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PROJ. MGR. M. Arthur
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Corrective Action Section

January 24, 2005

Dr. Ata-ur-Rhaman
Permits Section
Industrial and Hazardous Waste Division
Texas Commission on Environmental Quality
12100 Park 35 Circle MC 130
Austin, Texas 78753

Subject: Transmittal of Annual Report, Permit No. HW-50343-000, January 1 through December 31, 2004, EPA ID No. TD000820266, Houston Wood Preserving Works

Dear Dr. Rahman:

Pursuant to the requirements of Provisions III.B, 1.IV, C.5.g, and V.F. of Post-Closure Care Permit No. HW-50343-000, enclosed are two copies of the referenced report.

If you have any questions regarding the enclosed report, please call me at (281) 350-7197.

Sincerely,

Union Pacific Railroad Company

Geoffrey Reeder

Geoffrey B. Reeder, P.G.
Manager, Environmental Site Remediation

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Enclosure

cc: Ray Risner, TCEQ-Austin
Marsha Hill, TCEQ Region 12 - Houston
Christopher Young, Environmental Resources Management

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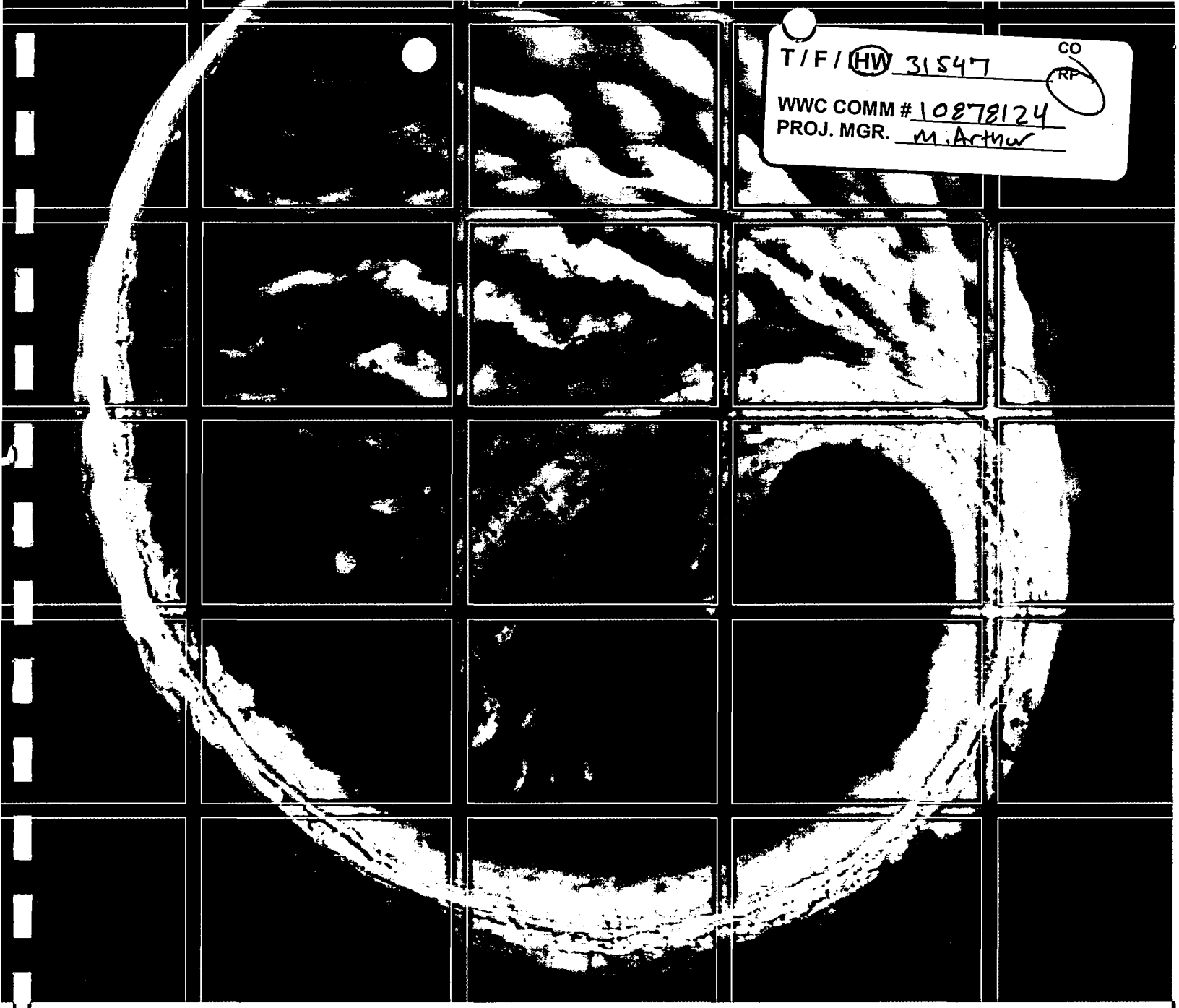

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PROJ. MGR. M. Arthur

Annual Report, Permit No. HW-50343-000, January 1 through December 31, 2004

EPA ID No. TD000820266
Houston Wood Preserving Works

Union Pacific Railroad Company

January 24, 2005

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Annual Report, Permit No. HW-05343-000, January 1 through December 31, 2004

EPA ID No. TD000820266

Houston Wood Preserving Works

January 24, 2005

Project No. 0014419

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1.0 *INTRODUCTION*

On June 20, 1994, the Texas Natural Resources Conservation Commission (TNRCC; known as the Texas Commission on Environmental Quality (TCEQ) as of September 1, 2002) issued RCRA Permit Number HW-50343-000 (the Permit) and TNRCC Compliance Plan Number CP-50343 to Southern Pacific Transportation Company (SPTCo). The Permit authorizes post-closure care for one former surface impoundment (TCEQ Permit Unit No. II.B.1) located at the former Houston Wood Preserving Works facility at 4910 Liberty Road, Houston, Texas (Figure 1-1). Union Pacific Railroad became responsible for the facility in 1997. This Annual Report for 2004 was prepared by Environmental Resources Management (ERM) on behalf of Union Pacific Railroad (UPRR) in accordance with the requirements of Provisions III.B.1, IV.C.5.g, and V.F. of the Permit.

1.1 *PERMIT REQUIREMENTS*

Provision III.B.1 of the Permit requires that the Annual Report include the following:

1. Information and records required by Title 30 Texas Administrative Code (TAC) Section 335.154, including:
   - U.S. EPA identification number, name, and address of the facility;
   - Calendar year covered by the report;
   - TCEQ (formerly TNRCC and Texas Water Commission) hazardous waste code and quantity of each hazardous waste received by the facility during the year;
   - Method of storage, processing, or disposal of each hazardous waste;
   - Most recent closure cost estimate under the regulations contained in 40 Code of Federal Regulations (CFR) §264.142 and 30 TAC §335.178 and, for disposal facilities, the most recent post-closure care estimate under 40 CFR §264.144;
   - For generators who treat, store, or dispose of hazardous waste on site, a description of efforts undertaken to reduce the volume and toxicity of waste generated;
   - For generators who treat, store, or dispose of hazardous waste on site, a description of changes in volume and toxicity of waste actually achieved in comparison with previous years; and
   - Certification signed by owner or operator of the facility or authorized representative.
2. Summary of ground water compliance monitoring activities;
3. Summary of inspections made and any remedial and/or maintenance activities conducted;

4. Summary of annual cost estimate adjustments for facility closure and post-closure care; and

5. Certification of waste minimization in accordance with Permit Provision V.N., as follows:
   - Permittee has a program in place to reduce the volume and toxicity of all hazardous wastes generated by the facility operation to the degree determined to be economically practicable; and
   - The proposed method of treatment, storage, or disposal that is the most practical method currently available to the permittee, which minimizes the present and future threat to human health and the environment.

As provided in Provision II.B, the Permit authorizes and requires the permittee to perform post-closure care for a closed landfill consisting of one former surface impoundment, Notice of Registration (NOR) Facility No. 01. This impoundment has a total surface area of 0.5923 acre and a total capacity of 5,065 cubic yards. The waste was removed from the impoundment in 1984. Because this facility is clean-closed, hazardous and toxic waste is not received or disposed at the facility. Wastes are being generated as Investigation-Derived Wastes (IDW) associated with the periodic monitoring of Point of Compliance (POC) and Corrective Action Observation (CAO) wells, interim remedial activities, and implementation of investigation work plans approved under the Permit and Compliance Plan. A recovery system has not been installed for this facility; therefore, items 1 through 5, listed above are addressed as they relate to ground water monitoring and inspections of the impoundment.

1.2 *GEOLOGIC ZONE DESIGNATION*

For simplicity and organizational reasons, the nomenclature to designate geological strata has been modified from the designations in the Permit. The native cohesive and transmissive zones underlying the site have been re-designated alphabetically from shallowest to deepest. The shallowest or uppermost transmissive zone is referred to as the A-Transmissive Zone or A-TZ. The lithologic units that underlie the site are the fill material, the A-Cohesive Zone (A-CZ), the A-Transmissive Zone (A-TZ), the B-Cohesive Zone (B-CZ), the B-Transmissive Zone (B-TZ), the C-Cohesive Zone (C-CZ), the C-Transmissive Zone (C-TZ), and the D-Cohesive Zone (D-CZ).

2.0 *REPORT ITEMS*

This section includes the information and records required by Provision III.B.1 of the Permit and listed as numbers 1 through 5 in Section 1.1 of this report.

2.1 *INFORMATION AND RECORDS REQUIRED BY 30 TAC §335.154*

Although 30 TAC 335.154 was repealed in 1999 (proposed in the Texas Register on February 5, 1999; 24 Tex. Reg. 682; and adopted on May 14, 1999; 24 Tex. Reg. 3730), the requested information is provided in this report for consistency with previously submitted annual reports. The following sub-sections discuss facility identification, period covered, hazardous waste codes, waste storage information, post-closure care cost estimate revisions, waste minimization, and certification.

2.1.1 *Facility Identification*

This facility is identified by the following information:

EPA identification number:	TXD000820266
Facility name:	Union Pacific Railroad Houston Tie Plant
Facility address:	Union Pacific Railroad 4910 Liberty Road Houston, Texas 77020

2.1.2 *Calendar Year Covered by This Report*

The activity period covered by this report is designated in Provision III.B.1 of the Permit and encompasses January 1 through December 31, 2004.

2.1.3 *Hazardous Waste Codes and Quantities Received*

Based on a review of the NOR for the facility and waste generation activities for the facility during 2004, the following hazardous waste codes and quantities were generated at the facility in 2004:

TCEQ Waste Code	*Description*	*Annual Quantity Generated*
0917406H	Plastic and used PPE generated as a result of monitor well and/or soil sampling.	100 lbs.
0914101H	Ground water generated from purging of various monitor wells for investigative purposes	100 lbs.

2.1.4 *Method of Storage, Processing, or Disposal of Hazardous Wastes*

The hazardous waste generated at the facility during the 2004 reporting period was identified in Section 2.1.3. These wastes were stored temporarily in the

Container Storage Area (NOR Unit No. 004) pending off-site disposal. The Container Storage Area is a less than 90-day storage facility for hazardous waste and stores other non-hazardous wastes. The Annual Waste Summary for 2004 is presented in Appendix A.

2.1.5 *Post-Closure Care Cost Estimate*

The regulated unit was clean-closed in 1984. A revised post-closure care cost estimate for 2004 prepared in accordance with 40 CFR §264.144 is addressed in Section 2.4 of this Annual Report. The total estimated cost for post-closure care for 2005 is $30,000.00.

2.1.6 *Reduction of Volume and Toxicity of Waste Generated*

Waste minimization typically applies to operating facilities. As stated above, the only wastes generated at this facility are a result of the specific investigation or post-closure care activities directed by the TCEQ under the Permit and Compliance Plan. These IDW are related to the scope of the RCRA Facility Investigation (RFI) and Extent of Contamination (EOC) activities, as approved by the TCEQ under the Permit and Compliance Plan.

No hazardous wastes were treated or disposed on site during 2004. The only hazardous waste stored on site was a limited quantity of plastic and used personal protective equipment generated during site investigation and monitoring and ground water generated from purging various monitor wells for investigative purposes. The remaining waste was non-hazardous. Investigative techniques such as low-flow ground water sampling and direct-push technologies are utilized when possible during installation and sampling of soil borings, monitor wells and piezometers in order to reduce the volume of soil cuttings and purge water generated for off-site disposal.

2.1.7 *Description of the Change in Volume and Toxicity Achieved*

This requirement is not applicable to the facility because the waste generated is related to the implementation of the RFI and EOC Work Plan.

2.1.8 *Certification*

A certification signed by the owner or operator of the facility or his authorized representative, as required, is included as Appendix B.

2.2 *SUMMARY OF GROUND WATER COMPLIANCE MONITORING ACTIVITIES*

Existing CAO and POC wells were monitored and sampled on a semiannual basis in March and September 2004 to evaluate the extent of affected ground water in the A-TZ and B-TZ. A map showing the location of CAO and POC wells is presented as Figure 2-1. The schedule for ground water monitoring was

changed from quarterly to semiannual beginning in July 1995, as provided by Provision VI.C.3 of the Compliance Plan. Ground water monitoring results for the March 2004 monitoring event were presented in the first semiannual report, dated July 21, 2004. Ten wells completed in the A-TZ and two wells and three piezometers completed in the B-TZ were sampled during each event in 2004. Ground water monitoring results for the September 2004 monitoring event are included in the *Semiannual Monitoring Report: Second Semiannual Event 2004* submitted under separate cover.

The CAO and POC wells and piezometers are summarized below:

- A-TZ POC wells: MW-01A, MW-02, MW-07, MW-10A, and MW-11A;
- A-TZ CAO wells: MW-04, MW-05, MW-07, MW-08, and MW-09;
- 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 represents the A-TZ adjacent to the impoundment, was also sampled.

For the purposes of this report, the ground water analytical data for each semi-annual sampling event are listed in Tables 2-1 through 2-4. The results are tabulated separately for the A-TZ and B-TZ. For each sampling event, detected concentrations of analytes in excess of the Ground Water Protection Standard are indicated by boxes.

Table 2-5 lists the total depth, casing reference elevation, the measured depth to water, and the calculated water level elevation relative to Mean Sea Level for each monitor well and piezometer. For both water-bearing zones, the monitor wells and piezometers provide a general indication that the potentiometric surfaces have relatively low gradients. Data gathered as part of the RFI indicates that the horizontal hydraulic gradient is typically 0.0064 ft/ft in the A-TZ and 0.0122 ft/ft in the B-TZ.

2.3 *SUMMARY OF INSPECTIONS AND REMEDIAL/MAINTENANCE ACTIVITIES*

In a letter dated January 10, 1995, the TCEQ acknowledged fulfillment of the requirement of Compliance Plan Provision XI.B by approving the Operation and Maintenance (O&M) Plan, dated August 19, 1994, and the addendum to the O&M Plan, dated December 8, 1994. Under this O&M Plan, inspections of the former surface impoundment and monitor wells are conducted on a monthly basis. O&M Plan Amendment 2, dated May 20, 1995 and Amendment 3 dated June 23, 1995 were submitted to the TCEQ on May 21, 1995 and August 8, 1995, respectively. In a letter dated October 13, 1995, the TCEQ-approved the second and third amendments to the O&M Plan. O&M Plan Amendment 3 establishes a weekly inspection schedule for the former surface impoundment and a quarterly inspection schedule for the monitor wells.

Inspection of the integrity of the well casings was conducted during March, June, September, and December 2004. No integrity issues were identified concerning monitor wells in 2004.
Inspections related to the former surface impoundment and container storage areas for IDW were performed weekly. The former surface impoundment was mowed the week of June 21, 2004 and September 6, 2004. No additional issues were identified regarding the former surface impoundment.

2.4 *SUMMARY OF ANNUAL COST ESTIMATE FOR POST-CLOSURE CARE*

An adjusted annual cost estimate for post-closure care in 2004 is presented in Appendix C. The post-closure care cost estimate includes ground water monitoring, inspection, and operation and maintenance costs averaged on an annual basis. Ground water monitoring includes semiannual sampling and analysis for existing monitor wells and piezometers. Inspection and maintenance activities include monthly inspection for monitor well integrity, weekly inspections of the closed surface impoundment and the container storage areas, and minor repairs and upgrades. Cost for replacement of existing monitor wells is not included.

The annual cost estimate for post-closure care has been adjusted from 2004 dollars in accordance with 40 CFR §264.144 using the Implicit Price Deflator obtained from the U.S. Department of Commerce. The Implicit Price Deflator results in an inflation factor of 1.0152. The total estimated post-closure care cost for 2005 is $30,000.00.

2.5 *CERTIFICATION OF WASTE MINIMIZATION*

The volume and toxicity of IDW are directly controlled by the activities required by the Permit and Compliance Plan. The scope and schedule of activities proposed in the RFI and EOC Work Plans, as approved by the TCEQ, were designed to reduce the volume and toxicity of the IDW generated by the facility investigations in accordance with the requirements of the Permit and Compliance Plan. Waste minimization has occurred and will continue through the use of low-flow ground water sampling and direct push investigation techniques, where practical, as outlined in the Work Plans. Relative to the method of treatment, storage, or disposal utilized at the facility, waste is temporarily stored and disposed of using methods designed to reduce the present and future potential threat to human health and the environment.

Tables

January 24, 2005
Project No. 0014419

Environmental Resources Management
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Houston, Texas 77084-5140
(281) 600-1000

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TABLE 2-1

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

Houston Wood Preserving Works
Houston, Texas

Analyte	PQL (GWPS)	Monitor Well ID: Sample Date:	MW-01A 9/14/04	MW-02 9/15/04	MW-02D [a] 9/15/04	MW-03 9/15/04	MW-04 9/14/04	MW-05 9/14/04	MW-07 9/13/04	MW-08 9/13/04	MW-09 9/14/04	MW-10A 9/15/04	MW-11A 9/13/04	MW-11AD [b] 9/14/04
Volatile Organic Constituents														
Benzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	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	ND	ND
Methylene chloride	0.010		ND	ND	ND	0.00136 J, *U*	ND	ND	ND	ND	0.00137 J, *U*	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Constituents														
Acenaphthene	0.010		0.231	0.0604	0.0658	0.00662	0.00722	0.00156	ND	ND	ND	0.106	0.0987	0.0881
Acenaphthylene	0.010		0.00196	0.000768	0.000838	ND	0.000166 J	ND	ND	ND	ND	0.0076	0.000797	0.000657
Anthracene	0.010		0.0116	0.00218	0.0024	0.000792	0.00129	0.000563	0.000955	0.000307 J	0.000483	0.00237	0.00315	0.00354
Benzo(a)anthracene	0.010		ND	ND	0.000245	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	0.000068 J	ND	ND	ND, *UJ*
bis(2-Chloroethoxy)methane	0.010		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	ND	ND	ND	ND, *UJ*
2-Chloronaphthalene	0.010		ND	0.000147 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	0.010		ND	ND	0.000172 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	0.010		0.114	0.0302	0.0346	0.00391	0.0011	ND	ND	ND	ND	0.0391	0.00919	0.00872
Di-n-butyl phthalate	0.010		ND	0.000519 *U*	0.000299 J, *U*	0.00076 *U*	0.000637 *U*	ND	0.000238 J, *U*	0.000449 J, *U*	0.000364 J, *U*	ND	0.000279 J, *U*	0.000386 J, *U*
2,4-Dimethylphenol	0.010		ND	0.00134 *J*	0.00244 *J*	ND, *UJ*	ND	ND	ND	ND	ND	ND, *UJ*	ND	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	ND	ND	ND	ND, *UJ*
2,6-Dinitrotoluene	0.010		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	ND	ND	ND	ND, *UJ*
1,2-Diphenylhydrazine	0.010		ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*
bis(2-Ethylhexyl)phthalate	0.010		0.000672	ND	0.000675	ND	0.000846	0.000608	ND	0.000689	ND	ND	ND	0.000714
Fluoranthene	0.010		0.0154	0.00202 *J*	0.00283 *J*	ND, *UJ*	0.000355 J	0.000135J	0.000352 J	0.000287 J	ND	0.0085 *J*	0.0099	0.0121
Fluorene	0.010		0.136	0.0328	0.0387	0.0113	0.00339	0.00016 J	ND	ND	ND	0.00297	0.0455	0.0474
2-Methylnaphthalene	0.010		0.00834	0.01029	0.00993	0.224	ND	ND	ND	ND	ND	ND	ND	0.000877
Naphthalene	0.010		0.000884 *J*	0.0555 *J*	0.108 *J*	0.0425 *J*	ND, *UJ*	0.00131 *J*	ND, *UJ*	ND, *UJ*	ND, *UJ*	0.000395 J, *J*	0.000236 J, *J*	0.00255 *J*
Nitrobenzene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Nitrophenol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	0.000376	ND	ND	ND, *UJ*
Phenanthrene	0.010		0.00152 *JH*	0.00554 *JH*	0.00573 *JH*	0.0106 *JH*	0.000278 J, *JH*	ND	ND	ND	ND	0.00133 *JH*	0.000594 *JH*	0.000895 *JH*
Phenol	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	0.010		0.00676	0.00122	0.00136	0.000392 J	0.000398 J	0.000241 J	0.000563	0.000412 J	ND	0.00474	0.00483	0.00552

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.
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 Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.
[ ] indicates value reported above the GWPS.
(a) MW-02D is a duplicate of MW-02.
(b) MW-11AD is a duplicate of MW-11A
J = Estimated value between the reporting limit and MDL.
U = Not Detected based on third party qualification
J = Estimated data based on third party qualification
L = Low bias based on third party qualification
H = High bias based on third party qualification
R = Rejected based on third party qualification

TABLE 2-2

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

Houston Wood Preserving Works
Houston, Texas

Analyte	PQL (GWPS)	Monitor Well ID: Sample Date:	MW-10B 3/16/04	MW-10BD [a] 3/16/04	MW-11B 3/16/04	P-10 3/16/04	P-10D [b] 3/16/04	P-11 3/17/04	P-12 3/17/04
Volatile Organic Constituents									
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
Semivolatile Organic Constituents									
Acenaphthene	0.010		0.04421	0.04517	0.0486	ND, *UJ*	0.08375 *J*	0.1301	ND
Acenaphthylene	0.010		0.000833	0.000855	0.001163	ND, *UJ*	0.000586 *J*	ND	ND
Anthracene	0.010		0.002478	0.00243	0.000854	ND, *UJ*	0.004746 *J*	0.005611	ND
Benzo(a)anthracene	0.010		ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND	ND	ND	ND	ND	ND, *UJ*	ND
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	ND	ND
Dibenzofuran	0.010		0.0171	0.01702	0.01581	ND, *UJ*	0.03219 *J*	0.003985	ND
Di-n-butyl phthalate	0.010		0.000303 J, *U*	0.000251 J, *U*	0.000348 J, *U*	0.000379 J, *U*	0.000418 J, *U*	0.000923 *U*	0.000922 *U*
2,4-Dimethylphenol	0.010		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*	ND
bis(2-Ethylhexyl)phthalate	0.010		0.000982	0.000988	ND	ND	ND	0.000904 *U*	0.001748 *U*
Fluoranthene	0.010		0.001567	0.0001681	0.001971	ND, *UJ*	0.003192 *J*	0.008623	ND
Fluorene	0.010		0.02079	0.0213	0.0112	ND, *UJ*	0.04259 *J*	0.05025	ND
2-Methylnaphthalene	0.010		0.00013 J	ND	0.001569	ND, *UJ*	0.0218 *J*	0.001097	ND
Naphthalene	0.010		0.001853	0.001653	0.01168	ND, *UJ*	0.4144 *J*	0.007031	ND
Nitrobenzene	0.010		ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND	ND	ND	ND	ND	ND, *R*	0.000337 *JL*
Phenanthrene	0.010		0.008858	0.00956	0.000198 J	ND, *UJ*	0.02155 *J*	0.01956	ND
Phenol	0.010		ND	ND	ND	ND	ND	ND	ND
Pyrene	0.010		0.000718	0.000694	0.000991	ND, *UJ*	0.001372 *J*	0.00445	0.007348

NOTES:

All values reported in mg/L.
ND = Not detected at the Method Detection Limit (MDL), which can be found in the laboratory reports in Appendix C and is less than or equal to the GWPS in all instances.
PQL = *Practical Quantitation Limit*, as defined on Table 1 of the Compliance Plan and determined by the analytical methods of EPA SW-846 *Test Methods for Determining Solid Wastes*.
The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.
[ ] indicates value reported above the GWPS.
(a) MW-10BD is a duplicate of MW-10B.
(b) P-10D is a duplicate of P-10.
J = Estimated value between the reporting limit and MDL.
U = Not Detected based on third party qualification
J = Estimated data based on third party qualification
L = Low bias based on third party qualification
H = High bias based on third party qualification
R = Rejected based on third party qualification

TABLE 2-3

Summary of Analytical Results for the A-Transmissive Zone (A-TZ)
Second Semiannual Event 2004

Houston Wood Preserving Works
Houston, Texas

Analyte	PQL (GWPS)	Monitor Well ID: Sample Date:	MW-01A 9/14/04	MW-02 9/15/04	MW-02D [a] 9/15/04	MW-03 9/15/04	MW-04 9/14/04	MW-05 9/14/04	MW-07 9/13/04	MW-08 9/13/04	MW-09 9/14/04	MW-10A 9/15/04	MW-11A 9/13/04	MW-11AD [b] 9/14/04
Volatile Organic Constituents														
Benzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	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	ND	ND
Methylene chloride	0.010		ND	ND	ND	0.00136 J, *U*	ND	ND	ND	ND	0.00137 J, *U*	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Constituents														
Acenaphthene	0.010		0.231	0.0604	0.0658	0.00662	0.00722	0.00156	ND	ND	ND	0.106	0.0987	0.0881
Acenaphthylene	0.010		0.00196	0.000768	0.000838	ND	0.000166 J	ND	ND	ND	ND	0.0076	0.000797	0.000657
Anthracene	0.010		0.0116	0.00218	0.0024	0.000792	0.00129	0.000563	0.000955	0.000307 J	0.000483	0.00237	0.00315	0.00354
Benzo(a)anthracene	0.010		ND	ND	0.000245	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	0.000068 J	ND	ND	ND, *UJ*
bis(2-Chloroethoxy)methane	0.010		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	ND	ND	ND	ND, *UJ*
2-Chloronaphthalene	0.010		ND	0.000147 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	0.010		ND	ND	0.000172 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	0.010		0.114	0.0302	0.0346	0.00391	0.0011	ND	ND	ND	ND	0.0391	0.00919	0.00872
Di-n-butyl phthalate	0.010		ND	0.000519 *U*	0.000299 J, *U*	0.00076 *U*	0.000637 *U*	ND	0.000238 J, *U*	0.000449 J, *U*	0.000364 J, *U*	ND	0.000279 J, *U*	0.000386 J, *U*
2,4-Dimethylphenol	0.010		ND	0.00134 *J*	0.00244 *J*	ND, *UJ*	ND	ND	ND	ND	ND	ND, *UJ*	ND	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	ND	ND	ND	ND, *UJ*
2,6-Dinitrotoluene	0.010		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	ND	ND	ND	ND, *UJ*
1,2-Diphenylhydrazine	0.010		ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*
bis(2-Ethylhexyl)phthalate	0.010		0.000672	ND	0.000675	ND	0.000846	0.000608	ND	0.000689	ND	ND	ND	0.000714
Fluoranthene	0.010		0.0154	0.00202 *J*	0.00283 *J*	ND, *UJ*	0.000355 J	0.000135J	0.000352 J	0.000287 J	ND	0.0085 *J*	0.0099	0.0121
Fluorene	0.010		0.136	0.0328	0.0387	0.0113	0.00339	0.00016 J	ND	ND	ND	0.00297	0.0455	0.0474
2-Methylnaphthalene	0.010		0.00834	0.01029	0.00993	0.224	ND	ND	ND	ND	ND	ND	ND	0.000877
Naphthalene	0.010		0.000884 *J*	0.0555 *J*	0.108 *J*	0.0425 *J*	ND, *UJ*	0.00131 *J*	ND, *UJ*	ND, *UJ*	ND, *UJ*	0.000395 J, *J*	0.000236 J, *J*	0.00255 *J*
Nitrobenzene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Nitrophenol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND	ND	ND	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND	ND	0.000376	ND	ND	ND, *UJ*
Phenanthrene	0.010		0.00152 *JH*	0.00554 *JH*	0.00573 *JH*	0.0106 *JH*	0.000278 J, *JH*	ND	ND	ND	ND	0.00133 *JH*	0.000594 *JH*	0.000895 *JH*
Phenol	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	0.010		0.00676	0.00122	0.00136	0.000392 J	0.000398 J	0.000241 J	0.000563	0.000412 J	ND	0.00474	0.00483	0.00552

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.
PQL = *Practical Quantitation Limit,* as defined on Table 1 of the Compliance Plan and determined by the analytical methods of EPA SW-846 *Test Methods for Determining Solid Wastes.*
The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.
[ ] indicates value reported above the GWPS.
(a) MW-02D is a duplicate of MW-02.
(b) MW-11AD is a duplicate of MW-11A
J = Estimated value between the reporting limit and MDL.
U = Not Detected based on third party qualification
J = Estimated data based on third party qualification
L = Low bias based on third party qualification
H = High bias based on third party qualification
R = Rejected based on third party qualification

TABLE 2-4

Summary of Analytical Results for the B-Transmissive Zone (B-TZ)
Second Semiannual Event 2004

Houston Wood Preserving Works
Houston, Texas

Analyte	PQL (GWPS)	Monitor Well ID: Sample Date:	MW-10B 9/14/04	MW-11B 9/14/04	P-10 9/13/04	P-11 9/15/04	P-12 9/14/04
Volatile Organic Constituents							
Benzene	0.005		0.0025 J	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005		ND	ND	ND	ND	ND
Methylene chloride	0.010		ND	ND	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND
Xylene (total)	0.005		ND	ND	ND	ND	ND
Semivolatile Organic Constituents							
Acenaphthene	0.010		0.0864	0.151	0.0244	0.151	ND
Acenaphthylene	0.010		0.00161	0.00193	0.000179 J	ND	ND
Anthracene	0.010		0.00549	0.00764	0.000798	0.00666	ND
Benzo(a)anthracene	0.010		ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND, *UJ*	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	0.010		ND, *UJ*	ND	ND	ND	ND
2-Chloronaphthalene	0.010		ND	ND	ND	ND	ND
Chrysene	0.010		ND	ND	ND	ND	ND
Dibenzofuran	0.010		0.0404	0.0804	0.00643	0.00261	ND
Di-n-butyl phthalate	0.010		0.000419 J, *U*	0.000449 J, *U*	0.000456 J, *U*	0.000532 *U*	0.000279 J, *U*
2,4-Dimethylphenol	0.010		ND	ND	ND	ND, *UJ*	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010		ND, *UJ*	ND	ND	ND	ND
2,6-Dinitrotoluene	0.010		ND, *UJ*	ND	ND	ND	ND
1,2-Diphenylhydrazine	0.010		ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*
bis(2-Ethylhexyl)phthalate	0.010		0.0081	0.000649	ND	ND	0.000861
Fluoranthene	0.010		0.00294	0.00536	0.000474 J	0.00635 *J*	ND
Fluorene	0.010		0.044	0.0671	0.00768	0.0643	ND
2-Methylnaphthalene	0.010		0.0127	0.0748	0.00264	0.00152	ND
Naphthalene	0.010		0.107 *J*	0.184 *J*	0.119 *J*	0.364 *J*	ND, *UJ*
Nitrobenzene	0.010		ND	ND	ND	ND	ND
p-Nitrophenol	0.050		ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND, *UJ*	ND	ND	ND	ND
Phenanthrene	0.010		0.0256 *JH*	0.0422 *JH*	0.00234 *JH*	0.0352 *JH*	ND
Phenol	0.010		ND	ND	ND	ND	ND
Pyrene	0.010		0.00137	0.00268	0.000221 J	0.00375	0.00457

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.
PQL = *Practical Quantitation Limit,* as defined on Table 1 of the Compliance Plan and determined by the analytical methods of EPA SW-846 *Test Methods for Determining Solid Wastes.*
The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.
[ ] indicates value reported above the GWPS.
(a) MW-02D is a duplicate of MW-02.
(b) MW-11AD is a duplicate of MW-11A
J = Estimated value between the reporting limit and MDL.
U = Not Detected based on third party qualification
J = Estimated data based on third party qualification
L = Low bias based on third party qualification
H = High bias based on third party qualification
R = Rejected based on third party qualification

TABLE 2-5

Water Level and Total Depth of Well Measurements
Semiannual Events 2004

Houston Wood Preserving Works
Houston, Texas

Well ID	Top-of-Casing Elevation [a] (ft MSL)	Depth to Water (ft TOC)		Ground Water Elevation (ft MSL)		Total Measured Well Depth [b] (ft TOC)	Total Depth as* Completed (ft TOC)
		3/15/04	9/13/04	3/15/04	9/13/04		
A-TZ Monitoring Locations							
MW-01A	47.92	3.49	8.26	44.43	39.66	19.61	20.2
MW-02	47.97	2.87	8.71	45.10	39.26	NM	20.3
MW-03	48.34	3.27	9.03	45.07	39.31	19.52	20.9
MW-04	49.85	4.80	9.80	45.05	40.05	21.60	23.4
MW-05	49.24	4.22	8.58	45.02	40.66	27.30	28.3
MW-07	48.86	3.89	9.04	44.97	39.82	24.69	N/A
MW-08	49.33	4.31	9.31	45.02	40.02	24.98	26.8
MW-09	49.26	4.18	8.39	45.08	40.87	25.14	26.8
MW-10A	49.86	4.69	10.30	45.17	39.56	NM	25.9
MW-11A	50.05	4.99	10.28	45.06	39.77	23.75	24.4
B-TZ Monitoring Locations							
MW-10B	49.94	5.78	10.41	44.16	39.53	46.42	48.8
MW-11B	50.18	5.16	10.53	45.02	39.65	46.66	46.8
P-10	47.69	2.85	7.99	44.84	39.70	42.80	N/A
P-11	48.98	4.11	9.14	44.87	39.84	42.69	51.8
P-12	48.78	3.55	7.93	45.23	40.85	42.70	51.7

NOTES:

NAPL was not detected in any well.
ft MSL = feet above Mean Sea Level
ft TOC = feet below the Top Of (the well) Casing
* Reporting during well installation and completion
N/A = Information not available
(a) TOC elevations resurveyed by Baseline Surveyors on April 21 and 28, 2004.
(b) Total Depth measurements reported from Second Semiannual Event only.

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Figures

January 24, 2005
Project No. 0014419

Environmental Resources Management
15810 Park Ten Place Suite 300
Houston, Texas 77084-5140
(281) 600-1000

SOURCE: U.S.G.S. 7.5 MINUTE QUADRANGLE, SETTEGAST, TEXAS, 1982.

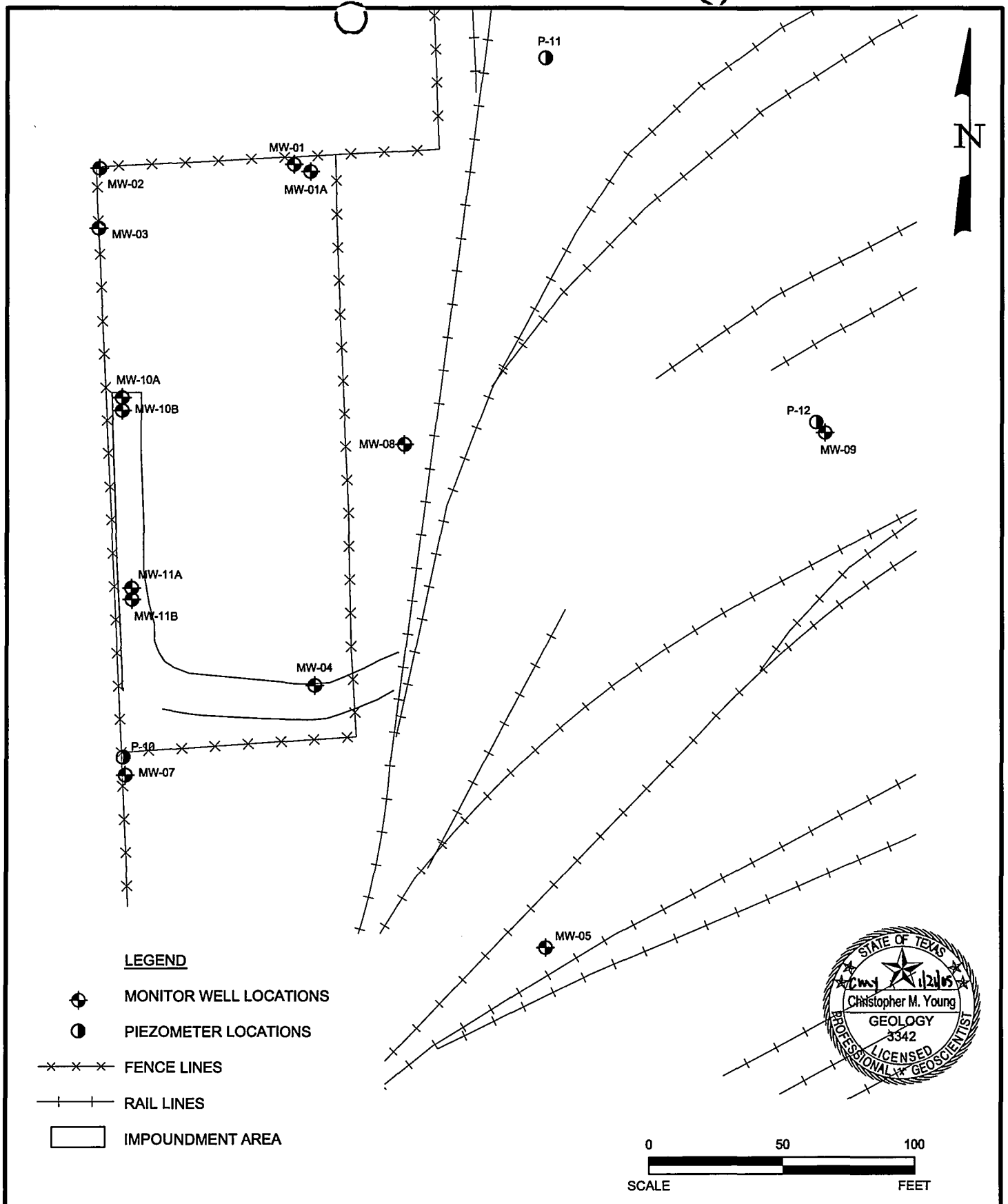
0 2000 4000
SCALE FEET

ERM-Southwest, Inc.
HOUSTON · NEW ORLEANS · AUSTIN · MOBILE · BEAUMONT · BATON ROUGE · CORPUS CHRISTI

FIGURE 1-1
SITE LOCATION MAP
Houston Wood Preserving Works
Houston, Texas

ERM®

DESIGN:	DRAWN: CAK	CHKD.: PJG
DATE: 07/13/04	SCALE: AS SHOWN	REV.:
W.O.NO.: H:\dwg\G04\0014419A247.dwg, 1/20/2005 3:19:17 PM		



ERM-Southwest, Inc.

HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT · BATON ROUGE · CORPUS CHRISTI

DESIGN: LBG	DRAWN: EFC/LAH	CHKD.:
DATE: 01/03/05	SCALE: AS SHOWN	REV.:
W.O.NO.: H:\dwg\A05\Incoming\422102A01A03R0.dwg, 1/11/2005 2:54:56 PM		

FIGURE 2-1
MONITOR WELLS AND PIEZOMETERS
TCEQ PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM®

Annual Waste Summary for Data Year 2004

Appendix A

January 24, 2005
Project No. 0014419

Environmental Resources Management
15810 Park Ten place, Suite 300
Houston, Texas 77084-5140
(281) 600-1000

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REGISTRATION AND REPORTING SECTION
MC 129
REGISTRATION, REVIEW AND REPORTING DIVISION
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087 TELEPHONE: (512) 239-6413

ANNUAL WASTE SUMMARY

Your SOLID WASTE REGISTRATION NUMBER: 31547 (1) G 1 (6) Report for: 2004 (8)

Geoffrey B Reeder
Union Pacific Railroad Company
4910 Liberty Road
Houston, TX 77026-5264 281-350-7197

☐ NO REPORT REQUIRED (24)
{See 30 TAC 335.9(a)(3); also see instructions}

Your EPA ID # TXD008208266 (12)

SUMMARY STATUS		
X ORIGINAL SUMMARY	☐ REVISED SUMMARY	☐ SUPPLEMENTAL SUMMARY

YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE THE INFORMATION IS CORRECT.
TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLET RG-151.

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
0917406H	F034	K001			Plastic and used Personal Protective Equipment generated as	100	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
100	P	H1411		30271	TXD074196338	
		H				
		H				

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
14781011					Petroleum-affected purge water generated as part of ground w	4070	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
4070	P	H		30271	TXD074196338	
		H				
		H				

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that basedon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

GENERATOR COMPANY NAME (120–169): Union Pacific Railroad Company

GENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE (120–169):

Page 1 of 6

COMPANY AUTHORIZED AGENT (170–199): Geoffrey Reeder

PHONE NUMBER: (281) 350-7197

TITLE (200–229): Manager Env. Site Remediation

SIGNATURE OF COMPANY AUTHORIZED AGENT: Geoffrey Reeder

DATE: 01/21/05

LPS Form TCEQ - 0436A (Rev. 05.20.04)

Annual Waste Summary Form Instructions

For more detailed instructions, please read or download RG-151, Industrial and Hazardous Waste Annual Waste Summary Instruction Booklet found on our website www.tceq.com under Forms and Publications. For the TCEQ mailing address and phone number, see front of form, upper-left corner.

Instructions are in numerical order based on the column number found below the data field. Do not use commas or leading zeroes in number fields. Decimal points must be shown in their own box. Most of the information needed to complete this form is found on the Uniform Hazardous Waste Manifest form used to ship the waste off site.

1-5 **Your Solid Waste Registration Number:** The 5-digit number assigned to the site for which you are reporting.

8-11 **Report for:** The year of the data included in the report. (Example, Report for: 2003, reported in 2004)

12-23 **Your EPA ID#:** Enter the EPA ID Number assigned to the site for which you are reporting.

24 **No Report Required:** Check this box if the facility meets the qualifications found in RG-151.

25-32 **Texas Waste Code:** The 8-digit Texas Waste Code assigned to the waste on the facility's Notice of Registration (NOR). This can also be an 8-digit One-time Shipment waste code number assigned by the TCEQ. Do not report Texas Waste Codes beginning with OUTS, TSDF, UNIV or CESQ.

33-48 **EPA Hazardous Waste No:** Enter the 4-digit EPA Hazardous Waste Number(s) that corresponds to the Texas Waste Code. If the waste is non-hazardous, these fields should be left blank.

49-57 **Total Quantity Generated:** Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.

58 **Units:** Enter the type of unit of measurement that describes the quantity generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons. To convert other units of measurement, read publication RG-151, as stated above.

59-67 **Quantity Handled:** Enter the amount of this waste that was managed on site or shipped off site. If either the receiving facility number or the system type code changes, report a separate quantity handled in the next row. Quantity handled must be greater than zero and cannot be blank.

68 **Units:** Enter the type of unit of measurement that describes the quantity handled. To report several quantities handled for the same Texas Waste Code, the unit of measure must always match that of the Total Quantity Generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons.

69-71 **System Type Code:** Enter the H-code that represents the treatment, storage or disposal of the waste, either on site or at an off site receiving facility. This list is found in the RG-151 or at our website ww.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting.

72 **Fee:** If the treatment of this waste qualifies for an exemption from waste generation fees, enter the code 1, 2, or 3. (See publication RG-151 for a definition of the exemption codes.) If you are not claiming an exemption, leave this field blank.

73-77 **Facility Number:** Enter the 5-digit Solid Waste Registration Number of the off site facility that treated, stored, or disposed of the waste. For waste that is shipped out-of-state, refer to the Codes for Out-of-State Generators and Receivers list found on our website www.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting. If, on December 31, the waste was still on site for treatment, storage or disposal, refer to your NOR and enter the 3-digit waste management unit number for the unit where the waste is located.

78-89 **Receiver's EPA ID#:** Enter the 12-digit EPA ID Number of the off site facility that treated, stored or disposed of the waste. For a foreign receiver's EPA ID Number, refer to the Codes for Out-of-State Generators and Receivers list found at the website stated above. If the waste is non-hazardous and the receiving facility does not have an EPA ID#, leave this field blank and record the receiving facility's name in the Comments field.

90-119 **Comments:** This field is used to record additional 4-digit EPA Waste Numbers or the name of the non-hazardous, out-of-state, receiving facility that does not have an EPA ID#.

120-169 **Generator Company Name:** If the generator company name has changed since the form was preprinted, then complete this field with the current company name. If the form is not preprinted and the company name is blank, enter the current company name.

170-199 **Company Authorized Agent:** Print the name of the person designated by the generating company as the person responsible for the Annual Waste Summary report. Record a phone number for questions, sign and date each page of the form.

200-229 **Title:** Print the title of the Authorized Agent.

UNION PACIFIC RAILROAD COMPANY
GEOFFREY B REEDER
24125 ALDINE WESTFIELD RD
SPRING, TX 77373-9015

REGISTRATION AND REPORTING SECTION
MC 129
REGISTRATION, REVIEW AND REPORTING DIVISION
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087 TELEPHONE: (512) 239-6413

ANNUAL WASTE SUMMARY

Your SOLID WASTE REGISTRATION NUMBER: 31547 (1) G1 (6) Report for: 2004 (8)

Geoffrey B Reeder
Union Pacific Railroad Company
4910 Liberty Road
Houston, TX 77026-5264 281-350-7197

[ ] NO REPORT REQUIRED (24)
{See 30 TAC 335.9(a)(3); also see instructions}

Your EPA ID # TXD000082026 (12)

SUMMARY STATUS

[X] ORIGINAL SUMMARY [ ] REVISED SUMMARY [ ] SUPPLEMENTAL SUMMARY

YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE THE INFORMATION IS CORRECT.
TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLET RG-151.

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
1,4,7,7,3,0,1,2					Petroleum-affected soils generated as part of site investigation and corrective action.	63480	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
63480	P	H141		30271	TXD047196338	
		H				
		H				

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
1,4,8,3,5,1,4,2					Drilling mud from boring monitor wells for investigative purposes.	14936	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
14936	P	H141		30271	TXD074196338	
		H				
		H				

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

GENERATOR COMPANY NAME (120–169): Union Pacific Railroad Company

GENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE (120–169):

Page 2 of 6

COMPANY AUTHORIZED AGENT (170–199): Geoffrey Reeder

PHONE NUMBER: (281) 350-7197

TITLE (200–229): Manager, Env. Site Remediation

SIGNATURE OF COMPANY AUTHORIZED AGENT: Geoffrey Reeder

DATE: 012105

Annual Waste Summary Form Instructions

For more detailed instructions, please read or download RG-151, Industrial and Hazardous Waste Annual Waste Summary Instruction Booklet found on our website www.tceq.com under Forms and Publications. For the TCEQ mailing address and phone number, see front of form, upper-left corner.

Instructions are in numerical order based on the column number found below the data field. Do not use commas or leading zeroes in number fields. Decimal points must be shown in their own box. Most of the information needed to complete this form is found on the Uniform Hazardous Waste Manifest form used to ship the waste off site.

1-5 **Your Solid Waste Registration Number:** The 5-digit number assigned to the site for which you are reporting.

8-11 **Report for:** The year of the data included in the report. (Example, Report for: 2003, reported in 2004)

12-23 **Your EPA ID#:** Enter the EPA ID Number assigned to the site for which you are reporting.

24 **No Report Required:** Check this box if the facility meets the qualifications found in RG-151.

25-32 **Texas Waste Code:** The 8-digit Texas Waste Code assigned to the waste on the facility's Notice of Registration (NOR). This can also be an 8-digit One-time Shipment waste code number assigned by the TCEQ. Do not report Texas Waste Codes beginning with OUTS, TSDF, UNIV or CESQ.

33-48 **EPA Hazardous Waste No:** Enter the 4-digit EPA Hazardous Waste Number(s) that corresponds to the Texas Waste Code. If the waste is non-hazardous, these fields should be left blank.

49-57 **Total Quantity Generated:** Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.

58 **Units:** Enter the type of unit of measurement that describes the quantity generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons. To convert other units of measurement, read publication RG-151, as stated above.

59-67 **Quantity Handled:** Enter the amount of this waste that was managed on site or shipped off site. If either the receiving facility number or the system type code changes, report a separate quantity handled in the next row. Quantity handled must be greater than zero and cannot be blank.

68 **Units:** Enter the type of unit of measurement that describes the quantity handled. To report several quantities handled for the same Texas Waste Code, the unit of measure must always match that of the Total Quantity Generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons.

69-71 **System Type Code:** Enter the H-code that represents the treatment, storage or disposal of the waste, either on site or at an off site receiving facility. This list is found in the RG-151 or at our website ww.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting.

72 **Fee:** If the treatment of this waste qualifies for an exemption from waste generation fees, enter the code 1, 2, or 3. (See publication RG-151 for a definition of the exemption codes.) If you are not claiming an exemption, leave this field blank.

73-77 **Facility Number:** Enter the 5-digit Solid Waste Registration Number of the off site facility that treated, stored, or disposed of the waste. For waste that is shipped out-of-state, refer to the Codes for Out-of-State Generators and Receivers list found on our website www.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting. If, on December 31, the waste was still on site for treatment, storage or disposal, refer to your NOR and enter the 3-digit waste management unit number for the unit where the waste is located.

78-89 **Receiver's EPA ID#:** Enter the 12-digit EPA ID Number of the off site facility that treated, stored or disposed of the waste. For a foreign receiver's EPA ID Number, refer to the Codes for Out-of-State Generators and Receivers list found at the website stated above. If the waste is non-hazardous and the receiving facility does not have an EPA ID#, leave this field blank and record the receiving facility's name in the Comments field.

90-119 **Comments:** This field is used to record additional 4-digit EPA Waste Numbers or the name of the non-hazardous, out-of-state, receiving facility that does not have an EPA ID#.

120-169 **Generator Company Name:** If the generator company name has changed since the form was preprinted, then complete this field with the current company name. If the form is not preprinted and the company name is blank, enter the current company name.

170-199 **Company Authorized Agent:** Print the name of the person designated by the generating company as the person responsible for the Annual Waste Summary report. Record a phone number for questions, sign and date each page of the form.

200-229 **Title:** Print the title of the Authorized Agent.

UNION PACIFIC RAILROAD COMPANY
GEOFFREY B REEDER
24125 ALDINE WESTFIELD RD
SPRING, TX 77373-9015

REGISTRATION AND REPORTING SECTION
MC 129
REGISTRATION, REVIEW AND REPORTING DIVISION
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087 TELEPHONE: (512) 239-6413

ANNUAL WASTE SUMMARY

Your SOLID WASTE REGISTRATION NUMBER: 31547 (1) G1 (6) Report for: 2004 (8)

Geoffrey B Reeder
Union Pacific Railroad Company
4910 Liberty Road
Houston, TX 77026-5264 281-350-7197

☐ NO REPORT REQUIRED (24)
{See 30 TAC 335.9(a)(3); also see instructions}

Your EPA ID # TXD008206 6 (12)

SUMMARY STATUS

☒ ORIGINAL SUMMARY ☐ REVISED SUMMARY ☐ SUPPLEMENTAL SUMMARY

YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE THE INFORMATION IS CORRECT. TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLET RG-151.

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
0914101H	F034	K001			Groundwater generated from purging of various monitor wells	100	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
100	P	H141		50029	TXD980624035	
		H				
		H				

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
0915301H					Soil derived from the boring of monitoring wells for investi	0	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
		H				
		H				
		H				

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

GENERATOR COMPANY NAME (120–169): Union Pacific Railroad Company

GENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE (120–169):

COMPANY AUTHORIZED AGENT (170–199): Geoffrey Reeder

PHONE NUMBER: (281) 350-7197

TITLE (200–229): Manager, Env. Site Remediation

SIGNATURE OF COMPANY AUTHORIZED AGENT: Geoffrey Reeder

DATE: 012105

LPS Form TCEQ 0436A (Rev. 05.20.04)

Annual Waste Summary Form Instructions

For more detailed instructions, please read or download RG-151, Industrial and Hazardous Waste Annual Waste Summary Instruction Booklet found on our website www.tceq.com under Forms and Publications. For the TCEQ mailing address and phone number, see front of form, upper-left corner.

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1-5 **Your Solid Waste Registration Number:** The 5-digit number assigned to the site for which you are reporting.

8-11 **Report for:** The year of the data included in the report. (Example, Report for: 2003, reported in 2004)

12-23 **Your EPA ID#:** Enter the EPA ID Number assigned to the site for which you are reporting.

24 **No Report Required:** Check this box if the facility meets the qualifications found in RG-151.

25-32 **Texas Waste Code:** The 8-digit Texas Waste Code assigned to the waste on the facility's Notice of Registration (NOR). This can also be an 8-digit One-time Shipment waste code number assigned by the TCEQ. Do not report Texas Waste Codes beginning with OUTS, TSDF, UNIV or CESQ.

33-48 **EPA Hazardous Waste No:** Enter the 4-digit EPA Hazardous Waste Number(s) that corresponds to the Texas Waste Code. If the waste is non-hazardous, these fields should be left blank.

49-57 **Total Quantity Generated:** Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.

58 **Units:** Enter the type of unit of measurement that describes the quantity generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons. To convert other units of measurement, read publication RG-151, as stated above.

59-67 **Quantity Handled:** Enter the amount of this waste that was managed on site or shipped off site. If either the receiving facility number or the system type code changes, report a separate quantity handled in the next row. Quantity handled must be greater than zero and cannot be blank.

68 **Units:** Enter the type of unit of measurement that describes the quantity handled. To report several quantities handled for the same Texas Waste Code, the unit of measure must always match that of the Total Quantity Generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons.

69-71 **System Type Code:** Enter the H-code that represents the treatment, storage or disposal of the waste, either on site or at an off site receiving facility. This list is found in the RG-151 or at our website ww.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting.

72 **Fee:** If the treatment of this waste qualifies for an exemption from waste generation fees, enter the code 1, 2, or 3. (See publication RG-151 for a definition of the exemption codes.) If you are not claiming an exemption, leave this field blank.

73-77 **Facility Number:** Enter the 5-digit Solid Waste Registration Number of the off site facility that treated, stored, or disposed of the waste. For waste that is shipped out-of-state, refer to the Codes for Out-of-State Generators and Receivers list found on our website www.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting. If, on December 31, the waste was still on site for treatment, storage or disposal, refer to your NOR and enter the 3-digit waste management unit number for the unit where the waste is located.

78-89 **Receiver's EPA ID#:** Enter the 12-digit EPA ID Number of the off site facility that treated, stored or disposed of the waste. For a foreign receiver's EPA ID Number, refer to the Codes for Out-of-State Generators and Receivers list found at the website stated above. If the waste is non-hazardous and the receiving facility does not have an EPA ID#, leave this field blank and record the receiving facility's name in the Comments field.

90-119 **Comments:** This field is used to record additional 4-digit EPA Waste Numbers or the name of the non-hazardous, out-of-state, receiving facility that does not have an EPA ID#.

120-169 **Generator Company Name:** If the generator company name has changed since the form was preprinted, then complete this field with the current company name. If the form is not preprinted and the company name is blank, enter the current company name.

170-199 **Company Authorized Agent:** Print the name of the person designated by the generating company as the person responsible for the Annual Waste Summary report. Record a phone number for questions, sign and date each page of the form.

200-229 **Title:** Print the title of the Authorized Agent.

UNION PACIFIC RAILROAD COMPANY
GEOFFREY B REEDER
24125 ALDINE WESTFIELD RD
SPRING, TX 77373-9015

REGISTRATION AND REPORTING SECTION
MC 129
REGISTRATION, REVIEW AND REPORTING DIVISION
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087 TELEPHONE: (512) 239-6413

ANNUAL WASTE SUMMARY

Your SOLID WASTE REGISTRATION NUMBER: 31547 (1) G1 (6) Report for: 2004 (8)

Geoffrey B Reeder
Union Pacific Railroad Company
4910 Liberty Road
Houston, TX 77026-5264 281-350-7197

☐ NO REPORT REQUIRED (24)
{See 30 TAC 335.9(a)(3); also see instructions}

Your EPA ID # TXD000820266 (12)

SUMMARY STATUS		
☒ ORIGINAL SUMMARY	☐ REVISED SUMMARY	☐ SUPPLEMENTAL SUMMARY

YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE THE INFORMATION IS CORRECT.
TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLET RG-151.

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
1481514H					Drilling mud from boring monitor wells for investigative pur	0	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90)
		H				
		H				
		H				

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
1482110H					Purge water generated as part of ground water monitoring and	0	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90)
		H				
		H				
		H				

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

GENERATOR COMPANY NAME (120–169): Union Pacific Railroad Company

GENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE (120–169):

COMPANY AUTHORIZED AGENT (170–199): Geoffrey Reeder

PHONE NUMBER: (281) 350-7197

TITLE (200–229): Manager, Env. Site Remediation

SIGNATURE OF COMPANY AUTHORIZED AGENT: Geoffrey Reeder

DATE: 012105

LPS Form TCEQ - 0436A (Rev. 05-20-04)

Annual Waste Summary Form Instructions

For more detailed instructions, please read or download RG-151, Industrial and Hazardous Waste Annual Waste Summary Instruction Booklet found on our website www.tceq.com under Forms and Publications. For the TCEQ mailing address and phone number, see front of form, upper-left corner.

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1-5 **Your Solid Waste Registration Number:** The 5-digit number assigned to the site for which you are reporting.

8-11 **Report for:** The year of the data included in the report. (Example, Report for: 2003, reported in 2004)

12-23 **Your EPA ID#:** Enter the EPA ID Number assigned to the site for which you are reporting.

24 **No Report Required:** Check this box if the facility meets the qualifications found in RG-151.

25-32 **Texas Waste Code:** The 8-digit Texas Waste Code assigned to the waste on the facility's Notice of Registration (NOR). This can also be an 8-digit One-time Shipment waste code number assigned by the TCEQ. Do not report Texas Waste Codes beginning with OUTS, TSDF, UNIV or CESQ.

33-48 **EPA Hazardous Waste No:** Enter the 4-digit EPA Hazardous Waste Number(s) that corresponds to the Texas Waste Code. If the waste is non-hazardous, these fields should be left blank.

49-57 **Total Quantity Generated:** Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.

58 **Units:** Enter the type of unit of measurement that describes the quantity generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons. To convert other units of measurement, read publication RG-151, as stated above.

59-67 **Quantity Handled:** Enter the amount of this waste that was managed on site or shipped off site. If either the receiving facility number or the system type code changes, report a separate quantity handled in the next row. Quantity handled must be greater than zero and cannot be blank.

68 **Units:** Enter the type of unit of measurement that describes the quantity handled. To report several quantities handled for the same Texas Waste Code, the unit of measure must always match that of the Total Quantity Generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons.

69-71 **System Type Code:** Enter the H-code that represents the treatment, storage or disposal of the waste, either on site or at an off site receiving facility. This list is found in the RG-151 or at our website ww.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting.

72 **Fee:** If the treatment of this waste qualifies for an exemption from waste generation fees, enter the code 1, 2, or 3. (See publication RG-151 for a definition of the exemption codes.) If you are not claiming an exemption, leave this field blank.

73-77 **Facility Number:** Enter the 5-digit Solid Waste Registration Number of the off site facility that treated, stored, or disposed of the waste. For waste that is shipped out-of-state, refer to the Codes for Out-of-State Generators and Receivers list found on our website www.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting. If, on December 31, the waste was still on site for treatment, storage or disposal, refer to your NOR and enter the 3-digit waste management unit number for the unit where the waste is located.

78-89 **Receiver's EPA ID#:** Enter the 12-digit EPA ID Number of the off site facility that treated, stored or disposed of the waste. For a foreign receiver's EPA ID Number, refer to the Codes for Out-of-State Generators and Receivers list found at the website stated above. If the waste is non-hazardous and the receiving facility does not have an EPA ID#, leave this field blank and record the receiving facility's name in the Comments field.

90-119 **Comments:** This field is used to record additional 4-digit EPA Waste Numbers or the name of the non-hazardous, out-of-state, receiving facility that does not have an EPA ID#.

120-169 **Generator Company Name:** If the generator company name has changed since the form was preprinted, then complete this field with the current company name. If the form is not preprinted and the company name is blank, enter the current company name.

170-199 **Company Authorized Agent:** Print the name of the person designated by the generating company as the person responsible for the Annual Waste Summary report. Record a phone number for questions, sign and date each page of the form.

200-229 **Title:** Print the title of the Authorized Agent.

UNION PACIFIC RAILROAD COMPANY
GEOFFREY B REEDER
24125 ALDINE WESTFIELD RD
SPRING, TX 77373-9015

REGISTRATION AND REPORTING SECTION
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REGISTRATION, REVIEW AND REPORTING DIVISION
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087 TELEPHONE: (512) 239-6413

ANNUAL WASTE SUMMARY

Your SOLID WASTE REGISTRATION NUMBER: 31547 (1) G1 (6) Report for: 2004 (8)

Geoffrey B Reeder
Union Pacific Railroad Company
4910 Liberty Road
Houston, TX 77026-5264 281-350-7197

☐ NO REPORT REQUIRED (24)
{See 30 TAC 335.9(a)(3); also see instructions}

Your EPA ID # TXD000820266 (12)

SUMMARY STATUS

☒ ORIGINAL SUMMARY ☐ REVISED SUMMARY ☐ SUPPLEMENTAL SUMMARY

YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE THE INFORMATION IS CORRECT.
TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLET RG-151.

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
0909101H					Aqueous waste with low surfactants. Groundwater generated fr	0	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
		H				
		H				
		H				

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
0912489H					Creosote sludge, soil mixture generated as part of correctiv	0	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
		H				
		H				
		H				

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that basedon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

GENERATOR COMPANY NAME (120–169): Union Pacific Railroad Company

GENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE (120–169):

Page 5 of 6

COMPANY AUTHORIZED AGENT (170–199): Geoffrey Reeder

PHONE NUMBER: (281) 350-7197

TITLE (200–229): Manager, Env. Site Remediation

SIGNATURE OF COMPANY AUTHORIZED AGENT: Geoffrey Reeder

DATE: 01/21/05

LPS Form TCEQ 0428A (Rev. 05.20.04)

Annual Waste Summary Form Instructions

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1-5 **Your Solid Waste Registration Number:** The 5-digit number assigned to the site for which you are reporting.

8-11 **Report for:** The year of the data included in the report. (Example, Report for: 2003, reported in 2004)

12-23 **Your EPA ID#:** Enter the EPA ID Number assigned to the site for which you are reporting.

24 **No Report Required:** Check this box if the facility meets the qualifications found in RG-151.

25-32 **Texas Waste Code:** The 8-digit Texas Waste Code assigned to the waste on the facility's Notice of Registration (NOR). This can also be an 8-digit One-time Shipment waste code number assigned by the TCEQ. Do not report Texas Waste Codes beginning with OUTS, TSDF, UNIV or CESQ.

33-48 **EPA Hazardous Waste No:** Enter the 4-digit EPA Hazardous Waste Number(s) that corresponds to the Texas Waste Code. If the waste is non-hazardous, these fields should be left blank.

49-57 **Total Quantity Generated:** Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.

58 **Units:** Enter the type of unit of measurement that describes the quantity generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons. To convert other units of measurement, read publication RG-151, as stated above.

59-67 **Quantity Handled:** Enter the amount of this waste that was managed on site or shipped off site. If either the receiving facility number or the system type code changes, report a separate quantity handled in the next row. Quantity handled must be greater than zero and cannot be blank.

68 **Units:** Enter the type of unit of measurement that describes the quantity handled. To report several quantities handled for the same Texas Waste Code, the unit of measure must always match that of the Total Quantity Generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons.

69-71 **System Type Code:** Enter the H-code that represents the treatment, storage or disposal of the waste, either on site or at an off site receiving facility. This list is found in the RG-151 or at our website ww.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting.

72 **Fee:** If the treatment of this waste qualifies for an exemption from waste generation fees, enter the code 1, 2, or 3. (See publication RG-151 for a definition of the exemption codes.) If you are not claiming an exemption, leave this field blank.

73-77 **Facility Number:** Enter the 5-digit Solid Waste Registration Number of the off site facility that treated, stored, or disposed of the waste. For waste that is shipped out-of-state, refer to the Codes for Out-of-State Generators and Receivers list found on our website www.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting. If, on December 31, the waste was still on site for treatment, storage or disposal, refer to your NOR and enter the 3-digit waste management unit number for the unit where the waste is located.

78-89 **Receiver's EPA ID#:** Enter the 12-digit EPA ID Number of the off site facility that treated, stored or disposed of the waste. For a foreign receiver's EPA ID Number, refer to the Codes for Out-of-State Generators and Receivers list found at the website stated above. If the waste is non-hazardous and the receiving facility does not have an EPA ID#, leave this field blank and record the receiving facility's name in the Comments field.

90-119 **Comments:** This field is used to record additional 4-digit EPA Waste Numbers or the name of the non-hazardous, out-of-state, receiving facility that does not have an EPA ID#.

120-169 **Generator Company Name:** If the generator company name has changed since the form was preprinted, then complete this field with the current company name. If the form is not preprinted and the company name is blank, enter the current company name.

170-199 **Company Authorized Agent:** Print the name of the person designated by the generating company as the person responsible for the Annual Waste Summary report. Record a phone number for questions, sign and date each page of the form.

200-229 **Title:** Print the title of the Authorized Agent.

UNION PACIFIC RAILROAD COMPANY
GEOFFREY B REEDER
24125 ALDINE WESTFIELD RD
SPRING, TX 77373-9015

REGISTRATION AND REPORTING SECTION
MC 129
REGISTRATION, REVIEW AND REPORTING DIVISION
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087 TELEPHONE: (512) 239-6413

ANNUAL WASTE SUMMARY

Your SOLID WASTE REGISTRATION NUMBER: 31547 (1) G1 (6) Report for: 2004 (8)

Geoffrey B Reeder
Union Pacific Railroad Company
4910 Liberty Road
Houston, TX 77026-5264 281-350-7197

[ ] NO REPORT REQUIRED (24)
{See 30 TAC 335.9(a)(3); also see instructions}

Your EPA ID # TXD000820266 (12)

SUMMARY STATUS

[X] ORIGINAL SUMMARY [ ] REVISED SUMMARY [ ] SUPPLEMENTAL SUMMARY

YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE THE INFORMATION IS CORRECT.
TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLET RG-151.

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
0001301H					Soil generated primarily by the boring of monitoring wells a	0	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
		H				
		H				
		H				

TEXAS WASTE CODE (25)	EPA HAZARDOUS WASTE NO. (33)	EPA HAZARDOUS WASTE NO. (37)	EPA HAZARDOUS WASTE NO. (41)	EPA HAZARDOUS WASTE NO. (45)	WASTE DESCRIPTION	TOTAL QUANTITY GENERATED (49)	UNITS (58)
04003011					Petroleum contaminated soils generated as part of corrective	0	P

QUANTITY HANDLED (59)	UNITS (68)	SYSTEM TYPE CODE (69)	FEE (72)	FACILITY NUMBER (73)	RECEIVER'S EPA ID # (78)	COMMENTS (90–119)
		H				
		H				
		H				

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that basedon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

GENERATOR COMPANY NAME (120–169): Union Pacific Railroad Company

GENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE (120–169):

Page 6 of 6

COMPANY AUTHORIZED AGENT (170–199): Geoffrey Reeder

PHONE NUMBER: (281) 350-7197

TITLE (200–229): Manager, Env. Site Remediation

SIGNATURE OF COMPANY AUTHORIZED AGENT: Geoffrey Reeder

DATE: 01/21/05

LPS Form TCEQ 0428A (Rev. 05.20.04)

Annual Waste Summary Form Instructions

For more detailed instructions, please read or download RG-151, Industrial and Hazardous Waste Annual Waste Summary Instruction Booklet found on our website www.tceq.com under Forms and Publications. For the TCEQ mailing address and phone number, see front of form, upper-left corner.

Instructions are in numerical order based on the column number found below the data field. Do not use commas or leading zeroes in number fields. Decimal points must be shown in their own box. Most of the information needed to complete this form is found on the Uniform Hazardous Waste Manifest form used to ship the waste off site.

1-5 **Your Solid Waste Registration Number:** The 5-digit number assigned to the site for which you are reporting.

8-11 **Report for:** The year of the data included in the report. (Example, Report for: 2003, reported in 2004)

12-23 **Your EPA ID#:** Enter the EPA ID Number assigned to the site for which you are reporting.

24 **No Report Required:** Check this box if the facility meets the qualifications found in RG-151.

25-32 **Texas Waste Code:** The 8-digit Texas Waste Code assigned to the waste on the facility's Notice of Registration (NOR). This can also be an 8-digit One-time Shipment waste code number assigned by the TCEQ. Do not report Texas Waste Codes beginning with OUTS, TSDF, UNIV or CESQ.

33-48 **EPA Hazardous Waste No:** Enter the 4-digit EPA Hazardous Waste Number(s) that corresponds to the Texas Waste Code. If the waste is non-hazardous, these fields should be left blank.

49-57 **Total Quantity Generated:** Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.

58 **Units:** Enter the type of unit of measurement that describes the quantity generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons. To convert other units of measurement, read publication RG-151, as stated above.

59-67 **Quantity Handled:** Enter the amount of this waste that was managed on site or shipped off site. If either the receiving facility number or the system type code changes, report a separate quantity handled in the next row. Quantity handled must be greater than zero and cannot be blank.

68 **Units:** Enter the type of unit of measurement that describes the quantity handled. To report several quantities handled for the same Texas Waste Code, the unit of measure must always match that of the Total Quantity Generated. Use only **P** for pounds, **K** for kilograms, or **T** for tons.

69-71 **System Type Code:** Enter the H-code that represents the treatment, storage or disposal of the waste, either on site or at an off site receiving facility. This list is found in the RG-151 or at our website ww.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting.

72 **Fee:** If the treatment of this waste qualifies for an exemption from waste generation fees, enter the code 1, 2, or 3. (See publication RG-151 for a definition of the exemption codes.) If you are not claiming an exemption, leave this field blank.

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78-89 **Receiver's EPA ID#:** Enter the 12-digit EPA ID Number of the off site facility that treated, stored or disposed of the waste. For a foreign receiver's EPA ID Number, refer to the Codes for Out-of-State Generators and Receivers list found at the website stated above. If the waste is non-hazardous and the receiving facility does not have an EPA ID#, leave this field blank and record the receiving facility's name in the Comments field.

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170-199 **Company Authorized Agent:** Print the name of the person designated by the generating company as the person responsible for the Annual Waste Summary report. Record a phone number for questions, sign and date each page of the form.

200-229 **Title:** Print the title of the Authorized Agent.

UNION PACIFIC RAILROAD COMPANY
GEOFFREY B REEDER
24125 ALDINE WESTFIELD RD
SPRING, TX 77373-9015

Certification

Appendix B

January 24, 2005
Project No. 0014419

Environmental Resources Management
15810 Park Ten Place, Suite 300
Houston, Texas 77084-5140
(281) 600-1000

G:\2005\0014419\6404Hrpt.doc

Certification
Appendix B

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Geoffrey B. Reeder, P.G.
Authorized Representative
Union Pacific Railroad

Post-Closure Care Cost Estimate

Appendix C

January 24, 2005
Project No. 0014419

Environmental Resources Management
15810 Park Ten Place, Suite 300
Houston, Texas 77084-5140
(281) 600-1000

Post-Closure Care Cost Calculation
Appendix C

Former Houston Wood Preserving Works
4910 Liberty Road
Houston, Texas

Surface Impoundment
Post-Closure Care Permit HW-50343-000
Industrial Solid Waste Registration No. 31547

Ground Water Monitoring

15 existing wells/piezometers sampled semiannually at a cost of $500 each	$15,000

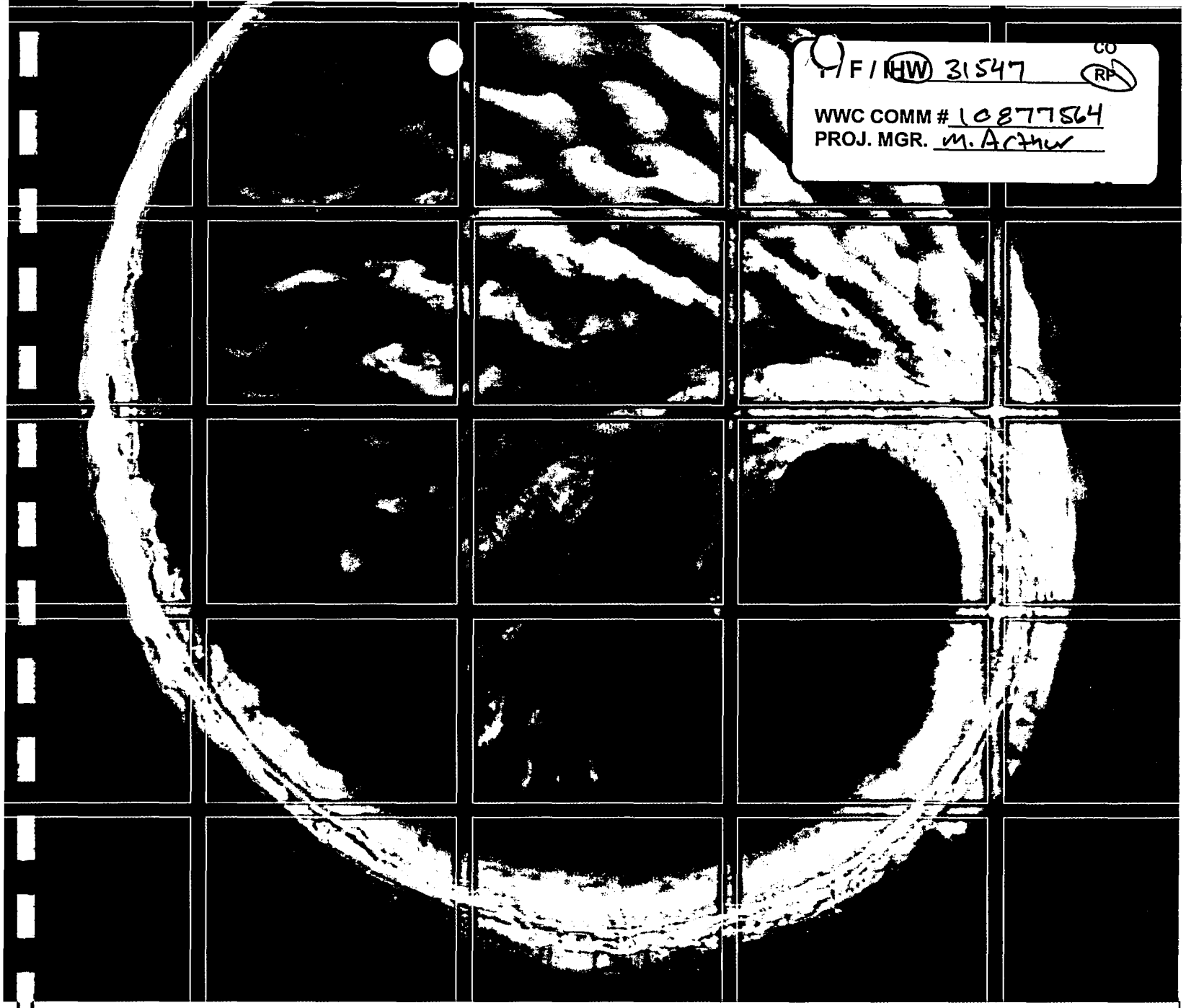
Inspection and Maintenance

Mowing monthly at a cost of $300 per month	$3,600
15 wells/piezometers inspected monthly at a cost of $50 each	$750
Impoundment/storage area inspected weekly at a cost of $150/week	$5,200
Minor repairs and/or upgrades (estimated)	$4,000
	$13,550

Total Estimated Cost (2004)	**$28,550**
Adjusted to 2004 dollars using the inflation factor of 1.0152 (1)	**$30,000.00**

NOTE:

(1) The annual cost estimate for post-closure care has been adjusted and rounded from 2004 dollars in accordance with 40 CFR §264.144 using the Implicit Price Deflator obtained from the U.S. Department of Commerce. The Implicit Price Deflator results in an inflation factor of 1.0152.



