

Semiannual Monitoring Report: First Semiannual Event 2004

Houston Wood Preserving Works Houston, Texas

Union Pacific Railroad Company

Received

JUL 22 2004

Remediation Division Corrective Action Section

July 21, 2004

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July 21, 2004

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Permits Section
Industrial and Hazardous Waste Division
Texas Commission on Environmental Quality
12100 Park 35 Circle, MC 130
Austin, Texas 78753

JUL 2 2 2004
Remediation Division
Corrective Action Section



Subject:

Transmittal of the Semiannual Monitoring Report: First

Received

Semiannual Event 2004

Houston Wood Preserving Works, Houston, Texas

Dear Dr. Rahman:

On behalf of Union Pacific Railroad (UPRR), two copies of the referenced report are enclosed pursuant to the requirements of Section VII.B.2 of Compliance Plan No. CP-50343, issued in conjunction with Post-Closure Care Permit No. HW-50343-000. THW 3 / 547

Please call me at (281) 600-1000 if you have any questions regarding the enclosed report.

Sincerely,

Environmental Resources Management

Christopher M. Young, &G.

Chin M. Mus

GBR/jan Enclosures

cc: Mark Arthur, TCEQ-Austin Marsha Hill, TCEQ Region 12 – Houston Geoffrey B. Reeder, Union Pacific Railroad

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Union Pacific Railroad Company Semiannual Monitoring Report: First Semiannual Event 2004 Houston Wood Preserving Works Houston, Texas July 21, 2004 Project No. 0014419 Principal Christopher M. Your Project Manager

Christopher A. Cunningham, E.I.T.

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1.0 INTRODUCTION

Routine semiannual ground water monitoring is required as a condition of the Compliance Plan (CP) for the former Houston Wood Preserving Works (HWPW) site, located at 4910 Liberty Road, Houston, Texas (Figure 1-1). These activities are performed to monitor ground water quality beneath a closed surface impoundment (Texas Natural Resource Conservation Commission [TNRCC] Permit Unit No. II.B.1). The surface impoundment was described in RCRA Permit No. HW-50343-000 and associated Compliance Plan (CP-50343), both issued by the TNRCC; [now referred to as the Texas Commission on Environmental Quality (TCEQ)]. The sampling event, analytical data, and this data evaluation report represent the first half of 2004 and fulfill the semiannual reporting requirements described in the CP, Section VII.B.2.

On March 15 and March 17, 2004, Environmental Resources Management (ERM) conducted ground water sampling activities at the site. These activities included sampling the on-site wells and piezometers associated with the surface impoundment.

Section VII.B.2 of the CP requires that a specific list of provisions be included in each semiannual report. As such, each provision listed below is addressed by number in Section 2 of this report. Some of the provisions listed in the CP refer to evaluation of a recovery system, if present. As of July 21, 2004, a recovery system had not been installed at this facility. Therefore, the few instances where a provision refers to a recovery system (i.e., provisions 5, 7, and 11) are notated in the text. The provisions as they relate to recovery wells were not addressed in this report. The following provisions are required for the semiannual report, pursuant to CP Section VII.B.2:

- 1. A narrative summary of the evaluations made in accordance with CP Sections V, VI, and VII for the preceding six-month period. These periods shall be January 1 through June 30 and July 1 through December 31;
- 2. The results of the chemical analyses, submitted in a tabulated format in a form acceptable to the Executive Director, which clearly indicates each parameter that exceeds the Ground Water Protection Standard (GWPS). Copies of the original laboratory report for chemical analyses showing detection limits and quality control and quality assurance data shall be provided if requested by the Executive Director;
- Tabulation of all water level elevations (relative to mean sea level), depth to water measurements, and total depth of well measurements collected since the data that was submitted in the previous semiannual report;
- 4. Potentiometric surface maps showing the elevation of the water table at the time of sampling;
- 5. If a recovery system is installed, potentiometric surface maps showing delineation of the radius of influence, minimum and maximum gradient within the hydrologically influenced area, and the direction of ground-water flow gradients outside the radius of influence;

6. A notation of the presence or absence of non-aqueous phase liquids (NAPLs), both light and dense phases, in each well during each sampling event since the last event covered in the previous semiannual report and tabulation of depth and thickness of NAPLs, if detected; 7. If a recovery system is installed, monthly tabulations of quantities of recovered ground-water and NAPLs (if encountered), and graphs of weekly recorded flow rates versus time for the recovery wells during each quarter; 8. Tabulation of all data evaluation results pursuant to Section VI.D and status of each well listed on CP Table III with regard to compliance with the corrective action objectives and compliance with the GWPSs; 9. Maps of the contaminated area depicting concentrations of naphthalene, acenaphthene, and total benzene, toluene, ethylbenzene, and xylenes (BTEX) as isopleth contours; 10. An updated schedule summary as required by Section XI.A; 11. Summary of any changes made to the monitoring/corrective action program and a summary of recovery well inspections, repairs, and any operational difficulties; 12. Recommendation for any changes; and 13. Any other items requested by the Executive Director.

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	2.0	FIRST SEMIANNUAL GROUND WATER SAMPLING EVENT FOR 2004
		This section contains a discussion of each of the semiannual report provisions required by CP Section VII.B.2, by reference number to the list of provisions in Section 1.
Π		Section 1.
Ц	2.1	NARRATIVE SUMMARY OF FIRST SEMIANNUAL ACTIVITIES
		CP Section VII.B.2.a requires a narrative summary of evaluations completed in accordance with CP Sections V, VI, and VII. Section V relates to the Corrective Action Program in place for the permitted unit. Section VI relates to the Ground
		Water Monitoring Program designed to evaluate the effectiveness of the Corrective Action Program. Section VII includes provisions for amending the Corrective Action Program and/or Compliance Plan. Each of these evaluations
		is provided below.
	2.1.1	Corrective Action Program
		Ground water samples were collected from the existing wells to assess affected
		ground water in the A-Transmissive Zone (A-TZ) and the B-Transmissive Zone (B-TZ). The definitions of the A-TZ and B-TZ are consistent with the Uppermost Transmissive Zone (UTZ) and Second Transmissive Zone (STZ), respectively, as defined in CP Provision I.A. and summarized as follows:
]		 A-TZ refers to the first sand unit encountered at approximately 35 feet above mean sea level (msl), averaging 6 to 8 feet in thickness.
]		 B-TZ refers to the second sand unit encountered at approximately 15 feet above msl, averaging 8 to 10 feet in thickness.
]		The following monitor wells were sampled (as designated by function in CP Table III; Appendix A to this report):
]		 A-TZ Point of Compliance (POC) wells: MW-01A, MW-02, MW-07, MW- 10A, and MW-11A;
- 1		 A-TZ Corrective Action Observation (CAO) wells: MW-04, MW-05, MW-07, MW-08, and MW-09;
1		B-TZ POC wells: MW-10B, MW-11B, and P-10; and
]		B-TZ CAO wells: P-11 and P-12.
,]		In addition, MW-03, which is screened in the A-TZ within the closed impoundment, was also sampled.
i	2.1.2	Ground Water Monitoring
]		ERM performed quarterly well inspections on March 15, 2004 and June 8 and 30, 2004 and ground water monitoring activities on March 15 through March 17,
	•	2004. Ground water sampling was performed using procedures outlined in a U.S. EPA document titled <i>Low-Flow (Minimal Drawdown) Ground-Water Sampling</i>
]		

Procedures (EPA/540/S-95/504) published in April 1996. Purging and sampling were performed using a low-flow pump, with its sample intake set at the approximate center of the screened interval of each well.

The wells are equipped with dedicated polytetrafluoroethylene (PTFE) tubing for ground water sampling. A Master-Flex® peristaltic pump was used to collect the ground water samples. A one-foot section of disposable silicon tubing was placed around the pump head and attached to the PTFE tubing for proper operation of the pump. Ground water was pumped from the screened interval of the well at a flow rate of less than approximately 0.5 L/min. A flow-through cell and field meters were used to measure and evaluate field parameters including temperature, pH, specific conductivity, dissolved oxygen, and turbidity. When the field parameters had stabilized to the EPA-specified criteria, the well was sampled. The samples were also collected at a flow rate of less then 0.5 L/min. A compilation of recorded field parameters is included in Appendix B.

For each well, three 40-mL glass vials [for volatile organic constituent (VOC) analysis] and four 1,000-mL amber glass bottles [for semivolatile organic constituent (SVOC) analysis] were filled directly from the pumping apparatus described above. The bottles, which had been preserved previously by the laboratory, were sealed and packed in coolers with sufficient ice to maintain a sample temperature of approximately 4°C. The coolers with Union Pacific Railroad's (UPRR) samples were delivered to Severn Trent Laboratory, in Houston, Texas for analysis. Chain-of-Custody (COC) forms were completed and kept with their respective samples. Copies of the analytical data and COCs are included in Appendix C.

2.2 ANALYTICAL RESULTS

The results of the chemical analyses performed on the A-TZ and B-TZ ground water samples collected during the first semiannual sampling event of 2004 are summarized in Tables 2-1 and 2-2, respectively. Those compounds reported by the laboratory at concentrations greater than the GWPS are indicated in boxes on the tables. The CP sets the GWPS at the practical quantitation limit (PQL) for each of the compounds analyzed. Table 2-3 summarizes the field blank and trip blank results for quality assurance/quality control (QA/QC) purposes. Duplicate sample results are included on Table 2-1 for comparison with the original sample.

2.3 WELL MEASUREMENT

The following measurements were collected at each well in order:

Before Sampling

- light non-aqueous phase liquids (LNAPLs); and
- depth to ground water.

After Sampling

- dense non-aqueous phase liquids (DNAPLs); and
- total well depths.

Table 2-4 provides a summary of these measurements. LNAPL and DNAPL were not apparent in any CP well.

2.4 POTENTIOMETRIC SURFACE MAPS

The ground water elevation data described in Section 2.3 were used to create potentiometric surface maps of the A-TZ and B-TZ (Figures 2-1 and 2-2, respectively). A review of Figure 2-1 indicates that ground water flow is slightly toward the northeast with an estimated gradient of 0.00625 feet/foot (ft/ft) in the A-TZ. The flow in the B-TZ is toward the northwest with a gradient of 0.005 ft/ft (Figure 2-2).

2.5 POTENTIOMETRIC SURFACE MAPS FOR RECOVERY SYSTEM

As of June 30, 2004, a recovery system had not been installed at the closed surface impoundment. Therefore, this provision is not applicable.

2.6 NON-AQUEOUS PHASE LIQUIDS

As mentioned above, no LNAPL or DNAPL was apparent in any of the CP wells.

2.7 NAPL RECOVERIES

As of June 30, 2004, a recovery system had not been installed at the closed surface impoundment. Therefore, this item is not addressed herein.

2.8 ANALYTICAL DATA EVALUATION

CP Section VI.D describes two methods which may be used to determine the compliance status of a given well. The analytical results may be either directly compared to the GWPS (CP Table I; included in Appendix A herein), or statistically compared to the GWPS using the 99% significance level of the t-distribution. Table 2-5 shows the results of a direct comparison of data from the first semiannual sampling event to the GWPS. A boxed value indicates an exceedance of the GWPS. Wells and piezometers were considered to be compliant if each of the constituents listed in CP Table I was reported at a concentration less than or equal to the GWPS.

2.9 BTEX, ACENAPHTHENE, AND NAPHTHALENE ISOPLETHS

As specified by the CP, isopleth maps depicting concentrations of BTEX, acenaphthene, and naphthalene were constructed using the data presented in . Tables 2-1 and 2-2. To facilitate generation of the contours, locations with results

		reported as <i>Not Detected</i> were assigned a value equal to one-half of the reported detection limit for contouring purposes. Figures 2-3 through 2-8 illustrate these
U	2.10	data. UPDATED COMPLIANCE SCHEDULE
	2.10	An updated compliance schedule is included as Appendix D of this report. The
		schedule has been updated from the Second Semiannual Monitoring Report, 2003.
	2.11	SUMMARY OF CHANGES MADE TO THE MONITORING/CORRECTIVE ACTION PROGRAM AND SUMMARY OF RECOVERY WELL INSPECTIONS AND MAINTENANCE
		The monitor well network was resurveyed on April 21 and 28, 2004. Table 2-4 and Figures 2-1 through 2-8 reflect the new survey locations and top of casing.
	2.12	RECOMMENDATION FOR CHANGES
		A compliance plan renewal application was submitted to TCEQ on December 23, 2003 consistent with the renewal requirements for the RCRA permit at the site. Several changes to the ground water monitoring program were proposed in the renewal application. UPRR responded to TCEQ comments on the application
		and is awaiting issuance of the final permit. At this time, no changes are recommended.
	2.13	OTHER REQUESTED ITEMS
		To date, no other items have been requested by the Executive Director.
]		
]		
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Tables July 21, 2004 Project No. 0014419 **Environmental Resources Management** 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000 G:\2004\006287\0014419\5706Hrpt.doc

TABLE 2-1

Summary of Analytical Results for the A-Transmissive Zone (A-TZ) Semiannual Monitoring Report: First Semiannual Event 2004

Houston Wood Preserving Works Houston, Texas

Analyte	PQL (GWPS)		/W-01A 3/17/04		MW-02 3/17/04		MW-03 3/17/04		MW-04 3/16/04	MW-05 3/16/04	MW-07 3/16/04	MW-08 3/16/04	MW-09 3/15/04		MW-10A 3/16/04	MW-11A 3/16/04
Volatile Organic Constituents	(6441-0)	Cample Date.	0, 1,, 0, 1			_		-								
Benzene	0.005		ND		ND		NĎ		ND	ND	ND	ND	ND		ND	ND
Chlorobenzene	0.005		ND		ND		ND		ND	ND	ND	ND	ND		ND	ND
1.2-Dichloroethane	0.005		ND		ND		ND		ND	ND	ND	ND	ND		ND	ND
Methylene chloride	0.010		ND		ND		ND		ND	ND	ND	ND .	ND		ND	ND
Ethylbenzene	0.005		ND		ND		ND		ND	ND	ND	ND	ND		ND	ND .
Toluene	0.005		ND		ND		ND		ND	ND	ND	ND	ND		ND	ND
Xylene (total)	0.005		ND	Г	0.0122 J		ND		ND	ND	ND	ND	ND		ND	ND
Aylerie (total)	0.000			_												
Semivolatile Organic Constituen	ts	-		_		-			ND	0.000283 J	0.000285 J	ND	ND		ND	0.002777
Acenaphthene	0.010		0.04226	L	0.03018	L	0.1104		ND	0.000263 J ND	0.000203 3 ND	ND	ND		ND	ND
Acenaphthylene	0.010		0.000785		0.000418 J		0.000833 0.00129	JL JL	0.00026 J	0.000251 J	0.000219 J	ND	ND		ND	0.000321 J
Anthracene	0.010	0	0.001854		0.001494		0.00129 0.000379 J		0.00028 J ND	0,0002513 ND	ND	ND	ND		ND	ND
Benzo(a)anthracene	0.010		ND		ND ND		0.0003793	JL	ND	ND	ND	ND	. ND		ND	ND
Benzo(a)pyrene	0.010		ND .				0.000511 ND		ND	ND	ND	ND	ND		ND	ND
bis(2-Chloroethoxy)methane	0.010		ND		ND		ND		ND	ND	ND	ND	ND		ND	ND
2-Chloronaphthalene	0.010		ND		ND ND		ND		ND	ND	ND	ND	ND		ND	ND
Chrysene	0.010	_	ND	Г	0.01945	1	ND		ND	ND	ND	ND	ND		ND	0.000463 J
Dibenzofuran	0.010		0.0194	L	0.01945	l U	0.000654	Ub	ND		ub .000199 J Ub	.000268 J Ub	.00033 J	Ub	ND	0.000521 Ub
Di-n-butyl phthalate	0.010	(UЬ	0,000792 ND	U	0.000034 ND	OU	ND	ND	ND	ND	ND		ND	ND
2,4-Dimethylphenol	0.010		ND		ND ND		ND		ND	ND	ND	ND	ND		ND	ND
4,6-Dinitro-o-cresol	0.050		ND		ND		ND		ND	ND	ND	ND	ND		ND	ND
2,4-Dinitrotoluene	0.010		ND		ND		ND		ND	ND	ND	ND	ND		ND	ND
2,6-Dinitrotoluene	0.010		ND ND		ND		ND		ND	ND	ND	ND	ND		ND	ND
1,2-Diphenylhydrazine	0.010		–	u	ND	U	0.000943	U	0.001025	ND	ND	ND	ND		0.000916	0.001042
bis(2-Ethylhexyl)phthalate	0.010		0.000973	U	0.001861	١	0.01034] JL	ND	ND	ND	ND	ND		ND	0.000394 J
Fluoranthene	0.010		0.003337	г	0.02035	1 '	0.0427	JL	ND	ND	ND	ND	ND		ND	0.000354 J
Fluorene	0.010		0.02334	L	0.02033	ו	ND	, 02	ND	ND	ND	ND	ND		ND	ND
2-Methylnaphthalene	0.010		0.005221		0.001694		0.000264 J	.11	ND	ND	ND	ND	ND		ND	0.002776
Naphthalene	0.010				0.000004 ND		ND	٠	ND	ND	ND	ND	ND		ND	ND
Nitrobenzene	0.010		ND		ND		ND		ND	· ND	ND	ND	ND		ND	ND
p-Nitrophenol	0.050		ND		ND		ND		ND	ND	ND	ND	ND		ND	ND
N-Nitrosodiphenylamine	0.010		ND	n	ND	R	ND	·R	ND	ND	ND	ND	ND		ND	ND
Pentachlorophenol	0.050		ND	R		K	0.000663	JL	ND	ND	ND	ND	ND		ND	ND
Phenanthrene	0.010		0.002194		0.002468 ND		0.000663 ND	JL	ND	ND	ND	ND	ND		ND	ND
Phenol	0.010		ND		0.000883		0.004965	JL		ND	ND	ND	ND		ND	ND
Pyrene	0.010		0.00117		0.00000		0.004000	-								

NOTES:

ND = Not detected at the Method Detection Limit (MDL), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances and can be found in the laboratory reports in Appendix C.

PQL = Practical Quantitation Limit, as defined on Table I of the Compliance Plan and determined by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes . The PQL is the Ground Water Protection Standard (GWPS).

indicates value reported above the GWPS.

b = Target analyte was found in the method blank. L = Low bias

(b) P-10D is a duplicate of P-10.

R = Rejected

J = Estimated value between the reporting limit and MDL.

⁽a) MW-10BD is a duplicate of MW-10B. U = Not Detected

TABLE 2-2

Summary of Analytical Results for the B-Transmissive Zone (B-TZ) Semiannual Monitoring Report: First Semiannual Event 2004

Houston Wood Preserving Works Houston, Texas

	PQL	Monitor Well ID:	MW-10B		MW-10BD ^(a)		MW-11B		P-10 ^(b)		P-10D		P-11		P-12	
Analyle	(GWPS)	Sample Date:	3/16/04		3/16/04		3/16/04		3/16/04	_	3/16/04	_	3/17/04	_	3/17/04	
Benzene	0.005		0.00231 J	_	0.00228 J		ND		ND		ND		ND		ND	
Chlorobenzene	0.005		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloroethane	0.005		ND		ND		ND		ND		ND		ND		ND	
Methylene chloride	0.010		ND		ND		ND		ND		ND		ND		ND	
Ethylbenzene	0.005		ND		ND		ND		ND		ND		ND		ND	
Toluene	0.005		ND		ND.		ND		ND		ND		ND		ND	
Xylene (total)	0.005		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	0.010	[0.04421	[0.04517		0.0486		ND	กา [0.08375] m [0.1301		ND ND	
Acenaphthylene	0.010	-	0.000833		0.000855		0.001163		ND	UJ	0.000586	UJ	ND		ND	
Anthracene	0.010		0.002478		0.00243		0.000854		ND	ŲĴ	0.004746	UJ	0.005611		ND	
Benzo(a)anthracene	0,010		ND		ND		ND		ND		ND		ND		ND ND	
Benzo(a)pyrene	0.010		ИD		ND		ND		ND		ND		ND	UJ		
bis(2-Chloroethoxy)methane	0.010		ND		ND		ND		ND		ND		ND	UJ	ND	
2-Chloronaphthalene	0.010		ND		ND		ND		ND		ND		ND		ND	
Chrysene	0.010		ND		ND	_	ND		ND		ND	٦.	ND		ND	
Dibenzofuran	0.010	[0.0171		0.01702] [0.01581]	ND	บม [0.03219]]	0.003985		ND 0.000922	Ub
Di-n-butyl phthalate	0.010	•	.000303 J	Ub	.000251 J	Ub	.000348 J	Ub	.000379 J	UJb	0.000418 J	UЪ	0.000923	Ub	0.000922 ND	UD
2,4-Dimethylphenol	0.010		ND		ND		ND		, ND		ND		ND		ND ND	
4.6-Dinitro-o-cresol	0.050		ND		ND		ND		ND		ND		ND		ND	
2.4-Dinitrotoluene	0.010		ND		ND		ND		ND		ND		ND	UJ	ND	
2,6-Dinitrotoluene	0.010		ND		ND		ND		ND		ND		ND	UJ	ND	
1,2-Diphenylhydrazine	0.010		ND		ND		ND		ND		ND		ND	UJ	0.001748	U
bis(2-Ethylhexyl)phthalate	0.010		0.000982		0.000988		ND		ND		ND		0.000904	U	0.001740 ND	·
Fluoranthene	0.010		0.001567		0.001681		0.001971	_	ND	UJ	0.003192	ر آ	0,008623	1	ND	
Fluorene	0.010		0.02079]	0.0213	l	0.0112]	ND	เกา	0.04259	- 1	0.05025	1	ND	
2-Methylnaphthalene	0.010		0.00013 J	•	ND	_	0.001569	_	ND	UJ	0.0218	1 1	0.001097		ND	
Naphthalene	0.010		0.001853		0.001653	L	0,01168	Ţ	ND	UJ	0.4144	1	0.007031		ND ND	
Nitrobenzene	0.010		ND		ND		ND		ND		ND		ND		ND	
p-Nitrophenol	0.050		ND		ND		ND		ND		ND		ND		ND	
N-Nitrosodiphenylamine	0.010		ND		ND		ND		ND		ND		ND	R		JL
Pentachlorophenol	0.050		ND		ND		ND		ND		ND ND	¬ .	ND	ヿ゙	0.000337 ND	J.
Phenanthrene	0.010		0.008858		0.00956		0.000198 J		ND	UJ	0.02155	T 1	0.01956	١	ND	
Phenol	0.010		ND		ND		ND		ND		ND		ND 0.00445		0.007348	
Pyrene	0.010		0.000718		0.000694		0.000991		ND	UJ	0.001372	J	0.00445		0.001348	
, ,,,,,,,					•											

NOTES:

ND = Not detected at the Method Detection Limit (MDL), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances and can be found in the laboratory reports in Appendix C.

PQL = Practical Quantitation Limit, as defined on Table I of the Compliance Plan and determined by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes.

The PQL is the Ground Water Protection Standard (GWPS).

indicates value reported above the GWPS.

J = Estimated value between the reporting limit and MDL.

L = Low bias

U = Not Detected

R = Rejected

b = Target analyte was found in the method blank.

(a) MW-10BD is a duplicate of MW-10B.

(b) P-10D is a duplicate of P-10.

TABLE 2-3

Summary of Analytical Results for Quality Assurance/Quality Control Samples Semiannual Monitoring Report: First Semiannual Event 2004

Houston Wood Preserving Works Houston, Texas

			Field Blank		Field Blank	Trip Blank		
Analyte	PQL S (GWPS) Sample		mple FB-031504-1SA04 Date: 3/17/04		FB-031704-1SA04 3/17/04	TB01-1SA04 3/16/04	TB02-1SA04 3/17/04	
Methylene chloride	0.010	-	ND		ND 0.00004 J	ND NA	ND NA	
Di-n-butyl phthalate bis(2-Ethylhexyl)phthalate	0.010 0.010		0.000514 ND	Ub	0.00361 J ND	NA NA	NA	

NOTES:

All values reported in mg/L.

ND = Not detected at the Method Detection Limit (MDL), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances and can be found in the laboratory reports in Appendix C. NA = Not Analyzed.

PQL = Practical Quantitation Limit, as defined on Table I of the Compliance Plan and determined by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes. The PQL is the Ground Water Protection Standard (GWPS).

J = Estimated value between the reporting limit and MDL.

b = Target analyte was found in the method blank.

TABLE 2-4

Water Level and Total Depth of Well Measurements Semiannual Monitoring Report: First Semiannual Event 2004

Houston Wood Preserving Works Houston, Texas

Well ID	Top of Casing ⁽¹⁾ Elevation (ft MSL)	Depth to Water (ft TOC)	Water Surface Elevation (ft MSL)	Total Depth of Well as Measured (ft TOC)	Total Depth as Completed (ft TOC) *
A-TZ Monito	oring Locations				
MW-01A	47.92	3.49	44.43	19.6	20
MW-02	47.97	2.87	45.10	18.36	20
MW-03	48.34	3.27	45.07	18.86	21 .
MW-04	49.85	4.8	45.05	21.59	23
MW-05	49.24	4.22	45.02	27.31	28
MW-07	48.86	3.89	44.97	24.71	N/A
MW-08	49.33	4.31	45.02	24.99	27
MW-09	49.26	4.18	45.08	25.38	27
MW-10A	49.86	4.69	45.17	25.49	26
MW-11A	50.05	4.99	45.06	23.93	24
B-TZ Monit	toring Locations				
MW-10B	49.94	5.78	44.16	46.46	49
	50.18	5.16	45.02	46.74	47
MW-11B	47.69	2.85	44.84	42.83	N/A
P-10	48.98	4.51	44.47	42.69	52
P-11 P-12 ⁽²⁾	48.78	3.55	45.23	N/A	52

NOTES:

Wells were gauged on March 15, 2004 except where noted.

Non-aqueous phase liquids were not measured in any well.

ft MSL = feet above Mean Sea Level

ft TOC = feet below the Top Of (the well) Casing

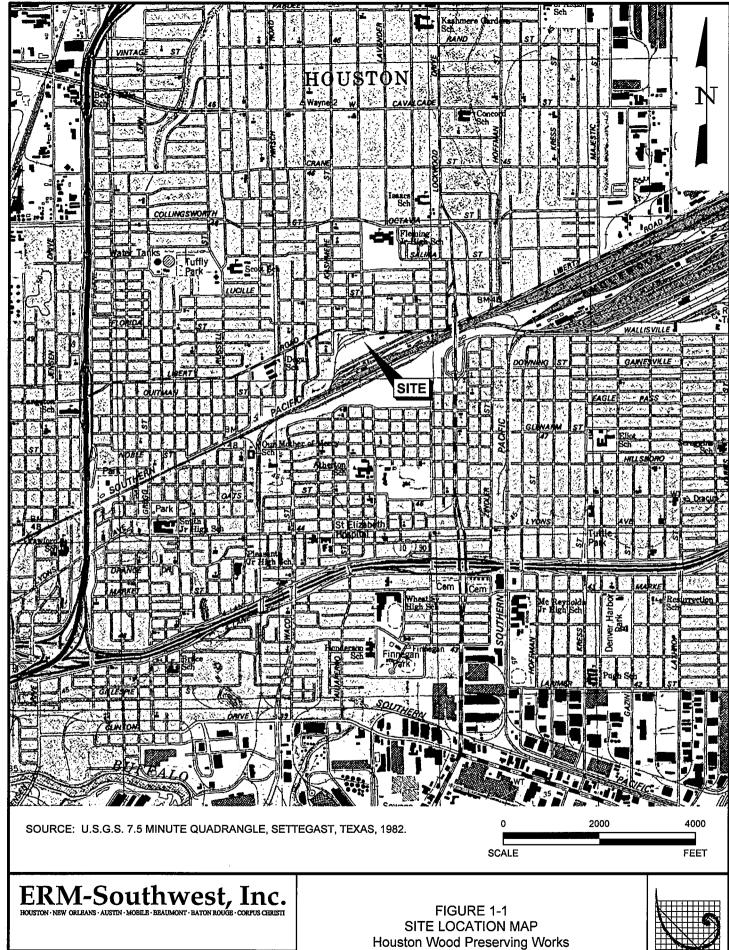
* Reported during well installation and completion

N/A = Information not available

- (1) Resurveyed on April 21 and 28, 2004.
- (2) Gauged on March 17, 2004 due to access to well.

			•
		TABLE 2-5 liance Status of Wells and Piezometers Nonitoring Report: First Semiannual Ev	
		Houston Wood Preserving Works Houston, Texas	
	A-TZ Monitoring Location	Well Designation	Compliance Status
	MW-01A MW-02	Point of compliance Point of compliance	Non-Compliant Non-Compliant
	MW-03 MW-10A MW-11A MW-04	Point of compliance Point of compliance Point of compliance Corrective action observation	Non-Compliant Compliant Compliant Compliant
0	MW-05 MW-07 MW-08	Corrective action observation Corrective action observation Corrective action observation	Compliant Compliant Compliant
	MW-09	Corrective action observation	Compliant
[] n	B-TZ Monitoring Location MW-10B MW-11B P-10 P-11	Well Designation Point of compliance Point of compliance Point of compliance Corrective action observation	Compliance Status Non-Compliant Non-Compliant Non-Compliant Non-Compliant
	P-12	Corrective action observation	Compliant
	·		
]			
			0.1000.00000000000000000000000000000000

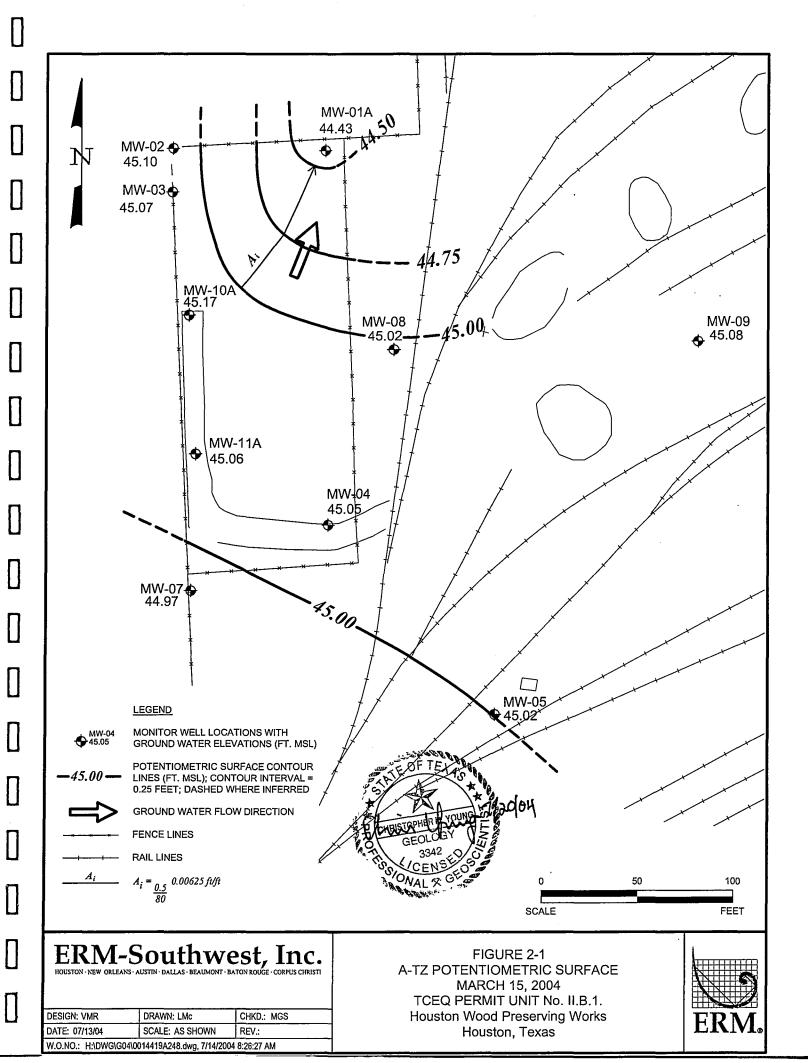
Figures July 21, 2004 Project No. 0014419 **Environmental Resources Management** 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000 $G: \verb|\|2004\\|006287\\|0014419\\|5706Hrpt.doc$

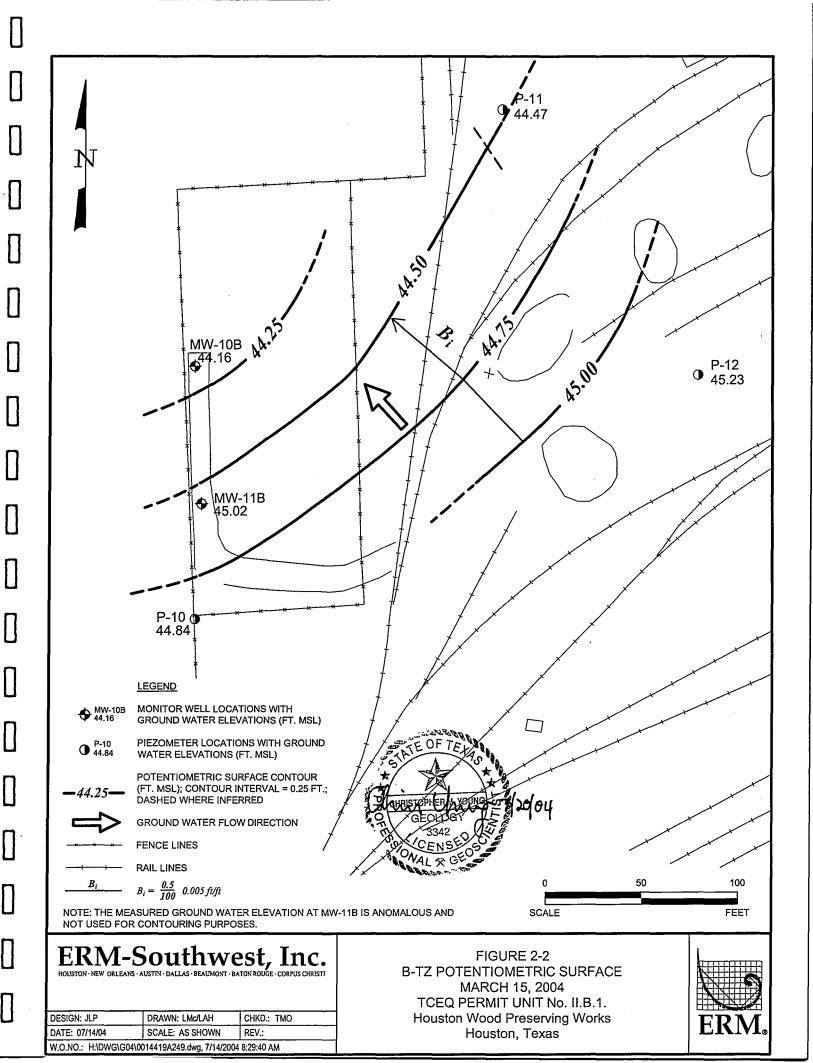


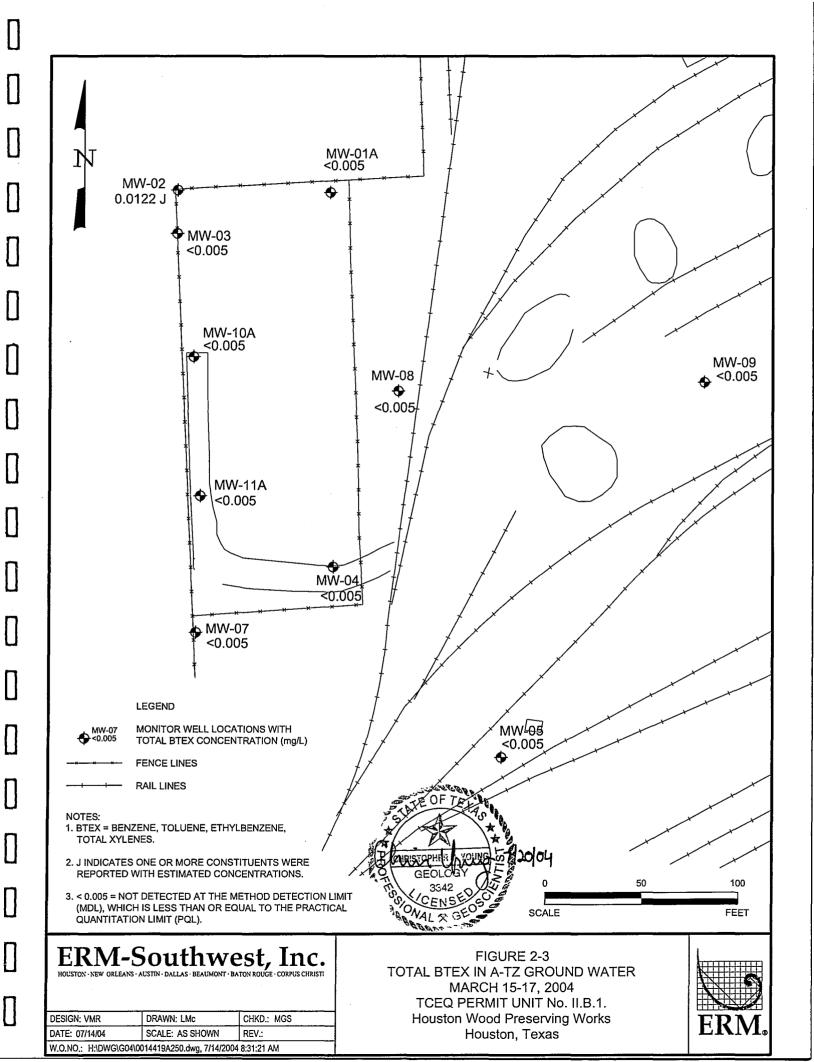
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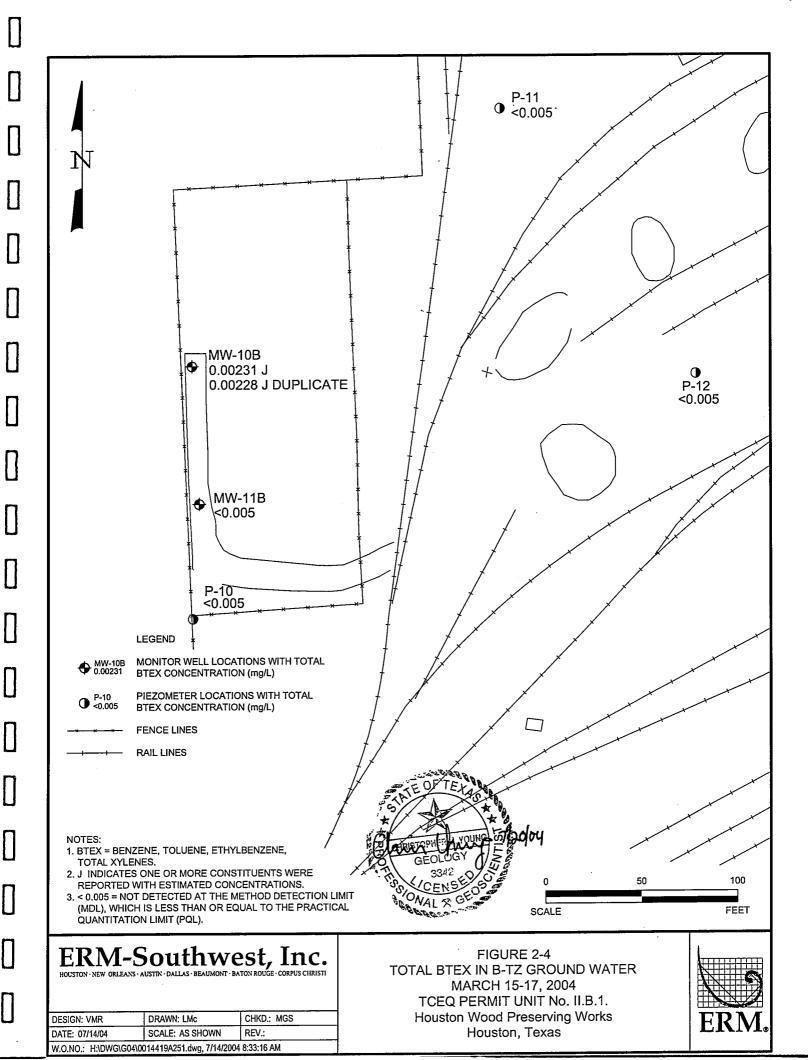
Houston, Texas

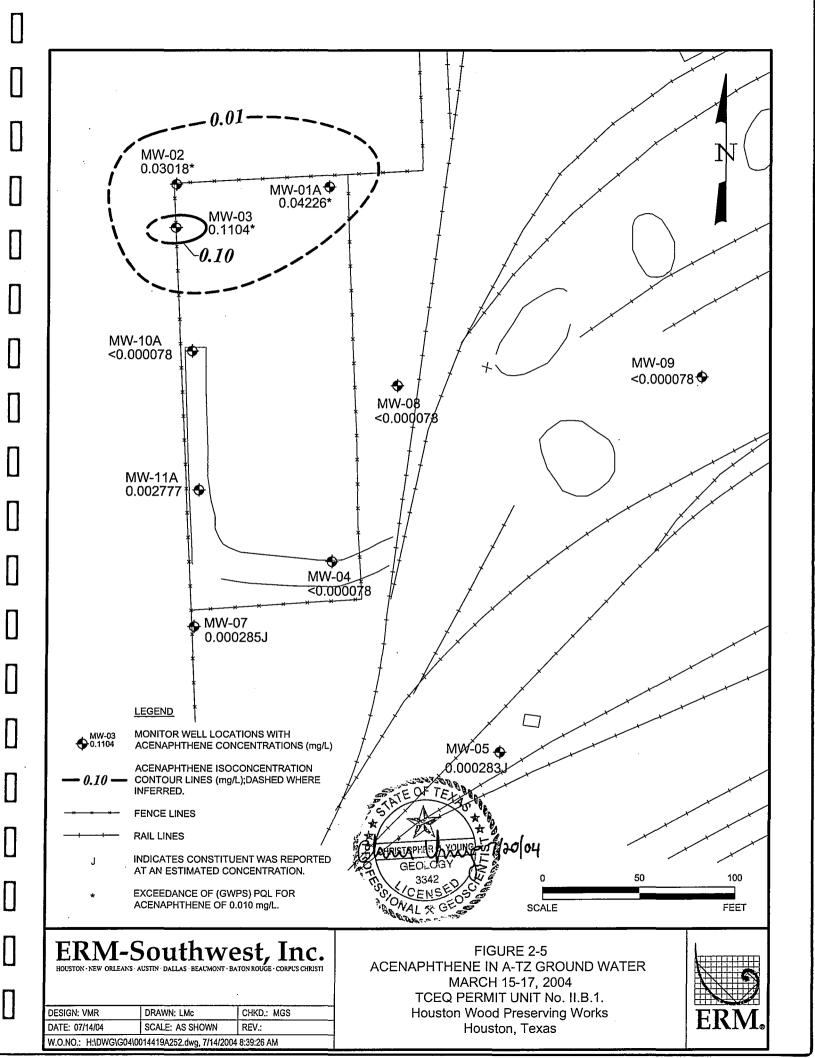


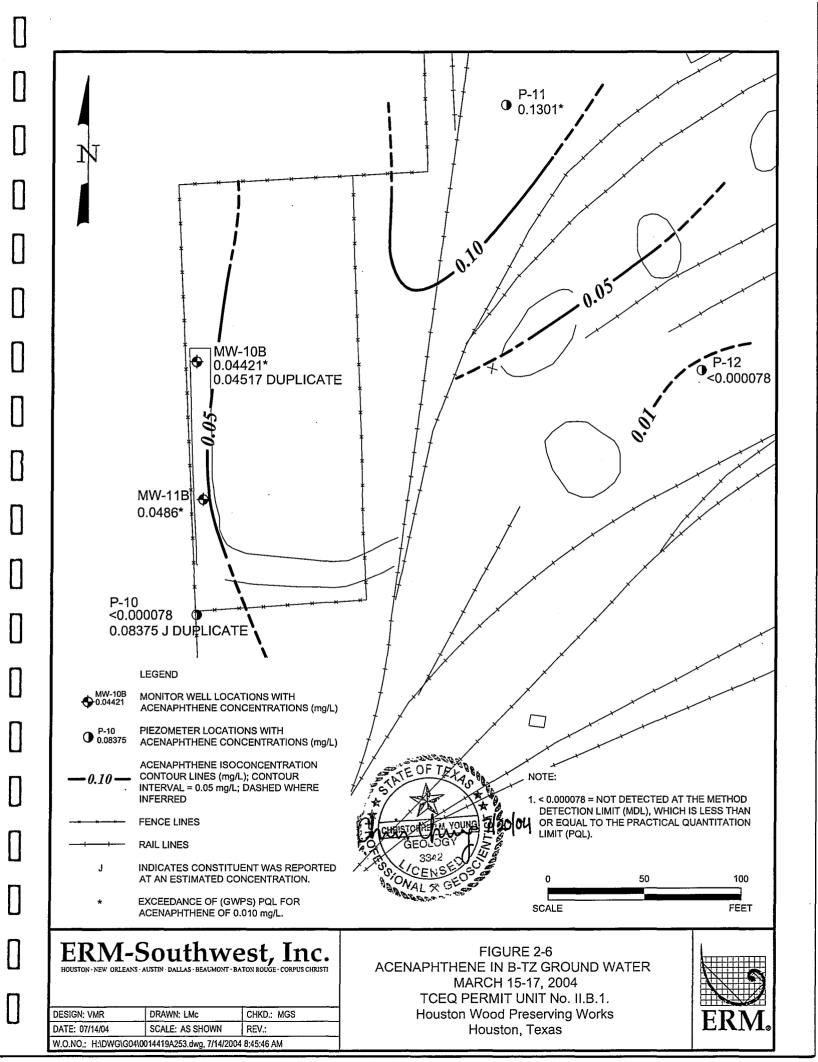


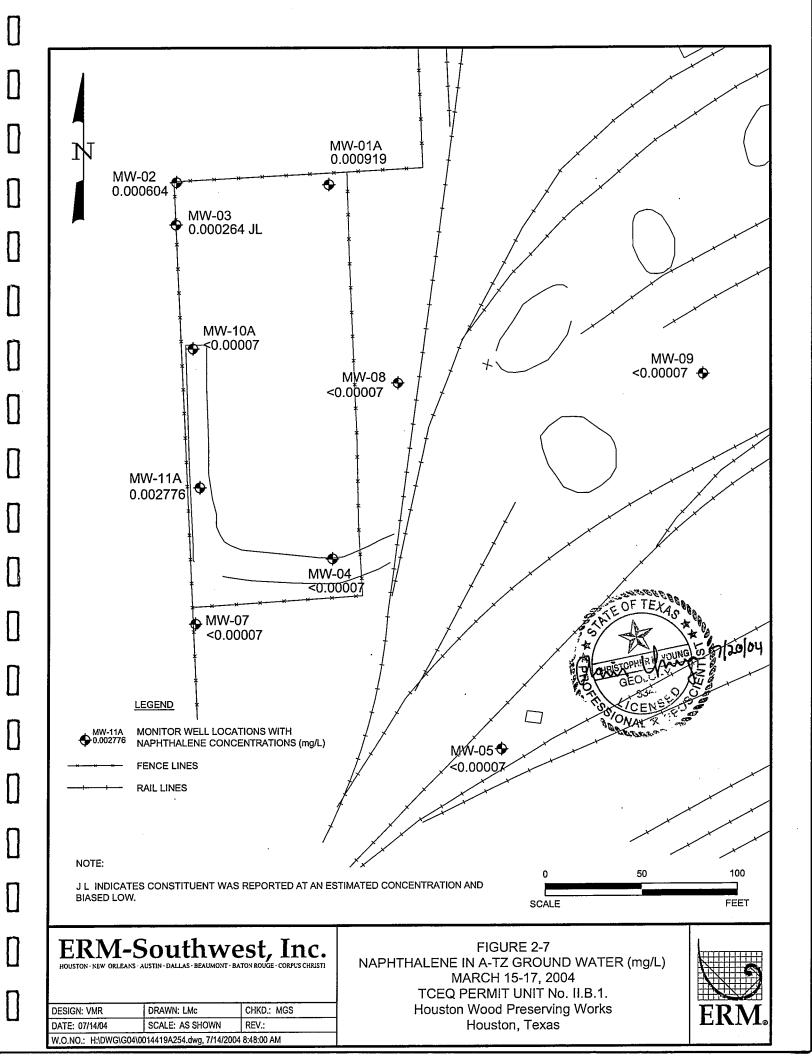


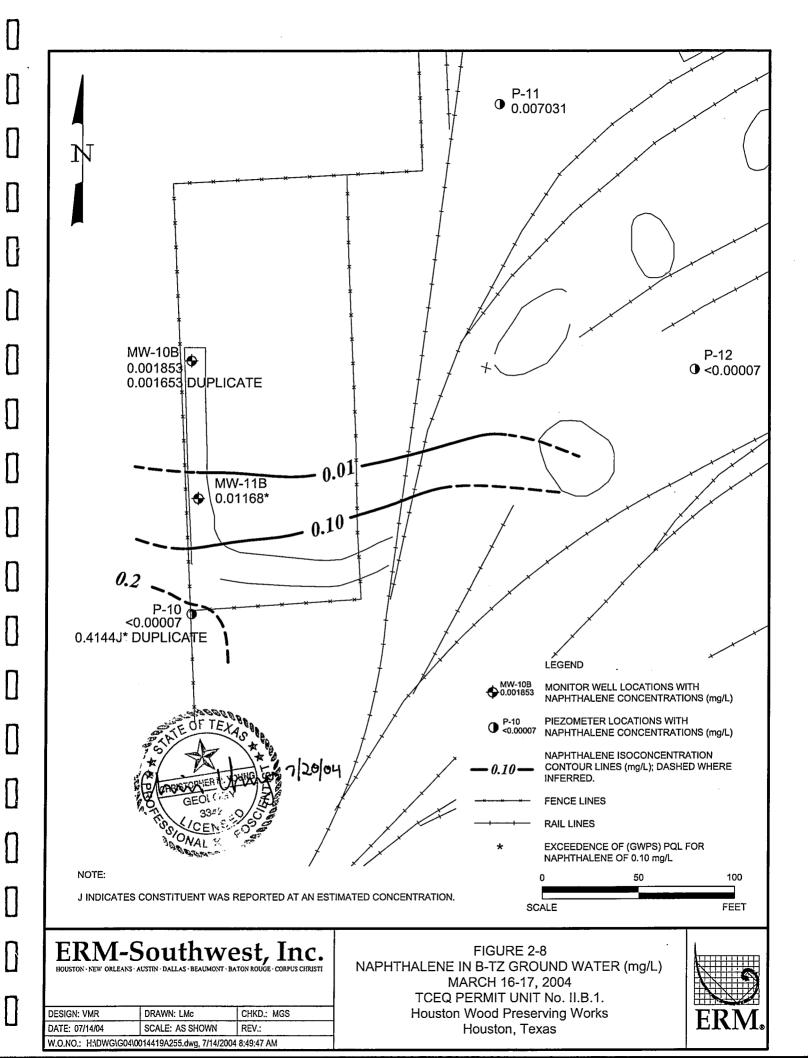












]		
	Compliance Plan Tables Appendix A	
	July 21, 2004 Project No. 0014419	
	Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000	

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TABLE I

Table of Hazardous and Solid Waste Constituents and Concentration Limits for Ground-Water Protection Standard

COLUMN A	COLUMN B
Hazardous Constituents	Concentration Limits (mg/l)
	• •
Acenaphthene	ND (0.010)
Acenaphthylene	ND (0.010)
Anthracene	ND (0.010)
Benzene	ND (0.005)
Benzo(a) anthracene	ND (0.010)
Benzo (a) pyrene	ND (0.010)
bis(2-Ethylhexyl)phthalate	ND (0.010)
bis(2-Chloroethoxy)methane	ND (0.010)
Chlorobenzene	ND (0.005)
2-Chloranaphthalene	ND (0.010)
Chrysene	ND (0.010)
Dibenzofuran	ND (0.010)
1,2-Dichlorethane	ND (0.005)
Dichloromethane	NO (0.005)
2,4-Dimethylphenol	ND (0.010)
Di-n-butyl phthalate	ND (0.010)
4,6-Dinitro-o-cresol	ND (0.050)
2,4-Dinitrotoluene	ND (0.010)
2,6-Dinitrotoluene	ND (0.010)
1,2-Diphenylhydrazine	ND (0.010)
Ethylbenzene	ND (0.005)
Fluoranthene	ND (0.010)
Fluorene	ND (0.010)
Methylene chloride	ND (0.010)
2-Methylnaphthalene	ND (0.010)
Naphthalene	ND (0.010)
Nitrobenzene	ND (0.010)
4-Nitrophenal	ND (0.050)
N-Nitrosodiphenylamine	ND (0.010)
Pentachlorophenol	ND (0.050)
Phenanthrene	ND (0.010)
Phenol	ND (0.010)
Pyrene	ND (0.010)
Toluene	ND (0.005)
Mylenes	ND (0.005)

Mon-detectable at Practical Quantitation Limit as determined by the analytical methods of the United States Environmental Protection Agency publication SW-346 Test Methods for Evaluating Solid Waste, Third Edition, November 1986, (USEPA SW-846) and as listed in the July 3, 1987 edition of the Federal Register and later editions. Practical Quantitation Limit (PQL) is indicated in parentheses. Practical Quantitation Limits are the lowest concentrations of analytes in ground-water that can be reliably determined within specified

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limits of precision and accuracy by the indicated methods under routine laboratory operating conditions.

