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Southern Pacific Transportation Company

Semiannual Monitoring Report: First Semiannual Event 2000

Houston Wood Preserving Works
Houston, Texas

July 21, 2000

W.O. #422-009

VOL. 038

Environmental Resources Management
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

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1.0 INTRODUCTION

1.1 BACKGROUND

On March 27-29, 2000, Environmental Resources Management (ERM) conducted ground water sampling activities at Southern Pacific Transportation Company's Houston Wood Preserving Works (HWPW) site, located at 4910 Liberty Road, Houston, Texas (Figure 1-1). This semiannual sampling event included the on-site wells and piezometers associated with a closed surface impoundment (TNRCC Permit Unit No. II.B.1) as described in RCRA Permit No. HW-50343-000 and associated Compliance Plan (CP-50343), both issued by the Texas Natural Resource Conservation Commission (TNRCC). The sampling event, analytical data, and this data evaluation report represent the first semiannual monitoring period for 2000 (i.e., January 1 through June 30) and fulfill the semiannual reporting requirements described in Compliance Plan Section VII.B.2.

1.2 REPORT CONTENT AND ORGANIZATION

Section VII.B.2 of the Compliance Plan (CP) requires that a specific list of items be included in each Semiannual Report. As such, each item listed below is addressed by number in Section 2.0 of this report. As of June 30, 2000, a recovery system had not been installed at this facility. Therefore, in the few instances where a provision refers to a recovery system (i.e., items 5, 7, and 11), a notation was made in the text, and the items, as they relate to recovery wells, were not addressed in this report. The following items are required for the Semiannual Report, pursuant to CP Section VII.B.2:

1. A narrative summary of the evaluations made in accordance with CP Sections V, VI, and VII for the preceding six-month period. These periods shall be January 1 through June 30 and July 1 through December 31;

2. The results of the chemical analyses, submitted in a tabulated format in a form acceptable to the Executive Director, which clearly indicates each parameter that exceeds the Ground Water Protection Standard (GWPS). Copies of the original laboratory report for chemical analyses showing detection limits and quality control and quality assurance data shall be provided if requested by the Executive Director;

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 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 Ground Water Protection Standards;

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.

2.0 SECOND SEMIANNUAL GROUND WATER SAMPLING EVENT

This section contains a discussion of each of the Semiannual Report items required by CP Section VII.B.2.

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.

2.1.1 *Corrective Action Program*

Existing wells were sampled to evaluate the extent of 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 UTZ and STZ, respectively, as defined in CP Provision I.A.

- A-TZ refers to the first sand unit encountered at approximately 35 feet above mean sea level (msl), averaging 6 to 8 feet in thickness.

- B-TZ refers to the second sand unit encountered at approximately 15 feet above msl, averaging 8 to 10 feet in thickness.

Existing monitoring wells in the A-TZ, designated by function in CP Table III (Appendix A), include the Corrective Action Observation (CAO) wells MW-04, MW-05, MW-07, MW-08, and MW-09, and the Point of Compliance (POC) wells MW-01A, MW-02, MW-03, MW-10A, and MW-11A. Existing monitoring wells in the B-TZ include the POC wells MW-10B and MW-11B, and the POC piezometers P-10, P-11, and P-12.

2.1.2 *Ground Water Monitoring*

ERM personnel performed monitoring activities at the site on March 27 through 29, 2000. The 15 A-TZ and B-TZ wells and piezometers listed in Section 2.1.1 (above) were located and inspected in preparation for the sampling event. 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, which drew a sample directly from the screened interval of each well.

Polytetrafluoroethylene (PTFE) tubing was placed in the wells and used for sampling. A Master-Flex® peristaltic pump was placed next to each well during sampling. Using a one-foot section of disposable silicon tubing placed around the pump head and attached to the PTFE tubing, ground water was pumped from the screened interval of the well at a flow rate of approximately 0.5 L/min. A measuring cup was used to collect purge water in one-liter increments to evaluate field parameters, including temperature, pH, specific conductivity, dissolved oxygen, and turbidity. When three successive readings indicated that the field parameters had stabilized, a sample was collected. The samples were collected at a flow rate of approximately 0.5 L/min. A compilation of recorded field parameters is included in Appendix B.

For each well, two 40-mL glass vials (for volatile organic compound analysis), and one 1000-mL amber glass bottle (for semivolatile organic compounds analysis) were filled directly from the pumping apparatus described above. Any required preservatives were included in the new laboratory-supplied bottles. The bottles were then sealed and packed in coolers with sufficient ice to maintain a sample temperature of approximately 4° C. The coolers were delivered to the Severn Trent laboratory in Houston, Texas. Chain-of-Custody (COC) forms were completed and kept with their respective samples. Copies of the analytical data and COCs are included in Appendix C.

2.2 *ANALYTICAL RESULTS*

The results of the chemical analyses performed on the A-TZ and B-TZ ground water samples collected during the first semiannual sampling event of 2000 are summarized in Tables 2-1 and 2-2, respectively. Those compounds reported by the laboratory to be above the GWPS are indicated in bold italics on the tables. The CP sets the GWPS at the practical quantitation limit (PQL) for each of the compounds analyzed.

2.3 *WATER LEVEL AND TOTAL DEPTH MEASUREMENT*

Because low-flow sampling procedures were utilized for this sampling event, it was important to reduce disruption of the water column to the extent practical prior to sampling. To accomplish this, light non-aqueous phase liquid (LNAPL) measurements were made first with an MMC® Model D-240 oil/water interface probe. LNAPL was not noted on the probe at any of the wells measured. Next, water levels were measured using the oil/water interface probe. Since the meter came into contact with only the upper surface of the water column, disruption of the water column was reduced.

Dense non-aqueous phase liquid (DNAPL) and total depth measurements were collected with the oil/water interface probe following ground water sampling. These measurements were collected in accordance with the methodology

described in EPA's low-flow guidance (U.S. EPA, April 1996) which suggests that a probe be lowered gently through the water column to the bottom of the well following sample collection. DNAPL was not noted at any of the wells measured. Table 2-3 summarizes the results of the depth-to-water and total well depth measurements.

2.4 *POTENTIOMETRIC SURFACE MAPS*

The ground water elevation data collected as described in Section 2.3 were used to create potentiometric surface maps of the A-TZ and B-TZ (Figures 2-1 and 2-2, respectively).

2.5 *POTENTIOMETRIC SURFACE MAPS FOR RECOVERY SYSTEM*

As of June 30, 2000, no recovery system had been installed at the closed surface impoundment. Therefore, this item is not addressed herein.

2.6 *NON-AQUEOUS PHASE LIQUIDS*

The wells and piezometers were examined for the presence of light NAPLs before low-flow sampling and dense NAPLs after low-flow sampling was completed, in order to reduce disruption of the water column prior to sampling. The low-flow sampling method resulted in little or no drawdown. Accordingly, dense NAPL layers, if present, would not have been significantly affected by prior ground water sample collection. An MMC® Model D-240 oil/water interface probe was used to measure for light and heavy NAPLs. NAPLs were not detected in any of the wells sampled during this semiannual event.

2.7 *NAPL RECOVERIES*

As of June 30, 2000, no recovery system had been installed at the closed surface impoundment. Therefore, this item is not addressed herein.

2.8 *ANALYTICAL DATA EVALUATION*

CP Section VI.D describes two methods which may be used to determine the compliance status of a given well. The analytical results may be either directly compared to the GWPS (CP Table I; included in Appendix A herein), or statistically compared to the GWPS using the 99% significance level of the t-distribution. Table 2-4 shows the results of a direct comparison of data from the second semiannual sampling event to 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 Concentration Limit (i.e., the GWPS). Conversely, wells and piezometers were considered non-compliant

if one or more constituents were reported at concentrations above the Concentration Limit.

2.9 *BTEX, ACENAPHTHENE, AND NAPHTHALENE ISOPLETHS*

The concentration contours of these constituents were prepared using the data presented in Table 2-3. The contours were generated manually. To facilitate the preparation of these figures, constituents that were reported as not detected were estimated using a concentration equal to one-half of the reported detection limit.

The reported BTEX concentrations for samples collected from the A-TZ and B-TZ during the first semiannual sampling event of 2000 are presented in Figures 2-3 and 2-4, respectively. Similarly, reported acenaphthene and naphthalene concentrations are presented in Figures 2-5 through 2-8.

2.10 *UPDATED COMPLIANCE SCHEDULE*

An updated compliance schedule is included as Appendix D of this report.

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

No recovery wells or ground water recovery system is present on site. Accordingly, there were no recovery well inspections, repairs, or operations conducted. However, the POC and CAO wells were inspected twice during the semiannual monitoring period. Based on the results of the inspections, one of the bollards at monitor well MW-16 was dislodged and leaning to one side. A summary of the well inspections will be included in the 2000 Annual Report.

2.12 *RECOMMENDATIONS FOR CHANGES*

At this time, no changes are recommended.

2.13 *OTHER REQUESTED ITEMS*

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

Tables

July 21, 2000
W.O. #422-009

Environmental Resources Management
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TABLE 2-1

Summary of Analytical Results for the A-Transmissive Zone (A-TZ)

First Semiannual Sampling Event, 2000
Houston Wood Preserving Works
Houston, Texas

Analyte	PQL (GWPS)[1]	Monitor Well ID: Sample Date:	MW-01A 3/27/00	MW-02 3/27/00	MW-03 3/28/00	MW-04 3/29/00	MW-05 3/28/00	MW-07 3/29/00	MW-08 3/27/00	MW-09 3/28/00	MW-10A 3/28/00	MW-11A 3/28/00	MW-11AD* 3/28/00
Benzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003 J	0.003 J
Chlorobenzene	0.005		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
Methylene chloride	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.005		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
Xylene (total)	0.005		ND[3]	ND[3]	ND[3]	ND[3]	ND[3]	ND[3]	ND[3]	ND[3]	ND[3]	0.005 J	0.004 J
Acenaphthene	0.010		***0.240***	***0.0219***	0.0046	ND	0.0016	ND	ND	ND	***0.0869***	***0.232***	***0.226***
Acenaphthylene	0.010		0.00491	ND	ND	ND	ND	ND	ND	ND	ND	0.00383	0.00366
Anthracene	0.010		0.009	0.002	0.0006 J	ND	0.0005 J	ND	ND	0.0005 J	0.003	***0.011***	***0.011***
Benzo(a)anthracene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	0.010		***0.126***	***0.0171***	0.0024	ND	ND	ND	ND	ND	0.0019	***0.103***	***0.0954***
Di-n-butylphthalate	0.010		ND[4]	ND[4]	ND[4]	ND[4]	0.0007 J[4]	ND[4]	ND[4]	0.0008 J[4]	ND[4]	0.0008 J[4]	0.0008 J[4]
2,4-Dimethylphenol	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Diphenylhydrazine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	0.010		ND[4]	ND[4]	0.0006 J[4]	ND[4]	0.0009 J[4]	ND[4]	ND[4]	0.0009 J[4]	0.0007 J[4]	0.001 J[4]	0.001 J[4]
Fluoranthene	0.010		***0.011***	ND	0.0005 J	ND	ND	ND	ND	ND	0.008	***0.015***	***0.014***
Fluorene	0.010		***0.141***	***0.0156***	0.0019	ND	ND	ND	ND	ND	***0.0353***	***0.179***	***0.173***
2-Methylnaphthalene	0.010		***0.0223***	ND	ND	ND	ND	ND	ND	ND	ND	0.0021	0.003
Naphthalene	0.010		***0.132***	***0.0109***	ND	ND	ND	ND	ND	ND	***0.0929***	***0.0637***	***0.0635***
Nitrobenzene	0.010		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
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND	ND	0.005	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	0.010		***0.068***	ND	ND	ND	ND	ND	ND	ND	0.0025	***0.0694***	***0.0699***
Phenol	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	0.010		0.0055	ND	ND	ND	ND	ND	ND	ND	0.0053	0.0067	0.0071

NOTES:

Values reported in mg/L. ND - Not detected at the Practical Quantitation Limit (PQL).

[1]PQL - *Practical Quantitation Limit* as defined on Table 1 of the Compliance Plan, and determined by the analytical methods of EPA SW-846. The PQL is the Ground Water Protection Standard.

[2] ***Bold, italics*** indicate values reported at concentrations greater than the Ground Water Protection Standard (GWPS).

[3]The compound was not detected but the reported detection limit is greater than the PQL.

[4]The compound was detected in a blank.

J = Value was detected, but below limit of quantitation.

* = MW-11AD is a duplicate sample from well MW-11A.

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TABLE 2-2

Summary of Analytical Results for the B-Transmissive Zone (B-TZ)

First Semiannual Sampling Event, 2000
Houston Wood Preserving Works
Houston, Texas

Analyte	PQL (GWPS)[1]	Monitor Well ID: Sample Date:	MW-10B 3/28/00	MW-10BD* 3/28/00	MW-11B 3/29/00	P-10 3/28/00	P-11 3/28/00	P-12 3/28/00
Benzene	0.005		ND	ND	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005		ND	ND	ND	ND	ND	ND
Methylene chloride	0.010		ND	ND	ND	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	***0.018***	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND	ND
Xylene (total)	0.005		ND[3]	ND[3]	ND[3]	***0.02***	ND[3]	ND[3]
Acenaphthene	0.010		0.0072	0.0052	***0.0427***	***0.280***	***0.126***	ND
Acenaphthylene	0.010		ND	ND	0.00179	0.00176	0.0017	ND
Anthracene	0.010		0.002 J	0.002 J	ND	***0.022***	0.004	ND
Benzo(a)anthracene	0.010		ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND	ND	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	0.010		ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	0.010		ND	ND	ND	ND	ND	ND
Chrysene	0.010		ND	ND	ND	ND	ND	ND
Dibenzofuran	0.010		***0.0149***	***0.0153***	***0.0161***	***0.105***	***0.0666***	ND
Di-n-butylphthalate	0.010		ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	0.0008 J[4]
2,4-Dimethylphenol	0.010		ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010		ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	0.010		ND	ND	ND	ND	ND	ND
1,2-Diphenylhydrazine	0.010		ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	0.010		0.0007 J[4]	0.0009 J[4]	ND[4]	0.0009 J[4]	0.0006 J[4]	0.001 J[4]
Fluoranthene	0.010		0.001 J	0.001 J	0.003	***0.014***	***0.010***	ND
Fluorene	0.010		***0.0142***	***0.0149***	***0.0138***	***0.220***	***0.0592***	ND
2-Methylnaphthalene	0.010		0.0013 J	0.0014 J	0.0016	***0.138***	ND	ND
Naphthalene — >HA	0.010		***0.0231***	***0.019***	***0.0791***	***4.320***	0.00172 J	ND
Nitrobenzene	0.010		ND	ND	ND	ND	ND	ND
p-Nitrophenol	0.050		ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND	ND	ND	ND	ND	ND
Phenanthrene	0.010		0.0072	0.0065	ND	***0.144***	0.0016	ND
Phenol	0.010		ND	ND	ND	ND	ND	ND
Pyrene	0.010		0.0005 J	0.0005 J	ND	0.006	0.0043	***0.0106***

NOTES:

Values reported in mg/L. ND - Not detected at the Practical Quantitation Limit (PQL).

[1]PQL - *Practical Quantitation Limit* as defined on Table I of the Compliance Plan, and determined by the analytical methods of EPA SW-846. The PQL is the Ground Water Protection Standard.

[2] ***Bold, italics*** indicate values reported at concentrations greater than the Ground Water Protection Standard (GWPS).

[3]The compound was not detected but the reported detection limit is greater than the PQL.

[4]The compound was detected in a blank.

J = Value was detected, but below limit of quantitation.

* = MW-10BD is a duplicate sample from well MW-10B.

TABLE 2-3

Water Level and Total Depth of Well Measurements

First Semiannual Sampling Event, 2000
Houston Wood Preserving Works
Houston, Texas

ATZ Monitoring Location

Well ID	Top of Casing Elevation (ft msl)	Depth to Water (ft TOC)	Water Surface Elevation (ft msl)	Total Depth of Well as Measured (ft TOC)	Total Depth as Logged (ft TOC) *
MW-01A	47.95	7.38	40.57	21.77	20.20
MW-02	48.03	7.73	40.30	18.55	20.30
MW-03	48.55	8.06	40.49	19.66	20.90
MW-04	49.85	9.38	40.47	21.79	23.40
MW-05	49.35	8.62	40.73	27.40	28.30
MW-07	48.86	8.62	40.24	24.84	N/A
MW-08	49.37	8.75	40.62	25.13	26.80
MW-09	49.29	8.22	41.07	25.47	26.80
MW-10A	49.90	9.57	40.33	25.65	25.90
MW-11A	50.04	9.66	40.38	24.05	24.40

BTZ Monitoring Location

Well ID	Top of Casing Elevation (ft msl)	Depth to Water (ft TOC)	Water Surface Elevation (ft msl)	Total Depth of Well as (ft TOC) Measured	Total Depth as Logged (ft TOC) *
MW-10B	49.97	9.67	40.30	46.53	48.80
MW-11B	50.19	9.93	40.26	46.80	46.80
P-10	47.72	7.53	40.19	42.94	N/A
P-11	49.02	8.32	40.70	42.89	51.80
P-12	48.82	7.76	41.06	42.93	51.70

NOTES:

msl - feet above mean sea level
ft TOC - feet below the Top Of (the well) Casing
* Logged during well installation
N/A - Information not available

TABLE 2-4

Compliance Status of Wells and Piezometers

First Semiannual Sampling Event, 2000
Houston Wood Preserving Works
Houston, Texas

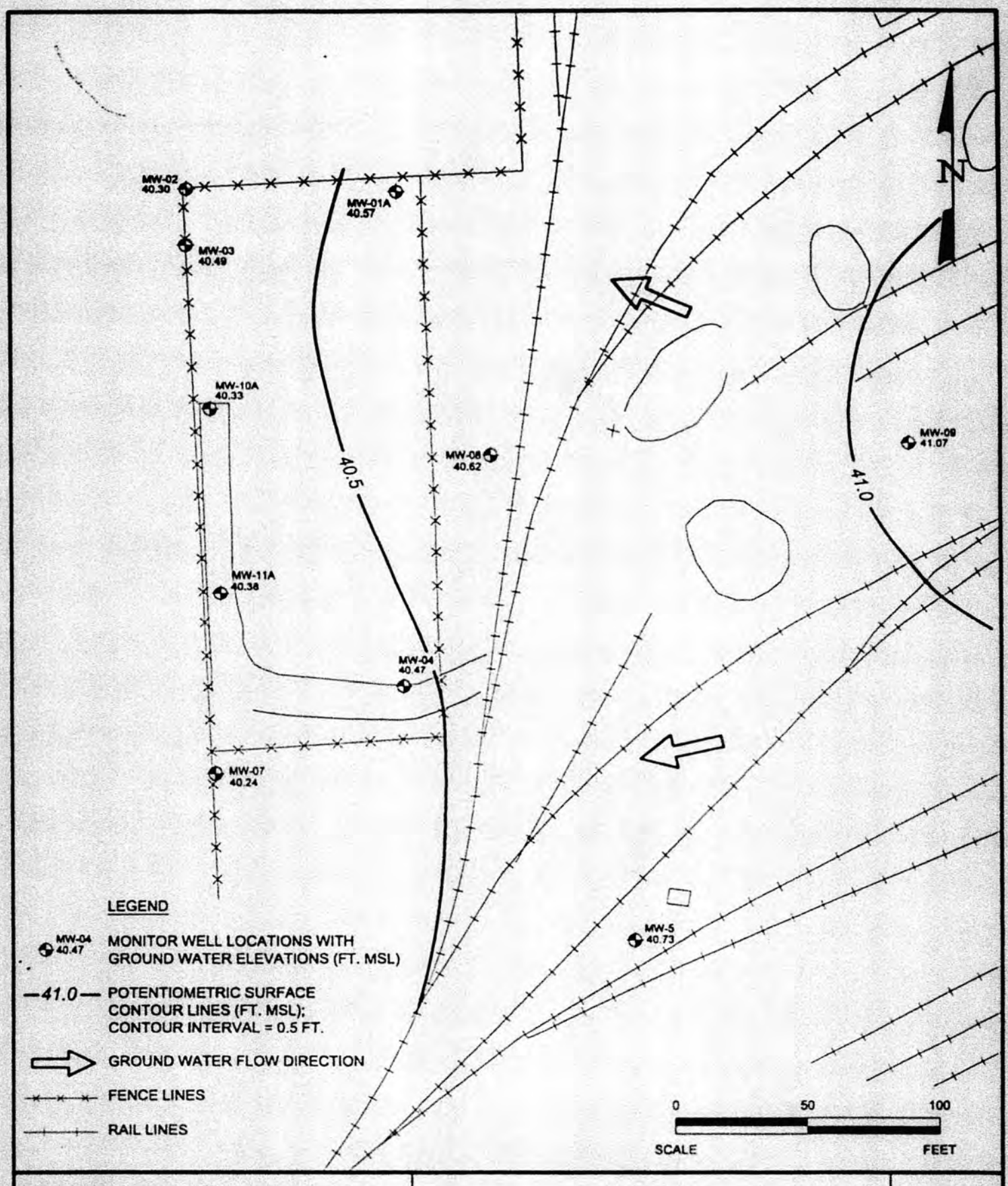
A-TZ Monitoring Location	Well Designation	Compliance Status
MW-01A	Point of compliance	Non-Compliant
MW-02	Point of compliance	Non-Compliant
MW-03	Point of compliance	Compliant
MW-10A	Point of compliance	Non-Compliant
MW-11A	Point of compliance	Non-Compliant
MW-04	Corrective action observation	Compliant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