F/HW 31547 CO RP
WWC COMM # 10877564
PROJ. MGR. M. Arthur

Semiannual Monitoring Report: Second Semiannual Event 2004

Houston Wood Preserving Works
Houston, Texas

Union Pacific Railroad Company

TCEQ CENTRAL FILE ROOM

Received
JAN 21 2005
Remediation Division
Corrective Action Section

January 20, 2005

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Delivering sustainable solutions in a more competitive world

ERM

TM / HW 31547 RP

WWC COMM # 10877564
PROJ. MGR. M. Arthur

Houston, Texas 77084
(281) 600-1000
(281) 600-1001 (fax)

Received

JAN 21 2005
Remediation Division
Corrective Action Section

January 20, 2005

Dr. Ata-ur Rahman
Permits Section
Industrial and Hazardous Waste Division
Texas Commission on Environmental Quality
12100 Park 35 Circle, MC 130
Austin, Texas 78753

ERM

Subject: Transmittal of the Semiannual Monitoring Report: Second 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.

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

Sincerely,

Environmental Resources Management

Christopher M. Young, P.G.

CMY/mnt
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: Second Semiannual Event 2004

Houston Wood Preserving Works
Houston, Texas

January 20, 2005

Project No. 0014419

Paul A. Stefan, P.G.
Principal

Christopher M. Young, P.G.
Project Manager

Mike Robbins
Project Scientist

Environmental Resources Management
15810 Park Ten Place, Suite 300
Houston, Texas 77084-5140
T: 281-600-1000
F: 281-600-1001

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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 second half of 2004 and fulfill the semiannual reporting requirements described in the CP, Section VII.B.2.

On September 13, 14, and 15, 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 describes the technical information to be provided in each semiannual report. Those requirements include:

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;
3. 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.

As of December 31, 2004, a recovery system had not been installed at this facility. Therefore, the provisions that relate to recovery wells (i.e., provisions 5, 7, and 11) were not applicable to this reporting period.

2.0 *SECOND 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.

2.1 *NARRATIVE SUMMARY OF SECOND 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; and
- 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;
- A-TZ Corrective Action Observation (CAO) wells: MW-04, MW-05, MW-07, MW-08, and MW-09;
- 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.

2.1.2 *Ground Water Monitoring*

ERM performed quarterly well inspections on September 13, 2004 and December 23, 2004 and ground water monitoring activities on September 13 through September 15, 2004. Ground water sampling was performed using procedures outlined in a U.S. EPA document titled *Low-Flow (Minimal*

Drawdown) Ground-Water Sampling 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, containing laboratory-supplied preservatives, were sealed and packed in coolers with sufficient ice to maintain a sample temperature of approximately 4°C. The sample coolers 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 for the second semiannual sampling event of 2004 are summarized in Tables 2-1 and 2-2, respectively. Compounds with concentrations reported above 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 MEASUREMENTS*

During the quarterly well inspections and the sampling event, the following information was recorded at each monitor well:

Before Sampling

- The presence of light non-aqueous phase liquids (LNAPLs) was evaluated; and
- Depth to ground water was measured to the nearest 0.01 foot.

After Sampling

- The presence of dense non-aqueous phase liquids (DNAPLs) was evaluated; and
- Total well depths were determined.

Table 2-4 provides a summary of these measurements. None of the CP wells had measurable amounts of LNAPL or DNAPL.

2.4 *POTENTIOMETRIC SURFACE MAPS*

The ground water elevation data recorded during the second semiannual 2004 well gauging activities 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 toward the northwest with an estimated gradient of 0.00556 feet/foot (ft/ft) in the A-TZ. The flow in the B-TZ is toward the northwest with a gradient of 0.00625 ft/ft (Figure 2-2).

2.5 *POTENTIOMETRIC SURFACE MAPS FOR RECOVERY SYSTEM*

As of December 31, 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*

None of the CP wells had measurable amounts of LNAPL or DNAPL.

2.7 *NAPL RECOVERIES*

No measurable amount of NAPL has been recorded in any of the CP wells. Therefore, recovery of NAPL has not been required and this provision is not applicable.

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. Third party data usability summaries are included in Appendix C, and third party qualifers were added to the data tables in italics.

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. The isopleth maps are present in Figures 2-3 through 2-8.

2.10 *UPDATED COMPLIANCE SCHEDULE*

An updated compliance schedule is included as Appendix D of this report. The schedule has been updated from the First Semiannual Monitoring Report, 2004.

2.11 *SUMMARY OF CHANGES MADE TO THE MONITORING/CORRECTIVE ACTION PROGRAM AND SUMMARY OF RECOVERY WELL INSPECTIONS AND MAINTENANCE*

No changes were made to the monitoring/corrective action program.

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 other changes are recommended and the monitoring will proceed following the original provision until the new CP is issued.

2.13 *OTHER REQUESTED ITEMS*

To date, no other items have been requested by the Executive Director.

Tables

January 20, 2005
Project No. 0014419

Environmental Resources Management
15810 Park Ten Place, Suite 300
Houston, Texas 77084
(281) 600-1000

TABLE 2-1

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

Houston Wood Preserving Works
Houston, Texas

Analyte	PQL (GWPS)	Monitor Well ID: Sample Date:	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	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												
Benzene	0.005		ND	ND	ND	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	0.0122 J	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Constituents												
Acenaphthene	0.010		0.04226	0.03018	0.1104	ND	0.000283 J	0.000285 J	ND	ND	ND	0.002777
Acenaphthylene	0.010		0.000785	0.000418 J	0.000833 *JL*	ND	ND	ND	ND	ND	ND	ND
Anthracene	0.010		0.001854	0.001494	0.00129 *JL*	0.00026 J	0.000251 J	0.000219 J	ND	ND	ND	0.000321 J
Benzo(a)anthracene	0.010		ND	ND	0.000379 J, *JL*	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND	ND	0.000511	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
Chrysene	0.010		ND	ND	0.00052 *JL*	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	0.010		0.0194	0.01945	0.0097 *JL*	ND	ND	ND	ND	ND	ND	0.000463 J
Di-n-butyl phthalate	0.010		0.000691 *U*	0.000792 *U*	0.000654 *U*	ND	0.000253 J, *U*	0.000199 J, *U*	0.000268 J, *U*	0.00033 J, *U*	ND	0.000521 *U*
2,4-Dimethylphenol	0.010		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
1,2-Diphenylhydrazine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	0.010		0.000973 *U*	ND	0.000943 *U*	0.001025	ND	ND	ND	0.00099	0.000916	0.001042
Fluoranthene	0.010		0.003337	0.001861	0.01034 *JL*	ND	ND	ND	ND	ND	ND	0.000394 J
Fluorene	0.010		0.02334	0.02035	0.0427 *JL*	ND	ND	ND	ND	ND	ND	0.000354 J
2-Methylnaphthalene	0.010		0.005221	0.001694	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	0.010		0.000919	0.000604	0.000264 J, *JL*	ND	ND	ND	ND	ND	ND	0.002776
Nitrobenzene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND, *R*	ND, *R*	ND, *R*	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	0.010		0.002194	0.002468	0.000663 *JL*	ND	ND	ND	ND	ND	ND	ND
Phenol	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	0.010		0.00117	0.000883	0.004965 *JL*	ND	ND	ND	ND	ND	ND	ND

NOTES:

All values reported in mg/L.
ND = Not detected at the Method Detection Limit (MDL), which can be found in the laboratory reports in Appendix C and is less than or equal to the GWPS in all instances.
PQL = *Practical Quantitation Limit*, as defined on Table 1 of the Compliance Plan and determined by the analytical methods of EPA SW-846 *Test Methods for Determining Solid Wastes*.
The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.
[ ] indicates value reported above the GWPS.
(a) MW-10BD is a duplicate of MW-10B.
(b) P-10D is a duplicate of P-10.
J = Estimated value between the reporting limit and MDL.
U = Not Detected based on third party qualification
J = Estimated data based on third party qualification
L = Low bias based on third party qualification
H = High bias based on third party qualification
R = Rejected based on third party qualification

TABLE 2-2

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

Houston Wood Preserving Works
Houston, Texas

Analyte	PQL (GWPS)	Monitor Well ID: Sample Date:	MW-10B 9/14/04	MW-11B 9/14/04	P-10 9/13/04	P-11 9/15/04	P-12 9/14/04
Volatile Organic Constituents							
Benzene	0.005		0.0025 J	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005		ND	ND	ND	ND	ND
Methylene chloride	0.010		ND	ND	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND
Xylene (total)	0.005		ND	ND	ND	ND	ND
Semivolatile Organic Constituents							
Acenaphthene	0.010		0.0864	0.151	0.0244	0.151	ND
Acenaphthylene	0.010		0.00161	0.00193	0.000179 J	ND	ND
Anthracene	0.010		0.00549	0.00764	0.000798	0.00666	ND
Benzo(a)anthracene	0.010		ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND, *UJ*	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	0.010		ND, *UJ*	ND	ND	ND	ND
2-Chloronaphthalene	0.010		ND	ND	ND	ND	ND
Chrysene	0.010		ND	ND	ND	ND	ND
Dibenzofuran	0.010		0.0404	0.0804	0.00643	0.00261	ND
Di-n-butyl phthalate	0.010		0.000419 J, *U*	0.000449 J, *U*	0.000456 J, *U*	0.000532 *U*	0.000279 J, *U*
2,4-Dimethylphenol	0.010		ND	ND	ND	ND, *UJ*	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010		ND, *UJ*	ND	ND	ND	ND
2,6-Dinitrotoluene	0.010		ND, *UJ*	ND	ND	ND	ND
1,2-Diphenylhydrazine	0.010		ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*	ND, *UJ*
bis(2-Ethylhexyl)phthalate	0.010		0.0081	0.000649	ND	ND	0.000861
Fluoranthene	0.010		0.00294	0.00536	0.000474 J	0.00635 *J*	ND
Fluorene	0.010		0.044	0.0671	0.00768	0.0643	ND
2-Methylnaphthalene	0.010		0.0127	0.0748	0.00264	0.00152	ND
Naphthalene	0.010		0.107 *J*	0.184 *J*	0.119 *J*	0.364 *J*	ND, *UJ*
Nitrobenzene	0.010		ND	ND	ND	ND	ND
p-Nitrophenol	0.050		ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND, *UJ*	ND	ND	ND	ND
Phenanthrene	0.010		0.0256 *JH*	0.0422 *JH*	0.00234 *JH*	0.0352 *JH*	ND
Phenol	0.010		ND	ND	ND	ND	ND
Pyrene	0.010		0.00137	0.00268	0.000221 J	0.00375	0.00457

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.
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 Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.
[ ] indicates value reported above the GWPS.
(a) MW-02D is a duplicate of MW-02.
(b) MW-11AD is a duplicate of MW-11A
J = Estimated value between the reporting limit and MDL.
U = Not Detected based on third party qualification
J = Estimated data based on third party qualification
L = Low bias based on third party qualification
H = High bias based on third party qualification
R = Rejected based on third party qualification

TABLE 2-3

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

Houston Wood Preserving Works
Houston, Texas

Analyte	PQL (GWPS)	Sample Sample Date:	Field Blank FB-091404 9/14/04	Trip Blank TB01-2SA04 9/14/04
Methylene chloride	0.010		0.00281 J, *U*	0.00302 J, *U*
Di-n-butyl phthalate	0.010		0.000356 J, *U*	NA
bis(2-Ethylhexyl)phthalate	0.010		ND	NA
1,2-Diphenylhydrazine	0.010		ND, *UJ*	NA
Naphthalene	0.010		ND, *UJ*	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 Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.
J = Estimated value between the reporting limit and MDL.
U = Not Detected based on third party qualification.
J = Estimated data based on third party qualification.

TABLE 2-4

Water Level and Total Depth of Well Measurements
Semiannual Monitoring Report: Second 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 Monitoring Locations					
MW-01A	47.92	8.26	39.66	19.61	20.2
MW-02	47.97	8.71	39.26	NM	20.3
MW-03	48.34	9.03	39.31	19.52	20.9
MW-04	49.85	9.80	40.05	21.60	23.4
MW-05	49.24	8.58	40.66	27.30	28.3
MW-07	48.86	9.04	39.82	24.69	N/A
MW-08	49.33	9.31	40.02	24.98	26.8
MW-09	49.26	8.39	40.87	25.41	26.8
MW-10A	49.86	10.30	39.56	NM	25.9
MW-11A	50.05	10.28	39.77	23.75	24.4
B-TZ Monitoring Locations					
MW-10B	49.94	10.41	39.53	46.42	48.8
MW-11B	50.18	10.53	39.65	46.66	46.8
P-10	47.69	7.99	39.70	44.80	N/A
P-11	48.98	9.14	39.84	44.69	51.8
P-12	48.78	7.93	40.85	42.70	51.7

NOTES:

Wells were gauged on September 13, 2004.
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
NM = Not Measured
(1) Wells resurveyed by Baseline Surveyors on April 21 and 28, 2004.

TABLE 2-5

Compliance Status of Wells and Piezometers
Semiannual Monitoring Report: Second Semiannual Event 2004

Houston Wood Preserving Works
Houston, Texas

A-TZ Monitoring Location	Well Designation	Compliance Status
MW-01A	Point of compliance	Non-Compliant
MW-02	Point of compliance	Non-Compliant
MW-03	Point of compliance	Non-Compliant
MW-10A	Point of compliance	Non-Compliant
MW-11A	Point of compliance	Non-Compliant
MW-04	Corrective action observation	Compliant
MW-05	Corrective action observation	Compliant
MW-07	Corrective action observation	Compliant
MW-08	Corrective action observation	Compliant
MW-09	Corrective action observation	Compliant

B-TZ Monitoring Location	Well Designation	Compliance Status
MW-10B	Point of compliance	Non-Compliant
MW-11B	Point of compliance	Non-Compliant
P-10	Point of compliance	Non-Compliant
P-11	Corrective action observation	Non-Compliant
P-12	Corrective action observation	Compliant

Figures

January 20, 2005
Project No. 0014419

Environmental Resources Management
15810 Park Ten Place, Suite 300
Houston, Texas 77084
(281) 600-1000

STATE OF TEXAS
Christopher M. Young
GEOLOGY
3342
LICENSED
PROFESSIONAL GEOSCIENTIST

SOURCE: U.S.G.S. 7.5 MINUTE QUADRANGLE, SETTEGAST, TEXAS, 1982.

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FIGURE 1-1
SITE LOCATION MAP
Houston Wood Preserving Works
Houston, Texas

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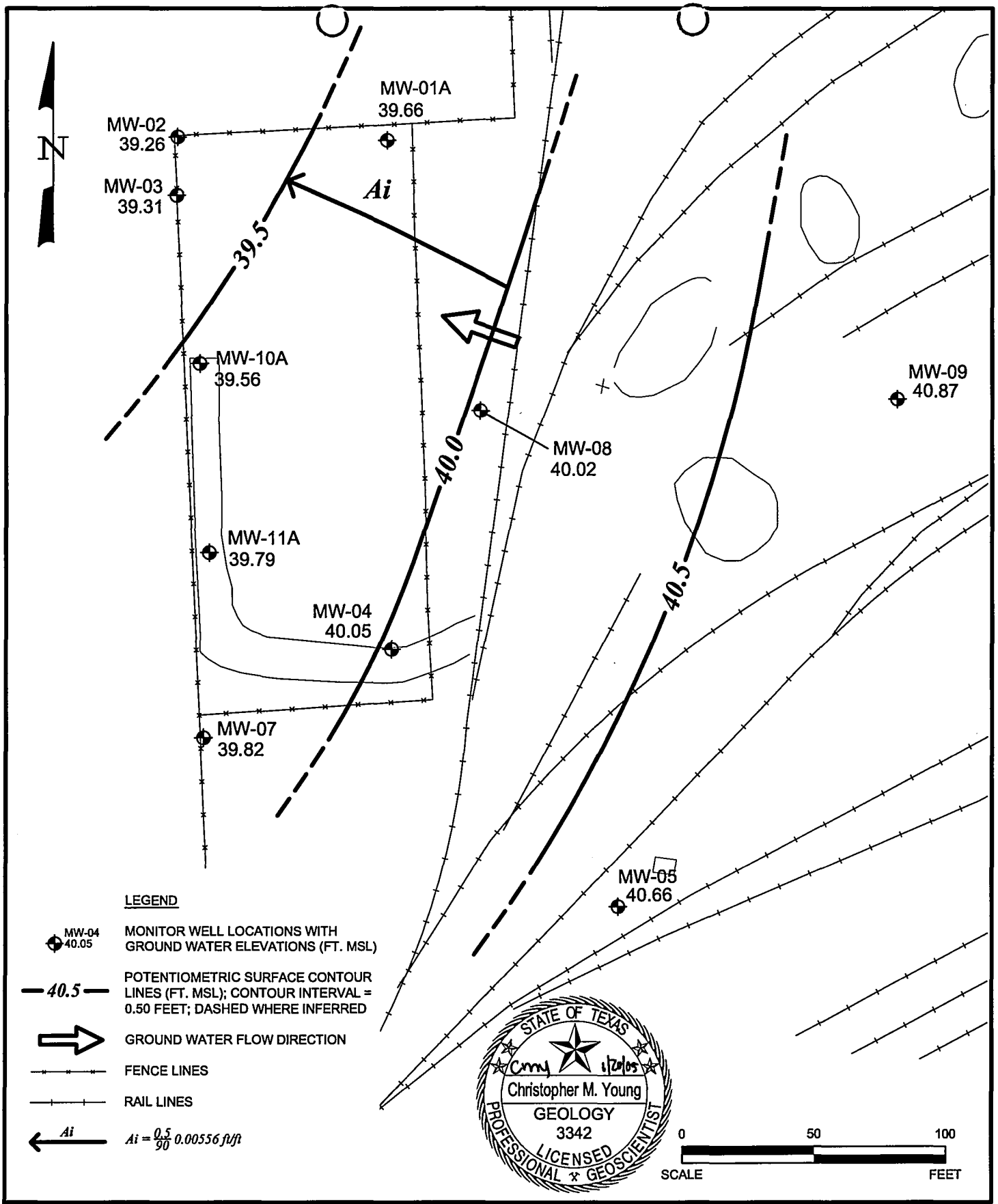

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FIGURE 2-1
A-TZ POTENTIOMETRIC SURFACE
SEPTEMBER 13, 2004
TCEQ PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

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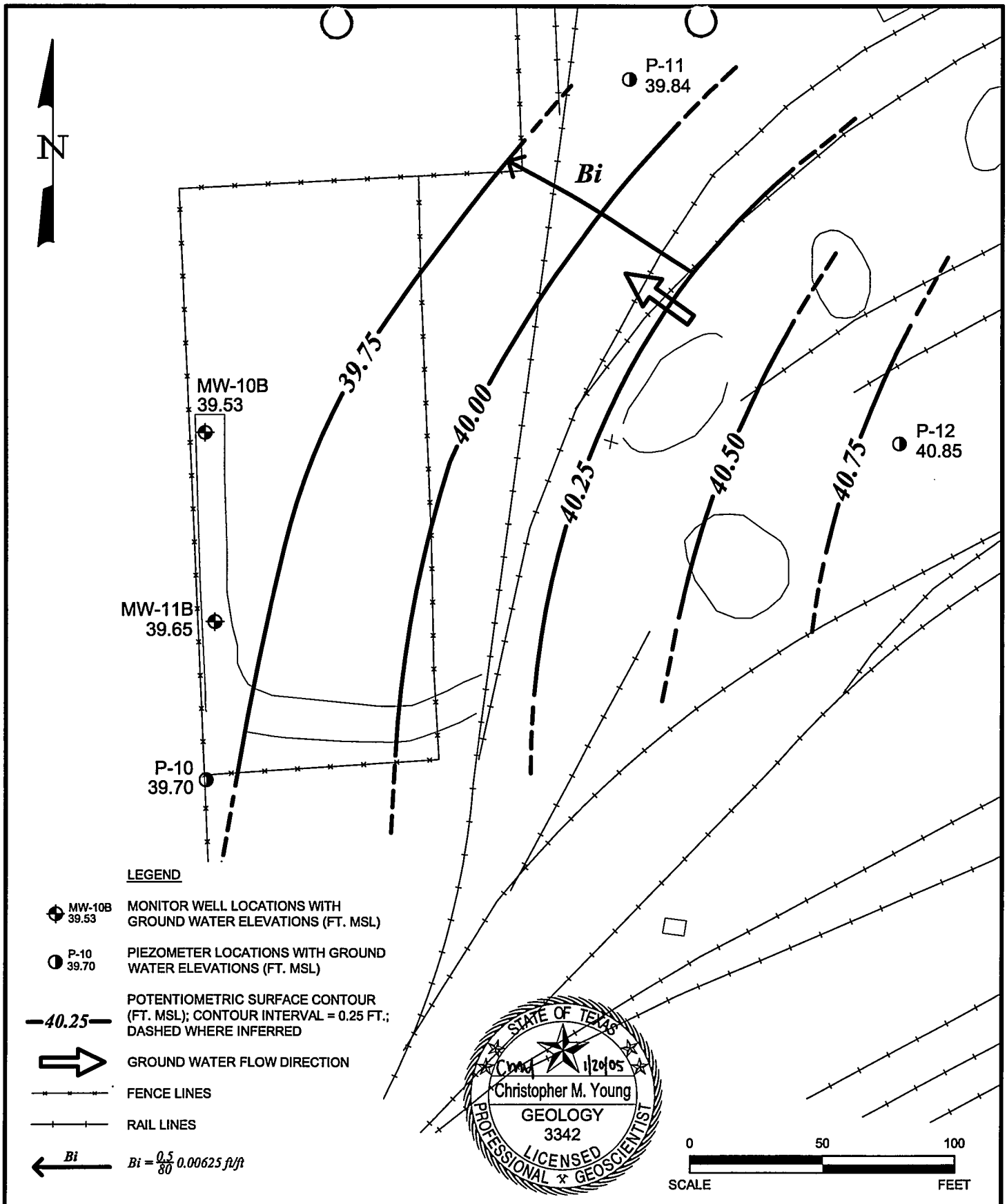

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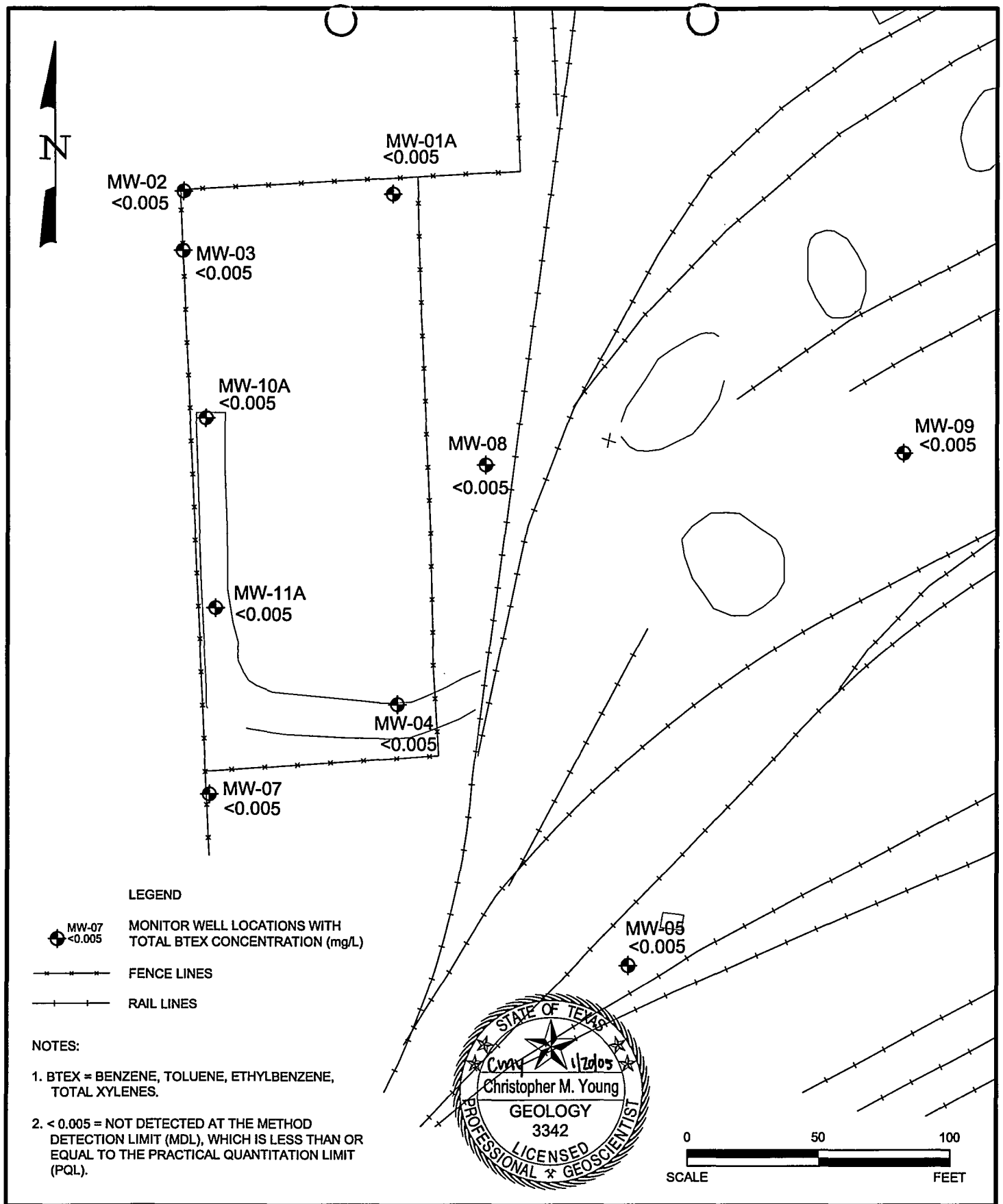
FIGURE 2-2
B-TZ POTENTIOMETRIC SURFACE
SEPTEMBER 13, 2004
TCEQ PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM



NOTES:

1. BTEX = BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES.

2. < 0.005 = NOT DETECTED AT THE METHOD DETECTION LIMIT (MDL), WHICH IS LESS THAN OR EQUAL TO THE PRACTICAL QUANTITATION LIMIT (PQL).

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FIGURE 2-3
TOTAL BTEX IN A-TZ GROUND WATER
SEPTEMBER 13-14, 2004
TCEQ PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

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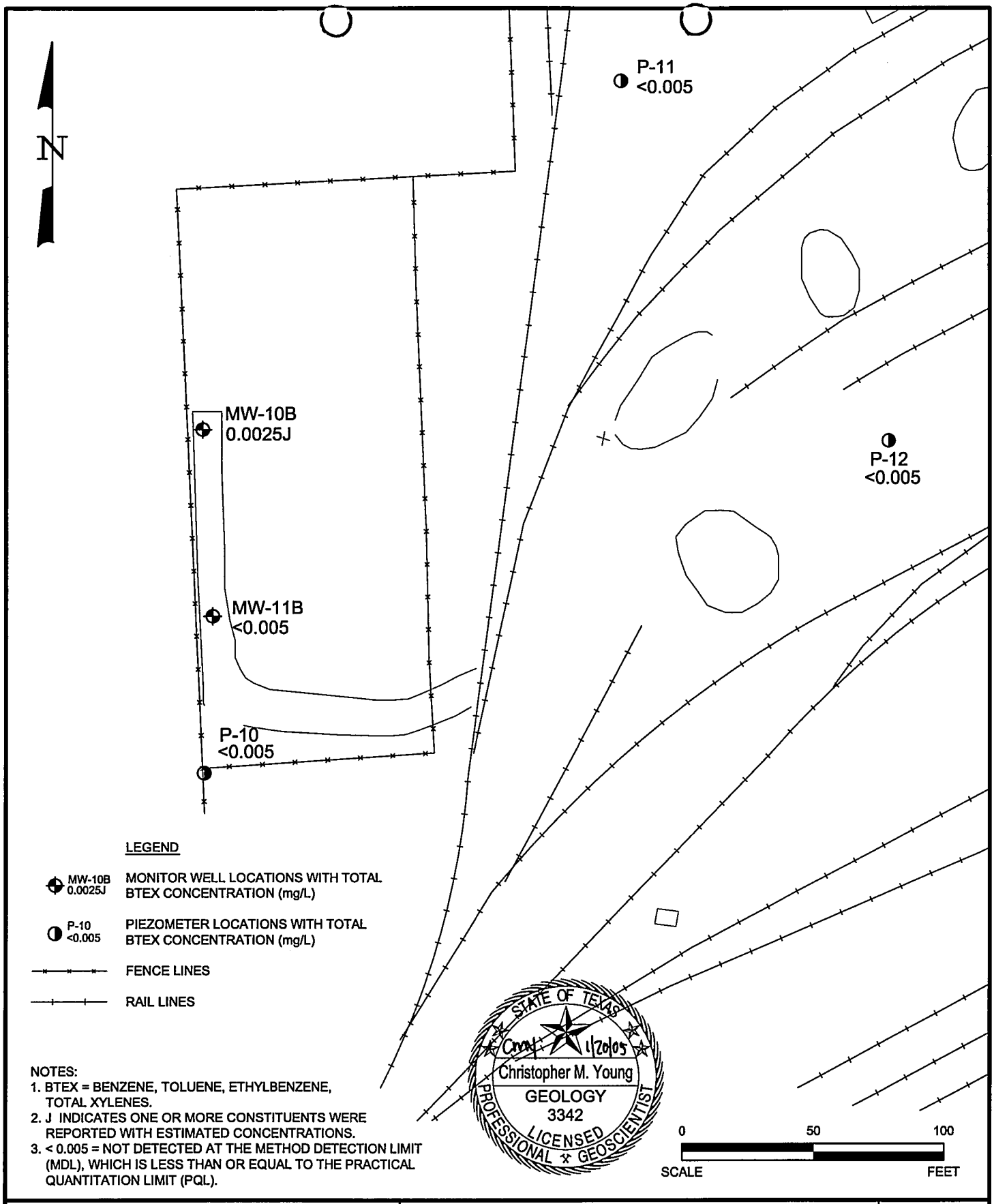

NOTES:
1. BTEX = BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES.
2. J INDICATES ONE OR MORE CONSTITUENTS WERE REPORTED WITH ESTIMATED CONCENTRATIONS.
3. < 0.005 = NOT DETECTED AT THE METHOD DETECTION LIMIT (MDL), WHICH IS LESS THAN OR EQUAL TO THE PRACTICAL QUANTITATION LIMIT (PQL).

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FIGURE 2-4
TOTAL BTEX IN B-TZ GROUND WATER
SEPTEMBER 13-14, 2004
TCEQ PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

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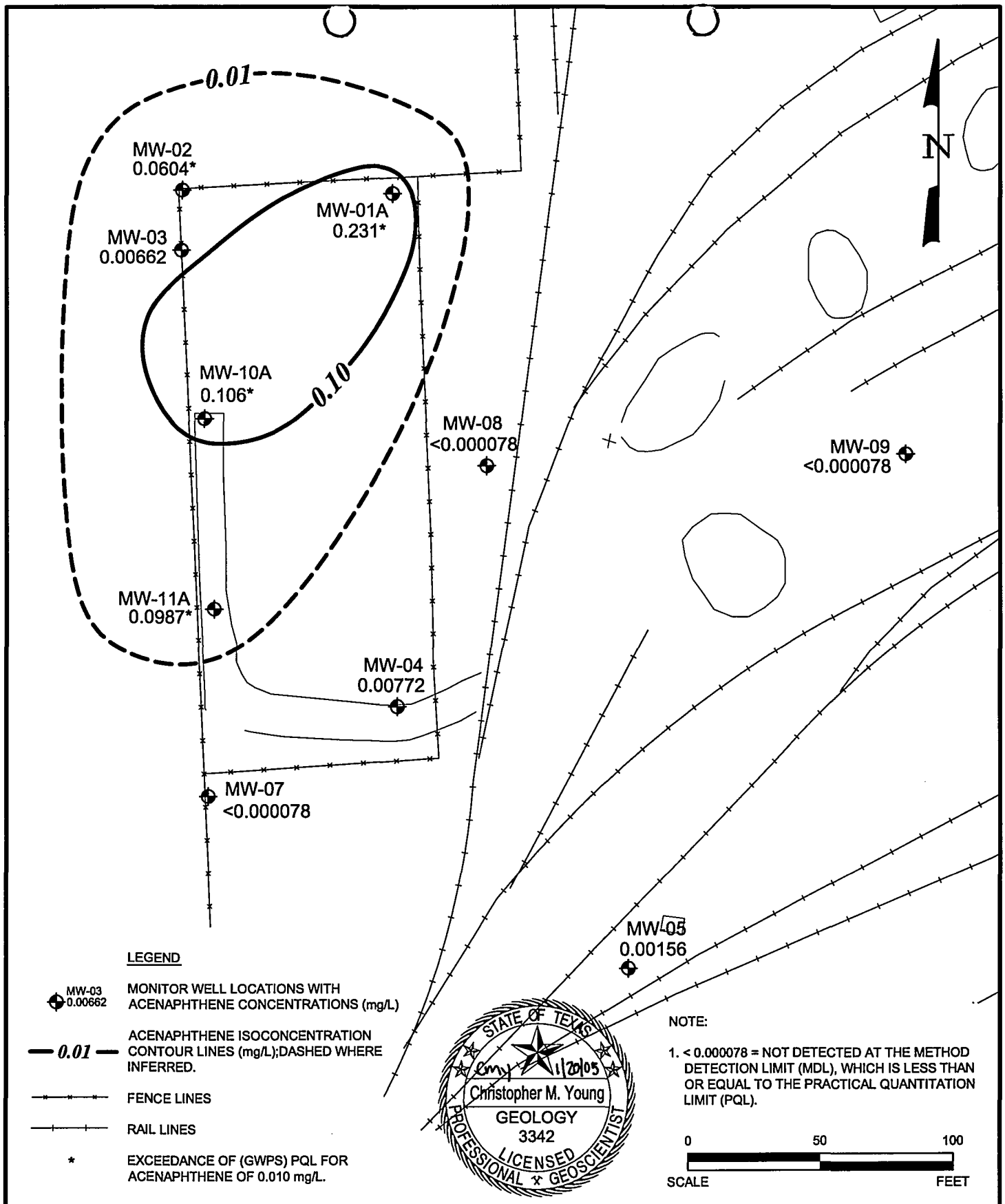

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FIGURE 2-5
ACENAPHTHENE IN A-TZ GROUND WATER
SEPTEMBER 13-14, 2004
TCEQ PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

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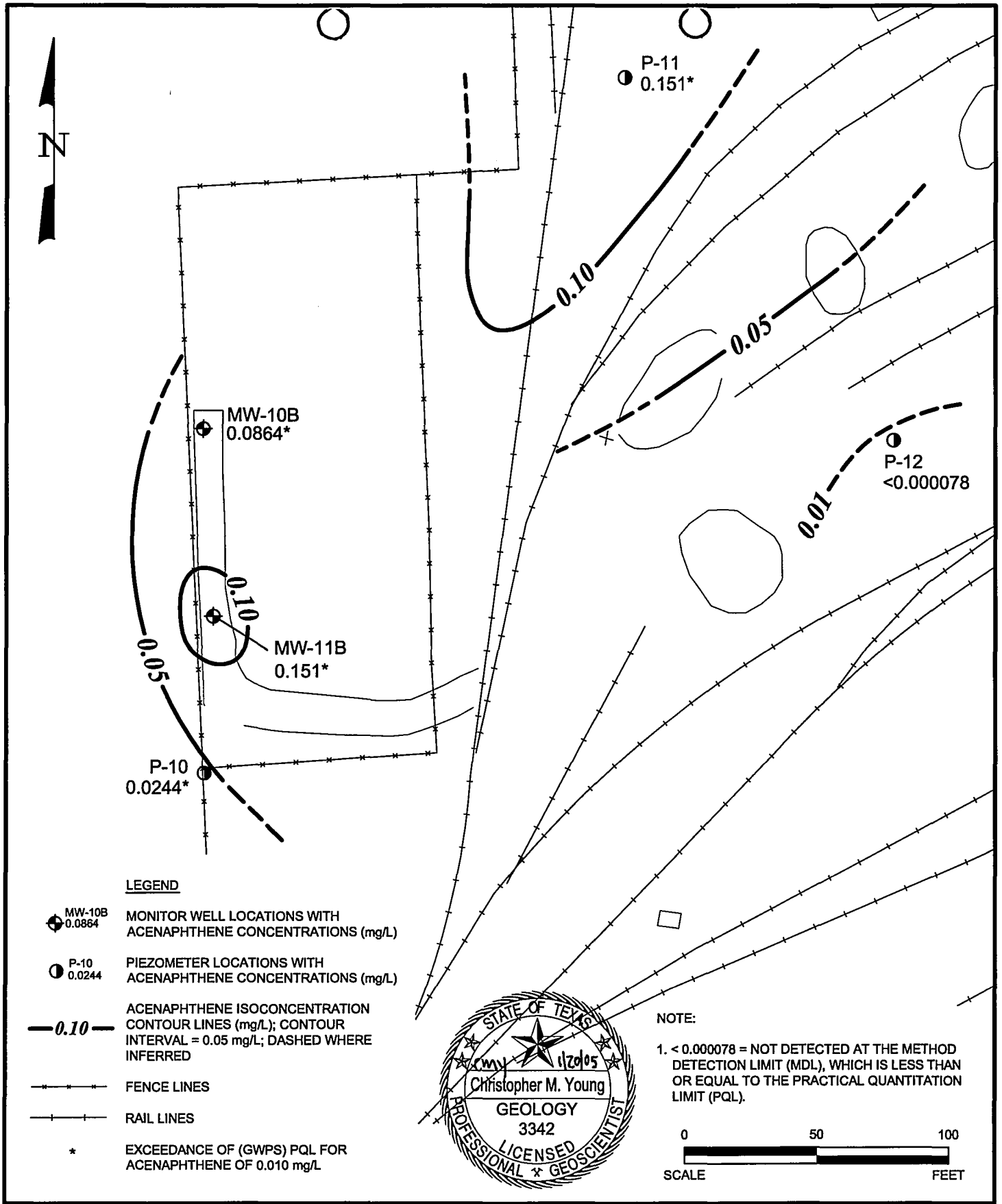

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FIGURE 2-6
ACENAPHTHENE IN B-TZ GROUND WATER
SEPTEMBER 13-14, 2004
TCEQ PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