TABLE II

Table of Indicator Parameters and Concentration Limits for Ground-water Protection Standard

		•				
	COLUMN A	COLUMN 3				
lazardous Constituents		Concentration Limits (mg/1)				
		(a. a.a.)				
	Acenaphthene .	ND (0.010)				
	Anthracene	NO (0.010)				
	Benzene	ND (0.00S)				
	bis(2-Ethylhexyl)phthalate	NO (0.010)				
	Dibenzofuran	ИО (0.010)				
	2,4-Dimethylphenol	ND (0.010)				
	Ethylbenzene	ND (0.005)				
	Fluoranchene	NO (0.010)				
	Fluorene	ND (0.010)				
	Methylene Chloride	ND (0.010)				
	2-Methylnaphthalene	ND (0.010)				
	Naphthalene	ND (0.010)				
	Phenanthrene	ND (0.010)				
	Pyrene	ND (0.010)				
	Toluene	ND (0.005)				
	Xylenes	ND (0.005)				
	-					

N.D. Non-detectable at Practical (Quantitation Limit as determined by the analytical methods of the United States Environmental Protection Agency publication SW-346 Test Methods for Evaluating Solid Waste, Third Edition, November 1986, (USEPA SW-846) and as listed in the July 8, 1987 edition of the Federal Register and later editions. Practical Quantitation Limit (PQL) is indicated in parentheses. Practical Quantitation Limits are the lowest concentrations of analytes in ground-water that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions.

TABLE III

Designation of Wells by Function

1. POINT OF COMPLIANCE WELLS A. Upper Transmissive Zone (existing) MW-1 MW-2 MW-7 Semi-annual Semi-annual Semi-annual

BACKGROUND WELLS

KW-10.

MW-11.

As proposed in the Compliance Plan Application, background values of the tested constituents will be assumed to be the Practical Quantitation Limit (PQL), and therefore, negate the need for background wells, unless this Compliance Plan Is modified under Section VI.A.

3. CORRECTIVE ACTION OBSERVATION WELLS

SAMPLING FREQUENCY

Semi-annual

Semi-annual

A. On-site Uppermost Transmissive Zone (existing)

MW-4	Semi-annual
MW-5	Semi-annual
MW-7	Semi-annual
MM-3	Semi-annual
MM - 9	Semi-annual

*Point of Compliance wells noted with an asterisk are to be installed within ninety (90) days of issuance of this Compliance Plan along the property boundary between existing monitor wells MW-2 and MW-7.

Field Parameters Appendix B
July 21, 2004 Project No. 0014419
Environmental Resources Management 15810 Park Ten Place, Suite 300
Houston, Texas 77084 (281) 600-1000
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TABLE B-1

Ground Water Sampling Field Parameters

Semiannual Monitoring Report: First Semiannual Event 2004 Houston Wood Preserving Works Houston, Texas

Well ID: Date Sampled:	MW-01A 3/17/04	MW-02 3/17/04	MW-03 3/17/04	MW-04 3/16/04	MW-05 3/16/04	MVV-07 3/16/04	MVV-08 3/16/04	MW-09 3/15/04
Time Sampled (hrs CST)	1040	950	852	902	1445	910	1315	1410
Temperature (°C)	21.4	21.6	22.4	19.4	21.5	19.0	20.6	21.3
pH (Standard Units)	7.04	6.72	6.84	6.63	6.88	3.82	7.23	6.46
Specific Conductivity (uS)	1,696	775	928	1,068	631	837	488	928
Dissolved Oxygen (mg/L)	0.1	0.1	0.1	0.1	1.6	4.5	5.2	3.5
Turbidity (NTU)	34.72	23.93	6.69	0.00	8.93	10.53	0.0	0.00
Well ID: Date Sampled:	MW-10A 3/16/04	MW-10B 3/16/04	MW-11A 3/16/04	MW-11B 3/16/04	P-10 3/16/04	P-11 3/17/04	P-12 3/17/04	
Time Sampled (hrs CST)	1425	1310	1002	1050	1010	855	1250	
Temperature (°C)	22.7	22.5	19.6	21.2	19.7	20.7	23.4	
pH (Standard Units)	6.97	6.95	7.05	6.94	7.12	6.54	7.04	
Specific Conductivity (uS)	1,079	1,378	1,233	1,309	1,137	1,433	1,480	
Dissolved Oxygen (mg/L)	2.3	0.1	0.6	0.1	0.2	0.7	1.0	
Turbidity (NTU)	0.00	41.52	25.08	0.00	3.40	3.46	0.00	

NOTES:

CST = Central Standard Time

NTU = Natural Turbidity Unit

Laboratory Analytical Reports Appendix C July 21, 2004 Project No. 0014419 **Environmental Resources Management** 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000 G:\2004\006287\0014419\5706Hrpt.doc

APPENDIX C-1

Data Usability Summary

Houston Wood Preserving Works Houston, Texas

Environmental Resources Management (ERM) reviewed a laboratory analytical data package 270409 from Severn Trent Laboratories of Houston, Texas for the analysis of 12 ground water samples collected on March 15-16, 2004 in the area of the former Houston Wood Preserving Works site. Data were reviewed to assess conformance with the requirements of the *Review and Reporting of COC Concentration Data* TRRP-13 (December 2002) and adherence to project data quality objectives.

Purpose of Sampling Event: Continuation of on-site and off-site investigation.

Analysis requested included:

SW-846 8270C - Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (low-level and Selective Ion Monitoring (SIM))

SW-846 8260B – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Data were reviewed and validated as described in the TRRP-13 Guidance Document and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were reviewed by ERM:

- Analytical data report,
- Laboratory Review Checklist (LRC), and
- Exception Reports (ER).

The results of supporting quality control (QC) analyses are summarized in the QC section of the analytical report.

The reportable data, LRCs and ERs included in this review are attached to this DUS.

Project Data Quality Objectives for each analytical method are listed in Table 1.

Introduction

Ten ground water samples and two duplicate ground water samples were analyzed for semivolatile organic compounds (SVOCs) and volatile organic compounds (VOCs). Rinsate and field blanks were not provided to the laboratory for analysis. One field blank was provided to the laboratory and analyzed for VOCs and SVOCs and one trip

u	
0	blank was provided with the laboratory package and analyzed by the laboratory for VOCs only. Table 2 lists the sample identifications cross-referenced to laboratory identifications.
	Data Review / Validation Results
	Analytical Results
	Qualified sample data are listed on Table 3. Not Detected results are reported as less than the value of the sample quantitation limit (SQL) as defined by TRRP. According to the LRC, some SQLs were elevated because of dilutions necessary for analysis.
_ _	Preservation and Holding Times
U	The samples were evaluated for agreement with the chain-of-custody (COC). The
	samples were received in the appropriate containers and in good condition with the paperwork filled out properly. Most sample receipt temperatures were within the acceptance criteria of $4 + / - 2$ degrees C. Two temperatures (1.9 and 1.7 degrees C) were
	slightly below the acceptance criteria. Qualifiers were not added to the data because of the slightly lower cooler temperature. The samples were preserved in the field as specified in SW-846 Table 2-36. Samples were prepared and analyzed within holding
	times as specified in SW-846 Table 2-36.
о О	Calibrations and Tunes
Ц	According to the LRC, initial calibration and continuing calibration data met SW-846 method requirements for VOC and SVOC analyses. The data package documents satisfactory instrument performance calibrations (GC/MS tunes) for VOC and SVOC
	analyses.
n	Blanks
U	Method blank analyses were reported as Not Detected for SVOC SIM.
	The VOCs method blank analyzed on 3/19/04 at 12:22pm had a detection of methylene chloride of 3.63226 ug/L. Associated samples were reported as Not Detected for
Π	methylene chloride, so qualification of the data was not necessary.
u 	SVOC low-level method blank analyzed on 3/23/04 at 15:31 had a reported detection of di-n-butyl phthalate (0.28010 ug/L). Samples MW-9-1SA04, FB-031504-1SA04, MW-
	11A-1SA04, MW-11B-1SA0, MW-10B-1SA04, MW-10BD-1SA04, MW-7-1SA04, P-10-1SA04, P-10D-1SA04, MW-8-1SA04 and MW-5-1SA04 had detections of di-n-butyl
	phthalate less than 10X the method blank concentration, and were qualified as Not Detected (U) for di-n-butyl phthalate, because of method blank contamination.
	The field blank (FB-031504-1SA04) was reported as detected for di-n-butyl phthalate (0.000514 mg/L). Samples MW-9-1SA04, MW-11A-1SA04, MW-11B-1SA0, MW-10B-

1SA04, MW-10BD-1SA04, MW-7-1SA04, P-10-1SA04, P-10D-1SA04, MW-8-1SA04 and MW-5-1SA04 had detections of di-n-butyl phthalate less than 10X the field blank concentration, and were qualified as Not Detected (U) for di-n-butyl phthalate, because of field blank contamination. One trip blank (TB01-1SA04) was received by the laboratory, and was reported as Not Detected for VOCs. Surrogate Recoveries Surrogate recoveries for VOC and SVOC SIM analyses were within laboratory acceptance criteria. SVOC low-level analysis had elevated surrogate 2,4,6-tribromophenol recovery for samples MW-4-1SA04, MW-11B-1SA04 and MW-7-1SA04. The other five surrogates were within acceptance limits, so qualification of the data was not necessary. Sample P-10D-1SA04 20X dilution had low surrogate recoveries. Since the surrogates were diluted out of the sample, qualification of the data was not necessary. **Internal Standards** According to the LRC, VOC and SVOC internal standard areas were within SW-846 method acceptance criteria. **Laboratory Control Samples** VOC and SVOC LCS recoveries met the laboratory-defined acceptable ranges. Matrix Spike/Matrix Spike Duplicates VOC and SVOC low level MS/MSD recoveries were within laboratory-supplied acceptance criteria. SVOC SIM MS/MSD was analyzed from sample MW-11B-1SA04. The SVOC SIM MS/MSD had elevated recovery for pentachlorophenol. The associated samples were reported as Not Detected for pentachlorophenol, so qualification of the data was not necessary. **Field Precision** Two field duplicate samples were collected during this sampling event. Sample MW-10B-1SA04 and duplicate MW-10BD-1SA04 were reported as detected or

estimated detected (J flagged) for 12 common compounds. MW-10B-1SA04 was also

acenaphthene, acenaphthylene, anthracene, bis(2-ethylhexyl)phthalate, dibenzofuran,

reported as detected for 2-methylnaphthalene. The 12 compounds (benzene,

di-n-butyl phthalate, fluoranthene, fluorene, naphthalene, phenanthrene and pyrene) had RPD less than 20% and were within acceptance criteria.

Sample P-10-1SA04 and duplicate P-10D-1SA04 were reported as estimated detected (J flagged) for di-n-butyl phthalate. Di-n-butyl phthalate had RPD less than 20% and was within acceptance criteria. P-10D-1SA04 was also reported as detected for 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, dibenzofuran, fluoranthene, fluorene, naphthalene, phenanthrene and pyrene. The sample/duplicate precision calculation could not be completed on the ten compounds listed because they were reported as Not Detected in both the sample and the duplicate sample. The ten compounds listed were qualified as Estimated (J) in sample P-10D-1SA04 and qualified as Not Detected and Estimated (UJ) in sample P-10-1SA04, because of the difference in results between the sample and duplicate.

Sample/duplicate precision calculations are included in Table 4.

Field Procedures

The samples were collected using documented sampling procedures.

Summary

Ground water analytical data are useable for the purpose of delineation of VOCs and SVOCs in the area of the former Houston Wood Preserving Works site. The data user is advised that samples MW-9-1SA04, FB-031504-1SA04, MW-11A-1SA04, MW-11B-1SA0, MW-10B-1SA04, MW-10BD-1SA04, MW-7-1SA04, P-10-1SA04, P-10D-1SA04, MW-8-1SA04 and MW-5-1SA04 were qualified as Not Detected (U) for di-n-butyl phthalate, because of method blank contamination.

Samples P-10-1SA04 and P-10D-1SA04 were qualified as estimated (J) for detections and qualified as Not Detected estimated (UJ) for compounds reported as Not Detected for 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, dibenzofuran, fluoranthene, fluorene, naphthalene, phenanthrene and pyrene, because of sample/duplicate precision outside acceptance criteria.

TABLE 1

Analytical Methods and Quality Objectives for Ground Water Laboratory Package 270409

Houston Wood Preserving Works Union Pacific Railroad

Analyte(s)	Method Reference	Method Number	Method Description	Quality Control Type	Quality Objective
SVOC	SW-846	8270	GC/MS	Method Blank LCS MS/MSD MS/MSD RPD Surrogates	<mql Variable* Variable* Variable* Variable*</mql
VOC	SW-846	8260	GC/MS	Method Blank LCS MS/MSD MS/MSD RPD Surrogates	<mql Variable* Variable* Variable* Variable*</mql

NOTE:

^{* =} Lab quality control limits vary for each compound.

TABLE 2

Cross-Reference Field Sample Identifications and Laboratory Identifications
Laboratory Package 270409

Houston Wood Preserving Works Union Pacific Railroad

Field Identification	Laboratory Identification
MW-9-1SA04	270409-1
FB-031504-1SA04	270409-2
MW-4-1SA04	270409-3
MW-11A-1SA05	270409-4
MW-11B-1SA06	270409-5
MW-10B-1SA07	270409-6
MW-10BD-1SA08	270409-7
TB01-1SA04	270409-8
MW-10A-1SA04	270409-9
MW-7-1SA04	270409-10
P-10-1SA04	270409-11
P-10D-1SA04	270409-12
MW-8-1SA04	270409-13
MW-5-1SA04	270409-14

]	
1	TABLE 3
]	Qualified Analytical Data Laboratory Package 270409

Houston Wood Preserving Works Union Pacific Railroad

Π	Field Identification	Analyte	Qualification	Reason for Qualification
U	MW-9-1SA04	di-n-butyl phthalate	U	method blank contamination
_	FB-031504-1SA04	di-n-butyl phthalate	ŭ	method blank contamination
Ŋ	MW-11A-1SA05	di-n-butyl phthalate	Ū	method blank contamination
Ш	MW-11B-1SA06	di-n-butyl phthalate	Ū	method blank contamination
	MW-10B-1SA07	di-n-butyl phthalate	Ū	method blank contamination
\cap	MW-10BD-1SA08	di-n-butyl phthalate	Ū	method blank contamination
11	MW-7-1SA04	di-n-butyl phthalate	U	method blank contamination
u	P-10-1SA04	di-n-butyl phthalate	U	method blank contamination
	P-10D-1SA04	di-n-butyl phthalate	U	method blank contamination
П	MW-8-1SA04	di-n-butyl phthalate	U	method blank contamination
U	MW-5-1SA04	di-n-butyl phthalate	U	method blank contamination
n	MW-9-1SA04	di-n-butyl phthalate	U	field blank contamination
11	MW-11A-1SA05	di-n-butyl phthalate	υ	field blank contamination
L	MW-11B-1SA06	di-n-butyl phthalate	U	field blank contamination
	MW-10B-1SA07	di-n-butyl phthalate	U	field blank contamination
П	MW-10BD-1SA08	di-n-butyl phthalate	U	field blank contamination
11	MW-7 - 1SA04	di-n-butyl phthalate	U	field blank contamination
•	P-10-1SA04	di-n-butyl phthalate	Ü	field blank contamination
_	P-10D - 1SA04	di-n-butyl phthalate	U	field blank contamination
11	MW-8-1SA04	di-n-butyl phthalate	U	field blank contamination
u	MW-5-1SA04	di-n-butyl phthalate	U	field blank contamination
n	P-10-1SA04	2-methylnaphthalene	UJ	sample/duplicate precision outside criteria
{ }	P-10-1SA04	acenaphthene	UJ	sample/duplicate precision outside criteria
Ų	P-10-1SA04	acenaphthylene	UJ	sample/duplicate precision outside criteria
	P-10-1SA04	anthracene	UJ	sample/duplicate precision outside criteria
n	P-10-1SA04	dibenzofuran	UJ	sample/duplicate precision outside criteria
11.	P-10-1SA04	fluoranthene	UJ	sample/duplicate precision outside criteria
-	P-10-1SA04	fluorene	UJ	sample/duplicate precision outside criteria
	P-10-1SA04	naphthalene	UJ	sample/duplicate precision outside criteria
11	P-10-1SA04	phenanthrene	UJ	sample/duplicate precision outside criteria
u	P-10-1SA04	pyrene	UJ	sample/duplicate precision outside criteria
П	P-10D-1SA04	2-methylnaphthalene	J	sample/duplicate precision outside criteria
11	P-10D-1SA04	acenaphthene	J	sample/duplicate precision outside criteria
J	P-10D-1SA04	acenaphthylene	J	sample/duplicate precision outside criteria
_	P-10D-1SA04	anthracene	J	sample/duplicate precision outside criteria
\Box	P-10D-1SA04	dibenzofuran	J	sample/duplicate precision outside criteria
U	P-10D-1SA04	fluoranthene	J	sample/duplicate precision outside criteria
	P-10D-1SA04	fluorene	J	sample/duplicate precision outside criteria
n	P-10D-1SA04	naphthalene	J	sample/duplicate precision outside criteria
11	P-10D-1SA04	phenanthrene	J	sample/duplicate precision outside criteria
U	P-10D-1SA04	pyrene	J	sample/duplicate precision outside criteria
n	,			•
П	NOTES:			
	U = not-detected			

J = estimated data, the reported sample concentration is approximated due to exceedance of QC requirements UJ = the analyte was analyzed for but was not detected above the reported sample quantitation limit. the associated value is an estimate and may be inaccurate or imprecise.

TABLE 4

Field Precision Laboratory Package 270409

Houston Wood Preserving Works Union Pacific Railroad

Field Identification	Analyte	Sample Result	Duplicate Result	RPD	Qualified
MW-10B-1SA04/MW-10BD-1SA04	benzene	0.00231	0.00228	1.31	Α
	acenaphthene	0.04421	0.04517	-2.15	Α
	acenaphthylene	0.000833	0.000855	-2.61	Α
	anthracene	0.002478	0.00243	1.96	Α
	bis(2-ethylhexyl)phthalate	0.000982	0.000988	-0.61	Α
	dibenzofuran	0.0171	0.01702	0.47	Α
	di-n-butyl phthalate	0.000303	0.000251	18.77	Α
	fluoranthene	0.001567	0.001681	-7.02	Α
	fluorene	0.02079	0.0213	-2.42	Α
	naphthalene	0.001853	0.001653	11.41	Α
	phenanthrene	0.008858	0.00956	-7.62	Α
	pyrene	0.000718	0.000694	3.40	Α
P-10-1SA04/P-10D-1SA04	di-n-butyl phthalate	0.000379	0.000418	-9.79	Α

NOTES:

results reported as mg/L RPD = ((SR-DR)*200)/(SR+DR) A = Acceptable data

APPENDIX C-2 Data Usability Summary Houston Wood Preserving Works Houston, Texas Environmental Resources Management (ERM) reviewed a laboratory analytical data package 270473 from Severn Trent Laboratories of Houston, Texas for the analysis of five ground water samples collected on March 17, 2004 in the area of the Union Pacific Railroad property former Houston Wood Preserving Works site. Data were reviewed to assess conformance with the requirements of the Review and Reporting of COC Concentration Data TRRP-13 (December 2002), and adherence to project data quality objectives. Purpose of Sampling Event: Continuation of on-site and off-site investigation. Analysis requested included: SW-846 8270C - Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (low-level and Selective Ion Monitoring (SIM)) SW-846 8260B – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) Data were reviewed and validated as described in the TRRP-13 Guidance Document and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were reviewed by ERM: Analytical data report, Laboratory Review Checklist (LRC), and Exception Reports (ER). The results of supporting quality control (QC) analyses are summarized in the QC section of the analytical report. The reportable data, LRCs and ERs included in this review are attached to this DUS. Project Data Quality Objectives for each analytical method are listed in Table 1.

Five ground water samples were analyzed for semivolatile organic compounds (SVOCs) and volatile organic compounds (VOCs). Rinsate blanks and equipment blanks were not provided to the laboratory for analysis. One field blank was provided to the laboratory and analyzed

C-2-1

Introduction

0	for VOCs and SVOCs. One trip blank was provided to the laboratory and analyzed for VOCs only. Table 2 lists the sample identifications cross-referenced to laboratory identifications.
n	Data Review / Validation Results
<u>u</u>	Analytical Results
0	Qualified sample data are listed on Table 3. Not Detected results are reported as less than the value of the sample quantitation limit (SQL) as defined by TRRP. According to the LRC, some
	SQLs were elevated because of dilutions necessary for analysis.
n	Preservation and Holding Times
U	The samples were evaluated for agreement with the chain-of-custody (COC). The samples were received in the appropriate containers and in good condition with the paperwork filled
	out properly. Sample receipt temperature was within the acceptance criteria of 4 +/- 2 degrees C. The samples were preserved in the field as specified in SW-846 Table 2-36. Samples were prepared and analyzed within holding times as specified in SW-846 Table 2-36.
	Calibrations and Tunes
	According to the LRC, initial calibration and continuing calibration data met SW-846 method requirements for VOC and SVOC analyses. The data package documents satisfactory instrument performance calibrations (GC/MS tunes) for VOC and SVOC analyses.
	Blanks
7	Method blank analyses were reported as Not Detected for SVOC SIM.
- -	SVOC low-level method blank analyzed on 3/24/04 at 09:24 AM had a reported detection of
1	bis(2-ethylhexyl)phthalate (0.46517 ug/L). Samples MW-3-1SA04, MW-01A-1SA04, P-12-1SA04 and P-11-1SA04 had detections of bis(2-ethylhexyl)phthalate less than 10X the amount found in the method blank. Therefore, the four samples listed were qualified as Not Detected
7	(U) for bis(2-ethylhexyl)phthalate, because of method blank contamination.
	VOC method blanks analyzed on $3/22/04$ at $13:16$ and $3/23/04$ $12:21$ had reported detections of methylene chloride (5.17618 ug/L and 4.28271 ug/L respectively). The associated samples were reported as Not Detected for methylene chloride, so qualification of the data was not
ן	necessary.
J 1	Field blank FB-031704-1SA04 was reported as Not Detected for VOCs. The field blank had one estimated detection for di-n-butyl phthalate of 0.000361 J mg/L.). Samples MW-3-1SA04, MW-2-1SA04, MW-01A-1SA04, P-12-1SA04 and P-11-1SA04 had detections of di-n-butyl
1	phthalate less than 10X the amount found in the field blank. Therefore, the five samples listed were qualified as Not Detected (U) for di-n-butyl phthalate, because of field blank
]	contamination.

	The trip blank (TB02-1SA04) was reported as Not Detected for VOCs.
U	Surrogate Recoveries
	Surrogate recoveries for ground water VOC and SVOC SIM analyses were within laboratory-defined acceptable ranges.
	SVOC low-level analysis had elevated 2,4,6-tribromophenol surrogate for sample P-11-1SA04 1X dilution. Because the other five surrogates were within acceptance limits, no qualification
	of the data was necessary.
	Internal Standards
	According to the LRC, VOC and SVOC internal standard areas were within SW-846 method acceptance criteria. Sample P-11MSD-1SA04 used as the site-specific MS/MSD, had elevated
0	internal standards for SVOC low level analysis. Qualifiers were not added to the data for elevated internal standard recovery within the MS/MSD.
	SVOC low level sample MW-3-1SA04 1X dilution had all internal standards above limits. Detections of SVOCs reported at 1X dilution were qualified as estimated low (JL), because of elevated internal standards.
	SVOC SIM sample P-11-1SA04 1X dilution had all internal standards below limits. The six compounds analyzed by the SVOC SIM method were reported as Not Detected and qualified
	as Not Detected estimated (UJ), because of low internal standards.
	Laboratory Control Samples
	VOC and SVOC LCS recoveries met the laboratory-defined acceptable ranges.
	Matrix Spike/Matrix Spike Duplicates
u	VOC MS/MSD recoveries were within laboratory-supplied acceptance criteria.
	SVOC SIM MS/MSD analyzed on samples P-11MS-1SA04 and P-11MSD-1SA04 had less than 10% MS recovery for pentachlorophenol. Samples MW-3-1SA04, MW-2-1SA04, MW-01A-
	1SA04 and P-11-1SA04 were reported as Not Detected for pentachlorophenol and were qualified as rejected (R), and sample P-12-1SA04 was reported as detected for pentachlorophenol and was qualified as estimated low (JL), because of MS recovery less than
	10%.
Π	SVOC low-level MS/MSD analyzed on samples P-11MS-1SA04 and P-11MSD-1SA04 had low or elevated recovery for four compounds (acenaphthene, fluorene, naphthalene, and phenanthrene). These four compounds had a spike amount less than four times the amount in
u 	the unspiked parent sample. Because the matrix effect may not have been accurately
	represented, qualifiers were not added to the data. This MS/MSD also had elevated recovery

0	of 2-methyl-4,6-dinitrophenol. The five associated samples were reported as Not Detected for 2-methyl-4,6-dinitrophenol, so qualification of the data was not necessary.
	SVOC SIM and low level MS/MSD analyzed on sample 270487-5 from a laboratory package associated with this site was analyzed in the same group with samples from this data package. Samples from this data package were not associated with this MS/MSD.
	Field Precision
	A duplicate sample was not collected during this sampling event.
	Field Procedures
	The samples were collected using documented sampling procedures.
Π	Summary
ų	Ground water analytical data are useable for the purpose of delineation of VOCs and SVOCs
	in the area of the former Houston Wood Preserving Works site. The data user is advised that samples MW-3-1SA04, MW-01A-1SA04, P-12-1SA04 and P-11-1SA04 were qualified as Not Detected (U) for bis(2-ethylhexyl)phthalate, because of method blank contamination. Samples
Π	MW-3-1SA04, MW-2-1SA04, MW-01A-1SA04, P-12-1SA04 and P-11-1SA04 were qualified as Not Detected (U) for di-n-butyl phthalate, because of field blank contamination. Detections of
n	low level SVOCs reported at 1X dilution for sample MW-3-1SA04 were qualified as estimated low (JL), because of elevated internal standards.
	SVOC SIM sample P-11-1SA04 1X dilution reported the internal standards below limits. The
0	six compounds analyzed by the SVOC SIM method were reported as Not Detected in sample P-11-1SA04 and qualified as Not Detected estimated (UJ), because of low internal standards. Samples MW-3-1SA04, MW-2-1SA04, MW-01A-1SA04 and P-11-1SA04 were qualified as
	rejected (R), and sample P-12-1SA04 was qualified as estimated low (JL) for pentachlorophenol, because of MS recovery less than 10%.
	Qualifications were added to the original data sheets by applying the most stringent qualifier assigned during the data usability process. When a compound had more than one qualifier assigned because of multiple reasons for qualification (MS/MSD, LCS, surrogates, etc.), the
	most stringent qualifier was applied to the original data sheets. For example, if benzene were assigned a J flag for calibration and a JL flag for low MS recovery during the review process, a JL flag would have been written on the original laboratory data sheets. If a compound had
	received a JH flag and a JL flag during data evaluation, a J qualifier would have been written on the original laboratory data sheets.
	y.
_	

TABLE 1

Analytical Methods and Quality Objectives for Ground Water Laboratory Package 270473

Houston Wood Preserving Works Union Pacific Railroad

Analyte(s)	Method Reference	Method Number	Method Description	Quality Control Type	Quality Objective
SVOC	SW-846	8270	GC/MS	Method Blank LCS MS/MSD MS/MSD RPD Surrogates	<mql Variable* Variable* Variable* Variable*</mql
VOC	SW-846	8260	GC/MS	Method Blank LCS MS/MSD MS/MSD RPD Surrogates	<mql Variable* Variable* Variable* Variable*</mql

NOTE:

^{* =} Lab quality control limits vary for each compound

0		ABLE 2 entifications and Laboratory Identifications
0	Laboratory Houston Woo	Package 270473 od Preserving Works Pacific Railroad
	Field Identification	Laboratory Identification 270473-1
	MW-3-1SA04 MW-2-1SA04 MW-01A-1SA04 P-12-1SA04	270473-1 270473-2 270473-3 270473-4
Û	P-11-1SA04 P-11MS-1SA04 P-11MSD-1SA04	270473-5 270473-6 270473-7
	FB-031704-1SA04 TB02-1SA04	270473-8 270473-9
0		
O		
Ω `		
0		

TABLE 3 Qualified Analytical Data Laboratory Package 270473 Houston Wood Preserving Works Union Pacific Railroad Field Identification Analyte Qualification Reason for Qualification MW-3-1SA04 bis(2-ethylhexyl)phthalate U method blank contamination MW-01A-1SA04 bis(2-ethylhexyl)phthalate U method blank contamination P-12-1SA04 bis(2-ethylhexyl)phthalate U method blank contamination P-11-1SA04 U bis(2-ethylhexyl)phthalate method blank contamination MW-3-1SA04 di-n-butyl phthalate U field blank contamination MW-2-1SA04 U field blank contamination di-n-butyl phthalate MW-01A-1SA04 di-n-butyl phthalate U field blank contamination P-12-1SA04 U di-n-butyl phthalate field blank contamination P-11-1SA04 di-n-butyl phthalate U field blank contamination MW-3-1SA04 acenaphthylene JL elevated internal standards MW-3-1SA04 anthracene JL elevated internal standards MW-3-1SA04 benzo(a)anthracene JL elevated internal standards MW-3-1SA04 bis(2-ethylhexyl)phthalate JL elevated internal standards MW-3-1SA04 chrysene JL elevated internal standards MW-3-1SA04 dibenzofuran JL elevated internal standards MW-3-1SA04 di-n-butyl phthalate JL elevated internal standards MW-3-1SA04 fluoranthene JL elevated internal standards MW-3-1SA04 fluorene JL elevated internal standards JL MW-3-1SA04 naphthalene elevated internal standards JL MW-3-1SA04 phenanthrene elevated internal standards MW-3-1SA04 JL elevated internal standards pyrene P-11-1SA04 1,2-diphenylhydrazine UJ Low internal standards P-11-1SA04 2.4-dinitrotoluene UJ Low internal standards UJ P-11-1SA04 2,6-dinitrotoluene Low internal standards P-11-1SA04 benzo(a)pyrene UJ Low internal standards P-11-1SA04 bis(2-chloroethoxy)methane UJ Low internal standards P-11-1SA04 UJ Low internal standards pentachlorophenol MW-3-1SA04 pentachlorophenoi R MS/MSD recovery less than 10% R MW-2-1SA04 pentachlorophenol MS/MSD recovery less than 10% MW-01A-1SA04 pentachlorophenol R MS/MSD recovery less than 10% P-12-1SA04 pentachlorophenoi JL MS/MSD recovery less than 10% P-11-1SA04 pentachlorophenol R MS/MSD recovery less than 10% NOTES: U = not-detected J = estimated data, the reported sample concentration is approximated due to exceedance of QC requirements UJ = the analyte was analyzed for but was not detected above the reported sample quantitation limit. the associated value is an estimate and may be inaccurate or imprecise. L = low bias R = rejected



ANALYTICAL REPORT

JOB NUMBER: 270409

Prepared For:

ERM Southwest, Inc.- Houston 15810 Park Ten Place Suite 300 Houston, TX 77084

Attention: Chris Young

Date: 04/06/2004

Signature

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail:

04/07/04

Date

Severn Trent Laboratories 6310 Rothway Drive Houston, TX 77040

PHONE: (713) 690-4444

TOTAL NO. OF PAGES 71



04/06/2004

Chris Young ERM Southwest, Inc. - Houston 15810 Park Ten Place Suite 300 Houston, TX 77084

Reference:

Project : UPRR-HWPW-0014419/60

Project No. : 270409

Date Received : 03/17/2004

: 270409 STL Job

Dear Chris Young:

Enclosed are the analytical results for your project referenced The following samples are included in the report.

1.	MW-9-1SA04
3.	MW-4-1SA04
5.	MW-11B-1SA04
_	307 10DD 10304

7. MW-10BD-1SA04

9. MW-10A-1SA04 11. P-10-1SA04

13. MW-8-1SA04

2. FB-031504-1SA04

4. MW-11A-1SA04

6. MW-10B-1SA04

8. TB01-1SA04

10. MW-7-1SA04

12. P-10D-1SA04

14. MW-5-1SA04

All holding times were met for the tests performed on these samples.

Enclosed, please find the Quality Control Summary. All quality control results for the QC batch that are applicable to the sample(s) are acceptable except as noted in the QC batch reports.

The test results in this report meet all NELAP requirements for STL Houston's NELAP accredited parameters. Any exceptions to NELAP requirements will be noted and included in a case narrative as a part of this report.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Severn-Trent Laboratories to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

Sincerely,

Sachin G. Kudchadkar

Project Manager



Table 1

Cross-Reference Field Sample Identifications and Laboratory Identifications

Field Identification	EPA Sample Number	Laboratory Identification	8260B	8270C	Comment
MW-9-1SA04	MW-9-1SA04	270409-1	х	x	
FB-031504-1SA04	FB-031504-1SA04	270409-2	X	Х .	Field Blank
MW-4-1SA04	MW-4-1SA04	270409-3	х	x	
MW-11A-1SA04	MW-11A-1SA04	270409-4	х	Х	
MW-11B-1SA04	MW-11B-1SA04	270409-5	х	X	,
MW-10B-1SA04	MW-10B-1SA04	270409-6	. x	x	
MW-10BD-1SA04	MW-10BD-1SA04	270409-7	х	Х	
TB01-1SA04	TB01-1SA04	270409-8	х		Trip Blank
MW-10A-1SA04	MW-10A-1SA04	270409-9	х	Х	·
MW-7-1SA04	MW-7-1SA04	270409-10	X	х	
P-10-1SA04	P-10-1SA04	270409-11	X	х .	
P-10D-1SA04	P-10D-1SA04	270409-12	X	Х	
MW-8-1SA04	MW-8-1SA04	270409-13	Х	·X	
MW-5-1SA04	MW-5-1SA04	270409-14	X	Х	

Appendix A Laboratory Data Package Cover Page

This da	ta package	consists of:
Ü	~ . ~	signature page, the laboratory review checklist, and the following reportable data:
Ġ.	R1	Field chain-of-custody documentation;
Ċ	R2	Sample identification cross-reference;
ġ	. R3	Test reports (analytical data sheets) for each environmental sample that includes:
•		a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
		b) dilution factors,
		c) preparation methods,
		d) cleanup methods, and
		e) if required for the project, tentatively identified compounds (TICs).
₽	R4	Surrogate recovery data including:
ب		a) Calculated recovery (%R), and
		b) The laboratory's surrogate QC limits.
Ō	R5	Test reports/summary forms for blank samples;
Ō	R6	Test reports/summary forms for laboratory control samples (LCSs) including:
4	200	a) LCS spiking amounts,
•		b) Calculated %R for each analyte, and
		c) The laboratory's LCS QC limits.
Ō	R 7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
•		a) Samples associated with the MS/MSD clearly identified,
		b) MS/MSD spiking amounts,
		c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
		d) Calculated %Rs and relative percent differences (RPDs), and
		e) The laboratory's MS/MSD QC limits
Ü	R8	Laboratory analytical duplicate (if applicable) recovery and precision:
-		a) the amount of analyte measured in the duplicate,
		b) the calculated RPD, and
		c) the laboratory's QC limits for analytical duplicates.
Ö	R9	List of method quantitation limits (MQLs) for each analyte for each method and matrix;
Ċ	R10	Other problems or anomalies.
	The l	Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.
Rele	ase Staten	nent: I am responsible for the release of this laboratory data package. This data package has been
	reviewed	by the laboratory and is complete and technically compliant with the requirements of the methods
		pt where noted by the laboratory in the attached exception reports. By me signature below, I affirm
	to the best	of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to
	affect the	quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and
	no inform	ation or data have been knowingly withheld that would affect the quality of the data.
•		
Chec	k, if app	licable: [] This laboratory is an in-house laboratory controlled by the person
:	respondir	ng to rule. The official signing the cover page of the rule-required report (for example, the
	APAR) ii	which these data are used is responsible for releasing this data package and is by signature
	affirming	the above release statement is true.
		IIII
Norm	an Flynn	Laboratory Director 9/7/04
	(Printed)	Signature Official Title (printed) Date
	()	
•		

Labe	arator	dix A (cont'd): Laboratory Review Checklis ry Name: STL-Houston LR	C Date: 03/22/04					
						·		····
			boratory Job Number: 270409					
Revi	iewer	Name: AY	ep Batch Number(s): 96172-VOA					
# ^l	A ²	Description		Yes	No	NA ³	NR ⁴	ER#5
		Chain-of-custody (C-O-C)		25. 25. 25.	复数	要定		186
R1	OI	Did samples meet the laboratory's standard conditions of sam	ple acceptability upon receipt?		X			1
	İ	Were all departures from standard conditions described in an		х				
R2	OI	Sample and quality control (QC) identification	•	.:193e	3.50		107 44	្នេះម
	<u> </u>	Are all field sample ID numbers cross-referenced to the laboration	atory ID numbers?	Х				-1
		Are all laboratory ID numbers cross-referenced to the corresp		X				
R3	OI	Test reports		'all'	ายาม	2 5 21	:53	્રોદ્ધા
	<u> </u>	Were all samples prepared and analyzed within holding times	?	X				
		Other than those results < MQL, were all other raw values bra		X				
		Were calculations checked by a peer or supervisor?		X				
		Were all analyte identifications checked by a peer or supervisit	or?	X				
١ ,		Were sample quantitation limits reported for all analytes not of		X				
		Were all results for soil and sediment samples reported on a d		1		Х		
ļ		Were % moisture (or solids) reported for all soil and sediment				X		
•		If required for the project, TICs reported?	t dampies.			X		
R4	0	Surrogate recovery data				2,200	- 244	-35,43
		Were surrogates added prior to extraction?		Х				
		Were surrogate percent recoveries in all samples within the la	horatory OC limits?	X				
R5	OI	Test reports/summary forms for blank samples				se ·	145 Tu	7.53
100	-	Were appropriate type(s) of blanks analyzed?		X	1.475		1997.75	
		Were blanks analyzed at the appropriate frequency?		X				
i		Were method blanks taken through the entire analytical proce	es including preparation and if	X				
	ļ	applicable, cleanup procedures?	ss, including preparation and, if	^				Í
		Were blank concentrations < MQL?	Х					
R6	OI	Laboratory control samples (LCS):		A Date	3400	- 4 - 4 } } a	75.4	Yaker
I(U	O1	Were all COCs included in the LCS?		Х				
	l	Was each LCS taken through the entire analytical procedure,	X					
		Were LCSs analyzed at the required frequency?	including prep and cleanup steps:	X				
		Were LCS (and LCSD, if applicable) %Rs within the laborator	omi OC limita?	X				
				1		X		
		Does the detectability data document the laboratory's capability to calculate the SQLs?	ity to detect the COCs at the MDL used			^		
		Was the LCSD RPD within QC limits?	<u> </u>	-		Х		
Ř7	ΟΙ			2 geren	11011		-0.0	green.
Α/	01	Matrix spike (MS) and matrix spike duplicate (MSD) data		.44%		1973	X	2
		Were the project/method specified analytes included in the M	3 and MSD:				X	
		Were MS/MSD analyzed at the appropriate frequency? Were MS (and MSD, if applicable) %Rs within the laboratory	· OC limito?				X	
			QC ninus?				X	
DQ	OT	Were MS/MSD RPDs within laboratory QC limits?		120			A	4 500
R8	OI	Analytical duplicate data	:0	12477	,	<i>∴</i>	2.4	90, 375.
		Were appropriate analytical duplicates analyzed for each matr				X		
		Were analytical duplicates analyzed at the appropriate frequer				X		
DO.	Oĭ	Were RPDs or relative standard deviations within the laborate	ory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):	tom, data makana	 			:	
		Are the MQLs for each method analyte included in the labora		X				
		Do the MQLs correspond to the concentration of the lowest n		X				ļ
D # A	<u> </u>	Are unadjusted MQLs included in the laboratory data package	B?	Χ				<u> </u>
R10	loi	Other problems/anomalies		1			<u> </u>	
		Are all known problems/anomalies/special conditions noted in		X				ļ
		Were all necessary corrective actions performed for the report		X			 _	
		Was applicable and available technology used to lower the SC affects on the sample results?	L minimize the matrix interference	X				

^{1.} Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

^{2. =} organic analyses; I = inorganic analyses (and general chemistry, when applicable);

^{3.} NA = Not applicable;

^{4.} NR = Not reviewed;

^{5.} ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Lab	orato	ry Name: STL-Houston LRC	Date: 03/22/04					
Proj	ect N	Name: UPRR-HWPW-0014419 60 Labor	atory Job Number: 270409				***	
Rev	iewer	r Name: AY Prep 1	Batch Number(s): 96172-VOA					
#1	A ²	Description		Yes	No	NA ³	NR ⁴	ER#5
$\overline{}$	OI	Initial calibration (ICAL)		.4	3336	Option to	\$.90 G	15 y 15 y
31	01	Were response factors and/or relative response factors for each ana	lute within OC limits?	X	_	-		-
		Were percent RSDs or correlation coefficient criteria met?	ryte within QC mints:	$\frac{\Lambda}{X}$		 		
		Was the number of standards recommended in the method used for	all analytes?	X				-
		Were all points generated between the lowest and highest standard		$\frac{\Lambda}{X}$				
			used to carculate the curve:	X			-	
		Are ICAL data available for all instruments used?	google course standard?	X				├──
<u>S2</u>	OT	Has the initial calibration curve been verified using an appropriate		 -	5÷.	12111		1,191
34	OI	Initial and continuing calibration verification (ICCV and CCV)	and continuing calibration		3			
		Was the CCV analyzed at the method-required frequency?	1001: : 1	X		<u> </u>		
		Were percent differences for each analyte within the method-requir	ed QC limits?	X				ļ
)	Was the ICAL curve verified for each analyte?		X	<u> </u>	7,		<u> </u>
		Was the absolute value of the analyte concentration in the inorgani	c CCB < MDL?		ļ	X		ļ
S3	0_	Mass spectral tuning:			220	4 e. j	76.3	5,5.2
		Was the appropriate compound for the method used for tuning?		X				<u> </u>
		Were ion abundance data within the method-required QC limits?		Х				<u> </u>
S4	0	Internal standards (IS):	·		- 43	3,40	3.4.9	N. State
		Were IS area counts and retention times within the method-require	d QC limits?	Х				
S5	OI	Raw data (NELAC section 1 appendix A glossary, and section 5	3.12 or ISO/IEC 17025 section		200	30 DO	300	(Q)*1.
		Were the raw data (for example, chromatograms, spectral data) rev	ewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw of	lata?	X		,		
S6	0	Dual column confirmation		~25°;*	36.3	1775	3715	0.5,1
		Did dual column confirmation results meet the method-required Q	C?			X		
S7	0	Tentatively identified compounds (TICs):		4.4°	9-1	4.5	la eta	7
		If TICs were requested, were the mass spectra and TIC data subject	to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results:		1) W.	rtic:	995	***	2019
		Were percent recoveries within method QC limits?				X		
S9	Ī	Serial dilutions, post digestion spikes, and method of standard a	dditions	y fest	536	#BD	Nat is	1000
	<u> </u>	Were percent differences, recoveries, and the linearity within the Q			_	X	<u> </u>	
S10	OI	Method detection limit (MDL) studies		7,1	N _a ph	est pa	429	10.0
	<u> </u>	Was a MDL study performed for each reported analyte?		X		<u> </u>		
	<u> </u>	Is the MDL either adjusted or supported by the analysis of DCSs?	,	X			 	
S11	Oī	Proficiency test reports:			الإنبيان		2.550	,
	۱	Was the laboratory's performance acceptable on the applicable pro-	iciency tests or evaluation studies?	X	-		-	
S12	Oī	Standards documentation	toloney tests of evaluation studies.	3 , 3	- 1	100	100	15-5
	<u> </u>	Are all standards used in the analyses NIST-traceable or obtained f	rom other appropriate sources?	X	_		 	-
S13	Oī	Compound/analyte identification procedures	iom onici appropriate sources.	. ₩.	<i>े</i> द्रान	20.3	140541	3.5
013	01	Are the procedures for compound/analyte identification documented?		X			 	
Q14	OT			<u> </u>	6.47	647	201	No.
S14	101		EC 42	Х	7 ,441	1	1	-
	1	Was DOC conducted consistent with NELAC Chapter 5C or ISO/I				} -	├	\vdash
04.5	07	Is documentation of the analyst's competency up-to-date and on file		X		2.12	 	+
S15	OI	Verification/validation documentation for methods (NELAC Ch		37	<u> </u>	2.41.20	25.3	
	ı	Are all the methods used to generate the data documented, verified	, and validated, where applicable?	X	1	1	1	1
S16	-	Laboratory standard operating procedures (SOPs):		part of	10.00	 	1,004	4(50);

Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

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ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Appendix A (cont'd): Laboratory Review Checklist: Exception Reports Laboratory Name: STL-Houston LRC Date: 03/22/04 Project Name: UPRR-HWPW-0014419 60 Reviewer Name: AY Prep Batch Number(s): 96172-VOA ER #1 DESCRIPTION 1 The temperatures of coolers "All green 60" and "All green 1 of 1" received by the laboratory on 03/17/04 w						
Project Name: UPRR-HWPW-0014419 60		Laboratory Job Number: 270409				
Review	er Name: AY	Prep Batch Number(s): 96172-VOA				
ER#I	DESCRIPTION					
1	The temperatures of coolers "All green 6 acceptance range of 2.0-6.0°C.	50" and "All green 1 of 1" received by the laboratory on 03/17/04 were below the				
2	Since no client sample was designated as	s the MS/MSD, the laboratory selected two samples from other clients.				