Figures

July 21, 2000
W.O. #422-009

Environmental Resources Management
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

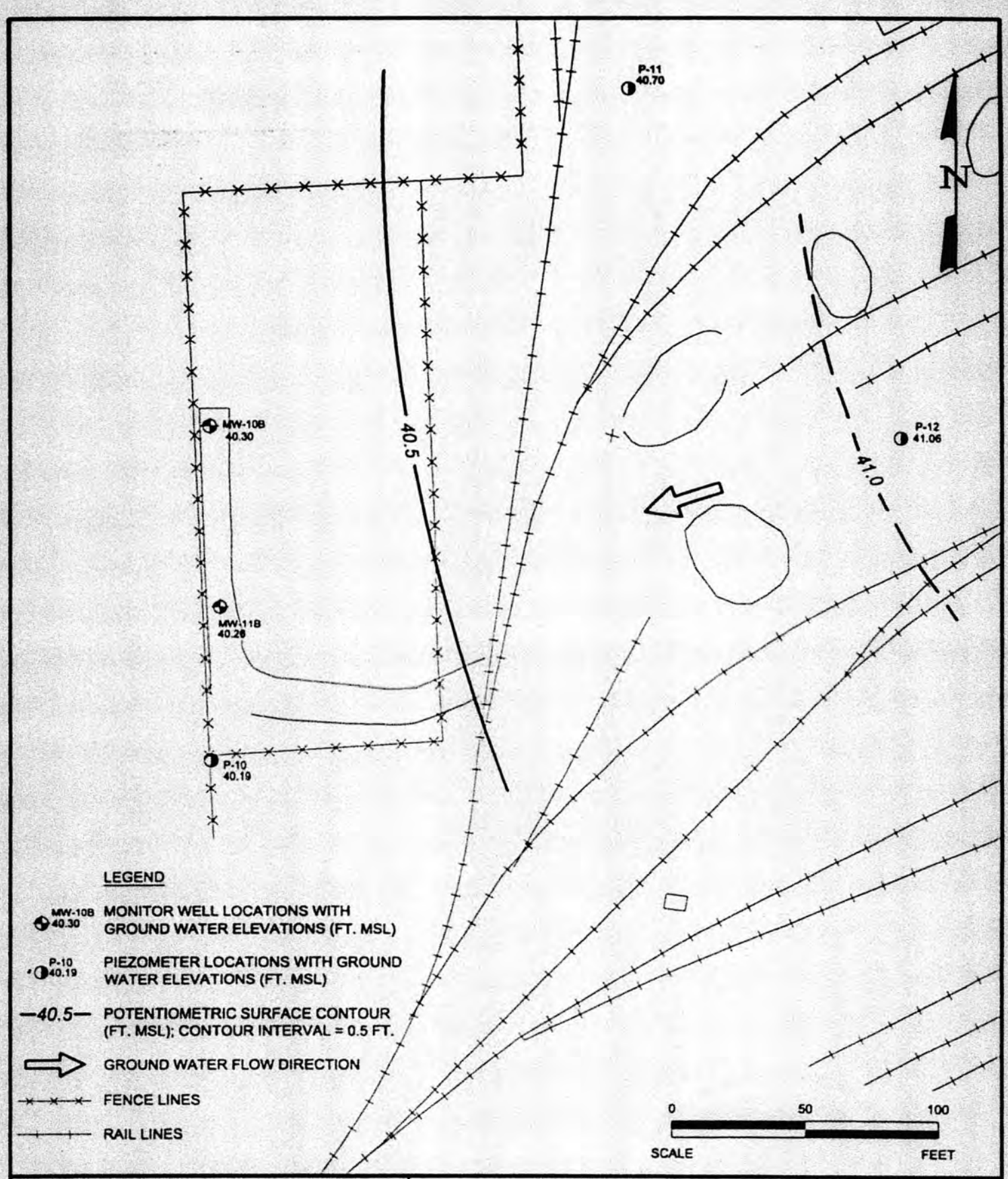


ERM-Southwest, Inc.
HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT

DESIGN: MLY	CHKD.:	DATE: 07/07/00	REV.:
DRAWN: LMc	SCALE: AS SHOWN	W.O.NO.: 42209A118G00	

FIGURE 2-1
A-TZ POTENTIOMETRIC SURFACE
MARCH 27, 2000
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM.

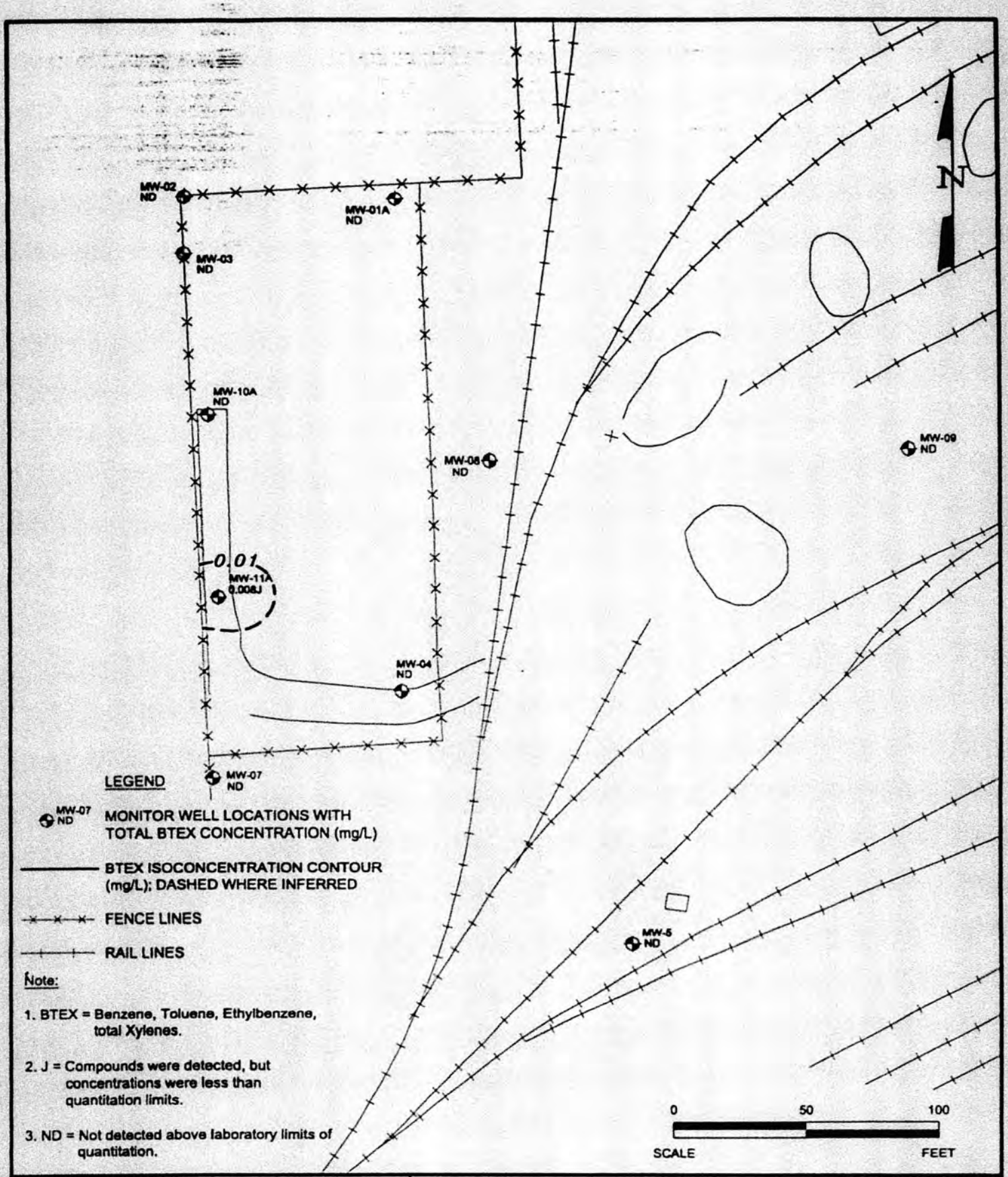


ERM-Southwest, Inc.
HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT

FIGURE 2-2
B-TZ POTENTIOMETRIC SURFACE
MARCH 27, 2000
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

DESIGN: MLY	CHKD.:	DATE: 07/07/00	REV.:
DRAWN: LMc	SCALE: AS SHOWN	W.O.NO.: 42209A119G00	

ERM

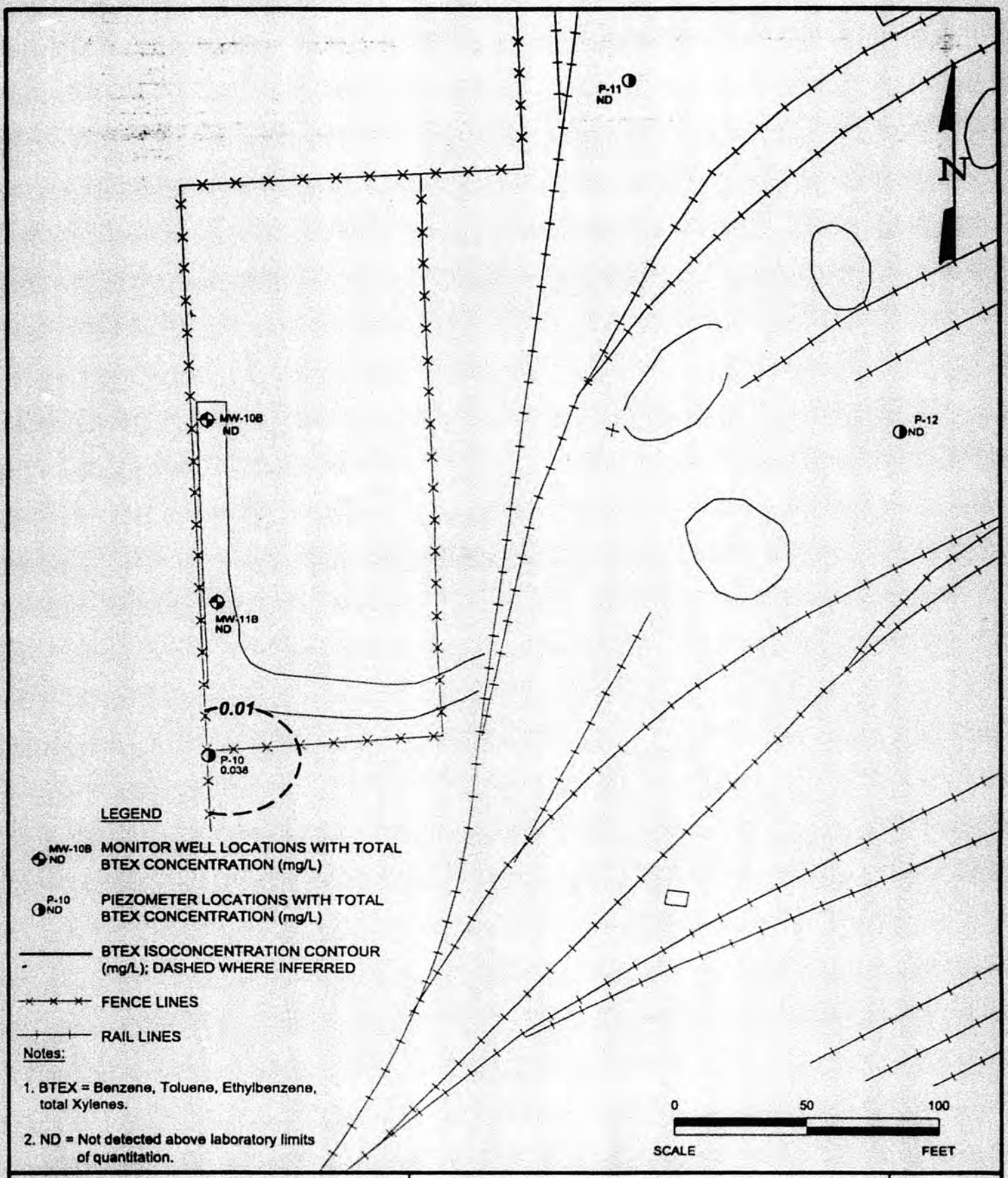


ERM-Southwest, Inc.
HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT

DESIGN: MLY	CHKD.:	DATE: 07/07/00	REV.:
DRAWN: LMc	SCALE: AS SHOWN	W.O.NO.: 42209A120G00	

FIGURE 2-3
TOTAL BTEX IN A-TZ GROUND WATER (mg/L)
MARCH 28-30, 2000
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM



ERM-Southwest, Inc.
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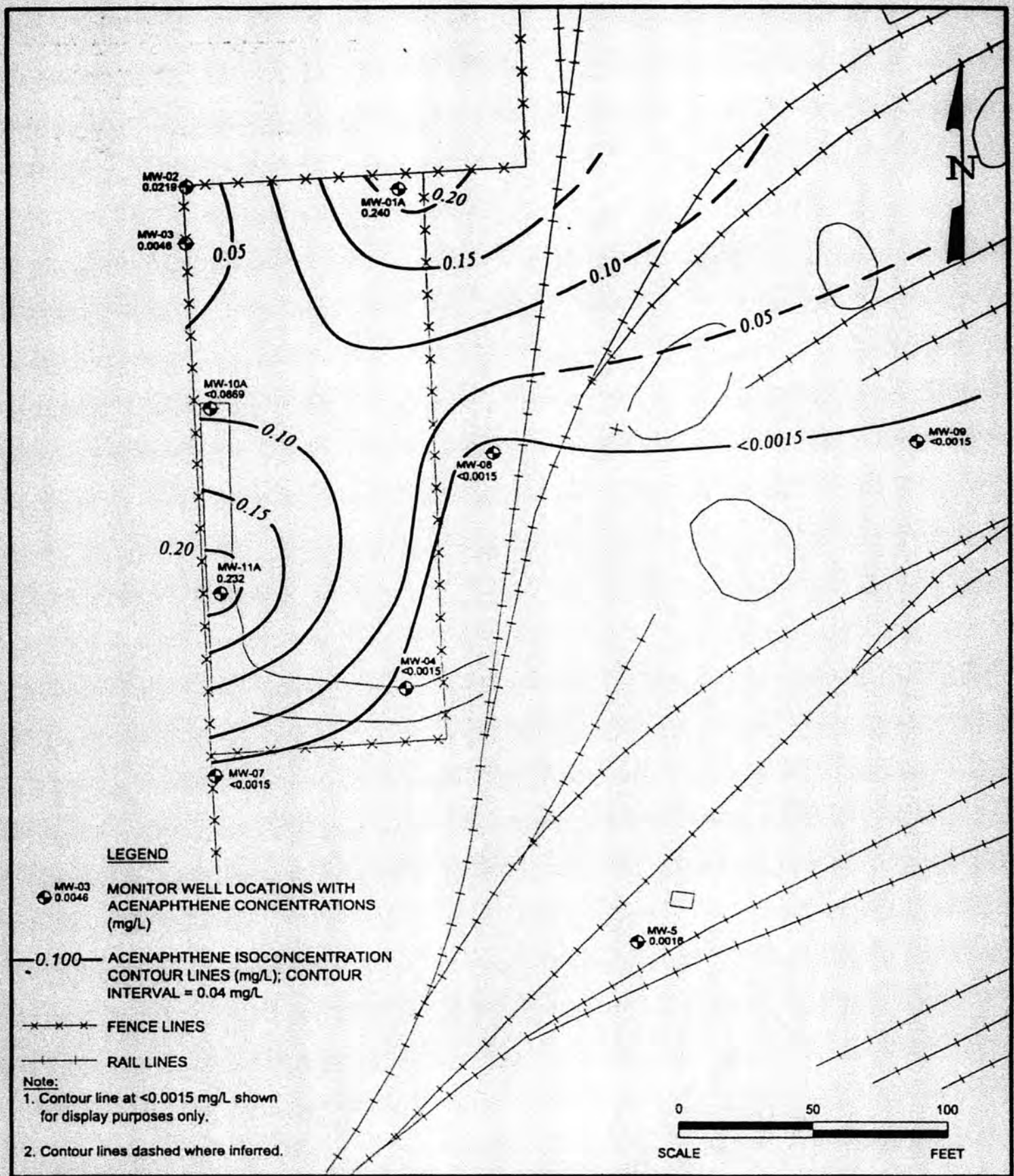
FIGURE 2-4
TOTAL BTEX IN B-TZ GROUND WATER (mg/L)
MARCH 28-30, 2000
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

DESIGN: MLY	CHKD.:	DATE: 07/07/00	REV.:
DRAWN: LMc	SCALE: AS SHOWN	W.O.NO.: 42209A121G00	

ERM.



ERM-Southwest, Inc.
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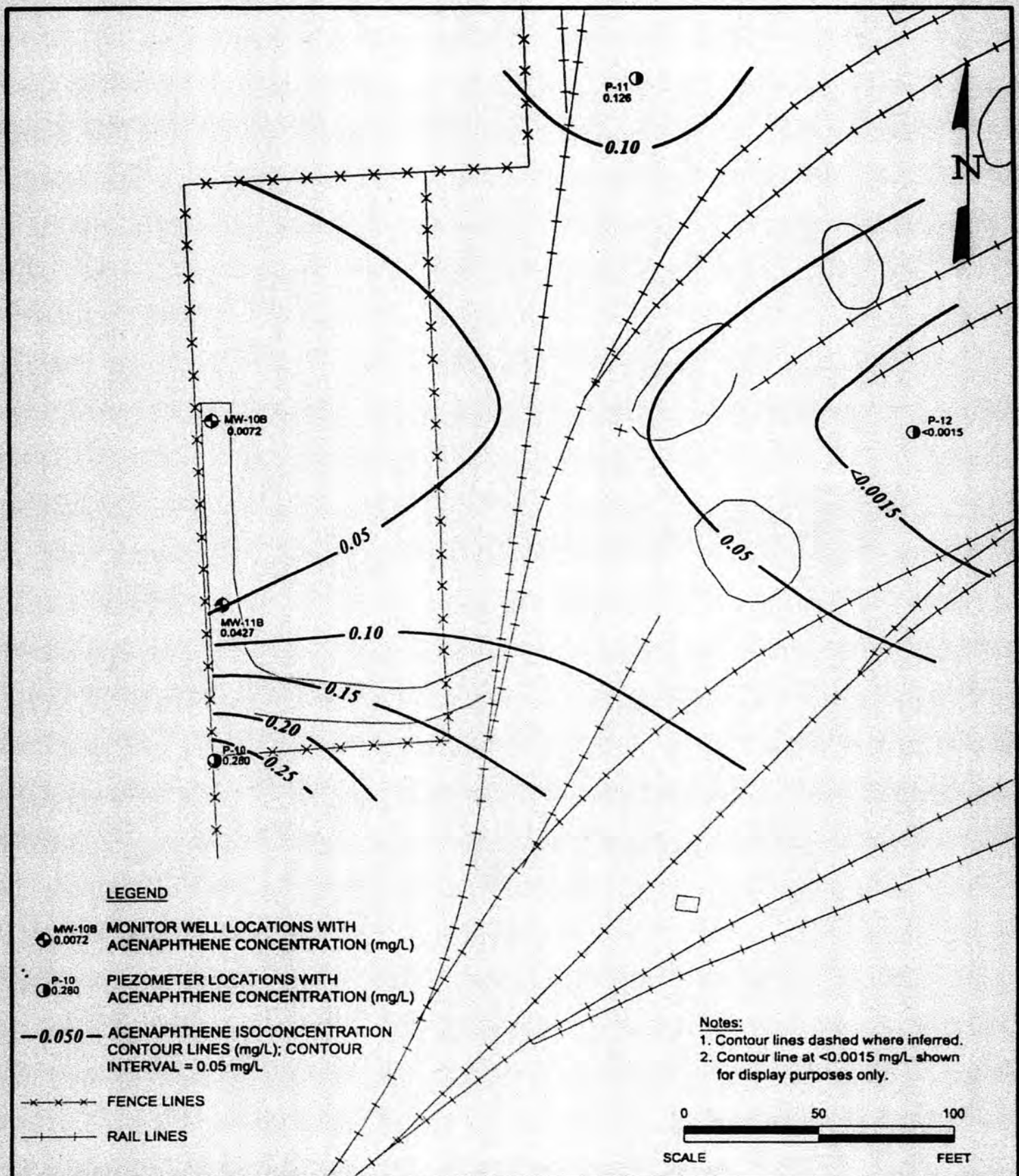
FIGURE 2-5
ACENAPHTHENE IN A-TZ GROUND WATER (mg/L)
MARCH 28-30, 2000
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM

DESIGN: MLY	CHKD.:	DATE: 07/07/00	REV.:
DRAWN: LMc	SCALE: AS SHOWN	W.O.NO.: 42209A122G00	

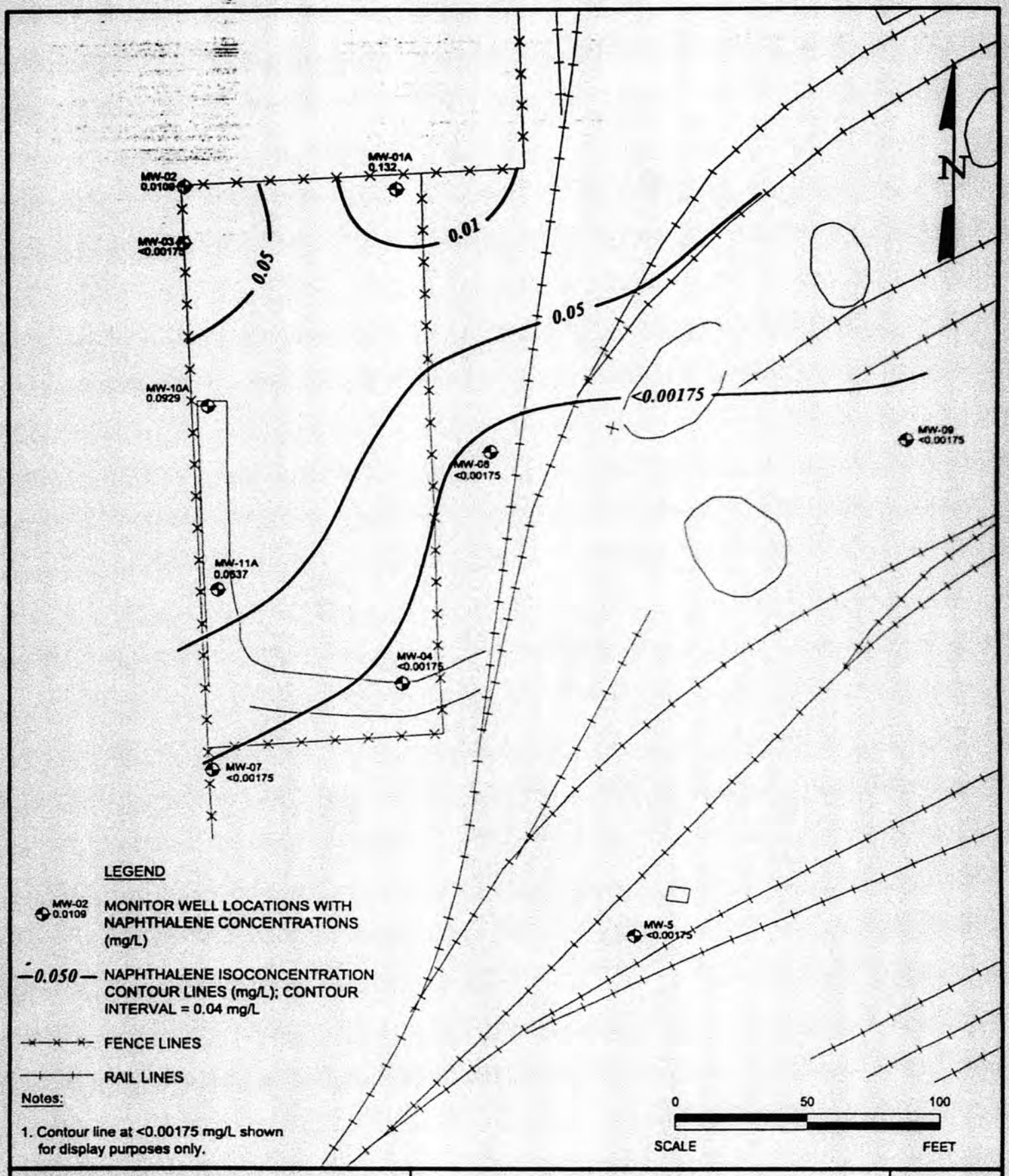


ERM-Southwest, Inc.
HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT

DESIGN: MLY	CHKD.:	DATE: 07/07/00	REV.:
DRAWN: LMc	SCALE: AS SHOWN	W.O.NO.: 42209A123G00	

FIGURE 2-6
ACENAPHTHENE IN B-TZ GROUND WATER (mg/L)
MARCH 28-30, 2000
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM



LEGEND

MW-02 0.0109 — MONITOR WELL LOCATIONS WITH NAPHTHALENE CONCENTRATIONS (mg/L)

—0.050— NAPHTHALENE ISOCONCENTRATION CONTOUR LINES (mg/L); CONTOUR INTERVAL = 0.04 mg/L

FENCE LINES

RAIL LINES

Notes:

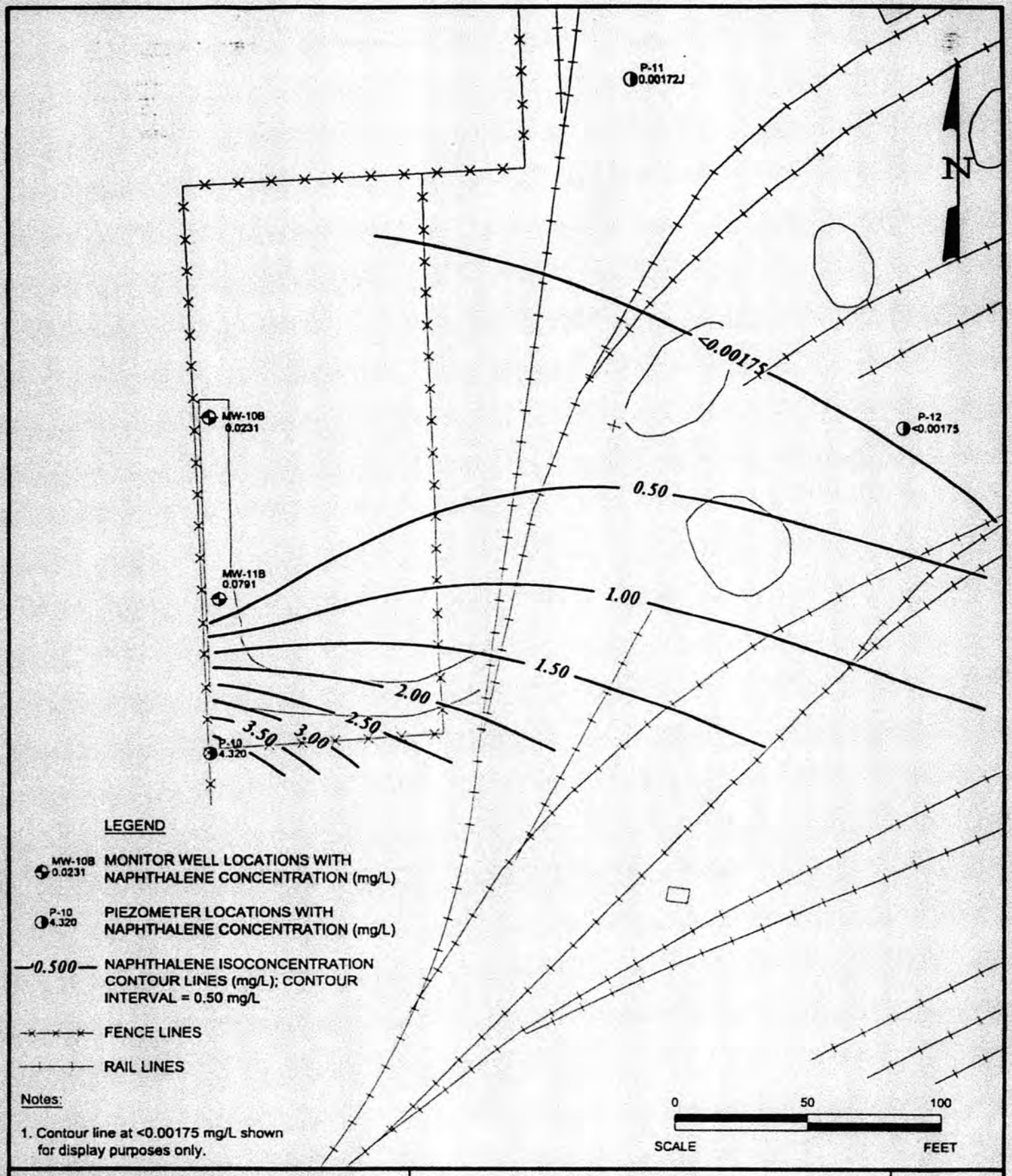
1. Contour line at <0.00175 mg/L shown for display purposes only.

ERM-Southwest, Inc.
HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT

DESIGN: MLY	CHKD.:	DATE: 07/07/00	REV.:
DRAWN: LMc	SCALE: AS SHOWN	W.O.NO.: 42209A124G00	

FIGURE 2-7
NAPHTHALENE IN A-TZ GROUND WATER (mg/L)
MARCH 28-30, 2000
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM.



ERM-Southwest, Inc.
HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT

FIGURE 2-8
NAPHTHALENE IN B-TZ GROUND WATER (mg/L)
MARCH 28-30, 2000
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

DESIGN: MLY	CHKD.:	DATE: 07/07/00	REV.:
DRAWN: LMc	SCALE: AS SHOWN	W.O.NO.: 42209A125G00	

ERM

Compliance Plan Table

Appendix A

July 21, 2000

W.O. #422-009

Environmental Resources Management
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

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-Chloronaphthalene	ND (0.010)
Chrysene	ND (0.010)
Dibenzofuran	ND (0.010)
1,2-Dichloroethane	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-Nitrophenol	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)

NOTES:

ND 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.

* Because Methylene Chloride is listed herein with a PQL of 0.010 mg/L, and is the same compound as Dichloromethane, comparisons for compliance will be made at 0.010 mg/L.

Field Parameters

Appendix B

July 21, 2000
W.O. #422-009

Environmental Resources Management
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

TABLE B-1

Ground Water Sampling Field Parameters

First Semiannual Sampling Event, 2000
Houston Wood Preserving Works
Houston, Texas

Well ID / Date Sampled	MW-01A 3/27/00	MW-02 3/27/00	MW-03 3/28/00	MW-04 3/29/00	MW-05 3/28/00	MW-07 3/29/00	MW-08 3/27/00	MW-09 3/28/00
Time Sampled (hrs)	1435	1550	0900	1055	1230	1320	1540	0930
Temperature (°C)	21.99	20.73	20.47	23.0	22.95	23.57	34.02	22.93
pH (Standard Units)	6.62	6.73	6.80	6.57	6.71	6.84	6.71	6.66
Specific Conductivity (uS)	1582	1149	1300	746	747	880	500	748
Dissolved Oxygen (mg/L)	0.41	0.56	0.60	0.57	0.89	0.36	0.47	0.21
Oxidation-Reduction Potential (mV)	-109.2	-42.6	-107.7	149.7	-7.8	215.1	275.6	137.0

Well ID / Date Sampled	MW-10A 3/28/00	MW-10B 3/28/00	MW-11A 3/28/00	MW-11B 3/29/00	P-10 3/28/00	P-11 3/28/00	P-12 3/28/00
Time Sampled (hrs)	1020	1145	1335	0950	1405	1400	1040
Temperature (°C)	21.24	22.17	22.26	23.11	23.43	23.55	23.73
pH (Standard Units)	6.81	6.88	6.72	6.47	6.54	6.63	6.46
Specific Conductivity (uS)	1439	1422	1360	1267	1227	1450	1468
Dissolved Oxygen (mg/L)	0.71	0.53	0.38	0.43	0.40	1.39	0.44
Oxidation-Reduction Potential (mV)	10.9	-17.2	-107.2	-64.3	-60.7	-61.0	86.6

Laboratory Analytical Reports

Appendix C

July 21, 2000
W.O. #422-009

Environmental Resources Management
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

07/21/2000

Mr. Peter Gagnon
ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094

Reference:
Project: HWPW 1st Semiannual
Project No.: 422-09
Date Received: 03/28/2000
STL Group: 59133 Group Report Date: 04/17/2000

Dear Mr. Gagnon:

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

P-11 :305960	MW-3 :305961
MW-10A :305962	MW-10A MS :305963
MW-10A MSD :305964	MW-10B :305965
MW-10B DUP :305966	MW-11A :305967
MW-11A DUP :305968	MW-9 :305969
P-12 :305970	MW-5 :305971
P-10 :305972	FB :305981

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

Our A2LA accreditation requires that, should this report be reproduced, it must be reproduced in total.

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

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 yours,

Ed B. Fry
Project Manager

Enclosure

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: P-11
Matrix: Water
EPA Sx #: P11

STL Sample: 305960
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/30/2000				
	Benzene	U	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/17/2000				
	Acenaphthene	120	ug/l		2
	Acenaphthylene	2	ug/l		1
	Anthracene	4	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.6 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	66	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

ERM-Southwest, Inc.

STL Sample: 305960
STL Group: 59133

Sample ID: P-11

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/04/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.5 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	10	ug/l	2
	Fluorene	59	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	2 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	2	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	4	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

a part of
Severn Trent Laboratories, Inc.

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-3
Matrix: Water
EPA Sx #: MW3

STL Sample: 305961
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/30/2000				
	Benzene	U	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/04/2000				
	Acenaphthene	5	ug/l		2
	Acenaphthylene	0.1 J	ug/l		1
	Anthracene	0.6 J	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.6 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	2	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

ERM-Southwest, Inc.

STL Sample: 305961
STL Group: 59133

Sample ID: MW-3

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/04/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.6 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	0.5 J	ug/l	2
	Fluorene	2	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.1 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	5	ug/l	1
	Phenanthrene	0.09 J	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	0.2 J	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

1) Compound detected in the blank at .61 ug/L.
2) Compound detected in the blank at .55 uf/L.

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-10A
Matrix: Water
EPA Sx #: MW10A

STL Sample: 305962
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	U	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/17/2000				
	Acenaphthene	87	ug/l		2
	Acenaphthylene	U	ug/l		1
	Anthracene	3	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.6 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	2	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

ERM-Southwest, Inc.

STL Sample: 305962
STL Group: 59133

Sample ID: MW-10A

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/04/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.6 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	8	ug/l	2
	Fluorene	35	ug/l	2
	2-Methylnaphthalene	0.2 J	ug/l	2
	Naphthalene	93	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	2	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	5	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-10A MS
Matrix: Water
EPA Sx #: MW10A MS

STL Sample: 305963
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	48	ug/l		5
	Chlorobenzene	45	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	45	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/12/2000				
	Acenaphthene	13	ug/l		2
	Acenaphthylene	U	ug/l		1
	Anthracene	U	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	0.01 J	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	1 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	0.8 J	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

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ERM-Southwest, Inc.

STL Sample: 305963
STL Group: 59133

Sample ID: MW-10A MS

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/12/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	1 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	13	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	U	ug/l	2
	Fluorene	0.5 J	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.3 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	15	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	30	ug/l	1
	Phenanthrene	0.4 J	ug/l	2
	Phenol	14	ug/l	1
	Pyrene	15	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-10A MSD
Matrix: Water
EPA Sx #: MW10A MSD

STL Sample: 305964
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	49	ug/l		5
	Chlorobenzene	47	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	45	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/12/2000				
	Acenaphthene	12	ug/l		2
	Acenaphthylene	U	ug/l		1
	Anthracene	U	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	1 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	0.7 J	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

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ERM-Southwest, Inc.

STL Sample: 305964
STL Group: 59133

Sample ID: MW-10A MSD

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/12/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	2 B	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	13	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	U	ug/l	2
	Fluorene	0.4 J	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.3 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	19	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	31	ug/l	1
	Phenanthrene	0.4 J	ug/l	2
	Phenol	14	ug/l	1
	Pyrene	15	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

1) Compound detected in the blank at .61 ug/L.
2) Compound detected in the blank at .55 uf/L.

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-10B
Matrix: Water
EPA Sx #: MW10B

STL Sample: 305965
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	U	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/13/2000				
	Acenaphthene	7	ug/l		2
	Acenaphthylene	0.3 J	ug/l		1
	Anthracene	2 J	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.7 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	15	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

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ERM-Southwest, Inc.

STL Sample: 305965
STL Group: 59133

Sample ID: MW-10B

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/13/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.6 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	1 J	ug/l	2
	Fluorene	14	ug/l	2
	2-Methylnaphthalene	1 J	ug/l	2
	Naphthalene	23	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	7	ug/l	2
	Phenol	0.2 J	ug/l	1
	Pyrene	0.4 J	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

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ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-10B DUP
Matrix: Water
EPA Sx #: MW10BD

STL Sample: 305966
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

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Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	U	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/13/2000				
	Acenaphthene	5	ug/l		2
	Acenaphthylene	0.3 J	ug/l		1
	Anthracene	2 J	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.9 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	15	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

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ERM-Southwest, Inc.

STL Sample: 305966
STL Group: 59133

Sample ID: MW-10B DUP

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/13/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.6 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	1 J	ug/l	2
	Fluorene	15	ug/l	2
	2-Methylnaphthalene	1 J	ug/l	2
	Naphthalene	19	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	6	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	0.5 J	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-11A
Matrix: Water
EPA Sx #: MW11A

STL Sample: 305967
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

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Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	3 J	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	5 J	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/14/2000				
	Acenaphthene	230	ug/l		2
	Acenaphthylene	4	ug/l		1
	Anthracene	11	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	1 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	100	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

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ERM-Southwest, Inc.

STL Sample: 305967
STL Group: 59133

Sample ID: MW-11A

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/13/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.8 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	15	ug/l	2
	Fluorene	180	ug/l	2
	2-Methylnaphthalene	2	ug/l	2
	Naphthalene	64	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	69	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	7	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-11A DUP
Matrix: Water
EPA Sx #: MW11AD

STL Sample: 305968
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	3 J	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	4 J	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/14/2000				
	Acenaphthene	220	ug/l		2
	Acenaphthylene	4	ug/l		1
	Anthracene	11	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	1 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	95	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

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ERM-Southwest, Inc.

STL Sample: 305968
STL Group: 59133

Sample ID: MW-11A DUP

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/13/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.8 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	14	ug/l	2
	Fluorene	170	ug/l	2
	2-Methylnaphthalene	3	ug/l	2
	Naphthalene	64	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	70	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	7	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-9
Matrix: Water
EPA Sx #: MW9

STL Sample: 305969
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	U	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/13/2000				
	Acenaphthene	U	ug/l		2
	Acenaphthylene	U	ug/l		1
	Anthracene	0.5 J	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.9 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	U	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

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ERM-Southwest, Inc.

STL Sample: 305969
STL Group: 59133

Sample ID: MW-9

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/13/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.8 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	U	ug/l	2
	Fluorene	U	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.1 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	U	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	U	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

SEVERN TRENT SERVICES

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: P-12
Matrix: Water
EPA Sx #: P12

STL Sample: 305970
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8261B	Volatiles, TCL List			
	Method: SW-846 8260B 03/31/2000			
	Benzene	U	ug/l	5
	Chlorobenzene	U	ug/l	5
	1,2-Dichloroethane	U	ug/l	5
	Methylene Chloride	U	ug/l	5
	Ethylbenzene	U	ug/l	5
	Toluene	U	ug/l	5
	Xylene (total)	U	ug/l	15
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/13/2000			
	Acenaphthene	U	ug/l	2
	Acenaphthylene	U	ug/l	1
	Anthracene	U	ug/l	2
	Benzo(a)anthracene	U	ug/l	1
	Benzo(a)pyrene	U	ug/l	0.2
	bis(2-Chloroethoxy)methane	U	ug/l	2
	bis(2-Ethylhexyl)phthalate	1 B J	ug/l (1)	2
	2-Chloronaphthalene	U	ug/l	2
	Chrysene	U	ug/l	2
	Dibenzofuran	U	ug/l	2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646
a part of Severn Trent Laboratories, Inc.

ERM-Southwest, Inc.

STL Sample: 305970
STL Group: 59133

Sample ID: P-12

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/13/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.8 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	U	ug/l	2
	Fluorene	U	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.1 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	U	ug/l	2
	Phenol	0.1 J	ug/l	1
	Pyrene	10	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-5
Matrix: Water
EPA Sx #: MW5

STL Sample: 305971
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	U	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/13/2000				
	Acenaphthene	2	ug/l		2
	Acenaphthylene	0.05 J	ug/l		1
	Anthracene	0.5 J	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.9 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	U	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

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ERM-Southwest, Inc.

STL Sample: 305971
STL Group: 59133

Sample ID: MW-5

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/13/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.7 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	0.1 J	ug/l	2
	Fluorene	U	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.1 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	0.06 J	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	0.2 J	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: P-10
Matrix: Water
EPA Sx #: P10

STL Sample: 305972
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/31/2000				
	Benzene	U	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	18	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	15	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/14/2000				
	Acenaphthene	280	ug/l		2
	Acenaphthylene	2	ug/l		1
	Anthracene	22	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.8 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	100	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

ERM-Southwest, Inc.

STL Sample: 305972
STL Group: 59133

Sample ID: P-10

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/13/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.6 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	14	ug/l	2
	Fluorene	220	ug/l	2
	2-Methylnaphthalene	140	ug/l	2
	Naphthalene	4300	ug/l	35
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	140	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	6	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

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ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: FB
Matrix: Water
EPA Sx #: FB

STL Sample: 305981
STL Group: 59133
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/28/2000
Date Sampled: 03/28/2000
Collected by:
Purchase Order: 422-09
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 04/01/2000				
	Benzene	U	ug/l		5
	Chlorobenzene	U	ug/l		5
	1,2-Dichloroethane	U	ug/l		5
	Methylene Chloride	U	ug/l		5
	Ethylbenzene	U	ug/l		5
	Toluene	U	ug/l		5
	Xylene (total)	U	ug/l		15
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/12/2000				
	Acenaphthene	U	ug/l		2
	Acenaphthylene	U	ug/l		1
	Anthracene	U	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.6 J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	U	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

Severn Trent Laboratories
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ERM-Southwest, Inc.

STL Sample: 305981
STL Group: 59133

Sample ID: FB

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/12/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.8 J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	U	ug/l	2
	Fluorene	U	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.4 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	U	ug/l	2
	Phenol	0.2 J	ug/l	1
	Pyrene	U	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 uf/L.