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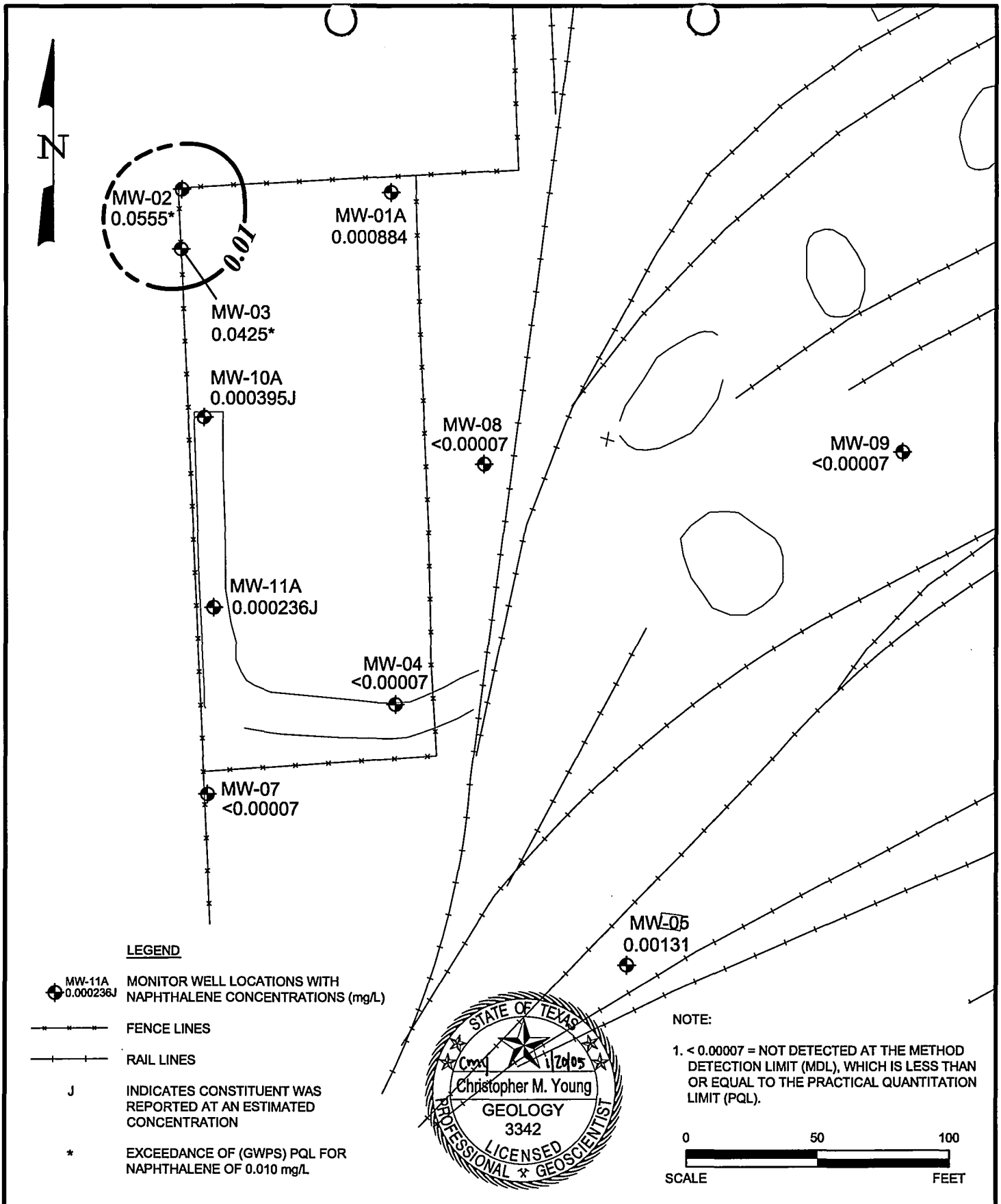

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FIGURE 2-7
NAPHTHALENE IN A-TZ GROUND WATER (mg/L)
SEPTEMBER 13-14, 2004
TCEQ PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

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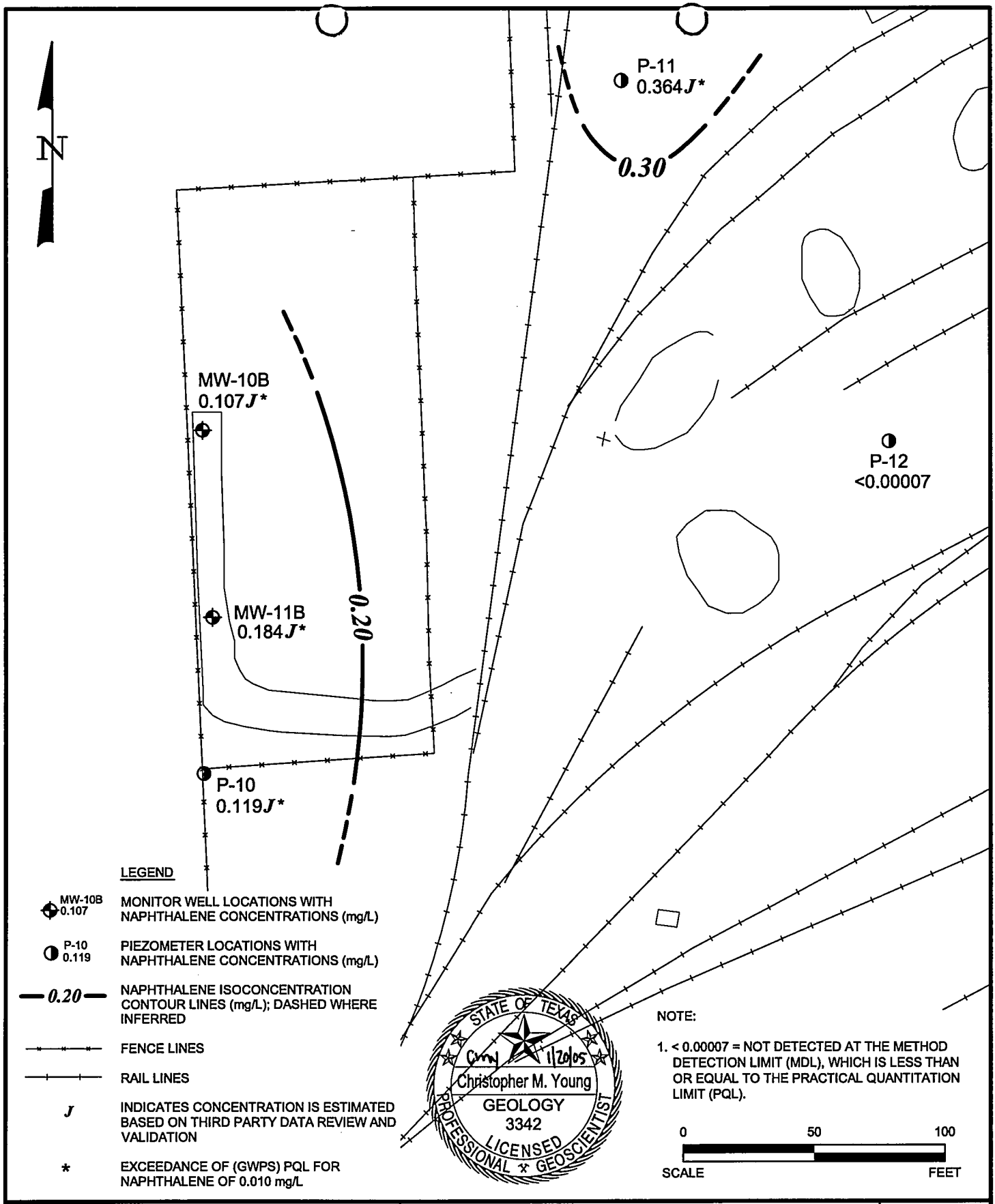

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FIGURE 2-8
NAPHTHALENE IN B-TZ GROUND WATER (mg/L)
SEPTEMBER 13-14, 2004
TCEQ PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

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Compliance Plan Tables

Appendix A

January 20, 2005
Project No. 0014419

Environmental Resources Management
15810 Park Ten Place, Suite 300
Houston, Texas 77084
(281) 600-1000

G:\2005\0014419\6440H\6440Hrpt.doc

TABLE I

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

COLUMN A Hazardous Constituents	COLUMN B 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	ND (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)
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-846 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 II

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

COLUMN A Hazardous Constituents	COLUMN 3 Concentration Limits (mg/l)
Acenaphthene	ND (0.010)
Anthracene	NO (0.010)
Benzene	ND (0.005)
bis(2-Ethylhexyl)phthalate	NO (0.010)
Dibenzofuran	ND (0.010)
2,4-Dimethylphenol	ND (0.010)
Ethylbenzene	ND (0.005)
Fluoranthene	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-846 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	SAMPLING FREQUENCY
A. Upper Transmissive Zone (existing)	
MW-1	Semi-annual
MW-2	Semi-annual
MW-7	Semi-annual
MW-10*	Semi-annual
MW-11*	Semi-annual

2. BACKGROUND WELLS

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
A. On-site Uppermost Transmissive Zone (existing)	
MW-4	Semi-annual
MW-5	Semi-annual
MW-7	Semi-annual
MW-8	Semi-annual
MW-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

January 20, 2005
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: Second Semiannual Event 2004
Houston Wood Preserving Works
Houston, Texas

Well ID:	MW-01A	MW-02	MW-03	MW-04	MW-05	MW-07	MW-08	MW-09
Date Sampled:	9/14/04	9/15/04	9/15/04	9/14/04	9/14/04	9/13/04	9/13/04	9/14/04
Time Sampled (hrs CST)	1328	942	848	1027	908	1543	1323	1337
Temperature (°C)	24.2	24.2	22.6	25.1	24.1	24.2	25.7	25.4
pH (Standard Units)	6.80	6.52	6.80	6.36	6.73	7.07	7.10	6.82
Specific Conductivity (uS)	1,532	767	751	885	600	804	486	784
Dissolved Oxygen (mg/L)	0.3	0.1	0.3	0.5	0.3	0.3	0.4	0.2
Turbidity (NTU)	0.45	0.00	0.00	31.12	3.35	0.68	0.92	0.00

Well ID:	MW-10A	MW-10B	MW-11A	MW-11B	P-10	P-11	P-12
Date Sampled:	9/15/04	9/14/04	9/14/04	9/14/04	9/13/04	9/15/04	9/14/04
Time Sampled (hrs CST)	850	1123	1500	1013	1433	953	1135
Temperature (°C)	24.3	23.7	24.6	23.7	23.3	25.0	25.3
pH (Standard Units)	6.84	6.90	6.74	6.87	7.17	6.85	6.75
Specific Conductivity (uS)	892	1,209	1,027	1,132	1,066	1,166	1,124
Dissolved Oxygen (mg/L)	0.2	0.2	0.4	0.2	0.2	0.4	0.4
Turbidity (NTU)	0.00	0.26	0.00	0.00	0.00	0.00	0.00

NOTES:

CST = Central Standard Time
NTU = Nephalometric Turbidity Unit

Laboratory Analytical Reports and Data Usability Summaries

Appendix C

January 20, 2005
Project No. 0014419

Environmental Resources Management
15810 Park Ten Place, Suite 300
Houston, Texas 77084
(281) 600-1000

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SEVERN TRENT STL

ANALYTICAL REPORT

JOB NUMBER: 281147

Prepared For:

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

Attention: Chris Young

Date: 10/06/2004

Signature

Date 10/07/04

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail: [redacted]

Severn Trent Laboratories
6310 Rothway Drive
Houston, TX 77040

PHONE: 713-690-4444
FAX..: 713-690-5646

TOTAL NO. OF PAGES 43

SEVERN TRENT STL

10/06/2004

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

Reference:
Project : UPRR-HWPW-0014419/60
Project No. : 281147
Date Received : 09/15/2004
STL Job : 281147

Dear Chris Young:

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

1. MW-03-2SA04
2. MW-10A-2SA04
3. MW-02-2SA04
4. P-11-2SA04
5. MW-02D-2SA04

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

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REVISED

Table 1

Cross-Reference Field Sample Identifications and Laboratory Identifications

Field Identification	EPA Sample Number	Laboratory Identification	8260B	8270C	Comment
MW-03-2SA04	MW-03-2SA04	281147-1	X	X	
MW-10A-2SA04	MW-10A-2SA04	281147-2	X	X	
MW-02 2SA04	MW-02 2SA04	281147-3	X	X	
P-11-2SA04	P-11-2SA04	281147-4	X	X	
MW-02D-2SA04	MW-02D-2SA04	281147-5	X	X	

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Appendix A Laboratory Data Package Cover Page

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

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:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c) The laboratory's LCS QC limits.

R7 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

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.

R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;

R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: 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 used, except 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 information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: [ ] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Norman Flynn		Laboratory Director	10/07/04
Name (Printed)	Signature	Official Title (printed)	Date

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/21/04
Project Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Reviewer Name: ZFL	Prep Batch Number(s): 111223-VOA

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		X			1
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample quantitation limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		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 laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?			X		
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				2
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	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).

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/21/04
Project Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Reviewer Name: ZFL	Prep Batch Number(s): 111223-VOA

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	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?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**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?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

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.
2 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	
Laboratory Name: STL-Houston	LRC Date: 09/21/04
Project Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Reviewer Name: ZFL	Prep Batch Number(s): 111223-VOA

ER #[1]	DESCRIPTION
1	Even though sample TB02-25A04 was listed on the C-O-C it was not received by the laboratory.
2	Since no client sample was designated as the MS/MSD, the laboratory selected sample 281147-5 and one sample from another client. The data for the other client's sample was not reviewed.

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

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Reviewer Name: LG	Prep Batch Number(s): 110850-SV SIM

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample quantitation limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		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 laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?			X		
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?				X	2
		Were MS/MSD analyzed at the appropriate frequency?				X	
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?				X	
		Were MS/MSD RPDs within laboratory QC limits?				X	
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SQL to minimize the matrix interference affects on the sample results?	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).

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Reviewer Name: LG	Prep Batch Number(s): 110850-SV SIM

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	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?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?		X			3
S5	OI	**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?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
-		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

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.
2 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	
Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Reviewer Name: LG	Prep Batch Number(s): 110850-SV SIM

ER #[1]	DESCRIPTION
1	The nitrobenzene-d5 surrogate recovery in sample 281147-1 was above acceptance limits due to matrix interference.
2	Since no client sample was designated as the MS/MSD, the selected two samples from another client.
3	The phenanthrene-d10, chrysene-d12, and perylene-d12 internal standard areas in sample 281147-1 were below acceptance limits. Per method requirements no corrective action was necessary.

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

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Reviewer Name: LG	Prep Batch Number(s): 110489-SV

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample quantitation limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1,2
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		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 laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?			X		
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?				X	3
		Were MS/MSD analyzed at the appropriate frequency?				X	
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?				X	
		Were MS/MSD RPDs within laboratory QC limits?				X	
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SQL to minimize the matrix interference affects on the sample results?	X				4

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).

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Reviewer Name: LG	Prep Batch Number(s): 110489-SV

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	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?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**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?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

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.
2 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	
Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Reviewer Name: LG	Prep Batch Number(s): 110489-SV

ER #[1]	DESCRIPTION
1	Seven surrogate recoveries were above acceptance limits due to the dilutions necessary for analyses.
2	The 2,4,6-tribromophenol surrogate recovery was above acceptance limits in the method blank. This high recovery will not affect the quality of reported results.
3	Since no client sample was designated as the MS/MSD, the laboratory selected two samples from another client.
4	One or more SQLs in all client samples 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)

SEVERN TRENT **STL**

CHAIN OF CUSTODY RECORD

Customer Information		Project Information		Analysis/Method	No. 57216-10
	726270	PROJECT NAME	99000484/HWPW	A 8260	
	0014419/60	LAB NUMBER	281147 BOTTLE ORDER	B 8270LL	
MPANY	ERM Southwest, Inc.- Houston	BILL TO	Union Pacific Railroad	C 8270SIM	
ND REPORT TO	Chris Young	INVOICE ATTN	Geoff Reeder	D	
DRESS	15810 Park Ten Place	ADDRESS	24125 Aldine Westfield Road	E	Level 2/ TRRP data package
	Suite 300			F	
				G	
TY/STATE/ZIP	Houston, TX 77084	CITY/STATE/ZIP	Spring, TX 77373-9015	H	
ONE	281-600-1000	PHONE	281-350-7197	I	
X	281-600-1001	FAX	281-350-7362	J	
				K	
				L	
				M	
				N	
				O	
				P	
				Q	
				R	
				S	

MP NO.	SAMPLE DESCRIPTION	PRESERVE	F	SAMPLE MATRIX	SAMPLE DATE	SAMPLE TIME	# CONTAINER	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	MW-03-2SA04			Water	9-15-04	848	7	X	X	X																
2	MW-10A-2SA04			Water		850	7	X	X	X																
3	MW-02-2SA04			Water		942	7	X	X	X																
4	P-11-2SA04			Water		953	7	X	X	X																
5	MW-02D-2SA04			Water		1000	7	X	X	X																
6	TB02-2SA04			Water	—	—	2	X																		
7				Water																						
8				Water																						

ampler: Andy Waters, Andy Sanchez

Shipment Method:

Airbill No.:

Required TurnAround: 14 Days/28

Relinquished By:	Date 9-15-04	2. Relinquished By:	Date 9/15/04	3. Relinquished By:	Date
mpany Name: ERM	Time 1145	Company Name: SR	Time 4:02	Company Name:	Time
Received By:	Date 9/15/04	2. Received By: Rodney	Date 9-15-04	3. Received By:	Date
mpany Name: SR	Time 2:23	Company Name: SR	Time 16:02	Company Name:	Time

vern Trent Laboratories 6310 Rothway Drive Houston, TX 77040 713-690-4444 FAX 713-690-5646

3

STL HOUSTON - SAMPLE RECEIPT CHECKLIST

CLIENT NAME: E-R.m

CARRIER/DRIVER NAME: WV

PROJECT:

UNPACKED BY: ARC

DATE RECEIVED:

UNPACKED STAMP: 2004 SEP 15 PM 4:09

TOTAL # COOLERS RECEIVED: 2

2004 SEP 15 PM 4:02

COOLER CHECKLIST

COOLER ID	COC PRESENT (Y/N)	CUSTODY TAPE PRESENT (Y/N)	CUSTODY TAPE INTACT (Y/N)	COOLER TEMP (°C)	THERM ID	TEMP BLK PRESENT (Y/N)	List Sample Bottles in Each Cooler if out of Temperature
W1B 5/8	Y-S	C no	no	2.4c	368	no	
		B —	—				
W1B 113	Y-S	C no	no	2.9.c	368	no	
		B —	—				
		C					
		B					

C = COOLER B = BOTTLES

COOLER(S) SCREENED FOR RADIATION? Yes — No ___ IF TEMP BLK N, HOW WAS TEMP TAKEN: next to ice

SHORT HOLD / RUSH SAMPLES (include department delivered to and time delivered)

****

SPECIFIC PROJECT INFORMATION

JOB NUMBER: 281147

VOLATILE HEADSPACE ACCEPTABLE? Yes ✓ No ___ NA ___

(If ANY headspace is present, list details in INCONSISTENCIES section)

Marked As Preserved? Yes ✓ No ___

Number of VOA Vials: 15

pH OF WATER SAMPLES

PRESERVATION	# BOTTLES	CORRECT pH (Y/N)	If N, List sample ID and Corresponding pH
H2SO4 (<2)			
HNO3 (<2)			
HCL (<2) (Not VOA Vials)			
NaOH – Cyanide (>12)			
NaOH/Zn Acetate – Sulfide (>9)			
Other	20	Y	

OF NEAT BOTTLES: ___ # OF SOIL JARS: ___

INCONSISTENCIES – Place in Job Notes as well (CTEA 1-12)

Did not receive any bottles for the last sample on COC - TB02 - 25A04.

ACTION TAKEN

PERSON CONTACTED: ___ DATE: ___

RESOLUTION

NOTES

(Use back of sheet if necessary)

Project Manager ___

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 281147 Location.: 57216 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: Date of the Report..: 09/15/2004
Project Number.: 99000484 Project Description.: UPRR-HWPW-0014419/60 Project Manager.....: sgk
Customer.....: ERM Southwest, Inc.- Houston Contact.: Chris Young

Questions ?	(Y/N)	Comments
Chain of Custody Received?.....	Y	
...If "yes", completed properly?.....	Y	
Custody seal on shipping container?.....	N	
...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	2.4,2.9
...If "no", is sample an air matrix?(no temp req.)		
Thermometer ID.....	Y	368
Samples received intact (good condition)?.....	Y	
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?.....	Y	
Additional.....		
Comments.....		
Sample Custodian Signature/Date.....	Y	ACR

9-15-04

SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-03-2SA04

Laboratory Sample ID: 281147-001

Date/Time Sampled .....: 9/15/2004 8:48

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	9/21/2004 20:19	111223	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	9/21/2004 20:19	111223	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	9/21/2004 20:19	111223	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	9/21/2004 20:19	111223	1	zfl
Methylene Chloride	75-09-2	0.00136	J	u	0.0013	0.005	0.0013	mg/L	9/21/2004 20:19	111223	1	zfl 10/29/04 LBL
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004 20:19	111223	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	9/21/2004 20:19	111223	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-03-2SA04

Laboratory Sample ID: 281147-001

Date/Time Sampled .....: 9/15/2004 8:48

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/22/04
1,2-Diphenylhydrazine	122-66-7	0.000011	U	UJ	0.000011	0.0001	0.000011	mg/L	9/21/2004 14:01	111554	1	lgl UBL
2,4-Dimethylphenol	105-67-9	0.000117	U	UJ	0.000122	0.0005	0.000117	mg/L	9/21/2004 19:52	111563	1	lgl UBL
2,4-Dinitrotoluene	121-14-2	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	9/21/2004 14:01	111554	1	lgl UBL
2,6-Dinitrotoluene	606-20-2	0.000026	U	UJ	0.000027	0.0001	0.000026	mg/L	9/21/2004 14:01	111554	1	lgl UBL
2-Chloronaphthalene	91-58-7	0.000077	U		0.00008	0.0005	0.000077	mg/L	9/21/2004 19:52	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	9/21/2004 19:52	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.224			0.00007	0.0005	0.00067	mg/L	9/23/2004 12:38	111563	10	lgl
4-Nitrophenol	100-02-7	0.000288	U		0.000299	0.0015	0.000288	mg/L	9/21/2004 19:52	111563	1	lgl
Acenaphthene	83-32-9	0.00662			0.000078	0.0005	0.000075	mg/L	9/21/2004 19:52	111563	1	lgl
Acenaphthylene	208-96-8	0.000077	U		0.00008	0.0005	0.000077	mg/L	9/21/2004 19:52	111563	1	lgl
Anthracene	120-12-7	0.000792			0.00013	0.0005	0.000125	mg/L	9/21/2004 19:52	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000269	U		0.00028	0.0005	0.000269	mg/L	9/21/2004 19:52	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U	UJ	0.000007	0.0001	0.000007	mg/L	9/21/2004 14:01	111554	1	lgl UBL
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	9/21/2004 14:01	111554	1	lgl UBL

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-03-2SA04

Laboratory Sample ID: 281147-001

Date/Time Sampled .....: 9/15/2004 8:48

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000173	U		0.00018	0.0005	0.000173	mg/L	9/21/2004 19:52	111563	1	lgl
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 19:52	111563	1	lgl
Dibenzofuran	132-64-9	0.00391			0.00008	0.0005	0.000077	mg/L	9/21/2004 19:52	111563	1	lgl
Di-n-butyl Phthalate	84-74-2	0.00076		u	0.00015	0.0005	0.000144	mg/L	9/21/2004 19:52	111563	1	lgl
Fluoranthene	206-44-0	0.000094	U	uJ	0.000098	0.0005	0.000094	mg/L	9/21/2004 19:52	111563	1	lgl
Fluorene	86-73-7	0.0113			0.000071	0.0005	0.000068	mg/L	9/21/2004 19:52	111563	1	lgl
Naphthalene	91-20-3	0.0425		J	0.00007	0.0005	0.000067	mg/L	9/21/2004 19:52	111563	1	lgl
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	9/21/2004 19:52	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 19:52	111563	1	lgl
Pentachlorophenol	87-86-5	0.000038	U	uJ	0.00004	0.0003	0.000038	mg/L	9/21/2004 14:01	111554	1	lgl
Phenanthrene	85-01-8	0.0106		JH	0.000081	0.0005	0.000078	mg/L	9/21/2004 19:52	111563	1	lgl
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	mg/L	9/21/2004 19:52	111563	1	lgl
Pyrene	129-00-0	0.000392	J		0.000088	0.0005	0.000085	mg/L	9/21/2004 19:52	111563	1	lgl

10/29/04

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-10A-2SA04

Date/Time Sampled .....: 9/15/2004 8:50

Date/Time Received .....: 9/15/2004 16:02

Laboratory Sample ID: 281147-002

Sample Matrix .....: Water

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	9/21/2004 19:52	111223	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	9/21/2004 19:52	111223	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	9/21/2004 19:52	111223	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	9/21/2004 19:52	111223	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	9/21/2004 19:52	111223	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004 19:52	111223	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	9/21/2004 19:52	111223	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-10A-2SA04

Laboratory Sample ID: 281147-002

Date/Time Sampled .....: 9/15/2004 8:50

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/29/04
1,2-Diphenylhydrazine	122-66-7	0.000011	U	UJ	0.000011	0.0001	0.000011	mg/L	9/21/2004 14:29	111554	1	lgl UBL
2,4-Dimethylphenol	105-67-9	0.000117	U	UJ	0.000122	0.0005	0.000117	mg/L	9/21/2004 20:19	111563	1	lgl UBL
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 14:29	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	9/21/2004 14:29	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000077	U		0.00008	0.0005	0.000077	mg/L	9/21/2004 20:19	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	9/21/2004 20:19	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	9/21/2004 20:19	111563	1	lgl
4-Nitrophenol	100-02-7	0.000288	U		0.000299	0.0015	0.000288	mg/L	9/21/2004 20:19	111563	1	lgl
Acenaphthene	83-32-9	0.106			0.000078	0.0005	0.0003	mg/L	9/23/2004 13:06	111563	4	lgl
Acenaphthylene	208-96-8	0.00076			0.00008	0.0005	0.000077	mg/L	9/21/2004 20:19	111563	1	lgl
Anthracene	120-12-7	0.00237			0.00013	0.0005	0.000125	mg/L	9/21/2004 20:19	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000269	U		0.00028	0.0005	0.000269	mg/L	9/21/2004 20:19	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	9/21/2004 14:29	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 14:29	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-10A-2SA04

Laboratory Sample ID: 281147-002

Date/Time Sampled .....: 9/15/2004 8:50

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000173	U		0.00018	0.0005	0.000173	mg/L	9/21/2004 20:19	111563	1	lg1 10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 20:19	111563	1	lg1
Dibenzofuran	132-64-9	0.0391			0.00008	0.0005	0.000077	mg/L	9/21/2004 20:19	111563	1	lg1
Di-n-butyl Phthalate	84-74-2	0.000144	U		0.00015	0.0005	0.000144	mg/L	9/21/2004 20:19	111563	1	lg1
Fluoranthene	206-44-0	0.0085		J	0.000098	0.0005	0.000094	mg/L	9/21/2004 20:19	111563	1	lg1 VBL
Fluorene	86-73-7	0.00297			0.000071	0.0005	0.00027	mg/L	9/23/2004 13:06	111563	4	lg1
Naphthalene	91-20-3	0.000395	J	J	0.00007	0.0005	0.000067	mg/L	9/21/2004 20:19	111563	1	lg1 VBL
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	9/21/2004 20:19	111563	1	lg1
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 20:19	111563	1	lg1
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	9/21/2004 14:29	111554	1	lg1
Phenanthrene	85-01-8	0.00133		JH	0.000081	0.0005	0.000078	mg/L	9/21/2004 20:19	111563	1	lg1 VBL
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	mg/L	9/21/2004 20:19	111563	1	lg1
Pyrene	129-00-0	0.00474			0.000088	0.0005	0.000085	mg/L	9/21/2004 20:19	111563	1	lg1

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419.60 ATTN: Chris Young

Customer Sample ID: MW-02-2SA04

Laboratory Sample ID: 281147-003

Date/Time Sampled .....: 9/15/2004 9:42

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	9/21/2004 19:25	111223	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	9/21/2004 19:25	111223	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	9/21/2004 19:25	111223	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	9/21/2004 19:25	111223	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	9/21/2004 19:25	111223	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004 19:25	111223	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	9/21/2004 19:25	111223	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-02-2SA04

Laboratory Sample ID: 281147-003

Date/Time Sampled .....: 9/15/2004 9:42

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/29/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	9/21/2004 14:57	111554	1	lgl LBG
2,4-Dimethylphenol	105-67-9	0.00134		J	0.000122	0.0005	0.000116	mg/L	9/21/2004 20:47	111563	1	lgl LBG
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 14:57	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	9/21/2004 14:57	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000147	J		0.00008	0.0005	0.000076	mg/L	9/21/2004 20:47	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	9/21/2004 20:47	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.0103			0.00007	0.0005	0.000067	mg/L	9/21/2004 20:47	111563	1	lgl
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	9/21/2004 20:47	111563	1	lgl
Acenaphthene	83-32-9	0.0604			0.000078	0.0005	0.00015	mg/L	9/23/2004 13:34	111563	2	lgl
Acenaphthylene	208-96-8	0.000768			0.00008	0.0005	0.000076	mg/L	9/21/2004 20:47	111563	1	lgl
Anthracene	120-12-7	0.00218			0.00013	0.0005	0.000124	mg/L	9/21/2004 20:47	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	9/21/2004 20:47	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	9/21/2004 14:57	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 14:57	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-02-2SA04

Laboratory Sample ID: 281147-003

Date/Time Sampled .....: 9/15/2004 9:42

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	10/28/04
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U		0.00018	0.0005	0.000172	mg/L	9/21/2004 20:47	111563	1	lgl	
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 20:47	111563	1	lgl	
Dibenzofuran	132-64-9	0.0302			0.00008	0.0005	0.000076	mg/L	9/21/2004 20:47	111563	1	lgl	
Di-n-butyl Phthalate	84-74-2	0.000519		U	0.00015	0.0005	0.000143	mg/L	9/21/2004 20:47	111563	1	lgl	LBC
Fluoranthene	206-44-0	0.00202		J	0.000098	0.0005	0.000093	mg/L	9/21/2004 20:47	111563	1	lgl	LBC
Fluorene	86-73-7	0.0328			0.000071	0.0005	0.000068	mg/L	9/21/2004 20:47	111563	1	lgl	
Naphthalene	91-20-3	0.0555		J	0.00007	0.0005	0.00013	mg/L	9/23/2004 13:34	111563	2	lgl	LB
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	9/21/2004 20:47	111563	1	lgl	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 20:47	111563	1	lgl	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	9/21/2004 14:57	111554	1	lgl	
Phenanthrene	85-01-8	0.00554		JH	0.000081	0.0005	0.000077	mg/L	9/21/2004 20:47	111563	1	lgl	LBC
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	9/21/2004 20:47	111563	1	lgl	
Pyrene	129-00-0	0.00122			0.000088	0.0005	0.000084	mg/L	9/21/2004 20:47	111563	1	lgl	

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: P-11-2SA04

Laboratory Sample ID: 281147-004

Date/Time Sampled .....: 9/15/2004 9:53

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	9/21/2004 18:02	111223	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	9/21/2004 18:02	111223	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	9/21/2004 18:02	111223	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	9/21/2004 18:02	111223	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	9/21/2004 18:02	111223	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004 18:02	111223	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	9/21/2004 18:02	111223	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: P-11-2SA04

Laboratory Sample ID: 281147-004

Date/Time Sampled .....: 9/15/2004 9:53

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/29/04
1,2-Diphenylhydrazine	122-66-7	0.000011	U	UJ	0.000011	0.0001	0.000011	mg/L	9/21/2004 15:25	111554	1	lgl UBL
2,4-Dimethylphenol	105-67-9	0.000117	U	UJ	0.000122	0.0005	0.000117	mg/L	9/21/2004 21:15	111563	1	lgl UBL
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 15:25	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	9/21/2004 15:25	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000077	U		0.00008	0.0005	0.000077	mg/L	9/21/2004 21:15	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	9/21/2004 21:15	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.00152			0.00007	0.0005	0.000067	mg/L	9/21/2004 21:15	111563	1	lgl
4-Nitrophenol	100-02-7	0.000288	U		0.000299	0.0015	0.000288	mg/L	9/21/2004 21:15	111563	1	lgl
Acenaphthene	83-32-9	0.151			0.000078	0.0005	0.00075	mg/L	9/23/2004 14:02	111563	10	lgl
Acenaphthylene	208-96-8	0.000077	U		0.00008	0.0005	0.000077	mg/L	9/21/2004 21:15	111563	1	lgl
Anthracene	120-12-7	0.00666			0.00013	0.0005	0.000125	mg/L	9/21/2004 21:15	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000269	U		0.00028	0.0005	0.000269	mg/L	9/21/2004 21:15	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	9/21/2004 15:25	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 15:25	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: P-11-2SA04

Laboratory Sample ID: 281147-004

Date/Time Sampled .....: 9/15/2004 9:53

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000173	U		0.00018	0.0005	0.000173	mg/L	9/21/2004 21:15	111563	1	lg1 10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 21:15	111563	1	lg1
Dibenzofuran	132-64-9	0.00261			0.00008	0.0005	0.000077	mg/L	9/21/2004 21:15	111563	1	lg1
Di-n-butyl Phthalate	84-74-2	0.000532		U	0.00015	0.0005	0.000144	mg/L	9/21/2004 21:15	111563	1	lg1 LBC
Fluoranthene	206-44-0	0.00635		J	0.000098	0.0005	0.000094	mg/L	9/21/2004 21:15	111563	1	lg1 LBC
Fluorene	86-73-7	0.0643			0.000071	0.0005	0.00068	mg/L	9/23/2004 14:02	111563	10	lg1
Naphthalene	91-20-3	0.364		J	0.00007	0.0005	0.00067	mg/L	9/23/2004 14:02	111563	10	lg1 LBC
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	9/21/2004 21:15	111563	1	lg1
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 21:15	111563	1	lg1
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	9/21/2004 15:25	111554	1	lg1
Phenanthrene	85-01-8	0.0352		JH	0.000081	0.0005	0.000078	mg/L	9/21/2004 21:15	111563	1	lg1 LBC
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	mg/L	9/21/2004 21:15	111563	1	lg1
Pyrene	129-00-0	0.00375			0.000088	0.0005	0.000085	mg/L	9/21/2004 21:15	111563	1	lg1

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-02D-2SA04

Laboratory Sample ID: 281147-005

Date/Time Sampled .....: 9/15/2004 10:00

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	9/21/2004 17:35	111223	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	9/21/2004 17:35	111223	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	9/21/2004 17:35	111223	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	9/21/2004 17:35	111223	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	9/21/2004 17:35	111223	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004 17:35	111223	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	9/21/2004 17:35	111223	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-02D-2SA04

Laboratory Sample ID: 281147-005

Date/Time Sampled .....: 9/15/2004 10:00

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water													10/29/04
1,2-Diphenylhydrazine	122-66-7	0.000011	U	UJ	0.000011	0.0001	0.000011	mg/L	9/21/2004 15:53	111554	1	lg1	LBL
2,4-Dimethylphenol	105-67-9	0.00244		J	0.000122	0.0005	0.000117	mg/L	9/23/2004 12:11	111563	1	lg1	LBL
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 15:53	111554	1	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	9/21/2004 15:53	111554	1	lg1	
2-Chloronaphthalene	91-58-7	0.000077	U		0.00008	0.0005	0.000077	mg/L	9/23/2004 12:11	111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	9/23/2004 12:11	111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.00993			0.00007	0.0005	0.000067	mg/L	9/23/2004 12:11	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000288	U		0.000299	0.0015	0.000288	mg/L	9/23/2004 12:11	111563	1	lg1	
Acenaphthene	83-32-9	0.0658			0.000078	0.0005	0.00038	mg/L	9/23/2004 14:30	111563	5	lg1	
Acenaphthylene	208-96-8	0.000838			0.00008	0.0005	0.000077	mg/L	9/23/2004 12:11	111563	1	lg1	
Anthracene	120-12-7	0.0024			0.00013	0.0005	0.000125	mg/L	9/23/2004 12:11	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000245			0.00028	0.0005	0.000269	mg/L	9/23/2004 12:11	111563	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	9/21/2004 15:53	111554	1	lg1	
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 15:53	111554	1	lg1	

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281147

Date: 10/6/2004

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

Customer Sample ID: MW-02D-2SA04

Laboratory Sample ID: 281147-005

Date/Time Sampled .....: 9/15/2004 10:00

Sample Matrix .....: Water

Date/Time Received .....: 9/15/2004 16:02

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000675			0.00018	0.0005	0.000173	mg/L	9/23/2004 12:11	111563	1	lgl	10/29/04
Chrysene	218-01-9	0.000172	J		0.000094	0.0005	0.00009	mg/L	9/23/2004 12:11	111563	1	lgl	
Dibenzofuran	132-64-9	0.0346			0.00008	0.0005	0.000077	mg/L	9/23/2004 12:11	111563	1	lgl	
Di-n-butyl Phthalate	84-74-2	0.000299	J	U	0.00015	0.0005	0.000144	mg/L	9/23/2004 12:11	111563	1	lgl	LBC
Fluoranthene	206-44-0	0.00283		J	0.000098	0.0005	0.000094	mg/L	9/23/2004 12:11	111563	1	lgl	LBC
Fluorene	86-73-7	0.0387			0.000071	0.0005	0.000068	mg/L	9/23/2004 12:11	111563	1	lgl	
Naphthalene	91-20-3	0.108		J	0.00007	0.0005	0.00034	mg/L	9/23/2004 14:30	111563	5	lgl	LBC
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	9/23/2004 12:11	111563	1	lgl	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/23/2004 12:11	111563	1	lgl	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	9/21/2004 15:53	111554	1	lgl	
Phenanthrene	85-01-8	0.00573		JH	0.000081	0.0005	0.000078	mg/L	9/23/2004 12:11	111563	1	lgl	LBC
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	mg/L	9/23/2004 12:11	111563	1	lgl	
Pyrene	129-00-0	0.00136			0.000088	0.0005	0.000085	mg/L	9/23/2004 12:11	111563	1	lgl	