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC)

Labo	orator	y Name: STL-Houston	LRC Date: 03/31/04					
		<u> </u>	aboratory Job Number: 270409					•
			rep Batch Number(s): 96166-SV					
#1	A ²	Description		Yes	No			ER#
	ĺ	Chain-of-custody (C-O-C)		3. 3	9.5		1700	
R1	OI	Did samples meet the laboratory's standard conditions of			X			1
		Were all departures from standard conditions described in	n an exception report?	X				
R2	OI	Sample and quality control (QC) identification	•	11.00	485	3-13	- 460	-1710,41
		Are all field sample ID numbers cross-referenced to the la	aboratory ID numbers?	Х				
		Are all laboratory ID numbers cross-referenced to the cor		X				
R3	OI	Test reports		1.426	i in	- 250	\$2.50 \$2.50	4
		Were all samples prepared and analyzed within holding to	imes?	X				
		Other than those results < MQL, were all other raw value		X				
	l	Were calculations checked by a peer or supervisor?	b ordered by carrotation standards.	X				
		Were all analyte identifications checked by a peer or supe	arricor?	X				
		Were sample quantitation limits reported for all analytes		$\frac{\lambda}{X}$				
	Were all results for soil and sediment samples re			1		X		
		Were % moisture (or solids) reported for all soil and sedi		-	-	$\frac{\lambda}{X}$		
			ment samples?	-		$\frac{\lambda}{X}$		
R4	0	If required for the project, TICs reported?		÷35	(Special	A Std	20.00	- minter
K4	0_	Surrogate recovery data		-	266	-6169	204	TIPE
		Were surrogates added prior to extraction?		X	177			
D.C.	OX	Were surrogate percent recoveries in all samples within the	ne laboratory QC limits?		X			2
R5	OI	Test reports/summary forms for blank samples			ilini,	4800	1,4 5 2	H.TSr
		Were appropriate type(s) of blanks analyzed?		X				
		Were blanks analyzed at the appropriate frequency?		X	<u> </u>			
	ļ	Were method blanks taken through the entire analytical p	rocess, including preparation and, if	X				ı
		applicable, cleanup procedures?						
		Were blank concentrations < MQL?		X				
R6	OI	Laboratory control samples (LCS):		0.847	-agai	Hitti	1977	2507
		Were all COCs included in the LCS?	Х	ļ				
		Was each LCS taken through the entire analytical procedu	Х					
		Were LCSs analyzed at the required frequency?	X					
	• •	Were LCS (and LCSD, if applicable) %Rs within the labor		X				
		Does the detectability data document the laboratory's cap	ability to detect the COCs at the MDL	l		X		
		used to calculate the SQLs?	·					
		Was the LCSD RPD within QC limits?				Χ		
R7 ·	OI	Matrix spike (MS) and matrix spike duplicate (MSD)		\$175g	#2	3.3	JGC .	3850
		Were the project/method specified analytes included in the	e MS and MSD?	X				3
	,	Were MS/MSD analyzed at the appropriate frequency?	· · · · · · · · · · · · · · · · · · ·	X				
		Were MS (and MSD, if applicable) %Rs within the labora	atory QC limits?	Х				
		Were MS/MSD RPDs within laboratory QC limits?		X				
R8	OI	Analytical duplicate data		Agric.	353	(22)	<u>-₫%1</u> :	1000
		Were appropriate analytical duplicates analyzed for each	matrix?			X		
1		Were analytical duplicates analyzed at the appropriate fre				X		
		Were RPDs or relative standard deviations within the lab				Х		
R9	OI	Method quantitation limits (MQLs):		Jago	1.5	-11 ₆ (5),	JEE.	194,35
		Are the MQLs for each method analyte included in the la	boratory data package?	X				
,		Do the MQLs correspond to the concentration of the lower		X				
		Are unadjusted MQLs included in the laboratory data page		X				
R10	Oī	Other problems/anomalies		3550	3.50	2500	, Ports	4.5°.55
🕶	•	Are all known problems/anomalies/special conditions not	red in this LRC and FR?	X			\vdash	
		Were all necessary corrective actions performed for the re		X				
		Was applicable and available technology used to lower th		X	-			4
		affects on the sample results?	to a series of the matrix interference	^`			<u>.</u>	7

^{1.} Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

^{2. =} organic analyses; I = inorganic analyses (and general chemistry, when applicable);

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I ah	orato	ry Name: STL-Houston LR	C Date: 03/31/04					
		***************************************		<u> </u>				
Pro	ect in	lame: UPRR-HWPW-0014419 60 Lab	poratory Job Number: 270409					
Rev	iewei	r Name: LG	p Batch Number(s): 96166-SV			٠.		
#1	A ²	Description		Yes	No	NA ³	NR⁴	ER#
S1		Initial calibration (ICAL)		্ৰভূত	嫲	<i>C</i> ###	6,535 <u>(</u>	¥450°
		Were response factors and/or relative response factors for each a	nalyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method used to	for all analytes?	X		L		
		Were all points generated between the lowest and highest standa	rd used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	-	X				
		Has the initial calibration curve been verified using an appropria	te second source standard?	X				<u>L. </u>
S2	OI	Initial and continuing calibration verification (ICCV and CC	V) and continuing calibration	860	×.20	4,100	(89%)	1
	,	Was the CCV analyzed at the method-required frequency?		X		<u> </u>		
	,	Were percent differences for each analyte within the method-req	uired QC limits?	X				
		Was the ICAL curve verified for each analyte?		Х				
		Was the absolute value of the analyte concentration in the inorga	nic CCB < MDL?		٠	X		
S3	0	Mass spectral tuning:		388	\$\%\.	1989	33XX	350
		Was the appropriate compound for the method used for tuning?	**	Х				
		Were ion abundance data within the method-required QC limits?		Х				<u> . </u>
S4	0	Internal standards (IS):		\$\$\$\\	×35	2000	经数据	878
		Were IS area counts and retention times within the method-requi	ired QC limits?	X				l
S5	OI	Raw data (NELAC section 1 appendix A glossary, and section	n 5.12 or ISO/IEC 17025 section	286	为称	33-55	3.3.3.3.j	1000
		Were the raw data (for example, chromatograms, spectral data) re		Х				
		Were data associated with manual integrations flagged on the rav	w data?	X				
S6	0	Dual column confirmation		:\$ ^{5,7}	3775	84.30	*****	3.50
		Did dual column confirmation results meet the method-required	QC?			Х		
S7	0	Tentatively identified compounds (TICs):		* 43	\$ \$ \$ \$ \$ \$	Yage o	13.53	3 854
		If TICs were requested, were the mass spectra and TIC data subj	ect to appropriate checks?			Х		
S8	I	Interference Check Sample (ICS) results:		1994	A.		W6/18	¥3%
		Were percent recoveries within method QC limits?				Х		
S9	I	Serial dilutions, post digestion spikes, and method of standard	d additions	94	100	234	¥8362	48.39
		Were percent differences, recoveries, and the linearity within the	QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies		37.5	(1 55)	***	Mrs.	369
		Was a MDL study performed for each reported analyte?		Х				
		Is the MDL either adjusted or supported by the analysis of DCSs	?	Х				
S11	OI	Proficiency test reports:		建筑	9.86	BOST .	1483	30092
		Was the laboratory's performance acceptable on the applicable p	roficiency tests or evaluation studies?	Х				
S12	OI	Standards documentation		-28%;	-01-3×	3000	(*XXX)	25.55
		Are all standards used in the analyses NIST-traceable or obtained	d from other appropriate sources?	Х				İ
S13	OI	Compound/analyte identification procedures		934	830°	160000	(3)	1923
		Are the procedures for compound/analyte identification document	nted?	Х				
S14	OI	Demonstration of analyst competency (DOC)		2334	K2/A:	*28,635	3000 A	×4.5
		Was DOC conducted consistent with NELAC Chapter 5C or ISC	D/IEC 4?	Х				
		Is documentation of the analyst's competency up-to-date and on		Х	Î			
	10	Verification/validation documentation for methods (NELAC (Q\$.2826	(M)	25 X	\$233
S15								
S15		Are all the methods used to generate the data documented, verifi	ed, and validated, where applicable?	Х		l		1
S15 S16		Are all the methods used to generate the data documented, verifi Laboratory standard operating procedures (SOPs):	ed, and validated, where applicable?	X	3,00%	3888	35.3%	STEERS

Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

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Laboratory Name: STL		Appendix A (cont'd): Laboratory Review Checklist: Exception Reports								
Laboratory Name: STL-Houston Project Name: UPRR-HWPW-0014419 60		LRC Date: 03/31/04								
		Laboratory Job Number: 270409								
Reviewer Name: LG		Prep Batch Number(s): 96166-SV								
ER #1 DESCRIPTI	ON									
	tures of coolers "All green 60" ange of 2.0-6.0°C.	" and "All green 1 of 1" received by the laboratory on 03/17/04 were below the								
These high	The 2,4,6-tribromophenol surrogate recoveries in samples 270409-3, 4MS, 5, 10 and the LCS were above acceptance limits. These high recoveries will not affect the quality of the reported results. The 2,4,6-tribromophenol and 2-fluorobiphenyl surrogate recoveries in sample 270409-12 were below acceptance limits due to the dilution necessary for analysis.									
		e MS/MSD, the laboratory selected sample 270409-4.								
4 The acenapt	hene and naphthalene SQLs in	sample 270409-12 were elevated due to the dilutions necessary for analyses.								

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC)

Labo	orato	ry Name: STL-Houston LR	C Date: 03/31/04					
Proj	ect N	ame: UPRR-HWPW-0014419 60 Lal	boratory Job Number: 270409					
			p Batch Number(s): 96167-SV SIM					
#1		Description	p Bateli Hamoor(o). 90107 B V BIN1	Yes	No	NA ³	NR ⁴	ER#
#		7	- 1294	103	100		14K	
D.		Chain-of-custody (C-O-C)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			155	300 p. 5	474
R1	OI	Did samples meet the laboratory's standard conditions of sa Were all departures from standard conditions described in a		X	Х			1
		-	an exception report?	↓				<u> </u>
R2	OI	Sample and quality control (QC) identification	· · · · · · · · · · · · · · · · · · ·	38	- Right.	3956	1550	333
		Are all field sample ID numbers cross-referenced to the lab		X				
D2	67	Are all laboratory ID numbers cross-referenced to the corre	sponding QC data?	X			10000	11.413
R3	OI	Test reports	<u>, , , , , , , , , , , , , , , , , , , </u>	X	.en	333	1267	1,500
		Were all samples prepared and analyzed within holding tim	1 within holding times?					
		Other than those results < MQL, were all other raw values by	bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?		X		<u> </u>		
		Were all analyte identifications checked by a peer or superv Were sample quantitation limits reported for all analytes no		X		 		
	**					Х		
		Were all results for soil and sediment samples reported on a Were % moisture (or solids) reported for all soil and sediment		-		X		
		If required for the project, TICs reported?	ent samples?			X		
₹4	0	Surrogate recovery data		-340	1743		754 s. N 353 471	- 44 EV
`	-	Were surrogates added prior to extraction?		X	34,955	C377.	309491	
		Were surrogate percent recoveries in all samples within the	Jahoratory OC limits?	$\frac{x}{x}$				
35	OI	Test reports/summary forms for blank samples	laboratory QC limits:	-9276	भंडर	(3) K 3 (-	2771	-:::::
_	01	Were appropriate type(s) of blanks analyzed?		X		134,134	3 , 43	
		Were blanks analyzed at the appropriate frequency?		X				
		Were method blanks taken through the entire analytical pro	cess including preparation and if	X		_		
		applicable, cleanup procedures?	record meracing proparation and, in					
		Were blank concentrations < MQL?		Х				
₹6	OI	Laboratory control samples (LCS):		Hhi	1873	£38461	SER	3185
		Were all COCs included in the LCS?		Х				
		Was each LCS taken through the entire analytical procedure	e, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?		Х				
		Were LCS (and LCSD, if applicable) %Rs within the labora			X			
		Does the detectability data document the laboratory's capab				X		
		used to calculate the SQLs?	· ·					
		Was the LCSD RPD within QC limits?				Χ		
۲7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) da			15 75.	334	2815	- C+1
		Were the project/method specified analytes included in the	MS and MSD?	X				2
		Were MS/MSD analyzed at the appropriate frequency?		Х				
		Were MS (and MSD, if applicable) %Rs within the laborate	ory QC limits?		X		1.	3
		Were MS/MSD RPDs within laboratory QC limits?		Х				
85	OI	Analytical duplicate data		252	1,545	魏野	्राम्	3170
		Were appropriate analytical duplicates analyzed for each management				X		
		Were analytical duplicates analyzed at the appropriate frequ				Х		
		Were RPDs or relative standard deviations within the labor	atory QC limits?			X		
છ	OI	Method quantitation limits (MQLs):		14.5%	323F	æx.		(RR)
		Are the MQLs for each method analyte included in the labo		X				
į		Do the MQLs correspond to the concentration of the lowest		X				
_	0.7	Are unadjusted MQLs included in the laboratory data packa	age?	X				20.00
110	OI	Other problems/anomalies	I. I. IDG. 1990	£5000	39)3	P(m)	485	\$3
		Are all known problems/anomalies/special conditions noted		X				
		Were all necessary corrective actions performed for the repo		X				
		Was applicable and available technology used to lower the affects on the sample results?	SQL to minimize the matrix interference	X				

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1.5

B. NA = Not applicable;

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v .		dix A (cont'd): Laboratory Review Checklist						
		<u>*</u>	C Date: 03/31/04	-				
Proj	ect N	Jame: UPRR-HWPW-0014419 60 Lal	boratory Job Number: 270409					
Rev	iewei	r Name: LG	p Batch Number(s): 96167-SV SIM					
# ¹	A ²	Description		Yes	No	NA ³	NR ⁴	ER#
S1		Initial calibration (ICAL)		39.5	134	18 Sec.	* \$ 4 9	934
		Were response factors and/or relative response factors for each a	nalyte within OC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?		X	_		<u> </u>	
		Was the number of standards recommended in the method used	for all analytes?	X				
		Were all points generated between the lowest and highest standa		X				
		Are ICAL data available for all instruments used?	a dood to valoulate the vality.	X	_			\vdash
		Has the initial calibration curve been verified using an appropria	ite second source standard?	X	┰			
S2	OI	Initial and continuing calibration verification (ICCV and CC		PASS.	Y.W.	148/48	148,01 S.	- 182k
-	01	Was the CCV analyzed at the method-required frequency?	y and continuing canoration	X	_	- 168/01/28	.a	,
		Were percent differences for each analyte within the method-req	uired OC limits?	X			-	\vdash
		Was the ICAL curve verified for each analyte?	unou yo mino.	$\frac{\lambda}{X}$	 		<u> </u>	
		Was the absolute value of the analyte concentration in the inorga	onia CCD < MDI 2		├	х	-	
S3	0	Mass spectral tuning:	anic CCB < MDL?	1800	332	A	-3.2k==	10.32
55		Was the appropriate compound for the method used for tuning?		Х	. 10 N 1985.	050.00	2300	1 3.24
		Were ion abundance data within the method-required QC limits')	Ŷ				-
S4	0		(A	14.5	45.51.27	111 2 101	
34	U	Internal standards (IS):	10011 10		3.866	STATE.	***	393
05	07	Were IS area counts and retention times within the method-requ		X	2825			-
S5	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					180,667	Spridgy.	regarde)
		Were the raw data (for example, chromatograms, spectral data) r		X		<u> </u>		<u> </u>
		Were data associated with manual integrations flagged on the raw data?						
S6	0	Dual column confirmation		10%	-360	25000	-38%	0-1/7
		Did dual column confirmation results meet the method-required	QC?		ļ	X	ļ	ļ
S7	0	Tentatively identified compounds (TICs):		73%	1420	:35 53 5	4.75%	14.77.8
		If TICs were requested, were the mass spectra and TIC data subj	ect to appropriate checks?			X		<u> </u>
S8	I	Interference Check Sample (ICS) results:		3.38	44.	118872	363-65%	2483
		Were percent recoveries within method QC limits?			ļ	Х		
S9	I	Serial dilutions, post digestion spikes, and method of standar		. 362\$	X5	22/25	-33%	A 195
		Were percent differences, recoveries, and the linearity within the	QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies		i Elbegali Silbergali	*8×	\$5.8 8	325.303	1.35%
		Was a MDL study performed for each reported analyte?		X	,			
		Is the MDL either adjusted or supported by the analysis of DCS	s?	Х				
S11	OI	Proficiency test reports:		3,18	188E.	36 XX	Parity or the second	1000
		Was the laboratory's performance acceptable on the applicable p	roficiency tests or evaluation studies?	Х				
S12	OI	Standards documentation		TÉRÈ	17.8	例识别。	1800	3833
		Are all standards used in the analyses NIST-traceable or obtaine	d from other appropriate sources?	Х				
S13	OI					3000	1484.7	3,423
		Are the procedures for compound/analyte identification documented?						
S14	OI	Demonstration of analyst competency (DOC)		X Osta	\$45%	3275	47916	্রন
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?						1
		Is documentation of the analyst's competency up-to-date and on		X	T			1
S15	OI	Verification/validation documentation for methods (NELAC		7.90	343	1,0,10,3	34336	्र ु
-		Are all the methods used to generate the data documented, verifi		X				1
					ight:	Negation 1	100 (8)	17 782
S16	വ			100				

Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

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Apper	aboratory Name: STL-Houston LRC Date: 03/31/04					
Laborat	ory Name: STL-Houston	LRC Date: 03/31/04				
Project	Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 270409				
Review	er Name: LG	Prep Batch Number(s): 96167-SV SIM				
ER#1	DESCRIPTION					
1	The temperatures of coolers "All green 60" and "All green 1 of 1" received by the laboratory on 03/17/04 were below the acceptance range of 2.0-6.0°C.					
2	Since no client sample was designated as the	MS/MSD, the laboratory selected sample 270409-5.				
3	The pentachlorophenol recoveries in the MS	/MSD were above acceptance limits due to matrix interference.				

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC)





CHAIN OF CUSTODY RECORD

			CHAIN	OF CU	JSTODY	RECO	и о									
Cust	tomer Information	n	Prc	ject د	lnforn	nation	1 De San		Analys	sis/N	viet i	n o d	No.	5216-	-3	
PO State Policy	726270	-	PROJECT NAME	99000484/	HWPW			A B	8260 8270LL							
wo . F. T. Carlo	422-102/10	,	LAB NUMBER		ВОТ	TLE ORDER	હૈ	C D	8270SIM			. 6	,			1
COMPANY	ERM Southwest, Inc Houston		BILL TO	Union Pac	cific Railroa	ıd		E	Lough 2/ TC	inn data	nanka)
SEND REPORT TO	Chris Young		INVOICE ATTN	Geoff Ree	Geoff Reeder			F Level 2/ TRRP data package]
ADDRESS	15810 Park Ten Place		ADDRESS	24125 Ald	24125 Aldine Westfield Road											J
	Suite 300							K								i
								M N								. 1
CITY/STATE/ZIP	Houston, TX 77084		CITY/STATE/ZIP	Spring, T	TX 77373-9015	,										İ
PHONE	281-600-1000		PHONE	281-350-7	197											
FAX	281-600-1001		FAX	281-350-73	362			R s								
SAMP NO. SAMP	PLE DESCRIPTION		PRESI	ERVE S	SAMPLE MA	ATRIX SAM	IPLE DATE 5	AMPLE T	TIME # CONTAINE	RABC	DEF	GHI	JKL	. М И	OPQ	RS
	MW-9-15ADY		Na, S, Q	5 HU	Water	3/1	5/04	1410	7	XXX	111		1		+	
2 .	FB-031504 - 15A	79 4	107	/ 	Water	 	15/04	135C		TXIXI		 	11		1	十
3 .	MW-4-15A04	<u>v</u>			Water		16/04	090		WW.	// 		+		1	丁
4	MW-11A-15A0	Ч			Water		(6/04	/00/	- V.	TYY	#11		-	111	, † † †	
5	mw-11B-15AD			1	Water		16/04	1050		TYXI	///		1		 	T
6 .	mw-108- 15A1			<i>i</i>	Water			1830	كالمتعننة بسبسب	VVV	7-1-		+		, +	
7 600	mw-10BD-15A			(.	Water		116/04	/31		WK	11	 	11	1	. +	
8 .	TB01 - 15AR		H	166	Water	-	-17		2	XII	111		11	1	,†[
Sampler: And					'	Airbill I	No.:			Requ	ired Tu	rnAroun	d:	14 Day	ys/28	
Relinquished By:		Date 3/10/34	2. Relinquished By:	a	 L	1	Date 317-04	3. Reli	inquished By:						Date	
Company Name:	NERM-SW	Time 1630	Company Name:	•	ガレ		Time	Compr	eany Name:						Time	_
1. Received By:	Thu	Bate 3-17-114	2. Received By:				Date	3. Rec	ceived By:						Date	_
Company Name:	57	Time	Company Name:				Time	Comp	any Name:						Time	

evern Trent Laboratories

6310 Rothway Drive

Houston, TX 77040

(713) 690-4444



CHAIN OF CUSTODY RECORD

Cus	omer Information			Pro	ject		Informat	ion			Α'n	naly	/si	s / N	1 e 1	h c	d	No.	572	16-4	}	
PO White Address	726270		PROJECT NA	AME -	9900048	34/HW	PW			A B	8260 8270	0 01 I										
wo 🔀	422-102/10		LAB NUMBE	R			BOTTLE O	RDER .			827	OSIM					•					
COMPANY	ERM Southwest, Inc Houston		BILL TO	1 18 8	Union A	acif	ic Railroad		······	Ę	Love	el 2/	roon /	lata	nant.							
SEND REPORT TO	Chris Young	§ INVOICE ATTN					Geoff Reeder						IKKP (idid	pack	aye						
ADDRESS	15810 Park Ten Place		ADDRESS		24125 A	ildin	e Westfield Roa		- [
	Suite 300								<u> </u>	K												
										— M												
CITY/STATE/ZIP	Houston, TX 77084		CITY/STATE	E/ZIP	Spring,	TX	77373-9015														-	
PHONE	281-600-1000		PHONE	, HV/	281-350	719	7	-		PQ												
FAX	281-600-1001		FAX		281-350	736	2			→ R S	1											
SAMP NO. SAME	PLE DESCRIPTION			PRESE	RVE	F	SAMPLE MATRIX	SAMI	PLE DATE	SAMPLE	TIME	# CONTA	INER A	ВС	DE	FG	Ηι	JΚ	LM	ΝО	PQ	RS
1 .	mw-10A-1SAB	4		Miss	9,114		Water	31	16/04	142	5	7	X	W				<u> </u>				Ш
2 .	MW-7-15A04			• •		.,	Water		1 '	0910	,	1.		XX					П		П	
3 .	P-10-15A04		······································				Water		1	1010			,	XX							\sqcap	
4 .	P-10D-15A04	,					Water		~	l085			٠)					<i>z</i>				\Box
5 .	MW-8-15004	`					Water		~- \	1315		_	· ()		,			П				
6	MW-5-15A04				,		Water		*	1449	5	Y. W.	1	XX	y							
1 .							Water										_				\sqcap	
8 C1 .							Water			•				\sqcap					П		厂	\Box
Sampler: ANDY	TRAM DODOS / The Day	Shipment I	Method: 30	ELIVE	೯೭೪		Airt	oill llic	٠ اه.:		٠.		F	Requi	red 7	Furn <i>P</i>	rour	<u></u> ıd:	14	Days	/28	
Relinquished By:		116/04	2. Relinquishe	ed By:	M				Date 417-04	3. Rel	linquish	ed By:			e.					- I	Date	
Company Name:	Ben-sw	Time (630	Company Nar	me:	- 9TC				Time		any Na	ame:	•			1	-				Time	
1. Received By:									Date		3. Received By:					T	Date					
Company Name:	<u> </u>						Time					Company Name:								Time		

evern Trent Laboratories

i

6310 Rothway Drive

Houston, TX 77040

(713) 690-4444

rpjsckl Job Sample Receipt Checklist Report	V2
Job Number.: 270409 Location.: 57216 Check List Number.: 1 Description.: Customer Job ID: Job Check List Date.: 03/18/2004 Project Number.: 99000484 Project Description.: UPRR-HWPW-422-102/10 Customer: ERM Southwest, Inc Houston Contact.: Chris Young	Date of the Report: 03/18/2004 Project Manager: sgk
Questions ? (Y/N) Comments	
Chain of Custody Received? Y	
If "yes", completed properly? Y	
Custody seal on shipping container? Y	
If "yes", custody seal intact?	•
Custody seals on sample containers? N	
If "yes", custody seal intact?	
Samples chilled? Y	
Temperature of cooler acceptable? (4 deg C +/- 2). Y 2.6,3.1,1.9,2.9,1.7	
If "no", is sample an air matrix?(no temp req.)	
Thermometer ID	
Samples received intact (good condition)? Y	
Volatile samples acceptable? (no headspace) Y	
Correct containers used?	
Adequate sample volume provided?	
Samples preserved correctly? Y	
Samples received within holding-time? Y	
Agreement between COC and sample labels? Y	
Radioactivity at or below background levels? Y	
Additional	
Comments	:
Sample Custodian Signature/Date Y EIB	•

Page 1

CLIENT NAME:	FRM -So	ituwest.		CARRIER	R/DRIVER NA	ME: (?	hu.	
PROJECT:		201 MAR 7	7 414 11 -				8:01	JB
DATE RECEIVED:			AM 11: 5					
DATE RECEIVED.		 .	•	UNPACK	ED STAMP:_			
TOTAL # COOLEF	RS RECEIVED							•
COOLER ID	I coc I	CUSTODY TAPE	OLER CHE	CKLIST THERM	TEMP BLK	Line Compl	o Dalllos in S	ach Cooler if
COOLETTIB	PRESENT	COSTOD? TAPE	TEMP	ID :	PRESENT	out of Tem		-acti cociei II
	(Y/N)	PRESENT INTACT	(°C)		(Y/N)			
<u> </u>		(X/N) (X/N)			1	<u> </u>	· · · · ·	
P/w (05)	1	BATTAT	2.6	368	N			
01					1		. •	
7/w 361	Y	BAI	3.1	405		*		
Allgreen		CMIN		~				
60	4 [B MINI	1.9	370	<u> </u>			<u> </u>
C = COOLER B	= BOTTLES	ADIATION? Yes V.No	: "	EMO DI KI	NI : ÊONA NA A C	TEMPTAL	CENI by	110
JOULEN(3) SCRE	בוזבט רטת אז	ADIATION TES V NO	· IF I	EIVIP DLN.)	M. UOM MAS	I EIVIP I AI	VEIV 7	100
•	SHORT HO	LD / RUSH SAMPLES (include depa	ırtment del	livered to and	d time deliv	vered)	• .
'								•
					_ 			
	:							
4:4	*****	****	******	******	*****	******	*****	
** SPECIFIC PROJEC	: :***********************************	**************************************	****	******	*****	*******	*****	
			****		**************************************		*****	
/OLATILE HEADSI	PACE ACCEP	TABLE? Yes No _		_ M	larked As Pre	served? Ye	******** esNo	
OLATILE HEADSI	PACE ACCEPT			_ M		served? Ye	******** ∋sNo	
/OLATILE HEADSI	PACE ACCEP present, list deta MPLES	TABLE? Yes No _	section)	_ M N	larked As Pre	served? Ye A Vials:		MI
OLATILE HEADSI If ANY headspace is OH OF WATER SAI PRESER	PACE ACCEP present, list deta MPLES	TABLE? Yes No _ its in INCONSISTENCIES	section)	_ M N	larked As Pre umber of VO	served? Ye A Vials:		MI
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/OLATILE HEADSI If ANY headspace is bH OF WATER SAI PRESER' H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA HaOH – Cyanide (>	PACE ACCEP present, list deta MPLES VATION Vials)	TABLE? Yes No _ its in INCONSISTENCIES	section)	_ M N	larked As Pre umber of VO	served? Ye A Vials:		MI
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TRRP Laboratory Test Results

Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-9-1SA04

Laboratory Sample ID: 270409-001

Date/Time Sampled 3/15/04

Sample Matrix: Water

Date/Time Received: 3/17/04

14:10 11:52

		Water Street, rich by the Street Street Street	1 2-2	War and the same of the same o	10.21	1192W-1-7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-		* * * * * * * * * * * * * * * * * * *	7727 - 17 20 - 37.	(7 PK - 1 S PKG) * 17 T		
TEST METHOD	⊸:CAS#	RESULT	FLAG	MDL	MQL	SQL	" UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/18/04	21:26	96172	1	ydy
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/18/04	21:26	96172	.1	ydy
Chlorobenzene	108-90-7	0.00155	ប	0.00155	0.005	0.00155	mg/L	3/18/04	21:26	96172	1	ydy
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/18/04	21:26	96172	1	ydy
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/18/04	21:26	96172	1	ydy
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/18/04	21:26	96172	1	ydy
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/18/04	21:26	96172	1	ydy

Form I

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TRRP Laboratory Test Results

Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-9-1SA04

Laboratory Sample ID: 270409-001

Date/Time Sampled 3/15/04

Sample Matrix: Water

Date/Time Received: 3/17/04

14:10 11:52

	•									.*		
TEST METHOD	⊸ CAS# 🐇	RESULT	FLAG	_MDL_	MQL	SQL	UNITS	Analysis Da	te/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/26/04	18:40	96918	1,	lg1
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/23/04	18:01	96568	1,	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	18:40	96918	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/26/04	18:40	96918	1,	lg1
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	18:01	96568	1.	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/23/04	18:01	96568	1	lg1
2-Methylnaphthalene	91-57-6	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	18:01	96568	1	lg1
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/23/04	18:01	96568	1	lg1
Acenaphthene	83-32-9	0.000074	U	0.000078	0.0005	0.000074	mg/L	3/23/04	18:01	96568	- 1	lg1
Acenaphthylene	208-96-8	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	18:01	96568	1	lg1
Anthracene	120-12-7	0.000124	U	0.00013	0.0005	0.000124	mg/L	3/23/04	18:01	96568	1	lg1
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/23/04	18:01	96568	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/26/04	18:40	96918	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	18:40	96918	1	lg1

Form I

Page 18



TRRP Laboratory Test Results

Date:

4/6/04

CUSTOMER; ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-9-1SA04

Laboratory Sample ID: 270409-001

Date/Time Sampled 3/15/04

Sample Matrix: Water

Date/Time Received: 3/17/04

14:10 11:52

													i
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.00099		0.00018	0.0005	0.000172	mg/L	3/23/04	18:01	96568	1	lg1	
Chrysene	218-01-9	0.00009	Ū	0.000094	0.0005	0.00009	mg/L	3/23/04	18:01	96568	1	lg1	l
Dibenzofuran	132-64-9	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	18:01	96568	.1	lg1	-H-
Di-n-butyl Phthalate	84-74-2	0.00033	Ju	0.00015	0.0005	0.000143	mg/L	3/23/04	18:01	96568	1	_	BL
Fluoranthene	206-44-0	0.000093	U	0.000098	0.0005	0.000093	mg/L	3/23/04	18:01	96568	1	lg1	l
Fluorene	86-73-7	0.000068	U	0.000071	0.0005	0.000068	mg/L	3/23/04	18:01	96568	1 .	lg1	l
Naphthalene	91-20-3	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	18:01	96568	1	lg1	l
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/23/04	18:01	96568	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	υ	0.000094	0.0005	0.00009	mg/L	3/23/04	18:01	96568	. 1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/26/04	18:40	96918	1	lg1	
Phenanthrene	85-01-8	0.000077	U	0.000081	0.0005	0.000077	mg/L	3/23/04	18:01	96568	1	lg1	
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/23/04	18:01	96568	1	lg1	
Pyrene	129-00-0	0.000084	U	0.000088	0.0005	0.000084	. mg/L	3/23/04	18:01	96568	1	lg1	

Form I

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	·	, ,	, <u> </u>	1						



Date: 4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

FB-031504-1SA04

Laboratory Sample ID: 270409-002

Date/Time Sampled: 3/15/04

Sample Matrix Field Blank

Date/Time Received: 3/17/04

11:52

13:50

TEST METHOD	-∴CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst	
Method: SW-846 8260B, Water													
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	16:24	96172	1	ydy	
Benzene	71-43-2	0.00143	υ	0.00143	0.005	0.00143	mg/L	3/19/04	16:24	96172	1	ydy	
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/19/04	16:24	96172	1	ydy	
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/19/04	16:24	96172	1	ydy	
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/19/04	16:24	96172	1	ydy	
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	16:24	96172	1	ydy	
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/19/04	16:24	96172	1	ydy	



Date:

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID: FB-031504-1SA04

Job Number: 270409

Date/Time Sampled: 3/15/04 13:50

Date/Time Received: 3/17/04 11:52

Laboratory Sample ID: 270409-002 Sample Matrix: Field Blank 4/6/04

TEST METHOD CAS# Analysis Date/Time RESULT **FLAG** MDL MOL SOL UNITS Batch D.F. Analyst Method: SW-846 8270C, Water 1.2-Diphenylhydrazine 122-66-7 0.00005 U 0.00005 0.0001 0.00005 mg/L 3/26/04 19:10 96918 1 lg1 2,4-Dimethylphenol 105-67-9 0.000116 IJ 0.000122 0.0005 0.000116 3/23/04 18:31 96568 1 mg/L lg1 2,4-Dinitrotoluene 0.000009 U 0.000009 0.0001 10.000009 3/26/04 19:10 96918 1 121-14-2 mg/L lg 1 606-20-2 IJ 0.0001 3/26/04 1 2,6-Dinitrotoluene 0.000026 0.000027 10.000026 mg/L 19:10 96918 lg1 2-Chloronaphthalene 91-58-7 0.000076 U 0.00008 0.0005 10.000076 mg/L 3/23/04 18:31 96568 1 lg1 2-Methyl-4,6-dinitrophenol 534-52-1 0.000295 U 0.00031 0.0015 0.000295 3/23/04 18:31 96568 1 mg/L lg1 2-Methylnaphthalene 91-57-6 0.000067 U 0.00007 0.0005 0.000067 3/23/04 18:31 96568 1 mg/L lg1 100-02-7 IJ 0.000299 0.0015 mg/L 3/23/04 4-Nitrophenol 0.000285 0.000285 18:31 96568 1 lg1 Acenaphthene 83-32-9 0.000074 U 0.000078 0.0005 3/23/04 18:31 96568 1 0.000074 mg/L lg1 Acenaphthylene 208-96-8 0.000076 IJ 0.00008 0.0005 0.000076 mg/L 3/23/04 18:31 96568 1 lg1 120-12-7 0.000124 IJ 0.00013 0.0005 0.000124 3/23/04 18:31 Anthracene 96568 1 mg/L lg1 Benzo(a)anthracene 56-55-3 0.000267 IJ 0.00028 0.0005 0.000267 3/23/04 18:31 96568 1 mg/L lg1 Benzo(a)pyrene 50-32-8 0.000007 IJ 0.0001 3/26/04 96918 0.000007 0.000007 mg/L 19:10 lg1 111-91-1 0.000009 0.0001 bis(2-chloroethoxy)methane 0.000009 0.000009 mg/L 3/26/04 19:10 96918 lg1

Form I

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N



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

FB-031504-1SA04

Laboratory Sample ID: 270409-002

Date/Time Sampled 3/15/04

Sample Matrix: Field Blank

Date/Time Received: 3/17/04

13:50 11:52

Date/Time Received 3/17/04	11.52												
TEST METHOD	CAS#	RESULT	FLAG	MDL :	MQL	SQL	UNITS 🚁	Analysis Dat	e/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U	0.00018	0.0005	0.000172	mg/L	3/23/04	18:31	96568	1	lg1	
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	18:31	96568	1:	lg1	
Dibenzofuran	132-64-9	0.000076	υ	0.00008	0.0005	0.000076	mg/L	3/23/04	18:31	96568	1,	lg1	.ų-
Di-n-butyl Phthalate	84-74-2	0.000514	u	0.00015	0.0005	0.000143	mg/L	3/23/04	18:31	96568	1		BC
Fluoranthene	206-44-0	0.000093	U	0.000098	0.0005	0.000093	mg/L	3/23/04	18:31	96568	1,	lg1	ı
Fluorene	86-73-7	0.000068	U	0.000071	0.0005	0.000068	mg/L	3/23/04	18:31	96568	1,	lgl	ı
Naphthalene	91-20-3	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	18:31	96568	1	lg1	ı
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/23/04	18:31	96568	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	18:31	96568	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/26/04	19:10	96918	1	lg1	
Phenanthrene	85-01-8	0.000077	U	0.000081	0.0005	0.000077	mg/L	3/23/04	18:31	96568	1	lg1	
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/23/04	18:31	96568	1	lg1	
Pyrene	129-00-0	0.000084	U	0.000088	0.0005	0.000084	mg/L	3/23/04	18:31	96568	1	lg1	

Form I

N



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-4-1SA04

Laboratory Sample ID: 270409-003

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

9:02 11:52

		* *					3	•				
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/18/04	21:54	96172	1	ydy
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/18/04	21:54	96172	1	ydy
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/18/04	21:54	96172	1	ydy
Ethylbenzene	100-41-4	0.00137	ប	0.00137	0.005	0.00137	mg/L	3/18/04	21:54	96172	1	ydy
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/18/04	21:54	96172	1	ydy
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/18/04	21:54	96172	1	ydy
Xylenes (total)	1330-20-7	0.00441	υ	0.00441	0.015	0.00441	mg/L	3/18/04	21:54	96172	1	ydy

Form I

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							-



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-4-1SA04

9:02

111-91-1

Laboratory Sample ID: 270409-003

Date/Time Sampled 3/16/04

Sample Matrix: Water

mg/L

3/26/04

19:39

96918

lg1

Date/Time Received: 3/17/04 11:52													
TEST METHOD	⇔ CAS#	RESULT	FLAG	MDL	MQL	SQL	: UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water													
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/26/04	19:39	96918	1,	lgl	
2,4-Dimethylphenol	105-67-9	0.000116	υ	0.000122	0.0005	0.000116	mg/L	3/23/04	19:00	96568	1.	lgl	
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	19:39	96918	1.	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	υ	0.000027	0.0001	0.000026	mg/L	3/26/04	19:39	96918	1,	lg1	
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	19:00	96568	1,	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/23/04	19:00	96568	1	lg1	
2-Methylnaphthalene	91-57-6	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	19:00	96568	1.	lg1	
4-Nitrophenol	100-02-7	0.000285	U,	0.000299	0.0015	0.000285	mg/L	3/23/04	19:00	96568	1	lg1	
Acenaphthene	83-32-9	0.000074	U	0.000078	0.0005	0.000074	mg/L	3/23/04	19:00	96568	1	lg1	
Acenaphthylene	208-96-8	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	19:00	96568	1	lg1	
Anthracene	120-12-7	0.00026	J	0.00013	0.0005	0.000124	mg/L	3/23/04	19:00	96568	1	lg1	
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/23/04	19:00	96568	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	្រក្ 🚟	0.000007	0.0001	0.000007	mg/L	3/26/04	19:39	96918	1	lg1	

Form I

bis(2-chloroethoxy)methane

0 Ci

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0.000009

0.000009 0.0001 0.000009



CUSTOMER: ERM Southwest, Inc.- Houston

TRRP Laboratory Test Results

Date:

4/6/04

Job Number: 270409

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

MW-4-1SA04

Laboratory Sample ID: 270409-003

Date/Time Sampled 3/16/04

Sample Matrix: Water

9:02

Date/Time Received: 3/17/04 11:52

2400711110710007700 1111111 277770	11.02								•		
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/T	me Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.001025	•	0.00018	0.0005	0.000172	mg/L	3/23/04 19:	00 96568	1	lg1
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04 19:	00 96568	1	lg1
Dibenzofuran	132-64-9	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04 19:	00 96568	1	lg1
Di-n-butyl Phthalate	84-74-2	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/23/04 19:	00 96568	1	lg1
Fluoranthene	206-44-0	0.000093	U	0.000098	0.0005	0.000093	mg/L	3/23/04 19:	00 96568	1	lg1
Fluorene	86-73-7	0.000068	Ü	0.000071	0.0005	0.000068	mg/L	3/23/04 19:	00 96568	1	lg1
Naphthalene	91-20-3	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04 19:	00 96568	1	lg1
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/23/04 19:	00 96568	1	lg1
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04 19:	00 96568	1	lg1
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/26/04 19:	39 96918	1	lg1
Phenanthrene	85-01-8	0.000077	U	0.000081	0.0005	0.000077	mg/L	3/23/04 19:	00 96568	1	lg1
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/23/04 19:	00 96568	1	lg1
Pyrene	129-00-0	0.000084	U	0.000088	0.0005	0.000084	mg/L	3/23/04 19:	00 96568	1	lg1

Form I

3 **റ**



Job Number: 270409

TRRP Laboratory Test Results

Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID: MW-11A-1SA04 Laboratory Sample ID: 270409-004

Date/Time Received: 3/17/04 11:52

TEST METHOD	CAS#	*RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis L	Date/Time	Batch	D.F.	Analyst	
Method: SW-846 8260B, Water													
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/18/04	22:21	96172	1	ydy	
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/18/04	22:21	96172	1.	ydy	
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/18/04	22:21	96172	1,	ydy	
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/18/04	22:21	96172	1,	ydy	
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/18/04	22:21	96172	1,	ydy	
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/18/04	22:21	96172	1.	ydy	
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/18/04	22:21	96172	1	ydy	

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Form I



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-11A-1SA04

Laboratory Sample ID: 270409-004

Date/Time Sampled 3/16/04

Sample Matrix Water

Date/Time Received: 3/17/04

11:52

10:02

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/26/04	20:08	96918	1	lg1
2,4-Dimethylphenol	105-67-9	0.000122	U	0.000122	0.0005	0.000122	mg/L	3/23/04	16:31	96568	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	Ū	0.000009	0.0001	0.000009	mg/L	3/26/04	20:08	96918	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000027	U	0.000027	0.0001	0.000027	mg/L	3/26/04	20:08	96918	1	lg1
2-Chloronaphthalene	91-58-7	0.00008	U	0.00008	0.0005	0.00008	mg/L	3/23/04	16:31	96568	1	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.00031	U	0.00031	0.0015	0.00031	mg/L	3/23/04	16:31	96568	1	lg1
2-Methylnaphthalene	91-57-6	0.00007	ับ	0.00007	0.0005	0.00007	mg/L	3/23/04	16:31	96568	1	lg1
4-Nitrophenol	100-02-7	0.000299	υ	0.000299	0.0015	0.000299	mg/L	3/23/04	16:31	96568	1	lg1
Acenaphthene	83-32-9	0.002777		0.000078	0.0005	0.000078	mg/L	3/23/04	16:31	96568	1	lg1
Acenaphthylene	208-96-8	0.00008	U	0.00008	0.0005	0.00008	mg/L	3/23/04	16:31	96568	1	lg1
Anthracene	120-12-7	0.000321	J	0.00013	0.0005	0.00013	mg/L	3/23/04	16:31	96568	1	lg1
Benzo(a)anthracene	56-55-3	0.00028	U	0.00028	0.0005	0.00028	mg/L	3/23/04	16:31	96568	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/26/04	20:08	96918	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	ָ ט	0.000009	0.0001	0.000009	mg/L	3/26/04	20:08	96918	1	lg1

Form I



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-11A-1SA04

Laboratory Sample ID: 270409-004

Date/Time Sampled: 3/16/04

10:02

Sample Matrix Water

Date/Time Received: 3/17/04

11:52

Parlies from the second of the			1 LUN. AT		TT 22.00				* 13 <u>_</u> 22 \		Transfer Section	l
TEST METHOD	📜 CAS # 👯	RESULT	FLAG	MDL	"MQL"	∬SQL ∰	UNITS	Analysis Date/Ti	ne Batch	}D.F.	Analyst	ĺ
bis(2-ethylhexyl)phthalate	117-81-7	0.001042		0.00018	0.0005	0.00018	mg/L	3/23/04 16:3	1 96568	1	lg1	
Chrysene	218-01-9	0.000094	U	0.000094	0.0005	0.000094	mg/L	3/23/04 16:3	1 96568	1	lg1	
Dibenzofuran	132-64-9	0.000463	J	0.00008	0.0005	0.00008	mg/L	3/23/04 16:3	1 96568	1	lg1	.پ.
Di-n-butyl Phthalate	84-74-2	0.000521	u	0.00015	0.0005	0.00015	mg/L	3/23/04 16:3	1 96568	1	1	BO
Fluoranthene	206-44-0	0.000394	J	0.000098	0.0005	0.000098	mg/L	3/23/04 16:3	1 96568	1,	lg1	
Fluorene	86-73-7	0.000354	J	0.000071	0.0005	0.000071	mg/L	3/23/04 16:3	1 96568	1,	lgl	
Naphthalene	91-20-3	0.002776		0.00007	0.0005	0.00007	mg/L	3/23/04 16:3	1 96568	1	lgl	
Nitrobenzene	98-95-3	0.00015	υ	0.00015	0.0005	0.00015	mg/L	3/23/04 16:3	1 96568	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.000094	U	0.000094	0.0005	0.000094	mg/L	3/23/04 16:3	1 96568	1	lg1	ľ
Pentachlorophenol	87-86-5	0.00004	U	0.00004	0.0003	0.00004	mg/L	3/26/04 20:0	8 96918	1	lg1	
Phenanthrene	85-01-8	0.000081	U	0.000081	0.0005	0.000081	mg/L	3/23/04 16:3	1 96568	1	lg1	
Phenol	108-95-2	0.0001	υ	0.0001	0.0005	0.0001	mg/L	3/23/04 16:3	1 96568	1	lg1	
Pyrene	129-00-0	0.000088	U	0.000088	0.0005	0.000088	mg/L	3/23/04 16:3	1 96568	1	lg1	

Form I

2 C



Date:

4/6/04

Job Number: 270409

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

MW-11B-1SA04

Laboratory Sample ID: 270409-005

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

10:50 11:52

TEST METHOD CAS# RESULT **FLAG** MOL SQL UNITS Analysis Date/Time Batch D.F. MDL Analyst Method: SW-846 8260B, Water 0.00136 1.2-Dichloroethane 107-06-2 0.00136 U 0.005 0.00136 3/19/04 17:18 96172 mg/L 1 ydy 0.005 0.00143 17:18 71-43-2 0.00143 U 0.00143 3/19/04 96172 Benzene mg/L 1 ydy Chlorobenzene 108-90-7 0.00155 U 0.00155 0.005 0.00155 mg/L 3/19/04 17:18 96172 1 ydy Ethylbenzene 100-41-4 0.00137 U 0.00137 0.005 0.00137 3/19/04 17:18 96172 1 mg/L ydy Methylene Chloride 75-09-2 0.0013 U 0.0013 0.005 0.0013 3/19/04 17:18 96172 mg/L 1 ydy U 0.00136 108-88-3 0.00136 0.00136 0.005 3/19/04 17:18 96172 Toluene mg/L ydy Xylenes (total) U 1330-20-7 0.00441 0.00441 0.015 0.00441 mg/L 3/19/04 17:18 96172 ydy