Severn Trent Laboratories
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ERM-Southwest, Inc.
STL Group: 59133

Qualifiers:

Organic:

U = Indicates compound was analyzed for but not detected.
J = Indicates the presence of a compound where the result is less than the CRQL but greater than zero.
B = Indicates that an analyte found was also found in the associated method blank.
E = Identifies compounds whose concentrations exceed the calibration range.
D = Indicates all compounds identified in an analysis that were analyzed at a secondary dilution.
P = Identifies that the difference in the concentration of a Pesticide/Aroclor target analyte is greater than 25% between the two columns.
C = Applies to Pesticide results where the identification has been confirmed by GC/MS.

Inorganic:

U = Indicates compound was analyzed for but not detected.
B = Indicates that a reported value was less than CRDL but greater than the IDL.
*** = Duplicate analysis not within control limits.**
E = The reported value is estimated because of the presence of interference.
N = Spiked sample recovery not within control limits.

Furnace Qualifiers Only:

M = Duplicate injection precision not met.
+ = Correlation coefficient for the MSA is less than 0.995.
W = Post digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.
S = The reported value was determined by the Method of Standard Additions (MSA).

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Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:24
Group: 59133

Analysis Batch Number: 0923 -04/04/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg095a.bQ
Number of Samples : 6
Batch Data-Date/Time : 04/14/00 / 17:24:21

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
SBLKW-03/29	Di-n-butyl phthalate	0.5500	10.0000
	bis(2-Ethylhexyl)phthalate	0.6080	10.0000

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-03/29	Phenol	6.3400	10.0000	63.4	10.0	112.0
	Nitrobenzene	8.5800	10.0000	85.8	35.0	180.0
	2,4-Dimethylphenol	3.1800	10.0000	31.8(G)	32.0	119.0
	bis(2-Chloroethoxy)methane	11.7000	10.0000	117.0	33.0	184.0
	Naphthalene	7.3200	10.0000	73.2	21.0	133.0
	2-Methylnaphthalene	6.6000	10.0000	66.0	57.0	129.0
	2-Chloronaphthalene	7.7200	10.0000	77.2	60.0	118.0
	Acenaphthylene	8.6200	10.0000	86.2	33.0	145.0
	2,6-Dinitrotoluene	14.5000	10.0000	145.0	50.0	158.0
	Acenaphthene	8.5600	10.0000	85.6	47.0	145.0
	4-Nitrophenol	7.4400	10.0000	74.4	10.0	132.0
	Dibenzofuran	9.1000	10.0000	91.0	65.0	127.0
	2,4-Dinitrotoluene	13.1600	10.0000	131.6	39.0	139.0
	Fluorene	9.8600	10.0000	98.6	59.0	121.0
	4,6-Dinitro-o-cresol	10.9600	10.0000	109.6	10.0	181.0
	N-Nitrosodiphenylamine	13.1200	10.0000	131.2(K1)	53.0	114.0
	Pentachlorophenol	13.7600	10.0000	137.6	14.0	176.0
	Phenanthrene	11.4800	10.0000	114.8	54.0	120.0
	Anthracene	11.8600	10.0000	118.6	27.0	133.0
	Di-n-butyl phthalate	14.1600	10.0000	141.6(K1)	10.0	118.0
	Fluoranthene	13.2000	10.0000	132.0	26.0	137.0
	Pyrene	14.2000	10.0000	142.0(K1)	52.0	115.0
	Benzo(a)anthracene	13.0000	10.0000	130.0	33.0	143.0
	bis(2-Ethylhexyl)phthalate	15.2400	10.0000	152.4	10.0	158.0
	Chrysene	14.1000	10.0000	141.0	17.0	168.0
	Benzo(a)pyrene	13.2800	10.0000	132.8	17.0	163.0

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59136-305988	49	31	73	71	110	110
SAMPLE 59136-305989	50	34	83	84	116	109
SAMPLE 59136-305990	43	30	73	72	109	91
SAMPLE 59133-305960	52	34	81	80	118	124
SAMPLE 59133-305961	50	32	80	78	115	106
SAMPLE 59133-305962	46	33	84	83	115	101
BLK 1 SBLKW-03/29	53	33	68	62	91	91
CTL 1 LCS-03/29	48	32	60	59	81	91

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:25
Group: 59133

Analysis Batch Number: 0923 -04/04/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg095a.bQ
Number of Samples : 6
Batch Data-Date/Time : 04/14/00 / 17:24:21

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES		QC LIMITS	
SRG ABRV =	SURROGATE DESCRIPTION	LOWER	UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(G) - Marginal Outlier
(K1) - See comment for explanation

---------- Batch Notes ----------
LCS mix was at very low volume and may have concentrated.

Groups & Samples

59133-305960 59133-305961 59133-305962 59136-305988 59136-305989 59136-305990

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:25
Group: 59133

Analysis Batch Number: 0923 -04/17/00-1273-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sn108a.bQ
Number of Samples : 6
Batch Data-Date/Time : 04/18/00 / 10:28:02

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
SBLKW-04/13	none detected		

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
BS-04/13	Phenol	200.0000	0.0000	103.2800	51.6	10.0	112.0
	2-Chlorophenol	200.0000	0.0000	216.6000	108.3	23.0	134.0
	1,4-Dichlorobenzene	100.0000	0.0000	104.0200	104.0	20.0	124.0
	N-Nitrosodi-n-propylamine	100.0000	0.0000	139.3600	139.4	10.0	230.0
	1,2,4-Trichlorobenzene	100.0000	0.0000	101.3000	101.3	44.0	142.0
	4-Chloro-3-methylphenol	200.0000	0.0000	214.2000	107.1	22.0	147.0
	Acenaphthene	100.0000	0.0000	121.9400	121.9	47.0	145.0
	4-Nitrophenol	200.0000	0.0000	101.5000	50.7	10.0	132.0
	2,4-Dinitrotoluene	100.0000	0.0000	109.6400	109.6	39.0	139.0
	Pentachlorophenol	200.0000	0.0000	255.2000	127.6	14.0	176.0
	Pyrene	100.0000	0.0000	108.0400	108.0	52.0	115.0

MSD SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
BSD-04/13	Phenol	200.0000	0.0000	107.5600	53.8	10.0	112.0	4.2	23.0
	2-Chlorophenol	200.0000	0.0000	217.2000	108.6	23.0	134.0	0.3	29.0
	1,4-Dichlorobenzene	100.0000	0.0000	104.4800	104.5	20.0	124.0	0.5	32.0
	N-Nitrosodi-n-propylamine	100.0000	0.0000	139.1800	139.2	10.0	230.0	0.1	55.0
	1,2,4-Trichlorobenzene	100.0000	0.0000	101.3800	101.4	44.0	142.0	0.1	28.0
	4-Chloro-3-methylphenol	200.0000	0.0000	199.1600	99.6	22.0	147.0	7.3	37.0
	Acenaphthene	100.0000	0.0000	119.9600	120.0	47.0	145.0	1.6	28.0
	4-Nitrophenol	200.0000	0.0000	83.9400	42.0	10.0	132.0	18.8	47.0
	2,4-Dinitrotoluene	100.0000	0.0000	97.6800	97.7	39.0	139.0	11.5	22.0
	Pentachlorophenol	200.0000	0.0000	258.6000	129.3	14.0	176.0	1.3	49.0
	Pyrene	100.0000	0.0000	107.4600	107.5	52.0	115.0	0.5	25.0

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/13	Phenol	63.8400	100.0000	63.8	10.0	112.0
	bis(2-Chloroethyl)ether	120.7200	100.0000	120.7	12.0	158.0
	2-Chlorophenol	108.9000	100.0000	108.9	23.0	134.0
	1,3-Dichlorobenzene	63.1800	100.0000	63.2	10.0	172.0
	1,4-Dichlorobenzene	64.4200	100.0000	64.4	20.0	124.0
	1,2-Dichlorobenzene	66.6200	100.0000	66.6	32.0	129.0
	Benzyl alcohol	116.6800	100.0000	116.7(P)	45.0	100.0
	o-Cresol (2-Methylphenol)	95.5400	100.0000	95.5	49.0	103.0
	2,2'-oxybis(1-Chloropropane)	129.7600	100.0000	129.8	36.0	166.0
	p-Cresol (4-Methylphenol)	93.4800	100.0000	93.5	47.0	100.0
	N-Nitrosodi-n-propylamine	137.0400	100.0000	137.0	10.0	230.0
	Hexachloroethane	60.1000	100.0000	60.1	40.0	113.0
	Nitrobenzene	114.4000	100.0000	114.4	35.0	180.0
	Isophorone	121.9800	100.0000	122.0	21.0	196.0
	2-Nitrophenol	110.9000	100.0000	110.9	29.0	182.0
	Benzoic acid	37.5800	100.0000	37.6	10.0	100.0
	2,4-Dimethylphenol	107.1200	100.0000	107.1	32.0	119.0
	bis(2-Chloroethoxy)methane	127.9400	100.0000	127.9	33.0	184.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:26
Group: 59133

Analysis Batch Number: 0923 -04/17/00-1273-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sn108a.bQ
Number of Samples : 6
Batch Data-Date/Time : 04/18/00 / 10:28:02

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/13	2,4-Dichlorophenol	114.4000	100.0000	114.4	39.0	135.0
	1,2,4-Trichlorobenzene	61.1800	100.0000	61.2	44.0	142.0
	Naphthalene	75.5600	100.0000	75.6	21.0	133.0
	4-Chloroaniline	101.2200	100.0000	101.2	52.0	104.0
	Hexachloro-1,3-butadiene	64.1600	100.0000	64.2	24.0	116.0
	4-Chloro-3-methylphenol	114.2800	100.0000	114.3	22.0	147.0
	2-Methylnaphthalene	74.1400	100.0000	74.1	57.0	129.0
	Hexachlorocyclopentadiene	46.1800	100.0000	46.2	10.0	100.0
	2,4,6-Trichlorophenol	120.4200	100.0000	120.4	37.0	144.0
	2,4,5-Trichlorophenol	119.3000	100.0000	119.3	30.0	128.0
	2-Chloronaphthalene	83.4400	100.0000	83.4	60.0	118.0
	2-Nitroaniline	124.9400	100.0000	124.9(P)	56.0	118.0
	Dimethylphthalate	127.2600	100.0000	127.3(P)	10.0	112.0
	Acenaphthylene	97.8200	100.0000	97.8	33.0	145.0
	2,6-Dinitrotoluene	126.6000	100.0000	126.6	50.0	158.0
	3-Nitroaniline	120.4400	100.0000	120.4	45.0	147.0
	Acenaphthene	103.3600	100.0000	103.4	47.0	145.0
	2,4-Dinitrophenol	85.3800	100.0000	85.4	10.0	191.0
	4-Nitrophenol	48.5600	100.0000	48.6	10.0	132.0
	Dibenzofuran	108.5000	100.0000	108.5	65.0	127.0
	2,4-Dinitrotoluene	121.7400	100.0000	121.7	39.0	139.0
	Diethylphthalate	138.8200	100.0000	138.8(P)	10.0	114.0
	4-Chlorophenyl-phenylether	111.3600	100.0000	111.4	25.0	158.0
	Fluorene	120.7200	100.0000	120.7	59.0	121.0
	4-Nitroaniline	123.0800	100.0000	123.1	23.0	160.0
	4,6-Dinitro-o-cresol	124.3400	100.0000	124.3	10.0	181.0
	N-Nitrosodiphenylamine	130.3000	100.0000	130.3(P)	53.0	114.0
	4-Bromophenyl-phenylether	130.4000	100.0000	130.4(P)	70.0	130.0
	Hexachlorobenzene	136.3800	100.0000	136.4	10.0	152.0
	Pentachlorophenol	138.9200	100.0000	138.9	14.0	176.0
	Phenanthrene	135.7000	100.0000	135.7(K1)	54.0	120.0
	Anthracene	128.9400	100.0000	128.9	27.0	133.0
	Di-n-butyl phthalate	139.6000	100.0000	139.6(P)	10.0	118.0
	Fluoranthene	140.0800	100.0000	140.1(K1)	26.0	137.0
	Pyrene	126.2200	100.0000	126.2(K1)	52.0	115.0
	Butylbenzyl phthalate	133.1000	100.0000	133.1	10.0	152.0
	3,3'-Dichlorobenzidine	115.2000	100.0000	115.2	10.0	262.0
	Benzo(a)anthracene	126.6400	100.0000	126.6	33.0	143.0
	bis(2-Ethylhexyl)phthalate	133.0200	100.0000	133.0	10.0	158.0
	Chrysene	135.8200	100.0000	135.8	17.0	168.0
	Di-n-octyl phthalate	149.3800	100.0000	149.4(P)	10.0	146.0
	Benzo(b)fluoranthene	125.0000	100.0000	125.0	24.0	159.0
	Benzo(k)fluoranthene	143.9000	100.0000	143.9	11.0	162.0
	Benzo(a)pyrene	126.4200	100.0000	126.4	17.0	163.0
	Indeno(1,2,3-cd)pyrene	121.9400	100.0000	121.9	10.0	171.0
	Dibenzo(a,h)anthracene	121.3000	100.0000	121.3	10.0	227.0
	Benzo(ghi)perylene	132.4000	100.0000	132.4	10.0	219.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:27
Group: 59133

Analysis Batch Number: 0923 -04/17/00-1273-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sn108a.bQ
Number of Samples : 6
Batch Data-Date/Time : 04/18/00 / 10:28:02

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59123-305898	72	31	87	69	69	97
SAMPLE 59123-305898	52	35	96	100	112	88
SAMPLE 59133-305960	58	37	99	101	126(A)	113
SAMPLE 59133-305962	56	37	98	101	121	108
SAMPLE 59437-308147	98	62	110	114	141(S1)	118
SAMPLE 59438-308159	71	51	107	113	107	101
BLK 1 SBLKW-04/13	78	51	113	108	122	117
SPK 1 BS-04/13	75	48	109	109	128(S1)	117
CTL 1 LCS-04/13	79	48	116(K1)	113	133(K1)	129
MSD 1 BSD-04/13	79	49	114	118(K1)	122	115

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES		QC LIMITS	
SRG ABRV =	SURROGATE DESCRIPTION	LOWER	UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(P) - Compound Was Not Reported
(K1) - See comment for explanation
(A) - Matrix Interference
(S1) - Surrogate not associated with reported analytes.

---------- Batch Notes ----------
1. Compounds with high recovery in the LCS were not found in the associated samples.
2. High surrogate recovery should not affect results.

Groups & Samples

59123-305898 59133-305960 59133-305962 59437-308147 59438-308159

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:28
Group: 59133

Analysis Batch Number: 0923 -04/12/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103b.bQ
Number of Samples : 17
Batch Data-Date/Time : 04/14/00 / 17:28:04

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
SBLKW-04/04	Diethylphthalate	0.3020	10.0000
	Di-n-butyl phthalate	1.6380	10.0000
	Butylbenzyl phthalate	0.3100	10.0000
	bis(2-Ethylhexyl)phthalate	0.3160	10.0000

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
59133-305963	Phenol	20.0000	0.0000	14.2400	71.2	10.0	112.0
	Acenaphthene	10.0000	97.5238	13.3000	-842.2(A)	47.0	145.0
	4-Nitrophenol	20.0000	0.0000	15.0000	75.0	10.0	132.0
	2,4-Dinitrotoluene	10.0000	0.0000	13.2800	132.8	39.0	139.0
	Pentachlorophenol	20.0000	0.0000	30.0200	150.1	14.0	176.0
	Pyrene	10.0000	4.3428	15.3200	109.8	52.0	115.0
BS-04/04-2	Phenol	20.0000	0.0000	9.3800	46.9	10.0	112.0
	1,4-Dichlorobenzene	10.0000	0.0000	6.4200	64.2	20.0	124.0
	N-Nitrosodi-n-propylamine	10.0000	0.0000	11.3000	113.0	10.0	230.0
	1,2,4-Trichlorobenzene	10.0000	0.0000	6.7400	67.4	44.0	142.0
	Acenaphthene	10.0000	0.0000	9.3800	93.8	47.0	145.0
	2,4-Dinitrotoluene	10.0000	0.0000	10.3400	103.4	39.0	139.0
	Pentachlorophenol	20.0000	0.0000	20.5800	102.9	14.0	176.0
	Pyrene	10.0000	0.0000	12.3200	123.2(J)	52.0	115.0

MSD SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
59133-305964	Phenol	20.0000	0.0000	14.0600	70.3	10.0	112.0	1.3	23.0
	Acenaphthene	10.0000	97.5238	12.2000	-853.2(A)	47.0	145.0	1.3	28.0
	4-Nitrophenol	20.0000	0.0000	18.8600	94.3	10.0	132.0	22.8	47.0
	2,4-Dinitrotoluene	10.0000	0.0000	13.2000	132.0	39.0	139.0	0.6	22.0
	Pentachlorophenol	20.0000	0.0000	31.0800	155.4	14.0	176.0	3.5	49.0
	Pyrene	10.0000	4.3428	14.9000	105.6	52.0	115.0	3.9	25.0
BSD-04/04-2	Phenol	20.0000	0.0000	10.0400	50.2	10.0	112.0	6.8	23.0
	1,4-Dichlorobenzene	10.0000	0.0000	8.3000	83.0	20.0	124.0	25.5	32.0
	N-Nitrosodi-n-propylamine	10.0000	0.0000	11.9800	119.8	10.0	230.0	5.8	55.0
	1,2,4-Trichlorobenzene	10.0000	0.0000	8.3200	83.2	44.0	142.0	21.0	28.0
	Acenaphthene	10.0000	0.0000	10.4200	104.2	47.0	145.0	10.5	28.0
	2,4-Dinitrotoluene	10.0000	0.0000	10.5800	105.8	39.0	139.0	2.3	22.0
	Pentachlorophenol	20.0000	0.0000	18.2800	91.4	14.0	176.0	11.8	49.0
	Pyrene	10.0000	0.0000	13.5200	135.2(J)	52.0	115.0	9.3	25.0

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/04	Phenol	5.9600	10.0000	59.6	10.0	112.0
	bis(2-Chloroethyl)ether	9.7600	10.0000	97.6	12.0	158.0
	1,4-Dichlorobenzene	5.0400	10.0000	50.4	20.0	124.0
	1,2-Dichlorobenzene	5.0800	10.0000	50.8	32.0	129.0
	o-Cresol (2-Methylphenol)	8.2000	10.0000	82.0	49.0	103.0
	2,2'-oxybis(1-Chloropropane)	10.6800	10.0000	106.8	36.0	166.0
	p-Cresol (4-Methylphenol)	7.7200	10.0000	77.2	47.0	100.0
	N-Nitrosodi-n-propylamine	11.3600	10.0000	113.6	10.0	230.0
	Hexachloroethane	4.5200	10.0000	45.2	40.0	113.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:28
Group: 59133

Analysis Batch Number: 0923 -04/12/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103b.bQ
Number of Samples : 17
Batch Data-Date/Time : 04/14/00 / 17:28:04

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/04	Nitrobenzene	10.3200	10.0000	103.2	35.0	180.0
	2,4-Dimethylphenol	3.0600	10.0000	30.6(G)	32.0	119.0
	1,2,4-Trichlorobenzene	4.6600	10.0000	46.6	44.0	142.0
	Naphthalene	5.7600	10.0000	57.6	21.0	133.0
	Hexachloro-1,3-butadiene	4.6800	10.0000	46.8	24.0	116.0
	2-Methylnaphthalene	5.5400	10.0000	55.4(G)	57.0	129.0
	Acenaphthylene	6.8600	10.0000	68.6	33.0	145.0
	2,6-Dinitrotoluene	12.3600	10.0000	123.6	50.0	158.0
	Acenaphthene	6.6800	10.0000	66.8	47.0	145.0
	2,4-Dinitrotoluene	11.9000	10.0000	119.0	39.0	139.0
	Diethylphthalate	12.7600	10.0000	127.6(J)	10.0	114.0
	Fluorene	8.4200	10.0000	84.2	59.0	121.0
	4,6-Dinitro-o-cresol	7.3800	10.0000	73.8	10.0	181.0
	Hexachlorobenzene	10.7000	10.0000	107.0	10.0	152.0
	Pentachlorophenol	10.0000	10.0000	100.0	14.0	176.0
	Phenanthrene	10.3400	10.0000	103.4	54.0	120.0
	Anthracene	11.4200	10.0000	114.2	27.0	133.0
	Di-n-butyl phthalate	14.2800	10.0000	142.8(J)	10.0	118.0
	Fluoranthene	12.4200	10.0000	124.2	26.0	137.0
	Pyrene	12.3400	10.0000	123.4(J)	52.0	115.0
	Butylbenzyl phthalate	12.4600	10.0000	124.6	10.0	152.0
	3,3'-Dichlorobenzidine	20.7600	10.0000	207.6	10.0	262.0
	Benzo(a)anthracene	12.0400	10.0000	120.4	33.0	143.0
	bis(2-Ethylhexyl)phthalate	12.5200	10.0000	125.2	10.0	158.0
	Chrysene	12.4200	10.0000	124.2	17.0	168.0
	Di-n-octyl phthalate	12.7200	10.0000	127.2	10.0	146.0
	Benzo(b)fluoranthene	11.9200	10.0000	119.2	24.0	159.0
	Benzo(k)fluoranthene	12.5200	10.0000	125.2	11.0	162.0
	Benzo(a)pyrene	11.3600	10.0000	113.6	17.0	163.0
	Indeno(1,2,3-cd)pyrene	9.2200	10.0000	92.2	10.0	171.0
	Dibenzo(a,h)anthracene	7.8200	10.0000	78.2	10.0	227.0
	Benzo(ghi)perylene	10.1800	10.0000	101.8	10.0	219.0