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281147 Report Date.: 10/06/2004

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

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics - SIM Analysis Batch(s)...: 111554

LCS	Laboratory Control Sample	SVS082504C	110850		09/21/2004	1142

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzo(a)pyrene, Water	0.51670		0.500000		103.3		30-130	
bis(2-chloroethoxy)methane, Water	0.40774		0.500000		81.5		30-130	
2,4-Dinitrotoluene, Water	0.43056		0.500000		86.1		60-140	
2,6-Dinitrotoluene, Water	0.43914		0.500000		87.8		60-140	
Pentachlorophenol, Water	0.42691		0.500000		85.4		30-130	
1,2-Diphenylhydrazine, Water	0.44586		0.500000		89.2		30-130	

MB	Method Blank	SVS082504B	110850		09/21/2004	1114

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzo(a)pyrene, Water	0							
bis(2-chloroethoxy)methane, Water	0							
2,4-Dinitrotoluene, Water	0							
2,6-Dinitrotoluene, Water	0							
Pentachlorophenol, Water	0							
1,2-Diphenylhydrazine, Water	0							

MS	Matrix Spike	SVS082504C	281075-11		09/21/2004	1305

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzo(a)pyrene, Water	0.49004		0.500000	0	98		30-130	
bis(2-chloroethoxy)methane, Water	0.50587		0.500000	0	101		30-130	
2,4-Dinitrotoluene, Water	0.55329		0.500000	0	111		24-96	A
2,6-Dinitrotoluene, Water	0.48768		0.500000	0	98		30-130	
Pentachlorophenol, Water	0.85818		0.500000	0	172		5-103	A
1,2-Diphenylhydrazine, Water	0.54337		0.500000	0	109		60-140	

MSD	Matrix Spike Duplicate	SVS082504C	281075-12		09/21/2004	1333

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzo(a)pyrene, Water	0.51449	0.49004	0.500000	0	103		30.0-130.0	
					4.9		40.0	
bis(2-chloroethoxy)methane, Water	0.40870	0.50587	0.500000	0	82		30.0-130.0	
					21.2		30.0	
2,4-Dinitrotoluene, Water	0.60088	0.55329	0.500000	0	120		24.0-96.0	A
					8.2		30.0	
2,6-Dinitrotoluene, Water	0.50541	0.48768	0.500000	0	101		30.0-130.0	
					3.6		30.0	
Pentachlorophenol, Water	0.76910	0.85818	0.500000	0	154		5.0-103.0	A
					10.9		40.0	
1,2-Diphenylhydrazine, Water	0.33961	0.54337	0.500000	0	68		60.0-140.0	
					46.2		40.0	r

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281147 Report Date.: 10/06/2004

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

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics, Low Level Batch(s)...: 111563

LCS	Laboratory Control Sample	SVS091004A	110849		09/21/2004	1132

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	4.00456		5.000000		80.1		32-165	
Acenaphthylene, Water	4.05422		5.000000		81.1		10-150	
Anthracene, Water	4.85966		5.000000		97.2		23-178	
Benzo(a)anthracene, Water	4.19610		5.000000		83.9		25-180	
bis(2-ethylhexyl)phthalate, Water	4.41038		5.000000		88.2		25-173	
2-Chloronaphthalene, Water	3.89372		5.000000		77.9		23-143	
Chrysene, Water	3.93110		5.000000		78.6		23-180	
Dibenzofuran, Water	4.06299		5.000000		81.3		35-153	
Di-n-butyl Phthalate, Water	5.14752		5.000000		103.0		28-185	
Fluoranthene, Water	4.43650		5.000000		88.7		28-180	
Fluorene, Water	4.34785		5.000000		87.0		30-189	
2-Methylnaphthalene, Water	3.60317		5.000000		72.1		26-168	
Naphthalene, Water	3.35485		5.000000		67.1		36-139	
Nitrobenzene, Water	3.47882		5.000000		69.6		17-163	
n-Nitrosodiphenylamine, Water	5.32389		5.000000		106.5		58-174	
Phenanthrene, Water	4.23165		5.000000		84.6		26-166	
Pyrene, Water	4.31889		5.000000		86.4		28-173	
2,4-Dimethylphenol, Water	2.68719		5.000000		53.7		23-157	
2-Methyl-4,6-dinitrophenol, Water	5.77315		5.000000		115.5		10-164	
4-Nitrophenol, Water	1.71733		5.000000		34.3		10-92	
Phenol, Water	1.57342		5.000000		31.5		20-83	

MB	Method Blank	SVS082504B	110849		09/21/2004	1104

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	0							
Acenaphthylene, Water	0							
Anthracene, Water	0							
Benzo(a)anthracene, Water	0							
bis(2-ethylhexyl)phthalate, Water	0							
2-Chloronaphthalene, Water	0							
Chrysene, Water	0							
Dibenzofuran, Water	0							
Di-n-butyl Phthalate, Water	0.22612							
Fluoranthene, Water	0							
Fluorene, Water	0							
2-Methylnaphthalene, Water	0							
Naphthalene, Water	0							
Nitrobenzene, Water	0							
n-Nitrosodiphenylamine, Water	0							
Phenanthrene, Water	0							
Pyrene, Water	0							
2,4-Dimethylphenol, Water	0							
2-Methyl-4,6-dinitrophenol, Water	0							
4-Nitrophenol, Water	0							
Phenol, Water	0							

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281147 Report Date.: 10/06/2004

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

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MS	Matrix Spike	SVS091004A	281075-11		09/21/2004	1227

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	88.3669		5.000000	92.5113	-83		46-118	A
Acenaphthylene, Water	5.57430		5.000000	1.02763	91		30-130	
Anthracene, Water	11.1836		5.000000	6.11715	101		30-130	
Benzo(a)anthracene, Water	4.60869		5.000000	0	92		60-140	
bis(2-ethylhexyl)phthalate, Water	4.12321		5.000000	0.35260	75		60-140	
2-Chloronaphthalene, Water	4.66630		5.000000	0	93		30-130	
Chrysene, Water	4.10248		5.000000	0	82		30-130	
Dibenzofuran, Water	50.9380		5.000000	49.6673	25		30-130	A
Di-n-butyl Phthalate, Water	5.17669		5.000000	0	104		30-130	
Fluoranthene, Water	12.4913		5.000000	8.08535	88		30-130	
Fluorene, Water	61.2788		5.000000	60.2845	20		30-130	A
2-Methylnaphthalene, Water	5.89842		5.000000	4.37968	30		60-140	A
Naphthalene, Water	4.48265		5.000000	0.46401	80		30-130	
Nitrobenzene, Water	4.89364		5.000000	0	98		30-130	
n-Nitrosodiphenylamine, Water	6.54763		5.000000	0	131		30-130	A
Phenanthrene, Water	4.88579		5.000000	0.79633	82		30-130	
Pyrene, Water	8.00582		5.000000	3.55032	89		26-115	
2,4-Dimethylphenol, Water	3.77352		5.000000	0	75		30-130	
2-Methyl-4,6-dinitrophenol, Water	6.91788		5.000000	0	138		30-130	A
4-Nitrophenol, Water	4.43568		5.000000	0	89		10-80	A
Phenol, Water	1.46413		5.000000	0	29		10-112	

MSD	Matrix Spike Duplicate	SVS091004A	281075-12		09/21/2004 1255

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	107.748	88.3669	5.000000	92.5113	305		46.0-118.0	A
					19.8		31.0	
Acenaphthylene, Water	5.56160	5.57430	5.000000	1.02763	91		30.0-130.0	
					0.2		50.0	
Anthracene, Water	11.7313	11.1836	5.000000	6.11715	112		30.0-130.0	
					4.8		50.0	
Benzo(a)anthracene, Water	4.51210	4.60869	5.000000	0	90		60.0-140.0	
					2.1		50.0	
bis(2-ethylhexyl)phthalate, Water	4.34205	4.12321	5.000000	0.35260	80		60.0-140.0	
					5.2		30.0	
2-Chloronaphthalene, Water	4.65164	4.66630	5.000000	0	93		30.0-130.0	
					0.3		50.0	
Chrysene, Water	4.07302	4.10248	5.000000	0	81		30.0-130.0	
					0.7		50.0	
Dibenzofuran, Water	57.6000	50.9380	5.000000	49.6673	159		30.0-130.0	A
					12.3		50.0	
Di-n-butyl Phthalate, Water	5.41441	5.17669	5.000000	0	108		30.0-130.0	
					4.5		50.0	
Fluoranthene, Water	13.0567	12.4913	5.000000	8.08535	99		30.0-130.0	
					4.4		50.0	
Fluorene, Water	72.1209	61.2788	5.000000	60.2845	237		30.0-130.0	A
					16.3		50.0	
2-Methylnaphthalene, Water	35.1847	5.89842	5.000000	4.37968	616		60.0-140.0	A
					142.6		30.0	r
Naphthalene, Water	6.69411	4.48265	5.000000	0.46401	125		30.0-130.0	
					39.6		50.0	
Nitrobenzene, Water	4.99660	4.89364	5.000000	0	100		30.0-130.0	
					2.1		50.0	

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281147 Report Date.: 10/06/2004

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

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	SVS091004A	281075-12		09/21/2004	1255

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
n-Nitrosodiphenylamine, Water	6.40932	6.54763	5.000000	0	128		30.0-130.0	
					2.1		50.0	
Phenanthrene, Water	8.91104	4.88579	5.000000	0.79633	162		30.0-130.0	A
					58.4		50.0	r
Pyrene, Water	8.96119	8.00582	5.000000	3.55032	108		26.0-115.0	
					11.3		31.0	
2,4-Dimethylphenol, Water	3.84394	3.77352	5.000000	0	77		30.0-130.0	
					1.8		50.0	
2-Methyl-4,6-dinitrophenol, Water	6.97188	6.91788	5.000000	0	139		30.0-130.0	A
					0.8		50.0	
4-Nitrophenol, Water	4.64807	4.43568	5.000000	0	93		10.0-80.0	A
					4.7		50.0	
Phenol, Water	1.37655	1.46413	5.000000	0	28		10.0-112.0	
					6.2		23.0	

Test Method.....: SW-846 8260B Units.....: ug/L Analyst...: zfl
Method Description.: Volatile Organics Batch(s)...: 111223

LCS	Laboratory Control Sample	VS091704E			09/20/2004	1247

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	42.9883		50.00	ND	86.0		68-127	
Chlorobenzene, Water	43.5777		50.00	ND	87.2		65-129	
1,2-Dichloroethane, Water	43.1296		50.00	ND	86.3		65-133	
Ethylbenzene, Water	44.4510		50.00	ND	88.9		64-132	
Methylene Chloride, Water	40.7610		50.00	2.47407	81.5		54-133	
Toluene, Water	44.1476		50.00	ND	88.3		63-127	
Xylenes (total), Water	132.976		150.0	ND	88.7		37-161	

LCS	Laboratory Control Sample	VS091704E			09/21/2004	1518

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	46.7199		50.00	ND	93.4		68-127	
Chlorobenzene, Water	45.9392		50.00	ND	91.9		65-129	
1,2-Dichloroethane, Water	47.9546		50.00	ND	95.9		65-133	
Ethylbenzene, Water	46.0640		50.00	ND	92.1		64-132	
Methylene Chloride, Water	47.0320		50.00	2.86031	94.1		54-133	
Toluene, Water	46.2848		50.00	ND	92.6		63-127	
Xylenes (total), Water	139.788		150.0	ND	93.2		37-161	

MB	Method Blank	VS091704C			09/20/2004	1342

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	ND							
Chlorobenzene, Water	ND							
1,2-Dichloroethane, Water	ND							
Ethylbenzene, Water	ND							

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281147

Report Date.: 10/06/2004

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

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank	VS091704C			09/20/2004	1342

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Methylene Chloride, Water	2.47407							
Toluene, Water	ND							
Xylenes (total), Water	ND							

MB	Method Blank	VS091704C			09/21/2004	1247

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	ND							
Chlorobenzene, Water	ND							
1,2-Dichloroethane, Water	ND							
Ethylbenzene, Water	ND							
Methylene Chloride, Water	2.86031							
Toluene, Water	ND							
Xylenes (total), Water	ND							

MS	Matrix Spike	VS091704E	281083-3	5.00000	09/20/2004	1816

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	34.5554		50.00	ND	69		65-125	
Chlorobenzene, Water	34.2374		50.00	ND	68		74-122	A
1,2-Dichloroethane, Water	36.6267		50.00	ND	73		60-140	
Ethylbenzene, Water	35.9950		50.00	1.58119	69		60-140	
Methylene Chloride, Water	37.4415		50.00	3.54996	68		60-140	
Toluene, Water	51.7393		50.00	17.5311	68		76-125	A
Xylenes (total), Water	149.472		150.0	48.0155	68		60-140	

MS	Matrix Spike	VS091704E	281147-5		09/21/2004	1830

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	44.3904		50.00	ND	89		65-125	
Chlorobenzene, Water	45.1678		50.00	ND	90		74-122	
1,2-Dichloroethane, Water	43.4925		50.00	ND	87		60-140	
Ethylbenzene, Water	47.4020		50.00	ND	95		60-140	
Methylene Chloride, Water	41.3171		50.00	ND	83		60-140	
Toluene, Water	46.6313		50.00	ND	93		76-125	
Xylenes (total), Water	143.877		150.0	4.30733	93		60-140	

MSD	Matrix Spike Duplicate	VS091704E	281083-3	5.00000	09/20/2004	1844

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	37.1161	34.5554	50.00	ND	74		65.0-125.0	
					7.1		30.0	
Chlorobenzene, Water	37.4296	34.2374	50.00	ND	75		74.0-122.0	
					8.9		30.0	
1,2-Dichloroethane, Water	39.3715	36.6267	50.00	ND	79		60.0-140.0	
					7.2		30.0	

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

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QUALITY CONTROL RESULTS

Job Number.: 281147 Report Date.: 10/06/2004

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419.60 ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	VS091704E	281083-3	5.00000	09/20/2004	1844

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Ethylbenzene, Water	38.5740	35.9950	50.00	1.58119	74		60.0-140.0	
					6.9		30.0	
Methylene Chloride, Water	41.0077	37.4415	50.00	3.54996	75		60.0-140.0	
					9.1		30.0	
Toluene, Water	53.6984	51.7393	50.00	17.5311	72		76.0-125.0	A
					3.7		30.0	
Xylenes (total), Water	157.635	149.472	150.0	48.0155	73		60.0-140.0	
					5.3		30.0	

MSD	Matrix Spike Duplicate	VS091704E	281147-5		09/21/2004 1857

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	47.2020	44.3904	50.00	ND	94		65.0-125.0	
					6.1		30.0	
Chlorobenzene, Water	47.1168	45.1678	50.00	ND	94		74.0-122.0	
					4.2		30.0	
1,2-Dichloroethane, Water	45.7161	43.4925	50.00	ND	91		60.0-140.0	
					5.0		30.0	
Ethylbenzene, Water	49.6689	47.4020	50.00	ND	99		60.0-140.0	
					4.7		30.0	
Methylene Chloride, Water	44.4141	41.3171	50.00	ND	89		60.0-140.0	
					7.2		30.0	
Toluene, Water	48.2905	46.6313	50.00	ND	97		76.0-125.0	
					3.5		30.0	
Xylenes (total), Water	151.410	143.877	150.0	4.30733	98		60.0-140.0	
					5.1		30.0	

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

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SURROGATE RECOVERIES REPORT

Job Number.: 281147 Report Date.: 10/06/2004

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

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 111223 Test Matrix...: Water Equipment Code: GCMSVOA06

Lab ID	DT	Sample ID	Date	12DCED	BRFLBE	DBRFLM	TOLD8
281083- 3	MS	MW-8	09/20/2004	80.1	114.2	81.5	93.7
281083- 3	MSD	MW-8	09/20/2004	82.3	114.3	84.1	92.6
281147- 1		MW-03-2SA04	09/21/2004	80.5	112.6	81.7	94.1
281147- 2		MW-10A-2SA04	09/21/2004	78.3	107.9	77.8	89.3
281147- 3		MW-02-2SA04	09/21/2004	80.5	111.9	81.6	92.4
281147- 4		P-11-2SA04	09/21/2004	78.9	108.8	80.4	89.0
281147- 5		MW-02D-2SA04	09/21/2004	81.5	111.8	84.0	91.6
281147- 5	MS	MW-02D-2SA04	09/21/2004	75.4	106.6	77.1	88.1
281147- 5	MSD	MW-02D-2SA04	09/21/2004	79.4	111.1	81.9	92.8
111223--21	LCS		09/21/2004	83.9	116.8	85.5	92.3
111223--21	MB		09/21/2004	83.7	109.7	84.4	91.0
111223--21	LCS		09/20/2004	85.0	121.8	86.3	97.5
111223--21	MB		09/20/2004	83.0	115.8	83.6	95.7

Test	Test Description	Limits
12DCED	1,2-Dichloroethane-d4	70 - 130
BRFLBE	4-Bromofluorobenzene	70 - 130
DBRFLM	Dibromofluoromethane	70 - 130
TOLD8	Toluene-d8	70 - 130

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SURROGATE RECOVERIES REPORT

Job Number.: 281147 Report Date.: 10/06/2004

CUSTOMER: 483648 PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Method.....: Semivolatile Organics, Low Level Method Code...: 8270LL Prep Batch....: 110849
Batch(s).....: 111563 Test Matrix...: Water Equipment Code: EGCMS06

Lab ID	DT	Sample ID	Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14
281075- 11 MS		MW-01A-2SA04 MS	09/21/2004	123.9A	94.7	37.7	90.0	36.5	99.7
281075- 12 MSD		MW-01-2SA04 MSD	09/21/2004	127.2A	94.7	38.7	94.3	34.2	102.8
281147- 1		MW-03-2SA04	09/21/2004	118.2	86.3	35.4	107.5	41.3	107.5
281147- 1		MW-03-2SA04	09/23/2004	204.2d	113.1	161.9d	64.0	72.5	144.2d
281147- 2		MW-10A-2SA04	09/21/2004	112.2	76.8	39.9	75.5	24.3	95.0
281147- 2		MW-10A-2SA04	09/23/2004	120.9	84.9	81.3	79.4	45.5	110.9
281147- 3		MW-02-2SA04	09/21/2004	122.7	91.1	41.0	95.6	35.5	106.7
281147- 3		MW-02-2SA04	09/23/2004	116.5	104.9	51.7	106.2	44.0	108.5
281147- 4		P-11-2SA04	09/21/2004	112.6	91.5	35.8	72.0	32.3	103.3
281147- 4		P-11-2SA04	09/23/2004	182.4d	103.7	163.0d	78.0	76.4	165.6d
281147- 5		MW-02D-2SA04	09/23/2004	118.9	84.9	44.1	86.1	37.8	112.1
281147- 5		MW-02D-2SA04	09/23/2004	148.9d	101.4	94.6	89.8	56.6	113.0
110849--21 LCS			09/21/2004	119.6	78.9	39.7	75.0	31.1	92.1
110849--21 MB			09/21/2004	125.0K	87.3	48.5	84.4	32.8	103.6

Test	Test Description	Limits
246TBP	2,4,6-Tribromophenol	10 - 123
2FLUBP	2-Fluorobiphenyl	43 - 116
2FLUPH	2-Fluorophenol	21 - 100
NITRD5	Nitrobenzene-d5	35 - 114
PHEND6	Phenol-d6	10 - 94
TERD14	Terphenyl-d14	33 - 141

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SURROGATE RECOVERIES REPORT

Job Number.: 281147 Report Date.: 10/06/2004

CUSTOMER: 483648 PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Method.....: Semivolatile Organics - SIM Analysis Method Code...: 8270SI Prep Batch....: 110850
Batch(s).....: 111554 Test Matrix...: Water Equipment Code: EGCMS08

Lab ID	DT	Sample ID	Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14
281075- 11	MS	MW-01A-2SA04 MS	09/21/2004	116.0	83.3	40.4	93.4	36.0	88.8
281075- 12	MSD	MW-01-2SA04 MSD	09/21/2004	119.8	74.8	31.5	71.7	31.0	97.0
281147- 1		MW-03-2SA04	09/21/2004	101.8	81.4	39.8	120.4A	43.1	103.4
281147- 2		MW-10A-2SA04	09/21/2004	97.4	68.2	38.8	75.3	29.8	81.3
281147- 3		MW-02-2SA04	09/21/2004	104.5	80.0	44.3	94.4	37.4	85.9
281147- 4		P-11-2SA04	09/21/2004	96.0	76.8	38.5	87.1	34.7	82.2
281147- 5		MW-02D-2SA04	09/21/2004	107.1	75.6	43.9	84.5	39.5	91.3
110850--21	LCS		09/21/2004	118.3	72.8	43.8	81.7	34.7	92.2
110850--21	MB		09/21/2004	113.2	76.7	46.5	87.1	36.1	94.2

Test	Test Description	Limits
246TBP	2,4,6-Tribromophenol	10 - 123
2FLUBP	2-Fluorobiphenyl	43 - 116
2FLUPH	2-Fluorophenol	21 - 100
NITRD5	Nitrobenzene-d5	35 - 114
PHEND6	Phenol-d6	10 - 94
TERD14	Terphenyl-d14	33 - 141

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/06/2004

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 reportesd 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.

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/06/2004

W - The MS/MSD recoveries are outside QC acceptance criteria because the amount spiked 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.
S - Sample reanalyzed/reextracted due to poor surrogate recovery. Reanalysis confirmed original analysis indicating a possible matrix interference.
T - 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.
V - 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.
s - BOD/cBOD seed value is not within method acceptance criteria. Due to the nature of the test method, the sample cannot be reanalyzed.
l - BOD/cBOD LCS value is not within method acceptance criteria. Due to the nature of the test method, sample cannot be reanalyzed.
N - Spiked sample recovery is not within control limits.
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.
* - Duplicate analysis is not within control limits.

Abbreviations:

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

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

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MDL - Method Detection Limit
MS - Matrix Spike
MSD - Matrix Spike Duplicate
ND - Not Detected
PB - Preparation Blank
PREPF - Preparation Factor
RL - Reporting Limit
RPD - Relative Percent Difference
RRF - Relative Response Factor
RT - Retention Time
DU - 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 1994.
(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.

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 281147 Date: 10/06/2004

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

Lab ID: 281147-1 Client ID: MW-03-2SA04 Date Recvd: 09/15/2004 Sample Date: 09/15/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
	Data Package Validation	1	112373		10/06/2004	0000	
	Electronic Data Deliverables	1	81662		09/29/2004	1000	
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
	GC/MS Semi-Volatile Package Production	1	111573		09/27/2004	1400	
	GC/MS Volatiles Data Package Production	1	111365		09/23/2004	1700	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1401	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	1952	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1238	10.0000
SW-846 8260B	Volatile Organics	1	111223		09/21/2004	2019	1.00000

Lab ID: 281147-2 Client ID: MW-10A-2SA04 Date Recvd: 09/15/2004 Sample Date: 09/15/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1429	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	2019	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1306	4.00000
SW-846 8260B	Volatile Organics	1	111223		09/21/2004	1952	1.00000

Lab ID: 281147-3 Client ID: MW-02-2SA04 Date Recvd: 09/15/2004 Sample Date: 09/15/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1457	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	2047	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1334	2.00000
SW-846 8260B	Volatile Organics	1	111223		09/21/2004	1925	1.00000

Lab ID: 281147-4 Client ID: P-11-2SA04 Date Recvd: 09/15/2004 Sample Date: 09/15/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1525	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	2115	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1402	10.0000
SW-846 8260B	Volatile Organics	1	111223		09/21/2004	1802	1.00000

Lab ID: 281147-5 Client ID: MW-02D-2SA04 Date Recvd: 09/15/2004 Sample Date: 09/15/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1553	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1211	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1430	5.00000
SW-846 8260B	Volatile Organics	1	111223		09/21/2004	1735	1.00000

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APPENDIX C

Data Usability Summary

Houston Wood Preserving Works
Houston, Texas

Environmental Resources Management (ERM) reviewed a laboratory analytical data package 281147 from Severn Trent Laboratories of Houston, Texas for the analysis of five ground water samples collected on September 15, 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: Semiannual ground water monitoring.

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.

Introduction

Four ground water samples and one duplicate ground water sample were analyzed for select semivolatile organic compounds (SVOCs) by low-level and SIM methods and select volatile organic compounds (VOCs). Field blanks and trip blanks were not provided to the laboratory for analysis. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review / Validation Results

Analytical Results

VOCs and SVOCs were reported in mg/L. Qualified sample data are listed on Table 2. Non-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 due to dilutions necessary for analysis.

Preservation and Holding Times

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 most of the paperwork filled out properly. According to the sample receipt checklist, the laboratory did not receive the trip blank (TB02-2SA04) that was listed on the COC. 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

Method blank analyses were reported as not-detected for SVOC SIM. Field blanks and trip blanks were not provided to the laboratory with this package.

VOCs method blank analyzed on 9/20/04 at 13:42 had a detection of methylene chloride of 2.47407 ug/L. Samples from this data package were reported on 9/21/04 and were not associated with this method blank. VOCs method blank analyzed on 9/21/04 at 12:47 had a detection of methylene chloride of 2.86031 ug/L. Sample MW-03-2SA04 had a detection of methylene chloride less than 10X the method blank concentration, and was qualified as not-detected (U) for methylene chloride, due to method blank contamination.

SVOC low-level method blank had a reported detection of di-n-butyl phthalate (0.22612 ug/L). Samples MW-03-2SA04, MW-02-2SA04, P-11-2SA04 and MW-02D-2SA04 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, due to method blank contamination.

Surrogate Recoveries

VOC surrogates were within laboratory-supplied acceptance limits for all samples.

SVOC low-level analysis had elevated surrogate 2,4,6-tribromophenol, 2-fluorobiphenyl and terphenyl-d14 recoveries for samples P-11-2SA04 and MW-03-2SA04 (all at 10X dilution). Sample MW-02D-2SA04 had elevated surrogate 2,4,6-tribromophenol recovery at 5X dilution. Since the surrogates were diluted out of the samples, qualification of the data was not necessary.

SVOC SIM sample MW-03-2SA04 had elevated nitrobenzene-d5 surrogate recovery. The other five surrogates were within acceptance limits, so qualification of the data was not necessary.

Internal Standards

According to the LRC, VOC and SVOC low-level internal standard areas were within SW-846 method acceptance criteria.

SVOC SIM sample MW-03-2SA04 had three internal standard areas below limits (phenanthrene-d10, chrysene-d12 and perylene-d12). Associated compounds (benzo(a)pyrene, bis(2-chloroethoxy)methane, 2,4-dinitrotoluene, 2,6-dinitrotoluene, pentachlorophenol and 1,2-diphenylhydrazine) were reported as not-detected and were qualified as non-detect estimated (UJ), due to low internal standard recovery.

Laboratory Control Samples

SVOC low-level, SVOC SIM and VOC laboratory control sample (LCS) recoveries met the laboratory-defined acceptable ranges.

Matrix Spike/Matrix Spike Duplicates

VOC MS/MSD recoveries analyzed from a sample from this project site (281075-11 and 12) were within laboratory-supplied acceptance criteria. A second VOC MS/MSD was analyzed and had low recovery for chlorobenzene and toluene. The sample used was not associated with this project site, so qualification of the data was not necessary.

SVOC SIM MS/MSD was analyzed from sample from this project site (281075-11 and 12). The SVOC SIM MS/MSD had elevated recovery for 2,4-dinitrotoluene and pentachlorophenol. All associated samples were reported as not-detected for these two compounds, no qualification of the data was not necessary. This MS/MSD also had elevated relative percent difference (RPD) for 1,2-diphenylhydrazine. The MS/MSD results were less than five times the method quantitation limit (MQL), and the difference between sample and duplicate was greater than the MQL. All associated samples were reported as not-detected for 1,2-diphenylhydrazine and were qualified as non-detect estimated (UJ), due to elevated MD/MSD RPD.

SVOC low-level MS/MSD was analyzed from sample from this project site (281075-11 and 12). The SVOC low level MS/MSD had elevated and low recovery for acenaphthene, dibenzofuran, 2-methylnaphthalene and fluorene. These compounds were not qualified because the spike amount was less than four times that in the unspiked parent sample and may not represent the true matrix effect. Additionally, 4-nitrophenol, n-nitrosodiphenylamine, 2-methyl-4,6-dinitrophenol and phenanthrene had elevated MS/MSD recovery. All associated samples were reported as not-detected for 4-nitrophenol, n-nitrosodiphenylamine and 2-methyl-4,6-dinitrophenol, so qualification of the data was not necessary. All five associated samples were reported as detected for phenanthrene and were qualified as estimated high (JH), due to elevated MS/MSD recovery. This SVOC low-level MS/MSD also had elevated RPD for phenanthrene. The MS/MSD results were greater than five times the MQL and detections of phenanthrene were qualified as estimated (J), due to elevated MS/MSD RPD.

Field Precision

One field duplicate sample was collected during this sampling event (MW-02-2SA04 / MW-02D-2SA04). The sample and duplicate were reported as detected or estimated detected (J flagged) for 12 common compounds. MW-02-2SA04 was also reported as detected for 2-chloronaphthalene and MW-02D-2SA04 was also reported as detected for bis(2-ethylhexyl)phthalate and benzo(a)anthracene. Eight compounds (2-methylnaphthalene, anthracene, acenaphthene, acenaphthylene, dibenzofuran, fluorene, phenanthrene and pyrene) had RPD less than 20% and were within acceptance criteria. 2,4-Dimethylphenol had analyte concentrations less than five times the method quantitation limit (MQL) and the difference between sample and duplicate was greater than two times the MQL, so detections were qualified as estimated (J) and non-detects as non-detect estimated (UJ). Di-n-butyl phthalate had analyte concentrations less than five times the method quantitation limit (MQL) and the difference between sample and duplicate was less than two times the MQL, so no qualification was necessary. Fluoranthene and naphthalene had analyte concentrations greater than five times the MQL and RPD greater than 30%. Detections of fluoranthene and naphthalene in associated samples were qualified as estimated (J) and non-detects were qualified as non-detect estimated (UJ). Sample/duplicate precision calculations are included in Table 3.

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 sample MW-03-2SA04 was qualified as not-detected (U) for methylene chloride due to method blank contamination. Samples MW-03-2SA04, MW-02-2SA04, P-11-2SA04 and MW-02D-2SA04 were qualified as not-detected (U) for di-n-butyl phthalate, due to method blank contamination.

SVOC SIM sample MW-03-2SA04 was qualified as non-detect estimated (UJ) for six compounds (benzo(a)pyrene, bis(2-chloroethoxy)methane, 2,4-dinitrotoluene, 2,5-dinitrotoluene, pentachlorophenol and 1,2-diphenylhydrazine), due to low internal standard recovery.

All SVOC SIM samples were qualified as non-detect estimated (UJ) for 1,2-diphenylhydrazine, due to elevated MD/MSD RPD.

SVOC low-level samples P-10-2SA04, MW-11B-2SA04, MW-04-2SA04, MW10B-2SA04, MW-01A-2SA04, MW-11A-2SA04 and MW-11AD-2SA04 were reported as detected for phenanthrene and were qualified as estimated high (JH), due to elevated MS/MSD recovery.

Detections of fluoranthene, naphthalene and 2,4-dimethylphenol in all samples were qualified as estimated (J) and non-detects were qualified as non-detect estimated (UJ), due to sample/duplicate precision outside QC criteria.

TABLE 1

Cross-Reference Field Sample Identifications and Laboratory Identifications
Laboratory Package 281147

Houston Wood Preserving Works
Union Pacific Railroad

Field Identification	Laboratory Identification	
MW-03-2SA04	281147-1	
MW-10A-2SA04	281147-2	
MW-02-2SA04	281147-3	
P-11-2SA04	281147-4	
MW-02D-2SA04	281147-5	field duplicate

TABLE 2

Qualified Analytical Data
Laboratory Package 281147

Houston Wood Preserving Works
Union Pacific Railroad

Field Identification	Analyte	Qualification	Reason for Qualification
MW-03-2SA04	Methylene Chloride	U	Method blank contamination
MW-03-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-02-2SA04	Di-n-butyl phthalate	U	Method blank contamination
P-11-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-02D-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-03-2SA04	benzo(a)pyrene	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	bis(2-chloroethoxy)methane	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	2,4-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	2,6-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	pentachlorophenol	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	1,2-diphenylhydrazine	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-10A-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-02-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
P-11-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-02D-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-03-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-10A-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-02-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
P-11-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-02D-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-03-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-10A-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-02-2SA04	phenanthrene	J	Elevated MS/MSD RPD
P-11-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-02D-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-03-2SA04	fluoranthene	UJ	Sample/duplicate precision outside criteria
MW-10A-2SA04	fluoranthene	J	Sample/duplicate precision outside criteria
MW-02-2SA04	fluoranthene	J	Sample/duplicate precision outside criteria
P-11-2SA04	fluoranthene	J	Sample/duplicate precision outside criteria
MW-02D-2SA04	fluoranthene	J	Sample/duplicate precision outside criteria
MW-03-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-10A-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-02-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
P-11-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-02D-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-03-2SA04	2,4-dimethylphenol	UJ	Sample/duplicate precision outside criteria
MW-10A-2SA04	2,4-dimethylphenol	UJ	Sample/duplicate precision outside criteria
MW-02-2SA04	2,4-dimethylphenol	J	Sample/duplicate precision outside criteria
P-11-2SA04	2,4-dimethylphenol	UJ	Sample/duplicate precision outside criteria
MW-02D-2SA04	2,4-dimethylphenol	J	Sample/duplicate precision outside criteria

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.
H = high bias

TABLE 3

Field Precision
Laboratory Package 281147

Houston Wood Preserving Works
Union Pacific Railroad

Field Identification	Analyte	Sample Result	Duplicate Result	RPD	Qualified
MW-02-2SA04 / MW-02D-2SA04	2,4-dimethylphenol	0.00134	0.00244	-58.20	J
	2-methylnaphthalene	0.0103	0.00993	3.66	A
	acenaphthene	0.0604	0.0658	-8.56	A
	acenaphthylene	0.000768	0.000838	-8.72	A
	anthracene	0.00218	0.0024	-9.61	A
	dibenzofuran	0.0302	0.0346	-13.58	A
	Di-n-butyl phthalate	0.000519	0.000299	53.79	A*
	fluoranthene	0.00202	0.00283	-33.40	J
	fluorene	0.0328	0.0387	-16.50	A
	naphthalene	0.0555	0.108	-64.22	J
	phenanthrene	0.00554	0.00573	-3.37	A
	pyrene	0.00122	0.00136	-10.85	A

NOTES:

results reported as mg/L
RPD = ((SR-DR)*200)/(SR+DR)
J = estimated data due to inability to meet QC criteria
A = Acceptable data
A* = Acceptable data based on Table D-2 of TRRP-13 Guidance Document

SEVERN TRENT STL

ANALYTICAL REPORT

JOB NUMBER: 281075

Prepared For:

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

Attention: Chris Young

Date: 10/13/2004

Signature

Date 10/14/04

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail: [redacted]

Severn Trent Laboratories
6310 Rothway Drive
Houston, TX 77040

PHONE: 713-690-4444
FAX..: 713-690-5646

TOTAL NO. OF PAGES 78

SEVERN TRENT STL

10/13/2004

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

Project : UPRR-HWPW-0014419/60
Project No. : 281075
Date Received : 09/14/2004
STL Job : 281075

Dear Chris Young:

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

1. MW-08-2SA04	2. P-10-2SA04
3. MW-07-2SA04	4. MW-5-2SA04
5. MW-11B-2SA04	6. MW-04-2SA04
7. MW-10B-2SA04	8. P-12-2SA04
9. FB-091404	10. MW-01A-2SA04
11. MW-01A-2SA04 MS	12. MW-01-2SA04 MSD
13. MW-11A-2SA04	14. MW-11AD-2SA04
15. TB01-2SA04	16. MW-09-2SA04

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-08-2SA04	MW-08-2SA04	281075-1	X	X	
P-10-2SA04	P-10-2SA04	281075-2	X	X	
MW-07-2SA04	MW-07-2SA04	281075-3	X	X	
MW-5-2SA04	MW-5-2SA04	281075-4	X	X	
MW-11B-2SA04	MW-11B-2SA04	281075-5	X	X	
MW-04-2SA04	MW-04-2SA04	281075-6	X	X	
MW-10B-2SA04	MW-10B-2SA04	281075-7	X	X	
P-12-2SA04	P-12-2SA04	281075-8	X	X	
FB-091404	FB-091404	281075-9	X	X	Field Blank
MW-01A-2SA04	MW-01A-2SA04	281075-10	X	X	
MW-01AMS-2SA04	MW-01A-2SA04 MS	281075-11	X	X	Matrix Spike of MW-01A-2SA04
MW-01AMSD-2SA04	MW-01A-2SA04 MSD	281075-12	X	X	Matrix Spike Duplicate of MW-01A-2SA04
MW-11A-2SA04	MW-11A-2SA04	281075-13	X	X	
MW-11AD-2SA04	MW-11AD-2SA04	281075-14	X	X	
TB01-2SA04	TB01-2SA04	281075-15	X		Trip Blank
MW-09-2SA04	MW-09-2SA04	281075-16	X	X	Not on C-O-C

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Appendix A Laboratory Data Package Cover Page

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

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:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c) The laboratory's LCS QC limits.

R7 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

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.

R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;

R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: 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 used, except 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 information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: [ ] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Norman Flynn		Laboratory Director	10/14/04
Name (Printed)	Signature	Official Title (printed)	Date

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/20/04
Project Name: HWPW	Laboratory Job Number: 281075
Reviewer Name: ZFL	Prep Batch Number(s): 111218-VOA

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				1
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample quantitation limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		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 laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?			X		
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				2
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	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).

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/20/04
Project Name: HWPW	Laboratory Job Number: 281075
Reviewer Name: ZFL	Prep Batch Number(s): 111218-VOA

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	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?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**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?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

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.
2 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	
Laboratory Name: STL-Houston	LRC Date: 09/20/04
Project Name: HWPW	Laboratory Job Number: 281075
Reviewer Name: ZFL	Prep Batch Number(s): 111218-VOA

ER #[1]	DESCRIPTION
1	The laboratory received sample MW-09 2SA04 even though it was not listed on the C-O-C. Per client's request, this sample was analyzed by method 8260B.
2	In addition to the designated MS/MSD, the laboratory also selected a sample from another client. The data for the other client's sample was not reviewed.