Form I

6310 Rothway Drive • Housto	n, TX 77040 • Tel:	: 713 690 44	144 • Fax: 7	713 690 564	6 • www.stl	-inc.com



Date:

Laboratory Sample ID: 270409-005

4/6/04

Job Number: 270409

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID: MW-11B-1SA04

Date/Time Received: 3/17/04 11:52

	·					• "			*	•	,	
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	: SQL	··· UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/26/04	17:12	96918	1	lg1
2,4-Dimethylphenol	105-67-9	0.000122	U	0.000122	0.0005	0.000122	mg/L	3/23/04	19:31	96568	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	17:12	96918	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000027	υ	0.000027	0.0001	0.000027	mg/L	3/26/04	17:12	96918	1	lg1
2-Chloronaphthalene	91-58-7	0.00008	U	0.00008	0.0005	0.00008	mg/L	3/23/04	19:3,1	96568	1.	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.00031	υ	0.00031	0.0015	0.00031	mg/L	3/23/04	19:31	96568	1	lg1
2-Methylnaphthalene	91-57-6	0.001569	· 	0.00007	0.0005	0.00007	mg/L	3/23/04	19:31	96568	1	lg1
4-Nitrophenol	100-02-7	0.000299	U	0.000299	0.0015	0.000299	mg/L	3/23/04	19:31	96568	1	lg1
Acenaphthene	83-32-9	0.0486		0.000078	0.0005	0.000078	mg/L	3/23/04	19:31	96568	1	lg1
Acenaphthylene	208-96-8	0.001163		0.00008	0.0005	0.00008	mg/L	3/23/04	19:31	96568	1	lg1
Anthracene	120-12-7	0.000854		0.00013	0.0005	0.00013	mg/L	3/23/04	19:31	96568	1	lg1
Benzo(a)anthracene	56-55-3	0.00028	U	0.00028	0.0005	0.00028	mg/L	3/23/04	19:31	96568	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/26/04	17:12	96918	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	17:12	96918	1	lg1
							•	•	•	•	•	•

Form I

CUSTOMER: ERM Southwest, Inc.- Houston

TRRP Laboratory Test Results

Date:

4/6/04

Job Number: 270409

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

MW-11B-1SA04

Laboratory Sample ID: 270409-005

Date/Time Sampled: 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

11:52

10:50

•				*								1	
TEST METHOD	□ CAS#as	RESULT	FLAG	, MDL	MQL	SQL	UNITS	Analysis Date	/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.00018	U	0.00018	0.0005	0.00018	mg/L	3/23/04 1	9:31	96568	1	lg1	
Chrysene	218-01-9	0.000094	U	0.000094	0.0005	0.000094	mg/L	3/23/04 1	9:31	96568	1	lg1	
Dibenzofuran	132-64-9	0.01581		0.00008	0.0005	0.00008	mg/L	3/23/04 1	9:31	96568	1	lg1	J
Di-n-butyl Phthalate	84-74-2	0.000348	JU	0.00015	0.0005	0.00015	mg/L	3/23/04 1	9:31	96568	1	lgl U	4-c 86
Fluoranthene	206-44-0	0.001971		0.000098	0.0005	0.000098	mg/L	3/23/04 1	9:31	96568	1	lgl	
Fluorene	86-73-7	0.0112		0.000071	0.0005	0.000071	mg/L	3/23/04 1	19:31	96568	1	lgl	
Naphthalene	91-20-3	0.01168		0.00007	0.0005	0.00007	mg/L	3/23/04 1	9:31	96568	1	lg1	
Nitrobenzene	98-95-3	0.00015	υ	0.00015	0.0005	0.00015	mg/L	3/23/04 1	9:31	96568	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.000094	U	0.000094	0.0005	0.000094	mg/L	3/23/04 1	19:31	96568	1	lg1	
Pentachlorophenol	87-86-5	0.00004	U	0.00004	0.0003	0.00004	mg/L	3/26/04 1	17:12	96918	1	lg1	
Phenanthrene	85-01-8	0.000198	J	0.000081	0.0005	0.000081	mg/L	3/23/04 1	19:31	96568	1	lg1	
Phenol	108-95-2	0.0001	U	0.0001	0.0005	0.0001	mg/L	3/23/04 1	19:31	96568	1	lg1	
Pyrene	129-00-0	0.000991	:	0.000088	0.0005	0.000088	mg/L	3/23/04	19:31	96568	1	lg1	

Form I



Job Number: 270409

Customer Sample ID:

TRRP Laboratory Test Results

Date: 4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

> MW-10B-1SA04 Laboratory Sample ID: 270409-006

Date/Time Sampled 3/16/04 13:10 Sample Matrix Water

Date/Time Received: 3/17/04 11:52

		<u></u>											
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst	J
Method: SW-846 8260B, Water													-
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	17:45	96172	1	ydy	
Benzene	71-43-2	0.00231	J	0.00143	0.005	0.00143	mg/L	3/19/04	17:45	96172	1	ydy	¥
Chlorobenzene	108-90-7_	0.00155	U	0.00155	0.005	0.00155	mg/L	3/19/04	17:45	96172	1	ydy	
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/19/04	17:45	96172	1	ydy	± \$ ⁸ . ×.
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/19/04	17:45	96172	1	ydy	
Toluene	108-88-3	0.00136	υ	0.00136	0.005	0.00136	mg/L	3/19/04	17:45	96172	1	ydy	س ي د - ا
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/19/04	17:45	96172	1	ydy	<u>.</u>



Job Number: 270409

4/6/04 Date:

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

MW-10B-1SA04

Laboratory Sample ID: 270409-006

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

13:10 11:52

	· · · · · · · · · · · · · · · · · · ·											
# TEST METHOD	CAS#	RESULT	FLAG	∴ MDL ∵	MQL	SQL	🔢 UNITS 😘	Analysis D	ate/Time	Batch	D.F.	Analys
Method: SW-846 8270C, Water					1941) 1344-4					4.4500E		412334 41 47 41
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/26/04	20:37	96918	1	lg1
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/23/04	20:00	96568	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	20:37	96918	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/26/04	20:37	96918	1	lg1
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	20:00	96568	1	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/23/04	20:00	96568	1	lg1
2-Methylnaphthalene	91-57-6	0.00013	J	0.00007	0.0005	0.000067	mg/L	3/23/04	20:00	96568	1	lg1
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/23/04	20:00	96568	1	lg1
Acenaphthene	83-32-9	0.04421	, ,	0.000078	0.0005	0.000074	mg/L	3/23/04	20:00	96568	1	lg1
Acenaphthylene	208-96-8	0.000833		0.00008	0.0005	0.000076	mg/L	3/23/04	20:00	96568	1	lg1
Anthracene	120-12-7	0.002478		0.00013	0.0005	0.000124	mg/L	3/23/04	20:00	96568	1	lg1
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/23/04	20:00	96568	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/26/04	20:37	96918	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	20:37	96918	1	lg1

Form I



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-10B-1SA04

Laboratory Sample ID: 270409-006

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

13:10 11:52

Date/Time Received 3/17/04	11.52	4											
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Dat	te/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000982		0.00018	0.0005	0.000172	mg/L	3/23/04	20:00	96568	1	lg1	ĺ
Chrysene	218-01 - 9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	20:00	96568	1	lg1	
Dibenzofuran	132-64-9	0.0171		0.00008	0.0005	0.000076	mg/L	3/23/04	20:00	96568	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000303	Ju	0.00015	0.0005	0.000143	mg/L	3/23/04	20:00	96568	1		4-0 136-
Fluoranthene	206-44-0	0.001567	÷.	0.000098	0.0005	0.000093	mg/L	3/23/04	20:00	96568	1	lg1	
Fluorene	86-73-7	0.02079	•	0.000071	0.0005	0.000068	mg/L	3/23/04	20:00	96568	1	lg1	
Naphthalene	91-20-3	0.001853		0.00007	0.0005	0.000067	mg/L	3/23/04	20:00	96568	1	lg1	
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/23/04	20:00	96568	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	20:00	96568	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/26/04	20:37	96918	1	lg1	
Phenanthrene	85-01-8	0.008858		0.000081	0.0005	0.000077	mg/L	3/23/04	20:00	96568	1	lg1	
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/23/04	20:00	96568	1	lg1	
Pyrene	129-00-0	0.000718		0.000088	0.0005	0.000084	mg/L	3/23/04	20:00	96568	1	lg1	

Form I



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston'

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-10BD-1SA04

Laboratory Sample ID: 270409-007

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

13:20 11:52

•	-											
TEST METHOD	CAS##	RESULT	FLAG	MDL*	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	18:12	96172	1	ydy
Benzene	71-43-2	0.00228	J	0.00143	0.005	0.00143	mg/L	3/19/04	18:12	96172	1	ydy
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/19/04	18:12	96172	1	ydy
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/19/04	18:12	96172	1	ydy
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/19/04	18:12	96172	-1	ydy
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	18:12	96172	1	ydy
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/19/04	18:12	96172	1	ydy



Date:

4/6/04

Job Number: 270409

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

MW-10BD-1SA04

13:20

Laboratory Sample ID: 270409-007

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04 11:52

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	te/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/26/04	21:07	96918	1	lg1
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/23/04	20:30	96568	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	Ū	0.000009	0.0001	0.000009	mg/L	3/26/04	21:07	96918	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/26/04	21:07	96918	1	lg1
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	20:30	96568	1 .	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/23/04	20:30	96568	1	lg1
2-Methylnaphthalene	91-57-6	0.000067	Ū	0.00007	0.0005	0.000067	mg/L	3/23/04	20:30	96568	1	lg1
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/23/04	20:30	96568	1	lg1
Acenaphthene	83-32-9	0.04517		0.000078	0.0005	0.000074	mg/L	3/23/04	20:30	96568	1	lg1
Acenaphthylene	208-96-8	0.000855		0.00008	0.0005	0.000076	mg/L	3/23/04	20:30	96568	1	lg1
Anthracene	120-12-7	0.00243		0.00013	0.0005	0.000124	mg/L	3/23/04	20:30	96568	1	lg1
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/23/04	20:30	96568	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/26/04	21:07	96918	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	21:07	96918	1	lg1

Form I



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-10BD-1SA04

Laboratory Sample ID: 270409-007

Date/Time Sampled: 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

13:20 11:52

												:	
TEST METHOD	CAS#,	RESULT	FLAG	MDL	∄MQL ॄ	. SQL	UNITS 🚓	Analysis Da	ite/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000988		0.00018	0.0005	0.000172	mg/L	3/23/04	20:30	96568	1	lg1	
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	20:30	96568	15	lg1	
Dibenzofuran	132-64-9	0.01702		0.00008	0.0005	0.000076	mg/L	3/23/04	20:30	96568	1,	lg1	
Di-n-butyl Phthalate	84-74-2	0.000251	Jμ	0.00015	0.0005	0.000143	mg/L	3/23/04	20:30	96568	1	ا اgl بر	g B
Fluoranthene	206-44-0	0.001681		0.000098	0.0005	0.000093	mg/L	3/23/04	20:30	96568	1,	lg1	
Fluorene	86-73-7	0.0213		0.000071	0.0005	0.000068	mg/L	3/23/04	20:30	96568	1	lg1	
Naphthalene	91-20-3	0.001653	, ,	0.00007	0.0005	0.000067	mg/L	3/23/04	20:30	96568	1	lg1	
Nitrobenzene	98-95-3	0.000143	υ	0.00015	0.0005	0.000143	mg/L	3/23/04	20:30	96568	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	20:30	96568	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/26/04	21:07	96918	1	lg1	
Phenanthrene	85-01-8	0.00956		0.000081	0.0005	0.000077	mg/L	3/23/04	20:30	96568	1	lg1	
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953		3/23/04	20:30	96568	1	lg1	
Pyrene	129-00-0	0.000694		0.000088	0.0005	0.000084	mg/L	3/23/04	20:30	96568	1	lg1	

Form I

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Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

TB01-1SA04

Laboratory Sample ID: 270409-008

Date/Time Sampled 3/16/04

Sample Matrix Trip Blank

Date/Time Received: 3/17/04

0:00 11:52

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	16:51	96172	1	ydy
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/19/04	16:51	96172	1	ydy
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/19/04	16:51	96172	1	ydy
Ethylbenzene	100-41-4	0.00137	υ	0.00137	0.005	0.00137	mg/L	3/19/04	16:51	96172	1 .	ydy
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/19/04	16:51	96172	1	ydy
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	16:51	96172	1	ydy
Xylenes (total)	1330-20-7	0.00441	υ	0.00441	0.015	0.00441	mg/L	3/19/04	16:51	96172	1	ydy

Form I

6310 Rothway Drive • Houston,	TX 77040 • Tel:	713 690 4444	4 • Fax:	713 690 56	646 • www.stl-inc.com



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-10A-1SA04

Laboratory Sample ID: 270409-009

Date/Time Sampled 3/16/04

14:25

Sample Matrix: Water

Date/Time Received: 3/17/04

11:52

TEST METHOD	CAS#	# RESULT #	FLAG	MDL _x	MQL	∠ SQL ∵	UNITS 🧽	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136		0.00136	mg/L	3/19/04	18:39	96172	1	ydy
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/19/04	18:39	96172	1,	ydy
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/19/04	18:39	96172	1	ydy
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/19/04	18:39	96172	1	ydy
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/19/04	18:39	96172	1,	ydy
Toluene	108-88-3	0.00136	υ	0.00136	0.005	0.00136	mg/L	3/19/04	18:39	96172	1	ydy
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/19/04	18:39	96172	1	ydy

Form I



Date:

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID: MW-10A-1SA04

Job Number: 270409

Laboratory Sample ID: 270409-009

4/6/04

Date/Time Sampled 3/16/04 14:25

Sample Matrix: Water

Date/Time Received: 3/17/04 11:52

	THE STREET		*	78.00		<u>। अर्थका रूप राज्यस्य स्</u>	T. K. W. C. T. T. T. T. T. T. T. T. T. T. T. T. T.	A TOTAL CONTRACTOR	editor e resco	TETER SET TO	9,500	ing on the contract
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	ite/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/26/04	21:36	96918	1	lg1
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/23/04	21:00	96568	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	21:36	96918	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/26/04	21:36	96918	,1	lgl
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	21:00	96568	1	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/23/04	21:00	96568	1	lg1
2-Methylnaphthalene	91-57-6	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	21:00	96568	1	lg1
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/23/04	21:00	96568	1	lg1
Acenaphthene	83-32-9	0.000074	U	0.000078	0.0005	0.000074	mg/L	3/23/04	21:00	96568	1	lg1
Acenaphthylene	208-96-8	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	21:00	96568	1	lg1
Anthracene	120-12-7	0.000124	U	0.00013	0.0005	0.000124	mg/L	3/23/04	21:00	96568	1	lg1
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/23/04	21:00	96568	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/26/04	21:36	96918	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	21:36	96918	1	lg1

Form I



4/6/04 Date:

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-10A-1SA04

14:25

11:52

Laboratory Sample ID: 270409-009

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

							·	<u> </u>			
TEST METHOD :	三 CAS #5年	RESULT	FLAG	: MDL	MQL	SQL	∉.UNITS 烂	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000916		0.00018	0.0005	0.000172	mg/L	3/23/04 21:00	96568	1,	lg1
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04 21:00	96568	1.	lg1
Dibenzofuran	132-64-9	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04 21:00	96568	1.	lg1
Di-n-butyl Phthalate	84-74-2	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/23/04 21:00	96568	1	lg1
Fluoranthene	206-44-0	0.000093	U	0.000098	0.0005	0.000093	mg/L	3/23/04 21:00	96568	1.	lg1
Fluorene	86-73-7	0.000068	U	0.000071	0.0005	0.000068	mg/L	3/23/04 21:00	96568	1	lg1
Naphthalene	91-20-3	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04 21:00	96568	1	lg1
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/23/04 21:00	96568	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04 21:00	96568	1	lg1
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/26/04 21:36	96918	1	lg1
Phenanthrene	85-01-8	0.000077	U	0.000081	0.0005	0.000077	mg/L	3/23/04 21:00	96568	1	lg1
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	p.0000953	mg/L	3/23/04 21:00	96568	1	lg1
Pyrene	129-00-0	0.000084	U	0.000088	0.0005	0.000084	mg/L	3/23/04 21:00	96568	1	lg1

Form I



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: - Chris Young

Customer Sample ID:

Job Number: 270409

MW-7-1SA04

Laboratory Sample ID: 270409-010

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

9:10 11:52

							• •					•
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis I	Date/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water											100 E 10	
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	19:06	96172	1	ydy
Benzene	71-43-2	0.00143	บ	0.00143	0.005	0.00143	mg/L	3/19/04	19:06	96172	1	ydy
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/19/04	19:06	96172	,1 -	ydy
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/19/04	19:06	96172	1	ydy
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/19/04	19:06	96172	1	ydy
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	19:06	96172	1	ydy
Xylenes (total)	1330-20-7	0.00441	υ	0.00441	0.015	0.00441	mg/L	3/19/04	19:06	96172	1	ydy

Form I



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-7-1SA04

Laboratory Sample ID: 270409-010

Date/Time Sampled: 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

9:10 11:52

TEST METHOD	ं ं ; CAS # ः <u>।</u>	RESULT	FLAG.	MDL	MQL .	SQL	: UNITS	Analysis D	ate/Time	Batch	D.F.	Analys
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/26/04	22:05	96918	1	lg1
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/23/04	21:30	96568	1.	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	22:05	96918	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/26/04	22:05	96918	1,	lg1
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	21:30	96568	1	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/23/04	21:30	96568	1,	lg1
2-Methylnaphthalene	91-57-6	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	21:30	96568	1	lg1
4-Nitrophenol	100-02-7	0.000285	ָ ע	0.000299	0.0015	0.000285	mg/L	3/23/04	21:30	96568	1	lg1
Acenaphthene	83-32-9	0.000285	J	0.000078	0.0005	0.000074	mg/L	3/23/04	21:30	96568	1	lg1
Acenaphthylene	208-96-8	0.000076	ับ	0.00008	0.0005	0.000076	mg/L	3/23/04	21:30	96568	1	lg1
Anthracene	120-12-7	0.000219	J	0.00013	0.0005	0.000124	mg/L	3/23/04	21:30	96568	1	lg1
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/23/04	21:30	96568	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/26/04	22:05	96918	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	22:05	96918	1 '	lg1

Form I



Date: 4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-7-1SA04

Laboratory Sample ID: 270409-010

Date/Time Sampled 3/16/04

9:10

Sample Matrix: Water

Date/Time Received: 3/17/04

11:52

Date/Time Received 3/17/04	11.52											:	l
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U	0.00018	0.0005	0.000172	mg/L	3/23/04	21:30	96568	1	lg1	
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	21:30	96568	1	lg1	
Dibenzofuran	132-64-9	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	21:30	96568	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000199	Ju	0.00015	0.0005	0.000143	mg/L	3/23/04	21:30	96568	.1		4-0 30-
Fluoranthene	206-44-0	0.000093	U	0.000098	0.0005	0.000093	mg/L	3/23/04	21:30	96568	.1	lg1	
Fluorene	86-73-7	0.000068	U	0.000071	0.0005	0.000068	mg/L	3/23/04	21:30	96568	1	lg1	
Naphthalene	91-20-3	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	21:30	96568	1	lg1	l
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/23/04	21:30	96568	1	lg1	İ
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	21:30	96568	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/26/04	22:05	96918	1	lgl	
Phenanthrene	85-01-8	0.000077	U	0.000081	0.0005	0.000077	mg/L	3/23/04	21:30	96568	1	lg1	
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/23/04	21:30	96568	1	lg1	
Pyrene	129-00-0	0.000084	U	0.000088	0.0005	0.000084	mg/L	3/23/04	21:30	96568	1	lg1	

Form I



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

P-10-1SA04

Laboratory Sample ID: 270409-011

Date/Time Sampled 3/16/04

10:10

Sample Matrix: Water

Date/Time Received: 3/17/04

11:52

TEST METHOD	CAS#	RESULT	FLAG	MDL 5	MQL:	SQL	UNITS	Analysis Da	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	υ	0.00136	0.005	0.00136	mg/L	3/19/04	19:33	96172	1:	ydy
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/19/04	19:33	96172	1,	ydy
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/19/04	19:33	96172	1.	ydy
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/19/04	19:33	96172	15	ydy
Methylene Chloride	75-09-2	0.0013	ប	0.0013	0.005	0.0013	mg/L	3/19/04	19:33	96172	1,	ydy
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	19:33	96172	1,	ydy
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/19/04	19:33	96172	1	ydy

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Form I

Job Number: 270409

TRRP Laboratory Test Results

Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

P-10-1SA04

Laboratory Sample ID: 270409-011

Date/Time Sampled 3/16/04

Sample Matrix: Water

10:10

Date/Time Received: 3/17/04 11:52

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	. UNITS :	Analysis D	ate/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water												S	4-04
1,2-Diphenylhydrazine	122-66-7	0.00005	Ü	0.00005	0.0001	0.00005	mg/L	3/26/04	22:35	96918	1	lg1	
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/23/04	22:00	96568	1	lg1	
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	22:35	96918	1	.lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/26/04	22:35	96918	1	lg1	
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	22:00	96568	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/23/04	22:00	96568	1	lg1	
2-Methylnaphthalene	91-57-6	0.000067	UW	0.00007	0.0005	0.000067	mg/L	3/23/04	22:00	96568	1	lg1 4	8C_
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/23/04	22:00	96568	1	lg1	
Acenaphthene	83-32-9	0.000074	Մև၁	0.000078	0.0005	0.000074	mg/L	3/23/04	22:00	96568	1	lg1 L	B(_
Acenaphthylene	208-96-8	0.000076	Uu	0.00008	0.0005	0.000076	mg/L	3/23/04	22:00	96568	1	lg1 4	gi_
Anthracene	120-12-7	0.000124	บนป	0.00013	0.0005	0.000124	mg/L	3/23/04	22:00	96568	1	lg1 C	84
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/23/04	22:00	96568	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	υ	0.000007	0.0001	0.000007	mg/L	3/26/04	22:35	96918	1	lg1	
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	22:35	96918	1	lg1	

Form I



Job Number: 270409

4/6/04 Date:

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

P-10-1SA04

Date/Time Sampled 3/16/04

10:10

Date/Time Received: 3/17/04

11:52

Laboratory Sample ID: 270409-011

Sample Matrix: Water

Analyst 4-04 TEST METHOD . CAS # . FLAG Analysis Date/Time RESULT * MDL * MOL SOL : UNITS Batch D.F. bis(2-ethylhexyl)phthalate 117-81-7 0.000172 U 0.00018 0.0005 0.000172 mg/L 3/23/04 22:00 96568 1 lg1 218-01-9 0.00009 U 0.000094 0.0005 0.00009 3/23/04 22:00 96568 Chrysene mg/L lg1 Dibenzofuran 132-64-9 0.000076 TIUT 0.00008 0.0005 0.000076 3/23/04 22:00 96568 lg1 UBL .1 mg/L Di-n-butyl Phthalate 84-74-2 0.000379 Ju 0.00015 0.0005 0.000143 mg/L 3/23/04 22:00 96568 1 lgl ugu Fluoranthene 206-44-0 0.000093 U w 0.000098 0.0005 0.000093 3/23/04 22:00 96568 1 مراجع lg1 mg/L U wat 0.000071 Fluorene 86-73-7 0.0005 lgl للإلا 0.000068 0.000068 mg/L 3/23/04 22:00 96568 1 Naphthalene 91-20-3 0.000067 UUT 0.00007 0.0005 0.000067 3/23/04 22:00 96568 1 lg1 LBC mg/L Nitrobenzene 98-95-3 U 0.00015 0.000143 3/23/04 0.000143 0.0005 mg/L 22:00 96568 1 lg1 n-Nitrosodiphenylamine 0.00009 U 0.000094 0.0005 0.00009 3/23/04 22:00 96568 1 lg1 86-30-6 mg/L 0.000038 Pentachlorophenol 87-86-5 0.000038 0.00004 0.0003 mg/L 3/26/04 22:35 96918 1 lg1 Phenanthrene 85-01-8 0.000077 **ひいす 0.000081** 0.0005 0.000077 3/23/04 22:00 96568 1 191 48c mg/L Phenol 108-95-2 0.0000953 IJ 0.0001 0.0005 0.0000953 mg/L 3/23/04 22:00 96568 1 lg1 129-00-0 0.000084 0.000088 0.0005 0.000084 3/23/04 22:00 96568 Pyrene UW mg/L

Form I

D.

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Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

P-10D-1SA04

Laboratory Sample ID: 270409-012

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

10:35 11:52

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U.	0.00136	0.005	0.00136	mg/L	3/19/04	20:00	96172	1	ydy
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/19/04	20:00	96172	1	ydy
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/19/04	20:00	96172	1	ydy
Ethylbenzene	100-41-4	0.00137	υ	0.00137	0.005	0.00137	mg/L	3/19/04	20:00	96172	1	ydy
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/19/04	20:00	96172	1	ydy
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	20:00	96172	1	ydy
Xylenes (total)	1330-20-7	0.00441	υ	0.00441	0.015	0.00441	mg/L	3/19/04	20:00	96172	1	ydy

Form I



Date: 4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

ATTN: Chris Young PROJECT: UPRR-HWPW-0014419 60

Customer Sample ID:

Job Number: 270409

P-10D-1SA04

Laboratory Sample ID: 270409-012

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

11:52

10:35

			11221 Z.0.00	r	1. V		The way			V V F10 1 20 8	1 1 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3	CONTRACTOR OF	_
TEST METHOD	∴ CAS#	RESULT	FLAG	MDL	∍ MQL⊯	SQL	UNITS E	Analysis Da	te/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water													5-4-04
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/26/04	23:04	96918	1,	lg1	
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/23/04	22:30	96568	1	lg1	
2,4-Dinitrotoluene	121-14-2	0.000009	υ	0.000009	0.0001	0.000009	mg/L	3/26/04	23:04	96918	1	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/26/04	23:04	96918	1	lg1	
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	22:30	96568	1	lg1 _,	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/23/04	22:30	96568	1	lg1	
2-Methylnaphthalene	91-57-6	0.0218	5	0.00007	0.0005	0.000067	mg/L	3/23/04	22:30	96568	1	lg1 (BL-
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/23/04	22:30	96568	1	lg1	
Acenaphthene	83-32-9	0.08375	5	0.000078	0.0005	0.00037	mg/L	3/24/04	18:56	96568	5	lg1 (BL
Acenaphthylene	208-96-8	0.000586	J	0.00008	0.0005	0.000076	mg/L	3/23/04	22:30	96568	1	lg1 d	BC
Anthracene	120-12-7	0.004746	J	0.00013	0.0005	0.000124	mg/L	3/23/04	22:30	96568	1	lg1 (ish.
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/23/04	22:30	96568	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/26/04	23:04	96918	1	lg1	
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/26/04	23:04	96918	1	lg1	

Form I



Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

P-10D-1SA04

Laboratory Sample ID: 270409-012

Date/Time Sampled 3/16/04

Sample Matrix: Water

10:35 11:52

Date/Time Received: 3/17/04

		1.00				· .							
TEST METHOD.	CAS#	RESULT	FLAG:	MDL	MQL	SQL	UNITS	Analysis Da	ite/Time	Batch	D.F.	Analyst	4-04
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U	0.00018	0.0005	0.000172	mg/L	3/23/04	22:30	96568	1	lg1	
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	22:30	96568	1	lg1	
Dibenzofuran	132-64-9	0.03219	J	0.00008	0.0005	0.000076	mg/L	3/23/04	22:30	96568	1	-5-	31-
Di-n-butyl Phthalate	84-74-2	0.000418	JU	0.00015	0.0005	0.000143	mg/L	3/23/04	22:30	96568	1		-4-04 BL
Fluoranthene	206-44-0	0.003192	J	0.000098	0.0005	0.000093	mg/L	3/23/04	22:30	96568	1	lgl 4	36
Fluorene	86-73-7	0.04259	7	0.000071	0.0005	0.000068	mg/L	3/23/04	22:30	96568	1	lg1 U	B6-
Naphthalene	91-20-3	0.4144	J	0.00007	0.0005	0.0013	mg/L	3/24/04	19:26	96568	20	lg1 4	ber
Nitrobenzene	98-95-3	0.000143	υ	0.00015	0.0005	0.000143	mg/L	3/23/04	22:30	96568	1	lgl	
n-Nitrosodiphenylamine	86-30-6	0.00009	ับ	0.000094	0.0005	0.00009	mg/L	3/23/04	22:30	96568	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/26/04	23:04	96918	1	lg1	
Phenanthrene	85-01-8	0.02155	J	0.000081	0.0005	0.000077	mg/L	3/23/04	22:30	96568	1	lg1 4	BL
Phenol	108-95-2	0.0000953	Ų	0.0001	0.0005	p.0000953	mg/L	3/23/04	22:30	96568	1	lg1	
Pyrene	129-00-0	0.001372	J	0.000088	0.0005	0.000084	mg/L	3/23/04	22:30	96568	1	lg1 4	R.

Form I

Page 50

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Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-8-1SA04

Laboratory Sample ID: 270409-013

Date/Time Sampled 3/16/04

13:15

Sample Matrix: Water

Date/Time Received: 3/17/04

11:52

												i
TEST METHOD	CAS#:	RESULT	FLAG	' MDL	MQL	SQL	UNITS*	Analysis Date	e/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	20:27	96172	1	ydy
Benzene	71-43-2	0.00143	บ	0.00143	0.005	0.00143	mg/L	3/19/04	20:27	96172	1	ydy
Chlorobenzene	108-90-7	0.00155	บ	0.00155	0.005	0.00155	mg/L	3/19/04	20:27	96172	1	ydy
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/19/04	20:27	96172	1	ydy
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/19/04	20:27	96172	1	ydy
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/19/04	20:27	96172	1	ydy
Xylenes (total)	1330-20-7	0.00441	υ	0.00441	0.015	0.00441	mg/L	3/19/04	20:27	96172	1	ydy

1/3



Date:

Batch

96918

4/6/04

D.F.

1

Analyst

lg1

CUSTOMER: ERM Southwest. Inc.- Houston:

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-8-1SA04

Laboratory Sample ID: 270409-013

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

13:15 11:52

TEST METHOD CAS# RESULT Analysis Date/Time **FLAG** MDL MOL SOL UNITS Method: SW-846 8270C, Water uppenid 1.2-Diphenylhydrazine 122-66-7 0.00005 IJ 0.00005 0.0001 0.00005 3/26/04 23:33 mg/L

2.4-Dimethylphenol 105-67-9 0.000116 IJ 0.000122 0.0005 0.000116 mg/L 3/23/04 23:00 96568 1 lg1 2.4-Dinitrotoluene 121-14-2 0.000009 0.000009 0.0001 U 0.000009 3/26/04 23:33 96918 1 mg/L lg1 2.6-Dinitrotoluene 606-20-2 0.000026 IJ 0.000027 0.0001 0.000026 3/26/04 23:33 96918 1 mg/L lg1 2-Chloronaphthalene 91-58-7 0.000076 IJ 0.00008 0.0005 0.000076 mg/L 3/23/04 23:00 96568 1 lg1 2-Methyl-4,6-dinitrophenol 534-52-1 0.000295 H 0.00031 0.0015 0.000295 3/23/04 23:00 mg/L 96568 1 lg1

2-Methylnaphthalene 0.000067 91-57-6 IJ 0.00007 0.0005 10.000067 mg/L 3/23/04 23:00 96568 1 lg1 4-Nitrophenol 100-02-7 0.000285 IJ 0.000299 0.0015 0.000285 3/23/04 23:00 96568 1 mg/L 121 Acenaphthene 83-32-9 0.000074 IJ 0.000078 0.0005 0.000074 mg/L 3/23/04 23:00 96568 1 lg1 Acenaphthylene 208-96-8 0.000076 IJ 0.00008 0.0005 0.000076 3/23/04 23:00 96568 1 lg1 mg/L

Anthracene 120-12-7 0.000124 IJ 0.00013 0.0005 0.000124 3/23/04 23:00 96568 mg/L 1 lg l Benzo(a)anthracene 56-55-3 0.000267 IJ 0.00028 0.0005 0.000267 mg/L 3/23/04 23:00 96568 1 lg1 Benzo(a)pyrene 50-32-8 0.000007 U 0.000007 0.0001 0.000007 3/26/04 23:33 96918 mg/L 191 bis(2-chloroethoxy)methane 111-91-1 0.000009 U 0.000009 0.0001 0.000009 mg/L 3/26/04 23:33 96918 lg1

Form I



4/6/04 Date:

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

Job Number: 270409

MW-8-1SA04

Laboratory Sample ID: 270409-013

Date/Time Sampled 3/16/04

Sample Matrix: Water

Date/Time Received: 3/17/04

13:15 11:52

TEST METHOD	E CAS#	RESULT	FLAG	MDL	MQL	∷ SQL	🖆 UNITS 🖖	Analysis Da	ate/Time	Batch	. D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U	0.00018	0.0005	0.000172	mg/L	3/23/04	23:00	96568	1	lg1
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	23:00	96568	1,	lg1
Dibenzofuran	132-64-9	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	23:00	96568	1	lg1
Di-n-butyl Phthalate	84-74-2	0.000268	JU	0.00015	0.0005	0.000143	mg/L	3/23/04	23:00	96568	1	-5 - اgl
Fluoranthene	206-44-0	0.000093	U	0.000098	0.0005	0.000093	mg/L	3/23/04	23:00	96568	1.	lg1
Fluorene	86-73-7	0.000068	U	0.000071	0.0005	0.000068	mg/L	3/23/04	23:00	96568	1	lg1
Naphthalene	91-20-3	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	23:00	96568	1	lg1
Nitrobenzene	98-95-3	0.000143	υ	0.00015	0.0005	0.000143	mg/L	3/23/04	23:00	96568	1	lg1
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	23:00	96568	1	lg1
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/26/04	23:33	96918	1	lg1
Phenanthrene	85-01-8	0.000077	U	0.000081	0.0005	0.000077	mg/L	3/23/04	23:00	96568	1	lg1
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/23/04	23:00	96568	1	lg1
Pyrene	129-00-0	0.000084	U	0.000088	0.0005	0.000084	mg/L	3/23/04	23:00	96568	1	lg1



Date: 4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

0.0013

0.00136

0.00441

Customer Sample ID: MW-5-1SA04

Laboratory Sample ID: 270409-014

Date/Time Sampled: 3/16/04

Job Number: 270409

Sample Matrix: Water

mg/L

mg/L

mg/L

3/19/04

3/19/04

3/19/04

20:54

20:54

20:54

96172

96172

96172

1

ydy

ydy

ydy

Date/Time Received: 3/17/04

14:45 11:52

75-09-2

108-88-3

1330-20-7

TEST METHOD UNITS CAS# FLAG MOL RESULT MDL SOL Analysis Date/Time Batch D.F. Analyst Method: SW-846 8260B, Water - De la Carlo de Barro de Carlo Carl 107-06-2 0.00136 IJ 0.00136 0.005 0.00136 3/19/04 20:54 96172 1 1,2-Dichloroethane mg/L ydy 71-43-2 0.00143 П 0.00143 0.005 0.00143 3/19/04 96172 Benzene mg/L 20:54 1 ydy Chlorobenzene 108-90-7 0.00155 IJ 0.00155 0.005 0.00155 3/19/04 20:54 96172 mg/L ydy Ethylbenzene 100-41-4 0.00137 U 0.00137 0.005 0.00137 3/19/04 20:54 96172 mg/L ydy

0.0013

0.00136

0.00441

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0.005

0.005

0.015

0.0013

0.00136

0.00441

OI OI

Toluene

Xylenes (total)

Methylene Chloride

Form I

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Date:

4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young 🔩

Customer Sample ID:

Job Number: 270409

MW-5-1SA04

Laboratory Sample ID: 270409-014

Date/Time Sampled 3/16/04

Sample Matrix Water

Date/Time Received: 3/17/04

14:45 11:52

TEST METHOD	CAS#	RESULT	FLAG	MDL	∦ MQL ∈	≟ SQL	UNITS	Analysis Da	ate/Time	Batch	D.F.	Analys
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/27/04	0:03	96918	1.	lg1
2,4-Dimethylphenol	105-67-9	0.000116	υ	0.000122	0.0005	0.000116	mg/L	3/23/04	23:30	96568	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	υ	0.000009	0.0001	0.000009	mg/L	3/27/04	0:03	96918	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/27/04	0:03	96918	1	lg1
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	23:30	96568	1	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/23/04	23:30	96568	1.	lg1
2-Methylnaphthalene	91-57-6	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	23:30	96568	1	lg1
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/23/04	23:30	96568	1	lg1
Acenaphthene	83-32-9	0.000283	J	0.000078	0.0005	0.000074	mg/L	3/23/04	23:30	96568	1	lg1
Acenaphthylene	208-96-8	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	23:30	96568	1	lg1
Anthracene	120-12-7	0.000251	J	0.00013	0.0005	0.000124	mg/L	3/23/04	23:30	96568	1	lg1
Benzo(a)anthracene	56-55-3	0.000267	υ	0.00028	0.0005	0.000267	mg/L	3/23/04	23:30	96568	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/27/04	0:03	96918	1 .	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/27/04	0:03	96918	1	lg1

Form I



TRRP Laboratory Test Results

Job Number: 270409

Date: 4/6/04

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

MW-5-1SA04

Laboratory Sample ID: 270409-014

Date/Time Sampled 3/16/04

14:45

Sample Matrix: Water

Date/Time Received: 3/17/04

11:52

		.*										*	
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst	4-04
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	υ	0.00018	0.0005	0.000172	mg/L	3/23/04	23:30	96568	1	lgl	
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	23:30	96568	1	lg1	
Dibenzofuran	132-64-9	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/23/04	23:30	96568	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000253	JU	0.00015	0.0005	0.000143	mg/L	3/23/04	23:30	96568	1	lg1 4	36
Fluoranthene	206-44-0	0.000093	U	0.000098	0.0005	0.000093	mg/L	3/23/04	23:30	96568	1	lgl	
Fluorene	86-73-7	0.000068	บ	0.000071	0.0005	0.000068	mg/L	3/23/04	23:30	96568	1	lg1	
Naphthalene	91-20-3	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/23/04	23:30	96568	1	lg1	
Nitrobenzene	98-95-3	0.000143	υ	0.00015	0.0005	0.000143	mg/L	3/23/04	23:30	96568	1	lgl	
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/23/04	23:30	96568	1	lgl	
Pentachlorophenol	87-86-5	0.000038	υ	0.00004	0.0003	0.000038	mg/L	3/27/04	0:03	96918	1	lgl	
Phenanthrene	85-01-8	0.000077	บ	0.000081	0.0005	0.000077	mg/L	3/23/04	23:30	96568	1	lgl	
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/23/04	23:30	96568	1	lgl	
Pyrene	129-00-0	0.000084	ט	0.000088	0.0005	0.000084	mg/L	3/23/04	23:30	96568	1	lg1	

Form I

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	Job Number.: 270409	QUALITY	CONTRO	L R	ESULT	S	Report	t Date.: 04/00	5/2004	
CUSTOMER: ERM	Southwest, Inc Houston	PROJE	CT: UPRR-HWPW-	001441	9 60		ATTN:	Chris Young		
QC Type	Description		Reag. Cod	e	Lab 1	ID	Dilu	tion Factor	Date	Time
	: SW-846 8270C ption.: Semivolatile Organi	cs - SIM Analys			: ug/ 96918	/L		Analysi	:: lg1	
LCS	Laboratory Control Sample		SVS030804A		96167				03/26/200	4 1545
Parame	ter/Test Description	QC Result	QC Result	True	Value	Orig. \	/alue	Calc. Result	: * Limi	ts
nzo(a)pyrene, s(2-chloroethe 4-Dinitrotolue 6-Dinitrotolue ntachlorophene 2-Diphenylhyd	oxy)methane, Water ene, Water ene, Water ol, Water	0.37068 0.40354 0.35773 0.39134 0.46185 0.34770		į.	0.500000 0.500000 0.500000 0.500000 0.500000			74.1 80.7 71.5 78.3 92.4 69.5	30- 60- 60- 30-	130 130 140 140 130 130
MB I	Method Blank		SVS030204B		96167				03/26/200	14 151
Parame	ter/Test Description	QC Result	QC Result	True	Value	Orig. \	/alue	Calc. Result	* Limi	ts l
nzo(a)pyrene, s(2-chloroeth 4-Dinitrotolu 6-Dinitrotolu ntachlorophen 2-Diphenylhyd	oxy)methane, Water ene, Water ene, Water ol, Water	0 0 0 0								
MS	Matrix Spike		SVS030804A		270409-5				03/26/200	174
Parame	ter/Test Description	QC Result	QC Result	True	Value	Orig. \	/alue	Calc. Result	: * Limi 	ts
nzo(a)pyrene, s(2-chloroethous) 4-Dinitrotoluo 6-Dinitrotoluo ntachloropheno 2-Diphenylhydo	oxy)methane, Water ene, Water ene, Water ol, Water	0.41440 0.38563 0.44872 0.46135 0.69722 0.44207			0.500000 0.500000 0.500000 0.500000 0.500000	())))	83 77 90 92 139 88	30- 24- 30-	130 130 96 130 103
MSD I	Matrix Spike Duplicate		SVS030804A		270409-5				03/26/200	4 181
Parame	ter/Test Description	QC Result	QC Result	True	Value	Orig. \	/alue	Calc. Result	: * Limi	ts
nzo(a)pyrene,	Water	0.36938	0.41440		0.500000	()	74 11.5	30.0- 40.0	130.0
s(2-chloroeth	oxy)methane, Water	0.38728	0.38563		0.500000	()	77 0.4		130.0
4-Dinitrotolu	ene, Water	0.42011	0.44872		0.500000	()	84	24.0-	96.0
6-Dinitrotolu	ene, Water	0.42921	0.46135		0.500000	(כ	6.6 86		130.0
ntachlorophen	ol, Water	0.61666	0.69722		0.500000	. ()	7.2 123		103.0
	razine, Water	0.37758	0.44207		0.500000)	12.3 76	40.0 140.0	

Page 57 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.