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59201-306860	71	60	106	87	109	117
SAMPLE 59188-306781	51	36	95	89	114	115
SAMPLE 59188-306782	53	37	99	90	110	115
SAMPLE 59133-305973	60	37	92	83	111	123
SAMPLE 59133-305974	53	37	94	85	95	104
SAMPLE 59133-305975	52	36	96	89	108	115
SAMPLE 59133-305976	50	34	91	86	116	126
SAMPLE 59133-305977	52	41	201(A)	93	108	112
SAMPLE 59133-305981	61	44	114	99	114	116
SAMPLE 59133-305965	54	36	88	87	121	108
SAMPLE 59133-305966	53	37	96	99	126(A)	110
SAMPLE 59133-305967	53	40	101	108	112	110
SAMPLE 59133-305968	55	38	91	103	115	117
SAMPLE 59133-305969	58	41	104	102	123	108

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:29
Group: 59133

Analysis Batch Number: 0923 -04/12/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103b.bQ
Number of Samples : 17
Batch Data-Date/Time : 04/14/00 / 17:28:04

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59133-305970	55	37	98	91	115	118
SAMPLE 59133-305971	53	38	97	96	120	108
SAMPLE 59133-305972	59	41	139(A)	110	102	121
BLK 1 SBLKW-04/04	58	42	105	79	98	111
SPK 1 59133-305963	63	55	87	70	111	122
SPK 2 BS-04/04	62	44	107	87	104	111
CTL 1 LCS-04/04	68	47	114(G)	95	99	116
MSD 1 59133-305964	61	53	81	62	113	106
MSD 2 BSD-04/04	65	43	103	85	100	122

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES		QC LIMITS	
SRG ABRV =	SURROGATE DESCRIPTION	LOWER	UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(A) - Matrix Interference
(J) - Within in-house statistical limits
(G) - Marginal Outlier

Groups & Samples

59133-305963 59133-305964 59133-305965 59133-305966 59133-305967 59133-305968 59133-305969 59133-305970
59133-305971 59133-305972 59133-305973 59133-305974 59133-305975 59133-305976 59133-305977 59133-305981
59188-306781 59188-306782 59201-306860

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:30
Group: 59133

Analysis Batch Number: 0923 -04/14/00-1005-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sn105a.bQ
Number of Samples : 7
Batch Data-Date/Time : 04/18/00 / 10:26:59

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59133-305977	55	34	142(A)	92	127(A)	100
SAMPLE 59133-305967	34	33	89	108	142(A)	120
SAMPLE 59133-305968	34	32	79	97	137(A)	121
SAMPLE 59133-305972	33	34	113	109	129(A)	110
SAMPLE 59133-305977	28	25	100	112	123	110
SAMPLE 59133-305972	0(D)	0(D)	42	138(D)	159(D)	157(D)
SAMPLE 59133-305977	0(D)	0(D)	0(D)	86	0(D)	89

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES		QC LIMITS	
SRG ABRV =	SURROGATE DESCRIPTION	LOWER	UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(A) - Matrix Interference
(D) - Surrogate is diluted out

Groups & Samples

59133-305967 59133-305968 59133-305972 59133-305977

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:31
Group: 59133

Analysis Batch Number: 0923 -04/14/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg105a.bQ
Number of Samples : 3
Batch Data-Date/Time : 04/19/00 / 11:23:01

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59188-306780	45	34	90	89	113	117
SAMPLE 59136-305989	57	38	99	100	118	146(D)
SAMPLE 59133-305974	52	37	95	90	100	117

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES		QC LIMITS	
SRG ABRV =	SURROGATE DESCRIPTION	LOWER	UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(D) - Surrogate is diluted out

Groups & Samples

59133-305974 59136-305989 59188-306780

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:31
Group: 59133

Analysis Batch Number: 8261B-03/30/00-1272-2
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: 1090.bQ
Number of Samples : 19
Batch Data-Date/Time : 04/07/00 / 11:57:07

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
1090-VBLK	1,2,4-Trichlorobenzene	1.1600	5.0000

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
59152-306050	1,1-Dichloroethene	50.0000	0.0000	47.7800	95.6	70.0	130.0
	Trichloroethene	50.0000	0.0000	50.3300	100.7	70.0	130.0
	Benzene	50.0000	0.0000	50.7800	101.6	70.0	130.0
	Toluene	50.0000	0.0000	50.7700	101.5	70.0	130.0
	Chlorobenzene	50.0000	0.0000	47.8900	95.8	70.0	130.0

MSD SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
59078-305599	1,1-Dichloroethene	50.0000	0.0000	14.2600	28.5(A)	70.0	130.0	200.0(A)	20.0
	Trichloroethene	50.0000	0.0000	39.6000	79.2	70.0	130.0	200.0(A)	20.0
	Benzene	50.0000	0.0000	37.8800	75.8	70.0	130.0	200.0(A)	20.0
	Toluene	50.0000	0.0000	41.5200	83.0	70.0	130.0	200.0(A)	20.0
	Chlorobenzene	50.0000	0.0000	44.2200	88.4	70.0	130.0	200.0(A)	20.0
59152-306051-2	1,1-Dichloroethene	50.0000	0.0000	48.1400	96.3	70.0	130.0	0.7	20.0
	Trichloroethene	50.0000	0.0000	50.5500	101.1	70.0	130.0	0.4	20.0
	Benzene	50.0000	0.0000	52.1100	104.2	70.0	130.0	2.5	20.0
	Toluene	50.0000	0.0000	51.0800	102.2	70.0	130.0	0.7	20.0
	Chlorobenzene	50.0000	0.0000	47.6800	95.4	70.0	130.0	0.4	20.0

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
1090-LCS	Acetone	29.8000	50.0000	59.6(P1)	70.0	130.0
	Benzene	46.1300	50.0000	92.3	70.0	130.0
	Bromodichloromethane	44.6000	50.0000	89.2	70.0	130.0
	Bromoform	45.3300	50.0000	90.7	70.0	130.0
	Bromomethane (Methyl bromide)	28.1000	50.0000	56.2(N1)	70.0	130.0
	2-Butanone (MEK)	44.3200	50.0000	88.6	70.0	130.0
	Carbon disulfide	58.2500	50.0000	116.5	70.0	130.0
	Carbon tetrachloride	43.5000	50.0000	87.0	70.0	130.0
	Chlorodibromomethane	44.5000	50.0000	89.0	70.0	130.0
	Chlorobenzene	44.8700	50.0000	89.7	70.0	130.0
	Chloroethane (Ethyl chloride)	44.6300	50.0000	89.3	70.0	130.0
	Chloroform	44.0700	50.0000	88.1	70.0	130.0
	Chloromethane (Methyl chloride)	41.9800	50.0000	84.0	70.0	130.0
	1,1-Dichloroethane	52.5000	50.0000	105.0	70.0	130.0
	1,2-Dichloroethane	47.2100	50.0000	94.4	70.0	130.0
	1,1-Dichloroethene	58.0100	50.0000	116.0	70.0	130.0
	cis-1,2-Dichloroethene	47.0700	50.0000	94.1	70.0	130.0
	trans-1,2-Dichloroethene	48.5700	50.0000	97.1	70.0	130.0
	1,2-Dichloropropane	46.3200	50.0000	92.6	70.0	130.0
	cis-1,3-Dichloropropene	38.9500	50.0000	77.9	70.0	130.0
	trans-1,3-Dichloropropene	37.3900	50.0000	74.8	70.0	130.0
	Ethylbenzene	44.2000	50.0000	88.4	70.0	130.0
	2-Hexanone	46.1100	50.0000	92.2	70.0	130.0
	Dichloromethane	44.0400	50.0000	88.1	70.0	130.0
	4-Methyl-2-pentanone (MIBK)	45.7400	50.0000	91.5	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:32
Group: 59133

Analysis Batch Number: 8261B-03/30/00-1272-2
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: 1090.bQ
Number of Samples : 19
Batch Data-Date/Time : 04/07/00 / 11:57:07

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
1090-LCS	Styrene	44.2000	50.0000	88.4	70.0	130.0
	1,1,2,2-Tetrachloroethane	41.0700	50.0000	82.1	70.0	130.0
	Tetrachloroethene	42.6800	50.0000	85.4	70.0	130.0
	Toluene	43.8700	50.0000	87.7	70.0	130.0
	1,1,1-Trichloroethane	44.1400	50.0000	88.3	70.0	130.0
	1,1,2-Trichloroethane	44.4000	50.0000	88.8	70.0	130.0
	Trichloroethene	45.2500	50.0000	90.5	70.0	130.0
	Vinyl chloride	39.6600	50.0000	79.3	70.0	130.0
	o-Xylene	45.3300	50.0000	90.7	70.0	130.0
	m,p-Xylene	89.7900	100.0000	89.8	70.0	130.0

SURG #:30-8260 -W-SU

SAMPLE#	DBFM #	DCE #	TOL #	BFB #
SAMPLE 59152-306058	98	96	92	94
SAMPLE 59088-305647	105	97	94	94
SAMPLE 59040-305374	105	100	95	100
SAMPLE 59076-305577	92	92	88	95
SAMPLE 59152-306053	102	99	95	96
SAMPLE 59152-306055	106	100	94	95
SAMPLE 59152-306057	102	100	94	93
SAMPLE 59129-305939	103	102	91	97
SAMPLE 59122-305896	99	94	92	96
SAMPLE 59122-305897	100	101	93	94
SAMPLE 59122-305893	108	108	98	103
SAMPLE 59122-305895	105	97	92	94
SAMPLE 59122-305894	102	102	95	96
SAMPLE 59151-306040	100	95	90	90
SAMPLE 59136-305988	97	96	87	95
SAMPLE 59136-305989	98	95	89	87
SAMPLE 59136-305990	108	104	97	98
SAMPLE 59133-305960	106	100	97	96
SAMPLE 59133-305961	105	101	97	96
BLK 1 1090-VBLK	113	108	106	105
SPK 1 59152-306050	99	97	96	93
CTL 1 1090-LCS	114	109	102	101
MSD 1 59078-305599	93	86	86	89
MSD 2 59152-306051	104	98	97	94

30-8260 -W-SU - VOLATILES BY 8260 SURROGATES		QC LIMITS	
SRG ABRV =	SURROGATE DESCRIPTION	LOWER	UPPER
DBFM	Dibromofluoromethane	70.0	130.0
DCE	1,2-Dichloroethane-d4	70.0	130.0
TOL	Toluene-d8	70.0	130.0
BFB	p-Bromofluorobenzene	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:32
Group: 59133

Analysis Batch Number: 8261B-03/30/00-1272-2
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: 1090.bQ
Number of Samples : 19
Batch Data-Date/Time : 04/07/00 / 11:57:07

---------- Result Footnotes ----------
(A) - Matrix Interference
(P1) - Ketone compounds have poor purge efficiency. In-house QC limits are being established.
(N1) - Unstable gaseous compound

Groups & Samples

59040-305374	59076-305577	59078-305599	59088-305647	59122-305893	59122-305894	59122-305895	59122-305896
59122-305897	59129-305939	59133-305960	59133-305961	59136-305988	59136-305989	59136-305990	59151-306040
59152-306050	59152-306051	59152-306053	59152-306055	59152-306057	59152-306058		

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:33
Group: 59133

Analysis Batch Number: 8261B-03/30/00-1272-1
Test Identification : 8261B-Volatiles, TCL List
Number of Samples : 17
Batch Data-Date/Time : 04/01/00 / 18:36:49

Units: ug/l
Sequence: m090.bQ

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
m090-VBLK	Acetone	3.1200	10.0000

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
59133-305963	1,1-Dichloroethene	50.0000	0.0000	39.3600	78.7	70.0	130.0
	Trichloroethene	50.0000	0.0000	45.0500	90.1	70.0	130.0
	Benzene	50.0000	0.0000	47.9000	95.8	70.0	130.0
	Toluene	50.0000	0.0000	44.6900	89.4	70.0	130.0
	Chlorobenzene	50.0000	0.0000	45.0600	90.1	70.0	130.0

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
59133-305964	1,1-Dichloroethene	50.0000	0.0000	39.3000	78.6	70.0	130.0	0.1	20.0
	Trichloroethene	50.0000	0.0000	45.7300	91.5	70.0	130.0	1.5	20.0
	Benzene	50.0000	0.0000	48.7500	97.5	70.0	130.0	1.8	20.0
	Toluene	50.0000	0.0000	44.8200	89.6	70.0	130.0	0.2	20.0
	Chlorobenzene	50.0000	0.0000	46.8800	93.8	70.0	130.0	4.0	20.0

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
m090-LCS	Acetone	24.9900	50.0000	50.0(P1)	70.0	130.0
	Benzene	43.9900	50.0000	88.0	70.0	130.0
	Bromodichloromethane	45.5200	50.0000	91.0	70.0	130.0
	Bromoform	46.1000	50.0000	92.2	70.0	130.0
	Bromomethane (Methyl bromide)	25.5900	50.0000	51.2(N1)	70.0	130.0
	2-Butanone (MEK)	54.6400	50.0000	109.3	70.0	130.0
	Carbon disulfide	49.3000	50.0000	98.6	70.0	130.0
	Carbon tetrachloride	37.8300	50.0000	75.7	70.0	130.0
	Chlorodibromomethane	45.8800	50.0000	91.8	70.0	130.0
	Chlorobenzene	43.5500	50.0000	87.1	70.0	130.0
	Chloroethane (Ethyl chloride)	37.8200	50.0000	75.6	70.0	130.0
	Chloroform	43.1500	50.0000	86.3	70.0	130.0
	Chloromethane (Methyl chloride)	38.1300	50.0000	76.3	70.0	130.0
	1,1-Dichloroethane	49.0200	50.0000	98.0	70.0	130.0
	1,2-Dichloroethane	49.6800	50.0000	99.4	70.0	130.0
	1,1-Dichloroethene	50.3300	50.0000	100.7	70.0	130.0
	cis-1,2-Dichloroethene	46.7300	50.0000	93.5	70.0	130.0
	trans-1,2-Dichloroethene	44.2000	50.0000	88.4	70.0	130.0
	1,2-Dichloropropane	47.9900	50.0000	96.0	70.0	130.0
	cis-1,3-Dichloropropene	40.3800	50.0000	80.8	70.0	130.0
	trans-1,3-Dichloropropene	37.5700	50.0000	75.1	70.0	130.0
	Ethylbenzene	41.8800	50.0000	83.8	70.0	130.0
	2-Hexanone	50.4000	50.0000	100.8	70.0	130.0
	Dichloromethane	44.4600	50.0000	88.9	70.0	130.0
	4-Methyl-2-pentanone (MIBK)	50.9200	50.0000	101.8	70.0	130.0
	Styrene	43.4600	50.0000	86.9	70.0	130.0
	1,1,2,2-Tetrachloroethane	43.4500	50.0000	86.9	70.0	130.0
	Tetrachloroethene	36.6900	50.0000	73.4	70.0	130.0
	Toluene	40.0900	50.0000	80.2	70.0	130.0
	1,1,1-Trichloroethane	39.0600	50.0000	78.1	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:34
Group: 59133

Analysis Batch Number: 8261B-03/30/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: m090.bQ
Number of Samples : 17
Batch Data-Date/Time : 04/01/00 / 18:36:49

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
m090-LCS	1,1,2-Trichloroethane	45.9900	50.0000	92.0	70.0	130.0
	Trichloroethene	41.2700	50.0000	82.5	70.0	130.0
	Vinyl chloride	33.0800	50.0000	66.2(N1)	70.0	130.0
	o-Xylene	43.9800	50.0000	88.0	70.0	130.0
	m,p-Xylene	84.7000	100.0000	84.7	70.0	130.0

SURG #:30-8260 -W-SU

SAMPLE#	DBFM #	DCE #	TOL #	BFB #
SAMPLE 59123-305898	92	90	79	87
SAMPLE 59123-305898	99	101	91	94
SAMPLE 59123-305899	93	91	82	90
SAMPLE 59123-305899	99	96	87	90
SAMPLE 59123-305900	107	102	93	96
SAMPLE 59123-305900	101	99	89	91
SAMPLE 59123-305901	96	94	88	91
SAMPLE 59123-305901	88	87	78	80
SAMPLE 59123-305902	96	96	81	87
SAMPLE 59123-305902	94	92	84	88
SAMPLE 59123-305903	97	92	85	88
SAMPLE 59123-305903	96	94	87	91
SAMPLE 59123-305904	94	91	84	85
SAMPLE 59123-305905	95	93	84	88
SAMPLE 59123-305906	95	92	84	89
SAMPLE 59133-305962	98	100	86	90
SAMPLE 59133-305965	103	103	90	90
BLK 1 m090-VBLK	105	101	89	91
SPK 1 59133-305963	102	99	87	91
CTL 1 m090-LCS	104	106	88	93
MSD 1 59133-305964	105	103	90	92

30-8260 -W-SU - VOLATILES BY 8260 SURROGATES SRG ABRV =	SURROGATE DESCRIPTION	QC LIMITS LOWER	QC LIMITS UPPER
DBFM	Dibromofluoromethane	70.0	130.0
DCE	1,2-Dichloroethane-d4	70.0	130.0
TOL	Toluene-d8	70.0	130.0
BFB	p-Bromofluorobenzene	70.0	130.0

---------- Result Footnotes ----------
(P1) - Ketone compounds have poor purge efficiency. In-house QC limits are being established.
(N1) - Unstable gaseous compound

Groups & Samples

59123-305898 59123-305899 59123-305900 59123-305901 59123-305902 59123-305903 59123-305904 59123-305905
59123-305906 59133-305962 59133-305963 59133-305964 59133-305965

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:35
Group: 59133

Analysis Batch Number: 8261B-03/31/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: 1091.bQ
Number of Samples : 20
Batch Data-Date/Time : 04/01/00 / 18:37:36

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
1091-VBLK	1,2,4-Trichlorobenzene	3.1400	5.0000

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
59122-305895	1,1-Dichloroethene	50.0000	0.0000	42.5200	85.0	70.0	130.0
	Trichloroethene	50.0000	0.0000	47.3900	94.8	70.0	130.0
	Benzene	50.0000	0.0000	50.0700	100.1	70.0	130.0
	Toluene	50.0000	0.0000	46.0900	92.2	70.0	130.0
	Chlorobenzene	50.0000	0.0000	46.6900	93.4	70.0	130.0

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
59122-305895	1,1-Dichloroethene	50.0000	0.0000	39.5200	79.0	70.0	130.0	7.3	20.0
	Trichloroethene	50.0000	0.0000	45.9500	91.9	70.0	130.0	3.1	20.0
	Benzene	50.0000	0.0000	48.9000	97.8	70.0	130.0	2.3	20.0
	Toluene	50.0000	0.0000	45.0600	90.1	70.0	130.0	2.3	20.0
	Chlorobenzene	50.0000	0.0000	46.6800	93.4	70.0	130.0	0.0	20.0

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
1091-LCS	Acetone	30.3600	50.0000	60.7(P1)	70.0	130.0
	Benzene	43.1600	50.0000	86.3	70.0	130.0
	Bromodichloromethane	41.1400	50.0000	82.3	70.0	130.0
	Bromoform	41.6900	50.0000	83.4	70.0	130.0
	Bromomethane (Methyl bromide)	23.7100	50.0000	47.4(N1)	70.0	130.0
	2-Butanone (MEK)	54.7600	50.0000	109.5	70.0	130.0
	Carbon disulfide	56.8600	50.0000	113.7	70.0	130.0
	Carbon tetrachloride	43.8600	50.0000	87.7	70.0	130.0
	Chlorodibromomethane	41.5300	50.0000	83.1	70.0	130.0
	Chlorobenzene	41.3200	50.0000	82.6	70.0	130.0
	Chloroethane (Ethyl chloride)	42.2400	50.0000	84.5	70.0	130.0
	Chloroform	40.4200	50.0000	80.8	70.0	130.0
	Chloromethane (Methyl chloride)	36.6700	50.0000	73.3	70.0	130.0
	1,1-Dichloroethane	51.0700	50.0000	102.1	70.0	130.0
	1,2-Dichloroethane	46.3100	50.0000	92.6	70.0	130.0
	1,1-Dichloroethene	55.2300	50.0000	110.5	70.0	130.0
	cis-1,2-Dichloroethene	42.6000	50.0000	85.2	70.0	130.0
	trans-1,2-Dichloroethene	45.9900	50.0000	92.0	70.0	130.0
	1,2-Dichloropropane	45.0000	50.0000	90.0	70.0	130.0
	cis-1,3-Dichloropropene	39.2100	50.0000	78.4	70.0	130.0
	trans-1,3-Dichloropropene	36.3600	50.0000	72.7	70.0	130.0
	Ethylbenzene	40.8000	50.0000	81.6	70.0	130.0
	2-Hexanone	46.8200	50.0000	93.6	70.0	130.0
	Dichloromethane	42.7800	50.0000	85.6	70.0	130.0
	4-Methyl-2-pentanone (MIBK)	45.7900	50.0000	91.6	70.0	130.0
	Styrene	40.4800	50.0000	81.0	70.0	130.0
	1,1,2,2-Tetrachloroethane	40.3300	50.0000	80.7	70.0	130.0
	Tetrachloroethene	40.2700	50.0000	80.5	70.0	130.0
	Toluene	41.1300	50.0000	82.3	70.0	130.0
	1,1,1-Trichloroethane	48.8700	50.0000	97.7	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:36
Group: 59133