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

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: HWPW	Laboratory Job Number: 281075
Reviewer Name: LG	Prep Batch Number(s): 110849-SV

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				1
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample quantitation limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			2,3,4
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		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 laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?			X		
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			5
		Were MS/MSD RPDs within laboratory QC limits?		X			6
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SQL to minimize the matrix interference affects on the sample results?	X				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);
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: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: HWPW	Laboratory Job Number: 281075
Reviewer Name: LG	Prep Batch Number(s): 110849-SV

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	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?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**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?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

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.
2 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	
Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: HWPW	Laboratory Job Number: 281075
Reviewer Name: LG	Prep Batch Number(s): 110849-SV

ER #[1]	DESCRIPTION
1	The laboratory received sample MW-09 2SA04 even though it was not listed on the C-O-C. Per client's request, this sample was analyzed by method 8270C.
2	Fourteen surrogate recoveries were above acceptance limits due to matrix interference.
3	Ten surrogate recoveries were above acceptance limits due to the dilutions necessary for analyses.
4	The 2,4,6-tribromophenol surrogate recovery was above acceptance limits in the method blank. This high recovery will not affect the quality of reported results.
5	Seven recoveries each in the MS and MSD were outside acceptance limits due to matrix interference.
6	The 2-methylnaphthalene and phenanthrene RPDs were above acceptance limits due to matrix interference.
7	One or more SQLs in eight client samples 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)

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: HWPW	Laboratory Job Number: 281075
Reviewer Name: LG	Prep Batch Number(s): 110850-SV SIM

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				1
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample quantitation limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			2
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		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 laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?			X		
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			3
		Were MS/MSD RPDs within laboratory QC limits?		X			4
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SQL to minimize the matrix interference affects on the sample results?	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).

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: HWPW	Laboratory Job Number: 281075
Reviewer Name: LG	Prep Batch Number(s): 110850-SV SIM

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	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?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?		X			5
S5	OI	**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?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
-		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

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.
2 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	
Laboratory Name: STL-Houston	LRC Date: 09/27/04
Project Name: HWPW	Laboratory Job Number: 281075
Reviewer Name: LG	Prep Batch Number(s): 110850-SV SIM

ER #[1]	DESCRIPTION
1	The laboratory received sample MW-09 2SA04 even though it was not listed on the C-O-C. Per client's request, this sample was analyzed by method 8270C.
2	Five surrogate recoveries were above acceptance limits due to matrix interference.
3	The 2,4-dinitrotoluene and pentachlorophenol recoveries in the MS and MSD were above acceptance limits due to matrix interference.
4	The 1,2-diphenylhydrazine RPD was above acceptance limits due to matrix interference.
5	The acenaphthene-d10, phenanthrene-d10, chrysene-d12, and perylene-d12 internal standard areas in sample 281075-4 were below acceptance limits. All of the internal standard areas except 1,4-dichlorobenzene-d4 in sample 281075-6 were below acceptance limits. All of the internal standard areas in samples 281075-7 and 14 were below acceptance limits. Per method requirements no corrective action was necessary.

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

SEVERN TRENT **STL**

281075

CHAIN OF CUSTODY RECORD

Customer Information		Project Information		Analysis/Method	No. 57216-2
PO	726270	PROJECT NAME	99000484/HWPW	A 8260 B 8270LL C 8270SIM	
WO	0014419/60	LAB NUMBER	BOTTLE ORDER		
COMPANY	ERM Southwest, Inc.- Houston	BILL TO	Union Pacific Railroad		
SEND REPORT TO	Chris Young	INVOICE ATTN	Geoff Reeder	D Level 2/ TRRP data package	
ADDRESS	15810 Park Ten Place	ADDRESS	24125 Aldine Westfield Road		
	Suite 300				
CITY/STATE/ZIP	Houston, TX 77084	CITY/STATE/ZIP	Spring, TX 77373-9015		
PHONE	281-600-1000	PHONE	281-350-7197		
FAX	281-600-1001	FAX	281-350-7362		

SAMP NO.	SAMPLE DESCRIPTION	PRESERVE	F	SAMPLE MATRIX	SAMPLE DATE	SAMPLE TIME	# CONTAINER	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	MW-08-2SA04			Water	9-13-04	1323	7	X	X	X																
2	P-10-2SA04			Water		1433	7	X	X	X																
3	MW-07-2SA04			Water		1543	7	X	X	X																
4	MW-5-2SA04			Water	9-14-04	908	7	X	X	X																
5	MW-11B-2SA04			Water		1013	7	X	X	X																
6	MW-04-2SA04			Water		1027	7	X	X	X																
7	MW-10B-2SA04			Water		1123	7	X	X	X																
8	P-12-2SA04			Water		1135	7	X	X	X																

Sampler: Andy Waters, Andy Sanchez

Shipment Method:

Airbill No.:

Required TurnAround: 14 Days/28

1. Relinquished By:	Date 9-14-04	2. Relinquished By:	Date	3. Relinquished By:	Date
Company Name: ERM	Time 1633	Company Name:	Time	Company Name:	Time
1. Received By:	Date 9-14-04	2. Received By:	Date	3. Received By:	Date
Company Name: STL	Time 16:33	Company Name:	Time	Company Name:	Time

Severn Trent Laboratories 6310 Rothway Drive Houston, TX 77040 713-690-4444 FAX 713-690-5646

SEVERN TRENT **STL**

CHAIN OF CUSTODY RECORD

Customer Information		Project Information		Analysis/Method	No. 57216-3
PO	726270	PROJECT NAME	99000484/HWPW	A 8260 B 8270LL C 8270SIM D E F Level 2/ TRRP data package G H I J K L M N O P Q R S	
NO	0014419/60	LAB NUMBER	BOTTLE ORDER		
COMPANY	ERM Southwest, Inc.- Houston	BILL TO	Union Pacific Railroad		
SEND REPORT TO	Chris Young	INVOICE ATTN	Geoff Reeder		
ADDRESS	15810 Park Ten Place Suite 300	ADDRESS	24125 Aldine Westfield Road		
CITY/STATE/ZIP	Houston, TX 77084	CITY/STATE/ZIP	Spring, TX 77373-9015		
PHONE	281-600-1000	PHONE	281-350-7197		
FAX	281-600-1001	FAX	281-350-7362		

SAMP NO.	SAMPLE DESCRIPTION	PRESERVE	F	SAMPLE MATRIX	SAMPLE DATE	SAMPLE TIME	# CONTAINER	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	FB-091404			Water	9-14-04	1200	7	X	X	X																
2	MW-01A-25A04			Water		1328	7	X	X	X																
3	MW-01A MS-25A04			Water		1350	7	X	X	X																
4	MW-01A MSD-25A04			Water		1410	7	X	X	X																
5	MW-11A-25A04			Water		1500	7	X	X	X																
6	MW-11AD-25A04			Water		1525	7	X	X	X																
7	TB01-25A04			Water	—	—	2	X																		
8				Water																						

Sampler: Andy Waters, Andy Sanchez | Shipment Method: | Airbill No.: | Required TurnAround: 14 Days/28

1. Relinquished By:	Date	2. Relinquished By:	Date	3. Relinquished By:	Date
Company Name: ERM	Time 1633	Company Name:	Time	Company Name:	Time
1. Received By:	Date 9.14.04	2. Received By:	Date	3. Received By:	Date
Company Name: JR	Time 16:33	Company Name:	Time	Company Name:	Time

Severn Trent Laboratories 6310 Rothway Drive Houston, TX 77040 713-690-4444 FAX 713-690-5646

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 281075 Location.: 57216 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: 09/15/2004 Date of the Report..: 09/15/2004
Project Number.: 99000484 Project Description.: UPRR-HWPW-0014419/60 Project Manager.....: sgk
Customer.....: ERM Southwest, Inc.- Houston Contact.: Chris Young

Questions ?	(Y/N)	Comments
Chain of Custody Received?.....	Y	
...If "yes", completed properly?.....	Y	
Custody seal on shipping container?.....	N	
...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	2.6,3.7,4.6,2.1,3.6
...If "no", is sample an air matrix?(no temp req.)		
Thermometer ID.....	Y	405
Samples received intact (good condition)?.....	Y	
Volatile samples acceptable? (no headspace).....		
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?.....	Y	
Additional.....		
Comments.....		
Sample Custodian Signature/Date.....	Y	EIB

JB 9/15/04

STL HOUSTON - SAMPLE RECEIPT CHECKLIST

CLIENT NAME: ERMSW

CARRIER/DRIVER NAME: Client

PROJECT:

UNPACKED BY: JB

DATE RECEIVED:

UNPACKED STAMP:

TOTAL # COOLERS RECEIVED: 5

2004 SEP 14 PM 5:

2004 SEP 15 AM 7:

COOLER CHECKLIST

COOLER ID	COC PRESENT (Y/N)	CUSTODY TAPE		COOLER TEMP (°C)	THERM ID	TEMP BLK PRESENT (Y/N)	List Sample Bottles in Each Cooler if out of Temperature
		PRESENT (Y/N)	INTACT (Y/N)				
W/B 16	Y	C Y / B Y	Y	2.6	405	N	
W/B 359	Y	C Y / B Y	Y	3.7	402	N	
W/W 334	Y	C Y / B Y	Y	4.6	405	N	

C = COOLER B = BOTTLES

COOLER(S) SCREENED FOR RADIATION? Yes ✓ No ___ IF TEMP BLK N, HOW WAS TEMP TAKEN: ___

SHORT HOLD / RUSH SAMPLES (include department delivered to and time delivered)

****

SPECIFIC PROJECT INFORMATION

JOB NUMBER: 281075

VOLATILE HEADSPACE ACCEPTABLE? Yes ✓ No ___ NA ___

(If ANY headspace is present, list details in INCONSISTENCIES section)

Marked As Preserved? Yes ✓ No ___

Number of VOA Vials: 14

pH OF WATER SAMPLES

PRESERVATION	# BOTTLES	CORRECT pH (Y/N)	If N, List sample ID and Corresponding pH
H2SO4 (<2)			
HNO3 (<2)			
HCL (<2) (Not VOA Vials)			
NaOH – Cyanide (>12)			
NaOH/Zn Acetate – Sulfide (>9)			
Other	50		

OF NEAT BOTTLES: ___ # OF SOIL JARS: ___

INCONSISTENCIES – Place in Job Notes as well (CTRL-F-12)

Received an extra sample ID = MW-09-25A021 9/14/04 13:37

ACTION TAKEN

PERSON CONTACTED: ___ DATE: ___

RESOLUTION ___

NOTES ___

(Use back of sheet if necessary)

Project Manager ___

SA 152, Rev 11 12/03

STL HOUSTON - SAMPLE RECEIPT CHECKLIST

CLIENT NAME: _____ CARRIER/DRIVER NAME: _____

PROJECT _____ UNPACKED BY: _____

DATE RECEIVED: _____ UNPACKED STAMP: _____

TOTAL # COOLERS RECEIVED: 5

2011 SEP 15 AM 7:

COOLER CHECKLIST

COOLER ID	COC PRESENT (Y/N)	CUSTODY TAPE		COOLER TEMP (°C)	THERM ID	TEMP BLK PRESENT (Y/N)	List Sample Bottles in Each Cooler if out of Temperature
		PRESENT (Y/N)	INTACT (Y/N)				
W/B 652	Y	C Y	Y	2.1	405	N	
		B Y	Y				
W/W 11	Y	C Y	Y	3.6	402	N	
		B Y	Y				
		C					
		B					

C = COOLER B = BOTTLES

COOLER(S) SCREENED FOR RADIATION? Yes ✓ No ____ IF TEMP BLK N, HOW WAS TEMP TAKEN: _____

SHORT HOLD / RUSH SAMPLES (include department delivered to and time delivered)

_____

_____

****

SPECIFIC PROJECT INFORMATION

JOB NUMBER: _____

VOLATILE HEADSPACE ACCEPTABLE? Yes ____ No ____ NA ____ Marked As Preserved? Yes ____ No ____

(If ANY headspace is present, list details in INCONSISTENCIES section) Number of VOA Vials: _____

pH OF WATER SAMPLES

PRESERVATION	# BOTTLES	CORRECT pH (Y/N)	If N, List sample ID and Corresponding pH
H2SO4 (<2)			
HNO3 (<2)			
HCL (<2) (Not VOA Vials)			
NaOH – Cyanide (>12)			
NaOH/Zn Acetate – Sulfide (>9)			
Other			

OF NEAT BOTTLES: _____ # OF SOIL JARS: _____

INCONSISTENCIES – Place in Job Notes as well (CTRL F-12)

_____

_____

_____

_____

ACTION TAKEN

PERSON CONTACTED: _____ DATE: _____

RESOLUTION _____

_____

_____

NOTES _____

_____

_____

(Use back of sheet if necessary)

Project Manager _____

SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-08-2SA04

Laboratory Sample ID: 281075-001

Date/Time Sampled .....: 09/13/2004 13:23

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 17:13	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 17:13	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 17:13	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 17:13	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004 17:13	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 17:13	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 17:13	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-08-2SA04

Laboratory Sample ID: 281075-001

Date/Time Sampled .....: 09/13/2004 13:23

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/24/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 16:21	111554	1	lgl USL
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/21/2004 13:23	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 16:21	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 16:21	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/21/2004 13:23	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/21/2004 13:23	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/21/2004 13:23	111563	1	lgl
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/21/2004 13:23	111563	1	lgl
Acenaphthene	83-32-9	0.000074	U		0.000078	0.0005	0.000074	mg/L	09/21/2004 13:23	111563	1	lgl
Acenaphthylene	208-96-8	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/21/2004 13:23	111563	1	lgl
Anthracene	120-12-7	0.000307	J		0.00013	0.0005	0.000124	mg/L	09/21/2004 13:23	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/21/2004 13:23	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 16:21	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 16:21	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-08-2SA04

Laboratory Sample ID: 281075-001

Date/Time Sampled .....: 09/13/2004 13:23

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000689			0.00018	0.0005	0.000172	mg/L	09/21/2004 13:23	111563	1	lgl 10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004 13:23	111563	1	lgl
Dibenzofuran	132-64-9	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/21/2004 13:23	111563	1	lgl
Di-n-butyl Phthalate	84-74-2	0.000449	J	u	0.00015	0.0005	0.000143	mg/L	09/21/2004 13:23	111563	1	lgl LBL
Fluoranthene	206-44-0	0.000287	J		0.000098	0.0005	0.000093	mg/L	09/21/2004 13:23	111563	1	lgl
Fluorene	86-73-7	0.000068	U		0.000071	0.0005	0.000068	mg/L	09/21/2004 13:23	111563	1	lgl
Naphthalene	91-20-3	0.000067	U	uJ	0.00007	0.0005	0.000067	mg/L	09/21/2004 13:23	111563	1	lgl LBL
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/21/2004 13:23	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004 13:23	111563	1	lgl
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004 16:21	111554	1	lgl
Phenanthrene	85-01-8	0.000077	U		0.000081	0.0005	0.000077	mg/L	09/21/2004 13:23	111563	1	lgl
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/21/2004 13:23	111563	1	lgl
Pyrene	129-00-0	0.000412	J		0.000088	0.0005	0.000084	mg/L	09/21/2004 13:23	111563	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: P-10-2SA04

Laboratory Sample ID: 281075-002

Date/Time Sampled .....: 09/13/2004 14:33

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 17:40	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 17:40	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 17:40	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 17:40	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004 17:40	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 17:40	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 17:40	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: P-10-2SA04

Date/Time Sampled .....: 09/13/2004 14:33

Date/Time Received .....: 09/14/2004 16:33

Laboratory Sample ID: 281075-002

Sample Matrix .....: Water

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/29/04
1,2-Diphenylhydrazine	122-66-7	0.000011	U	uJ	0.000011	0.0001	0.000011	mg/L	09/21/2004 16:49	111554	1	lgl
2,4-Dimethylphenol	105-67-9	0.000117	U		0.000122	0.0005	0.000117	mg/L	09/21/2004 13:51	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 16:49	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 16:49	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000077	U		0.00008	0.0005	0.000077	mg/L	09/21/2004 13:51	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	09/21/2004 13:51	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.00264			0.00007	0.0005	0.000067	mg/L	09/21/2004 13:51	111563	1	lgl
4-Nitrophenol	100-02-7	0.000288	U		0.000299	0.0015	0.000288	mg/L	09/21/2004 13:51	111563	1	lgl
Acenaphthene	83-32-9	0.0244			0.000078	0.0005	0.000075	mg/L	09/21/2004 13:51	111563	1	lgl
Acenaphthylene	208-96-8	0.000179	J		0.00008	0.0005	0.000077	mg/L	09/21/2004 13:51	111563	1	lgl
Anthracene	120-12-7	0.000798			0.00013	0.0005	0.000125	mg/L	09/21/2004 13:51	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000269	U		0.00028	0.0005	0.000269	mg/L	09/21/2004 13:51	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 16:49	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 16:49	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: P-10-2SA04

Laboratory Sample ID: 281075-002

Date/Time Sampled .....: 09/13/2004 14:33

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000173	U		0.00018	0.0005	0.000173	mg/L	09/21/2004 13:51	111563	1	lgl 10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004 13:51	111563	1	lgl
Dibenzofuran	132-64-9	0.00643			0.00008	0.0005	0.000077	mg/L	09/21/2004 13:51	111563	1	lgl
Di-n-butyl Phthalate	84-74-2	0.000456	J	u	0.00015	0.0005	0.000144	mg/L	09/21/2004 13:51	111563	1	lgl
Fluoranthene	206-44-0	0.000474	J		0.000098	0.0005	0.000094	mg/L	09/21/2004 13:51	111563	1	lgl
Fluorene	86-73-7	0.00768			0.000071	0.0005	0.000068	mg/L	09/21/2004 13:51	111563	1	lgl
Naphthalene	91-20-3	0.119		J	0.00007	0.0005	0.00034	mg/L	09/23/2004 15:25	111563	5	lgl
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	09/21/2004 13:51	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004 13:51	111563	1	lgl
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004 16:49	111554	1	lgl
Phenanthrene	85-01-8	0.00234		JH	0.000081	0.0005	0.000078	mg/L	09/21/2004 13:51	111563	1	lgl
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	mg/L	09/21/2004 13:51	111563	1	lgl
Pyrene	129-00-0	0.000221	J		0.000088	0.0005	0.000085	mg/L	09/21/2004 13:51	111563	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-07-2SA04

Laboratory Sample ID: 281075-003

Date/Time Sampled .....: 09/13/2004 15:43

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 18:08	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 18:08	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 18:08	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 18:08	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004 18:08	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 18:08	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 18:08	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-07-2SA04

Laboratory Sample ID: 281075-003

Date/Time Sampled .....: 09/13/2004 15:43

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.000011	U	WJ	0.000011	0.0001	0.000011	mg/L	09/21/2004 17:17	111554	1	lg1
2,4-Dimethylphenol	105-67-9	0.000118	U		0.000122	0.0005	0.000118	mg/L	09/21/2004 14:19	111563	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 17:17	111554	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 17:17	111554	1	lg1
2-Chloronaphthalene	91-58-7	0.000078	U		0.00008	0.0005	0.000078	mg/L	09/21/2004 14:19	111563	1	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000301	U		0.00031	0.0015	0.000301	mg/L	09/21/2004 14:19	111563	1	lg1
2-Methylnaphthalene	91-57-6	0.000068	U		0.00007	0.0005	0.000068	mg/L	09/21/2004 14:19	111563	1	lg1
4-Nitrophenol	100-02-7	0.00029	U		0.000299	0.0015	0.00029	mg/L	09/21/2004 14:19	111563	1	lg1
Acenaphthene	83-32-9	0.000076	U		0.000078	0.0005	0.000076	mg/L	09/21/2004 14:19	111563	1	lg1
Acenaphthylene	208-96-8	0.000078	U		0.00008	0.0005	0.000078	mg/L	09/21/2004 14:19	111563	1	lg1
Anthracene	120-12-7	0.000955			0.00013	0.0005	0.000126	mg/L	09/21/2004 14:19	111563	1	lg1
Benzo(a)anthracene	56-55-3	0.000272	U		0.00028	0.0005	0.000272	mg/L	09/21/2004 14:19	111563	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 17:17	111554	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 17:17	111554	1	lg1

10/29/04 LBG

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-07-2SA04

Laboratory Sample ID: 281075-003

Date/Time Sampled .....: 09/13/2004 15:43

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	10/29/04
bis(2-ethylhexyl)phthalate	117-81-7	0.000175	U		0.00018	0.0005	0.000175	mg/L	09/21/2004 14:19	111563	1	lgl	
Chrysene	218-01-9	0.000091	U		0.000094	0.0005	0.000091	mg/L	09/21/2004 14:19	111563	1	lgl	
Dibenzofuran	132-64-9	0.000078	U		0.00008	0.0005	0.000078	mg/L	09/21/2004 14:19	111563	1	lgl	
Di-n-butyl Phthalate	84-74-2	0.000238	J	u	0.00015	0.0005	0.000146	mg/L	09/21/2004 14:19	111563	1	lgl	LBG
Fluoranthene	206-44-0	0.000352	J		0.000098	0.0005	0.000095	mg/L	09/21/2004 14:19	111563	1	lgl	
Fluorene	86-73-7	0.000069	U		0.000071	0.0005	0.000069	mg/L	09/21/2004 14:19	111563	1	lgl	
Naphthalene	91-20-3	0.000068	U	uJ	0.00007	0.0005	0.000068	mg/L	09/21/2004 14:19	111563	1	lgl	LBG
Nitrobenzene	98-95-3	0.000146	U		0.00015	0.0005	0.000146	mg/L	09/21/2004 14:19	111563	1	lgl	
n-Nitrosodiphenylamine	86-30-6	0.000091	U		0.000094	0.0005	0.000091	mg/L	09/21/2004 14:19	111563	1	lgl	
Pentachlorophenol	87-86-5	0.000039	U		0.00004	0.0003	0.000039	mg/L	09/21/2004 17:17	111554	1	lgl	
Phenanthrene	85-01-8	0.000079	U		0.000081	0.0005	0.000079	mg/L	09/21/2004 14:19	111563	1	lgl	
Phenol	108-95-2	0.0000971	U		0.0001	0.0005	0.0000971	mg/L	09/21/2004 14:19	111563	1	lgl	
Pyrene	129-00-0	0.000563			0.000088	0.0005	0.000085	mg/L	09/21/2004 14:19	111563	1	lgl	

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-5-2SA04

Laboratory Sample ID: 281075-004

Date/Time Sampled .....: 09/14/2004 9:08

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 18:36	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 18:36	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 18:36	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 18:36	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004 18:36	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 18:36	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 18:36	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075 Date: 10/13/2004

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

Customer Sample ID: MW-5-2SA04 Laboratory Sample ID: 281075-004

Date/Time Sampled .....: 09/14/2004 9:08 Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water													10/29/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 17:45	111554	1	lgl	LBC
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/22/2004 21:47	111563	1	lgl	
2,4-Dinitrotoluene	121-14-2	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 17:45	111554	1	lgl	LBC
2,6-Dinitrotoluene	606-20-2	0.000026	U	UJ	0.000027	0.0001	0.000026	mg/L	09/21/2004 17:45	111554	1	lgl	LBC
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004 21:47	111563	1	lgl	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/22/2004 21:47	111563	1	lgl	
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/22/2004 21:47	111563	1	lgl	
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/22/2004 21:47	111563	1	lgl	
Acenaphthene	83-32-9	0.00156			0.000078	0.0005	0.000074	mg/L	09/22/2004 21:47	111563	1	lgl	
Acenaphthylene	208-96-8	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004 21:47	111563	1	lgl	
Anthracene	120-12-7	0.000563			0.00013	0.0005	0.000124	mg/L	09/22/2004 21:47	111563	1	lgl	
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/22/2004 21:47	111563	1	lgl	
Benzo(a)pyrene	50-32-8	0.000007	U	UJ	0.000007	0.0001	0.000007	mg/L	09/21/2004 17:45	111554	1	lgl	LBC
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 17:45	111554	1	lgl	LBC

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-5-2SA04

Laboratory Sample ID: 281075-004

Date/Time Sampled .....: 09/14/2004 9:08

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000608			0.00018	0.0005	0.000172	mg/L	09/22/2004 21:47	111563	1	lgl
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 21:47	111563	1	lgl
Dibenzofuran	132-64-9	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004 21:47	111563	1	lgl
Di-n-butyl Phthalate	84-74-2	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/22/2004 21:47	111563	1	lgl
Fluoranthene	206-44-0	0.000135	J		0.000098	0.0005	0.000093	mg/L	09/22/2004 21:47	111563	1	lgl
Fluorene	86-73-7	0.00016	J		0.000071	0.0005	0.000068	mg/L	09/22/2004 21:47	111563	1	lgl
Naphthalene	91-20-3	0.00131		J	0.00007	0.0005	0.000067	mg/L	09/22/2004 21:47	111563	1	lgl
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/22/2004 21:47	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 21:47	111563	1	lgl
Pentachlorophenol	87-86-5	0.000038	U	UJ	0.00004	0.0003	0.000038	mg/L	09/21/2004 17:45	111554	1	lgl
Phenanthrene	85-01-8	0.000077	U		0.000081	0.0005	0.000077	mg/L	09/22/2004 21:47	111563	1	lgl
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/22/2004 21:47	111563	1	lgl
Pyrene	129-00-0	0.000241	J		0.000088	0.0005	0.000084	mg/L	09/22/2004 21:47	111563	1	lgl

10/21/04

LBC

LBC

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-11B-2SA04

Laboratory Sample ID: 281075-005

Date/Time Sampled .....: 09/14/2004 10:13

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 19:03	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 19:03	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 19:03	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 19:03	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004 19:03	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 19:03	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 19:03	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075 Date: 10/13/2004

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

Customer Sample ID: MW-11B-2SA04 Laboratory Sample ID: 281075-005

Date/Time Sampled .....: 09/14/2004 10:13 Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 18:13	111554	1	lgl 10/29/04
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/22/2004 22:14	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 18:13	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 18:13	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004 22:14	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/22/2004 22:14	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.0748			0.00007	0.0005	0.00033	mg/L	09/23/2004 15:53	111563	5	lgl
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/22/2004 22:14	111563	1	lgl
Acenaphthene	83-32-9	0.151			0.000078	0.0005	0.00037	mg/L	09/23/2004 15:53	111563	5	lgl
Acenaphthylene	208-96-8	0.00193			0.00008	0.0005	0.000076	mg/L	09/22/2004 22:14	111563	1	lgl
Anthracene	120-12-7	0.00764			0.00013	0.0005	0.000124	mg/L	09/22/2004 22:14	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/22/2004 22:14	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 18:13	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 18:13	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-11B-2SA04

Laboratory Sample ID: 281075-005

Date/Time Sampled .....: 09/14/2004 10:13

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000649			0.00018	0.0005	0.000172	mg/L	09/22/2004 22:14	111563	1	lgl 10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 22:14	111563	1	lgl
Dibenzofuran	132-64-9	0.0804			0.00008	0.0005	0.00038	mg/L	09/23/2004 15:53	111563	5	lgl
Di-n-butyl Phthalate	84-74-2	0.000449	J	u	0.00015	0.0005	0.000143	mg/L	09/22/2004 22:14	111563	1	lgl
Fluoranthene	206-44-0	0.00536			0.000098	0.0005	0.000093	mg/L	09/22/2004 22:14	111563	1	lgl
Fluorene	86-73-7	0.0671			0.000071	0.0005	0.00034	mg/L	09/23/2004 15:53	111563	5	lgl
Naphthalene	91-20-3	0.184		J	0.00007	0.0005	0.00033	mg/L	09/23/2004 15:53	111563	5	lgl
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/22/2004 22:14	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 22:14	111563	1	lgl
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004 18:13	111554	1	lgl
Phenanthrene	85-01-8	0.0422		JH	0.000081	0.0005	0.00039	mg/L	09/23/2004 15:53	111563	5	lgl
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/22/2004 22:14	111563	1	lgl
Pyrene	129-00-0	0.00268			0.000088	0.0005	0.000084	mg/L	09/22/2004 22:14	111563	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-04-2SA04

Laboratory Sample ID: 281075-006

Date/Time Sampled .....: 09/14/2004 10:27

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 19:31	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 19:31	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 19:31	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 19:31	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004 19:31	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 19:31	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 19:31	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-04-2SA04

Laboratory Sample ID: 281075-006

Date/Time Sampled .....: 09/14/2004 10:27

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/29/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 18:41	111554	1	lgl LBL
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/22/2004 22:42	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 18:41	111554	1	lgl LBL
2,6-Dinitrotoluene	606-20-2	0.000026	U	UJ	0.000027	0.0001	0.000026	mg/L	09/21/2004 18:41	111554	1	lgl LBL
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004 22:42	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/22/2004 22:42	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/22/2004 22:42	111563	1	lgl
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/22/2004 22:42	111563	1	lgl
Acenaphthene	83-32-9	0.00722			0.000078	0.0005	0.000074	mg/L	09/22/2004 22:42	111563	1	lgl
Acenaphthylene	208-96-8	0.000166	J		0.00008	0.0005	0.000076	mg/L	09/22/2004 22:42	111563	1	lgl
Anthracene	120-12-7	0.00129			0.00013	0.0005	0.000124	mg/L	09/22/2004 22:42	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/22/2004 22:42	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U	UJ	0.000007	0.0001	0.000007	mg/L	09/21/2004 18:41	111554	1	lgl LBL
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 18:41	111554	1	lgl LBL

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075 Date: 10/13/2004

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

Customer Sample ID: MW-04-2SA04 Laboratory Sample ID: 281075-006

Date/Time Sampled .....: 09/14/2004 10:27 Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000846			0.00018	0.0005	0.000172	mg/L	09/22/2004 22:42	111563	1	lgl	10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 22:42	111563	1	lgl	
Dibenzofuran	132-64-9	0.0011			0.00008	0.0005	0.000076	mg/L	09/22/2004 22:42	111563	1	lgl	
Di-n-butyl Phthalate	84-74-2	0.000637		u	0.00015	0.0005	0.000143	mg/L	09/22/2004 22:42	111563	1	lgl	LBL
Fluoranthene	206-44-0	0.000355	J		0.000098	0.0005	0.000093	mg/L	09/22/2004 22:42	111563	1	lgl	
Fluorene	86-73-7	0.00339			0.000071	0.0005	0.000068	mg/L	09/22/2004 22:42	111563	1	lgl	
Naphthalene	91-20-3	0.000067	U	uJ	0.00007	0.0005	0.000067	mg/L	09/22/2004 22:42	111563	1	lgl	LBL
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/22/2004 22:42	111563	1	lgl	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 22:42	111563	1	lgl	
Pentachlorophenol	87-86-5	0.000038	U	uJ	0.00004	0.0003	0.000038	mg/L	09/21/2004 18:41	111554	1	lgl	LBL
Phenanthrene	85-01-8	0.000278	J	JH	0.000081	0.0005	0.000077	mg/L	09/22/2004 22:42	111563	1	lgl	LBL
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/22/2004 22:42	111563	1	lgl	
Pyrene	129-00-0	0.000398	J		0.000088	0.0005	0.000084	mg/L	09/22/2004 22:42	111563	1	lgl	

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-10B-2SA04

Laboratory Sample ID: 281075-007

Date/Time Sampled .....: 09/14/2004 11:23

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 19:58	111218	1	zfl
Benzene	71-43-2	0.0025	J		0.00143	0.005	0.00143	mg/L	09/18/2004 19:58	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 19:58	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 19:58	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004 19:58	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 19:58	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 19:58	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075 Date: 10/13/2004

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

Customer Sample ID: MW-10B-2SA04 Laboratory Sample ID: 281075-007

Date/Time Sampled .....: 09/14/2004 11:23 Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/29/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 19:08	111554	1	lgl UBL
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/22/2004 23:10	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 19:08	111554	1	lgl UBL
2,6-Dinitrotoluene	606-20-2	0.000026	U	UJ	0.000027	0.0001	0.000026	mg/L	09/21/2004 19:08	111554	1	lgl UBL
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004 23:10	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/22/2004 23:10	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.0127			0.00007	0.0005	0.000067	mg/L	09/22/2004 23:10	111563	1	lgl
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/22/2004 23:10	111563	1	lgl
Acenaphthene	83-32-9	0.0864			0.000078	0.0005	0.0003	mg/L	09/23/2004 16:21	111563	4	lgl
Acenaphthylene	208-96-8	0.00161			0.00008	0.0005	0.000076	mg/L	09/22/2004 23:10	111563	1	lgl
Anthracene	120-12-7	0.00549			0.00013	0.0005	0.000124	mg/L	09/22/2004 23:10	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/22/2004 23:10	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U	UJ	0.000007	0.0001	0.000007	mg/L	09/21/2004 19:08	111554	1	lgl UBL
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 19:08	111554	1	lgl UBL

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-10B-2SA04

Laboratory Sample ID: 281075-007

Date/Time Sampled .....: 09/14/2004 11:23

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.0081			0.00018	0.0005	0.000172	mg/L	09/22/2004 23:10	111563	1	lgl 10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 23:10	111563	1	lgl
Dibenzofuran	132-64-9	0.0404			0.00008	0.0005	0.000076	mg/L	09/22/2004 23:10	111563	1	lgl
Di-n-butyl Phthalate	84-74-2	0.000419	J	u	0.00015	0.0005	0.000143	mg/L	09/22/2004 23:10	111563	1	lgl
Fluoranthene	206-44-0	0.00294			0.000098	0.0005	0.000093	mg/L	09/22/2004 23:10	111563	1	lgl
Fluorene	86-73-7	0.044			0.000071	0.0005	0.00027	mg/L	09/23/2004 16:21	111563	4	lgl
Naphthalene	91-20-3	0.107		J	0.00007	0.0005	0.00027	mg/L	09/23/2004 16:21	111563	4	lgl
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/22/2004 23:10	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 23:10	111563	1	lgl
Pentachlorophenol	87-86-5	0.000038	U	UJ	0.00004	0.0003	0.000038	mg/L	09/21/2004 19:08	111554	1	lgl
Phenanthrene	85-01-8	0.0256		JH	0.000081	0.0005	0.000077	mg/L	09/22/2004 23:10	111563	1	lgl
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/22/2004 23:10	111563	1	lgl
Pyrene	129-00-0	0.00137			0.000088	0.0005	0.000084	mg/L	09/22/2004 23:10	111563	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: P-12-2SA04

Laboratory Sample ID: 281075-008

Date/Time Sampled .....: 09/14/2004 11:35

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 20:26	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 20:26	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 20:26	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 20:26	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004 20:26	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 20:26	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 20:26	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: P-12-2SA04

Laboratory Sample ID: 281075-008

Date/Time Sampled .....: 09/14/2004 11:35

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/28/04
1,2-Diphenylhydrazine	122-66-7	0.000011	U	UJ	0.000011	0.0001	0.000011	mg/L	09/21/2004 19:36	111554	1	lgl LBC
2,4-Dimethylphenol	105-67-9	0.000117	U		0.000122	0.0005	0.000117	mg/L	09/22/2004 23:37	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 19:36	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 19:36	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000077	U		0.00008	0.0005	0.000077	mg/L	09/22/2004 23:37	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	09/22/2004 23:37	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/22/2004 23:37	111563	1	lgl
4-Nitrophenol	100-02-7	0.000288	U		0.000299	0.0015	0.000288	mg/L	09/22/2004 23:37	111563	1	lgl
Acenaphthene	83-32-9	0.000075	U		0.000078	0.0005	0.000075	mg/L	09/22/2004 23:37	111563	1	lgl
Acenaphthylene	208-96-8	0.000077	U		0.00008	0.0005	0.000077	mg/L	09/22/2004 23:37	111563	1	lgl
Anthracene	120-12-7	0.000125	U		0.00013	0.0005	0.000125	mg/L	09/22/2004 23:37	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000269	U		0.00028	0.0005	0.000269	mg/L	09/22/2004 23:37	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 19:36	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 19:36	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: P-12-2SA04

Laboratory Sample ID: 281075-008

Date/Time Sampled .....: 09/14/2004 11:35

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000861			0.00018	0.0005	0.000173	mg/L	09/22/2004 23:37	111563	1	lgl	10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 23:37	111563	1	lgl	
Dibenzofuran	132-64-9	0.000077	U		0.00008	0.0005	0.000077	mg/L	09/22/2004 23:37	111563	1	lgl	
Di-n-butyl Phthalate	84-74-2	0.000279	J	u	0.00015	0.0005	0.000144	mg/L	09/22/2004 23:37	111563	1	lgl	LBC
Fluoranthene	206-44-0	0.000094	U		0.000098	0.0005	0.000094	mg/L	09/22/2004 23:37	111563	1	lgl	
Fluorene	86-73-7	0.000068	U		0.000071	0.0005	0.000068	mg/L	09/22/2004 23:37	111563	1	lgl	
Naphthalene	91-20-3	0.000067	U	uJ	0.00007	0.0005	0.000067	mg/L	09/22/2004 23:37	111563	1	lgl	LBC
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	09/22/2004 23:37	111563	1	lgl	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 23:37	111563	1	lgl	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004 19:36	111554	1	lgl	
Phenanthrene	85-01-8	0.000078	U		0.000081	0.0005	0.000078	mg/L	09/22/2004 23:37	111563	1	lgl	
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	mg/L	09/22/2004 23:37	111563	1	lgl	
Pyrene	129-00-0	0.00457			0.000088	0.0005	0.000085	mg/L	09/22/2004 23:37	111563	1	lgl	

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: FB-091404

Date/Time Sampled .....: 09/14/2004 12:00

Date/Time Received .....: 09/14/2004 16:33

Laboratory Sample ID: 281075-009

Sample Matrix .....: Field Blank

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 15:22	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 15:22	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 15:22	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 15:22	111218	1	zfl
Methylene Chloride	75-09-2	0.00281	J	U	0.0013	0.005	0.0013	mg/L	09/18/2004 15:22	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 15:22	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 15:22	111218	1	zfl