Job Number.: 270409		Y CONTROL	RESULTS	Report Date.: 04/06/2004	•
CUSTOMER: ERM Southwest, Inc H	louston PRO	JECT: UPRR-HWPW-0	014419 60	ATTN:	
QC Type Descr	ription	Reag. Code	Lab ID	Dilution Factor Dat	e Time
Test Method: SW-846 8270 Method Description.: Semivolatil			: ug/L : 96428 96568	Analyst:	lg1
LCS Laboratory Control	Sample	svs021204c	96166	03/23	3/2004 1601
Parameter/Test Description	on QC Result	QC Result	True Value Orig	. Value Calc. Result *	Limits F
enaphthene, Water	4.45229		5.000000	89.0	32-165
enaphthylene, Water hthracene, Water	4.20155 4.60540		5.000000 5.00000	84.0 92.1	10-150 23-178
enzo(a)anthracene, Water	4.51087		5.000000	90.2	25-170
s(2-ethylhexyl)phthalate, Water	4.44139		5.000000	88.8	25-173
Chloronaphthalene, Water	4.06284		5.000000	81.3	23-143
rysene, Water	4.71995		5.000000	94.4	23-180
benzofuran, Water	4.18033		5.000000	83.6	35-153
-n-butyl Phthalate, Water	4.62008		5.000000	92.4	28-185
uoranthene, Water	4.82332		5.000000	96.5	28-180
uorene, Water	4.46478		5.000000	89.3	30-189
Methylnaphthalene, Water	4.29038		5.000000	85.8	26-168
phthalene, Water	4.30515		5.00000	86.1	36-139
trobenzene, Water	4.04759 4.36729		5.000000 5.000000	81.0 87.3	17-163 58-174
Nitrosodiphenylamine, Water Menanthrene, Water	4.58732		5.000000	91.7	26-166
renanthrene, water /rene, Water	4.74744		5.000000	94.9	28-173
,4-Dimethylphenol, Water	3.17145		5.00000	63.4	23-157
-Methyl-4,6-dinitrophenol, Water	7.39703		5.000000	147.9	10-164
-Nitrophenol, Water	1.87716		5.000000	37.5	10-92
henol, Water	2.13328	}	5.000000	42.7	20-83
MB Method Blank		SVS030204B	96166	03/2	3/2004 1531
MB Method Blank Parameter/Test Description	on QC Result	SVS030204B QC Result		03/2. g. Value Calc. Result *	destructions and a second
Parameter/Test Description	0	****** *****************************			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water	0 0	****** *****************************			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water	0 0 0	****** *****************************			destructions and a second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water enzo(a)anthracene, Water	0 0 0 0	****** *****************************			destructions and a second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water	0 0 0 0	****** *****************************			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water -Chloronaphthalene, Water	0 0 0 0	****** *****************************			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water inthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water -Chloronaphthalene, Water intysene, Water	0 0 0 0 0	****** *****************************			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water	0 0 0 0 0	QC Result			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water -Chloronaphthalene, Water hrysene, Water ibenzofuran, Water i-n-butyl Phthalate, Water	0 0 0 0 0 0 0	QC Result			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water -Chloronaphthalene, Water hrysene, Water ibenzofuran, Water i-n-butyl Phthalate, Water luoranthene, Water	0 0 0 0 0 0 0 0 0	QC Result			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water -Chloronaphthalene, Water hrysene, Water ibenzofuran, Water i-n-butyl Phthalate, Water luoranthene, Water luorene, Water -Methylnaphthalene, Water	0 0 0 0 0 0 0 0 0 0.28010	QC Result			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water inthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water -Chloronaphthalene, Water irysene, Water i-n-butyl Phthalate, Water luoranthene, Water luorene, Water -Methylnaphthalene, Water aphthalene, Water	0 0 0 0 0 0 0 0 0.28010 0	QC Result	True Value Orig		destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water athracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water -Chloronaphthalene, Water arysene, Water ibenzofuran, Water i-n-butyl Phthalate, Water luoranthene, Water luorene, Water -Methylnaphthalene, Water aphthalene, Water itrobenzene, Water	0 0 0 0 0 0 0 0 0.28010 0 0	QC Result			destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenaphthacene, Water cenaphthalene, Water cenaphthalene, Water cenaphthylene, cenaphthylene, cenaphthylene, cenaphthylene, cenaphthylene, cenaphthylene,	0 0 0 0 0 0 0 0 0.28010 0 0	QC Result	True Value Orig		destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenapo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water chloronaphthalene, Water chloronaphthalene, Water chenzofuran, Water i-n-butyl Phthalate, Water luoranthene, Water luorene, Water -Methylnaphthalene, Water aphthalene, Water itrobenzene, Water -Nitrosodiphenylamine, Water menanthrene, Water	0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig		destructions and a second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenapo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water chloronaphthalene, Water chloronaphthalene, Water chenzofuran, Water chluorene, Water cluorene, Water cluorene, Water cluorene, Water cluorene, Water cluorene, Water chenthylnaphthalene, Water caphthalene, Water chitrosodiphenylamine, Water chenanthrene, Water chenanthrene, Water chene, Water chene, Water chene, Water	0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig		destructions and a second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenzo(a)anthracene, Water cenzo(a)anthracene, Water cenzo(a)anthracene, Water cenzofuran, Water cenzo	0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig		destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenaphthalate, Water cenaphthalate, Water cenaphthalate, Water cenaphthalate, Water cenaphthyl Phthalate, Water cenaphthyl Phthalate, Water cenaphthalene, Water cenaphthalene, Water cenaphthalene, Water cenaphthalene, Water cenaphthalene, Water cenaphthyl Water cenaphthyl Cena	0 0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig		destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenzo(a)anthracene, Water cenzo(a)anthracene, Water cenzo(a)anthracene, Water cenzofuran, Water cenzo	0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig		destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water chloronaphthalene, Water ibenzofuran, Water i-n-butyl Phthalate, Water luoranthene, Water luorene, Water enzohunghthalene, Water enzohunghthalene, Water enzohunghthalene, Water enzohunghthalene, Water enzohunghene, Water enzohunghen	0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig		destructions and a second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water -Chloronaphthalene, Water ibenzofuran, Water i-n-butyl Phthalate, Water luoranthene, Water luorene, Water -Methylnaphthalene, Water aphthalene, Water itrobenzene, Water -Nitrosodiphenylamine, Water henanthrene, Water yrene, Water ,4-Dimethylphenol, Water -Methyl-4,6-dinitrophenol, Water -Nitrophenol, Water	0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig		destination of the second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenzo(a)anthracene, Water cenzo(a)anthracene, Water cenzo(a)anthracene, Water cenzofuran, Water cenzo	0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig		destructions and a second
Parameter/Test Description cenaphthene, Water cenaphthylene, Water cenaphthylene, Water cenaphthylene, Water cenzo(a)anthracene, Water cenzo(a)anthracene, Water cenzo(a)anthracene, Water cenzofuran, Water cenzo	0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig		dest, et dituit et e meet
Parameter/Test Description cenaphthene, Water cenaphthylene, Water nthracene, Water enzo(a)anthracene, Water is(2-ethylhexyl)phthalate, Water -Chloronaphthalene, Water hrysene, Water ibenzofuran, Water	0 0 0 0 0 0 0 0 0.28010 0 0 0	QC Result	True Value Orig	p. Value Calc. Result *	dest, et dident et e e est

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	Job Number.: 270409	QUALITY	CONTROL	RESULTS	Report	Date.: 04/06	/2004	
CUSTOMER: E	RM Southwest, Inc Housto	on PROJEC	T: UPRR-HWPW-0014	419 60	ATTN:			
QC Type	Descriptio	on	Reag. Code	Lab ID	Diluti	on Factor	Date Ti	те
MS	Matrix Spike		SVS021204C	270409-4			03/23/2004 1	701
Para	meter/Test Description	QC Result	QC Result Tr	rue Value Or	ig. Value	Calc. Result	* Limits	F
cenaph thene,		6.90373	1 .	5.000000	1.38836	110	46-118	
cenaphthylen nthracene, W	•	3.84966 4.95765		5.000000 5.000000	0 0.16065	77 96	30-130 30-130	
	acene, Water	4.45173		5.000000	0.10003	89	. 60-140	
is(2-ethylhe	xyl)phthalate, Water	3.97167	•	5.000000	0.52112	69	60-140	
rysene, Wat	halene, Water er	3.05351 4.70923		5.000000 5.000000	0 0	61 94	30-130 · 30-130	
ibenzofuran,	Water	4.75508		5.000000	0.23155	90	30-130	
i-n-butyl Ph	thalate, Water	4.95292 5.27425		5.000000	0.26056	94	30-130 30-130	
luoranthene, luorene, Wat		5.27425 © 5.59556		5.000000 5.000000	0.19680 0.17701	102 108	, 30-130	
Methylnapht	halene, Water	3.23676		5.000000	0	65	60-140	
aphthalene, 1 itrobenzene,		5.56610 3.11495	5. *	5.000000 5.000000	1.38780 0	84 62	30-130 30-130	
	enylamine, Water	4.11035		5.000000	ő	82	30-130	
nenanthrene,		4.35245		5.000000	0	87	30-130	
/rene, Water 4-Dimethyld	henol, Water	5.18402 2.52253		5.000000 5.000000	0	104 50	26-115 30-130	
	dinitrophenol, Water	6.14786		5.000000	ő	123	30-130	
Nitrophenol		3.24434	•	5.000000	0	65	10-80	
	Matrix Spike Duplicate	1.58994	svs021204C	5.000000 270409-4	0	32	10-112 03/23/2004 × 1	73
MSD Water	I	1.58994 		270409-4			03/23/2004 - 1	73
MSD Paral	Matrix Spike Duplicate meter/Test Description			270409-4		Calc. Result	03/23/2004 1 * Limits 46.0-118.	
MSD Para Cenaphthene,	Matrix Spike Duplicate meter/Test Description Water	QC Result	QC Result Tr	270409-4 rue Value <u>O</u>	rig. Value	102 5.8 75	03/23/2004 × 1 * Limits 46.0-118. 31.0 30.0-130.	0
MSD Parameter Parame	Matrix Spike Duplicate meter/Test Description Water e, Water	QC Result 6.51292	QC Result Tr 6.90373	270409-4 rue Value 01 5.000000	rig. Value 1.38836	102 5.8 75 2.3 96	03/23/2004 % 1 * Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130.	0
MSD Parameter Pa	Matrix Spike Duplicate meter/Test Description Water e, Water ater	QC Result 6.51292 3.76090	QC Result Tr 6.90373 3.84966	270409-4 rue Value 00 5.000000 5.000000	rig. Value 1.38836	102 5.8 75 2.3 96 0.2 83	03/23/2004 1 * Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0 60.0-140.	0
MSD Paral cenaphthene, cenaphthylen nthracene, W enzo(a)anthr	Matrix Spike Duplicate meter/Test Description Water e, Water ater	QC Result 6.51292 3.76090 4.94630	QC Result Tr 6.90373 3.84966 4.95765	270409-4 rue Value 01 5.000000 5.000000	1.38836 0 0.16065	102 5.8 75 2.3 96 0.2	03/23/2004 1 * Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0	0 0 0
Paral cenaphthene, cenaphthylen nthracene, W enzo(a)anthr is(2-ethylhe	Matrix Spike Duplicate meter/Test Description Water e, Water ater acene, Water xyl)phthalate, Water halene, Water	QC Result 6.51292 3.76090 4.94630 4.12586 3.77883 3.71892	QC Result Tr 6.90373 3.84966 4.95765 4.45173 3.97167 3.05351	270409-4 rue Value 00 5.000000 5.000000 5.000000	1.38836 0 0.16065	102 5.8 75 2.3 96 0.2 83 7.6 65	03/23/2004 1 * Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0 60.0-140. 30.0 60.0-140.	0 0 0 0
Paral cenaphthene, cenaphthylen nthracene, W enzo(a)anthr is(2-ethylhe -Chloronapht	Matrix Spike Duplicate meter/Test Description Water e, Water ater acene, Water xyl)phthalate, Water halene, Water	QC Result 6.51292 3.76090 4.94630 4.12586 3.77883 3.71892 4.80024	QC Result Tr 6.90373 3.84966 4.95765 4.45173 3.97167 3.05351 4.70923	270409-4 rue Value 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000	1.38836 0 0.16065 0 0.52112	Calc. Result 102 5.8 75 2.3 96 0.2 83 7.6 65 5.0 74	* Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0 60.0-140. 30.0 60.0-140. 30.0 30.0-130.	0 0 0 0
Paral cenaphthene, cenaphthylen nthracene, Wenzo(a)anthris(2-ethylhen-Chloronaphtinrysene, Watibenzofuran,	Matrix Spike Duplicate meter/Test Description Water e, Water acene, Water xyl)phthalate, Water halene, Water er	QC Result 6.51292 3.76090 4.94630 4.12586 3.77883 3.71892 4.80024 4.74833	QC Result Tr 6.90373 3.84966 4.95765 4.45173 3.97167 3.05351 4.70923 4.75508	270409-4 rue Value 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000	1.38836 0 0.16065 0 0.52112 0 0	Tolor Result 102 5.8 75 2.3 96 0.2 83 7.6 65 5.0 74 19.7 96 1.9 90 0.1	03/23/2004 1 * Limits 46.0-118. 31.0 30.0-130. 50.0 60.0-140. 30.0 60.0-140. 30.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 50.0 50.0 50.0	0 0 0 0 0
Paral Cenaphthene, cenaphthylen hthracene, Wenzo(a)anthris(2-ethylhen-Chloronaphthylen hrysene, Watibenzofuran, i-n-butyl Ph	Matrix Spike Duplicate meter/Test Description Water e, Water acene, Water xyl)phthalate, Water halene, Water er Water thalate, Water	QC Result 6.51292 3.76090 4.94630 4.12586 3.77883 3.71892 4.80024 4.74833 4.61160	QC Result Tr 6.90373 3.84966 4.95765 4.45173 3.97167 3.05351 4.70923 4.75508 4.95292	270409-4 rue Value 01 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000	0 0.16065 0 0.52112 0 0 0.23155	Tolor Result 102 5.8 75 2.3 96 0.2 83 7.6 65 5.0 74 19.7 96 1.9 90 0.1 87 7.1	* Limits * Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0 60.0-140. 30.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0	0 0 0 0 0 0
Paral Cenaphthene, cenaphthylen hthracene, Wenzo(a)anthris(2-ethylhen-Chloronaphthylen hrysene, Watibenzofuran, i-n-butyl Phluoranthene,	Matrix Spike Duplicate meter/Test Description Water e, Water ater acene, Water xyl)phthalate, Water halene, Water er Water thalate, Water	QC Result 6.51292 3.76090 4.94630 4.12586 3.77883 3.71892 4.80024 4.74833 4.61160 5.02675	QC Result Tr 6.90373 3.84966 4.95765 4.45173 3.97167 3.05351 4.70923 4.75508 4.95292 5.27425	270409-4 rue Value 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000	0 0.16065 0 0.52112 0 0 0.23155 0.26056 0.19680	Calc. Result 102 5.8 75 2.3 96 0.2 83 7.6 65 5.0 74 19.7 96 1.9 90 0.1 87 7.1 97 4.8	* Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0 60.0-140. 30.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 50.0 50.0	
Paral cenaphthene, cenaphthylen hthracene, Wenzo(a)anthris(2-ethylhenchloronaphtinrysene, Wattibenzofuran, i-n-butyl Phluoranthene, luorene, Wattiburene, Wattibu	Matrix Spike Duplicate meter/Test Description Water e, Water ater acene, Water xyl)phthalate, Water halene, Water er Water thalate, Water Water water	QC Result 6.51292 3.76090 4.94630 4.12586 3.77883 3.71892 4.80024 4.74833 4.61160 5.02675 5.21225	QC Result Tr 6.90373 3.84966 4.95765 4.45173 3.97167 3.05351 4.70923 4.75508 4.95292 5.27425 5.59556	270409-4 rue Value 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000	0 0.16065 0 0.52112 0 0 0.23155 0.26056 0.19680 0.17701	Calc. Result 102 5.8 75 2.3 96 0.2 83 7.6 65 5.0 74 19.7 96 1.9 90 0.1 87 7.1 97 4.8 101 7.1	* Limits * Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0 60.0-140. 30.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0	
Paral Cenaphthene, cenaphthylen nthracene, Wenzo(a)anthris(2-ethylhen-Chloronaphthysene, Wathibenzofuran, i-n-butyl Phluoranthene, luorene, Wath-Methylnaphti	Matrix Spike Duplicate meter/Test Description Water e, Water acene, Water xyl)phthalate, Water halene, Water er Water thalate, Water water thalate, Water	QC Result 6.51292 3.76090 4.94630 4.12586 3.77883 3.71892 4.80024 4.74833 4.61160 5.02675 5.21225 3.78629	QC Result Tr 6.90373 3.84966 4.95765 4.45173 3.97167 3.05351 4.70923 4.75508 4.95292 5.27425 5.59556 3.23676	270409-4 rue Value 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000	0 0.16065 0 0.52112 0 0 0.23155 0.26056 0.19680 0.17701	Calc. Result 102 5.8 75 2.3 96 0.2 83 7.6 65 5.0 74 19.7 96 1.9 90 0.1 87 7.1 97 4.8 101 7.1 76 15.6	* Limits * Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0 60.0-140. 30.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0	
Parameter MSD Parame	Matrix Spike Duplicate meter/Test Description Water e, Water ater acene, Water xyl)phthalate, Water halene, Water thalate, Water Water thalate, Water Water water water Water Water Water Water	QC Result 6.51292 3.76090 4.94630 4.12586 3.77883 3.71892 4.80024 4.74833 4.61160 5.02675 5.21225 3.78629 6.66547	QC Result Tr 6.90373 3.84966 4.95765 4.45173 3.97167 3.05351 4.70923 4.75508 4.95292 5.27425 5.59556 3.23676 5.56610	270409-4 rue Value 01 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000	0 0.16065 0 0.52112 0 0 0.23155 0.26056 0.19680 0.17701 0 1.38780	Tolor Result 102 5.8 75 2.3 96 0.2 83 7.6 65 5.0 74 19.7 96 1.9 90 0.1 87 7.1 97 4.8 101 7.1 76 15.6 106 18.0	* Limits * Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0 60.0-140. 30.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0	
Paral enaphthene, enaphthylen athracene, Wenzo(a)anthr s(2-ethylhe Chloronaphti irysene, Wat benzofuran, -n-butyl Ph uoranthene, uorene, Wat	Matrix Spike Duplicate meter/Test Description Water e, Water ater acene, Water xyl)phthalate, Water halene, Water thalate, Water Water thalate, Water Water water water Water Water Water Water	QC Result 6.51292 3.76090 4.94630 4.12586 3.77883 3.71892 4.80024 4.74833 4.61160 5.02675 5.21225 3.78629	QC Result Tr 6.90373 3.84966 4.95765 4.45173 3.97167 3.05351 4.70923 4.75508 4.95292 5.27425 5.59556 3.23676	270409-4 rue Value 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000	0 0.16065 0 0.52112 0 0 0.23155 0.26056 0.19680 0.17701 0 1.38780	Calc. Result 102 5.8 75 2.3 96 0.2 83 7.6 65 5.0 74 19.7 96 1.9 90 0.1 87 7.1 97 4.8 101 7.1 76 15.6 106 18.0 71 13.7	* Limits * Limits 46.0-118. 31.0 30.0-130. 50.0 30.0-130. 50.0 60.0-140. 30.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0 30.0-130. 50.0	



Job Number.: 270409	QUALITY	CONTROL	RESULT		Date.: 04/06	/2004
CUSTOMER: ERM Southwest, Inc Houston	PROJE	CT: UPRR-HWPW-0	014419 60	ATTN:		
QC Type Description		Reag. Code	Lab I	D Dilut	ion Factor	Date Time
MSD Matrix Spike Duplicate		svs021204c	270409-4			03/23/2004 173
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits
n-Nitrosodiphenylamine, Water	4.03014	4.11035	5.000000	0	81	30.0-130.0
henanthrene, Water	4.14141	4.35245	5.000000	0	2.0 83	50.0 30.0-130.0
yrene, Water	4.93480	5.18402	5.000000	0	5.0 99	50.0 26.0-115.0
,4-Dimethylphenol, Water	2.78238	2.52253	5.000000	0	4.9 56	31.0 30.0-130.0
?-Methyl-4,6-dinitrophenol, Water	5.12943	6.14786	5.000000	0	9.8 103	50.0 30.0-130.0
	2.93516	3.24434	5.000000	0	18.1 59	50.0 10.0-80.0
-Nitrophenol, Water				_	10.0	50.0
Phenol, Water	1.93967	1.58994	5.000000	0	39 19.8	10.0-112.0 23.0
Test Method: SW-846 8260B Method Description:: Volatile Organics			: ug/	'L	Analyst	: ydy
LCS Laboratory Control Sample		VS030504E				03/18/2004 112
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	-
Benzene, Water Chlorobenzene, Water	46.8156 51.4188		50.00 50.00	ND ND	93.6 102.8	68-127 65-129
1,2-Dichloroethane, Water	53.1809		50.00 50.00	ND	106.4	65-133
thylbenzene, Water	50.1712	,				· 4/177
Methylene Chloride, Water	47.9268			ND ND	100.3 95.9	64-132 54-133
•	47.9268 49.4359		50.00 50.00	ND ND	95.9 98.9	54-133 63-127
oluene, Water			50.00	ND	95.9	54-133
Methylene Chloride, Water Toluene, Water (ylenes (total), Water LCS Laboratory Control Sample	49.4359 153.834	VS031904E	50.00 50.00	ND ND	95.9 98.9 102.6	54-133 63-127
Toluene, Water (ylenes (total), Water	49.4359 153.834	VS031904E QC Result	50.00 50.00	ND ND	95.9 98.9 102.6	54-133 63-127 37-161 03/19/2004 112
Coluene, Water (ylenes (total), Water LCS Laboratory Control Sample Parameter/Test Description Benzene, Water	49.4359 153.834 QC Result 48.4764	<u> </u>	50.00 50.00 150.0 True Value	ND ND ND Orig. Value	95.9 98.9 102.6 Calc. Result	54-133 63-127 37-161 03/19/2004 112 : * Limits 68-127
Coluene, Water (ylenes (total), Water LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water	49.4359 153.834 QC Result 48.4764 50.3633	QC Result	50.00 50.00 150.0 True Value 50.00 50.00	ND ND ND Orig. Value	95.9 98.9 102.6 Calc. Result 97.0 100.7	54-133 63-127 37-161 03/19/2004 112 : * Limits 68-127 65-129
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water 1,2-Dichloroethane, Water	49.4359 153.834 QC Result 48.4764	QC Result	50.00 50.00 150.0 True Value	ND ND ND Orig. Value	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1	54-133 63-127 37-161 03/19/2004 112 : * Limits 68-127
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water 1,2-Dichloroethane, Water Cthylbenzene, Water Methylene Chloride, Water	49.4359 153.834 QC Result 48.4764 50.3633 53.0376 50.0397 49.1408	QC Result	50.00 50.00 150.0 True Value 50.00 50.00 50.00 50.00 50.00	ND ND ND Orig. Value ND ND ND ND 3.6322	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1 6 98.3	54-133 63-127 37-161 03/19/2004 112 * * Limits 68-127 65-129 65-133 64-132 54-133
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water 1,2-Dichloroethane, Water Cithylbenzene, Water Bethylene Chloride, Water Coluene, Water	49.4359 153.834 QC Result 48.4764 50.3633 53.0376 50.0397 49.1408 48.7155	QC Result	50.00 50.00 150.0 True Value 50.00 50.00 50.00 50.00 50.00 50.00	ND ND ND Orig. Value ND ND ND ND ND ND	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1 6 98.3 97.4	54-133 63-127 37-161 03/19/2004 112 : * Limits 68-127 65-129 65-133 64-132 54-133 63-127
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water 1,2-Dichloroethane, Water Ethylbenzene, Water Methylene Chloride, Water Toluene, Water	49.4359 153.834 QC Result 48.4764 50.3633 53.0376 50.0397 49.1408	QC Result	50.00 50.00 150.0 True Value 50.00 50.00 50.00 50.00 50.00	ND ND ND Orig. Value ND ND ND ND 3.6322	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1 6 98.3	54-133 63-127 37-161 03/19/2004 112 * * Limits 68-127 65-129 65-133 64-132 54-133
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water 1,2-Dichloroethane, Water Ethylbenzene, Water Methylene Chloride, Water Toluene, Water	49.4359 153.834 QC Result 48.4764 50.3633 53.0376 50.0397 49.1408 48.7155	QC Result	50.00 50.00 150.0 True Value 50.00 50.00 50.00 50.00 50.00 50.00	ND ND ND Orig. Value ND ND ND ND ND ND	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1 6 98.3 97.4 100.0	54-133 63-127 37-161 03/19/2004 112 : * Limits 68-127 65-129 65-133 64-132 54-133 63-127
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water 1,2-Dichloroethane, Water Ethylbenzene, Water Bethylene Chloride, Water Foluene, Water Sylenes (total), Water	49.4359 153.834 QC Result 48.4764 50.3633 53.0376 50.0397 49.1408 48.7155	QC Result	50.00 50.00 150.0 True Value 50.00 50.00 50.00 50.00 50.00 50.00	ND ND ND Orig. Value ND ND ND ND ND ND	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1 6 98.3 97.4 100.0	54-133 63-127 37-161 03/19/2004 112 * Limits 68-127 65-129 65-133 64-132 54-133 63-127 37-161
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water 1,2-Dichloroethane, Water Ethylbenzene, Water Methylene Chloride, Water Foluene, Water Kylenes (total), Water MB Method Blank Parameter/Test Description Benzene, Water	49.4359 153.834 QC Result 48.4764 50.3633 53.0376 50.0397 49.1408 48.7155 150.042 QC Result	QC Result	50.00 50.00 150.0 True Value 50.00 50.00 50.00 50.00 50.00 150.0	ND ND ND Orig. Value ND ND ND ND ND ND ND ND ND	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1 6 98.3 97.4 100.0	54-133 63-127 37-161 03/19/2004 112 * Limits 68-127 65-129 65-133 64-132 54-133 63-127 37-161
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water chlorobenzene, Water thylbenzene, Water sethylene Chloride, Water foluene, Water (ylenes (total), Water MB Method Blank Parameter/Test Description Benzene, Water Chlorobenzene, Water	49.4359 153.834 QC Result 48.4764 50.3633 53.0376 50.0397 49.1408 48.7155 150.042	QC Result	50.00 50.00 150.0 True Value 50.00 50.00 50.00 50.00 50.00 150.0	ND ND ND Orig. Value ND ND ND ND ND ND ND ND ND	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1 6 98.3 97.4 100.0	54-133 63-127 37-161 03/19/2004 112 * Limits 68-127 65-129 65-133 64-132 54-133 63-127 37-161
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water 1,2-Dichloroethane, Water Ethylbenzene, Water Goluene, Water (ylenes (total), Water MB Method Blank Parameter/Test Description	49.4359 153.834 QC Result 48.4764 50.3633 53.0376 50.0397 49.1408 48.7155 150.042 QC Result	QC Result	50.00 50.00 150.0 True Value 50.00 50.00 50.00 50.00 50.00 150.0	ND ND ND Orig. Value ND ND ND ND ND ND ND ND ND	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1 6 98.3 97.4 100.0	54-133 63-127 37-161 03/19/2004 112 * Limits 68-127 65-129 65-133 64-132 54-133 63-127 37-161
LCS Laboratory Control Sample Parameter/Test Description Benzene, Water Chlorobenzene, Water Ltylbenzene, Water Ethylene Chloride, Water Goluene, Water (ylenes (total), Water MB Method Blank Parameter/Test Description Benzene, Water Chlorobenzene, Water MB Method Blank Parameter/Test Description Benzene, Water Chlorobenzene, Water Chlorobenzene, Water	49.4359 153.834 QC Result 48.4764 50.3633 53.0376 50.0397 49.1408 48.7155 150.042 QC Result	QC Result	50.00 50.00 150.0 True Value 50.00 50.00 50.00 50.00 50.00 150.0	ND ND ND Value ND ND ND ND ND ND ND ND ND ND ND ND ND N	95.9 98.9 102.6 Calc. Result 97.0 100.7 106.1 100.1 6 98.3 97.4 100.0	54-133 63-127 37-161 03/19/2004 112 : * Limits 68-127 65-129 65-133 64-132 54-133 63-127 37-161 03/18/2004 13

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Job Nur	nber.: 270409	QUALITY	CONTROL	RESUL ⁻		Date.: 04/0	6/2004	
CUSTOMER: ERM South	west, Inc Houston	PROJEC	CT: UPRR-HWPW-0	0014419 60	ATTN:			
QC Type	Description	· · · · · · · · · · · · · · · · · · ·	Reag. Code	e Lab	ID Dilut	ion Factor	Date Tir	пе
MB Method	Blank		VS030504C				03/18/2004 13	318
Parameter/Tes	st Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits	F
thylene Chloride, Walene, Water luene, (total), Water		ND ND ND	:					
MB Method	Blank		VS031904C				03/19/2004 17	222
Parameter/Te	st Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits	F
nzene, Water lorobenzene, Water 2-Dichloroethane, Wa hylbenzene, Water thylene Chloride, Wa luene, Water		ND ND ND ND 3.63226 ND						
lenes (total), Water	Γ	ND						
MS Matrix	Spike		VS030504E	270152-			03/18/2004 10	
MS Matrix	Spike st Description	QC Result 51.1606 46.1828 52.1319	VS030504E	270152- True Value 50.00 50.00 50.00	1 20.00 Orig. Value 4.68733 ND ND	Calc. Resul		
MS Matrix Parameter/Tes nzene, TCLP lorobenzene, TCLP 2-Dichloroethane, TG	Spike st Description CLP	QC Result 51.1606 46.1828		True Value 50.00 50.00	Orig. Value 4.68733 ND ND	Calc. Resul 3 93 92 104	t * Limits 63-123 61-126	F
Parameter/Tes nzene, TCLP lorobenzene, TCLP 2-Dichloroethane, TC	Spike st Description CLP	QC Result 51.1606 46.1828	QC Result	True Value 50.00 50.00 50.00	Orig. Value 4.68733 ND ND	Calc. Resul 3 93 92 104	t * Limits 63-123 61-126 66-135	F
Parameter/Tes rozene, TCLP lorobenzene, TCLP 2-Dichloroethane, TCLP MS Matrix	Spike st Description CLP Spike st Description	QC Result 51.1606 46.1828 52.1319	QC Result VS031904E	True Value 50.00 50.00 50.00 269995-	Orig. Value 4.68733 ND ND 1 20.00	Calc. Resul 3 93 92 104	t * Limits 63-123 61-126 66-135	31 <i>6</i>
Parameter/Tes nzene, TCLP lorobenzene, TCLP 2-Dichloroethane, TG MS Matrix Parameter/Tes nzene, TCLP lorobenzene, TCLP 2-Dichloroethane, TG	Spike st Description CLP Spike st Description	QC Result 51.1606 46.1828 52.1319 QC Result 52.6688 53.8819	QC Result VS031904E	True Value 50.00 50.00 50.00 269995- True Value 50.00 50.00	Orig. Value 4.68733 ND ND 1 20.00 Orig. Value ND ND ND	Calc. Resul 3 93 92 104 0000 Calc. Resul 105 108 117	t * Limits 63-123 61-126 66-135 03/19/2004 11 t * Limits 63-123 61-126	316 8
Parameter/Ter nzene, TCLP lorobenzene, TCLP 2-Dichloroethane, TC MS Matrix Parameter/Ter nzene, TCLP lorobenzene, TCLP 2-Dichloroethane, TC MSD Matrix	Spike st Description CLP Spike st Description	QC Result 51.1606 46.1828 52.1319 QC Result 52.6688 53.8819	QC Result VS031904E QC Result	True Value 50.00 50.00 50.00 269995- True Value 50.00 50.00 50.00	Orig. Value 4.68733 ND ND 1 20.00 Orig. Value ND ND ND	Calc. Resul 3 93 92 104 0000 Calc. Resul 105 108 117	t * Limits 63-123 61-126 66-135 03/19/2004 13 t * Limits 63-123 61-126 66-135 03/18/2004 13	316 8
Parameter/Temperer, TCLP lorobenzene, TCLP 2-Dichloroethane, TCLP MS Matrix Parameter/Temperer, TCLP lorobenzene, TCLP 2-Dichloroethane, TCLP MSD Matrix	Spike st Description CLP Spike st Description CLP Spike	QC Result 51.1606 46.1828 52.1319 QC Result 52.6688 53.8819 58.4475	QC Result VS031904E QC Result VS030504E	True Value 50.00 50.00 50.00 269995- True Value 50.00 50.00 50.00 270152-	Orig. Value 4.68733 ND ND 1 20.00 Orig. Value ND ND ND 1 20.00	Calc. Resul 3 93 92 104 0000 Calc. Resul 105 108 117 0000 Calc. Resul	t * Limits 63-123 61-126 66-135 03/19/2004 11 t * Limits 63-123 61-126 66-135 03/18/2004 11 t * Limits 63.2-123.3	31«
Parameter/Tes nzene, TCLP lorobenzene, TCLP 2-Dichloroethane, TC MS Matrix Parameter/Tes nzene, TCLP lorobenzene, TCLP 2-Dichloroethane, TCLP 2-Dichloroethane, TCLP 2-Dichloroethane, TCLP 2-Dichloroethane, TCLP MSD Matrix Parameter/Tes	Spike st Description CLP Spike st Description CLP Spike Duplicate st Description	QC Result 51.1606 46.1828 52.1319 QC Result 52.6688 53.8819 58.4475	QC Result VS031904E QC Result VS030504E QC Result	True Value 50.00 50.00 50.00 269995- True Value 50.00 50.00 50.00 50.00 True Value	Orig. Value 4.68733 ND ND 1 20.00 Orig. Value ND ND ND Orig. Value	Calc. Resul 3 93 92 104 0000 Calc. Resul 105 108 117	t * Limits 63-123 61-126 66-135 03/19/2004 1: t * Limits 63-123 61-126 66-135 03/18/2004 1: t * Limits	316 316 727 727 8

GARLES SANTE



Job Number.: 270409	QUALITY	CONTRO	L RESUL		t Date.: 04/0	6/2004
CUSTOMER: ERM Southwest, Inc Houston	n PROJ	ECT: UPRR-HWPW-	0014419 60	ATTN:		
QC Type Description	1	Reag. Cod	e Lab	ID Dilu	tion Factor	Date Time
MSD Matrix Spike Duplicate		VS031904E	269995-	1 20.0	0000	03/19/2004 1343
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits /
Benzene, TCLP	52.0050	52.6688	50.00	ND	104	63.2-123.2
Chlorobenzene, TCLP	52.8504	53.8819	50.00	ND	1.3 106	30.0 61.2-125.8
,2-Dichloroethane, TCLP	58.7398	58.4475	50.00	ND	1.9 117 0.5	30.0 66.4-135.0 30.0
PB Prep. Blank		VS031904C		20.0	0000	03/19/2004 115
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits
Benzene, TCLP Chlorobenzene, TCLP 1,2-Dichloroethane, TCLP Ethylbenzene, TCLP Methylene Chloride, TCLP Toluene, TCLP Kylenes (total), TCLP	ND ND ND ND ND ND ND					
						•

Page 62 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.



		: Volatile Organic : 96172	s			d Code Matrix	.: 8260 .: Water		Prep Batch: Equipment Code:	
Lab ID	DT	Sample ID			Date	12DCED	BRFLBE	DBRFLM	TOLD8	
9617221 9617221 270409- 2 270409- 3 270409- 5 270409- 6 270409- 7 270409- 10 270409- 11 270409- 12 270409- 13 270409- 13 270409- 13 270409- 13 270409- 14 96172221	MB LCS MB	MW-9-1SA04 FB-031504-1SA04 MW-4-1SA04 MW-11A-1SA04 MW-11B-1SA04 MW-10B-1SA04 TB01-1SA04 MW-10A-1SA04 MW-7-1SA04 P-10-1SA04 P-10-1SA04 W-8-1SA04 MW-8-1SA04			3/18/2004 3/18/2004 3/18/2004 3/18/2004 3/18/2004 3/18/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004 3/19/2004	112.3 117.7 109.7 110.5 107.6 110.7 110.8 108.1 108.7 109.6 107.1 110.0 111.9 110.7 107.1 111.4 113.8 117.3	100.8 102.9 99.9 93.2 103.0 96.1 95.1 95.2 95.3 95.4 93.3 95.1 94.8 96.7 97.6 95.3 101.0		110.4 110.9 108.8 109.2 107.3 108.9 104.0 104.3 105.8 106.3 105.2 106.0 105.6 105.5 108.5 107.6 110.1	
II .	4-Bromof Dibromof Toluene-	: Volatile Organic	s	70 - 130 70 - 130 70 - 130 70 - 130		d Code			Prep Batch:	
Lab ID		Sample ID			Date	Matrix 12DCED		DBRFLM	Equipment Code:	
9602321 269995- 1 269995- 1 270152- 1	PB MS MSD MSD MSD	DELISTING WASTE STR DELISTING WASTE STR ASAP #1 ASAP #1		. (03/19/2004 03/19/2004 03/19/2004 03/18/2004 03/18/2004	114.8 114.5 115.9 110.2	97.7 98.7 99.0 97.2 96.4	115.7 121.8 118.3	109.1 108.8 107.7 105.2 106.4	
12DCED BRFLBE DBRFLM TOLD8	4-Bromof	loroethane-d4 luorobenzene luoromethane d8		70 - 130 70 - 130 70 - 130 70 - 130						



SURROGATE RECOVERIES REPORT

Job Number.: 270409

Report Date.: 04/06/2004

CUSTOMER: 483648

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

	od h(s)		: Semivolatile 0 : 96428 96568	rgani	ics,	Low L	eve	i			d Code Matrix				tch: ent Code:	96166 EGCMS07	
Lab ID	D	T	Sample ID		• -				Date		246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14	
			MW-9-1SA04 FB-031504-1SA04 MW-4-1SA04 MW-11A-1SA04 MW-11A-1SA04 MW-11B-1SA04 MW-10B-1SA04 MW-10B-1SA04 MW-10B-1SA04 MW-10A-1SA04 P-10-1SA04 P-10D-1SA04 P-10D-1SA04 P-10D-1SA04 P-10D-1SA04 MW-8-1SA04 MW-8-1SA04						03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2 03/23/2	004 0004 0004 0004 0004 0004 0004 0004	123.0 111.5 139.6K 119.1 133.4K 100.2 129.7K 121.5 115.9 120.2 148.1K 120.4 119.5 39.0 0.0d 119.5 116.7 127.1K 117.7	75.6 86.4 83.7 82.8 68.6 85.1 76.4 86.9 81.9 58.6 69.4 56.7 75.7 78.0 42.8d 69.1 52.1 91.8 81.8	42.3 34.2 35.5 47.8 31.4 45.0 53.7 37.5 40.2 31.5 32.4 33.6 33.8 41.3 39.2 40.1 44.6 50.9 46.4	76.8 89.4 86.0 74.7 65.2 84.8 77.8 83.8 87.7 84.2 83.4 78.3 82.0 80.7 86.1 80.1 84.8 86.9 81.0	25.8 30.4 24.6 36.5 30.8 40.4 38.4 21.2 23.8 23.2 20.4 20.8 24.7 26.1 25.5 22.4 21.6 37.0 33.5	93.8 105.3 99.0 105.5 106.5 101.0 99.8 94.0 92.7 104.2 93.8 96.1 103.6 81.4 92.8 109.9 101.1 100.4	
Z46TBP 2FLUBP 2FLUPH NITRD5 PHEND6 TERD14	2,4,6- 2-Fluc 2-Fluc	Tr oro oro en						10 - 13 43 - 1 21 - 13 35 - 1 10 - 94 33 - 1	23 16 00 14								



Fig. 18 Stage SURROGATE RECOVERIES REPORT Job Number.: 270409 Report Date.: 04/06/2004 CUSTOMER: 483648 PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young Method.....: Semivolatile Organics - SIM Analysis Method Code...: 8270SI Prep Batch...: 96167 Batch(s)..... 96918 Test Matrix...: Water Equipment Code: EGCMS08 Lab ID DT Sample ID Date 246TBP 2FLUBP NITRD5 TERD14 03/26/2004 93.3 76.5 74.5 86.9 270409-MW-9-1SA04 03/26/2004 56.0 86.6 89.5 89.4 270409-FB-031504-1SA04 2 94.2 85.1 03/26/2004 86.6 270409-3 86.3 MW-4-1SA04 270409-MW-11A-1SA04 03/26/2004 106.5 70.1 75.4 91.7 97.4 03/26/2004 77.8 73.4 89.0 270409-MW-11B-1SA04 5 270409-5 MS MW-11B-1SA04 03/26/2004 92.0 73.3 74.4 81.6 MW-11B-1SA04 81.2 270409-5 MSD 03/26/2004 71.0 74.5 71.4 03/26/2004 83.8 83.1 95.3 270409-MW-10B-1SA04 74.7 270409-03/26/2004 95.1 82.1 87.7 84.3 7 MW-10BD-1SA04 65.9 101.1 85.1 03/26/2004 84.3 270409-9 MW-10A-1SA04 270409- 10 MW-7-1SA04 03/26/2004 79.4 57.7 86.2 80.9 79.2 03/26/2004 88.9 64.4 76.7 270409- 11 P-10-1SA04 87.8 83.3 83.9 84.2 270409- 12 P-10D-1SA04 03/26/2004 MW-8-1SA04 03/26/2004 95.0 63.9 80.2 87.0 270409- 13 89.4 87.3 03/27/2004 88.0 270409- 14 52.5 MW-5-1SA04 961671--21 LCS 03/26/2004 82.3 79.3 80.6 82.8 03/26/2004 82.5 76.8 77.4 91.8 961671--21 MB Limits Test Description Test 10 - 123 246TBP 2,4,6-Tribromophenol 43 - 116 2FLUBP 2-Fluorobiphenyl 35 - 114 33 - 141 Nitrobenzene-d5 NITRD5 TERD14 Terphenyl-d14



QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 04/06/2004

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 3) According to 40CFR Part 136.3, pH, Chlorine Residual, and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field,(e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.
- 4) For all USACE projects, the QC limits are based on "mean +/- 2 sigma", which are the warning limits.

General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reported as the final result.
- m-Cresol and p-Cresol co-elute. The result of the two is reported as either m&p-cresol or as p-cresol.
- m-Xylene and p-Xylene co-elute. The result of the two is reported as m.p-Xylene.
- N-Nitrosodiphenylamine decomposes in the gas chromatograph inlet forming dipheylamine and, consequently, may be detected as diphenylamine.
- Methylene Chloride and Acetone are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
- Trimethysilyl(Diazomethane) is used to esterify acid herbicides in Method SW-846 8151A.
- For Inorganic analyses, duplicate QC limits are determined as follows: If the sample result is less than or equal to 5 times the reporting limit, the RPD limit is equal to the reporting limit. If the sample result is greater than 5 times the reporting limit, the RPD limit is the method defined RPD.

Explanation of Qualifiers:

- U This qualifier indicates that the analyte was analyzed but not detected.
- J (Organics only) This qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- B (Inorganics only) This Qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- N (Organics only) This flag indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic charachterization of a TIC, such as "chlorinated hydrocarbon", the "N" flag is not used.

Explanation of General QC Outliers:

- A Matrix interference present in sample.
- a MS/MSD analyses yielded comparable poor recoveries, indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recoveries.
- b Target analyte was found in the method blank.
- M QC sample analysis yielded recoveries outside QC acceptance criteria. This sample was reanalyzed.
- L LCS analysis yielded high recoveries, indicating a potential high bias. No target analytes were observed above the RL in the associated samples.
- G Marginal outlier within 1% of acceptance criteria.
- r RPD value is outside method acceptance criteria.
- C Poor RPD values observed due to the non-homogenous nature of the sample.
- O Sample required dilution due to matrix interference.
- D Sample reported from a dilution.
- d Spike and/or surrogate diluted.
- P The recovery of this analyte is outside default QC limits. The data is accepted and will be used to calculate in-house statistical limits.
- E The reported concentration exceeds the instrument calibration.
- F The analyte is outside QC limits. The sample data is accepted since this analyte is not reported in associated samples.
- H Continuing Calibration Verification (CCV) standard is not associated with the samples reported.
- q See the subcontract final report for qualifier explanation.



QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 04/06/2004

W -	The MS/MSD	recoveries are outside QC acceptance cr	riteria because the amount spiked	l is much less than
	the amount	found in the sample.		•

K - High recovery will not affect the quality of reported results.

Z - See case narrative.

Explanation of Organic QC Outliers:

- e Method blank analysis yielded phthalate concentrations above the RL. Phthlates are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
- Sample reanalyzed/reextracted due to poor surrogate recovery. Reanalysis confirmed original analysis indicating a possible matrix interference.

Sample analysis yielded poor surrogate recovery.

- R The RPD between the two GC columns is greater than 40% and no anomalies are present. The higher result is reported as per EPA Method 8000B.
- I The RPD between the two GC columns is greater than 40% and anomalies are present. The lower of the two results has been reported.

X - Gaseous compound. In-house QC limits are advisory.

- Y Ketone compounds have poor purge efficiency. In-house QC limits are advisory.
- f Surrogate not associated with reported analytes.

Explanation of Inorganic QC Outliers:

- Q Method blank analysis yielded target analytes above the RL. Associated sample results are greater than 10 times the concentrations observed in the method blank.
- The RPD control limit for sample results less than 5 times the RL is +/- the RL value. Sample and duplicate results are within method acceptance criteria.

e - Serial dilution failed due to matrix interference.

- g Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike recovery being below 85 percent. The correlation coefficent for the MSA is greater than or equal to 0.995.
- BOD/cBOD seed value is not within method acceptance criteria. Due to the nature of the test method, the sample cannot be reanalyzed.
- BOD/cBOD LCS value is not within method acceptance criteria. Due to the nature of the test method, sample cannot be reanalyzed.
- Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike recovery being below 85 percent. The correlation coefficient for the MSA is less than 0.995.

Abbreviations:

- Designation given to identify a specific extraction, digestion, preparation, or analysis set. Batch

CCV - Continuing Calibration Verification

- Low level standard check - GFAA, Mercury - Low level standard check - ICP CRA

CRI

Dil Fac - Dilution Factor - Secondary dilution analysis

- Detection Limit Factor DLFac

- Extraction Blank (TCLP, SPLP, etc.) EB

ICAL - Initial Calibration

- Injtial Calibration Blank ICB ICV

- Initial Calibration Verification

- Interference Check Sample A - ICP ISA

- Interference Check Sample B - ICP ISB LCD

- Laboratory Control Duplicate - Laboratory Control Sample LCS

- Method Blank MB

MD Method Duplicate

MDL - Method Detection Limit

MS - Matrix Spike



QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 04/06/2004

MSD

- Matrix Spike Duplicate

ND PB

- Not Detected - Preparation Blank

PREPF RI.

- Preparation Factor - Reporting Limit

RPD

- Relative Percent Difference

RRF

- Relative Response Factor

RΤ

DU

- Retention Time - Duplicate

Method References:

(1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.

(2) EPA 600/R-94-111 Methods for the Determination of MEtals in Environmental Samples, Supplement I, May

(3) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1993; Update IIB, January 1995; Update III, December 1996, Update IVA January 1998, Update IVB November 2000.

(4) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989), 18th Edition (1992), 19th Edition (1995), 20th Edition (1998).

(5) HACH Water Analysis Handbook 3rd Edition (1997).

(6) Federal Register, July 1, 1990 (40 CFR Part 136 Appendix A).

(7) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.

(8) ASTM Annual Book of Methods (Various Years)

(9) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.



Job	LABORATOR Number: 270409		RONI	. L E	Date: (04/06/2004		
CUSTOMER: ERM Sou	thwest, Inc Houston PROJE	CT: UPRR-H	WPW-0014	419 60	J	ATTN: Chris Yo	nug	
.ab ID: 270409-1 METHOD	Client ID: MW-9-1SA04 DESCRIPTION		cvd: 03/ BATCH#	17/2004 PREP BT		Date: 03/15/2		DILUTIO
•	Data Package Validation Electronic Data Deliverables	1 1	97333			03/06/2004	0000	
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	96167			03/18/2004	1400	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	96166		Ī	03/18/2004	1400	
	GC/MS Semi-Volatile Package Production	1	96919			03/31/2004	1800	
014 024 00700	GC/MS Volatiles Data Package Production	1	96227			03/22/2004	1500	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	96918	96167		03/26/2004	1840	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	96568	96166	*	03/23/2004	1801	1.00000
SW-846 8260B	Volatile Organics	1	96172			03/18/2004	2126	1.00000
ab ID: 270409-2	Client ID: FB-031504-1SA04		cvd: 03/	-		Date: 03/15/20		
METHOD	DESCRIPTION			PREP BT	#(S)	DATE/TIME A		DILUTIO
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	96167			03/18/2004	1400	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	96166	04147		03/18/2004	1400	1 00000
SW-846 8270C SW-846 8270C	Semivolatile Organics - SIM Analysis Semivolatile Organics, Low Level	1	96918 96568	96167		03/26/2004 03/23/2004	1910 1831	1.00000
SW-846 8260B	Volatile Organics	i	96172	90 100	•	03/19/2004	1624	1.00000
ab ID: 270409-3	Client ID: MW-4-1SA04	Date Re	cvd: 03/	17/2004	Samole	Date: 03/16/2	004	
METHOD	DESCRIPTION			PREP BT		DATE/TIME A		DILUTIO
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	96167			03/18/2004	1400	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	96166			03/18/2004	1400	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	96918	96167		03/26/2004	1939	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	96568	96166		03/23/2004	1900	1.00000
SW-846 8260B	Volatile Organics	1	96172			03/18/2004	2154	1.00000
ab ID: 270409-4	Client ID: MW-11A-1SA04	Date Re	cvd: 03/	17/2004	Sample	Date: 03/16/2	004	5. <u>2</u>
METHOD	DESCRIPTION	RUN#		PREP BT	#(S)	DATE/TIME A		DILUTIO
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	96167		,	03/18/2004	1400	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	96166			03/18/2004	1400	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	96918	96167		03/26/2004	2008	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	96568	96166		03/23/2004	1631	1.00000
SW-846 8260B	Volatile Organics	1	96172		:	03/18/2004	2221	1.00000
ab ID: 270409-5	Client ID: MW-11B-1SA04		cvd: 03/	-		Date: 03/16/2		S.
METHOD	DESCRIPTION Extraction (Sep. Funnel) SVOC - SIM	1 KUN#	96167	PREP BT	#(5)	DATE/TIME AI 03/18/2004	1400	DILUTIO
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	96166			03/18/2004	1400	
SW-846 3510C SW-846 8270C	Semivolatile Organics - SIM Analysis	i	96918	96167		03/26/2004	1712	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	i	96568	96166		03/23/2004		1.00000
SW-846 8260B	Volatile Organics	i	96172	70100		03/19/2004	1718	1.00000
ab ID: 270409-6	Client ID: MW-10B-1SA04	Date Re	cvd: 03/	17/2004	Sample	Date: 03/16/2	004	
METHOD	DESCRIPTION			PREP BT		DATE/TIME A		DILUTIO
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	96167		4.	03/18/2004	1400	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	96166			03/18/2004	1400	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1		96167		03/26/2004	2037	1.00000
sw-846 8270c	Semivolatile Organics, Low Level	1	96568	96166		03/23/2004	2000	1.00000
SW-846 8260B	Volatile Organics	1	96172			03/19/2004	1745	1.00000
ab ID: 270409-7	Client ID: MW-10BD-1SA04					Date: 03/16/2	004	
METHOD	DESCRIPTION			PREP BT	#(S)	DATE/TIME A		DILUTIO
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	96167			03/18/2004	1400	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1 1	96166		•	03/18/2004	1400	
SW-846 8270C	Semivolatile Organics - SIM Analysis			96167		03/26/2004	2107	1.00000



	thwest, Inc Houston PROJEC						
ab ID: 270409-7		CT: UPRR-	WPW-0014	419 60	A	TTN: Chris Young	
METHOD	Client ID: MW-10BD-1SA04 DESCRIPTION	Date Re	ecvd: 03/ BATCH#			Date: 03/16/2004 DATE/TIME ANALYZED	DILUTION
SW-846 8270C SW-846 8260B	Semivolatile Organics, Low Level Volatile Organics	1 1	96568 96172	96166		03/23/2004 2030 03/19/2004 1812	1.00000 1.00000
ab ID: 270409-8	Client ID: TB01-1SA04				•	Date: 03/16/2004	
METHOD SW-846 8260B	DESCRIPTION Volatile Organics	1 1	BATCH# 96172	PREP BI	#(5)	DATE/TIME ANALYZED 03/19/2004 1651	DILUTION 1.00000
ab ID: 270409-9	Client ID: MW-10A-1SA04		ecvd: 03/			Date: 03/16/2004	BILLITION
METHOD SW-846 3510C	DESCRIPTION Extraction (Sep. Funnel) SVOC - SIM	1	BATCH# 96167	PKEP BI	#(5)	DATE/TIME ANALYZED 03/18/2004 1400	DILUTION
SW-846 3510C SW-846 8270C	Extraction (Sep. Funnel) SVOC Low Level Semivolatile Organics - SIM Analysis	1	96166 96918	96167		03/18/2004 1400 03/26/2004 2136	1.00000
SW-846 8270C	Semivolatile Organics - Sim Analysis Semivolatile Organics, Low Level	1	96568	96166		03/23/2004 2100	1.00000
SW-846 8260B	Volatile Organics	i	96172	,0,00		03/19/2004 1839	1.00000
ab ID: 270409-10			ecvd: 03/			Date: 03/16/2004	
METHOD SW-846 3510C	DESCRIPTION Extraction (Sep. Funnel) SVOC - SIM	RUN#	BATCH# 96167	PKEP BI	#(5)	DATE/TIME ANALYZED 03/18/2004 1400	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM Extraction (Sep. Funnel) SVOC Low Level	1	96166			03/18/2004 1400	
SW-846 8270C	Semivolatile Organics - SIM Analysis	i	96918	96167		03/26/2004 2205	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	i	96568	96166		03/23/2004 2130	1.00000
SW-846 8260B	Volatile Organics	1	96172			03/19/2004 1906	1.00000
ab ID: 270409-11			ecvd: 03/		•	Date: 03/16/2004	B. 7.1 . 1
METHOD	DESCRIPTION		BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3510C SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM Extraction (Sep. Funnel) SVOC Low Level	1 1	96167 96166			03/18/2004 1400 03/18/2004 1400	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	96918	96167		03/16/2004 1400 03/26/2004 2235	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	96568	96166		03/23/2004 2200	1.00000
SW-846 8260B	Volatile Organics	1	96172			03/19/2004 1933	1.00000
ab ID: 270409-12	Client ID: P-10D-1SA04	Date Re	ecvd: 03/	17/2004	Sample	Date: 03/16/2004	
METHOD	DESCRIPTION	_	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	96167			03/18/2004 1400	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	96166	041/7		03/18/2004 1400	1 00000
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	96918 96568	96167 96166		03/26/2004 2304 03/23/2004 2230	1.00000
SW-846 8270C SW-846 8270C	Semivolatile Organics, Low Level Semivolatile Organics, Low Level	1		96166		03/23/2004 2230 03/24/2004 1856	5.00000
SW-846 8270C	Semivolatile Organics, Low Level	i	96568	96166		03/24/2004 1926	20.0000
SW-846 8260B	Volatile Organics	i	96172			03/19/2004 2000	1.00000
ab ID: 270409-13			ecvd: 03/			Date: 03/16/2004	
METHOD	DESCRIPTION		BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3510C .	Extraction (Sep. Funnel) SVOC - SIM	1	96167			03/18/2004 1400	
SW-846 3510C SW-846 8270C	Extraction (Sep. Funnel) SVOC Low Level Semivolatile Organics - SIM Analysis	1 1	96166 96918	96167		03/18/2004 1400 03/26/2004 2333	1.00000
SW-846 8270C	Semivolatile Organics - SIM Analysis Semivolatile Organics, Low Level	1	96568	96166		03/23/2004 2300	1.00000
SW-846 8260B	Volatile Organics	i	96172			03/19/2004 2027	1.00000
ab ID: 270409-14			ecvd: 03/			Date: 03/16/2004	
METHOD	DESCRIPTION		BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	96167			03/18/2004 1400	
SW-846 3510C SW-846 8270C	Extraction (Sep. Funnel) SVOC Low Level Semivolatile Organics - SIM Analysis	1	96166 96918	96167	•	03/18/2004 1400	1 00000
SW-846 8270C	Semivolatile Organics - Sim Analysis Semivolatile Organics, Low Level	1	96568	96166		03/27/2004 0003 03/23/2004 2330	1.00000
		•	, 5,500	,		-0,00,2004 2000	



\$180 900

Job	Number: 270409	LABORATORY	CHRONI	CLE	Date: (04/06/2004		· · · · · · · · · · · · · · · · · · ·
CUSTOMER: ERM Sout	thwest, Inc Houston	PROJECT:	UPRR-HWPW-0014	4419 60	,	ATTN: Chris You	ing	
Lab ID: 270409-14 METHOD SW-846 8260B	Client ID: MW-5-1SA04 DESCRIPTION Volatile Organics		Date Recvd: 03, RUN# BATCH# 1 96172	/17/2004 PREP BT	Sample #(S)	Date: 03/16/20 DATE/TIME AN 03/19/2004	004 NALYZED 2054	DILUTION 1.00000
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								•
						•		

ANALYTICAL REPORT

JOB NUMBER: 270473

Prepared For:

ERM Southwest, Inc.- Houston 15810 Park Ten Place Suite 300 Houston, TX 77084

Attention: Chris Young

Date: 04/07/2004

Jkudhadi Signature

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail:

04/08/04

Date

Severn Trent Laboratories 6310 Rothway Drive Houston, TX 77040

PHONE: (713) 690-4444

TOTAL NO. OF PAGES _______

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04/07/2004

Chris Young
ERM Southwest, Inc.- Houston
15810 Park Ten Place
Suite 300
Houston, TX 77084

Project: UPRR-HWPW-0014419/60

Project No. : 270473
Date Received : 03/18/2004
STL Job : 270473

Dear Chris Young:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

1. MW-3-1SA04

3. MW-01A-1SA04

5. P-11-1SA04

7. P-11 MSD-1SA04

9. TB02-1SA04

2. MW-2-1SA04

4. P-12-1SA04

6. P-11 MS-1SA04

8. FB-031704-1SA04

All holding times were met for the tests performed on these samples.