Analysis Batch Number: 8261B-03/31/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: 1091.bQ
Number of Samples : 20
Batch Data-Date/Time : 04/01/00 / 18:37:36

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
1091-LCS	1,1,2-Trichloroethane	41.4400	50.0000	82.9	70.0	130.0
	Trichloroethene	43.6300	50.0000	87.3	70.0	130.0
	Vinyl chloride	38.0400	50.0000	76.1	70.0	130.0
	o-Xylene	41.3900	50.0000	82.8	70.0	130.0
	m,p-Xylene	81.9700	100.0000	82.0	70.0	130.0

SURG #:30-8260 -W-SU

SAMPLE#	DBFM #	DCE #	TOL #	BFB #
SAMPLE 59133-305978	107	100	97	96
SAMPLE 59133-305966	101	100	84	87
SAMPLE 59123-305899	114	110	106	103
SAMPLE 59123-305904	123	118	110	109
SAMPLE 59123-305905	115	110	103	111
SAMPLE 59123-305906	105	96	93	97
SAMPLE 59122-305893	102	95	91	89
SAMPLE 59122-305895	103	99	91	91
SAMPLE 59133-305967	111	108	94	96
SAMPLE 59133-305968	109	109	94	100
SAMPLE 59133-305969	99	97	90	86
SAMPLE 59133-305970	96	89	85	85
SAMPLE 59133-305971	99	95	88	87
SAMPLE 59133-305972	93	90	82	77
SAMPLE 59133-305973	100	97	87	88
SAMPLE 59133-305974	100	96	89	88
SAMPLE 59133-305975	87	84	75	83
SAMPLE 59133-305976	87	88	79	83
SAMPLE 59133-305977	92	93	81	84
SAMPLE 59123-305906	115	108	107	105
BLK 1 1091-VBLK	99	93	87	96
SPK 1 59122-305895	99	97	90	89
CTL 1 1091-LCS	104	103	93	93
MSD 1 59122-305895	98	95	89	86

30-8260 -W-SU - VOLATILES BY 8260 SURROGATES

SRG ABRV =	SURROGATE DESCRIPTION	QC LIMITS LOWER	QC LIMITS UPPER
DBFM	Dibromofluoromethane	70.0	130.0
DCE	1,2-Dichloroethane-d4	70.0	130.0
TOL	Toluene-d8	70.0	130.0
BFB	p-Bromofluorobenzene	70.0	130.0

---------- Result Footnotes ----------
(P1) - Ketone compounds have poor purge efficiency. In-house QC limits are being established.
(N1) - Unstable gaseous compound

Groups & Samples

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:36
Group: 59133

Analysis Batch Number: 8261B-03/31/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: 1091.bQ
Number of Samples : 20
Batch Data-Date/Time : 04/01/00 / 18:37:36

59122-305893	59122-305895	59123-305899	59123-305904	59123-305905	59123-305906	59133-305966	59133-305967
59133-305968	59133-305969	59133-305970	59133-305971	59133-305972	59133-305973	59133-305974	59133-305975
59133-305976	59133-305977	59133-305978					

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:37
Group: 59133

Analysis Batch Number: 8261B-04/01/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: m091.bQ
Number of Samples : 21
Batch Data-Date/Time : 04/01/00 / 18:40:24

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
m091-VBLK	1,2-Dibromo-3-chloropropane (DBCP)	2.3200	5.0000
	Naphthalene	18.6300(A)	5.0000
	1,2,4-Trichlorobenzene	4.3000	5.0000
m091-VBLK-2	Naphthalene	10.8300(A)	5.0000

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
59175-306715	1,1-Dichloroethene	50.0000	0.0000	43.2100	86.4	70.0	130.0
	Trichloroethene	50.0000	7.5400	55.2100	95.3	70.0	130.0
	Benzene	50.0000	0.0000	51.6800	103.4	70.0	130.0
	Toluene	50.0000	0.0000	46.0100	92.0	70.0	130.0
	Chlorobenzene	50.0000	0.0000	48.1900	96.4	70.0	130.0

MSD SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
59175-306715	1,1-Dichloroethene	50.0000	0.0000	43.6900	87.4	70.0	130.0	1.2	20.0
	Trichloroethene	50.0000	7.5400	54.2700	93.5	70.0	130.0	1.9	20.0
	Benzene	50.0000	0.0000	48.8800	97.8	70.0	130.0	5.6	20.0
	Toluene	50.0000	0.0000	45.7800	91.6	70.0	130.0	0.4	20.0
	Chlorobenzene	50.0000	0.0000	46.0200	92.0	70.0	130.0	4.7	20.0

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
m091-LCS	Acetone	27.3900	50.0000	54.8(P1)	70.0	130.0
	Benzene	45.8700	50.0000	91.7	70.0	130.0
	Bromodichloromethane	44.9600	50.0000	89.9	70.0	130.0
	Bromoform	48.3700	50.0000	96.7	70.0	130.0
	Bromomethane (Methyl bromide)	24.9100	50.0000	49.8(N1)	70.0	130.0
	2-Butanone (MEK)	46.8400	50.0000	93.7	70.0	130.0
	Carbon disulfide	48.8400	50.0000	97.7	70.0	130.0
	Carbon tetrachloride	37.4800	50.0000	75.0	70.0	130.0
	Chlorodibromomethane	44.8400	50.0000	89.7	70.0	130.0
	Chlorobenzene	44.2400	50.0000	88.5	70.0	130.0
	Chloroethane (Ethyl chloride)	36.9400	50.0000	73.9	70.0	130.0
	Chloroform	43.1400	50.0000	86.3	70.0	130.0
	Chloromethane (Methyl chloride)	36.3000	50.0000	72.6	70.0	130.0
	1,1-Dichloroethane	52.1100	50.0000	104.2	70.0	130.0
	1,2-Dichloroethane	51.3700	50.0000	102.7	70.0	130.0
	1,1-Dichloroethene	49.5100	50.0000	99.0	70.0	130.0
	cis-1,2-Dichloroethene	49.2100	50.0000	98.4	70.0	130.0
	trans-1,2-Dichloroethene	45.7800	50.0000	91.6	70.0	130.0
	1,2-Dichloropropane	49.0500	50.0000	98.1	70.0	130.0
	cis-1,3-Dichloropropene	40.3500	50.0000	80.7	70.0	130.0
	trans-1,3-Dichloropropene	38.6800	50.0000	77.4	70.0	130.0
	Ethylbenzene	41.8200	50.0000	83.6	70.0	130.0
	2-Hexanone	49.2700	50.0000	98.5	70.0	130.0
	Dichloromethane	48.4800	50.0000	97.0	70.0	130.0
	4-Methyl-2-pentanone (MIBK)	49.2700	50.0000	98.5	70.0	130.0
	Styrene	44.2800	50.0000	88.6	70.0	130.0
	1,1,2,2-Tetrachloroethane	44.8200	50.0000	89.6	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:38
Group: 59133

Analysis Batch Number: 8261B-04/01/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: m091.bQ
Number of Samples : 21
Batch Data-Date/Time : 04/01/00 / 18:40:24

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
m091-LCS	Tetrachloroethene	36.4200	50.0000	72.8	70.0	130.0
	Toluene	41.8800	50.0000	83.8	70.0	130.0
	1,1,1-Trichloroethane	42.6200	50.0000	85.2	70.0	130.0
	1,1,2-Trichloroethane	43.9000	50.0000	87.8	70.0	130.0
	Trichloroethene	42.7600	50.0000	85.5	70.0	130.0
	Vinyl chloride	31.0600	50.0000	62.1(N1)	70.0	130.0
	o-Xylene	43.4900	50.0000	87.0	70.0	130.0
	m,p-Xylene	82.9100	100.0000	82.9	70.0	130.0

SURG #:30-8260 -W-SU

SAMPLE#	DBFM #	DCE #	TOL #	BFB #
SAMPLE 59133-305980	100	96	85	92
SAMPLE 59175-306713	104	99	84	89
SAMPLE 59175-306714	102	101	87	89
SAMPLE 59175-306715	94	90	80	83
SAMPLE 59188-306783	96	94	84	93
SAMPLE 59177-306745	93	92	82	90
SAMPLE 59177-306728	93	91	81	81
SAMPLE 59177-306730	93	93	83	84
SAMPLE 59177-306732	98	96	81	87
SAMPLE 59177-306734	94	94	80	86
SAMPLE 59177-306736	96	97	83	91
SAMPLE 59177-306738	101	96	86	87
SAMPLE 59177-306740	97	95	83	84
SAMPLE 59177-306742	98	94	81	80
SAMPLE 59177-306744	102	97	83	92
SAMPLE 59188-306780	96	97	82	83
SAMPLE 59188-306781	96	95	78	87
SAMPLE 59188-306782	99	95	82	87
SAMPLE 59133-305981	99	101	83	93
SAMPLE 59133-305979	102	99	89	96
SAMPLE 59133-305977	102	99	97	96
BLK 1 m091-VBLK	97	94	83	96
BLK 2 m091-VBLK	94	96	82	93
SPK 1 59175-306715	103	104	90	96
CTL 1 m091-LCS	113	113	87	96
MSD 1 59175-306715	98	94	86	90

30-8260 -W-SU - VOLATILES BY 8260 SURROGATES SRG ABRV =	SURROGATE DESCRIPTION	QC LIMITS LOWER	QC LIMITS UPPER
DBFM	Dibromofluoromethane	70.0	130.0
DCE	1,2-Dichloroethane-d4	70.0	130.0
TOL	Toluene-d8	70.0	130.0
BFB	p-Bromofluorobenzene	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:38
Group: 59133

Analysis Batch Number: 8261B-04/01/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: m091.bQ
Number of Samples : 21
Batch Data-Date/Time : 04/01/00 / 18:40:24

---------- Result Footnotes ----------
(A) - Matrix Interference
(P1) - Ketone compounds have poor purge efficiency. In-house QC limits are being established.
(N1) - Unstable gaseous compound

Groups & Samples

59133-305977	59133-305979	59133-305980	59133-305981	59175-306713	59175-306714	59175-306715	59177-306728
59177-306730	59177-306732	59177-306734	59177-306736	59177-306738	59177-306740	59177-306742	59177-306744
59177-306745	59188-306780	59188-306781	59188-306782	59188-306783			

SEVERN TRENT LABORATORIES
6310 Rothway Center
Houston, TX 77040
(713) 690-4444, Fax (713) 690-5646

Committed To *Your* Success

❶ Company: ERM Southwest	Address: 16300 Katy Fwy	Tele #: 281-600-1000 Fax #: 281-600-1001
Reports Sent To: Peter Gagnon	P O #:	Project #: 422-09
Project Name: HWPW	Project Location: Houston, TX	
Sampler(s) Name: (Signature) Rita Nokes /		
Courier:		

❷ Field Sample ID	❸ Sampling Date	❸ Sampling Time	❹ Matrix: Water	Soil	Sludge	Oil	Other	# of Containers	Haz. Sample (Y/N)	0828	0278
1. P-11		1400	X							X	X
2. MW-3		0900	X							X	X
3. MW-10A		1020	X							X	X
4. MW-10A MS/MSD		1035	X							X	X
5. MW-10B		1155	X							X	X
6. MW-10B dup		1200	X							X	X
7. MW-11A		1335	X							X	X
8. MW-11A dup		1350	X							X	X
9. MW9		0930	X							X	X
10. P-12		1040	X							X	X
11. MW5		1230	X							X	X
12. P-10		1405	X							X	X
13.											

Relinquished by Sampler: (Signature)	Date: 3-28-00	Time: 1639
Relinquished by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:
Received by: (Signature)	Date:	Time:
Received by: (Signature)	Date:	Time:
Received by Laboratory: (Signature)	Date: 3-28-00	Time: 1639

❺ Remarks:

Requested Turnaround: standard

STL Group: 59133

Special Detection Limits: low limits

QC Package: (check one)
- ☐ CLP
- ☒ Site Specific
- ☐ Tier 1
- ☐ Tier 2
- ☐ QC Summary

White Copy to Accompany Samples to Lab — Yellow Copy Retained by Client — Pink Copy Retained by Sampler

SEVERN TRENT LABORATORIES
6310 Rothway Center
Houston, TX 77040
(713) 690-4444, Fax (713) 690-5646

Committed To Your Success

Company: ❶ ERM Southwest | Address: 16300 Katy Fwy | Tele #: 281-600-1000 | Fax #: 281-600-1001

Reports Sent To: Peter Gagnon | P O #: | Project #: 422-09

Project Name: HWPW | Project Location: Houston, TX

Samplers Name: (Signature) Rita Nokes

Courier:

❷ Field Sample ID	❸ Sampling Date	❸ Sampling Time	❹ Matrix: Water	Soil	Sludge	Oil	Other	# of Containers	Haz. Sample (Y/N)	❺ 8260	8270
1. MW24A		1120	X					5		X	X
2. MW24B		0855	X					5		X	X
3. MW24C		1015	X					5		X	X
4. EB-99		1245	X					5		X	X
5. MW25C		1530	X					5		X	X
6. trip blank										X	
7.											
8.											
9.											
10.											
11.											
12.											
13.											

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
❼ Rita Nokes	3-25-09	1639			
		53			
			Received by Laboratory: (Signature)	3-25-09	1639

❻ Remarks:

Requested Turnaround: Standard

STL Group: SG133

Special Detection Limits: low limits

QC Package: (check one)
☒ CLP ☐ Site Specific ☐ Tier 1 ☐ Tier 2 ☐ QC Summary

White Copy to Accompany Samples to Lab | Yellow Copy Retained by Client | Pink Copy Retained by Sampler

SEVERN TRENT LABORATORIES
SAMPLE RECEIPT CHECKLIST

CLIENT: ERMSW CONTACT: P GAGNON

PROJECT: 422-09 CARRIER: CLIENT

DATE RECEIVED: ~~MAR 28 FRI 9:37~~ UNPACKED STAMP: ~~MAR 28 FRI 9:43~~

DATE SHIPPED: 3-28-00 UNPACKED BY: TCR

NUMBER OF KITS RECEIVED: 3 GROUP# 59133 B.O.# 014894

KIT CHECKLIST

KIT ID	COC PRESENT	CUSTODY TAPE PRESENT?	CUSTODY TAPE INTACT?	COOLER TEMP Thermometer # 255	# OF SAMPLE CONTAINERS
BW 002	YES	C NO	NO	2.4 °C	27
		B No	No		
WW 0535	YES	C NO	NO	3.0°C	32
		B No	No		
1102	YES	C NO	NO	2.0°C	37
		B No	No		

C = COOLER B= BOTTLES

INCONSISTENCIES

SAMPLE	PARAMETER	INCONSISTENCY
FB	rcvd - not listed on COC.	

pH OF WATER SAMPLES CHECKED YES___ NO ✓ SAMPLE(S) SCREENED FOR RADIATION YES ✓ NO___
VOLATILE HEAD SPACE CHECKED YES ✓ NO___ SEE ATTACHED WORKSHEET___

ACTION TAKEN

PERSON CONTACTED:_____ DATE:_____
RESOLUTION_____

CORE / GSA EMPLOYEE_____ DATE:_____

☐ HNO3 ☒ HCL ☐ H2SO4 ☐ NaOH ☒ Na2S2O3 ☐ NEAT ☐ NaHSO4 ☐ OT/PRE.

(Water Only)

60 VOA
__ OTHER

__ VOA
__ OTHER

# Cont.	Mtrx.
96	WA
Total 96	

Remaining Samples in Group _____

Project Manager UC

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

07/21/2000

Mr. Peter Gagnon
ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094

Reference:
Project: HWPW 1st Semiannual
Project No.: 422-09
Date Received: 03/29/2000
STL Group: 59188 Group Report Date: 04/17/2000

Dear Mr. Gagnon:

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

MW-11B :306780	MW-4 :306781
MW-7 :306782	Trip Blank :306783

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

Our A2LA accreditation requires that, should this report be reproduced, it must be reproduced in total.

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

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 yours,

Ed Fry
Project Manager

Enclosure

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646
a part of Severn Trent Laboratories, Inc.

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-11B
Matrix: Water
EPA Sx #:

STL Sample: 306780
STL Group: 59188
Date Reported: 07/21/2000
Discard Date: 08/20/2000
Date Submitted: 03/29/2000
Date Sampled: 03/29/2000
Collected by:
Purchase Order:
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 04/01/2000				
	Benzene	U	mg/l		0.005
	Chlorobenzene	U	mg/l		0.005
	1,2-Dichloroethane	U	mg/l		0.005
	Methylene Chloride	U	mg/l		0.005
	Ethylbenzene	0.001 J	mg/l		0.005
	Toluene	U	mg/l		0.005
	Xylene (total)	U	mg/l		0.02
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/12/2000				
	Acenaphthene	43	ug/l		2
	Acenaphthylene	2	ug/l		1
	Anthracene	2 J	ug/l		2
	Benzo(a)anthracene	U	ug/l		2
	Benzo(a)pyrene	U	ug/l		2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.6 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	16	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646
a part of Severn Trent Laboratories, Inc.

ERM-Southwest, Inc.

STL Sample: 306780
STL Group: 59188

Sample ID: MW-11B

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/12/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.8 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	2
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	3	ug/l	2
	Fluorene	14	ug/l	2
	2-Methylnaphthalene	2	ug/l	2
	Naphthalene	79	ug/l	4
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	2
	Phenanthrene	0.9 J	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	1 J	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) compound detected in the blank at .53 ug/L.
(2) Compound detected in the blank at .64 ug/L.

Severn Trent Laboratories
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SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-4
Matrix: Water
EPA Sx #:

STL Sample: 306781
STL Group: 59188
Date Reported: 07/21/2000
Discard Date: 08/20/2000
Date Submitted: 03/29/2000
Date Sampled: 03/29/2000
Collected by:
Purchase Order:
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 04/01/2000				
	Benzene	U	mg/l		0.005
	Chlorobenzene	U	mg/l		0.005
	1,2-Dichloroethane	U	mg/l		0.005
	Methylene Chloride	U	mg/l		0.005
	Ethylbenzene	U	mg/l		0.005
	Toluene	U	mg/l		0.005
	Xylene (total)	U	mg/l		0.02
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/12/2000				
	Acenaphthene	0.2 J	ug/l		2
	Acenaphthylene	U	ug/l		1
	Anthracene	1 J	ug/l		2
	Benzo(a)anthracene	U	ug/l		2
	Benzo(a)pyrene	U	ug/l		2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.8 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	0.2 J	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

ERM-Southwest, Inc.

STL Sample: 306781
STL Group: 59188

Sample ID: MW-4

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/12/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.8 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	2
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	U	ug/l	2
	Fluorene	0.2 J	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.5 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	2
	Phenanthrene	0.3 J	ug/l	2
	Phenol	0.1 J	ug/l	1
	Pyrene	U	ug/l	2
3000L	Semivolatile, Low-level, water	D		
	Method: EPA/SW-846 3510B/3520B			

(1) compound detected in the blank at .53 ug/L.
(2) Compound detected in the blank at .64 ug/L.

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW-7
Matrix: Water
EPA Sx #:

STL Sample: 306782
STL Group: 59188
Date Reported: 07/21/2000
Discard Date: 08/20/2000
Date Submitted: 03/29/2000
Date Sampled: 03/29/2000
Collected by:
Purchase Order:
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 04/01/2000				
	Benzene	U	mg/l		0.005
	Chlorobenzene	U	mg/l		0.005
	1,2-Dichloroethane	U	mg/l		0.005
	Methylene Chloride	U	mg/l		0.005
	Ethylbenzene	U	mg/l		0.005
	Toluene	U	mg/l		0.005
	Xylene (total)	U	mg/l		0.02
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/12/2000				
	Acenaphthene	0.2 J	ug/l		2
	Acenaphthylene	U	ug/l		1
	Anthracene	0.6 J	ug/l		2
	Benzo(a)anthracene	U	ug/l		2
	Benzo(a)pyrene	U	ug/l		2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.7 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	U	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646
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ERM-Southwest, Inc.

STL Sample: 306782
STL Group: 59188

Sample ID: MW-7

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/12/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.9 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	2
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	U	ug/l	2
	Fluorene	U	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.1 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	1 J	ug/l	2
	Phenanthrene	0.07 J	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	U	ug/l	2
3000L	Semivolatile, Low-level, water	D		
	Method: EPA/SW-846 3510B/3520B			

(1) compound detected in the blank at .53 ug/L.
(2) Compound detected in the blank at .64 ug/L.

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SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: Trip Blank
Matrix: Water
EPA Sx #:

STL Sample: 306783
STL Group: 59188
Date Reported: 07/21/2000
Discard Date: 08/20/2000
Date Submitted: 03/29/2000
Date Sampled: 03/29/2000
Collected by:
Purchase Order:
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8261B	Volatiles, TCL List			
	Method: SW-846 8260B 04/01/2000			
	Benzene	U	mg/l	0.005
	Chlorobenzene	U	mg/l	0.005
	1,2-Dichloroethane	U	mg/l	0.005
	Methylene Chloride	U	mg/l	0.005
	Ethylbenzene	U	mg/l	0.005
	Toluene	U	mg/l	0.005
	Xylene (total)	U	mg/l	0.02

Respectfully Submitted,
Reviewed and Approved by:

Ed Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

ERM-Southwest, Inc.
STL Group: 59188

Qualifiers:

Organic:

U = Indicates compound was analyzed for but not detected.
J = Indicates the presence of a compound where the result is less than the CRQL but greater than zero.
B = Indicates that an analyte found was also found in the associated method blank.
E = Identifies compounds whose concentrations exceed the calibration range.
D = Indicates all compounds identified in an analysis that were analyzed at a secondary dilution.
P = Identifies that the difference in the concentration of a Pesticide/Aroclor target analyte is greater than 25% between the two columns.
C = Applies to Pesticide results where the identification has been confirmed by GC/MS.