10/28/04 BL

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075 Date: 10/13/2004

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

Customer Sample ID: FB-091404 Laboratory Sample ID: 281075-009

Date/Time Sampled .....: 09/14/2004 12:00 Sample Matrix .....: Field Blank

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water													10/29/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 20:04	111554	1	lgl	LBL
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/23/2004 0:05	111563	1	lgl	
2,4-Dinitrotoluene	121-14-2	0.000009	U	LBL ~~UJ~~	0.000009	0.0001	0.000009	mg/L	09/21/2004 20:04	111554	1	lgl	LBL
2,6-Dinitrotoluene	606-20-2	0.000026	U	LBL ~~UJ~~	0.000027	0.0001	0.000026	mg/L	09/21/2004 20:04	111554	1	lgl	LBL
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 0:05	111563	1	lgl	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/23/2004 0:05	111563	1	lgl	
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/23/2004 0:05	111563	1	lgl	
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/23/2004 0:05	111563	1	lgl	
Acenaphthene	83-32-9	0.000074	U		0.000078	0.0005	0.000074	mg/L	09/23/2004 0:05	111563	1	lgl	
Acenaphthylene	208-96-8	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 0:05	111563	1	lgl	
Anthracene	120-12-7	0.000124	U		0.00013	0.0005	0.000124	mg/L	09/23/2004 0:05	111563	1	lgl	
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/23/2004 0:05	111563	1	lgl	
Benzo(a)pyrene	50-32-8	0.000007	U	LBL ~~UJ~~	0.000007	0.0001	0.000007	mg/L	09/21/2004 20:04	111554	1	lgl	LBL
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	LBL ~~UJ~~	0.000009	0.0001	0.000009	mg/L	09/21/2004 20:04	111554	1	lgl	LBL

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: FB-091404

Date/Time Sampled .....: 09/14/2004 12:00

Date/Time Received .....: 09/14/2004 16:33

Laboratory Sample ID: 281075-009

Sample Matrix .....: Field Blank

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U		0.00018	0.0005	0.000172	mg/L	09/23/2004 0:05	111563	1	lgl	10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 0:05	111563	1	lgl	
Dibenzofuran	132-64-9	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 0:05	111563	1	lgl	
Di-n-butyl Phthalate	84-74-2	0.000356	J	u	0.00015	0.0005	0.000143	mg/L	09/23/2004 0:05	111563	1	lgl	LBL
Fluoranthene	206-44-0	0.000093	U		0.000098	0.0005	0.000093	mg/L	09/23/2004 0:05	111563	1	lgl	
Fluorene	86-73-7	0.000068	U		0.000071	0.0005	0.000068	mg/L	09/23/2004 0:05	111563	1	lgl	
Naphthalene	91-20-3	0.000067	U	uJ	0.00007	0.0005	0.000067	mg/L	09/23/2004 0:05	111563	1	lgl	LBL
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/23/2004 0:05	111563	1	lgl	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 0:05	111563	1	lgl	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004 20:04	111554	1	lgl	
Phenanthrene	85-01-8	0.000077	U		0.000081	0.0005	0.000077	mg/L	09/23/2004 0:05	111563	1	lgl	
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/23/2004 0:05	111563	1	lgl	
Pyrene	129-00-0	0.000084	U		0.000088	0.0005	0.000084	mg/L	09/23/2004 0:05	111563	1	lgl	

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-01A-2SA04

Laboratory Sample ID: 281075-010

Date/Time Sampled .....: 09/14/2004 13:28

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 15:50	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 15:50	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 15:50	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 15:50	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004 15:50	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 15:50	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 15:50	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-01A-2SA04

Laboratory Sample ID: 281075-010

Date/Time Sampled .....: 09/14/2004 13:28

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/29/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	W	0.000011	0.0001	0.00001	mg/L	09/21/2004 20:32	111554	1	lgl
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/21/2004 12:00	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 20:32	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 20:32	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/21/2004 12:00	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/21/2004 12:00	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.00834			0.00007	0.0005	0.000067	mg/L	09/21/2004 12:00	111563	1	lgl
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/21/2004 12:00	111563	1	lgl
Acenaphthene	83-32-9	0.231			0.000078	0.0005	0.00074	mg/L	09/23/2004 2:24	111563	10	lgl
Acenaphthylene	208-96-8	0.00196			0.00008	0.0005	0.000076	mg/L	09/21/2004 12:00	111563	1	lgl
Anthracene	120-12-7	0.0116			0.00013	0.0005	0.000124	mg/L	09/21/2004 12:00	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/21/2004 12:00	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 20:32	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 20:32	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-01A-2SA04

Laboratory Sample ID: 281075-010

Date/Time Sampled .....: 09/14/2004 13:28

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000672			0.00018	0.0005	0.000172	mg/L	09/21/2004 12:00	111563	1	lgl	10/28/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004 12:00	111563	1	lgl	
Dibenzofuran	132-64-9	0.114			0.00008	0.0005	0.00076	mg/L	09/23/2004 2:24	111563	10	lgl	
Di-n-butyl Phthalate	84-74-2	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/21/2004 12:00	111563	1	lgl	
Fluoranthene	206-44-0	0.0154			0.000098	0.0005	0.000093	mg/L	09/21/2004 12:00	111563	1	lgl	
Fluorene	86-73-7	0.136			0.000071	0.0005	0.00068	mg/L	09/23/2004 2:24	111563	10	lgl	
Naphthalene	91-20-3	0.000884		J	0.00007	0.0005	0.000067	mg/L	09/21/2004 12:00	111563	1	lgl	LBG
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/21/2004 12:00	111563	1	lgl	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004 12:00	111563	1	lgl	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004 20:32	111554	1	lgl	
Phenanthrene	85-01-8	0.00152		JH	0.000081	0.0005	0.000077	mg/L	09/21/2004 12:00	111563	1	lgl	LBG
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/21/2004 12:00	111563	1	lgl	
Pyrene	129-00-0	0.00676			0.000088	0.0005	0.000084	mg/L	09/21/2004 12:00	111563	1	lgl	

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-01A-2SA04 MS

Laboratory Sample ID: 281075-011

Date/Time Sampled .....: 09/14/2004 13:50

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.0429			0.00136	0.005	0.00136	mg/L	09/18/2004 16:17	111218	1	zfl
Benzene	71-43-2	0.0425			0.00143	0.005	0.00143	mg/L	09/18/2004 16:17	111218	1	zfl
Chlorobenzene	108-90-7	0.042			0.00155	0.005	0.00155	mg/L	09/18/2004 16:17	111218	1	zfl
Ethylbenzene	100-41-4	0.0436			0.00137	0.005	0.00137	mg/L	09/18/2004 16:17	111218	1	zfl
Methylene Chloride	75-09-2	0.0474			0.0013	0.005	0.0013	mg/L	09/18/2004 16:17	111218	1	zfl
Toluene	108-88-3	0.0428			0.00136	0.005	0.00136	mg/L	09/18/2004 16:17	111218	1	zfl
Xylenes (total)	1330-20-7	0.129			0.00441	0.015	0.00441	mg/L	09/18/2004 16:17	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075 Date: 10/13/2004

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

Customer Sample ID: MW-01A-2SA04 MS Laboratory Sample ID: 281075-011

Date/Time Sampled .....: 09/14/2004 13:50 Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00106			0.000011	0.0001	0.000011	mg/L	09/21/2004 13:05	111554	1	lgl
2,4-Dimethylphenol	105-67-9	0.00733			0.000122	0.0005	0.000118	mg/L	09/21/2004 12:27	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.00107			0.000009	0.0001	0.000009	mg/L	09/21/2004 13:05	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000947			0.000027	0.0001	0.000026	mg/L	09/21/2004 13:05	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.00906			0.00008	0.0005	0.000078	mg/L	09/21/2004 12:27	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.0134			0.00031	0.0015	0.000301	mg/L	09/21/2004 12:27	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.0114			0.00007	0.0005	0.000068	mg/L	09/21/2004 12:27	111563	1	lgl
4-Nitrophenol	100-02-7	0.00861			0.000299	0.0015	0.00029	mg/L	09/21/2004 12:27	111563	1	lgl
Acenaphthene	83-32-9	0.245			0.000078	0.0005	0.00076	mg/L	09/23/2004 2:52	111563	10	lgl
Acenaphthylene	208-96-8	0.0108			0.00008	0.0005	0.000078	mg/L	09/21/2004 12:27	111563	1	lgl
Anthracene	120-12-7	0.0217			0.00013	0.0005	0.000126	mg/L	09/21/2004 12:27	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.00895			0.00028	0.0005	0.000272	mg/L	09/21/2004 12:27	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000952			0.000007	0.0001	0.000007	mg/L	09/21/2004 13:05	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000982			0.000009	0.0001	0.000009	mg/L	09/21/2004 13:05	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-01A-2SA04 MS

Laboratory Sample ID: 281075-011

Date/Time Sampled .....: 09/14/2004 13:50

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.00801			0.00018	0.0005	0.000175	mg/L	09/21/2004 12:27	111563	1	lgl
Chrysene	218-01-9	0.00797			0.000094	0.0005	0.000091	mg/L	09/21/2004 12:27	111563	1	lgl
Dibenzofuran	132-64-9	0.124			0.00008	0.0005	0.00078	mg/L	09/23/2004 2:52	111563	10	lgl
Di-n-butyl Phthalate	84-74-2	0.01			0.00015	0.0005	0.000146	mg/L	09/21/2004 12:27	111563	1	lgl
Fluoranthene	206-44-0	0.0243			0.000098	0.0005	0.000095	mg/L	09/21/2004 12:27	111563	1	lgl
Fluorene	86-73-7	0.14			0.000071	0.0005	0.00069	mg/L	09/23/2004 2:52	111563	10	lgl
Naphthalene	91-20-3	0.0087			0.00007	0.0005	0.000068	mg/L	09/21/2004 12:27	111563	1	lgl
Nitrobenzene	98-95-3	0.0095			0.00015	0.0005	0.000146	mg/L	09/21/2004 12:27	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.0127			0.000094	0.0005	0.000091	mg/L	09/21/2004 12:27	111563	1	lgl
Pentachlorophenol	87-86-5	0.00167			0.00004	0.0003	0.000039	mg/L	09/21/2004 13:05	111554	1	lgl
Phenanthrene	85-01-8	0.00949			0.000081	0.0005	0.000079	mg/L	09/21/2004 12:27	111563	1	lgl
Phenol	108-95-2	0.00284			0.0001	0.0005	0.0000971	mg/L	09/21/2004 12:27	111563	1	lgl
Pyrene	129-00-0	0.0156			0.000088	0.0005	0.000085	mg/L	09/21/2004 12:27	111563	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-01-2SA04 MSD

Date/Time Sampled .....: 09/14/2004 14:10

Date/Time Received .....: 09/14/2004 16:33

Laboratory Sample ID: 281075-012

Sample Matrix .....: Water

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.043			0.00136	0.005	0.00136	mg/L	09/18/2004 16:45	111218	1	zfl
Benzene	71-43-2	0.0418			0.00143	0.005	0.00143	mg/L	09/18/2004 16:45	111218	1	zfl
Chlorobenzene	108-90-7	0.0418			0.00155	0.005	0.00155	mg/L	09/18/2004 16:45	111218	1	zfl
Ethylbenzene	100-41-4	0.0435			0.00137	0.005	0.00137	mg/L	09/18/2004 16:45	111218	1	zfl
Methylene Chloride	75-09-2	0.0423			0.0013	0.005	0.0013	mg/L	09/18/2004 16:45	111218	1	zfl
Toluene	108-88-3	0.0424			0.00136	0.005	0.00136	mg/L	09/18/2004 16:45	111218	1	zfl
Xylenes (total)	1330-20-7	0.128			0.00441	0.015	0.00441	mg/L	09/18/2004 16:45	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-01-2SA04 MSD

Laboratory Sample ID: 281075-012

Date/Time Sampled .....: 09/14/2004 14:10

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.000653			0.000011	0.0001	0.000011	mg/L	09/21/2004 13:33	111554	1	lgl
2,4-Dimethylphenol	105-67-9	0.00739			0.000122	0.0005	0.000117	mg/L	09/21/2004 12:55	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.00116			0.000009	0.0001	0.000009	mg/L	09/21/2004 13:33	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000972			0.000027	0.0001	0.000026	mg/L	09/21/2004 13:33	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.00894			0.00008	0.0005	0.000077	mg/L	09/21/2004 12:55	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.0134			0.00031	0.0015	0.000298	mg/L	09/21/2004 12:55	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.0118			0.00007	0.0005	0.00067	mg/L	09/23/2004 3:19	111563	10	lgl
4-Nitrophenol	100-02-7	0.00894			0.000299	0.0015	0.000288	mg/L	09/21/2004 12:55	111563	1	lgl
Acenaphthene	83-32-9	0.236			0.000078	0.0005	0.00075	mg/L	09/23/2004 3:19	111563	10	lgl
Acenaphthylene	208-96-8	0.0107			0.00008	0.0005	0.000077	mg/L	09/21/2004 12:55	111563	1	lgl
Anthracene	120-12-7	0.0226			0.00013	0.0005	0.000125	mg/L	09/21/2004 12:55	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.00868			0.00028	0.0005	0.000269	mg/L	09/21/2004 12:55	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000989			0.000007	0.0001	0.000007	mg/L	09/21/2004 13:33	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000786			0.000009	0.0001	0.000009	mg/L	09/21/2004 13:33	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-01-2SA04 MSD

Laboratory Sample ID: 281075-012

Date/Time Sampled .....: 09/14/2004 14:10

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.00835			0.00018	0.0005	0.000173	mg/L	09/21/2004 12:55	111563	1	lgl
Chrysene	218-01-9	0.00783			0.000094	0.0005	0.00009	mg/L	09/21/2004 12:55	111563	1	lgl
Dibenzofuran	132-64-9	0.122			0.00008	0.0005	0.00077	mg/L	09/23/2004 3:19	111563	10	lgl
Di-n-butyl Phthalate	84-74-2	0.0104			0.00015	0.0005	0.000144	mg/L	09/21/2004 12:55	111563	1	lgl
Fluoranthene	206-44-0	0.0251			0.000098	0.0005	0.000094	mg/L	09/21/2004 12:55	111563	1	lgl
Fluorene	86-73-7	0.143			0.000071	0.0005	0.00068	mg/L	09/23/2004 3:19	111563	10	lgl
Naphthalene	91-20-3	0.0129			0.00007	0.0005	0.000067	mg/L	09/21/2004 12:55	111563	1	lgl
Nitrobenzene	98-95-3	0.00961			0.00015	0.0005	0.000144	mg/L	09/21/2004 12:55	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.0123			0.000094	0.0005	0.00009	mg/L	09/21/2004 12:55	111563	1	lgl
Pentachlorophenol	87-86-5	0.00148			0.00004	0.0003	0.000038	mg/L	09/21/2004 13:33	111554	1	lgl
Phenanthrene	85-01-8	0.0171			0.000081	0.0005	0.000078	mg/L	09/21/2004 12:55	111563	1	lgl
Phenol	108-95-2	0.00265			0.0001	0.0005	0.0000962	mg/L	09/21/2004 12:55	111563	1	lgl
Pyrene	129-00-0	0.0172			0.000088	0.0005	0.000085	mg/L	09/21/2004 12:55	111563	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-11A-2SA04

Laboratory Sample ID: 281075-013

Date/Time Sampled .....: 09/14/2004 15:00

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/20/2004 19:38	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/20/2004 19:38	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/20/2004 19:38	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/20/2004 19:38	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/20/2004 19:38	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/20/2004 19:38	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/20/2004 19:38	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-11A-2SA04

Laboratory Sample ID: 281075-013

Date/Time Sampled .....: 09/14/2004 15:00

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 21:00	111554	1	lg1 10/29/04
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/23/2004 0:33	111563	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 21:00	111554	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 21:00	111554	1	lg1
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 0:33	111563	1	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/23/2004 0:33	111563	1	lg1
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/23/2004 0:33	111563	1	lg1
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/23/2004 0:33	111563	1	lg1
Acenaphthene	83-32-9	0.0987			0.000078	0.0005	0.0003	mg/L	09/23/2004 16:49	111563	4	lg1
Acenaphthylene	208-96-8	0.000797			0.00008	0.0005	0.000076	mg/L	09/23/2004 0:33	111563	1	lg1
Anthracene	120-12-7	0.00315			0.00013	0.0005	0.000124	mg/L	09/23/2004 0:33	111563	1	lg1
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/23/2004 0:33	111563	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 21:00	111554	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 21:00	111554	1	lg1

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-11A-2SA04

Laboratory Sample ID: 281075-013

Date/Time Sampled .....: 09/14/2004 15:00

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U		0.00018	0.0005	0.000172	mg/L	09/23/2004 0:33	111563	1	lgl 10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 0:33	111563	1	lgl
Dibenzofuran	132-64-9	0.00919			0.00008	0.0005	0.000076	mg/L	09/23/2004 0:33	111563	1	lgl
Di-n-butyl Phthalate	84-74-2	0.000279	J	u	0.00015	0.0005	0.000143	mg/L	09/23/2004 0:33	111563	1	lgl UBL
Fluoranthene	206-44-0	0.0099			0.000098	0.0005	0.000093	mg/L	09/23/2004 0:33	111563	1	lgl
Fluorene	86-73-7	0.0455			0.000071	0.0005	0.00027	mg/L	09/23/2004 16:49	111563	4	lgl
Naphthalene	91-20-3	0.000236	J	J	0.00007	0.0005	0.000067	mg/L	09/23/2004 0:33	111563	1	lgl UBL
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/23/2004 0:33	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 0:33	111563	1	lgl
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004 21:00	111554	1	lgl
Phenanthrene	85-01-8	0.000594		JH	0.000081	0.0005	0.000077	mg/L	09/23/2004 0:33	111563	1	lgl UBL
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/23/2004 0:33	111563	1	lgl
Pyrene	129-00-0	0.00483			0.000088	0.0005	0.000084	mg/L	09/23/2004 0:33	111563	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-11AD-2SA04

Laboratory Sample ID: 281075-014

Date/Time Sampled .....: 09/14/2004 15:25

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/20/2004 20:06	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/20/2004 20:06	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/20/2004 20:06	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/20/2004 20:06	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/20/2004 20:06	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/20/2004 20:06	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/20/2004 20:06	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-11AD-2SA04

Laboratory Sample ID: 281075-014

Date/Time Sampled .....: 09/14/2004 15:25

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												10/29/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 21:28	111554	1	lgl
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/23/2004 14:57	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 21:28	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U	UJ	0.000027	0.0001	0.000026	mg/L	09/21/2004 21:28	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 14:57	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/23/2004 14:57	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.000877			0.00007	0.0005	0.000067	mg/L	09/23/2004 14:57	111563	1	lgl
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/23/2004 14:57	111563	1	lgl
Acenaphthene	83-32-9	0.0881			0.000078	0.0005	0.0003	mg/L	09/23/2004 17:16	111563	4	lgl
Acenaphthylene	208-96-8	0.000657			0.00008	0.0005	0.000076	mg/L	09/23/2004 14:57	111563	1	lgl
Anthracene	120-12-7	0.00354			0.00013	0.0005	0.000124	mg/L	09/23/2004 14:57	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/23/2004 14:57	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000007	U	UJ	0.000007	0.0001	0.000007	mg/L	09/21/2004 21:28	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 21:28	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075 Date: 10/13/2004

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

Customer Sample ID: MW-11AD-2SA04 Laboratory Sample ID: 281075-014

Date/Time Sampled .....: 09/14/2004 15:25 Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000714			0.00018	0.0005	0.000172	mg/L	09/23/2004 14:57	111563	1	lgl 10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 14:57	111563	1	lgl
Dibenzofuran	132-64-9	0.00872			0.00008	0.0005	0.000076	mg/L	09/23/2004 14:57	111563	1	lgl
Di-n-butyl Phthalate	84-74-2	0.000386	J	u	0.00015	0.0005	0.000143	mg/L	09/23/2004 14:57	111563	1	lgl UBC
Fluoranthene	206-44-0	0.0121			0.000098	0.0005	0.000093	mg/L	09/23/2004 14:57	111563	1	lgl
Fluorene	86-73-7	0.0474			0.000071	0.0005	0.00027	mg/L	09/23/2004 17:16	111563	4	lgl
Naphthalene	91-20-3	0.00255		J	0.00007	0.0005	0.000067	mg/L	09/23/2004 14:57	111563	1	lgl UBC
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/23/2004 14:57	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 14:57	111563	1	lgl
Pentachlorophenol	87-86-5	0.000038	U	uJ	0.00004	0.0003	0.000038	mg/L	09/21/2004 21:28	111554	1	lgl UBC
Phenanthrene	85-01-8	0.000895		JH	0.000081	0.0005	0.000077	mg/L	09/23/2004 14:57	111563	1	lgl UBC
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/23/2004 14:57	111563	1	lgl
Pyrene	129-00-0	0.00552			0.000088	0.0005	0.000084	mg/L	09/23/2004 14:57	111563	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: TB01-2SA04

Date/Time Sampled .....: 09/14/2004 0:00

Date/Time Received .....: 09/14/2004 16:33

Laboratory Sample ID: 281075-015

Sample Matrix .....: Trip Blank

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/18/2004 14:55	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004 14:55	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004 14:55	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004 14:55	111218	1	zfl
Methylene Chloride	75-09-2	0.00302	J	u	0.0013	0.005	0.0013	mg/L	09/18/2004 14:55	111218	1	zfl 10/29/04
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004 14:55	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004 14:55	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-09-2SA04

Laboratory Sample ID: 281075-016

Date/Time Sampled .....: 09/14/2004 13:37

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis 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	09/20/2004 20:33	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/20/2004 20:33	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/20/2004 20:33	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/20/2004 20:33	111218	1	zfl
Methylene Chloride	75-09-2	0.00137	J	u	0.0013	0.005	0.0013	mg/L	09/20/2004 20:33	111218	1	zfl 10/29/04
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/20/2004 20:33	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/20/2004 20:33	111218	1	zfl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075 Date: 10/13/2004

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

Customer Sample ID: MW-09-2SA04 Laboratory Sample ID: 281075-016

Date/Time Sampled .....: 09/14/2004 13:37 Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water												
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UJ	0.000011	0.0001	0.00001	mg/L	09/22/2004 15:08	111554	1	lgl 10/29/04
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/23/2004 1:28	111563	1	lgl
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/22/2004 15:08	111554	1	lgl
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/22/2004 15:08	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 1:28	111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/23/2004 1:28	111563	1	lgl
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/23/2004 1:28	111563	1	lgl
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/23/2004 1:28	111563	1	lgl
Acenaphthene	83-32-9	0.000074	U		0.000078	0.0005	0.000074	mg/L	09/23/2004 1:28	111563	1	lgl
Acenaphthylene	208-96-8	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 1:28	111563	1	lgl
Anthracene	120-12-7	0.000483			0.00013	0.0005	0.000124	mg/L	09/23/2004 1:28	111563	1	lgl
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/23/2004 1:28	111563	1	lgl
Benzo(a)pyrene	50-32-8	0.000068	J		0.000007	0.0001	0.000007	mg/L	09/22/2004 15:08	111554	1	lgl
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/22/2004 15:08	111554	1	lgl

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SEVERN TRENT STL

TRRP Laboratory Test Results

Job Number: 281075

Date: 10/13/2004

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

Customer Sample ID: MW-09-2SA04

Laboratory Sample ID: 281075-016

Date/Time Sampled .....: 09/14/2004 13:37

Sample Matrix .....: Water

Date/Time Received .....: 09/14/2004 16:33

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U		0.00018	0.0005	0.000172	mg/L	09/23/2004 1:28	111563	1	lgl 10/29/04
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 1:28	111563	1	lgl
Dibenzofuran	132-64-9	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 1:28	111563	1	lgl
Di-n-butyl Phthalate	84-74-2	0.000364	J	u	0.00015	0.0005	0.000143	mg/L	09/23/2004 1:28	111563	1	lgl UBL
Fluoranthene	206-44-0	0.000093	U		0.000098	0.0005	0.000093	mg/L	09/23/2004 1:28	111563	1	lgl
Fluorene	86-73-7	0.000068	U		0.000071	0.0005	0.000068	mg/L	09/23/2004 1:28	111563	1	lgl
Naphthalene	91-20-3	0.000067	U	UJ	0.00007	0.0005	0.000067	mg/L	09/23/2004 1:28	111563	1	lgl UBL
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/23/2004 1:28	111563	1	lgl
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 1:28	111563	1	lgl
Pentachlorophenol	87-86-5	0.000376			0.00004	0.0003	0.000038	mg/L	09/22/2004 15:08	111554	1	lgl
Phenanthrene	85-01-8	0.000077	U		0.000081	0.0005	0.000077	mg/L	09/23/2004 1:28	111563	1	lgl
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/23/2004 1:28	111563	1	lgl
Pyrene	129-00-0	0.000084	U		0.000088	0.0005	0.000084	mg/L	09/23/2004 1:28	111563	1	lgl

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281075 | Report Date.: 10/13/2004

CUSTOMER: ERM Southwest, Inc.- Houston | PROJECT: HWPW | ATTN: Chris Young

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: SW-846 8270C | Units.....: ug/L | Analyst...: lg1
Method Description.: Semivolatile Organics - SIM Analysis | Batch(s)...: 111554

LCS	Laboratory Control Sample	SVS082504C	110850		09/21/2004	1142

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzo(a)pyrene, Water	0.51670		0.500000		103.3		30-130	
bis(2-chloroethoxy)methane, Water	0.40774		0.500000		81.5		30-130	
2,4-Dinitrotoluene, Water	0.43056		0.500000		86.1		60-140	
2,6-Dinitrotoluene, Water	0.43914		0.500000		87.8		60-140	
Pentachlorophenol, Water	0.42691		0.500000		85.4		30-130	
1,2-Diphenylhydrazine, Water	0.44586		0.500000		89.2		30-130	

MB	Method Blank	SVS082504B	110850		09/21/2004	1114

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzo(a)pyrene, Water	0							
bis(2-chloroethoxy)methane, Water	0							
2,4-Dinitrotoluene, Water	0							
2,6-Dinitrotoluene, Water	0							
Pentachlorophenol, Water	0							
1,2-Diphenylhydrazine, Water	0							

MS	Matrix Spike	SVS082504C	281075-11		09/21/2004	1305

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzo(a)pyrene, Water	0.49004		0.500000	0	98		30-130	
bis(2-chloroethoxy)methane, Water	0.50587		0.500000	0	101		30-130	
2,4-Dinitrotoluene, Water	0.55329		0.500000	0	111		24-96	A
2,6-Dinitrotoluene, Water	0.48768		0.500000	0	98		30-130	
Pentachlorophenol, Water	0.85818		0.500000	0	172		5-103	A
1,2-Diphenylhydrazine, Water	0.54337		0.500000	0	109		60-140	

MSD	Matrix Spike Duplicate	SVS082504C	281075-12		09/21/2004	1333

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzo(a)pyrene, Water	0.51449	0.49004	0.500000	0	103		30.0-130.0	
					4.9		40.0	
bis(2-chloroethoxy)methane, Water	0.40870	0.50587	0.500000	0	82		30.0-130.0	
					21.2		30.0	
2,4-Dinitrotoluene, Water	0.60088	0.55329	0.500000	0	120		24.0-96.0	A
					8.2		30.0	
2,6-Dinitrotoluene, Water	0.50541	0.48768	0.500000	0	101		30.0-130.0	
					3.6		30.0	
Pentachlorophenol, Water	0.76910	0.85818	0.500000	0	154		5.0-103.0	A
					10.9		40.0	
1,2-Diphenylhydrazine, Water	0.33961	0.54337	0.500000	0	68		60.0-140.0	
					46.2		40.0	r

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281075

Report Date.: 10/13/2004

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: HWPW ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: SW-846 8270C
Method Description.: Semivolatile Organics, Low Level
Units.....: ug/L
Batch(s)...: 111563
Analyst...: lg1

LCS	Laboratory Control Sample	SVS091004A	110849		09/21/2004	1132

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	4.00456		5.000000		80.1		32-165	
Acenaphthylene, Water	4.05422		5.000000		81.1		10-150	
Anthracene, Water	4.85966		5.000000		97.2		23-178	
Benzo(a)anthracene, Water	4.19610		5.000000		83.9		25-180	
bis(2-ethylhexyl)phthalate, Water	4.41038		5.000000		88.2		25-173	
2-Chloronaphthalene, Water	3.89372		5.000000		77.9		23-143	
Chrysene, Water	3.93110		5.000000		78.6		23-180	
Dibenzofuran, Water	4.06299		5.000000		81.3		35-153	
Di-n-butyl Phthalate, Water	5.14752		5.000000		103.0		28-185	
Fluoranthene, Water	4.43650		5.000000		88.7		28-180	
Fluorene, Water	4.34785		5.000000		87.0		30-189	
2-Methylnaphthalene, Water	3.60317		5.000000		72.1		26-168	
Naphthalene, Water	3.35485		5.000000		67.1		36-139	
Nitrobenzene, Water	3.47882		5.000000		69.6		17-163	
n-Nitrosodiphenylamine, Water	5.32389		5.000000		106.5		58-174	
Phenanthrene, Water	4.23165		5.000000		84.6		26-166	
Pyrene, Water	4.31889		5.000000		86.4		28-173	
2,4-Dimethylphenol, Water	2.68719		5.000000		53.7		23-157	
2-Methyl-4,6-dinitrophenol, Water	5.77315		5.000000		115.5		10-164	
4-Nitrophenol, Water	1.71733		5.000000		34.3		10-92	
Phenol, Water	1.57342		5.000000		31.5		20-83	

MB	Method Blank	SVS082504B	110849		09/21/2004	1104

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	0							
Acenaphthylene, Water	0							
Anthracene, Water	0							
Benzo(a)anthracene, Water	0							
bis(2-ethylhexyl)phthalate, Water	0							
2-Chloronaphthalene, Water	0							
Chrysene, Water	0							
Dibenzofuran, Water	0							
Di-n-butyl Phthalate, Water	0.22612							
Fluoranthene, Water	0							
Fluorene, Water	0							
2-Methylnaphthalene, Water	0							
Naphthalene, Water	0							
Nitrobenzene, Water	0							
n-Nitrosodiphenylamine, Water	0							
Phenanthrene, Water	0							
Pyrene, Water	0							
2,4-Dimethylphenol, Water	0							
2-Methyl-4,6-dinitrophenol, Water	0							
4-Nitrophenol, Water	0							
Phenol, Water	0							

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281075

Report Date.: 10/13/2004

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: HWPW ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MS	Matrix Spike	SVS091004A	281075-11		09/21/2004	1227

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	88.3669		5.000000	92.5113	-83		46-118	A
Acenaphthylene, Water	5.57430		5.000000	1.02763	91		30-130	
Anthracene, Water	11.1836		5.000000	6.11715	101		30-130	
Benzo(a)anthracene, Water	4.60869		5.000000	0	92		60-140	
bis(2-ethylhexyl)phthalate, Water	4.12321		5.000000	0.35260	75		60-140	
2-Chloronaphthalene, Water	4.66630		5.000000	0	93		30-130	
Chrysene, Water	4.10248		5.000000	0	82		30-130	
Dibenzofuran, Water	50.9380		5.000000	49.6673	25		30-130	A
Di-n-butyl Phthalate, Water	5.17669		5.000000	0	104		30-130	
Fluoranthene, Water	12.4913		5.000000	8.08535	88		30-130	
Fluorene, Water	61.2788		5.000000	60.2845	20		30-130	A
2-Methylnaphthalene, Water	5.89842		5.000000	4.37968	30		60-140	A
Naphthalene, Water	4.48265		5.000000	0.46401	80		30-130	
Nitrobenzene, Water	4.89364		5.000000	0	98		30-130	
n-Nitrosodiphenylamine, Water	6.54763		5.000000	0	131		30-130	A
Phenanthrene, Water	4.88579		5.000000	0.79633	82		30-130	
Pyrene, Water	8.00582		5.000000	3.55032	89		26-115	
2,4-Dimethylphenol, Water	3.77352		5.000000	0	75		30-130	
2-Methyl-4,6-dinitrophenol, Water	6.91788		5.000000	0	138		30-130	A
4-Nitrophenol, Water	4.43568		5.000000	0	89		10-80	A
Phenol, Water	1.46413		5.000000	0	29		10-112	

MSD	Matrix Spike Duplicate	SVS091004A	281075-12		09/21/2004 1255

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	107.748	88.3669	5.000000	92.5113	305		46.0-118.0	A
					19.8		31.0	
Acenaphthylene, Water	5.56160	5.57430	5.000000	1.02763	91		30.0-130.0	
					0.2		50.0	
Anthracene, Water	11.7313	11.1836	5.000000	6.11715	112		30.0-130.0	
					4.8		50.0	
Benzo(a)anthracene, Water	4.51210	4.60869	5.000000	0	90		60.0-140.0	
					2.1		50.0	
bis(2-ethylhexyl)phthalate, Water	4.34205	4.12321	5.000000	0.35260	80		60.0-140.0	
					5.2		30.0	
2-Chloronaphthalene, Water	4.65164	4.66630	5.000000	0	93		30.0-130.0	
					0.3		50.0	
Chrysene, Water	4.07302	4.10248	5.000000	0	81		30.0-130.0	
					0.7		50.0	
Dibenzofuran, Water	57.6000	50.9380	5.000000	49.6673	159		30.0-130.0	A
					12.3		50.0	
Di-n-butyl Phthalate, Water	5.41441	5.17669	5.000000	0	108		30.0-130.0	
					4.5		50.0	
Fluoranthene, Water	13.0567	12.4913	5.000000	8.08535	99		30.0-130.0	
					4.4		50.0	
Fluorene, Water	72.1209	61.2788	5.000000	60.2845	237		30.0-130.0	A
					16.3		50.0	
2-Methylnaphthalene, Water	35.1847	5.89842	5.000000	4.37968	616		60.0-140.0	A
					142.6		30.0	r
Naphthalene, Water	6.69411	4.48265	5.000000	0.46401	125		30.0-130.0	
					39.6		50.0	
Nitrobenzene, Water	4.99660	4.89364	5.000000	0	100		30.0-130.0	
					2.1		50.0	

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281075 Report Date.: 10/13/2004

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: HWPW ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	SVS091004A	281075-12		09/21/2004	1255

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
n-Nitrosodiphenylamine, Water	6.40932	6.54763	5.000000	0	128		30.0-130.0	
					2.1		50.0	
Phenanthrene, Water	8.91104	4.88579	5.000000	0.79633	162		30.0-130.0	A
					58.4		50.0	r
Pyrene, Water	8.96119	8.00582	5.000000	3.55032	108		26.0-115.0	
					11.3		31.0	
2,4-Dimethylphenol, Water	3.84394	3.77352	5.000000	0	77		30.0-130.0	
					1.8		50.0	
2-Methyl-4,6-dinitrophenol, Water	6.97188	6.91788	5.000000	0	139		30.0-130.0	A
					0.8		50.0	
4-Nitrophenol, Water	4.64807	4.43568	5.000000	0	93		10.0-80.0	A
					4.7		50.0	
Phenol, Water	1.37655	1.46413	5.000000	0	28		10.0-112.0	
					6.2		23.0	

Test Method.....: SW-846 8260B Units.....: ug/L Analyst...: zfl
Method Description.: Volatile Organics Batch(s)...: 111218

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
LCS	Laboratory Control Sample	VS091704E			09/18/2004	1236

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	52.7127		50.00	ND	105.4		68-127	
Chlorobenzene, Water	52.8846		50.00	ND	105.8		65-129	
1,2-Dichloroethane, Water	56.7405		50.00	ND	113.5		65-133	
Ethylbenzene, Water	54.5410		50.00	ND	109.1		64-132	
Methylene Chloride, Water	64.3808		50.00	1.69128	128.8		54-133	
Toluene, Water	54.1690		50.00	ND	108.3		63-127	
Xylenes (total), Water	161.026		150.0	ND	107.4		37-161	

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
LCS	Laboratory Control Sample	VS091704E			09/20/2004	1247

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	42.9883		50.00	ND	86.0		68-127	
Chlorobenzene, Water	43.5777		50.00	ND	87.2		65-129	
1,2-Dichloroethane, Water	43.1296		50.00	ND	86.3		65-133	
Ethylbenzene, Water	44.4510		50.00	ND	88.9		64-132	
Methylene Chloride, Water	40.7610		50.00	2.47407	81.5		54-133	
Toluene, Water	44.1476		50.00	ND	88.3		63-127	
Xylenes (total), Water	132.976		150.0	ND	88.7		37-161	

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank	VS091704C			09/18/2004	1332

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	ND							
Chlorobenzene, Water	ND							
1,2-Dichloroethane, Water	ND							
Ethylbenzene, Water	ND							

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281075 | Report Date.: 10/13/2004

CUSTOMER: ERM Southwest, Inc.- Houston | PROJECT: HWPW | ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank	VS091704C			09/18/2004	1332

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Methylene Chloride, Water	1.69128							
Toluene, Water	ND							
Xylenes (total), Water	ND							

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank	VS091704C			09/20/2004	1342

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	ND							
Chlorobenzene, Water	ND							
1,2-Dichloroethane, Water	ND							
Ethylbenzene, Water	ND							
Methylene Chloride, Water	2.47407							
Toluene, Water	ND							
Xylenes (total), Water	ND							

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MS	Matrix Spike	VS091704E	281075-11		09/18/2004	1617

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	42.4770		50.00	ND	85		65-125	
Chlorobenzene, Water	41.9574		50.00	ND	84		74-122	
1,2-Dichloroethane, Water	42.9045		50.00	ND	86		60-140	
Ethylbenzene, Water	43.6156		50.00	ND	87		60-140	
Methylene Chloride, Water	47.3577		50.00	ND	95		60-140	
Toluene, Water	42.8084		50.00	ND	86		76-125	
Xylenes (total), Water	129.072		150.0	ND	86		60-140	

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MS	Matrix Spike	VS091704E	281083-3	5.00000	09/20/2004	1816

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	34.5554		50.00	ND	69		65-125	
Chlorobenzene, Water	34.2374		50.00	ND	68		74-122	A
1,2-Dichloroethane, Water	36.6267		50.00	ND	73		60-140	
Ethylbenzene, Water	35.9950		50.00	1.58119	69		60-140	
Methylene Chloride, Water	37.4415		50.00	3.54996	68		60-140	
Toluene, Water	51.7393		50.00	17.5311	68		76-125	A
Xylenes (total), Water	149.472		150.0	48.0155	68		60-140	

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	VS091704E	281075-12		09/18/2004	1645

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	41.7531	42.4770	50.00	ND	84		65.0-125.0	
					1.7		30.0	
Chlorobenzene, Water	41.7902	41.9574	50.00	ND	84		74.0-122.0	
					0.4		30.0	
1,2-Dichloroethane, Water	43.0089	42.9045	50.00	ND	86		60.0-140.0	
					0.2		30.0	