Enclosed, please find the Quality Control Summary. All quality control results for the QC batch that are applicable to the sample(s) are acceptable except as noted in the QC batch reports.

The test results in this report meet all NELAP requirements for STL Houston's NELAP accredited parameters. Any exceptions to NELAP requirements will be noted and included in a case narrative as a part of this report.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Severn-Trent Laboratories to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

Sincerely,

Sachin G. Kudchadkar Project Manager



Table 1 Cross-Reference Field Sample Identifications and Laboratory Identifications

Field Identification * *	EPA Sample Number	Laboratory Identification	8260B	8270C	Comment
MW-3-1SA04	MW-3-1SA04	270473-1	X	Х	301-101-101-101-101-101-101-101-101-101-
MW-2-1SA04	MW-2-1SA04	270473-2	X	х	
MW-01A-1SA04	MW-01A-1SA04	270473-3	Х	Х	
P-12-1SA04	P-12-1SA04	270473-4	Х	х	
P-11-1SA04	P-11-1SA04	270473-5	Х	Χ.	
P-11MS-1SA04	P-11MS-1SA04	270473-6	Х	· X	Matrix Spike of sample P-11-1SA04
P-11MSD-1SA04	P-11MSD-1SA04	270473-7	Х	X	Matrix Spike Duplicate of sample P-11-1SA04
FB-031704-1SA04	FB-031704-1SA04	270473-8	Χ.	X	Field Blank
TB02-1SA04	TB02-1SA04	270473-9	Х	·	Trip Blank

Appendix A Laboratory Data Package Cover Page

This data package consi	ete of:				
This data package const	ture page, the laboratory review	checklist, and the fo	ollowing reportable data	:	
	ld chain-of-custody documentati				
	nple identification cross-referen				
R3 Tes	st reports (analytical data sheets)	for each environme	ntal sample that include	es:	
a)	Items consistent with NELAC	5.13 or ISO/IEC 17	025 Section 5.10		
b)				•	•
	preparation methods,				
	cleanup methods, and			•	
- e)	if required for the project, tent	atively identified co	mpounds (TICs).		
	rrogate recovery data including:	•	•		·
	Calculated recovery (%R), and	1		•	
b)	The laboratory's surrogate Qo	C limits.	•		
R5 Te	st reports/summary forms for bla	ank samples;			
R6 Te	st reports/summary forms for lab	ooratory control sam	ples (LCSs) including:		
	LCS spiking amounts,			,	
b)	Calculated %R for each analyt	te, and			
c)	The laboratory's LCS QC limi	its.		••	
R7 Te	st reports for project matrix spik	e/matrix spike dupli	cates (MS/MSDs) inclu	ding:	
	Samples associated with the M	IS/MSD clearly iden	ntified,		
b)	MS/MSD spiking amounts,		, , , , , , , , , , , , , , , , , , , ,	11	•
c)	Concentration of each MS/MS	SD analyte measured	I in the parent and spike	d samples,	•
	Calculated %Rs and relative p		RPDs), and		
e)	The laboratory's MS/MSD QC	∠ IIIIIIS 11\ rocover	, and precision:		
R8 La	boratory analytical duplicate (if	applicable) recovers	and precision.		
	the amount of analyte measure	ed in the duphcate,	~	•	
0)	the calculated RPD, and the laboratory's QC limits for	analytical dunlicate	s.		
R9 Lis	st of method quantitation limits ((MOLs) for each an	alvte for each method a	nd matrix;	
	her problems or anomalies.	(1/1/220) 101 00011	,		
The Exce	eption Report for every "No" or	"Not Reviewed (NF	t)" item in laboratory re	eview checklist.	
•		•	•		•
Release Statemen	t: I am responsible for the relea	se of this laboratory	data package. This dat	ta package has been	
reviewed by t	the laboratory and is complete at	nd technically comp	liant with the requireme	ents of the methods	·
used except	where noted by the laboratory in	the attached except	ion reports. By me sign	nature below, I affirm	٠,
to the best of	my knowledge, all problems/and	omalies, observed b	y the laboratory as havi	ng the potential to	
affect the qua	ality of the data, have been ident	ified by the laborato	ry in the Laboratory Re	view Checklist, and	
no informatio	on or data have been knowingly	withheld that would	affect the quality of the	e data.	
•	•				
Check, if applic	able: [] This laboratory	is an in-house lab	oratory controlled by	the person	٠.
responding	to rule. The official signing the	he cover page of th	ne rule-required repor	t (for example, the	
APAR) in v	which these data are used is re	sponsible for relea	asing this data packag	e and is by signature	
affirming th	e above release statement is t	rue.	•		
· Norman Flynn	Ware (Crew	For Lab	oratory Director	4/8/04.	_
Name (Printed)	Signature	Off	icial Title (printed)	Date	
ranic (rimou)				•	
		,		. •	
•		•	•		
		•		•	
		•			
•	,			•	
					٠-,
-			•		

Lab	orato	ry Name: STL-Houston LRC D	ate: 04/06/04					
		<u></u>	ory Job Number: 270473					
			<u> </u>					
		<u> </u>	atch Number(s): 96367-VOA					
#1	A ²			Yes	ı	NA,		
•	1	Chain-of-custody (C-O-C)			2	12°	142	
R1	OI			X				
		Were all departures from standard conditions described in an exce	ption report?			X		
R2	ΟĬ	Sample and quality control (QC) identification		430	(§%)	4284	180	3.5
		Are all field sample ID numbers cross-referenced to the laboratory	ID numbers?	X				
	ļ	Are all laboratory ID numbers cross-referenced to the correspondi		X				
R3	OI	Test reports	-	1987	335	\$\$00	363	33.32
		Were all samples prepared and analyzed within holding times?		X				
	ł	Other than those results < MQL, were all other raw values bracket	ed by calibration standards?	X				
	1	Were calculations checked by a peer or supervisor?	· · · · · · · · · · · · · · · · · · ·	X				
		Were all analyte identifications checked by a peer or supervisor?		X				
	1	Were sample quantitation limits reported for all analytes not detec	ted?	$\frac{1}{X}$				
~	ļ	Were all results for soil and sediment samples reported on a dry w				X		
		Were % moisture (or solids) reported for all soil and sediment sam				X		
	ĺ	If required for the project, TICs reported?		├		X	l	_
R4	0	Surrogate recovery data		14 1 1	3,350		'≰,"(e))" .	130
	 	Were surrogates added prior to extraction?		x	<u> </u>	17.66.13	54.756	177.585.7
	·	Were surrogate percent recoveries in all samples within the laborar	ory OC limits?	X	-			
R5	OI	Test reports/summary forms for blank samples	ory QC minus:	A		200		232
	<u> </u>	Were appropriate type(s) of blanks analyzed?		$\overline{\mathbf{x}}$	13.7	2000	\$ XV .	2734
		Were blanks analyzed at the appropriate frequency?		X	<u> </u>	-		
		Were method blanks taken through the entire analytical process, in	aluding proporation and if	$\frac{\Lambda}{X}$				
		applicable, cleanup procedures?	cluding preparation and, it	^	!			
		Were blank concentrations < MQL?		-	X	-		1
R6	OI	Laboratory control samples (LCS):		1.75		.1 Ca.	42.5	
	01	Were all COCs included in the LCS?		X	4) (C)	Night .	3
•]	Was each LCS taken through the entire analytical procedure, inclu	3:	X				
	l		anig prep and cleanup steps?	$\frac{\Lambda}{X}$				
	l	Were LCSs analyzed at the required frequency?	G1::					
	ļ	Were LCS (and LCSD, if applicable) %Rs within the laboratory Q		X		37		
		Does the detectability data document the laboratory's capability to	detect the COCs at the MDL used			X		
	ĺ	to calculate the SQLs?		 		37		
D 7	OT.	Was the LCSD RPD within QC limits?			W 0.5	Х	1210	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data	12.6000		130	S. M.S.		在 意图
		Were the project/method specified analytes included in the MS and	I MISD!	X				.
		Were MS/MSD analyzed at the appropriate frequency?	1	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC	limits?	X			[
00	- T	Were MS/MSD RPDs within laboratory QC limits?		X				
R8	OI	Analytical duplicate data		1824	400			is in the
		Were appropriate analytical duplicates analyzed for each matrix?	~	<u> </u>		X		
		Were analytical duplicates analyzed at the appropriate frequency?		L		X		
		Were RPDs or relative standard deviations within the laboratory Q	C limits?	L_		X		
S	OI	Method quantitation limits (MQLs):	· · · · · · · · · · · · · · · · · · ·	935.		(*)	333	
		Are the MQLs for each method analyte included in the laboratory		Х				
1		Do the MQLs correspond to the concentration of the lowest non-zer	ro calibration standard?	X		I]	
		Are unadjusted MQLs included in the laboratory data package?		X]]	
R10	OI	Other problems/anomalies		45	性色	Karata Karata	J. S. S.	
		Are all known problems/anomalies/special conditions noted in this		X				
		Were all necessary corrective actions performed for the reported da		X				
		Was applicable and available technology used to lower the SQL m	minoina tha matrix interference	X				

^{1.} Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

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⁼ organic analyses; I = inorganic analyses (and general chemistry, when applicable);

^{3.}

NA = Not applicable; NR = Not reviewed; 4. 5.

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

A	pper	ndix A (cont'd): Laboratory Review Checklis	t: Reportable Data					
Lal	orato	ory Name: STL-Houston	RC Date: 04/06/04					
Pro	ject l	Name: UPRR-HWPW-0014419 60 L	aboratory Job Number: 270473					-
Rev	viewe	r Name: YX	rep Batch Number(s): 96367-VOA				_	
#1		Description	<u> </u>	Yes	No	NA ³	NR4	IER#5
<u>51</u>		Initial calibration (ICAL)		- 15	226	1.00		32. 5.
51	[]	Were response factors and/or relative response factors for each	analyte within OC limits?	X	1 ***		12.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	
	ĺ	Were percent RSDs or correlation coefficient criteria met?	maryte within QC mints:	X			\vdash	
		Was the number of standards recommended in the method used	d for all analytes?	X		<u> </u>	\vdash	
	1	Were all points generated between the lowest and highest standard used to calculate the curve?		X		 -	\vdash	
	1	Are ICAL data available for all instruments used?	data used to calculate the curve:	X	├─		 	-
	ļ		into second source standard?	X	 		\vdash	├
S2	OI	Has the initial calibration curve been verified using an appropriate second source standard? Initial and continuing calibration verification (ICCV and CCV) and continuing calibration		Λ	*100.63	300 W	Suite 8 19	and the same
34	Was the CCV analyzed at the method-required frequency? Were percent differences for each analyte within the method-required QC limits?		X	Seese see		unicipal numerouses	1. 1277.125.	
				├			 -	
			equired QC limits?	X	<u> </u>		-	-
	Was the ICAL curve verified for each analyte?		X	├	- -	ļ		
02	 	Was the absolute value of the analyte concentration in the inorganic and the inorgan	ganic CCB < MDL!	7.11		X		
S3	0	Mass spectral tuning:		37	2	-		
	1	Was the appropriate compound for the method used for tuning		X	ļ		<u> </u>	ļ
~ .	 	Were ion abundance data within the method-required QC limit	S?	Х	<u> </u>		<u> </u>	ļ
S4	Were IS area counts and retention times within the method-required QC limi			ిము				3.
				X	<u></u>		<u> </u>	<u> </u>
S5_	OI			37.5	<i>P</i>		1	
		Were the raw data (for example, chromatograms, spectral data)		Х	<u> </u>			<u> </u>
	<u> </u>	Were data associated with manual integrations flagged on the raw data?		X			<u> </u>	<u>i </u>
S6_	0	Dual column confirmation	•		-		1	
		Did dual column confirmation results meet the method-required	d QC?			X		1
S7	0	Tentatively identified compounds (TICs):		-				
,		If TICs were requested, were the mass spectra and TIC data sul	bject to appropriate checks?			Х		
S8	I	Interference Check Sample (ICS) results:					1300	
		Were percent recoveries within method QC limits?				X	Π,	
S9	I	Serial dilutions, post digestion spikes, and method of standa	ard additions	- 200		120	1	
	·	Were percent differences, recoveries, and the linearity within the	he QC limits specified in the method?	,		X		
S10	OI	Method detection limit (MDL) studies		100		3500 82	25/55	173.75
		Was a MDL study performed for each reported analyte?		·X				
		Is the MDL either adjusted or supported by the analysis of DCS	Ss? .	Х				
S11	OI	Proficiency test reports:		i delta i	2 V 2	489 K	\$16.	35 mm
	<u> </u>	Was the laboratory's performance acceptable on the applicable	proficiency tests or evaluation studies?	Х		- Capriolog		
S12	OI	Standards documentation		5.85	21 Tq.	355.4c	3400	14.4
	 	Are all standards used in the analyses NIST-traceable or obtain	ed from other appropriate sources?	X	useri-et	north August	1,014 (8.50-1)	
S13	OI	Compound/analyte identification procedures	PA P	1.2	115	, N. 1947		1 1 1 1
	 -	Are the procedures for compound/analyte identification docum	ented?	X	him a	- Amprilane	A 1980 - 10 - 1	
S14	OI	Demonstration of analyst competency (DOC)	· · · · · · · · · · · · · · · · · · ·	2 0 E	183	35.30	11.34 %.	12.72
		Was DOC conducted consistent with NELAC Chapter 5C or IS	SO/IEC 4?	X			- College area	1
		Is documentation of the analyst's competency up-to-date and or		X	 		 	\vdash
\$15	OI	Verification/validation documentation for methods (NELAC		1	N. 5	15.5	12.4 %	
	 	Are all the methods used to generate the data documented, veri		X		مستنسم	- incomments	-
\$16	OI	Laboratory standard operating procedures (SOPs):	where applicable:	<u> </u>	-	Jefset	 	-
210	101		19	·				
		Are laboratory SOPs current and on file for each method perfor	mea?	Х				Ι,

Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

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O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

³ NA = Not applicable.

⁴ NR = Not Reviewed.

⁵ ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Appendix A (cont'd): Laboratory Review Checklist: Exception Reports							
Labora	tory Name: STL-Houston	LRC Date: 04/06/04					
Project	Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 270473					
Review	ver Name: YX	Prep Batch Number(s): 96367-VOA					
ER#1	DESCRIPTION						
1	Methylene chloride was detected above t	he MQL in the method blank analyzed on 03/22/04 at 13:16. Since methylene					
	chloride was not detected in any samples associated with this method blank, no corrective action was required.						
	ER# = Exception Report identification number (an Exception Report should be completed for an item if						

"NR" or "No" is checked on the LRC)

Ap	pen	dix A (cont'd): Laboratory Review Checkl	ist: Reportable Data					
Lab	orator	ry Name: STL-Houston LRC	LRC Date: 04/07/04					
Proj	ect N	ame: UPRR-HWPW-0014419 60 Lab	oratory Job Number: 270473					
Rev	iewer	Name: ACN Prep	Batch Number(s): 96171-SV SIM					
#1	A ²	Description	<u></u>	Yes	No	NA ³	NR ⁴	ER#5
		Chain-of-custody (C-O-C)		35.5		1 (15) 98/11	374	
R1	Oī	Did samples meet the laboratory's standard conditions of sar	mple acceptability upon receipt?	X				
	"	Were all departures from standard conditions described in an exception report?				x		
R2	OI	Sample and quality control (QC) identification	oxooption report.	5,54	72.20	13gas	24/-	9 ks 2020
102	OI	Are all field sample ID numbers cross-referenced to the labor	protony ID numbers?	X	33.20	4,4,46	4,363.5.5	\$1000
]	Are all laboratory ID numbers cross-referenced to the corres		X	├─	\vdash	-	
R3	OI	Test reports	sponding QC data:	^	1200	Q-400-1	- A-1	MONEY.
-	01	Were all samples prepared and analyzed within holding time	es?	X		1 1 1 1	20.67	वर् भ ः ।
		Other than those results < MQL, were all other raw values by		$\frac{\lambda}{X}$	<u> </u>	-		- -
		Were calculations checked by a peer or supervisor?	racketed by carioration standards.	X		<u> </u>		
	İ	Were all analyte identifications checked by a peer or supervisor.	isor?	X				
		Were sample quantitation limits reported for all analytes not		$\frac{x}{x}$	<u> </u>			
		Were all results for soil and sediment samples reported on a			<u> </u>	Х		
		Were % moisture (or solids) reported for all soil and sedimen				X		
	ļ	If required for the project, TICs reported?		٠.		X		
R4	0	Surrogate recovery data		rep de	* Ex.	1,000	ى∜ۇۋىيە.	· Paris
_	-	Were surrogates added prior to extraction?	•	Х			•	
		Were surrogate percent recoveries in all samples within the	laboratory OC limits?	X	\vdash	┢		
R5	OI	Test reports/summary forms for blank samples		92.57	. 18. e.,	12.30 A	373	10.42
_		Were appropriate type(s) of blanks analyzed?	•	X	_			
		Were blanks analyzed at the appropriate frequency?		X		H		
	ĺ	Were method blanks taken through the entire analytical proc	cess, including preparation and, if	X		\vdash		
		applicable, cleanup procedures?						
	1	Were blank concentrations < MQL?		X				
R6	OI	Laboratory control samples (LCS):	•		3,4	ASV.	3448	0.37
		Were all COCs included in the LCS?		X				
		Was each LCS taken through the entire analytical procedure	, including prep and cleanup steps?	X				
	•	Were LCSs analyzed at the required frequency?		X				
		Were LCS (and LCSD, if applicable) %Rs within the laborate	tory QC limits?			X		
!		Does the detectability data document the laboratory's capabil	lity to detect the COCs at the MDL			Х		
		used to calculate the SQLs?			L			_
		Was the LCSD RPD within QC limits?			<u> </u>	X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) dat		**************************************	220	3.00	74/2	J. #25
		Were the project/method specified analytes included in the M	MS and MSD?	X				
	1	Were MS/MSD analyzed at the appropriate frequency?		X	<u> </u>			
		Were MS (and MSD, if applicable) %Rs within the laborator	ry QC limits?		X			1
		Were MS/MSD RPDs within laboratory QC limits?		<u>X</u>				
R8	OI	Analytical duplicate data		250 C	E STATE	্ৰাই	3/8%	\$5.44.5E
	ļ	Were appropriate analytical duplicates analyzed for each ma			<u> </u>	X		
:		Were analytical duplicates analyzed at the appropriate freque				X		
		Were RPDs or relative standard deviations within the labora	tory QC limits?		<u> </u>	X.		
R9	OI	Method quantitation limits (MQLs):		-16 A	19 ° %.	-1000	:35	SHE
		Are the MQLs for each method analyte included in the labor		X	<u> </u>	ļ		
	[Do the MQLs correspond to the concentration of the lowest		X	<u> </u>	Щ		
	<u> </u>	Are unadjusted MQLs included in the laboratory data package	ge?	Х	<u> </u>	<u> </u>		
R10	OI .	Other problems/anomalies	·	3.000 3.000	784.2 2	Site	are.	164213
'	1	Are all known problems/anomalies/special conditions noted		X	L	<u> </u>		
	}	Were all necessary corrective actions performed for the repo		X	<u> </u>	<u> </u>		
		Was applicable and available technology used to lower the S affects on the sample results?	SQL to minimize the matrix interference	Х	_			

^{1.} Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

RG-366/TRRP-13 December 2002

⁼ organic analyses; I = inorganic analyses (and general chemistry, when applicable);

^{3.} NA = Not applicable;

^{4.} 5. NR = Not reviewed;

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

	Laboratory Name: STL-Houston LRC Date: 04/07/04							
Proj	ject N	Jame: UPRR-HWPW-0014419 60	Laboratory Job Number: 270473					
Rev	iewe	Name: ACN	Prep Batch Number(s): 96171-SV SIM			-		
#1	Δ2	Description		Yes	No	NA ³	NR ⁴	ER#5
	OI	Initial calibration (ICAL)			W.	AMA	304.5	
31	01	Were response factors and/or relative response factors for each	h analyta within OC limita?	X	. Eq., 2000	46.15.62.00	jehna ka	Tripling's.
	ļ	Were percent RSDs or correlation coefficient criteria met?	ii anaryte within OC limits?	 ☆			 	┼
	ĺ	Was the number of standards recommended in the method use	od for all analytes?	$\frac{\hat{x}}{x}$		 		┼─
				 ↑	 	 		├
	Were all points generated between the lowest and highest standard used to calculate the curve? Are ICAL data available for all instruments used?		idard used to calculate the curve?	 ^	├	 -	 	┼┈─
	l		· · · · · · · · · · · · · · · · · · ·	$\frac{\Lambda}{X}$				┼
62	OT	Has the initial calibration curve been verified using an approp			100280000	2501275	La seas di Algoria	- Trescounts
S2	OI	Initial and continuing calibration verification (ICCV and C	CCV) and continuing calibration	77	100	2242	324	\$25.0%.
		Was the CCV analyzed at the method-required frequency?	-1001:-4-9	X	 	 	<u> </u>	
		Were percent differences for each analyte within the method-required QC limits?		X	 -	 		
		Was the ICAL curve verified for each analyte?		X	 	X	<u> </u>	4
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?						10.10.10.10.10.10.10.10.10.10.10.10.10.1
S3	0	Mass spectral tuning:				L'annua.		
		Was the appropriate compound for the method used for tuning?				ļ	<u> </u>	<u> </u>
		Were ion abundance data within the method-required QC limits?						<u> </u>
S4	0	Internal standards (IS):		22	X	des.	name.	
•		Were IS area counts and retention times within the method-required QC limits?				<u> </u>		2
S5	OI			0.80	244	Contract of	111	130
	Were the raw data (for example, chromatograms, spectral data) reviewed b		n) reviewed by an analyst?	X	<u> </u>			<u></u>
٠,		Were data associated with manual integrations flagged on the raw data?		X				
S6	0	Dual column confirmation		112	٤Щ٤		152	
		Did dual column confirmation results meet the method-require	ed QC?			X		L
S7_	0	Tentatively identified compounds (TICs):		200		47.34	190	110
		If TICs were requested, were the mass spectra and TIC data su	ubject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results:	• • • • • • • • • • • • • • • • • • • •	100	224	THE.		
		Were percent recoveries within method QC limits?				Х		\Box
S9	I	Serial dilutions, post digestion spikes, and method of stand	lard additions	200	100	144	12.00	
		Were percent differences, recoveries, and the linearity within		1		Х		
S10	OI	Method detection limit (MDL) studies		200		1000	1731	4195
		Was a MDL study performed for each reported analyte?		·X				
		Is the MDL either adjusted or supported by the analysis of DC	Ss?	X				
S11	OI	Proficiency test reports:			4472	333	- 22	UQ74
		Was the laboratory's performance acceptable on the applicable	proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation	promotory total of overlanding	(33))- iii	1005	1602
	<u> </u>	Are all standards used in the analyses NIST-traceable or obtain	ned from other appropriate sources?	X	A 102 A	and a second	*	111,111,111
S13	OI	Compound/analyte identification procedures	ned Home of the second		93.94	124.00	G034	930
	<u>~1</u>	Are the procedures for compound/analyte identification docum	nented?	X		numbers (6	206000000000000000000000000000000000000	
S14	OI.	Demonstration of analyst competency (DOC)		200	Ballion.	A COMPANY	NAME.	1346
	<u> </u>	Was DOC conducted consistent with NELAC Chapter 5C or I	SO/JEC 42	X	(CO456*C)	70'000000°C	7.75 NO.75 NO.	1
ĺ		Is documentation of the analyst's competency up-to-date and of		X	<u> </u>		 	+-
S15		Verification/validation documentation for methods (NELA			1,342	12/24/2012:	- CANA	
013	71	Are all the methods used to generate the data documented, ver		X	بقطعتند	القطنطينية الماكات	بقائضتها	1
-	<u> </u>		med, and vandated, where applicable?		, here	2.21600	Status 15.	MAR COMM
S16	OI	Laboratory standard operating procedures (SOPs):		PAR.	1156	43-64E	12:17:4	1020
		Are laboratory SOPs current and on file for each method perfo	ormea?	X.	'		1	1

Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

NA = Not applicable.

NR = Not Reviewed.

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Appendix A (cont'd): Laboratory Review Checklist: Exception Reports							
Laborat	ory Name: STL-Houston	LRC Date: 04/07/04					
Project 1	Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 270473					
Reviewe	er Name: ACN	Prep Batch Number(s): 96171-SV SIM					
ER#1	DESCRIPTION						
1	The pentachlorophenol recoveries in the M	AS/MSD were above acceptance limits due to matrix interference.					
2	All the internal standard areas in sample 270473-5 were below acceptance limits due to matrix interference. Per method requirements, no corrective action was required.						

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC)

Labo	orator	ry Name: STL-Houston LRC	C Date: 04/07/04					
			oratory Job Number: 270473					
			Batch Number(s): 96170-SV					
#¹	A ²	Description		Yes		NA ³		
		Chain-of-custody (C-O-C)		45		Z3.		138
R1	OI	Did samples meet the laboratory's standard conditions of sar		X				
		Were all departures from standard conditions described in a	n exception report?			Х		
R2	ΟI	Sample and quality control (QC) identification		25000	1,63	7 %	55	(44.3
		Are all field sample ID numbers cross-referenced to the labor	pratory ID numbers?	Х				
	}	Are all laboratory ID numbers cross-referenced to the corres		X				
R3	ΟĬ	Test reports		12 12 N	25.3	38.8°	Sec.	(XXX)
		Were all samples prepared and analyzed within holding time	es?	X				
		Other than those results < MQL, were all other raw values by		Х				
		Were calculations checked by a peer or supervisor?		X			- . -	
	ĺ	Were all analyte identifications checked by a peer or supervision	isor?	X	<u> </u>			
		Were sample quantitation limits reported for all analytes not		x	\vdash			
	1	Were all results for soil and sediment samples reported on a		1		Х		
		Were % moisture (or solids) reported for all soil and sedime				X		
	ļ	If required for the project, TICs reported?	in samples:		<u> </u>	X		
R4	0	Surrogate recovery data		3367	X-45	100		25.30
10		Were surrogates added prior to extraction?		x	335.50	1.0 mm		
		Were surrogate percent recoveries in all samples within the	Jaharatani OC limita?	^	X	<u> </u>	-	1,2
R5	OI	Test reports/summary forms for blank samples	iaboratory QC mints:	·832:	a	772	33	1,2
KS	101			X	1.1842.4	APROPERTY.	3634	
		Were appropriate type(s) of blanks analyzed?		X				—
	}	Were blanks analyzed at the appropriate frequency?	100 + 100 1+ 100 + 200 + 100 + 200	X	 	-	-	
		Were method blanks taken through the entire analytical proc	ess, including preparation and, if	^				
		applicable, cleanup procedures?	· · · · · · · · · · · · · · · · · · ·	v	 			├──
n.		Were blank concentrations < MQL?	······································	X	. 21-103-	iaz	a talka india	1 PROCESSO
R6	OI	Laboratory control samples (LCS):		150	340	ware.	100	1996
		Were all COCs included in the LCS?		X	├		_	
		Was each LCS taken through the entire analytical procedure	, including prep and cleanup steps?	X				<u> </u>
		Were LCSs analyzed at the required frequency?	0.011	X				
		Were LCS (and LCSD, if applicable) %Rs within the labora		Х				<u> </u>
		Does the detectability data document the laboratory's capabi	lity to detect the COCs at the MDL			Ж		
		used to calculate the SQLs?			<u> </u>			<u> </u>
		Was the LCSD RPD within QC limits?			0.40.7	X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) dat			1982	200	- 63	Jagar.
		Were the project/method specified analytes included in the M	MS and MSD?	X	<u> </u>			<u> </u>
ľ		Were MS/MSD analyzed at the appropriate frequency?		X	<u> </u>	<u> </u>		
		Were MS (and MSD, if applicable) %Rs within the laborator	ry QC limits?		X			3
		Were MS/MSD RPDs within laboratory QC limits?		X				
R8	OI	Analytical duplicate data	·	3.80	144	经	***	35.00
		Were appropriate analytical duplicates analyzed for each ma		<u> </u>		X		
		Were analytical duplicates analyzed at the appropriate freque			L	X		<u> </u>
		Were RPDs or relative standard deviations within the labora	tory QC limits?			Х		
R9	OI	Method quantitation limits (MQLs):		**	2,22		3	/科特
		Are the MQLs for each method analyte included in the labor	atory data package?	X	L			
ļ		Do the MQLs correspond to the concentration of the lowest		Х				L
		Are unadjusted MQLs included in the laboratory data package	ge?	X				
R10	OI	Other problems/anomalies		150	3 B.F.	W.	WE.	KEE.
		Are all known problems/anomalies/special conditions noted	in this LRC and ER?	Х				
ļ		Were all necessary corrective actions performed for the repo		x				
		Was applicable and available technology used to lower the S		X				4
		affects on the sample results?			l			1

^{1.} Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

 ⁼ organic analyses; I = inorganic analyses (and general chemistry, when applicable);

^{3.} NA = Not applicable;

NR = Not reviewed;

^{5.} ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Aı	per	dix A (cont'd): Laboratory Review Checklist	t: Reportable Data	-				
Lab	orato	ry Name: STL-Houston	RC Date: 04/07/04					
Pro	ject N	Name: UPRR-HWPW-0014419 60	aboratory Job Number: 270473			•		
Rev	Reviewer Name: ACN Prep Batch Number(s): 96170-SV							
	# ¹ A ² Description				No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)		Yes	39.00	de de la	3,800.5	144.1
3.	, 101	Were response factors and/or relative response factors for each	analyte within OC limits?	x		49 (198 (80)	-	
	1	Were percent RSDs or correlation coefficient criteria met?	anaryte within oe mints:	X		 	_	
		Was the number of standards recommended in the method used	for all analytes?	X	├─		 -	
		Were all points generated between the lowest and highest standard used to calculate the curve?				 	 	
		Are ICAL data available for all instruments used?		X	 		 	\vdash
		Has the initial calibration curve been verified using an appropriate second source standard?		$\frac{\lambda}{X}$	├─			-
S2	OI	Initial and continuing calibration verification (ICCV and C		1000	49.41	57466	1000	1000000
-	101	Was the CCV analyzed at the method-required frequency?	CV / and continuing candi ation	Х	1 20 2	101.69521	1 (M23) (1990)	10000000
	1	Were percent differences for each analyte within the method-re	quired OC limits?	X	 	 	 	}
		Was the ICAL curve verified for each analyte?		X	-	 	 	 .
	ļ	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		 ^ -	├─-	X	 	-
S3	0	Mass spectral tuning:				21/2	3530	SIGNAL I
55	10	Was the appropriate compound for the method used for tuning?				Same Sales	111111111111111111111111111111111111111	Sales Liber
		Were ion abundance data within the method-required QC limits		X			 	-
S4	0	Internal standards (IS):		<u>^</u>	. %	94 K	7230	(* - 75) (* 20)
34	Ι <u>υ</u>	Were IS area counts and retention times within the method-requ	virad OC limita?	Phil. 3	X	2.3736.	4.6.255	5
S5	 -			100	-	-5-A)	19531	J
33	OI	I Raw data (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		х	46.5	- 7 <u>- 43</u>	17,7034,6	, e i'y e
	٠.	Were data associated with manual integrations flagged on the ra		X	-	 	 	
S6	o	Dual column confirmation		<u> </u>	- Ober 17	TEAT	ino.	405
30	Ι <u>Ο</u>	Did dual column confirmation results meet the method-required	I OC?		* William	X	1.00000000	discussion.
S7	ō		100:	2543	1,550		Aug 1 1 to	Sept.
31	Ι <u>υ</u>	Tentatively identified compounds (TICs): If TICs were requested, were the mass spectra and TIC data sub-	signet to appropriate absolve?	423	al reference	X	167 %-6	
S8	T	Interference Check Sample (ICS) results:	ect to appropriate checks?	3.32	-4 core	<u>^</u>		. distant
30		Were percent recoveries within method QC limits?		- Saledon		X		100000000000000000000000000000000000000
S9	I	Serial dilutions, post digestion spikes, and method of standa	ud additions	TREAS	Jagar -	1222	TOTAL STATE	100 (30) (1 1 (30) (2 (3) 1 (30) (3) (3) 1 (30) (3) (3)
37	 	Were percent differences, recoveries, and the linearity within the		18,733		X	SPECIAL SPECIAL	Company Con
C10	OI	Method detection limit (MDL) studies	le QC littles specified in the method?	4550			ikalik.	12.394
210	101	Was a MDL study performed for each reported analyte?		X	12.1.2	ALL CAR	- Marin Sales Sales	Parket .
	 	Is the MDL either adjusted or supported by the analysis of DCS	a?	Ŷ				
<u>.</u>	OI	Proficiency test reports:	5:		SAT.		Y.145	1,26
511	101	Was the laboratory's performance acceptable on the applicable	proficiency tosts or evaluation studies?	X	100000		LLA CL	
\$12	OI	Standards documentation	proficiency tests of evaluation studies?	<u> </u>		1.00	17,505	1865
312	OI.	Are all standards used in the analyses NIST-traceable or obtain	od from other appropriate courses?	Х	1,5,6,10	1119994.14	18 444	40000
C12	OI	Compound/analyte identification procedures	at from other appropriate sources:		W.C.	des.	: "Topic of the control of the contr	Agrija :
313	OI.	Are the procedures for compound/analyte identification docume	ontad?	X	#P1927	(En4250)	4 4500	Lijski 221. i
<u>C14</u>	OT	Demonstration of analyst competency (DOC)	illed:	13	1000	4377 8 4.	O Tresta	- 1, 1 , 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
314	OI	Was DOC conducted consistent with NELAC Chapter 5C or IS	OUEC 43	X	250,000	2011 1 3 6 5 1	to " to " pared"	32.30***
	1	Is documentation of the analyst's competency up-to-date and or		X			 	-
S15	OT	Verification/validation documentation for methods (NELAC		201		11825		1,650 11.
313	lor -			_	1	345342	tuliščii	
<u> </u>	-	Are all the methods used to generate the data documented, verif	ieu, anu vanualeu, where apphicable!	X	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1150	5 pg	2 delena
210	OI	Laboratory standard operating procedures (SOPs):	10	37	.256		WEST.	(IEPA)
		Are laboratory SOPs current and on file for each method perfor	mea!	X				
	1	1 •		1	, ,		1	

Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

O = organic analyses;
 NA = Not applicable.

⁴ NR = Not Reviewed.

⁵ ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Appendix A (cont'd): Laboratory Review Checklist: Exception Reports						
Laborat	ory Name: STL-Houston	LRC Date: 04/07/04				
Project	Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 270473				
Review	er Name: ACN	Prep Batch Number(s): 96170-SV				
ER#1	DESCRIPTION					
1	The 2,4,6-tribromophenol surrogate recoveries in samples 270473-5, 6MS, 7MSD, the LCS, and the MB were above acceptance limits. These high recoveries will not affect the quality of the reported results.					
2	The 2,4,6-tribromophenol surrogate recoveries in sam dilutions necessary for analyses.	ples 270473-6 5X and 7 5X were above acceptance limits due to the				
3	The acenaphthene and fluorene recoveries in the MS and MSD and the phenanthrene recovery in the MSD were below acceptance limits. The 2-methyl-4,6-dinitrophenol recoveries in the MS and MSD and the naphthalene recovery in the MSD were above acceptance limits. All excursions were due to matrix interference.					
4 .	The acenapthene SQLs in samples 270473-1, 5, 6, and 7 were elevated due to the dilutions necessary for analyses. Additionally, the fluorene SQL in sample 270473-5 was elevated due to the dilution necessary for analysis.					
5	All the internal standard areas in samples 270473-5 1X and 7 1X were above acceptance limits due to matrix interference. Per method requirements, no corrective action was required.					
	FR# = Exception Report identification number (an Exception Report should be completed for an item if					

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC)

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Severn Trent Laboratories

6310 Rothway Drive

Houston, TX 77040

(713) 690-4444

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evern Trent Labo	pratories 6310 Rothway Drive	Houston	TX 77040	(713)	690-À	444			;			•										

rpjsckl , Job Sample	Receipt Checklist Report			Va
	t Number.: 1 Description.: ck List Date.: RR-HWPW-0014419/60 Contact.: Chris Young	_	the Report: Manager:	1
Questions ? (Y/	N) Comments			
Chain of Custody Received? Y				
If "yes", completed properly? Y				
Custody seal on shipping container? Y				
If "yes", custody seal intact? Y				
Custody seals on sample containers? N			•	
If "yes", custody seal intact?		•		•
Samples chilled?Y				
Temperature of cooler acceptable? (4 deg C +/- 2). Y	2.5,3.1,2.7,3.0,2.7,2.4			
If "no", is sample an air matrix?(no temp req.)				. 4.
Thermometer IDY	404,402,324,368,325,		•	
Samples received intact (good condition)?		•		
Volatile samples acceptable? (no headspace) Y				
Correct containers used? Y				
Adequate sample volume provided?Y				
Samples preserved correctly? Y		•		
Samples received within holding-time? Y		•		
Agreement between COC and sample labels? Y				•
Radioactivity at or below background levels?				
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Page 1

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PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY neadspace is present, list details H OF WATER SAMPLES PRESERVATION	BLE? YesNo in INCONSISTENCIES	NA Section)	J(M Ni	OB NUMBER arked As Pre umber of VO	:	473 YNO	- , рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2)	BLE? YesNo in INCONSISTENCIES	NA NA CORRECT P	J(M Ni	OB NUMBER arked As Pre umber of VO	:	473 YNO	, рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2)	BLE? YesNo in INCONSISTENCIES	NA NA CORRECT P	J(M Ni	OB NUMBER arked As Pre umber of VO	:	473 YNO	; рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials)	BLE? YesNo in INCONSISTENCIES	NA NA CORRECT P	J(M Ni	OB NUMBER arked As Pre umber of VO	:	473 YNO	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH — Cyanide (>12)	BLE? YesNo in INCONSISTENCIES	NA NA CORRECT P	J(M Ni	OB NUMBER arked As Pre umber of VO	:	473 YNO	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY headspace is present, fist details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH – Cyanide (>12) aOH/Zn Acetate – Sulfide (>9)	BLE? Yes No in INCONSISTENCIES	NA NA CORRECT P	J(M Ni	OB NUMBER arked As Pre umber of VO	:	473 YNO	- ; рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY headspace is present, fist details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH - Cyanide (>12) aOH/Zn Acetate - Sulfide (>9) ther	BLE? YesNo in INCONSISTENCIES	NA NA CORRECT P	JO M NI	OB NUMBER arked As Pre umber of VO If N, List sa	: served? Yes_ A Vials: mple ID and C	No	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY headspace is present, fist details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH - Cyanide (>12) aOH/Zn Acetate - Sulfide (>9) ther	BLE? Yes No in INCONSISTENCIES	NA NA CORRECT P	JO M NI	OB NUMBER arked As Pre umber of VO If N, List sa	:	No	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA If ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH - Cyanide (>12) aOH/Zn Acetate - Sulfide (>9) ther OF NEAT BOTTLES:	BLE? YesNo in INCONSISTENCIES # BOTTLES	NA NA Concept (Y/N)	JC M Nr Hq	OB NUMBER arked As Pre umber of VO If N, List sa OF SOIL JAR	::	No	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA If ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH - Cyanide (>12) aOH/Zn Acetate - Sulfide (>9) ther OF NEAT BOTTLES:	BLE? Yes No in INCONSISTENCIES	NA NA Concept (Y/N)	JC M Nr Hq	OB NUMBER arked As Pre umber of VO If N, List sa OF SOIL JAR	::	No	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA If ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH - Cyanide (>12) aOH/Zn Acetate - Sulfide (>9) ther OF NEAT BOTTLES:	BLE? YesNo in INCONSISTENCIES # BOTTLES	NA NA Concept (Y/N)	JC M Nr Hq	OB NUMBER arked As Pre umber of VO If N, List sa OF SOIL JAR	::	No	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH – Cyanide (>12) aOH/Zn Acetate – Sulfide (>9) ther OF NEAT BOTTLES:	BLE? YesNo in INCONSISTENCIES # BOTTLES	NA NA Concept (Y/N)	DH # (OB NUMBER arked As Pre umber of VO If N, List sa OF SOIL JAR	:	No	- На
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA If ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH – Cyanide (>12) aOH/Zn Acetate – Sulfide (>9) ther OF NEAT BOTTLES:	BLE? YesNo in INCONSISTENCIES # BOTTLES	NA NA Concept (Y/N)	DH # (OB NUMBER arked As Pre umber of VO/ If N, List sa OF SOIL JAF	:	No	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA If ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH - Cyanide (>12) aOH/Zn Acetate - Sulfide (>9) ther OF NEAT BOTTLES:	BLE? YesNo in INCONSISTENCIES # BOTTLES	NA NA	JO M No	OB NUMBER arked As Pre umber of VO/ If N, List sa OF SOIL JAF	:	No	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY neadspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH - Cyanide (>12) aOH/Zn Acetate - Sulfide (>9) ther OF NEAT BOTTLES:	BLE? YesNo in INCONSISTENCIES	NA NA	JO M No M No M No M No M No M No M No M N	OB NUMBER arked As Pre umber of VO/ If N, List sa OF SOIL JAF	:	No	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY neadspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH – Cyanide (>12) aOH/Zn Acetate – Sulfide (>9) ther OF NEAT BOTTLES: IN	BLE? YesNo in INCONSISTENCIES# BOTTLES	NA Section) CORRECT (Y/N) Place in Job I	JO M No M No M No M No M No M No M No M N	OB NUMBER arked As Pre umber of VO/ If N, List sa OF SOIL JAF	:	No	рН
COLATILE HEADSPACE ACCEPTA ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH – Cyanide (>12) aOH/Zn Acetate – Sulfide (>9) ther OF NEAT BOTTLES: IN	BLE? YesNo in INCONSISTENCIES	NA Section) CORRECT (Y/N) Place in Job I	JO M No M No M No M No M No M No M No M N	OB NUMBER arked As Pre umber of VO/ If N, List sa OF SOIL JAF	:	No	рН
SPECIFIC PROJECT INFORMATION /OLATILE HEADSPACE ACCEPTA If ANY headspace is present, list details IF OF WATER SAMPLES PRESERVATION IZSO4 (<2) INO3 (<2) ICL (<2) (Not VOA Vials) IAOH - Cyanide (>12) IAOH/Zn Acetate - Sulfide (>9) IOTHER OF NEAT BOTTLES: IN	BLE? YesNo in INCONSISTENCIES# BOTTLES	NA Section) CORRECT (Y/N) Place in Job I	JO M No M No M No M No M No M No M No M N	OB NUMBER arked As Pre umber of VO/ If N, List sa OF SOIL JAF	:	No	рН
SPECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA If ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION (2SO4 (<2) INO3 (<2) ICL (<2) (Not VOA Vials) IAOH - Cyanide (>12) IAOH/Zn Acetate - Sulfide (>9) ITHER OF NEAT BOTTLES: IN IN IN ERSON CONTACTED: ESOLUTION	BLE? YesNo in INCONSISTENCIES# BOTTLES	NA Section) CORRECT (Y/N) Place in Job I	JO M No M No M No M No M No M No M No M N	OB NUMBER arked As Pre umber of VO/ If N, List sa OF SOIL JAF	:	No	рН
COLATILE HEADSPACE ACCEPTA ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH – Cyanide (>12) aOH/Zn Acetate – Sulfide (>9) ther OF NEAT BOTTLES: IN	BLE? YesNo in INCONSISTENCIES# BOTTLES	NA Section) CORRECT (Y/N) Place in Job I	JO M No M No M No M No M No M No M No M N	OB NUMBER arked As Pre umber of VO/ If N, List sa OF SOIL JAF	:	No	рН
PECIFIC PROJECT INFORMATION OLATILE HEADSPACE ACCEPTA f ANY headspace is present, list details H OF WATER SAMPLES PRESERVATION 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) aOH - Cyanide (>12) aOH/Zn Acetate - Sulfide (>9) ther OF NEAT BOTTLES: IN IRSON CONTACTED: ESOLUTION	BLE? YesNo in INCONSISTENCIES# BOTTLES	NA Section) CORRECT (Y/N) Place in Job I	JO M No M No M No M No M No M No M No M N	OB NUMBER arked As Pre umber of VO/ If N, List sa OF SOIL JAF	:	No	рН

	STL HOUSTON	I-SAMPLE	RECEIPT	CHECKLIS'	T (
CLIENT NAME: ERM		•	CARRIER	DRIVER NA	ME: Thu	-	
PROJECT: 204 MAR 18 F	W 10 -	•	UNPACK	ED BY:	2000 10	IN	_
DATE RECEIVED:	11 12: 26		UNPACK	ED STAMP:_	ZU4 [[]]	R 18 PH 4	_38
TOTAL # COOLERS RECEIVED:	<u> </u>		CKLICT			•	
000,50,50		OOLER CHE		·			a &
COOLER ID COC PRESENT (Y/N)	CUSTODY TAPE	COOLER TEMP (°C)	THERM ID	TEMP BLK PRESENT (Y/N)	List Sample Bottles in out of Temperature	Each Cooler if	
	RESENT INTACT (Y/N) (Y/N)						
K/W/3 7 - C	7 nt	25	404	N		-	
8/W. C	XX	3.1	402			- · · · · · · · · · · · · · · · · · · ·	-
Admite c	7 4	2:7			<u> </u>		
1075 W B	in l. n.	-01	324	<u></u>			
C = COOLER B = BOTTLES COOLER(S) SCREENED FOR RADI.	ATIONS Von Von	. ''''		บ.ถูกเกรียง ธ	TEMP TAKEN	by tu	
GOGLER(S) SCREENED FOR RADIA	ATION! TES_ NO		EMP BLA-1	y; now was	TEMP TAKEN	1	
SHORT HOLD	/RUSH SAMPLES (include depa	rtment del	vered to and	itime delivered)		
<u> </u>	·						•
• .			· · ·				-
		****	*******	+****	*******	(00	
SPECIFIC PROJECT INFORMATION	!			70 MIMBED	. 77n	475	•
VOLATILE HEADSPACE ACCEPTAB	No Yes Vo	NA	J.C M:	OB NUMBER arked As Pre:	served? Yes N		
(If ANY headspace is present, list details in				umber of VOA		<u> </u>	
pH OF-WATER SAMPLES					714		 ,
PRESERVATION	#BOTTLES	CORRECT	pH	lf N, List sa	nple ID and Correst	onding pH	İ
H2SO4 (<2)	1	(Y/N)					-
HNO3 (<2)	-					· · · · · · · · · · · · · · · · · · ·	-
HCL (<2) (Not VOA Vials)	1		1				
NaOH – Cyanide (>12)				•	•		_
NaOH/Zn Acetate – Sulfide (>9) Other				·		<u> </u>	4
# OF NEAT BOTTLES:			# (OF SOIL JAR	· ·		
. OF HEAT BOTTLES.		1	# (JE BUIL JAK			
INC	CONSISTENCIES - F	Place in Job	Notes as w	ell (CTRL F-	12)	· · · · · · · · · · · · · · · · · · ·	_
						<u> </u>	·
							•
		ACTION TAK	EN		•	•	
PERSON CONTACTED:				DATE:		<u>.</u>	
RESOLUTION			· · · · · · · · · · · · · · · · · · ·				•
`		· ,			-		
IOTES		 .		<u> </u>			
		 	· - ·				
				(Use ba	ick of sheet if necess	агу)	
roject Manager				•		-	



TRRP Laboratory Test Results

Date:

4/7/04

Job Number: 270473

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

MW-3-1SA04

Laboratory Sample ID: 270473-001.