Inorganic:

U = Indicates compound was analyzed for but not detected.
B = Indicates that a reported value was less than CRDL but greater than the IDL.
*** = Duplicate analysis not within control limits.**
E = The reported value is estimated because of the presence of interference.
N = Spiked sample recovery not within control limits.

Furnace Qualifiers Only:

M = Duplicate injection precision not met.
+ = Correlation coefficient for the MSA is less than 0.995.
W = Post digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.
S = The reported value was determined by the Method of Standard Additions (MSA).

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:47
Group: 59188

Analysis Batch Number: 0923 -04/12/00-1005-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103a.bQ
Number of Samples : 4
Batch Data-Date/Time : 04/14/00 / 11:07:56

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
SBLKW-04/05	Di-n-butyl phthalate	0.3680	10.0000
	bis(2-Ethylhexyl)phthalate	0.4520	10.0000
SBLKW-03/31-2	Di-n-butyl phthalate	0.6360	10.0000
	bis(2-Ethylhexyl)phthalate	0.5280	10.0000

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
BS-04/05	Phenol	20.0000	0.0000	7.1800	35.9	10.0	112.0
	Acenaphthene	10.0000	0.0000	8.0400	80.4	47.0	145.0
	4-Nitrophenol	20.0000	0.0000	9.7800	48.9	10.0	132.0
	2,4-Dinitrotoluene	10.0000	0.0000	8.2400	82.4	39.0	139.0
	Pentachlorophenol	20.0000	0.0000	17.2400	86.2	14.0	176.0
	Pyrene	10.0000	0.0000	9.0000	90.0	52.0	115.0

MSD SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
BSD-04/05	Phenol	20.0000	0.0000	7.0800	35.4	10.0	112.0	1.4	23.0
	Acenaphthene	10.0000	0.0000	8.2000	82.0	47.0	145.0	2.0	28.0
	4-Nitrophenol	20.0000	0.0000	4.4400	22.2	10.0	132.0	75.1(K1)	47.0
	2,4-Dinitrotoluene	10.0000	0.0000	8.0400	80.4	39.0	139.0	2.5	22.0
	Pentachlorophenol	20.0000	0.0000	10.1200	50.6	14.0	176.0	52.0(K1)	49.0
	Pyrene	10.0000	0.0000	9.4400	94.4	52.0	115.0	4.8	25.0

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/05	Phenol	5.0200	10.0000	50.2	10.0	112.0
	Nitrobenzene	9.7400	10.0000	97.4	35.0	180.0
	2,4-Dimethylphenol	6.9400	10.0000	69.4	32.0	119.0
	bis(2-Chloroethoxy)methane	9.8000	10.0000	98.0	33.0	184.0
	Naphthalene	9.4000	10.0000	94.0	21.0	133.0
	2-Methylnaphthalene	9.8400	10.0000	98.4	57.0	129.0
	2-Chloronaphthalene	9.3200	10.0000	93.2	60.0	118.0
	Acenaphthylene	8.6600	10.0000	86.6	33.0	145.0
	2,6-Dinitrotoluene	10.2200	10.0000	102.2	50.0	158.0
	Acenaphthene	9.1800	10.0000	91.8	47.0	145.0
	4-Nitrophenol	5.1600	10.0000	51.6	10.0	132.0
	Dibenzofuran	9.5400	10.0000	95.4	65.0	127.0
	2,4-Dinitrotoluene	9.8600	10.0000	98.6	39.0	139.0
	Fluorene	9.7800	10.0000	97.8	59.0	121.0
	4,6-Dinitro-o-cresol	8.8000	10.0000	88.0	10.0	181.0
	N-Nitrosodiphenylamine	10.6200	10.0000	106.2	53.0	114.0
	Pentachlorophenol	10.5800	10.0000	105.8	14.0	176.0
	Phenanthrene	9.6200	10.0000	96.2	54.0	120.0
	Anthracene	10.1600	10.0000	101.6	27.0	133.0
	Di-n-butyl phthalate	11.1400	10.0000	111.4	10.0	118.0
	Fluoranthene	10.8200	10.0000	108.2	26.0	137.0
	Pyrene	10.0000	10.0000	100.0	52.0	115.0
	Benzo(a)anthracene	9.7800	10.0000	97.8	33.0	143.0
	bis(2-Ethylhexyl)phthalate	10.4400	10.0000	104.4	10.0	158.0
	Chrysene	10.2600	10.0000	102.6	17.0	168.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:48
Group: 59188

Analysis Batch Number: 0923 -04/12/00-1005-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103a.bQ
Number of Samples : 4
Batch Data-Date/Time : 04/14/00 / 11:07:56

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/05	Benzo(a)pyrene	9.6000	10.0000	96.0	17.0	163.0
59188-LCS-2	Phenol	5.9400	10.0000	59.4	10.0	112.0
	Nitrobenzene	10.6200	10.0000	106.2	35.0	180.0
	2,4-Dimethylphenol	4.0800	10.0000	40.8	32.0	119.0
	bis(2-Chloroethoxy)methane	11.7200	10.0000	117.2	33.0	184.0
	Naphthalene	7.4200	10.0000	74.2	21.0	133.0
	2-Methylnaphthalene	7.2400	10.0000	72.4	57.0	129.0
	2-Chloronaphthalene	7.5600	10.0000	75.6	60.0	118.0
	Acenaphthylene	8.1200	10.0000	81.2	33.0	145.0
	2,6-Dinitrotoluene	12.8800	10.0000	128.8	50.0	158.0
	Acenaphthene	8.2000	10.0000	82.0	47.0	145.0
	4-Nitrophenol	4.7600	10.0000	47.6	10.0	132.0
	Dibenzofuran	8.5800	10.0000	85.8	65.0	127.0
	2,4-Dinitrotoluene	12.2800	10.0000	122.8	39.0	139.0
	Fluorene	9.4800	10.0000	94.8	59.0	121.0
	4,6-Dinitro-o-cresol	10.3000	10.0000	103.0	10.0	181.0
	N-Nitrosodiphenylamine	12.9000	10.0000	129.0(J)	53.0	114.0
	Pentachlorophenol	11.1400	10.0000	111.4	14.0	176.0
	Phenanthrene	10.8200	10.0000	108.2	54.0	120.0
	Anthracene	11.6400	10.0000	116.4	27.0	133.0
	Di-n-butyl phthalate	13.9400	10.0000	139.4(J)	10.0	118.0
	Fluoranthene	13.0000	10.0000	130.0	26.0	137.0
	Pyrene	13.0200	10.0000	130.2(J)	52.0	115.0
	Benzo(a)anthracene	12.2800	10.0000	122.8	33.0	143.0
	bis(2-Ethylhexyl)phthalate	13.7400	10.0000	137.4	10.0	158.0
	Chrysene	12.6000	10.0000	126.0	17.0	168.0
	Benzo(a)pyrene	12.1200	10.0000	121.2	17.0	163.0

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59122-305895	61	42	75	70	87	87
SAMPLE 59122-305894	56	41	99	92	117	128
SAMPLE 59136-305989	50	39	95	97	117	119
SAMPLE 59188-306780	36	32	85	82	104	101
BLK 1 SBLKW-04/05	12(S1)	19	47	67	79	101
BLK 2 SBLKW-03/31	57	40	95	84	99	118
SPK 1 BS-04/05	40	33	82	80	81	84
CTL 1 LCS-04/05	46	36	85	79	84	84
CTL 2 59188-LCS	60	44	103	90	109	113
MSD 1 BSD-04/05	38	32	85	82	65	89

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:49
Group: 59188

Analysis Batch Number: 0923 -04/12/00-1005-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103a.bQ
Number of Samples : 4
Batch Data-Date/Time : 04/14/00 / 11:07:56

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES		QC LIMITS	
SRG ABRV =	SURROGATE DESCRIPTION	LOWER	UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(K1) - See comment for explanation
(J) - Within in-house statistical limits
(S1) - Surrogate not associated with reported analytes.

---------- Batch Notes ----------
Compounds met recovery criteria in the LCS.

Groups & Samples

59122-305894 59122-305895 59136-305989 59188-306780

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:49
Group: 59188

Analysis Batch Number: 0923 -04/14/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg105a.bQ
Number of Samples : 3
Batch Data-Date/Time : 04/19/00 / 11:23:01

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59188-306780	45	34	90	89	113	117
SAMPLE 59136-305989	57	38	99	100	118	146(D)
SAMPLE 59133-305974	52	37	95	90	100	117

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES

SRG ABRV	SURROGATE DESCRIPTION	QC LIMITS LOWER	QC LIMITS UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(D) - Surrogate is diluted out

Groups & Samples

59133-305974 59136-305989 59188-306780

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:50
Group: 59188

Analysis Batch Number: 0923 -04/12/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103b.bQ
Number of Samples : 17
Batch Data-Date/Time : 04/14/00 / 17:28:04

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
SBLKW-04/04	Diethylphthalate	0.3020	10.0000
	Di-n-butyl phthalate	1.6380	10.0000
	Butylbenzyl phthalate	0.3100	10.0000
	bis(2-Ethylhexyl)phthalate	0.3160	10.0000

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
59133-305963	Phenol	20.0000	0.0000	14.2400	71.2	10.0	112.0
	Acenaphthene	10.0000	97.5238	13.3000	-842.2(A)	47.0	145.0
	4-Nitrophenol	20.0000	0.0000	15.0000	75.0	10.0	132.0
	2,4-Dinitrotoluene	10.0000	0.0000	13.2800	132.8	39.0	139.0
	Pentachlorophenol	20.0000	0.0000	30.0200	150.1	14.0	176.0
	Pyrene	10.0000	4.3428	15.3200	109.8	52.0	115.0
BS-04/04-2	Phenol	20.0000	0.0000	9.3800	46.9	10.0	112.0
	1,4-Dichlorobenzene	10.0000	0.0000	6.4200	64.2	20.0	124.0
	N-Nitrosodi-n-propylamine	10.0000	0.0000	11.3000	113.0	10.0	230.0
	1,2,4-Trichlorobenzene	10.0000	0.0000	6.7400	67.4	44.0	142.0
	Acenaphthene	10.0000	0.0000	9.3800	93.8	47.0	145.0
	2,4-Dinitrotoluene	10.0000	0.0000	10.3400	103.4	39.0	139.0
	Pentachlorophenol	20.0000	0.0000	20.5800	102.9	14.0	176.0
	Pyrene	10.0000	0.0000	12.3200	123.2(J)	52.0	115.0

MSD SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
59133-305964	Phenol	20.0000	0.0000	14.0600	70.3	10.0	112.0	1.3	23.0
	Acenaphthene	10.0000	97.5238	12.2000	-853.2(A)	47.0	145.0	1.3	28.0
	4-Nitrophenol	20.0000	0.0000	18.8600	94.3	10.0	132.0	22.8	47.0
	2,4-Dinitrotoluene	10.0000	0.0000	13.2000	132.0	39.0	139.0	0.6	22.0
	Pentachlorophenol	20.0000	0.0000	31.0800	155.4	14.0	176.0	3.5	49.0
	Pyrene	10.0000	4.3428	14.9000	105.6	52.0	115.0	3.9	25.0
BSD-04/04-2	Phenol	20.0000	0.0000	10.0400	50.2	10.0	112.0	6.8	23.0
	1,4-Dichlorobenzene	10.0000	0.0000	8.3000	83.0	20.0	124.0	25.5	32.0
	N-Nitrosodi-n-propylamine	10.0000	0.0000	11.9800	119.8	10.0	230.0	5.8	55.0
	1,2,4-Trichlorobenzene	10.0000	0.0000	8.3200	83.2	44.0	142.0	21.0	28.0
	Acenaphthene	10.0000	0.0000	10.4200	104.2	47.0	145.0	10.5	28.0
	2,4-Dinitrotoluene	10.0000	0.0000	10.5800	105.8	39.0	139.0	2.3	22.0
	Pentachlorophenol	20.0000	0.0000	18.2800	91.4	14.0	176.0	11.8	49.0
	Pyrene	10.0000	0.0000	13.5200	135.2(J)	52.0	115.0	9.3	25.0

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/04	Phenol	5.9600	10.0000	59.6	10.0	112.0
	bis(2-Chloroethyl)ether	9.7600	10.0000	97.6	12.0	158.0
	1,4-Dichlorobenzene	5.0400	10.0000	50.4	20.0	124.0
	1,2-Dichlorobenzene	5.0800	10.0000	50.8	32.0	129.0
	o-Cresol (2-Methylphenol)	8.2000	10.0000	82.0	49.0	103.0
	2,2'-oxybis(1-Chloropropane)	10.6800	10.0000	106.8	36.0	166.0
	p-Cresol (4-Methylphenol)	7.7200	10.0000	77.2	47.0	100.0
	N-Nitrosodi-n-propylamine	11.3600	10.0000	113.6	10.0	230.0
	Hexachloroethane	4.5200	10.0000	45.2	40.0	113.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:50
Group: 59188

Analysis Batch Number: 0923 -04/12/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103b.bQ
Number of Samples : 17
Batch Data-Date/Time : 04/14/00 / 17:28:04

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/04	Nitrobenzene	10.3200	10.0000	103.2	35.0	180.0
	2,4-Dimethylphenol	3.0600	10.0000	30.6(G)	32.0	119.0
	1,2,4-Trichlorobenzene	4.6600	10.0000	46.6	44.0	142.0
	Naphthalene	5.7600	10.0000	57.6	21.0	133.0
	Hexachloro-1,3-butadiene	4.6800	10.0000	46.8	24.0	116.0
	2-Methylnaphthalene	5.5400	10.0000	55.4(G)	57.0	129.0
	Acenaphthylene	6.8600	10.0000	68.6	33.0	145.0
	2,6-Dinitrotoluene	12.3600	10.0000	123.6	50.0	158.0
	Acenaphthene	6.6800	10.0000	66.8	47.0	145.0
	2,4-Dinitrotoluene	11.9000	10.0000	119.0	39.0	139.0
	Diethylphthalate	12.7600	10.0000	127.6(J)	10.0	114.0
	Fluorene	8.4200	10.0000	84.2	59.0	121.0
	4,6-Dinitro-o-cresol	7.3800	10.0000	73.8	10.0	181.0
	Hexachlorobenzene	10.7000	10.0000	107.0	10.0	152.0
	Pentachlorophenol	10.0000	10.0000	100.0	14.0	176.0
	Phenanthrene	10.3400	10.0000	103.4	54.0	120.0
	Anthracene	11.4200	10.0000	114.2	27.0	133.0
	Di-n-butyl phthalate	14.2800	10.0000	142.8(J)	10.0	118.0
	Fluoranthene	12.4200	10.0000	124.2	26.0	137.0
	Pyrene	12.3400	10.0000	123.4(J)	52.0	115.0
	Butylbenzyl phthalate	12.4600	10.0000	124.6	10.0	152.0
	3,3'-Dichlorobenzidine	20.7600	10.0000	207.6	10.0	262.0
	Benzo(a)anthracene	12.0400	10.0000	120.4	33.0	143.0
	bis(2-Ethylhexyl)phthalate	12.5200	10.0000	125.2	10.0	158.0
	Chrysene	12.4200	10.0000	124.2	17.0	168.0
	Di-n-octyl phthalate	12.7200	10.0000	127.2	10.0	146.0
	Benzo(b)fluoranthene	11.9200	10.0000	119.2	24.0	159.0
	Benzo(k)fluoranthene	12.5200	10.0000	125.2	11.0	162.0
	Benzo(a)pyrene	11.3600	10.0000	113.6	17.0	163.0
	Indeno(1,2,3-cd)pyrene	9.2200	10.0000	92.2	10.0	171.0
	Dibenzo(a,h)anthracene	7.8200	10.0000	78.2	10.0	227.0
	Benzo(ghi)perylene	10.1800	10.0000	101.8	10.0	219.0

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59201-306860	71	60	106	87	109	117
SAMPLE 59188-306781	51	36	95	89	114	115
SAMPLE 59188-306782	53	37	99	90	110	115
SAMPLE 59133-305973	60	37	92	83	111	123
SAMPLE 59133-305974	53	37	94	85	95	104
SAMPLE 59133-305975	52	36	96	89	108	115
SAMPLE 59133-305976	50	34	91	86	116	126
SAMPLE 59133-305977	52	41	201(A)	93	108	112
SAMPLE 59133-305981	61	44	114	99	114	116
SAMPLE 59133-305965	54	36	88	87	121	108
SAMPLE 59133-305966	53	37	96	99	126(A)	110
SAMPLE 59133-305967	53	40	101	108	112	110
SAMPLE 59133-305968	55	38	91	103	115	117
SAMPLE 59133-305969	58	41	104	102	123	108

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:51
Group: 59188

Analysis Batch Number: 0923 -04/12/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103b.bQ
Number of Samples : 17
Batch Data-Date/Time : 04/14/00 / 17:28:04

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59133-305970	55	37	98	91	115	118
SAMPLE 59133-305971	53	38	97	96	120	108
SAMPLE 59133-305972	59	41	139(A)	110	102	121
BLK 1 SBLKW-04/04	58	42	105	79	98	111
SPK 1 59133-305963	63	55	87	70	111	122
SPK 2 BS-04/04	62	44	107	87	104	111
CTL 1 LCS-04/04	68	47	114(G)	95	99	116
MSD 1 59133-305964	61	53	81	62	113	106
MSD 2 BSD-04/04	65	43	103	85	100	122

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES

SRG ABRV =	SURROGATE DESCRIPTION	QC LIMITS LOWER	UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(A) - Matrix Interference
(J) - Within in-house statistical limits
(G) - Marginal Outlier

Groups & Samples

59133-305963 59133-305964 59133-305965 59133-305966 59133-305967 59133-305968 59133-305969 59133-305970
59133-305971 59133-305972 59133-305973 59133-305974 59133-305975 59133-305976 59133-305977 59133-305981
59188-306781 59188-306782 59201-306860

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:52
Group: 59188

Analysis Batch Number: 8261B-04/01/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: m091.bQ
Number of Samples : 21
Batch Data-Date/Time : 04/01/00 / 18:40:24

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
m091-VBLK	1,2-Dibromo-3-chloropropane (DBCP)	2.3200	5.0000
	Naphthalene	18.6300(A)	5.0000
	1,2,4-Trichlorobenzene	4.3000	5.0000
m091-VBLK-2	Naphthalene	10.8300(A)	5.0000

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
59175-306715	1,1-Dichloroethene	50.0000	0.0000	43.2100	86.4	70.0	130.0
	Trichloroethene	50.0000	7.5400	55.2100	95.3	70.0	130.0
	Benzene	50.0000	0.0000	51.6800	103.4	70.0	130.0
	Toluene	50.0000	0.0000	46.0100	92.0	70.0	130.0
	Chlorobenzene	50.0000	0.0000	48.1900	96.4	70.0	130.0

MSD SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
59175-306715	1,1-Dichloroethene	50.0000	0.0000	43.6900	87.4	70.0	130.0	1.2	20.0
	Trichloroethene	50.0000	7.5400	54.2700	93.5	70.0	130.0	1.9	20.0
	Benzene	50.0000	0.0000	48.8800	97.8	70.0	130.0	5.6	20.0
	Toluene	50.0000	0.0000	45.7800	91.6	70.0	130.0	0.4	20.0
	Chlorobenzene	50.0000	0.0000	46.0200	92.0	70.0	130.0	4.7	20.0

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
m091-LCS	Acetone	27.3900	50.0000	54.8(P1)	70.0	130.0
	Benzene	45.8700	50.0000	91.7	70.0	130.0
	Bromodichloromethane	44.9600	50.0000	89.9	70.0	130.0
	Bromoform	48.3700	50.0000	96.7	70.0	130.0
	Bromomethane (Methyl bromide)	24.9100	50.0000	49.8(N1)	70.0	130.0
	2-Butanone (MEK)	46.8400	50.0000	93.7	70.0	130.0
	Carbon disulfide	48.8400	50.0000	97.7	70.0	130.0
	Carbon tetrachloride	37.4800	50.0000	75.0	70.0	130.0
	Chlorodibromomethane	44.8400	50.0000	89.7	70.0	130.0
	Chlorobenzene	44.2400	50.0000	88.5	70.0	130.0
	Chloroethane (Ethyl chloride)	36.9400	50.0000	73.9	70.0	130.0
	Chloroform	43.1400	50.0000	86.3	70.0	130.0
	Chloromethane (Methyl chloride)	36.3000	50.0000	72.6	70.0	130.0
	1,1-Dichloroethane	52.1100	50.0000	104.2	70.0	130.0
	1,2-Dichloroethane	51.3700	50.0000	102.7	70.0	130.0
	1,1-Dichloroethene	49.5100	50.0000	99.0	70.0	130.0
	cis-1,2-Dichloroethene	49.2100	50.0000	98.4	70.0	130.0
	trans-1,2-Dichloroethene	45.7800	50.0000	91.6	70.0	130.0
	1,2-Dichloropropane	49.0500	50.0000	98.1	70.0	130.0
	cis-1,3-Dichloropropene	40.3500	50.0000	80.7	70.0	130.0
	trans-1,3-Dichloropropene	38.6800	50.0000	77.4	70.0	130.0
	Ethylbenzene	41.8200	50.0000	83.6	70.0	130.0
	2-Hexanone	49.2700	50.0000	98.5	70.0	130.0
	Dichloromethane	48.4800	50.0000	97.0	70.0	130.0
	4-Methyl-2-pentanone (MIBK)	49.2700	50.0000	98.5	70.0	130.0
	Styrene	44.2800	50.0000	88.6	70.0	130.0
	1,1,2,2-Tetrachloroethane	44.8200	50.0000	89.6	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:53
Group: 59188