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 281075 Report Date.: 10/13/2004

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: HWPW ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	VS091704E	281075-12		09/18/2004	1645

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Ethylbenzene, Water	43.4722	43.6156	50.00	ND	87		60.0-140.0	
					0.3		30.0	
Methylene Chloride, Water	42.3456	47.3577	50.00	ND	85		60.0-140.0	
					11.2		30.0	
Toluene, Water	42.4328	42.8084	50.00	ND	85		76.0-125.0	
					0.9		30.0	
Xylenes (total), Water	127.949	129.072	150.0	ND	85		60.0-140.0	
					0.9		30.0	

MSD	Matrix Spike Duplicate	VS091704E	281083-3	5.00000	09/20/2004	1844

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	37.1161	34.5554	50.00	ND	74		65.0-125.0	
					7.1		30.0	
Chlorobenzene, Water	37.4296	34.2374	50.00	ND	75		74.0-122.0	
					8.9		30.0	
1,2-Dichloroethane, Water	39.3715	36.6267	50.00	ND	79		60.0-140.0	
					7.2		30.0	
Ethylbenzene, Water	38.5740	35.9950	50.00	1.58119	74		60.0-140.0	
					6.9		30.0	
Methylene Chloride, Water	41.0077	37.4415	50.00	3.54996	75		60.0-140.0	
					9.1		30.0	
Toluene, Water	53.6984	51.7393	50.00	17.5311	72		76.0-125.0	A
					3.7		30.0	
Xylenes (total), Water	157.635	149.472	150.0	48.0155	73		60.0-140.0	
					5.3		30.0	

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

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SEVERN TRENT STL

SURROGATE RECOVERIES REPORT

Job Number.: 281075 Report Date.: 10/13/2004

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

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 111218 Test Matrix...: Water Equipment Code: GCMSVOA06

Lab ID	DT	Sample ID	Date	12DCED	BRFLBE	DBRFLM	TOLD8
281075- 1		MW-08-2SA04	09/18/2004	89.8	113.1	91.4	94.0
281075- 2		P-10-2SA04	09/18/2004	89.1	111.9	91.9	94.1
281075- 3		MW-07-2SA04	09/18/2004	91.2	112.7	92.4	95.0
281075- 4		MW-5-2SA04	09/18/2004	92.2	112.5	93.5	94.7
281075- 5		MW-11B-2SA04	09/18/2004	89.2	113.5	91.2	95.0
281075- 6		MW-04-2SA04	09/18/2004	87.1	108.3	88.8	90.7
281075- 7		MW-10B-2SA04	09/18/2004	85.9	113.7	88.7	94.2
281075- 8		P-12-2SA04	09/18/2004	84.0	108.3	84.4	91.0
281075- 9		FB-091404	09/18/2004	85.7	108.5	87.8	90.6
281075- 10		MW-01A-2SA04	09/18/2004	87.0	110.5	90.0	92.6
281075- 11		MW-01A-2SA04 MS	09/18/2004	86.6	115.5	90.8	95.5
281075- 11	MS	MW-01A-2SA04 MS	09/18/2004	86.6	115.5	90.8	95.5
281075- 12		MW-01-2SA04 MSD	09/18/2004	89.1	110.0	92.1	93.2
281075- 12	MSD	MW-01-2SA04 MSD	09/18/2004	89.1	110.0	92.1	93.2
281075- 13		MW-11A-2SA04	09/20/2004	85.7	110.9	86.8	91.9
281075- 14		MW-11AD-2SA04	09/20/2004	78.6	110.0	79.6	89.8
281075- 15		TB01-2SA04	09/18/2004	87.2	110.2	88.6	91.3
281075- 16		MW-09-2SA04	09/20/2004	77.7	109.5	77.7	90.1
281083- 3	MS	MW-8	09/20/2004	80.1	114.2	81.5	93.7
281083- 3	MSD	MW-8	09/20/2004	82.3	114.3	84.1	92.6
111218--21	LCS		09/18/2004	90.3	115.0	94.5	95.2
111218--21	MB		09/18/2004	88.5	110.3	88.7	94.3
111218--21	LCS		09/20/2004	85.0	121.8	86.3	97.5
111218--21	MB		09/20/2004	83.0	115.8	83.6	95.7

Test	Test Description	Limits
12DCED	1,2-Dichloroethane-d4	70 - 130
BRFLBE	4-Bromofluorobenzene	70 - 130
DBRFLM	Dibromofluoromethane	70 - 130
TOLD8	Toluene-d8	70 - 130

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SEVERN TRENT STL

SURROGATE RECOVERIES REPORT

Job Number.: 281075 Report Date.: 10/13/2004

CUSTOMER: 483648 PROJECT: HWPW ATTN: Chris Young

Method.....: Semivolatile Organics, Low Level Method Code...: 8270LL Prep Batch....: 110849
Batch(s).....: 111563 Test Matrix...: Water Equipment Code: EGCMS06

Lab ID	DT	Sample ID	Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14
281075- 1		MW-08-2SA04	09/21/2004	114.2	78.1	41.8	74.1	27.9	95.7
281075- 2		P-10-2SA04	09/21/2004	126.5A	98.0	44.4	94.0	33.2	97.9
281075- 2		P-10-2SA04	09/23/2004	131.7d	96.3	94.3	87.1	61.5	118.2
281075- 3		MW-07-2SA04	09/21/2004	114.6	92.2	38.4	86.9	31.6	96.1
281075- 4		MW-5-2SA04	09/22/2004	134.7A	118.9A	59.1	105.7	37.7	135.4
281075- 5		MW-11B-2SA04	09/22/2004	141.9A	114.1	35.6	79.7	34.4	134.8
281075- 5		MW-11B-2SA04	09/23/2004	145.2d	99.8	98.1	97.2	47.0	113.8
281075- 6		MW-04-2SA04	09/22/2004	143.9A	113.2	59.6	110.1	35.4	134.9
281075- 7		MW-10B-2SA04	09/22/2004	147.6A	119.1A	39.1	103.3	38.3	136.3
281075- 7		MW-10B-2SA04	09/23/2004	138.3d	97.4	79.6	81.0	38.6	114.2
281075- 8		P-12-2SA04	09/22/2004	122.4	84.7	32.1	71.1	26.6	103.5
281075- 9		FB-091404	09/23/2004	136.0A	106.9	47.3	103.6	31.8	118.2
281075- 10		MW-01A-2SA04	09/21/2004	122.8	97.9	45.3	98.1	34.9	108.0
281075- 10		MW-01A-2SA04	09/23/2004	183.2d	108.3	155.5d	66.0	64.6	117.6
281075- 11		MW-01A-2SA04 MS	09/21/2004	123.9A	94.7	37.7	90.0	36.5	99.7
281075- 11		MW-01A-2SA04 MS	09/23/2004	175.4d	104.3	155.4d	84.4	72.2	119.8
281075- 11	MS	MW-01A-2SA04 MS	09/21/2004	123.9A	94.7	37.7	90.0	36.5	99.7
281075- 12		MW-01-2SA04 MSD	09/21/2004	127.2A	94.7	38.7	94.3	34.2	102.8
281075- 12		MW-01-2SA04 MSD	09/23/2004	180.0d	115.9	166.8d	88.8	84.7	108.1
281075- 12	MSD	MW-01-2SA04 MSD	09/21/2004	127.2A	94.7	38.7	94.3	34.2	102.8
281075- 13		MW-11A-2SA04	09/23/2004	119.0	97.6	43.1	106.9	37.5	108.7
281075- 13		MW-11A-2SA04	09/23/2004	111.2	93.9	79.9	76.0	39.9	92.5
281075- 14		MW-11AD-2SA04	09/23/2004	140.1A	82.2	31.8	63.9	22.2	118.7
281075- 14		MW-11AD-2SA04	09/23/2004	147.5d	76.1	72.2	41.9	36.2	97.8
281075- 16		MW-09-2SA04	09/23/2004	131.8A	99.1	39.4	87.9	21.8	119.9
110849--21	LCS		09/21/2004	119.6	78.9	39.7	75.0	31.1	92.1
110849--21	MB		09/21/2004	125.0K	87.3	48.5	84.4	32.8	103.6

Test	Test Description	Limits
246TBP	2,4,6-Tribromophenol	10 - 123
2FLUBP	2-Fluorobiphenyl	43 - 116
2FLUPH	2-Fluorophenol	21 - 100
NITRD5	Nitrobenzene-d5	35 - 114
PHEND6	Phenol-d6	10 - 94
TERD14	Terphenyl-d14	33 - 141

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SEVERN TRENT STL

SURROGATE RECOVERIES REPORT

Job Number.: 281075 Report Date.: 10/13/2004

CUSTOMER: 483648 PROJECT: HWPW ATTN: Chris Young

Method.....: Semivolatile Organics - SIM Analysis Method Code...: 8270SI Prep Batch....: 110850
Batch(s).....: 111554 Test Matrix...: Water Equipment Code: EGCMS08

Lab ID	DT	Sample ID	Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14
281075- 1		MW-08-2SA04	09/21/2004	97.7	79.0	39.8	86.2	28.1	86.6
281075- 2		P-10-2SA04	09/21/2004	105.8	78.0	45.5	98.1	35.6	86.3
281075- 3		MW-07-2SA04	09/21/2004	84.9	74.3	37.8	89.8	32.5	88.3
281075- 4		MW-5-2SA04	09/21/2004	137.0A	93.8	38.0	103.1	39.6	108.5
281075- 5		MW-11B-2SA04	09/21/2004	129.9A	103.0	50.4	117.4A	43.6	111.2
281075- 6		MW-04-2SA04	09/21/2004	112.6	88.9	40.8	108.6	39.2	113.8
281075- 7		MW-10B-2SA04	09/21/2004	139.7A	97.8	37.8	99.1	39.9	117.4
281075- 8		P-12-2SA04	09/21/2004	93.8	72.3	32.5	74.2	28.6	90.0
281075- 9		FB-091404	09/21/2004	93.7	86.0	52.0	110.7	38.5	106.0
281075- 10		MW-01A-2SA04	09/21/2004	92.4	86.3	49.7	103.0	37.3	90.8
281075- 11		MW-01A-2SA04 MS	09/21/2004	116.0	83.3	40.4	93.4	36.0	88.8
281075- 11	MS	MW-01A-2SA04 MS	09/21/2004	116.0	83.3	40.4	93.4	36.0	88.8
281075- 12		MW-01-2SA04 MSD	09/21/2004	119.8	74.8	31.5	71.7	31.0	97.0
281075- 12	MSD	MW-01-2SA04 MSD	09/21/2004	119.8	74.8	31.5	71.7	31.0	97.0
281075- 13		MW-11A-2SA04	09/21/2004	91.5	84.0	46.7	104.6	33.6	94.3
281075- 14		MW-11AD-2SA04	09/21/2004	99.7	71.1	21.4	65.4	27.1	100.7
281075- 16		MW-09-2SA04	09/22/2004	147.6A	85.4	39.3	90.7	25.3	100.2
110850--21	LCS		09/21/2004	118.3	72.8	43.8	81.7	34.7	92.2
110850--21	MB		09/21/2004	113.2	76.7	46.5	87.1	36.1	94.2

Test	Test Description	Limits
246TBP	2,4,6-Tribromophenol	10 - 123
2FLUBP	2-Fluorobiphenyl	43 - 116
2FLUPH	2-Fluorophenol	21 - 100
NITRD5	Nitrobenzene-d5	35 - 114
PHEND6	Phenol-d6	10 - 94
TERD14	Terphenyl-d14	33 - 141

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/13/2004

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 reportesd 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.

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/13/2004

W - The MS/MSD recoveries are outside QC acceptance criteria because the amount spiked 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.
S - Sample reanalyzed/reextracted due to poor surrogate recovery. Reanalysis confirmed original analysis indicating a possible matrix interference.
T - 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.
V - 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.
s - BOD/cBOD seed value is not within method acceptance criteria. Due to the nature of the test method, the sample cannot be reanalyzed.
l - BOD/cBOD LCS value is not within method acceptance criteria. Due to the nature of the test method, sample cannot be reanalyzed.
N - Spiked sample recovery is not within control limits.
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.
* - Duplicate analysis is not within control limits.

Abbreviations:

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

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/13/2004

MDL - Method Detection Limit
MS - Matrix Spike
MSD - Matrix Spike Duplicate
ND - Not Detected
PB - Preparation Blank
PREPF - Preparation Factor
RL - Reporting Limit
RPD - Relative Percent Difference
RRF - Relative Response Factor
RT - Retention Time
DU - 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 1994.
(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.

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 281075 Date: 10/13/2004

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

Lab ID: 281075-1 Client ID: MW-08-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/13/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
	Data Package Validation	1	112931		10/13/2004	0000	
	Electronic Data Deliverables	1	81662		09/29/2004	1000	
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
	GC/MS Semi-Volatile Package Production	1	111572		09/27/2004	1400	
	GC/MS Volatiles Data Package Production	1	111763		09/29/2004	0830	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1621	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	1323	1.00000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1713	1.00000

Lab ID: 281075-2 Client ID: P-10-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/13/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1649	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	1351	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1525	5.00000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1740	1.00000

Lab ID: 281075-3 Client ID: MW-07-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/13/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1717	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	1419	1.00000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1808	1.00000

Lab ID: 281075-4 Client ID: MW-5-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1745	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/22/2004	2147	1.00000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1836	1.00000

Lab ID: 281075-5 Client ID: MW-11B-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1813	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/22/2004	2214	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1553	5.00000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1903	1.00000

Lab ID: 281075-6 Client ID: MW-04-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1841	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/22/2004	2242	1.00000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1931	1.00000

Lab ID: 281075-7 Client ID: MW-10B-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 281075 Date: 10/13/2004

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

Lab ID: 281075-7 Client ID: MW-10B-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1908	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/22/2004	2310	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1621	4.00000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1958	1.00000

Lab ID: 281075-8 Client ID: P-12-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1936	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/22/2004	2337	1.00000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	2026	1.00000

Lab ID: 281075-9 Client ID: FB-091404 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	2004	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	0005	1.00000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1522	1.00000

Lab ID: 281075-10 Client ID: MW-01A-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	2032	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	1200	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	0224	10.0000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1550	1.00000

Lab ID: 281075-11 Client ID: MW-01A-2SA04 MS Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110849		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110850		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1305	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	1227	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	0252	10.0000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1617	1.00000

Lab ID: 281075-12 Client ID: MW-01-2SA04 MSD Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110849		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110850		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	1333	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/21/2004	1255	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	0319	10.0000
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1645	1.00000

Lab ID: 281075-13 Client ID: MW-11A-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	2100	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	0033	1.00000

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 281075 Date: 10/13/2004

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

Lab ID: 281075-13 Client ID: MW-11A-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1649	4.00000
SW-846 8260B	Volatile Organics	1	111218		09/20/2004	1938	1.00000

Lab ID: 281075-14 Client ID: MW-11AD-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/21/2004	2128	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1457	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	1716	4.00000
SW-846 8260B	Volatile Organics	1	111218		09/20/2004	2006	1.00000

Lab ID: 281075-15 Client ID: TB01-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 8260B	Volatile Organics	1	111218		09/18/2004	1455	1.00000

Lab ID: 281075-16 Client ID: MW-09-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849		09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850	09/22/2004	1508	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849	09/23/2004	0128	1.00000
SW-846 8260B	Volatile Organics	1	111218		09/20/2004	2033	1.00000

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APPENDIX C

Data Usability Summary

Houston Wood Preserving Works
Houston, Texas

Environmental Resources Management (ERM) reviewed a laboratory analytical data package 281075 from Severn Trent Laboratories of Houston, Texas for the analysis of 12 ground water samples collected on September 13 and 14, 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: Semiannual ground water monitoring.

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.

Introduction

Eleven ground water samples and one duplicate ground water sample were analyzed for select semivolatile organic compounds (SVOCs) by low-level and SIM methods and select volatile organic compounds (VOCs). One field blanks was provided to the laboratory for analysis of SVOCs and VOCs. One trip blank was provided with the

laboratory package and analyzed by the laboratory for VOCs only. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review / Validation Results

Analytical Results

VOCs and SVOCs were reported in mg/L. Qualified sample data are listed on Table 2. Non-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 due to dilutions necessary for analysis.

Preservation and Holding Times

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 most of the paperwork filled out properly. According to the sample receipt checklist, the laboratory received sample MW-09-2SA04, but it was not listed on the COC. 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

Method blank analyses were reported as not-detected for SVOC SIM.

The VOCs method blank analyzed on 9/18/04 at 13:32 had a detection of methylene chloride of 1.69128 ug/L. Samples FB-091404 and TB01-2SA04 had detections of methylene chloride less than 10 times the method blank concentration and were qualified as not-detected (U). VOCs method blank analyzed on 9/20/04 at 13:42 had a detection of methylene chloride of 2.47407 ug/L. Sample MW-09-2SA04 had a detection of methylene chloride less than 10 times the method blank concentration and was qualified as not-detected (U).

SVOC low-level method blank had a reported detection of di-n-butyl phthalate (0.22612 ug/L). Samples MW-08-2SA04, P-10-2SA04, MW-07-2SA04, MW-11B-2SA04, MW-04-2SA04, MW-10B-2SA04, P-12-2SA04, FB-091404, MW-11A-2SA04, MW-11AD-2SA04 and MW-09-2SA04 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, due to method blank contamination.

One trip blank (TB01-2SA04) was received by the laboratory, and was reported as detected for methylene chloride (0.00302 J mg/L). Samples FB-091404 and MW-09-2SA04 had detections of methylene chloride less than 10X the trip blank concentration and were qualified as not-detected (U), due to trip blank contamination.

The field blank (FB-091404) was reported as detected for methylene chloride (0.00281 J mg/L) and di-n-butyl phthalate (0.000356 mg/L). Sample MW-09-2SA04 had a detection of methylene chloride less than 10 times the field blank concentration and was qualified as not-detected (U). Samples MW-11B-2SA04, MW-04-2SA04, MW-10B-2SA04, P-12-2SA04, MW-11A-2SA04, MW-11AD-2SA04 and MW-09-2SA04 collected on 9/14/04 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, due to field blank contamination.

Surrogate Recoveries

VOC surrogates were within laboratory-supplied acceptance limits for all samples.

SVOC low-level analysis had elevated surrogate 2,4,6-tribromophenol recovery for samples P-10-2SA04, MW-11B-2SA04, MW-04-2SA04, FB-091404, MW-11AD-2SA04 and MW-09-2SA04 (all at 1X dilution). The other five surrogates were within acceptance limits, so qualification of the data was not necessary. Surrogate 2,4,6-tribromophenol also had elevated recovery for samples P-10-2SA04 5X dilution, MW-11B-2SA04 5X dilution, MW-10B-2SA04 4X dilution and MW-11AD-2SA04 4X dilution. The other five surrogates were within acceptance limits, so qualification of the data was not necessary. Samples MW-5-2SA04 1X dilution and MW-10B-2SA04 1X dilution had elevated surrogate 2,4,6-tribromophenol and 2-fluorobiphenyl recoveries. Since only one acid and one base surrogate were outside limits and the other four surrogates were within acceptance limits, qualification of the data was not necessary. Sample MW-01A-2SA04 10X dilution had elevated surrogate 2,4,6-tribromophenol and 2-fluorobiphenyl recoveries. Since the surrogates were diluted out of the sample, qualification of the data was not necessary.

SVOC SIM samples MW-5-2SA04, MW-10B-2SA04 and MW-09-2SA04 had elevated 2,4,6-tribromophenol surrogate recovery. The other five surrogates were within acceptance limits, so qualification of the data was not necessary. Sample MW-11B-2SA04 had elevated 2,4,6-tribromophenol and 2-fluorobiphenyl surrogate recoveries. Since only one acid and one base surrogate were outside limits and the other four surrogates were within acceptance limits, qualification of the data was not necessary.

Internal Standards

According to the LRC, VOC and SVOC low-level internal standard areas were within SW-846 method acceptance criteria.

SVOC SIM samples MW-10B-2SA04 and MW-11AD-2SA04 had all internal standards below acceptance limits. Sample MW-04-2SA04 had all internal standards below acceptance limits except 1,4-dichlorobenzene-d4. Sample MW-5-2SA04 had four internal standard areas below limits (acenaphthene-d10, phenanthrene-d10, chrysene-d12 and perylene-d12). Associated compounds (benzo(a)pyrene, bis(2-chloroethoxy)methane, 2,4-dinitrotoluene, 2,6-dinitrotoluene, pentachlorophenol and 1,2-diphenylhydrazine) were reported as not-detected and were qualified as non-detect estimated (UJ) in the four samples listed, due to low internal standard recovery.

Laboratory Control Samples

SVOC low-level, SVOC SIM and VOC laboratory control sample (LCS) recoveries met the laboratory-defined acceptable ranges.

Matrix Spike/Matrix Spike Duplicates

VOC MS/MSD recoveries analyzed from sample MW-01A-2SA04 were within laboratory-supplied acceptance criteria. A second VOC MS/MSD was analyzed and had low recovery for chlorobenzene and toluene. The sample used was not associated with this project site, so qualification of the data was not necessary.

SVOC SIM MS/MSD was analyzed from sample MW-01A-2SA04. The SVOC SIM MS/MSD had elevated recovery for 2,4-dinitrotoluene and pentachlorophenol. All associated samples were reported as not-detected for these two compounds, no qualification of the data was not necessary. This MS/MSD also had elevated relative percent difference (RPD) for 1,2-diphenylhydrazine. The MS/MSD results were less than five times the method quantitation limit (MQL), and the difference between sample and duplicate was greater than the MQL. All associated samples were reported as not-detected for 1,2-diphenylhydrazine and were qualified as non-detect estimated (UJ), due to elevated MD/MSD RPD.

SVOC low-level MS/MSD was analyzed from sample MW-01A-2SA04. The SVOC low level MS/MSD had elevated and low recovery for acenaphthene, dibenzofuran, 2-methylnaphthalene and fluorene. These compounds were not qualified because the spike amount was less than four times that in the unspiked parent sample and may not represent the true matrix effect. Additionally, 4-nitrophenol, n-nitrosodiphenylamine, 2-methyl-4,6-dinitrophenol and phenanthrene had elevated MS/MSD recovery. All associated samples were reported as not-detected for 4-nitrophenol, n-nitrosodiphenylamine and 2-methyl-4,6-dinitrophenol, so qualification of the data was not necessary. Samples P-10-2SA04, MW-11B-2SA04, MW-04-2SA04, MW10B-2SA04, MW-01A-2SA04, MW-11A-2SA04 and MW-11AD-2SA04 were reported as detected for phenanthrene and were qualified as estimated high (JH), due to elevated MS/MSD recovery. This SVOC low level MS/MSD also had elevated RPD for phenanthrene. The MS/MSD results were greater than five times the MQL and detections of phenanthrene were qualified as estimated (J), due to elevated MS/MSD RPD.

Field Precision

One field duplicate sample was collected during this sampling event (MW-11A-2SA04 / MW-11AD-2SA04). The sample and duplicate were reported as detected or estimated detected (J flagged) for 10 common compounds. MW-11AD-2SA04 was also reported as detected for 2-methylnaphthalene and bis(2-ethylhexyl)phthalate. Seven compounds (anthracene, acenaphthene, acenaphthylene, dibenzofuran, fluoranthene, fluorene and pyrene) had RPD less than 20% and were within acceptance criteria. Di-n-butyl phthalate and phenanthrene had analyte concentrations less than five times the method quantitation limit (MQL) and the difference between sample and duplicate was less than two times the MQL, so qualification was not needed. Naphthalene had analyte concentrations greater than five times the MQL and RPD greater than 30%. Detections of naphthalene in associated samples were qualified as estimated (J) and non-detects were qualified as non-detect estimated (UJ). Sample/duplicate precision calculations are included in Table 3.

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 FB-091404, MW-09-2SA04 and TB01-2SA04 were qualified as not-detected (U) for methylene chloride due to method blank contamination. Samples MW-08-2SA04, P-10-2SA04, MW-07-2SA04, MW-11B-2SA04, MW-04-2SA04, MW-10B-2SA04, P-12-2SA04, FB-091404, MW-11A-2SA04, MW-11AD-2SA04 and MW-09-2SA04 were qualified as not-detected (U) for di-n-butyl phthalate, due to method blank contamination.

SVOC SIM samples MW-10B-2SA04 and MW-11AD-2SA04, MW-04-2SA04 and MW-5-2SA04 were qualified as non-detect estimated (UJ) for six compounds (benzo(a)pyrene, bis(2-chloroethoxy)methane, 2,4-dinitrotoluene, 2,5-dinitrotoluene, pentachlorophenol and 1,2-diphenylhydrazine), due to low internal standard recovery.

All SVOC SIM samples were qualified as non-detect estimated (UJ) for 1,2-diphenylhydrazine, due to elevated MD/MSD RPD.

SVOC low-level samples P-10-2SA04, MW-11B-2SA04, MW-04-2SA04, MW10B-2SA04, MW-01A-2SA04, MW-11A-2SA04 and MW-11AD-2SA04 were reported as detected for phenanthrene and were qualified as estimated high (JH), due to elevated MS/MSD recovery.

Detections of naphthalene in all samples were qualified as estimated (J) and non-detects were qualified as non-detect estimated (UJ), due to sample/duplicate precision outside QC criteria.

TABLE 1

Cross-Reference Field Sample Identifications and Laboratory Identifications
Laboratory Package 281075

Houston Wood Preserving Works
Union Pacific Railroad

Field Identification	Laboratory Identification	
MW-08-2SA04	281075-1	
P-10-2SA04	281075-2	
MW-07-2SA04	281075-3	
MW-5-2SA04	281075-4	
MW-11B-2SA04	281075-5	
MW-04-2SA04	281075-6	
MW-10B-2SA04	281075-7	
P-12-2SA04	281075-8	
FB-091404	281075-9	Field Blank
MW-01A-2SA04	281075-10	
MW-01AMS-2SA04	281075-11	Matrix Spike
MW-01AMSD-2SA04	281075-12	Matrix Spike Duplicate
MW-11A-2SA04	281075-13	
MW-11AD-2SA04	281075-14	Field Duplicate
TB01-2SA04	281075-15	Trip Blank
MW-09-2SA04	281075-16	

TABLE 2

Qualified Analytical Data
Laboratory Package 281075

Houston Wood Preserving Works
Union Pacific Railroad

Field Identification	Analyte	Qualification	Reason for Qualification
FB-091404	Methylene Chloride	U	Method blank contamination
TB01-2SA04	Methylene Chloride	U	Method blank contamination
MW-09-2SA04	Methylene Chloride	U	Method blank contamination
MW-08-2SA04	Di-n-butyl phthalate	U	Method blank contamination
P-10-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-07-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-11B-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-04-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-10B-2SA04	Di-n-butyl phthalate	U	Method blank contamination
P-12-2SA04	Di-n-butyl phthalate	U	Method blank contamination
FB-091404	Di-n-butyl phthalate	U	Method blank contamination
MW-11A-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-11AD-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-09-2SA04	Di-n-butyl phthalate	U	Method blank contamination
FB-091404	Methylene Chloride	U	Trip blank contamination
MW-09-2SA04	Methylene Chloride	U	Trip blank contamination
MW-09-2SA04	Methylene Chloride	U	Field blank contamination
MW-11B-2SA04	Di-n-butyl phthalate	U	Field blank contamination
MW-04-2SA04	Di-n-butyl phthalate	U	Field blank contamination
MW-10B-2SA04	Di-n-butyl phthalate	U	Field blank contamination
P-12-2SA04	Di-n-butyl phthalate	U	Field blank contamination
MW-11A-2SA04	Di-n-butyl phthalate	U	Field blank contamination
MW-11AD-2SA04	Di-n-butyl phthalate	U	Field blank contamination
MW-09-2SA04	Di-n-butyl phthalate	U	Field blank contamination
MW-5-2SA04	benzo(a)pyrene	UJ	Internal standard areas below acceptance limits
MW-04-2SA04	benzo(a)pyrene	UJ	Internal standard areas below acceptance limits
MW-10B-2SA04	benzo(a)pyrene	UJ	Internal standard areas below acceptance limits
MW-11AD-2SA04	benzo(a)pyrene	UJ	Internal standard areas below acceptance limits
MW-5-2SA04	bis(2-chloroethoxy)methane	UJ	Internal standard areas below acceptance limits
MW-04-2SA04	bis(2-chloroethoxy)methane	UJ	Internal standard areas below acceptance limits
MW-10B-2SA04	bis(2-chloroethoxy)methane	UJ	Internal standard areas below acceptance limits
MW-11AD-2SA04	bis(2-chloroethoxy)methane	UJ	Internal standard areas below acceptance limits
MW-5-2SA04	2,4-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-04-2SA04	2,4-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-10B-2SA04	2,4-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-11AD-2SA04	2,4-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-5-2SA04	2,6-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-04-2SA04	2,6-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-10B-2SA04	2,6-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-11AD-2SA04	2,6-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-5-2SA04	pentachlorophenol	UJ	Internal standard areas below acceptance limits
MW-04-2SA04	pentachlorophenol	UJ	Internal standard areas below acceptance limits
MW-10B-2SA04	pentachlorophenol	UJ	Internal standard areas below acceptance limits
MW-11AD-2SA04	pentachlorophenol	UJ	Internal standard areas below acceptance limits
MW-5-2SA04	1,2-diphenylhydrazine	UJ	Internal standard areas below acceptance limits
MW-04-2SA04	1,2-diphenylhydrazine	UJ	Internal standard areas below acceptance limits
MW-10B-2SA04	1,2-diphenylhydrazine	UJ	Internal standard areas below acceptance limits
MW-11AD-2SA04	1,2-diphenylhydrazine	UJ	Internal standard areas below acceptance limits
MW-08-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
P-10-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD

TABLE 2

Qualified Analytical Data
Laboratory Package 281075

Houston Wood Preserving Works
Union Pacific Railroad

Field Identification	Analyte	Qualification	Reason for Qualification
MW-07-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-5-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-11B-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-04-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-10B-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
P-12-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
FB-091404	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-01A-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-11A-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-11AD-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-09-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
P-10-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-11B-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-04-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-10B-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-01A-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-11A-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-11AD-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
P-10-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-11B-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-04-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-10B-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-01A-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-11A-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-11AD-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-08-2SA04	naphthalene	UJ	Sample/duplicate precision outside criteria
P-10-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-07-2SA04	naphthalene	UJ	Sample/duplicate precision outside criteria
MW-5-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-11B-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-04-2SA04	naphthalene	UJ	Sample/duplicate precision outside criteria
MW-10B-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
P-12-2SA04	naphthalene	UJ	Sample/duplicate precision outside criteria
FB-091404	naphthalene	UJ	Sample/duplicate precision outside criteria
MW-01A-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-11A-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-11AD-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-09-2SA04	naphthalene	UJ	Sample/duplicate precision outside criteria

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.
H = high bias

TABLE 3

Field Precision
Laboratory Package 281075

Houston Wood Preserving Works
Union Pacific Railroad

Field Identification	Analyte	Sample Result	Duplicate Result	RPD	Qualified
MW-11A-2SA04 / MW-11AD-2SA04	acenaphthene	0.0987	0.0881	11.35	A
	acenaphthylene	0.000797	0.000657	19.26	A
	anthracene	0.00315	0.00354	-11.66	A
	dibenzofuran	0.00919	0.00872	5.25	A
	Di-n-butyl phthalate	0.000279	0.000386	-32.18	A*
	fluoranthene	0.0099	0.0121	-20.00	A
	fluorene	0.0455	0.0474	-4.09	A
	naphthalene	0.000236	0.00255	-166.12	J
	phenanthrene	0.000594	0.000895	-40.43	A*
	pyrene	0.00483	0.00552	-13.33	A

NOTES:

results reported as mg/L
RPD = ((SR-DR)*200)/(SR+DR)
J = estimated data due to inability to meet QC criteria
A = Acceptable data
A* = Acceptable data based on Table D-2 of TRRP-13 Guidance Document

Updated Compliance Schedule

Appendix D

January 20, 2005
Project No. 0014419

Environmental Resources Management
15810 Park Ten Place, Suite 300
Houston, Texas 77084
(281) 600-1000

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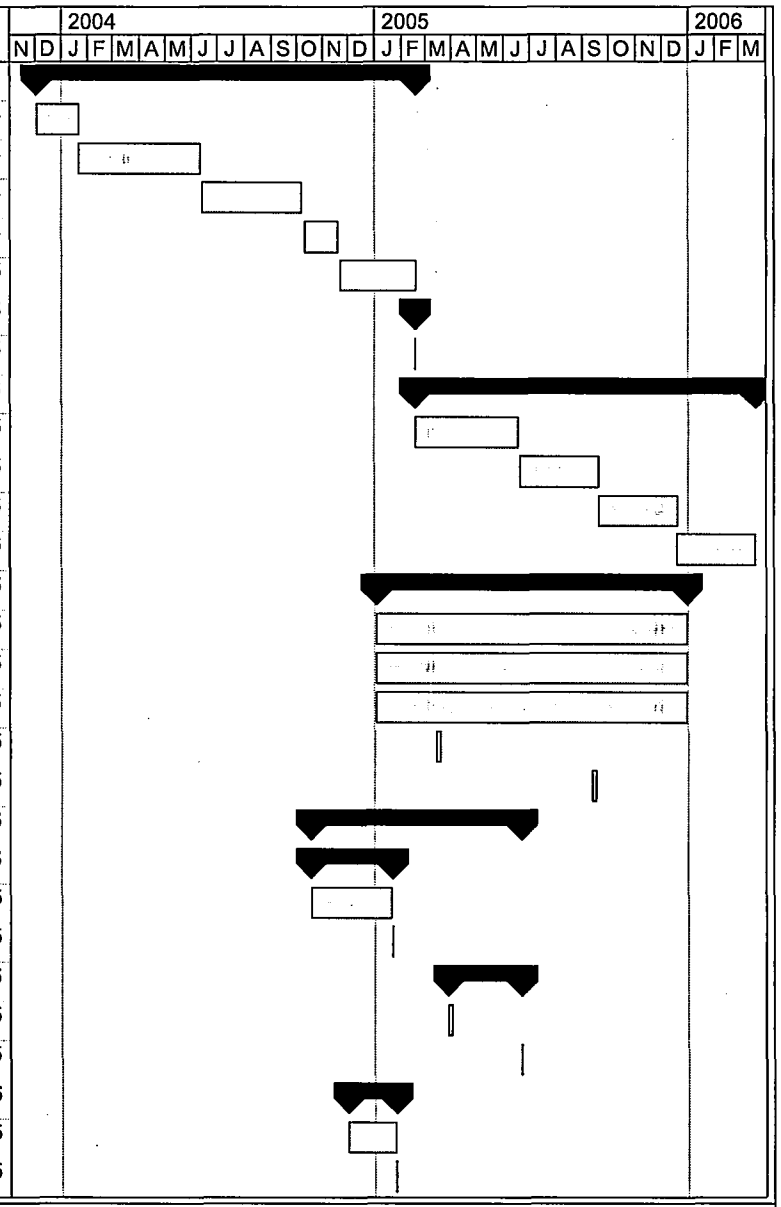
ID	Task Name/Permit or CP Section No.	Start	Finish
1	**Addendum to RFI Report {Permit VIII.I}**	**Wed 12/3/03**	**Thu 2/17/05**
2	Field Investigation Activities	Wed 12/3/03	Wed 1/21/04
3	Prepare and Submit Affected Property Assessment Report (APAR)	Thu 1/22/04	Fri 6/11/04
4	TCEQ Review Process	Mon 6/14/04	Wed 10/6/04
5	Response to TCEQ Comments on APAR	Mon 10/11/04	Fri 11/19/04
6	TCEQ Review Process	Mon 11/22/04	Thu 2/17/05
7	**Corrective Measures Study {Permit VIII.I and CP IX}**	**Thu 2/17/05**	**Thu 2/17/05**
8	Not Required under the Texas Risk Reduction Program (TRRP) for RCRA sites	Thu 2/17/05	Thu 2/17/05
9	**Corrective Measures Implementation {Permit VIII.J and CP X}**	**Thu 2/17/05**	**Mon 3/20/06**
10	Prepare and Submit Response Action Plan (RAP)	Thu 2/17/05	Fri 6/17/05
11	TCEQ Review Process	Mon 6/20/05	Mon 9/19/05
12	Implement Corrective Action	Tue 9/20/05	Mon 12/19/05
13	Prepare and Submit Corrective Measures Report (RAER/RACR/PRACR)	Mon 12/19/05	Mon 3/20/06
14	**Compliance Activities {Permit IV,C and CP VI}**	**Mon 1/3/05**	**Fri 12/30/05**
15	Impoundment Inspections (Weekly)	Mon 1/3/05	Fri 12/30/05
16	Water Level Measurements (Semiannually)	Mon 1/3/05	Fri 12/30/05
17	Monitor Well Inspections (Quarterly)	Mon 1/3/05	Fri 12/30/05
18	Ground Water Sampling (First Semiannual)	Mon 3/14/05	Fri 3/18/05
19	Ground Water Sampling (Second Semiannual)	Mon 9/12/05	Fri 9/16/05
20	**Post-Closure Care Reporting**	**Mon 10/18/04**	**Tue 6/21/05**
21	**Semiannual Report - January 21, 2005 {CP VII.B.2}**	**Mon 10/18/04**	**Fri 1/21/05**
22	Perform Data Evaluation	Mon 10/18/04	Wed 1/19/05
23	Submit Report to TCEQ	Fri 1/21/05	Fri 1/21/05
24	**Semiannual Report - July 21, 2005 {CP VII.B.2}**	**Mon 3/28/05**	**Tue 6/21/05**
25	Perform Data Evaluation	Mon 3/28/05	Fri 4/1/05
26	Submit Report to TCEQ	Tue 6/21/05	Tue 6/21/05
27	**2004 Annual Report - January 25, 2005 {Permit V.F and III.B.1}**	**Wed 12/1/04**	**Tue 1/25/05**
28	Perform Data Evaluation	Wed 12/1/04	Mon 1/24/05
29	Submit Report to TCEQ	Tue 1/25/05	Tue 1/25/05



Compliance Schedule
UPRR Houston Wood Preserving Works Site
Houston, Texas

Task		Rolled Up Task		External Tasks	
Progress		Rolled Up Milestone		Project Summary	
Milestone		Rolled Up Progress		External Milestone	
Summary		Split		Deadline	

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