Date/Time Sampled 3/17/04

Sample Matrix: Water

Date/Time Received: 3/18/04

8:52 12:26

`												
TEST METHOD	CAS#	RESULT.	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	21:50	96367	1	zfl
Benzene	71-43-2	0.00143	Ü	0.00143	0.005	0.00143	mg/L	3/22/04	21:50	96367	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/22/04	21:50	96367	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/22/04	21:50	96367	1	zfl
Methylene Chloride	75-09-2	0.0013	υ	0.0013	0.005	0.0013	mg/L	3/22/04	21:50	96367	1	zfl
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	21:50	96367	1	zfl
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/22/04	21:50	96367	1	zfl

Form I



CUSTOMER: ERM Southwest, Inc.- Houston

TRRP Laboratory Test Results

Date:

4/7/04

Job Number: 270473

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

MW-3-1SA04

8:52

Laboratory Sample ID: 270473-001

Date/Time Sampled 3/17/04

Sample Matrix: Water

Date/Time Received: 3/18/04

12:26

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												5-3
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/30/04	20:45	97046	1	acn
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/24/04	11:55	97017	1	acn
2,4-Dinitrotoluene	121-14-2	0.000009	บ	0.000009	0.0001	0.000009	mg/L	3/30/04	20:45	97046	1	acn
2,6-Dinitrotoluene	606-20-2	0.000026	υ.	0.000027	0.0001	0.000026	mg/L	3/30/04	20:45	97046	1	acn
2-Chloronaphthalene	91-58-7	0.000076	ับ	0.00008	0.0005	0.000076	mg/L	3/24/04	11:55	97017	1	acn
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	ָ ט	0.00031	0.0015	0.000295	mg/L	3/24/04	11:55	97017	1	acn
2-Methylnaphthalene	91-57-6	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/24/04	11:55	97017	1	acn
4-Nitrophenol	100-02-7	0.000285	ับ	0.000299	0.0015	0.000285	mg/L	3/24/04	11:55	97017	1	acn
Acenaphthene	83-32-9	0.1104		0.000078	0.0005	0.0003	mg/L	3/26/04	15:43	97017	4	acn
Acenaphthylene	208-96-8	0.000833	JL	0.00008	0.0005	0.000076	mg/L	3/24/04	11:55	97017	1	acn 4
Anthracene	120-12-7	0.00129	JL	0.00013	0.0005	0.000124	mg/L	3/24/04	11:55	97017	1	acn 🗷
Benzo(a)anthracene	56-55-3	0.000379	JJL	0.00028	0.0005	0.000267	mg/L	3/24/04	11:55	97017	1	acn u
Benzo(a)pyrene	50-32-8	0.000511		0.000007	0.0001	0.000007	mg/L	3/30/04	20:45	97046	1	acn
bis(2-chloroethoxy)methane	111-91-1	0.000009	ប	0.000009	0.0001	0.000009	mg/L	3/30/04	20:45	97046	1	acn

Form I

CC

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Job Number: 270473

Date: 4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

MW-3-1SA04

Laboratory Sample ID: 270473-001

Date/Time Sampled 3/17/04

Sample Matrix: Water

Date/Time Received: 3/18/04

8:52 12:26

TEST METHOD	: CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	ate/Time	Batch	D.F.	Analyst	5-3-64
bis(2-ethylhexyl)phthalate	117-81-7	0.000943	u	0.00018	0.0005	0.000172	mg/L	3/24/04	11:55	97017	1		BC-
Chrysene	218-01-9	0.00052	ナレ	0.000094	0.0005	0.00009	mg/L	3/24/04	11:55	97017	1	acn	UBC
Dibenzofuran	132-64-9	0.0097	JL	0.00008	0.0005	0.000076	mg/L	3/24/04	11:55	97017	1	acn	دبهد
Di-n-butyl Phthalate	84-74-2	0.000654	U	0.00015	0.0005	0.000143	mg/L	3/24/04	11:55	97017	1	acn	egc.
Fluoranthene	206-44-0	0.01034	JL	0.000098	0.0005	0.000093	mg/L	3/24/04	11:55	97017	1	acn	LBC.
Fluorene	86-73-7	0.0427	ナレ	0.000071	0.0005	0.000068	mg/L	3/24/04	11:55	97017	1	acn	18C
Naphthalene	91-20-3	0.000264	JJL	0.00007	0.0005	0.000067	mg/L	3/24/04	11:55	97017	1	acn	436
Nitrobenzene	98-95-3	0.000143	υ	0.00015	0.0005	0.000143	mg/L	3/24/04	11:55	97017	1	acn	
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/24/04	11:55	97017	1	acn	
Pentachlorophenol	87-86-5	0.000038	UR	0.00004	0.0003	0.000038	mg/L	3/30/04	20:45	97046	1	acn	400
Phenanthrene	85-01-8	0.000663	σL	0.000081	0.0005	0.000077	mg/L	3/24/04	11:55	97017	1	acn	E.
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/24/04	11:55	97017	1	acn	
Pyrene	129-00-0	0.004965	ナレ	0.000088	0.0005	0.000084	mg/L	3/24/04	11:55	97017	1	acn (usc-

Form I



Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

MW-2-1SA04

Laboratory Sample ID: 270473-002

Date/Time Sampled 3/17/04

Sample Matrix: Water

Date/Time Received: 3/18/04

9:50 12:26

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	ite/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	19:42	96367	1	zfl
Benzene	71-43-2	0.00143	Ū	0.00143	0.005	0.00143	mg/L	3/22/04	19:42	96367	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/22/04	19:42	96367	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/22/04	19:42	96367	1	zfl
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/22/04	19:42	96367	1	zfl
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	19:42	96367	1	zfl
Xylenes (total)	1330-20-7	0.0122	Ј	0.00441	0.015	0.00441	mg/L	3/22/04	19:42	96367	1	zfl

Form I



Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

MW-2-1SA04

Date/Time Sampled 3/17/04

9:50

Date/Time Received: 3/18/04

12:26

Laboratory Sample ID: 270473-002

Sample Matrix: Water

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analys
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/30/04	21:15	97046	1	acn
2,4-Dimethylphenol	105-67-9	0.000116	ΰ	0.000122	0.0005	0.000116	mg/L	3/24/04	12:25	97017	1	acn
2,4-Dinitrotoluene	121-14-2	0.000009	υ	0.000009	0.0001	0.000009	mg/L	3/30/04	21:15	97046	1	acn
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/30/04	21:15	97046	1	acn
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/24/04	12:25	97017	1	acn
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/24/04	12:25	97017	1	acn
2-Methylnaphthalene	91-57-6	0.001694		0.00007	0.0005	0.000067	mg/L	3/24/04	12:25	97017	1	acn
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/24/04	12:25	97017	1	acn
Acenaphthene	83-32-9	0.03018		0.000078	0.0005	0.000074	mg/L	3/24/04	12:25	97017	1	acn
Acenaphthylene	208-96-8	0.000418	J	0.00008	0.0005	0.000076	mg/L	3/24/04	12:25	97017	1	acn
Anthracene	120-12-7	0.001494		0.00013	0.0005	0.000124	mg/L	3/24/04	12:25	97017	1	acn
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/24/04	12:25	97017	1	acn
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/30/04	21:15	97046	1	acn
bis(2-chloroethoxy)methane	111-91-1	0.000009	υ	0.000009	0.0001	0.000009	mg/L	3/30/04	21:15	97046	1	acn

Form I



Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

Date/Time Sampled 3/17/04

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

3/24/04

12:25

97017

1

acn

Customer Sample ID:

Job Number: 270473

MW-2-1SA04

9:50

Laboratory Sample ID: 270473-002

Sample Matrix Water

mg/L

Date/Time Received: 3/18/04

n-Nitrosodiphenylamine

12:26

86-30-6

0.00009

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL _{??} ,	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst	5-8-6U
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U	0.00018	0.0005	0.000172	mg/L	3/24/04	12:25	97017	1	acn	
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/24/04	12:25	97017	1	acn	
Dibenzofuran	132-64-9	0.01945		0.00008	0.0005	0.000076	mg/L	3/24/04	12:25	97017	1	acn	••
Di-n-butyl Phthalate	84-74-2	0.000792	u	0.00015	0.0005	0.000143	mg/L	3/24/04	12:25	97017	1	acn	LBC_
Fluoranthene	206-44-0	0.001861		0.000098	0.0005	0.000093	mg/L	3/24/04	12:25	97017	1	acn	
Fluorene	86-73-7	0.02035		0.000071	0.0005	0.000068	mg/L	3/24/04	12:25	97017	1	acn	
Naphthalene	91-20-3	0.000604		0.00007	0.0005	0.000067	mg/L	3/24/04	12:25	97017	1	acn	
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/24/04	12:25	97017	1	acn	

Pentachlorophenol 87-86-5 0.000038 UR 0.00004 0.0003 0.000038 97046 mg/L 3/30/04 21:15 LBL acn Phenanthrene 85-01-8 0.002468 0.0005 0.000077 12:25 0.000081 mg/L · 3/24/04 97017 acn 0.0000953 0.0005 0.0000953 Phenol 108-95-2 U 0.0001 mg/L 3/24/04 12:25 97017 1 acn 129-00-0 Pyrene 0.000883 0.000088 0.0005 0.000084 97017 mg/L 3/24/04 12:25 acn

0.000094

0.0005

0.00009

Form I

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Page 23

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Job Number: 270473

TRRP Laboratory Test Results

Date: 4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID: MW-01A-1SA04 Laboratory Sample ID: 270473-003

Date/Time Sampled: 3/17/04 10:40 Sample Matrix: Water

Date/Time Received: 3/18/04 12:26

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL_	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	20:07	96367	1	zfl
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/22/04	20:07	96367	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/22/04	20:07	96367	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/22/04	20:07	96367	1	zfl
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/22/04	20:07	96367	1	zfl
Toluene	108-88-3	- 0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	20:07	96367	1	zfl
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/22/04	20:07	96367	1	zfl



Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

MW-01A-1SA04

Laboratory Sample ID: 270473-003

Date/Time Sampled 3/17/04

Sample Matrix: Water

Date/Time Received: 3/18/04

12:26

10:40

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water						#111111111			troniuminitare processor		DETECTION	Manager Annual Confession
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	3/30/04	21:44	97046	1	acn
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/24/04	12:55	97017	1	acn
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/30/04	21:44	97046	1	acn
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	3/30/04	21:44	97046	1	acn
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/24/04	12:55	97017	1	acn
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/24/04	12:55	97017	1	acn
2-Methylnaphthalene	91-57-6	0.005221		0.00007	0.0005	0.000067	mg/L	3/24/04	12:55	97017	1	acn
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/24/04	12:55	97017	1	acn
Acenaphthene	83-32-9	0.04226		0.000078	0.0005	0.000074	mg/L	3/24/04	12:55	97017	1	acn
Acenaphthylene	208-96-8	0.000785		0.00008	0.0005	0.000076	mg/L ·	3/24/04	12:55	97017	1	acn
Anthracene	120-12-7	0.001854		0.00013	0.0005	0.000124	mg/L	3/24/04	12:55	97017	1	acn
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/24/04	12:55	97017	1	acn
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	3/30/04	21:44	97046	1	acn
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	3/30/04	21:44	97046	1	acn

Form I

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Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

MW-01A-1SA04

Laboratory Sample ID: 270473-003

Date/Time Sampled 3/17/04

Sample Matrix Water

Date/Time Received: 3/18/04

10:40 12:26

TEST. METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst	5-3-04
bis(2-ethylhexyl)phthalate	117-81-7	0.000973	u	0.00018	0.0005	0.000172	mg/L	3/24/04	12:55	97017	1		UBC
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/24/04	12:55	97017	1	acn	
Dibenzofuran	132-64-9	0.0194		0.00008	0.0005	0.000076	mg/L	3/24/04	12:55	97017	1	acn	
Di-n-butyl Phthalate	84-74-2	0.000691	u	0.00015	0.0005	0.000143	mg/L	3/24/04	12:55	97017	1	acn	Less_
Fluoranthene	206-44-0	0.003337		0.000098	0.0005	0.000093	mg/L	3/24/04	12:55	97017	1	acn	
Fluorene	86-73-7	0.02334		0.000071	0.0005	0.000068	mg/L	3/24/04	12:55	97017	1	acn	
Naphthalene	91-20-3	0.000919		0.00007	0.0005	0.000067	mg/L	3/24/04	12:55	97017	1	acn	
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/24/04	12:55	97017	1	acn	
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/24/04	12:55	97017	1	acn	
Pentachlorophenol	87-86-5	0.000038	UR	0.00004	0.0003	0.000038	mg/L	3/30/04	21:44	97046	1	acn	Low
Phenanthrene	85-01-8	0.002194		0.000081	0.0005	0.000077	mg/L	3/24/04	12:55	97017	1	acn	
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/24/04	12:55	97017	1	acn	
Pyrene	129-00-0	0.00117		0.000088	0.0005	0.000084	mg/L	3/24/04	12:55	97017	1	acn	
		•		•	•	•	-	•			•		

Form I

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4/7/04 Date:

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CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

P-12-1SA04

Laboratory Sample ID: 270473-004

Date/Time Sampled 3/17/04

12:50

Sample Matrix Water

Date/Time Received: 3/18/04

12:26

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis I	Date/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	20:33	96367	1	zfl
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/22/04	20:33	96367	1	zfl
Chlorobenzene	108-90-7	0.00155	υ	0.00155	0.005	0.00155	mg/L	3/22/04	20:33	96367	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/22/04	20:33	96367	1	zfl
Methylene Chloride	75-09-2	0.0013	υ	0.0013	0.005	0.0013	mg/L	3/22/04	20:33	96367	1	zfl
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	20:33	96367	1	zfl
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/22/04	20:33	96367	1	zfl



Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

Chris Young ATTN:

Customer Sample ID:

Job Number: 270473

P-12-1SA04

Laboratory Sample ID: 270473-004

Date/Time Sampled 3/17/04

12:50

Sample Matrix: Water

Date/Time Received: 3/18/04

12:26

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TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL,	Address And the Williams	Analysis Da	2000	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	4/1/04	1:02	97046	1	acn
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/24/04	13:25	97017	1	acn
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	4/1/04	1:02	97046	1	acn
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	4/1/04	1:02	97046	1	acn
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/24/04	13:25	97017	1	acn
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/24/04	13:25	97017	1	acn
2-Methylnaphthalene	91-57-6	0.000067	υ	0.00007	0.0005	0.000067	mg/L	3/24/04	13:25	97017	1	acn
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	3/24/04	13:25	97017	1	acn
Acenaphthene	83-32-9	0.000074	U	0.000078	0.0005	0.000074	mg/L	3/24/04	13:25	97017	1	acn
Acenaphthylene	208-96-8	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/24/04	13:25	97017	1	acn
Anthracene	120-12-7	0.000124	U	0.00013	0.0005	0.000124	mg/L	3/24/04	13:25	97017	1	acn
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/24/04	13:25	97017	1	acn
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	4/1/04	1:02	97046	1	acn
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	4/1/04	1:02	97046	1	acn



Date: 4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

P-12-1SA04

12:50

Laboratory Sample ID: 270473-004

12:26

Sample Matrix Water

Date/Time Received: 3/18/04

Date/Time Sampled 3/17/04

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TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst	5-206
bis(2-ethylhexyl)phthalate	117-81-7	0.001748	u	0.00018	0.0005	0.000172	mg/L	3/24/04	13:25	97017	1		48C
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/24/04	13:25	97017	1	acn	
Dibenzofuran	132-64-9	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/24/04	13:25	97017	1	acn	-
Di-n-butyl Phthalate	84-74-2	0.000922	u	0.00015	0.0005	0.000143	mg/L	3/24/04	13:25	97017	1	acn	LEC-
Fluoranthene	206-44-0	0.000093	U	0.000098	0.0005	0.000093	mg/L	3/24/04	13:25	97017	1 ;	acn	
Fluorene	86-73-7	0.000068	U	0.000071	0.0005	0.000068	mg/L	3/24/04	13:25	97017	1	acn	
Naphthalene	91-20-3	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/24/04	13:25	97017	1	acn	
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/24/04	13:25	97017	1	acn	
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/24/04	13:25	97017	1	acn	
Pentachlorophenol	87-86-5	0.000337	JL	0.00004	0.0003	0.000038	mg/L	4/1/04	1:02	97046	1	acn	LBL
Phenanthrene	85-01-8	0.000077	U	0.000081	0.0005	0.000077	mg/L	3/24/04	13:25	97017	1	acn	
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/24/04	13:25	97017	1	acn	
Pyrene	129-00-0	0.007348		0.000088	0.0005	0.000084	mg/L	3/24/04	13:25	97017	1	acn	

Form I



Job Number: 270473

4/7/04 Date:

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

P-11-1SA04

Laboratory Sample ID: 270473-005

Date/Time Sampled 3/17/04

Sample Matrix Water

Date/Time Received: 3/18/04

8:55 12:26

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/23/04	13:15	96367	1	zfl
Benzene	71-43-2	0.00143	Ū	0.00143	0.005	0.00143	mg/L	3/23/04	13:15	96367	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/23/04	13:15	96367	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/23/04	13:15	96367	1	zfl
Methylene Chloride	75-09-2	0.0013	ับ	0.0013	0.005	0.0013	mg/L	3/23/04	13:15	96367	1	zfl
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/23/04	13:15	96367	1	zfl
Xylenes (total)	1330-20-7	0.00441	υ	0.00441	0.015	0.00441	mg/L	3/23/04	13:15	96367	1	zfl



Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

P-11-1SA04

Laboratory Sample ID: 270473-005

Date/Time Sampled 3/17/04

Sample Matrix: Water

Date/Time Received: 3/18/04

8:55 12:26

TEST METHOD CAS# RESULT. Analysis Date/Time **FLAG** MDL MQL SQL **UNITS** Batch D.F. Analyst Method: SW-846 8270C, Water 5-9-64 Hin 1,2-Diphenylhydrazine 122-66-7 0.00005 UWT 0.00005 0.0001 0.00005 4/1/04 97046 mg/L 0:33 1 acn ፈፀር -2,4-Dimethylphenol 105-67-9 0.000116 U 0.000122 0.0005 0.000116 3/24/04 97017 mg/L 10:24 1 acn 2,4-Dinitrotoluene 121-14-2 0.000009 U w 0.000009 0.0001 0.000009 mg/L 4/1/04 0:33 97046 1 acn 606-20-2 2.6-Dinitrotoluene 0.000026 U ust 0.000027 0.0001 0.000026 mg/L 4/1/04 0:33 97046 1 acn Joseph 2-Chloronaphthalene 91-58-7 0.000076 U 0.00008 0.0005 0.000076 3/24/04 97017 mg/L 10:24 1 acn 2-Methyl-4,6-dinitrophenol 534-52-1 0.000295 U 0.00031 0.0015 0.000295 mg/L 3/24/04 10:24 97017 acn 2-Methylnaphthalene 91-57-6 0.001097 0.00007 0.0005 10.000067 3/24/04 97017 mg/L 10:24 1 acn 4-Nitrophenol 100-02-7 0.000285 IJ 0.000299 0.0015 0.000285 mg/L 3/24/04 10:24 97017 1 acn Acenaphthene 83-32-9 0.1301 0.000078 0.0005 0.00037 mg/L 3/26/04 15:13 97017 acn Acenaphthylene 208-96-8 0.000076 U 0.00008 0.0005 0.000076 3/24/04 97017 mg/L 10:24 acn Anthracene 120-12-7 0.005611 0.00013 0.0005 0.000124 3/24/04 mg/L 10:24 97017 1 acn Benzo(a)anthracene 56-55-3 0.000267 IJ 0.00028 0.0005 0.000267 mg/L 3/24/04 10:24 97017 1 acn Benzo(a)pyrene 50-32-8 U W 0.000007 0.000007 0.0001 10.000007 mg/L 4/1/04 0:33 97046 1 acn CAC bis(2-chloroethoxy)methane 111-91-1 0.000009 U wt 0.000009 0.0001 0.000009 4/1/04 97046 mg/L 0:33 acn usc

Form I



Date: 4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

P-11-1SA04

Laboratory Sample ID: 270473-005

Date/Time Sampled 3/17/04

Sample Matrix Water

Date/Time Received: 3/18/04

8:55 12:26

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch ្	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000904	u	0.00018	0.0005	0.000172	mg/L	3/24/04	10:24	97017	1	acn dec
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/24/04	10:24	97017	1	acn
Dibenzofuran	132-64-9	0.003985		0.00008	0.0005	0.000076	mg/L	3/24/04	10:24	97017	1	acn
Di-n-butyl Phthalate	84-74-2	0.000923	u	0.00015	0.0005	0.000143	mg/L	3/24/04	10:24	97017	1	acn use
Fluoranthene	206-44-0	0.008623		0.000098	0.0005	0.000093	mg/L	3/24/04	10:24	97017	1	acn
Fluorene	86 - 73-7	0.05025		0.000071	0.0005	0.00034	mg/L	3/26/04	15:13	97017	5	acn
Naphthalene	91-20-3	0.007031		0.00007	0.0005	0.000067	mg/L	3/24/04	10:24	97017	1	acn
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/24/04	10:24	97017	1	acn
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	3/24/04	10:24	97017	1	acn
Pentachlorophenol	87-86-5	0.000038	UR	0.00004	0.0003	0.000038	mg/L	4/1/04	0:33	97046	1	acn 43c-
Phenanthrene	85-01-8	0.01956		0.000081	0.0005	0.000077	mg/L	3/24/04	10:24	97017	1	acn
Thenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/24/04	10:24	97017	1	acn
Pyrene	129-00-0	0.00445		0.000088	0.0005	0.000084	mg/L	3/24/04	10:24	97017	1	acn

Form I



Job Number: 270473

TRRP Laboratory Test Results

Date: 4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID: P-11 MS-1SA04 Laboratory Sample ID: 270473-006

Date/Time Received: 3/18/04 12:26

	Annual State in the second second	Antibura or a sale to the societies	Secretary Secretary with	KU JENNO W W WANTED	in and a second of the second	1		riches hakereit	[33518]3551]	14 (1 (8) (1 3) (1		
TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis I	Date/Time	Batch	D.F.	Analys
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.052		0.00136	0.005	0.00136	mg/L	3/23/04	14:09	96367	1	zfl
Benzene	71-43-2	0.045		0.00143	0.005	0.00143	mg/L	3/23/04	14:09	96367	1	zfl
Chlorobenzene	108-90-7	0.0602		0.00155	0.005	0.00155	mg/L	3/23/04	14:09	96367	1	zfl
Ethylbenzene	100-41-4	0.0591		0.00137.	0.005	0.00137	mg/L	3/23/04	14:09	96367	1	zfl
Methylene Chloride	75-09-2	0.0457		0.0013	0.005	0.0013	mg/L	3/23/04	14:09	96367	1	zfl
Toluene	108-88-3	0.0574		0.00136	0.005	0.00136	mg/L	3/23/04	14:09	96367	1	zfl
Xylenes (total)	1330-20-7	0.175		0.00441	0.015	0.00441	mg/L	3/23/04	14:09	96367	1	zfl

<u>a</u>



Job Number: 270473

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

P-11 MS-1SA04

Date/Time Sampled 3/17/04

9:20

Date/Time Received: 3/18/04

12:26

Laboratory Sample ID: 270473-006

4/7/04

Date:

Sample Matrix: Water

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	ite/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00096	- Market Anti-Frag - Page Talahad Sagle -	0.00005	0.0001	0.00005	mg/L	3/30/04	14:26	97046	1	acn
2,4-Dimethylphenol	105-67-9	0.007108		0.000122	0.0005	0.000116	mg/L	3/24/04	10:54	97017	1	acn
2,4-Dinitrotoluene	121-14-2	0.00089		0.000009	0.0001	0.000009	mg/L	3/30/04	14:26	97046	1	acn
2,6-Dinitrotoluene	606-20-2	0.000869		0.000027	0.0001	0.000026	mg/L	3/30/04	14:26	97046	1	acn
2-Chloronaphthalene	91-58-7	0.008183		0.00008	0.0005	0.000076	mg/L	3/24/04	10:54	97017	1	acn
2-Methyl-4,6-dinitrophenol	534-52-1	0.01457		0.00031	0.0015	0.000295	mg/L	3/24/04	10:54	97017	1	acn
2-Methylnaphthalene	91-57-6	0.008782	ļ	0.00007	0.0005	0.000067	mg/L	3/24/04	10:54	97017	1	acn
4-Nitrophenol	100-02-7	0.002937		0.000299	0.0015	0.000285	mg/L	3/24/04	10:54	97017	1	acn
Acenaphthene	83-32-9	0.115		0.000078	0.0005	0.00037	mg/L	4/1/04	20:16	97017	5	acn
Acenaphthylene	208-96-8	0.008813		0.00008	0.0005	0.000076	mg/L	3/24/04	10:54	97017	1	acn
Anthracene	120-12-7	0.01343		0.00013	0.0005	0.000124	mg/L	3/24/04	10:54	97017	1	acn
Benzo(a)anthracene	56-55-3	0.008749		0.00028	0.0005	0.000267	mg/L	3/24/04	10:54	97017	1	acn
Benzo(a)pyrene	50-32-8	0.000762		0.000007	0.0001	0.000007	mg/L	3/30/04	14:26	97046	1	acn
bis(2-chloroethoxy)methane	111-91-1	0.000776		0.000009	0.0001	0.000009	mg/L	3/30/04	14:26	97046	1	acn



4/7/04 Date:

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

P-11 MS-1SA04

Laboratory Sample ID: 270473-006

Date/Time Sampled 3/17/04

Sample Matrix: Water

Date/Time Received: 3/18/04

9:20 12:26

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TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.006581		0.00018	0.0005	0.000172	mg/L	3/24/04	10:54	97017	1	acn
Chrysene	218-01-9	0.008946		0.000094	0.0005	0.00009	mg/L	3/24/04	10:54	97017	1	acn
Dibenzofuran	132-64-9	0.01175		0.00008	0.0005	0.000076	mg/L	3/24/04	10:54	97017	1	acn
Di-n-butyl Phthalate	84-74-2	0.009483		0.00015	0.0005	0.000143	mg/L	3/24/04	10:54	97017	1	acn
Fluoranthene	206-44-0	0.01768		0.000098	0.0005	0.000093	mg/L	3/24/04	10:54	97017	1	acn
Fluorene	86-73-7	0.04594		0.000071	0.0005	0.000068	mg/L	3/24/04	10:54	97017	1	acn
Naphthalene	91-20-3	0.01838		0.00007	0.0005	0.000067	mg/L	3/24/04	10:54	97017	1	acn
Nitrobenzene	98-95-3	0.007007		0.00015	0.0005	0.000143	mg/L	3/24/04	10:54	97017	1	acn
n-Nitrosodiphenylamine	86-30-6	0.009583		0.000094	0.0005	0.00009	mg/L	3/24/04	10:54	97017	1	acn
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/30/04	14:26	97046	1	acn
Phenanthrene	85-01-8	0.02322		0.000081	0.0005	0.000077	mg/L	3/24/04	10:54	97017	1	acn
Phenol	108-95-2	0.003133		0.0001	0.0005	0.0000953	mg/L	3/24/04	10:54	97017	1	acn
Pyrene	129-00-0	0.01345		0.000088	0.0005	0.000084	mg/L	3/24/04	10:54	97017	1	acn

Form I



Date: 4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

9:50

Customer Sample ID: P-11 MSD-1SA04

Laboratory Sample ID: 270473-007

Date/Time Sampled 3/17/04

Job Number: 270473

Sample Matrix: Water

Date/Time Received: 3/18/04 12:26

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.0498		0.00136	0.005	0.00136	mg/L	3/23/04	15:03	96367	1	zfl
Benzene	71-43-2	0.042		0.00143	0.005	0.00143	mg/L	3/23/04	15:03	96367	1	zfl
Chlorobenzene	108-90-7	0.0574		0.00155	0.005	0.00155	mg/L	3/23/04	15:03	96367	1	zfl
Ethylbenzene	100-41-4	0.0553		0.00137	0.005	0.00137	mg/L	3/23/04	15:03	96367	1	zfl
Methylene Chloride	75-09-2	0.0419		0.0013	0.005	0.0013	mg/L	3/23/04	15:03	96367	1	zfi
Toluene	108-88-3	0.054		0.00136	0.005	0.00136	mg/L	3/23/04	15:03	96367	1	zfl
Xylenes (total)	1330-20-7	0.164		0.00441	0.015	0.00441	mg/L	3/23/04	15:03	96367	1	zfl



Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

P-11 MSD-1SA04

Laboratory Sample ID: 270473-007

Date/Time Sampled 3/17/04

Sample Matrix: Water

Date/Time Received: 3/18/04

9:50 12:26

TEST METHOD	CAC# 1	DECLIT	TI AC	MIN	MOT	Too Too	I D II TO		- Constitution			ar market are an
and the state of t	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.0008		0.00005	0.0001	0.00005	mg/L	3/30/04	14:55	97046	1	acn
2,4-Dimethylphenol	105-67-9	0.007212		0.000122	0.0005	0.000116	mg/L	3/24/04	11:24	97017	1	acn
2,4-Dinitrotoluene	121-14-2	0.000862		0.000009	0.0001	0.000009	mg/L	3/30/04	14:55	97046	1	acn
2,6-Dinitrotoluene	606-20-2	0.000879		0.000027	0.0001	0.000026	mg/L	3/30/04	14:55	97046	1	acn
2-Chloronaphthalene	91-58-7	0.008028		0.00008	0.0005	0.000076	mg/L	3/24/04	11:24	97017	1	acn
2-Methyl-4,6-dinitrophenol	534-52-1	0.01439		0.00031	0.0015	0.000295	mg/L	3/24/04	11:24	97017	1	acn
2-Methylnaphthalene	91-57-6	0.008967		0.00007	0.0005	0.000067	mg/L	3/24/04	11:24	97017	1	acn
4-Nitrophenol	100-02-7	0.004705		0.000299	0.0015	0.000285	mg/L	3/24/04	11:24	97017	1	acn
Acenaphthene	83-32-9	0.1004		0.000078	0.0005	0.00037	mg/L	4/1/04	20:46	97017	5	acn
Acenaphthylene	208-96-8	0.008463		0.00008	0.0005	0.000076	mg/L	3/24/04	11:24	97017	1	acn
Anthracene	120-12-7	0.01314		0.00013	0.0005	0.000124	mg/L	3/24/04	11:24	97017	1	acn
Benzo(a)anthracene	56-55-3	0.008396		0.00028	0.0005	0.000267	mg/L	3/24/04	11:24	97017	1	acn
Benzo(a)pyrene	50-32-8	0.000779		0.000007	0.0001	0.000007	mg/L	3/30/04	14:55	97046	1	acn
bis(2-chloroethoxy)methane	111-91-1	0.00074		0.000009	0.0001	0.000009	mg/L	3/30/04	14:55	97046	1	acn

Form I



Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

Job Number: 270473

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

P-11 MSD-1SA04

Laboratory Sample ID: 270473-007

Date/Time Sampled: 3/17/04

Sample Matrix: Water

Date/Time Received: 3/18/04

12:26

9:50

TEST METHOD	CAS#	RESULT	FLAG	MDL	∍MQL	SQL	a UNITS	Analysis Da	ate/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.007069		0.00018	0.0005	0.000172	mg/L	3/24/04	11:24	97017	1	acn
Chrysene	218-01-9	0.008753		0.000094	0.0005	0.00009	mg/L	3/24/04	11:24	97017	1	acn
Dibenzofuran	132-64-9	0.01117		0.00008	0.0005	0.000076	mg/L	3/24/04	11:24	97017	1	acn
Di-n-butyl Phthalate	84-74-2	0.009282	:	0.00015	0.0005	0.000143	mg/L	3/24/04	11:24	97017	1	acn
Fluoranthene	206-44-0	0.01683		0.000098	0.0005	0.000093	mg/L	3/24/04	11:24	97017	1	acn
Fluorene	86-73-7	0.04196		0.000071	0.0005	0.000068	mg/L	3/24/04	11:24	97017	1	acn
Naphthalene	91-20-3	0.01966		0.00007	0.0005	0.000067	mg/L	3/24/04	11:24	97017	1	acn
Nitrobenzene	98-95-3	0.00778		0.00015	0.0005	0.000143	mg/L	3/24/04	11:24	97017	1	acn
n-Nitrosodiphenylamine	86-30-6	0.01004		0.000094	0.0005	0.00009	mg/L	3/24/04	11:24	97017	1	acn
Pentachlorophenol	87-86-5	0.000038	U	0.00004	0.0003	0.000038	mg/L	3/30/04	14:55	97046	1	acn
Phenanthrene	85-01-8	0.02084	<u> </u>	0.000081	0.0005	0.000077	mg/L	3/24/04	11:24	97017	1	acn
Phenol	108-95-2	0.003327		0.0001	0.0005	p.0000953	mg/L	3/24/04	11:24	97017	1	acn
Pyrene	129-00-0	0.01314		0.000088	0.0005	0.000084	mg/L	3/24/04	11:24	97017	1	acn

Form I



Date:

4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Customer Sample ID:

Job Number: 270473

FB-031704-1SA04

Laboratory Sample ID: 270473-008

Date/Time Sampled 3/17/04

Sample Matrix Field Blank

Date/Time Received: 3/18/04

12:26

13:00

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												#12E9#60]F
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	20:58	96367	1	zfl
Benzene	71-43-2	0.00143	Ū	0.00143	0.005	0.00143	mg/L	3/22/04	20:58	96367	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/22/04	20:58	96367	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/22/04	20:58	96367	1	zfl
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/22/04	20:58	96367	1	zfl
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	20:58	96367	1	zfl
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	3/22/04	20:58	96367	1	zfl

Form I



Job Number: 270473

PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID:

FB-031704-1SA04

Date/Time Sampled 3/17/04

CUSTOMER: ERM Southwest, Inc.- Houston

13:00

Date/Time Received: 3/18/04

12:26

Laboratory Sample ID: 270473-008

Date:

4/7/04

Sample Matrix Field Blank

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00005	U	0.00005	0.0001	0.00005	mg/L	4/2/04	12:20	97046	1	acn
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	3/24/04	13:55	97017	1	acn
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	4/2/04	12:20	97046	1	acn
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	4/2/04	12:20	97046	1	acn
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/24/04	13:55	97017	1	acn
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	3/24/04	13:55	97017	1	acn
2-Methylnaphthalene	91-57-6	0.000067	. U	0.00007	0.0005	0.000067	mg/L	3/24/04	13:55	97017	1	acn
4-Nitrophenol	100-02-7	0.000285	Ū	0.000299	0.0015	0.000285	mg/L	3/24/04	13:55	97017	1	acn
Acenaphthene	83-32-9	0.000074	ับ	0.000078	0.0005	0.000074	mg/L	3/24/04	13:55	97017	1	acn
Acenaphthylene	208-96-8	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/24/04	13:55	97017	1	acn
Anthracene	120-12-7	0.000124	U	0.00013	0.0005	0.000124	mg/L	3/24/04	13:55	97017	1	acn
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	3/24/04	13:55	97017	1	acn
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	4/2/04	12:20	97046	1	acn
bis(2-chloroethoxy)methane	111-91-1	0.000009	υ	0.000009	0.0001	0.000009	mg/L	4/2/04	12:20	97046	1	acn

Form I



4/7/04

Job Number: 270473

Date:

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID: FB-031704-1SA04 Laboratory Sample ID: 270473-008

Date/Time Sampled: 3/17/04 13:00 Sample Matrix: Field Blank

Date/Time Received: 3/18/04 12:26

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	ite/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U	0.00018	0.0005	0.000172	mg/L	3/24/04	13:55	97017	1	acn
Chrysene	218-01-9	0.00009	υ	0.000094	0.0005	0.00009	mg/L	3/24/04	13:55	97017	1	acn
Dibenzofuran	132-64-9	0.000076	U	0.00008	0.0005	0.000076	mg/L	3/24/04	13:55	97017	1	acn
Di-n-butyl Phthalate	84-74-2	0.000361	J	0.00015	0.0005	0.000143	mg/L	3/24/04	13:55	97017	1	acn
Fluoranthene	206-44-0	0.000093	U	0.000098	0.0005	0.000093	mg/L	3/24/04	13:55	97017	1	acn
Fluorene	86-73-7	0.000068	U	0.000071	0.0005	0.000068	mg/L	3/24/04	13:55	97017	1	acn
Naphthalene	91-20-3	0.000067	U	0.00007	0.0005	0.000067	mg/L	3/24/04	13:55	97017	1	acn
Nitrobenzene	98-95-3	0.000143	U	0.00015	0.0005	0.000143	mg/L	3/24/04	13:55	97017	1	acn
n-Nitrosodiphenylamine	86-30-6	0.00009	บ	0.000094	0.0005	0.00009	mg/L	3/24/04	13:55	97017	1	acn
Pentachlorophenol	87-86-5	0.000038	ับ	0.00004	0.0003	0.000038	mg/L	4/2/04	12:20	97046	1	acn
Phenanthrene	85-01-8	0.000077	U	0.000081	0.0005	0.000077	mg/L	3/24/04	13:55	97017	1	acn
Phenol	108-95-2	0.0000953	U	0.0001	0.0005	0.0000953	mg/L	3/24/04	13:55	97017	1	acn
Pyrene	129-00-0	0.000084	υ	0.000088	0.0005	0.000084	mg/L	3/24/04	13:55	97017	1	acn

Form I Page 41



Job Number: 270473

TRRP Laboratory Test Results

Date: 4/7/04

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Customer Sample ID: TB02-1SA04 Laboratory Sample ID: 270473-009

Date/Time Sampled 3/17/04 0:00 Sample Matrix Trip Blank

Date/Time Received: 3/18/04 12:26

TEST METHOD	CAS#	RESULT	FLAG	MDL	MQL	SQL	UNITS	Analysis D	ate/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	3/22/04	21:24	96367	1	zfl
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	3/22/04	21:24	96367	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	3/22/04	21:24	96367	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	3/22/04	21:24	96367	1	zfl
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	3/22/04	21:24	96367	1	zfl
Toluene	108-88-3	0.00136	บ	0.00136	0.005	0.00136	mg/L	3/22/04	21:24	96367	1	zfl
Xylenes (total)	1330-20-7	0.00441	. U	0.00441	0.015	0.00441	mg/L	3/22/04	21:24	96367	1	zfl



	Job Number.: 270473	QUALITY	CONTROL	. RI	ESULT	S	Report	Date.: 04/07	/200	4	
CUSTOMER: ERM	Southwest, Inc Houston	PROJEC	T: UPRR-HWPW-0	01441	9 60		ATTN: (Chris Young			
QC Type	Description		Reag. Code	•	Lab	ID	Dilut	ion Factor	Da	te Ti	me
	: SW-846 8270C ption.: Semivolatile Organ	ics - SIM Analysi			: ug. 97046	/L		Analyst	:	acn	
LCS I	Laboratory Control Sample		SVS031904J		96171				03/2	6/2004 1	643
Parame	ter/Test Description	QC Result	QC Result	True	Value	Orig.	Value	Calc. Result	*	Limits	F
nzo(a)pyrene, s(2-chloroeth 4-Dinitrotolu 6-Dinitrotolu entachlorophene 2-Diphenylhyd	oxy)methane, Water ene, Water ene, Water ol, Water	0.40815 0.39598 0.34998 0.38170 0.44238 0.35261			0.500000 0.500000 0.500000 0.500000 0.500000 0.500000		0 0 0 0 0 0	81.6 79.2 70.0 76.3 88.5 70.5		30-130 30-130 60-140 60-140 30-130 30-130	
мв ј	Method Blank		SVS0302048		96171				03/2	:6/2004 1	1614
Parame	ter/Test Description	QC Result	QC Result	True	Value	Orig.	Value	Calc. Result	*	Limits	F
enzo(a)pyrene, s(2-chloroetho 4-Dinitrotolo 6-Dinitrotolo entachloropheno 2-Diphenylhyd	oxy)methane, Water ene, Water ene, Water ol, Water	0 0 0 0 0			·						
MS /	Matrix Spike		svs031904K		270487-5				03/2	27/2004 (0101
Parame	ter/Test Description	QC Result	QC Result	True	Value	Orig.	Value	Calc. Result	*	Limits	F
nzo(a)pyrene, s(2-chloroeth 4-Dinitrotolue 6-Dinitrotolue ntachlorophene 2-Diphenylhyd	oxy)methane, Water ene, Water ene, Water ol, Water	0.00533 0.32463 0.37354 0.05316 0.07038 0.49820			0.500000 0.500000 0.500000 0.500000 0.500000		0 0 0 0 0 0.08095	1 65 75 11 -2 100		30-130 30-130 24-96 30-130 5-103 60-140	A A
MS N	Matrix Spike		SVS031904K		270473-6				03/3	0/2004 1	1426
Parame	ter/Test Description	QC Result	QC Result	True	Value	Orig.	Value	Calc. Result	: *	Limits	F
nzo(a)pyrene, s(2-chloroetho 4-Dinitrotolue 6-Dinitrotolue ntachloropheno 2-Diphenylhydi	oxy)methane, Water ene, Water ene, Water ol, Water	0.39981 0.40727 0.46723 0.45608 0 0.50650			0.500000 0.500000 0.500000 0.500000 0.500000		0 0 0 0 0 0	80 81 93 91 0		30-130 30-130 24-96 30-130 5-103 60-140	А

Page 43 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

SEVERN STL

Job Number.: 270473	QUALITY	CONTROL	RESULTS	Report	Date.: 04/07/	2004
CUSTOMER: ERM Southwest, Inc Houston QC Type Description	PROJEC	T: UPRR-HWPW-001	4419 60 Lab ID	ATTN:	ion Factor	Date Time
MSD Matrix Spike Duplicate		SVS031904K	270487-6		O	3/27/2004 0131
Parameter/Test Description	QC Result	QC Result T	rue Value Orig.	Value	Calc. Result	* Limits F
Benzo(a)pyrene, Water	0.38920	0.00533	0.500000	0	78	30.0-130.0
bis(2-chloroethoxy)methane, Water	0.08520	0.32463	0.500000	0	194.6 17	40.0 A 30.0-130.0 A
2,4-Dinitrotoluene, Water	0.42472	0.37354	0.500000	0	116.8 85	30.0 A 24.0-96.0
2,6-Dinitrotoluene, Water	0.36223	. 0.05316	0.500000	0	12.8 72	30.0 30.0-130.0
Pentachlorophenol, Water	0.44253	0.07038	0.500000	0.08095	148.8 72	30.0 A 5.0-103.0
1,2-Diphenylhydrazine, Water	0.37416	0.49820	0.500000	0	145.1 75	40.0 A 60.0-140.0
The principality and a mater	0.57410	0.47020	0.30000	·	28.6	40.0
		I			T	
MSD Matrix Spike Duplicate		svs031904K	270473-7		0	3/30/2004 1455
Parameter/Test Description	QC Result			Value	Calc. Result	
Benzo(a)pyrene, Water	0.40878	0.39981	0.500000	0	82 2.2	30.0-130.0 40.0
bis(2-chloroethoxy)methane, Water	0.38843	0.40727	0.500000	0	78 4.7	30.0-130.0 30.0
2,4-Dinitrotoluene, Water	0.45250	0.46723	0.500000	0	90 3.2	24.0-96.0 30.0
2,6-Dinitrotoluene, Water	0.46132	0.45608	0.500000	0	92	30.0-130.0
Pentachlorophenol, Water	0	0	0.500000	0	1.1	30.0 5.0-103.0 A
1,2-Diphenylhydrazine, Water	0.42003	0.50650	0.500000	0	0.0 84 18.7	40.0 60.0-140.0 40.0
Test Method: SW-846 8270C Method Description.: Semivolatile Organi	cs, Low Level	Units Batch(s)	: ug/L .: 97017		Analyst.	: acn
LCS Laboratory Control Sample		SVS031904J	96170		0	3/24/2004 0954
Parameter/Test Description	QC Result	QC Result T	rue Value Orig.	Value	Calc. Result	* Limits F
Acenaphthene, Water Acenaphthylene, Water	4.51515 4.28688		5.000000 5.00000		90.3 85.7	32-165 10-150
Anthracene, Water Benzo(a)anthracene, Water	4.69058 4.59001		5.000000 5.000000		93.8 91.8	23-178 25-180
bis(2-ethylhexyl)phthalate, Water 2-Chloronaphthalene, Water	4.43400 4.14884		5.000000 5.000000		88.7 83.0	25-173 23-143
Chrysene, Water	4.87471 4.33981		5.000000		97.5	23-180
Dibenzofuran, Water Di-n-butyl Phthalate, Water	4.88014		5.000000 5.000000		86.8 97.6	35-153 28-185
Fluoranthene, Water Fluorene, Water	4.99281 4.54334		5.000000 5.000000		99.9 90.9	28-180 30-189
2-Methylnaphthalene, Water Naphthalene, Water	4.37877 4.50582		5.000000 5.000000		87.6 90.1	26-168 36-139
Nitrobenzene, Water	4.04906		5.000000		81.0	17-163
		Page 44	* %=% REC, R=RPD	A=ABS D	oiff., D=% Dif	f.

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Job Number.: 270473	QUALITY	CONTROL	RESULT		Date.: 04/07	7/2004	
CUSTOMER: ERM Southwest, Inc Houston	PROJEC	T: UPRR-HWPW-0	014419 60	ATTN:			
QC Type Description		Reag. Code	Lab	ID Dilut	ion Factor	Date	ime
LCS Laboratory Control Sample		svs031904J	96170			03/24/2004	0954
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits	_ F
-Nitrosodiphenylamine, Water	4.22516		5.000000		84.5	58-17	
nenanthrene, Water yrene, Water	4.73803 4.79426		5.000000 5.000000		94.8 95.9	26-16 28-17	
,4-Dimethylphenol, Water	3.98393		5.000000		79.7	23-15	
-Methyl-4,6-dinitrophenol, Water	6.63299		5.000000		132.7	10-16	¥
-Nitrophenol, Water	1.68863		5.000000		33.8	10-92	
nenol, Water	1.88209		5.000000		37.6	20-83	
MB Method Blank		svs030204B	96170			03/24/2004	0924
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits	F
cenaphthene, Water	0						
cenaphthylene, Water	0						
nthracene, Water enzo(a)anthracene, Water	. 0 . 0						
is(2-ethylhexyl)phthalate, Water	0.46517						
-Chloronaphthalene, Water	0						
rysene, Water	0						
benzofuran, Water	0						
-n-butyl Phthalate, Water	0						
uoranthene, Water	U						
luorene, Water Methylnaphthalene, Water	0						
aphthalene, Water	ŏ						
itrobenzene, Water	0				•		
-Nitrosodiphenylamine, Water	0						
nenanthrene, Water	0						
/rene, Water ,4-Dimethylphenol, Water	0				•		
-Methyl-4,6-dinitrophenol, Water	n						
Nitrophenol, Water	Ď						
enol, Water	Ö						
		svs031904J	3-0/		Ī		4057
MS Matrix Spike			270473-6	•		03/24/2004	1054
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul		F -
enaphthene, Water enaphthylene, Water	53.3120 4.62612		5.000000 5.000000		-136 93	46-11 30-13	
othracene, Water	7.04877		5.000000			30-13	
enzo(a)anthracene, Water	4.59274		5.000000	0	92	60-14	0
s(2-ethylhexyl)phthalate, Water	3.45457		5.000000			60-14	
Chloronaphthalene, Water	4.29566		5.000000		86 94	30-13 30-13	
rysene, Water benzofuran, Water	4.69620 6.16582		5.000000 5.000000			30-13 30-13	
-n-butyl Phthalate, Water	4.97772		5.000000			30-13 30-13	
	9.28271		5.000000			30-13	
· · · · · · · · · · · · · · · · · · ·					-43	30-13	O A
uoranthene, Water	24.1132		5.000000				
uoranthene, Water uorene, Water Methylnaphthalene, Water	24.1132 4.61007		5.000000	0.57605	81	60-14	
uoranthene, Water uorene, Water Methylnaphthalene, Water aphthalene, Water	24.1132 4.61007 9.64878		5.000000 5.000000	0.57605 3.69100	81 119	60-14 30-13	0
uoranthene, Water uorene, Water Methylnaphthalene, Water phthalene, Water	24.1132 4.61007		5.000000	0.57605 3.69100	81	60-14	0
uoranthene, Water uorene, Water Methylnaphthalene, Water phthalene, Water	24.1132 4.61007 9.64878	Page 45	5.000000 5.000000 5.000000	0.57605 3.69100	81 119 74	60-14 30-13 30-13	0
uoranthene, Water uorene, Water Methylnaphthalene, Water	24.1132 4.61007 9.64878	Page 45	5.000000 5.000000 5.000000	0.57605 3.69100 0	81 119 74 Diff., D=% D	60-14 30-13 30-13	0

SEVERN STL

										_
	Job Number.: 270473	QUALITY	CONTROL	. RE	SULT		Date.: 04/07/	/2004		
	CUSTOMER: ERM Southwest, Inc Houston	PROJE	CT: UPRR-HWPW-C	014419	60	ATTN:				
П	QC Type Description		Reag. Code		Lab 1	ID Dilut	ion Factor	Date	Time	
П	MS Matrix Spike		svs031904J		270473-6			3/24/20	04 1054	<i>[</i>]
U	Parameter/Test Description	QC Result	QC Result	True \	Value	Orig. Value	Calc. Result	* Lim	its F	F
\sim	n-Nitrosodiphenylamine, Water Phenanthrene, Water	5.03064 12.1892			5.000000	0 10.2660	101 38		- 130 - 130	_
	Pyrene, Water	7.05869		:	5.000000	2.33622	94	26	-115	
u	2,4-Dimethylphenol, Water 2-Methyl-4,6-dinitrophenol, Water	3.73116 7.64746			5.000000	0 0	75 153		-130 -130 <i>i</i>	A
П	4-Nitrophenol, Water	1.54175			5.000000	0	31	10	-80	•
U	Phenol, Water	1.64469		-	5.000000	0	33	10	-112	
ń	MS Matrix Spike		svs031904J		270487-5		(3/26/20	04 - 1243	3
IJ	Parameter/Test Description	QC Result	QC Result	True \	Value	Orig. Value	Calc. Result	* Lim	its F	 F
	Acenaphthene, Water	83.3035			5.000000	64.9434	367			A
П	Acenaphthylene, Water Anthracene, Water	5.36357 10.2028			5.000000	1.16795 4.46504	84 115		-130 -130	
U	Benzo(a)anthracene, Water	4.13756			5.000000	0	83	60	-140	
	bis(2-ethylhexyl)phthalate, Water 2-Chloronaphthalene, Water	3.65060 4.18500			5.000000	0 0	73 84		-140 -130	
П	Chrysene, Water	4.45336			5.000000	Ö	89		-130	
	Dibenzofuran, Water	68.0533			5.000000	51.2082	337			A
	Di-n-butyl Phthalate, Water Fluoranthene, Water	4.09481 7.40360			5.000000	0.18434 1.64592	78 115		-130 -130	
	Fluorene, Water	32.8590		5	5.000000	23.8964	179	30	-130 A	Ą
11	2-Methylnaphthalene, Water Naphthalene, Water	179.271 1046.96			5.000000	147.082 883.465	644 3270			A A
ч	Nitrobenzene, Water	4.32643			5.000000	0	87		-130 <i>/</i> -130	`
	n-Nitrosodiphenylamine, Water	5.26653			5.000000	0	105		-130	_
П	Phenanthrene, Water Pyrene, Water	41.9080 6.43954			5.000000	27.3125 0.89682	292 111		-130 <i>f</i> -115	Ą
Ц	2,4-Dimethylphenol, Water	11.1798			5.000000	13.1414	-39			Ą
	2-Methyl-4,6-dinitrophenol, Water	4.85979			5.000000	0 0	97 96		-130 -80 <i>1</i>	
П	4-Nitrophenol, Water Phenol, Water	4.80372 12.2559			5.000000	27.5809	-306		-80 # -112 #	A A
Ц								V		1
П	MSD Matrix Spike Duplicate		SVS031904J	7	270473-7		(3/24/200	04 - 1124	
П	Parameter/Test Description	QC Result	QC Result	True \		Orig. Value		* Lim		: -
_	Acenaphthene, Water	49.5673	53.3120	5	5.000000	60.1102	-211 7.3	46.0 31.0	-118.0 <i>f</i>	¥.
	Acenaphthylene, Water	4.44235	4.62612	5	5.000000	0	89 4.1	30.0 50.0	-130.0	
_	Anthracene, Water	6.89767	7.04877	5	5.000000	2.94562	79 2.2	30.0 ⁻ 50.0	-130.0	
Π	Benzo(a)anthracene, Water	4.40712	4.59274	5	5.000000	0	88 · 4.1	60.0 30.0	-140.0	
u	bis(2-ethylhexyl)phthalate, Water	3.71070	3.45457	5	000000	0.47470	65 7.1		-140.0	
П	2-Chloronaphthalene, Water	4.21405	4.29566	5	5.000000	0	84 1.9		-130.0	
П	Chrysene, Water	4.59464	4.69620	5	000000	0	92 2.2		-130.0	
ח			Page 46	* %	%=% REC,	R=RPD, A=ABS [oiff., D=% Dif	f.		
U					,	119				

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	Job Number.: 270473 CUSTOMER: ERM Southwest, Inc Houston	Q U A L I T Y	CONTROL	R E S U L T S	Report	Date.: 04/07	/2004	
Parameter/Test Description QC Result QC Result True Value Orig. Value Calc. Result * Limits Dibenzofuran, Water 5.86220 6.16582 5.000000 2.09195 75 5.0					·····	on Factor	Date	Time
	MSD Matrix Spike Duplicate		svs031904J	270473~7			03/24/2004	1124
pi-n-butyl Phthalate, Water	Parameter/Test Description	QC Result	QC Result	True Value Or	ig. Value	Calc. Result	* Limits	F
1-n-butyl Phthalate, Water 8.87269 4.97772 5.000000 0.48477 88 30.0-130.1	Dibenzofuran, Water	5.86220	6.16582	5.000000	2.09195			0.0
Residence Resi)i-n-butyl Phthalate, Water	4.87269	4.97772	5.000000	0.48477	88	30.0-13	0.0
	-luoranthene, Water	8.83696	9.28271	5.000000	4.52645	86	30.0-13	0.0
2-Methylnaphthalene, Water	-luorene, Water	22.0247	24.1132	5.000000	26.2599	-85	30.0-13	0.0 A
Naphthalene, Water	2-Methylnaphthalene, Water	4.70695	4.61007	5.000000	0.57605	83	60.0-14	0.0
### Access State 4.08400 3.67836 5.000000 0 82 30.0-130.10.5 50.0 -Nitrosodiphenylamine, Water 5.27158 5.03064 5.000000 0 105 30.0-130.1 -Nitrosodiphenylamine, Water 10.9384 12.1892 5.00000 10.2660 13 30.0-130.1 -Nitrosodiphenylamine, Water 10.9384 12.1892 5.00000 10.2660 13 30.0-130.1 -Nitrosodiphenylamine, Water 6.89964 7.05869 5.00000 2.33622 91 26.0-115.1 -Nitrosodiphenylamine, Water 3.78560 3.73116 5.00000 0 76 30.0-130.1 -Nitrosodiphenylamine, Water 3.78560 3.73116 5.00000 0 76 30.0-130.1 -Nitrosodiphenylamine, Water 7.55386 7.64746 5.00000 0 151 30.0-130.1 -Nitrosodiphenylamine, Water 2.47005 1.54175 5.00000 0 49 10.0-80.0 -Nitrosodiphenylamine, Water 2.47005 1.54175 5.00000 0 49 10.0-80.0 -Nitrosodiphenylamine, Water 2.47005 1.54175 5.00000 0 35 10.0-112.1 -Nitrosodiphenylamine, Water 3.78560 3.73116 5.00000 0 35 10.0-112.1 -Nitrosodiphenylamine, Water 3.60802 5.36357 5.00000 64.9434 535 66.0-113.1 -Nitrosodiphenylamine, Water 3.6344 3.65060 5.00000 0 81 60.0-140.1 -Nitrosodiphenylamine, Water 4.07256 4.13756 5.00000 0 81 60.0-140.1 -Nitrosodiphenylamine, Water 4.48931 4.18500 5.00000 0 86 30.0-130.1 -Nitrosomine 3.2 30.0-130.1 -Nitrosomine 3.2 30.0-130.1 -Nitrosomine 3.2 30.0-130.1 -Nitrosomine 3.2 30.0-130.1 -Nitrosomine 3.2 30.0-130.1 -Nitrosomine 3.6344 3.65060 5.00000 0 86 30.0-130.1 -Nitrosomine 3.2 30.0-130.1 -Nitrosomine 3.2 30.0-130.1 -Nitrosomine 3.2 30.0-130.1 -Nitrosomine 3.2 3.2 30.0-130.1 -Nitrosomine 3.2 30.0-130.1 -Nitrosomine 3.2 3.2 30.0-130.1 -Nitrosomine 3.2 3.2 30.0-130.1 -Nitrosomine 3.2 3.2 30.0-130.1 -Nitrosomine 3.2 3.2 30.0-130.1 -Nitrosomine 3.2 3.2 30.0-130.1 -Nitrosomine 3.2 3.2 30.0-130.1 -Nitrosom	Naphthalene, Water	10.3225	9.64878	5.000000	3.69100	133	30.0-13	A 0.0
7-Nitrosodiphenylamine, Water 5.27158 5.03064 5.00000 0 105 30.0-130. 4.7 50.0 4.7 50.0 4.7 50.0 4.7 50.0 10.8 50.0 11.8 50.0	Nitrobenzene, Water	4.08400	3.67836	5.000000	0	82	30.0-13	0.0
## Phenanthrene, Water	n-Nitrosodiphenylamine, Water	5.27158	5.03064	5.000000	0	105		0.0
29yrene, Water 6.89964 7.05869 5.000000 2.33622 91 26.0-115.0 2,4-Dimethylphenol, Water 3.78560 3.73116 5.000000 0 76 30.0-130.1 2-Methyl-4,6-dinitrophenol, Water 7.55386 7.64746 5.000000 0 151 30.0-130.1 31.0 2-Methyl-4,6-dinitrophenol, Water 7.55386 7.64746 5.000000 0 151 30.0-130.1 31.0 3.0 3.0 3.0 3.0 31.0 3.0 3.0 3.0 3.0 31.0 3.0 3.0 3.0 31.0 3.0 3.0 3.0 31.0 3.0 3.0 31.0 3.0 3.0 31.0 3.0 3.0 31.0 3.0 3.0 32.0 3.0 3.0 33.0 3.0 3.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0 35.0 30.0	•	10.9384	12.1892	5.000000	10.2660			0.0 A
2,4-Dimethylphenol, Water 3.78560 3.73116 5.000000 0 76 30.0-130.1 2-Methyl-4,6-dinitrophenol, Water 7.55386 7.64746 5.00000 0 151 30.0-130.1 3.0-	•		7.05869	5.000000	2.33622			5.0
1.4 50.0 1.5 50.0 1.5 50.0000 0 151 30.0 1						2.3	31.0	
1.2 50.0 1.54175 5.00000 0 49 10.0-80.0 1.0						1.4	50.0	
Phenol, Water 1.74628 1.64469 5.00000 0 35 10.0-112.0 6.0 23.0 23.0 23.0 23.0 270487-6						1.2	50.0	
MSD Matrix Spike Duplicate SVS031904J 270487-6 03/26/2004 1.	•					46.3	50.0	
Parameter/Test Description QC Result QC Result True Value Orig. Value Calc. Result * Limits Accenaphthene, Water 91.6818 83.3035 5.000000 64.9434 535 46.0-118.1 9.6 31.0 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6	rienot, water	1.74020	1.04407	3.000000	Ü			2.0
Acenaphthene, Water 91.6818 83.3035 5.000000 64.9434 535 46.0-118.0 9.6 31.0 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6 9.6	MSD Matrix Spike Duplicate		svs031904J	270487-6			03/26/2004	1313
Acenaphthylene, Water 5.60802 5.36357 5.000000 1.16795 89 30.0-130.4 4.5 50.0 4.5 50.0 5.00000 4.46504 127 30.0-130.4 5.00000 5.9 50.0 5.9 50.0 5.000000 5.000000 5.000000 5.00000 5.00000 5.00000 5.00000 5.00000 5.00000 5.000000 5.00000 5.	Parameter/Test Description	QC Result	QC Result	True Value Or	ig. Value	Calc. Result	* Limits	F
Acenaphthylene, Water 5.60802 5.36357 5.000000 1.16795 89 30.0-130.0 4.5 50.0 4.5 50.0 4.5 50.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Acenaphthene, Water	91.6818	83.3035	5.000000	64.9434			8.0 A
Anthracene, Water 10.8178 10.2028 5.000000 4.46504 127 30.0-130.0 10.8178 10.2028 5.000000 4.46504 127 30.0-130.0 10.8178 10.2028 5.000000 5.000000 0 81 60.0-140.0 10.818 60.0 10.818 60.0 10.818 60.0 10.818 60.0 10.818 60.0 10.818 60.0 10.818 60.	cenaphthylene, Water	5.60802	5.36357	5.000000	1.16795	89	30.0-13	0.0
Renzo(a)anthracene, Water 4.07256 4.13756 5.000000 0 81 60.0-140.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 30.0 1.6 1.6 30.0 1.6 1.6 1.6 30.0 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	Anthracene, Water	10.8178	10.2028	5.000000	4.46504	127	30.0-13	0.0
Dis(2-ethylhexyl)phthalate, Water 3.36344 3.65060 5.000000 0 67 60.0-140.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 30.0 8.2 50.0	Benzo(a)anthracene, Water	4.07256	4.13756	5.000000	0	81	60.0-14	0.0
2-Chloronaphthalene, Water 4.48931 4.18500 5.000000 0 90 30.0-130.	pis(2-ethylhexyl)phthalate, Water	3.36344	3.65060	5.000000	0	67	60.0-14	0.0
Chrysene, Water 4.31293 4.45336 5.000000 0 86 30.0-130.0 3.2 50.0 3.2 50.0 3.2 50.0 3.2 50.0 3.2 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50	2-Chloronaphthalene, Water	4.48931	4.18500	5.000000	0	90	30.0-13	0.0
76.2719 68.0533 5.000000 51.2082 501 30.0-130.0-	Chrysene, Water	4.31293	4.45336	5.000000	0	86	30.0-13	0.0
11.4 50.0 Di-n-butyl Phthalate, Water 4.34191 4.09481 5.000000 0.18434 83 30.0-130.0 5.9 50.0 Fluoranthene, Water 7.80390 7.40360 5.000000 1.64592 123 30.0-130.0	Dibenzofuran, Water	76.2719	68.0533	5.000000	51.2082	501	30.0-13	0.0 A
5.9 50.0 5.000000 1.64592 123 30.0-130.0 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.0000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.000000 5.0000000 5.0000000 5.0000000 5.0000000 5.00000000			4.09481	5.000000	0.18434			0.0
	·					123	50.0 30.0-13	
Page 47 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.			Page 47	* %=% REC, R=	RPD, A=ABS D			
i 2 0			-	•	_	•		

SEVERN STL

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Job Number.: 270473	QUALITY	CONTROL	. RESULTS		Date.: 04/07	/2004	_
CUSTOMER: ERM Southwest, Inc Houston	PROJE	CT: UPRR-HWPW-0	0014419 60	ATTN:			
QC Type Description		Reag. Code	e Lab ID	Dilut	ion Factor	Date Ti	те
MSD Matrix Spike Duplicate		SVS031904J	270487-6		(03/26/2004 1	313
Parameter/Test Description	QC Result	QC Result	True Value 0	rig. Value	Calc. Result	* Limits	F
Fluorene, Water	36.0795	32.8590	5.000000	23.8964	244	30.0-130.	0 A
2-Methylnaphthalene, Water	193.146	179.271	5.000000	147.082	9.3 921	50.0 60.0-140.	.O A
Naphthalene, Water	1096.98	1046.96	5.000000	883.465	7.5 4270	30.0 30.0-130.	.O A
Nitrobenzene, Water	5.57249	4.32643	5.000000	0	4.7 111	50.0 30.0-130.	
					25.2	50.0	
n-Nitrosodiphenylamine, Water	5.62571	5.26653	5.000000	0	113 6.6	30.0-130. 50.0	·U
Phenanthrene, Water	46.0460	41.9080	5.000000	27.3125	375 9.4	30.0-130. 50.0	О А
Pyrene, Water	6.29780	6.43954	5.000000	0.89682		26.0-115. 31.0	.0
2,4-Dimethylphenol, Water	11.0135	11.1798	5.000000	13.1414	-43	30.0-130.	0 A
2-Methyl-4,6-dinitrophenol, Water	4.84082	4.85979	5.000000	0	1.5 97	50.0 30.0-130.	0
4-Nitrophenol, Water	5.67291	4,80372	5.000000	0	0.4 113	50.0 10.0-80.0) A
Phenol, Water	20,6377	12.2559	5.000000	27.5809	16.6 -139	50.0 10.0-112.	
Theriot, water	20.0377	12.2337	3.00000	27.3007	51.0	23.0	A
Test Method: SW-846 8260B Method Description:: Volatile Organics			ug/L		Analyst	: zfl	
LCS Laboratory Control Sample		VS031904E				03/22/2004 1	225
Parameter/Test Description	QC Result	QC Result	True Value 0	rig. Value	Calc. Result	* Limits	F
Benzene, Water	46.3090		50.00	ND	92.6	68-127	
Chlorobenzene, Water 1,2-Dichloroethane, Water	47.7691 45.5158		50.00 50.00	ND ND	95.5 91.0	65-129 65-133	
Ethylbenzene, Water	49.8117		50.00	ND	99.6	64-132	
Methylene Chloride, Water ¶ Toluene, Water	52.0137 50.0604		50.00 50.00	5.17618 ND	104.0 100.1	54-133 63-127	
Xylenes (total), Water	138.313		150.0	ND	92.2	37-161	
LCS Laboratory Control Sample		VS031904E			(03/23/2004 1	437
Parameter/Test Description	QC Result	QC Result	True Value 0	rig. Value	Calc. Result	* Limits	F
Benzene, Water	45.8101		50.00	ND	91.6	68-127	
Chlorobenzene, Water (1,2-Dichloroethane, Water	62.7053 53.1850		50.00 50.00	ND ND	125.4 106.4	65-129 65-133	
Ethylbenzene, Water	63.9643		50.00	ND	127.9	64-132	
Methylene Chloride, Water Toluene, Water	41.6148 60.8159		50.00 50.00	4.78271 ND	83.2 121.6	54-133 63-127	
Xylenes (total), Water	188.069		150.0	ND	125.4	37-161	
ı	·						
1		Page 48	* %=% REC, R		Diff., D=% Dif	ff.	

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	Job Number.: 270473				Report	Date.: 04/07/	'2004	
CUSTOMER: ERM	Southwest, Inc Houston	PROJEC	T: UPRR-HWPW-(0014419 60	ATTN:			
QC Type	Description		Reag. Code	e Lab	ID Dilut	ion Factor	Date Ti	me
MB	Method Blank		vs031904c			(03/22/2004 1:	316
Parame	eter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
enzene, Water hlorobenzene, ,2-Dichloroeth thylbenzene, W ethylene Chlor oluene, Water ylenes (total)	ane, Water Hater Fide, Water	ND ND ND ND 5.17618 ND ND						
МВ	Method Blank		VS031904C			(03/23/2004 1	221
Parame	eter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
hlorobenzene, ,2-Dichloroeth thylbenzene, W ethylene Chlor oluene, Water ylenes (total)	ane, Water Nater Tide, Water	ND ND ND 4.78271 ND ND						
MS	Matrix Spike		VS031904E	270437-5	5 10.00	000 (03/22/2004 1	459
Parame	ter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
enzene, Water hlorobenzene, ,2-Dichloroeth thylbenzene, W ethylene Chlor oluene, Water ylenes (total)	ane, Water Hater Fide, Water	44.7849 45.5915 42.1885 47.3761 51.3256 47.8910 131.231		50.00 50.00 50.00 50.00 50.00 50.00 150.0	ND ND ND ND 4.40250 ND ND	90 91 84 95 94 96 87	65-125 74-122 60-140 60-140 60-140 76-125 60-140	
MS	Matrix Spike		VS031904E	270473-0	5	(03/23/2004 1	409
Parame	ter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
enzene, Water	Water ane, Water dater	44.9573 60.2032 52.0068 59.0748		50.00 50.00 50.00 50.00 50.00	ND ND ND ND ND	90 120 104 118 91	65-125 74-122 60-140 60-140 60-140	- -

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Job Number.: 270473	QUALITY	CONTRO	L RESULT		Date.: 04/07	/2004
CUSTOMER: ERM Southwest, Inc Houston	PROJI	ECT: UPRR-HWPW-	0014419 60	ATTN:		
QC Type Description		Reag. Cod	e Lab	ID Dilut	ion Factor	Date Time
MSD Matrix Spike Duplicate		VS031904E	270437-5	10.00	000	03/22/2004 152
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits
Benzene, Water	48.5827	44.7849	50.00	ND	97	65.0-125.0
Chlorobenzene, Water	49.9521	45.5915	50.00	ND	8.1 100 9.1	30.0 74.0-122.0 30.0
1,2-Dichloroethane, Water	43.5711	42.1885	50.00	ND	87 3.2	60.0-140.0
Ethylbenzene, Water	53.8869	47.3761	50.00	ND ·	108 12.9	30.0 60.0-140.0 30.0
Methylene Chloride, Water	54.0959	51.3256	50.00	4.40250	99 5.3	60.0-140.0 30.0
Toluene, Water	53.6063	47.8910	50.00	ND.	107 11.3	76.0-125.0
Xylenes (total), Water	147.458	131.231	150.0	ND	98 11.6	30.0 60.0-140.0 30.0
MSD Matrix Spike Duplicate	OR Parada	VS031904E	270473-7		•••••••••••••••••••••••••••••••••••••••	03/23/2004 150
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits
Benzene, Water	41.9731	44.9573	50.00	ND	6.9	30.0
Chlorobenzene, Water	57.4490	60.2032	50.00	ND	115 4.7	74.0-122.0 30.0
1,2-Dichloroethane, Water	49.7601	52.0068	50.00	ND	100 4.4	60.0-140.0 30.0
Ethylbenzene, Water	55.3332	59.0748	50.00	ND	111	60.0-140.0
Methylene Chloride, Water	41.8777	45.7127	50.00	ND	6.5 84	30.0 60.0-140.0
Toluene, Water	54.0497	57.4455	50.00	ND	8.8 108	30.0 76.0-125.0
·				ND	6.1 110	30.0 60.0-140.0
Xylenes (total), Water	164.460	175.064	150.0	ND	6.2	30.0
PB Prep. Blank		VS031904C		20,00	000	03/23/2004 115
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits
Benzene, TCLP Chlorobenzene, TCLP 1,2-Dichloroethane, TCLP Ethylbenzene, TCLP	ND ND ND ND					
Methylene Chloride, TCLP Toluene, TCLP	ND ND					
Xylenes (total), TCLP	ND					

Page 50 * %=% REC, R=RPD, A=ABS Diff., D=% Diff. $\stackrel{?}{1}$ $\stackrel{?}{2}$ $\stackrel{?}{3}$



	SURROGA Job Number.: 270473	ATE RE	COVERI	ES R	EPOR		rt Date.: 04/07/2004
CUSTOMER:	ERM Southwest, Inc Houston	PROJECT: U	PRR-HWPW-001	4419 60		ATTN	: Chris Young
	hod: Volatile Organics ch(s): 96367			d Code Matrix	.: 8260 .: Water		Prep Batch: Equipment Code: GCMSVOA07
Lab ID	DT Sample ID		Date	12DCED	BRFLBE	DBRFLM	TOLD8
270437- 5 270473- 1 270473- 2 270473- 3 270473- 4 270473- 6 270473- 6 270473- 7	MW-01A-1SA04 P-12-1SA04 P-11-1SA04 P-11 MS-1SA04 P-11 MS-1SA04 P-11 MSD-1SA04 P-11 MSD-1SA04 P-11 MSD-1SA04 TB02-1SA04 TB02-1SA04 LCS MB LCS		03/22/2004 03/22/2004 03/22/2004 03/22/2004 03/22/2004 03/23/2004 03/23/2004 03/23/2004 03/23/2004 03/23/2004 03/23/2004 03/22/2004 03/22/2004 03/22/2004 03/22/2004 03/23/2004 03/23/2004	77.1 74.4 71.5 73.7 71.2 74.8 120.1 88.2 88.2 84.2 84.2 84.2 71.3 72.9 78.5 96.8 99.4 118.1	114.4 115.5 104.7 111.6 101.7 110.1 98.1 110.8 110.8 109.7 109.7 109.7 106.0 111.1 105.1 114.1 99.2	80.0 79.3 78.4 75.4 81.1 119.7 88.6 87.0 87.0 77.7 78.4 78.4 95.5 98.2 119.9	98.4 101.2 100.0 98.2 94.5 104.3 104.8 115.0 115.0 108.9 108.9 95.1 93.9 99.8 98.3 120.6 105.2
Test	Test Description	Limits					
12DCED BRFLBE DBRFLM TOLD8	1,2-Dichloroethane-d4 4-Bromofluorobenzene Dibromofluoromethane Toluene-d8	70 - 13 70 - 13 70 - 13 70 - 13	0 0				
	hod: Volatile Organics ch(s): 96367			d Code Matrix			Prep Batch: Equipment Code: GCMSVOA07
Lab ID	DT Sample ID		Date	12DCED	BRFLBE	DBRFLM	TOLD8
9623721	РВ		03/23/2004	114.8	88.4	118.6	106.3
Test	Test Description	Limits					
12DCED BRFLBE DBRFLM TOLD8	1,2-Dichloroethane-d4 4-Bromofluorobenzene Dibromofluoromethane Toluene-d8	70 - 13 70 - 13 70 - 13 70 - 13	0				

П		L.K								• '			
		Job N	umber.: 270473	SURROGAT	E REC	OVERI	ES R	EPOR		ort Date.	: 04/07/	2004	
П	CUSTOMER:	483648		PR	OJECT: UPR	R-HWPW-001	4419 60		ATTN	: Chris	Young		
U			: Semivolatile C	rganics, Low Lev	el			.: 8270L .: Water			tch: nt Code:		
Π	Lab ID	DT	Sample ID			Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14	
	270473- 7 270473- 7 270473- 7 270473- 8	MSD MSD MS MSD LCS	MW-3-1SA04 MW-3-1SA04 MW-2-1SA04 P-12-1SA04 P-11-1SA04 P-11-1SA04 P-11 MS-1SA04 P-11 MS-1SA04 P-11 MSD-1SA04 P-11 MSD-1SA04 P-11 MSD-1SA04 P-11 MSD-1SA04 P-11 MSD-1SA04 P-11 MSD-1SA04 P-17 MSD-1SA04 FB-031704-1SA04 MW-17C MSD - RFI		0 0 0 0 0 0 0 0 0	3/24/2004 3/26/2004 3/24/2004 3/24/2004 3/24/2004 3/26/2004 3/26/2004 3/24/2004 3/24/2004 3/24/2004 3/24/2004 3/24/2004 3/24/2004 3/26/2004 3/26/2004 3/26/2004 3/24/2004	101.2 89.2 120.4 120.3 116.2 143.7K 110.2 142.4d 112.9 142.4K 136.1d 100.4 136.1K 81.3 108.9 109.2 136.2K 130.1K	71.2 91.4 70.9 83.6 64.8 99.2 108.5 96.8 89.3 96.5 88.0 96.5 75.3 96.9 97.8 98.3 96.0	33.3 27.7 32.4 41.2 38.3 49.8 31.9 40.1 48.0 40.1 49.4 44.5 63.7 35.6 49.7 55.9	72.1 80.6 68.9 85.1 76.7 90.1 95.8 84.0 92.1 84.0 90.0 87.1 90.0 84.1 102.3 107.4 93.4 92.6	23.8 27.9 22.7 21.8 26.5 32.0 36.3 33.0 35.4 33.0 33.9 30.7 33.9 29.2 35.4 62.7 37.5	86.7 106.0 96.3 92.7 100.0 108.6 126.1 101.1 97.3 82.2 97.3 93.5 103.7 96.5 104.2 103.0	
a	Test	Test Des	cription		Limits	_			•				
	246TBP 2FLUBP 2FLUPH NITRD5 PHEND6 TERD14	2,4,6-Tr 2-Fluoro 2-Fluoro Nitroben Phenol-d Terpheny	phenol zene-d5 6		10 - 123 43 - 116 21 - 100 35 - 114 10 - 94 33 - 141	_							
										,			



SURROGATE RECOVERIES REPORT

Job Number.: 270473

Report Date.: 04/07/2004

CUS.	OMER.	: 4836	48				PROJ	ECT:	UPR	R-HW	PW-O	0144	19 6	0		ATT	V: Ch	ris \	oung	Ü

Method.....: Semivolatile Organics - SIM Analysis Method Code...: 8270SI Prep Batch...: 96171
Batch(s)....: 97046 Test Matrix...: Water Equipment Code: EGCMS08

Lab ID	D	T	Sample ID	Date	246TBP	2FLUBP	NITRD5	TERD14		
270473- 1		_	MW-3-1SA04	 03/30/2004	67.8	61.3	67.6	78.2		
270473- 2			MW-2-1SA04	03/30/2004	76.2	64.2	68.2	85.3		
270473- 3			MW-01A-1SA04	03/30/2004	81.8	60.9	82.5	84.2		
270473- 4			P-12-1SA04	04/01/2004	87.1	73.8	71.1	87.3		
270473- 5			P-11-1SA04	04/01/2004	97.1	88.4	82.3	98.3		
270473- 6			P-11 MS-1SA04	03/30/2004	30.3	82.3	83.9	93.8		
270473- 6	MS		P-11 MS-1SA04	03/30/2004	30.3	82.3	83.9	93.8		
270473- 7			P-11 MSD-1SA04	03/30/2004	22.6	82.8	77.7	97.5		
270473- 7	MSD		P-11 MSD-1SA04	03/30/2004	22.6	82.8	77.7	97.5		
270473- 8			FB-031704-1SA04	04/02/2004	68.9	77.3	69.6	85.6		
270487- 5	MS		MW-17C MS - RFI	03/27/2004	99.3	90.6	114.2A	86.8		
270487- 6	MSD		MW-17C MSD - RFI	03/27/2004	82.0	80.5	29.7A	85.5		
96171121	LCS			03/26/2004	81.3	80.0	79.0	85.0		
96171121	мв			03/26/2004	92.7	92.2	92.8	92.2		

Test	Test Description	Limits
246TBP	2,4,6-Tribromophenol	10 - 123
2FLUBP	2-Fluorobiphenyl	43 - 116
NITRD5	Nitrobenzene-d5	35 - 114
TERD14	Terphenyl-d14	33 - 141



QUALITY ... ASSURANCE ... METHODS

REFERENCES AND NOTES

Report Date: 04/07/2004

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 3) According to 40CFR Part 136.3, pH, Chlorine Residual, and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field,(e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.
- 4) For all USACE projects, the QC limits are based on "mean +/- 2 sigma", which are the warning limits.

General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reported as the final result.
- m-Cresol and p-Cresol co-elute. The result of the two is reported as either m&p-cresol or as p-cresol.
- m-Xylene and p-Xylene co-elute. The result of the two is reported as m,p-Xylene.
- N-Nitrosodiphenylamine decomposes in the gas chromatograph inlet forming dipheylamine and, consequently, may be detected as diphenylamine.
- Methylene Chloride and Acetone are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
- Trimethysilyl(Diazomethane) is used to esterify acid herbicides in Method SW-846 8151A.
- For Inorganic analyses, duplicate QC limits are determined as follows: If the sample result is less than or equal to 5 times the reporting limit, the RPD limit is equal to the reporting limit. If the sample result is greater than 5 times the reporting limit, the RPD limit is the method defined RPD.

Explanation of Qualifiers:

- U This qualifier indicates that the analyte was analyzed but not detected.
- J (Organics only) This qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- B (Inorganics only) This Qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- N (Organics only) This flag indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic charachterization of a TIC, such as "chlorinated hydrocarbon", the "N" flag is not used.

Explanation of General QC Outliers:

- A Matrix interference present in sample.
- a MS/MSD analyses yielded comparable poor recoveries, indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recoveries.
- b Target analyte was found in the method blank.
- M QC sample analysis yielded recoveries outside QC acceptance criteria. This sample was reanalyzed.
- L LCS analysis yielded high recoveries, indicating a potential high bias. No target analytes were observed above the RL in the associated samples.
- G Marginal outlier within 1% of acceptance criteria.
- r RPD value is outside method acceptance criteria.
- C Poor RPD values observed due to the non-homogenous nature of the sample.
- O Sample required dilution due to matrix interference.
- D Sample reported from a dilution.
- d Spike and/or surrogate diluted.
- P The recovery of this analyte is outside default QC limits. The data is accepted and will be used to calculate in-house statistical limits.
- E The reported concentration exceeds the instrument calibration.
- The analyte is outside QC limits. The sample data is accepted since this analyte is not reported in associated samples.
- H Continuing Calibration Verification (CCV) standard is not associated with the samples reported.
- q See the subcontract final report for qualifier explanation.

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QUALITY ASSURANCE METHODS

AND REFERENCES

Report Date: 04/07/2004

- The MS/MSD recoveries are outside QC acceptance criteria because the amount spiked is much less than the amount found in the sample.
- High recovery will not affect the quality of reported results.
- Z See case narrative.

Explanation of Organic QC Outliers:

- e Method blank analysis yielded phthalate concentrations above the RL. Phthlates are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
- S Sample reanalyzed/reextracted due to poor surrogate recovery. Reanalysis confirmed original analysis indicating a possible matrix interference.
- Sample analysis yielded poor surrogate recovery.
- The RPD between the two GC columns is greater than 40% and no anomalies are present. The higher result is reported as per EPA Method 8000B.
- I The RPD between the two GC columns is greater than 40% and anomalies are present. The lower of the two results has been reported.
- X Gaseous compound. In-house QC limits are advisory.
- Y Ketone compounds have poor purge efficiency. In-house QC limits are advisory.
- f Surrogate not associated with reported analytes.

Explanation of Inorganic QC Outliers:

- Q Method blank analysis yielded target analytes above the RL. Associated sample results are greater than 10 times the concentrations observed in the method blank.
- The RPD control limit for sample results less than 5 times the RL is +/- the RL value. Sample and duplicate results are within method acceptance criteria.
- e Serial dilution failed due to matrix interference.
- g Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike recovery being below 85 percent. The correlation coefficent for the MSA is greater than or equal to 0.995.
- BOD/cBOD seed value is not within method acceptance criteria. Due to the nature of the test method, the sample cannot be reanalyzed.
- BOD/cBOD LCS value is not within method acceptance criteria. Due to the nature of the test method, sample cannot be reanalyzed.
- n Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike recovery being below 85 percent. The correlation coefficient for the MSA is less than 0.995.

Abbreviations:

- Designation given to identify a specific extraction, digestion, preparation, or analysis set. Batch
- Continuing Calibration Verification CCV
- Low level standard check GFAA, Mercury CRA
- CRI - Low level standard check - ICP
- Dil Fac Dilution Factor Secondary dilution analysis
- Detection Limit Factor DLFac
- Extraction Blank (TCLP, SPLP, etc.) EΒ
- Initial Calibration I CAL
- ICB - Initial Calibration Blank
- ICV - Initial Calibration Verification
- ISA - Interference Check Sample A - ICP
- Interference Check Sample B ICP I SB
- Laboratory Control Duplicate I.CD
- LCS - Laboratory Control Sample
- MB - Method Blank
- Method Duplicate MD
- Method Detection Limit MDL
- MS - Matrix Spike



QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 04/07/2004

- Matrix Spike Duplicate MSD

ND - Not Detected PΒ Preparation Blank **PREPF** - Preparation Factor - Reporting Limit

- Relative Percent Difference RPD RRF - Relative Response Factor

RΤ - Retention Time - Duplicate DH

Method References:

EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.

- EPA 600/R-94-111 Methods for the Determination of MEtals in Environmental Samples, Supplement I, May (2) 1994.
- EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1993; Update IIB, January 1995; Update III, December 1996, Update IVA January 1998, Update IVB November 2000.
- (4) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989), 18th Edition (1992), 19th Edition (1995), 20th Edition (1998). (5) HACH Water Analysis Handbook 3rd Edition (1997).

- (6) Federal Register, July 1, 1990 (40 CFR Part 136 Appendix A).(7) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
- (8) ASTM Annual Book of Methods (Various Years)
- (9) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.



SW-846 3510C

SW-846 8270C

SW-846 8270C

SW-846 8270C

SW-846 8260B

Lab ID: 270473-7

METHOD

SW-846 3510C

Extraction (Sep. Funnel) SVOC Low Level

Semivolatile Organics - SIM Analysis

Semivolatile Organics, Low Level

Semivolatile Organics, Low Level

Extraction (Sep. Funnel) SVOC - SIM

Client ID: P-11 MSD-1SA04

Volatile Organics

DESCRIPTION

LABORATORY CHRONICLE Job Number: 270473 Date: 04/07/2004 CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young Lab ID: 270473-1 Client ID: MW-3-1SA04 Date Recvd: 03/18/2004 Sample Date: 03/17/2004 DESCRIPTION RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED METHOD DILUTION 97400 04/07/2004 0000 Data Package Validation Electronic Data Deliverables Extraction (Sep. Funnel) SVOC - SIM 96171 03/19/2004 SW-846 3510C 1100 SW-846 3510C Extraction (Sep. Funnel) SVOC Low Level 96170 03/19/2004 1100 GC/MS Semi-Volatile Package Production 97103 04/02/2004 0000 GC/MS Volatiles Data Package Production 96373 03/24/2004 1300 Semivolatile Organics - SIM Analysis 03/30/2004 SW-846 8270C 97046 96171 2045 1.00000 Semivolatile Organics, Low Level 1.00000 97017 03/24/2004 SW-846 8270C 96170 1155 SW-846 8270C Semivolatile Organics, Low Level 97017 96170 03/26/2004 1543 4.00000 SW-846 8260B Volatile Organics 96367 03/22/2004 2150 1.00000 Date Recvd: 03/18/2004 Sample Date: 03/17/2004 Lab ID: 270473-2 Client ID: MW-2-1SA04 RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED DESCRIPTION DILUTION METHOD SW-846 3510C Extraction (Sep. Funnel) SVOC - SIM 96171 03/19/2004 1100 SW-846 3510C Extraction (Sep. Funnel) SVOC Low Level 96170 03/19/2004 1100 97046 96171 03/30/2004 1.00000 SW-846 8270C Semivolatile Organics - SIM Analysis 2115 Semivolatile Organics, Low Level 97017 03/24/2004 1.00000 SW-846 8270C 96170 1225 1.00000 03/22/2004 SW-846 8260B Volatile Organics 96367 1942 Lab ID: 270473-3 Client ID: MW-01A-1SA04 Date Recvd: 03/18/2004 Sample Date: 03/17/2004 RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED METHOD DESCRIPTION DILUTION SW-846 3510C Extraction (Sep. Funnel) SVOC - SIM 1 96171 03/19/2004 1100 SW-846 3510C Extraction (Sep. Funnel) SVOC Low Level 96170 03/19/2004 1 1100 SW-846 8270C Semivolatile Organics - SIM Analysis 97046 96171 03/30/2004 2144 1.00000 SW-846 8270C 1.00000 97017 96170 03/24/2004 1255 Semivolatile Organics, Low Level 1.00000 SW-846 8260B Volatile Organics 96367 03/22/2004 2007 Lab ID: 270473-4 Client ID: P-12-1SA04 Date Recvd: 03/18/2004 Sample Date: 03/17/2004 METHOD DESCRIPTION RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED DILUTION 03/19/2004 Extraction (Sep. Funnel) SVOC - SIM SW-846 3510C 96171 1 1100 SW-846 3510C Extraction (Sep. Funnel) SVOC Low Level 96170 03/19/2004 1100 SW-846 8270C Semivolatile Organics - SIM Analysis 1 97046 96171 04/01/2004 0102 1.00000 1.00000 SW-846 8270C Semivolatile Organics, Low Level 97017 96170 03/24/2004 1325 SW-846 8260B Volatile Organics 96367 03/22/2004 2033 1.00000 Lab ID: 270473-5 Client ID: P-11-1SA04 Date Recvd: 03/18/2004 Sample Date: 03/17/2004 DESCRIPTION RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED DILUTION METHOD Extraction (Sep. Funnel) SVOC - SIM 03/19/2004 SW-846 3510C 96171 1100 SW-846 3510C Extraction (Sep. Funnel) SVOC Low Level 96170 03/19/2004 1100 96171 0033 1.00000 97046 04/01/2004 SW-846 8270C Semivolatile Organics - SIM Analysis SW-846 8270C Semivolatile Organics, Low Level 97017 96170 03/24/2004 1024 1.00000 Semivolatile Organics, Low Level 96170 03/26/2004 SW-846 8270C 97017 1513 5.00000 SW-846 8260B Volatile Organics 96367 03/23/2004 1315 1.00000 Lab ID: 270473-6 Date Recvd: 03/18/2004 Sample Date: 03/17/2004 Client ID: P-11 MS-1SA04 METHOD DESCRIPTION RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED DILUTION Extraction (Sep. Funnel) SVOC - SIM SW-846 3510C 96170 03/19/2004 1100 1

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Date Recvd: 03/18/2004

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RUN# BATCH# PREP BT #(S)

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96170

03/19/2004

03/30/2004

03/24/2004

04/01/2004

03/23/2004

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DATE/TIME ANALYZED

Sample Date: 03/17/2004

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DILUTION



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	Job	Number: 270473	LABORATORY	СН	RONI	CLE	Date:	04/07/2004		
<u>п</u>	CUSTOMER: ERM Sou	thwest, Inc Houston	n PROJECT	: UPRR-H	(WPW-0014	419 60		ATTN: Chris You	ng	
Ц	Lab ID: 270473-7 METHOD SW-846 3510C	Client ID: P-11 MS DESCRIPTION Extraction (Sep. Fur	nnel) SVOC Low Level		ecvd: 03/ BATCH# 96171	18/2004 PREP BT		Date: 03/17/20 DATE/TIME AN 03/19/2004		DILUTION
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	Lab ID: 270473-8 METHOD SW-846 3510C SW-846 3510C	Client ID: FB-0317 DESCRIPTION Extraction (Sep. Fur			ecvd: 03/ BATCH# 96171 96170	18/2004 PREP BT		Date: 03/17/20 DATE/TIME AN 03/19/2004 03/19/2004		DILUTION
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	Lab ID: 270473-9 METHOD SW-846 8260B	Client ID: TB02-19 DESCRIPTION Volatile Organics	SA04		ecvd: 03/ BATCH# 96367	18/2004 PREP BT		Date: 03/17/20 DATE/TIME AN 03/22/2004		DILUTION 1.00000
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<u>. </u>	Updated Compliance Schedule <i>Appendix D</i>	
7	July 21, 2004	
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	Environmental Resources Management 15810 Park Ten Place, Suite 300	
	Houston, Texas 77084 (281) 600-1000	
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ID	Task Name/Permit or CP Section No.		Start	Finish	D J F M A	M J J A S	2004 O N D J F M	
1	Addendum to RFI Report {Permit VIII.I}		12/3/03		O O I I IWI A I	W O O A O	O I N D O F W	
2	Field Investigation Activities		12/3/03	1/21/04				
3	Prepare and Submit Affected Property Assessment Report (APAR)		1/22/04	6/11/04				
4	TCEQ Review Process		6/14/04	10/12/04				
5	5 Corrective Measures Study {Permit VIII.I and CP IX}		10/13/04	10/13/04	:			
6	Not Required under the Texas Risk Reduction Program (TRRP) for RCRA sites		10/13/04	10/13/04				
7	7 Corrective Measures Implementation (Permit VIII.J and CP X)		10/13/04	11/10/05				
- 8	8 Prepare and Submit Response Action Plan (RAP)		10/13/04	2/10/05				
9	9 TCEQ Review Process		2/11/05	5/12/05				
10	10 Implement Corrective Action		5/13/05	8/11/05				
11	Prepare and Submit Corrective Measures Report (RAER/RACR/PRACR)		8/12/05	11/10/05				
12	12 Compliance Activities {Permit IV,C and CP VI}		1/1/04	12/31/04		•	\	
13	3 Impoundment Inspections (Weekly)		1/1/04	12/31/04				
14	Water Level Measurements (Semiannually)		1/1/04	12/31/04				
15	5 Monitor Well Inspections (Quarterly)		1/1/04	12/31/04				
16	16 Ground Water Sampling (First Semiannual)		3/15/04	3/19/04				
17	17 Ground Water Sampling (Second Semiannual)		9/13/04	9/17/04			, and the second second second second second second second second second second second second second second se	
18	Post-Closure Care Reporting		4/19/04	1/20/05				
19	19 Semiannual Report - July 21, 2004 (CP VII.B.2)		4/19/04	7/20/04				
20	Perform Data Evaluation		4/19/04	7/19/04				
21	Submit Report to TCEQ		7/20/04	7/20/04				
22	Semiannual Report - January 21, 2005 (CP VII.B.2)		10/18/04	1/20/05				
23	Perform Data Evaluation		10/18/04	1/19/05				
24	Submit Report to TCEQ		1/20/05	1/20/05				
25	2004 Annual Report - January 25, 2005 (Permit V.F and III.B.1)		12/1/04	1/25/05				
26	Perform Data Evaluation		12/1/04	1/24/05				
27	Submit Report to TCEQ	<u>. </u>	1/25/05	1/25/05				
		Task	R	olled Up Task		External Tasks		
Compliance Schedule UPRR Houston Wood Preserving Works Site Houston, Texas Progress Milestone Summary		***************************************	olled Up Milestone	\Diamond	Project Summary	*		
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