Analysis Batch Number: 8261B-04/01/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: m091.bQ
Number of Samples : 21
Batch Data-Date/Time : 04/01/00 / 18:40:24

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
m091-LCS	Tetrachloroethene	36.4200	50.0000	72.8	70.0	130.0
	Toluene	41.8800	50.0000	83.8	70.0	130.0
	1,1,1-Trichloroethane	42.6200	50.0000	85.2	70.0	130.0
	1,1,2-Trichloroethane	43.9000	50.0000	87.8	70.0	130.0
	Trichloroethene	42.7600	50.0000	85.5	70.0	130.0
	Vinyl chloride	31.0600	50.0000	62.1(N1)	70.0	130.0
	o-Xylene	43.4900	50.0000	87.0	70.0	130.0
	m,p-Xylene	82.9100	100.0000	82.9	70.0	130.0

SURG #:30-8260 -W-SU

SAMPLE#	DBFM #	DCE #	TOL #	BFB #
SAMPLE 59133-305980	100	96	85	92
SAMPLE 59175-306713	104	99	84	89
SAMPLE 59175-306714	102	101	87	89
SAMPLE 59175-306715	94	90	80	83
SAMPLE 59188-306783	96	94	84	93
SAMPLE 59177-306745	93	92	82	90
SAMPLE 59177-306728	93	91	81	81
SAMPLE 59177-306730	93	93	83	84
SAMPLE 59177-306732	98	96	81	87
SAMPLE 59177-306734	94	94	80	86
SAMPLE 59177-306736	96	97	83	91
SAMPLE 59177-306738	101	96	86	87
SAMPLE 59177-306740	97	95	83	84
SAMPLE 59177-306742	98	94	81	80
SAMPLE 59177-306744	102	97	83	92
SAMPLE 59188-306780	96	97	82	83
SAMPLE 59188-306781	96	95	78	87
SAMPLE 59188-306782	99	95	82	87
SAMPLE 59133-305981	99	101	83	93
SAMPLE 59133-305979	102	99	89	96
SAMPLE 59133-305977	102	99	97	96
BLK 1 m091-VBLK	97	94	83	96
BLK 2 m091-VBLK	94	96	82	93
SPK 1 59175-306715	103	104	90	96
CTL 1 m091-LCS	113	113	87	96
MSD 1 59175-306715	98	94	86	90

30-8260 -W-SU - VOLATILES BY 8260 SURROGATES

SRG ABRV =	SURROGATE DESCRIPTION	QC LIMITS LOWER	QC LIMITS UPPER
DBFM	Dibromofluoromethane	70.0	130.0
DCE	1,2-Dichloroethane-d4	70.0	130.0
TOL	Toluene-d8	70.0	130.0
BFB	p-Bromofluorobenzene	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:54
Group: 59188

Analysis Batch Number: 8261B-04/01/00-1272-1
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: m091.bQ
Number of Samples : 21
Batch Data-Date/Time : 04/01/00 / 18:40:24

---------- Result Footnotes ----------
(A) - Matrix Interference
(P1) - Ketone compounds have poor purge efficiency. In-house QC limits are being established.
(N1) - Unstable gaseous compound

Groups & Samples

59133-305977	59133-305979	59133-305980	59133-305981	59175-306713	59175-306714	59175-306715	59177-306728
59177-306730	59177-306732	59177-306734	59177-306736	59177-306738	59177-306740	59177-306742	59177-306744
59177-306745	59188-306780	59188-306781	59188-306782	59188-306783			

SEVERN TRENT LABORATORIES
6310 Rothway Center
Houston, TX 77040
(713) 690-4444, Fax (713) 690-5646

Committed To Your Success

❶ Company: ERM-SW	Address: 16300 KATY FWY HOUSTON TX 77094	Tele #: 281-600 1000 Fax #: 281-600 1001
Reports Sent To: PETER GAGNON	PO #:	Project #: 422-09
Project Name: HWPW	Project Location: HOUSTON TX	
Sampler(s) Name: (Signature)		
Courier:		

❺ Request for Analysis

❷ Field Sample ID	❸ Sampling Date	❸ Sampling Time	❹ Matrix: Water	Soil	Sludge	Oil	Other	# of Containers	Haz. Sample (Y/N)	8260	8270
1. MW-11B	3/28/00	0950	X					5		X	X
2. MW-4	3/28/00	10:55	X					5		X	X
3. MW-7	3/28/00	13:20	X					5		X	X
4. TRIP BLANK	3/28/00									X	
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											

Relinquished by Sampler: (Signature)	Relinquished by: (Signature)	Relinquished by: (Signature)
Date: 3/29/00	Date:	Date:
Time: 1458	Time:	Time:

Received by: (Signature)	Received by: (Signature)	Received by Laboratory: (Signature)
Date:	Date:	Date: 3/29/00
Time:	Time:	Time: 1458

❻ Remarks:

Requested Turnaround: STANDARD

STL Group: 5418

Special Detection Limits: LOW LIMITS

QC Package: (check one)
❑ CLP ❑ Site Specific
❑ Tier 1 ❑ Tier 2 X QC Summary

White Copy to Accompany Samples to Lab — Yellow Copy Retained by Client — Pink Copy Retained by Sampler

SEVERN TRENT LABORATORIES
SAMPLE RECEIPT CHECKLIST

CLIENT: ERMSW CONTACT: PETER GRAHAM

PROJECT: HWPW CARRIER: Client

DATE RECEIVED: UNPACKED STAMP:

DATE SHIPPED: 2000 MAR 29 FRI 2:58 3-29 UNPACKED BY: RG MAR 30 FRI 7:30

NUMBER OF KITS RECEIVED: 1 GROUP# 59188 B.O.#

KIT CHECKLIST

KIT ID	COC PRESENT	CUSTODY TAPE		COOLER TEMP Thermometer # 325	# OF SAMPLE CONTAINERS
		PRESENT?	INTACT?		
1176	YES	C NO	NO	2.2°C	15+2=17
		B NO	NO		
		C			
		B			
		C			
		B			

C = COOLER B= BOTTLES

INCONSISTENCIES

SAMPLE	PARAMETER	INCONSISTENCY

pH OF WATER SAMPLES CHECKED YES___ NO___ SAMPLE(S) SCREENED FOR RADIATION YES ✓ NO___
VOLATILE HEAD SPACE CHECKED YES ✓ NO___ SEE ATTACHED WORKSHEET___

ACTION TAKEN

PERSON CONTACTED: DATE:
RESOLUTION

CORE / GSA EMPLOYEE DATE:

☐ HNO3 ☑ RG HCL 11 ☐ H2SO4 ☐ NaOH (Water Only) ☑ 6 Na2S2O3 ☐ NEAT ☐ NaHSO4 ☐ OT/PRE.

__VOA
__OTHER

__VOA
__OTHER

# Cont.	Mtrx.
15+2=17	WA
Total ~~15~~ 17 RG	WA

Remaining Samples in Group

Project Manager MA

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

07/21/2000

Mr. Peter Gagnon
ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094

Reference:
Project: HWPW 1st Semiannual
Project No.: 422-09
Date Received: 03/27/2000
STL Group: 59136 Group Report Date: 04/17/2000

Dear Mr. Gagnon:

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

MW 8 :305988 MW 1A :305989 MW 2 :305990

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

Our A2LA accreditation requires that, should this report be reproduced, it must be reproduced in total.

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

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 yours,

Ed B. Fry
Project Manager

Enclosure

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW 8
Matrix: Water
EPA Sx #:

STL Sample: 305988
STL Group: 59136
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/27/2000
Date Sampled: 03/27/2000
Collected by: AW
Purchase Order:
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/30/2000				
	Benzene	U	mg/l		0.005
	Chlorobenzene	U	mg/l		0.005
	1,2-Dichloroethane	U	mg/l		0.005
	Methylene Chloride	U	mg/l		0.005
	Ethylbenzene	U	mg/l		0.005
	Toluene	U	mg/l		0.005
	Xylene (total)	U	mg/l		0.02
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/04/2000				
	Acenaphthene	U	ug/l		2
	Acenaphthylene	U	ug/l		1
	Anthracene	0.3 J	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.6 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	U	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

ERM-Southwest, Inc.

STL Sample: 305988
STL Group: 59136

Sample ID: MW 8

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/04/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.4 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	0.05 J	ug/l	2
	Fluorene	U	ug/l	2
	2-Methylnaphthalene	U	ug/l	2
	Naphthalene	0.2 J	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	0.1 J	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	0.04 J	ug/l	2
3000L	Semivolatile, Low-level, water	D	ug/l	
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 ug/L.

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

a part of
Severn Trent Laboratories, Inc.

SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW 1A
Matrix: Water
EPA Sx #:

STL Sample: 305989
STL Group: 59136
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/27/2000
Date Sampled: 03/27/2000
Collected by: AW
Purchase Order:
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/30/2000				
	Benzene	0.002 J	mg/l		0.005
	Chlorobenzene	U	mg/l		0.005
	1,2-Dichloroethane	U	mg/l		0.005
	Methylene Chloride	U	mg/l		0.005
	Ethylbenzene	0.002 J	mg/l		0.005
	Toluene	U	mg/l		0.005
	Xylene (total)	0.003 J	mg/l		0.02
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/14/2000				
	Acenaphthene	240	ug/l		12
	Acenaphthylene	5	ug/l		1
	Anthracene	9	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.7 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	120	ug/l		6

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

Severn Trent Laboratories
6310 Rothway Street, Houston, Texas 77040, (713) 690-4444, Fax (713) 690-5646

ERM-Southwest, Inc.

STL Sample: 305989
STL Group: 59136

Sample ID: MW 1A

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/04/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.5 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	10	ug/l	2
	Fluorene	140	ug/l	6
	2-Methylnaphthalene	22	ug/l	2
	Naphthalene	130	ug/l	7
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	68	ug/l	6
	Phenol	U	ug/l	1
	Pyrene	5	ug/l	2
3000L	Semivolatile, Low-level, water	D		
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 ug/L.

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SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES

ANALYSIS REPORT

ERM-Southwest, Inc.
16300 Katy Freeway, Ste. 300
Houston, TX 77094-1609

Attn: Mr. Peter Gagnon
Project: HWPW 1st Semiannual

Sample ID: MW 2
Matrix: Water
EPA Sx #:

STL Sample: 305990
STL Group: 59136
Date Reported: 04/17/2000
Discard Date: 05/17/2000
Date Submitted: 03/27/2000
Date Sampled: 03/27/2000
Collected by: AW
Purchase Order:
Project No.: 422-09

SDG #:

Although every effort has been made to provide this LIMS report identical to a CLP Form 1, rounding conventions are slightly different from those on Form 1.

Test	Analysis	Results	Units		IDL/CRDL/LOQ
8261B	Volatiles, TCL List				
	Method: SW-846 8260B 03/30/2000				
	Benzene	U	mg/l		0.005
	Chlorobenzene	U	mg/l		0.005
	1,2-Dichloroethane	U	mg/l		0.005
	Methylene Chloride	U	mg/l		0.005
	Ethylbenzene	U	mg/l		0.005
	Toluene	U	mg/l		0.005
	Xylene (total)	U	mg/l		0.02
8270X	SV - Low Level MSD 5973				
	Method: SW-846 8270C 04/04/2000				
	Acenaphthene	22	ug/l		2
	Acenaphthylene	0.6 J	ug/l		1
	Anthracene	2	ug/l		2
	Benzo(a)anthracene	U	ug/l		1
	Benzo(a)pyrene	U	ug/l		0.2
	bis(2-Chloroethoxy)methane	U	ug/l		2
	bis(2-Ethylhexyl)phthalate	0.6 B J	ug/l	(1)	2
	2-Chloronaphthalene	U	ug/l		2
	Chrysene	U	ug/l		2
	Dibenzofuran	17	ug/l		2

Respectfully Submitted,
Reviewed and Approved by:

Ed B. Fry
Project Manager

Severn Trent Laboratories
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ERM-Southwest, Inc.

STL Sample: 305990
STL Group: 59136

Sample ID: MW 2

Test	Analysis	Results	Units	IDL/CRDL/LOQ
8270X	SV - Low Level MSD 5973			
	Method: SW-846 8270C 04/04/2000			
	2,4-Dimethylphenol	U	ug/l	1
	Di-n-butylphthalate	0.5 B J	ug/l (2)	2
	4,6-Dinitro-2-methylphenol	U	ug/l	10
	2,4-Dinitrotoluene	U	ug/l	1
	2,6-Dinitrotoluene	U	ug/l	1
	1,2-Diphenylhydrazine	U	ug/l	1
	Fluoranthene	2 J	ug/l	2
	Fluorene	16	ug/l	2
	2-Methylnaphthalene	0.4 J	ug/l	2
	Naphthalene	11	ug/l	2
	Nitrobenzene	U	ug/l	2
	4-Nitrophenol	U	ug/l	7
	N-Nitrosodiphenylamine (1)	U	ug/l	2
	Pentachlorophenol	U	ug/l	1
	Phenanthrene	1 J	ug/l	2
	Phenol	U	ug/l	1
	Pyrene	0.7 J	ug/l	2
3000L	Semivolatile, Low-level, water	D		
	Method: EPA/SW-846 3510B/3520B			

(1) Compound detected in the blank at .61 ug/L.
(2) Compound detected in the blank at .55 ug/L.

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ERM-Southwest, Inc.
STL Group: 59136

Qualifiers:

Organic:

U = Indicates compound was analyzed for but not detected.
J = Indicates the presence of a compound where the result is less than the CRQL but greater than zero.
B = Indicates that an analyte found was also found in the associated method blank.
E = Identifies compounds whose concentrations exceed the calibration range.
D = Indicates all compounds identified in an analysis that were analyzed at a secondary dilution.
P = Identifies that the difference in the concentration of a Pesticide/Aroclor target analyte is greater than 25% between the two columns.
C = Applies to Pesticide results where the identification has been confirmed by GC/MS.

Inorganic:

U = Indicates compound was analyzed for but not detected.
B = Indicates that a reported value was less than CRDL but greater than the IDL.
* = Duplicate analysis not within control limits.
E = The reported value is estimated because of the presence of interference.
N = Spiked sample recovery not within control limits.

Furnace Qualifiers Only:

M = Duplicate injection precision not met.
+ = Correlation coefficient for the MSA is less than 0.995.
W = Post digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.
S = The reported value was determined by the Method of Standard Additions (MSA).

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Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:10
Group: 59136

Analysis Batch Number: 0923 -04/04/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg095a.bQ
Number of Samples : 6
Batch Data-Date/Time : 04/14/00 / 17:24:21

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
SBLKW-03/29	Di-n-butyl phthalate	0.5500	10.0000
	bis(2-Ethylhexyl)phthalate	0.6080	10.0000

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-03/29	Phenol	6.3400	10.0000	63.4	10.0	112.0
	Nitrobenzene	8.5800	10.0000	85.8	35.0	180.0
	2,4-Dimethylphenol	3.1800	10.0000	31.8(G)	32.0	119.0
	bis(2-Chloroethoxy)methane	11.7000	10.0000	117.0	33.0	184.0
	Naphthalene	7.3200	10.0000	73.2	21.0	133.0
	2-Methylnaphthalene	6.6000	10.0000	66.0	57.0	129.0
	2-Chloronaphthalene	7.7200	10.0000	77.2	60.0	118.0
	Acenaphthylene	8.6200	10.0000	86.2	33.0	145.0
	2,6-Dinitrotoluene	14.5000	10.0000	145.0	50.0	158.0
	Acenaphthene	8.5600	10.0000	85.6	47.0	145.0
	4-Nitrophenol	7.4400	10.0000	74.4	10.0	132.0
	Dibenzofuran	9.1000	10.0000	91.0	65.0	127.0
	2,4-Dinitrotoluene	13.1600	10.0000	131.6	39.0	139.0
	Fluorene	9.8600	10.0000	98.6	59.0	121.0
	4,6-Dinitro-o-cresol	10.9600	10.0000	109.6	10.0	181.0
	N-Nitrosodiphenylamine	13.1200	10.0000	131.2(K1)	53.0	114.0
	Pentachlorophenol	13.7600	10.0000	137.6	14.0	176.0
	Phenanthrene	11.4800	10.0000	114.8	54.0	120.0
	Anthracene	11.8600	10.0000	118.6	27.0	133.0
	Di-n-butyl phthalate	14.1600	10.0000	141.6(K1)	10.0	118.0
	Fluoranthene	13.2000	10.0000	132.0	26.0	137.0
	Pyrene	14.2000	10.0000	142.0(K1)	52.0	115.0
	Benzo(a)anthracene	13.0000	10.0000	130.0	33.0	143.0
	bis(2-Ethylhexyl)phthalate	15.2400	10.0000	152.4	10.0	158.0
	Chrysene	14.1000	10.0000	141.0	17.0	168.0
	Benzo(a)pyrene	13.2800	10.0000	132.8	17.0	163.0

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59136-305988	49	31	73	71	110	110
SAMPLE 59136-305989	50	34	83	84	116	109
SAMPLE 59136-305990	43	30	73	72	109	91
SAMPLE 59133-305960	52	34	81	80	118	124
SAMPLE 59133-305961	50	32	80	78	115	106
SAMPLE 59133-305962	46	33	84	83	115	101
BLK 1 SBLKW-03/29	53	33	68	62	91	91
CTL 1 LCS-03/29	48	32	60	59	81	91

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:11
Group: 59136

Analysis Batch Number: 0923 -04/04/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg095a.bQ
Number of Samples : 6
Batch Data-Date/Time : 04/14/00 / 17:24:21

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES		QC LIMITS	
SRG ABRV =	SURROGATE DESCRIPTION	LOWER	UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(G) - Marginal Outlier
(K1) - See comment for explanation

---------- Batch Notes ----------
LCS mix was at very low volume and may have concentrated.

Groups & Samples

59133-305960 59133-305961 59133-305962 59136-305988 59136-305989 59136-305990

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:11
Group: 59136

Analysis Batch Number: 0923 -04/12/00-1005-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103a.bQ
Number of Samples : 4
Batch Data-Date/Time : 04/14/00 / 11:07:56

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
SBLKW-04/05	Di-n-butyl phthalate	0.3680	10.0000
	bis(2-Ethylhexyl)phthalate	0.4520	10.0000
SBLKW-03/31-2	Di-n-butyl phthalate	0.6360	10.0000
	bis(2-Ethylhexyl)phthalate	0.5280	10.0000

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
BS-04/05	Phenol	20.0000	0.0000	7.1800	35.9	10.0	112.0
	Acenaphthene	10.0000	0.0000	8.0400	80.4	47.0	145.0
	4-Nitrophenol	20.0000	0.0000	9.7800	48.9	10.0	132.0
	2,4-Dinitrotoluene	10.0000	0.0000	8.2400	82.4	39.0	139.0
	Pentachlorophenol	20.0000	0.0000	17.2400	86.2	14.0	176.0
	Pyrene	10.0000	0.0000	9.0000	90.0	52.0	115.0

MSD SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
BSD-04/05	Phenol	20.0000	0.0000	7.0800	35.4	10.0	112.0	1.4	23.0
	Acenaphthene	10.0000	0.0000	8.2000	82.0	47.0	145.0	2.0	28.0
	4-Nitrophenol	20.0000	0.0000	4.4400	22.2	10.0	132.0	75.1(K1)	47.0
	2,4-Dinitrotoluene	10.0000	0.0000	8.0400	80.4	39.0	139.0	2.5	22.0
	Pentachlorophenol	20.0000	0.0000	10.1200	50.6	14.0	176.0	52.0(K1)	49.0
	Pyrene	10.0000	0.0000	9.4400	94.4	52.0	115.0	4.8	25.0

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/05	Phenol	5.0200	10.0000	50.2	10.0	112.0
	Nitrobenzene	9.7400	10.0000	97.4	35.0	180.0
	2,4-Dimethylphenol	6.9400	10.0000	69.4	32.0	119.0
	bis(2-Chloroethoxy)methane	9.8000	10.0000	98.0	33.0	184.0
	Naphthalene	9.4000	10.0000	94.0	21.0	133.0
	2-Methylnaphthalene	9.8400	10.0000	98.4	57.0	129.0
	2-Chloronaphthalene	9.3200	10.0000	93.2	60.0	118.0
	Acenaphthylene	8.6600	10.0000	86.6	33.0	145.0
	2,6-Dinitrotoluene	10.2200	10.0000	102.2	50.0	158.0
	Acenaphthene	9.1800	10.0000	91.8	47.0	145.0
	4-Nitrophenol	5.1600	10.0000	51.6	10.0	132.0
	Dibenzofuran	9.5400	10.0000	95.4	65.0	127.0
	2,4-Dinitrotoluene	9.8600	10.0000	98.6	39.0	139.0
	Fluorene	9.7800	10.0000	97.8	59.0	121.0
	4,6-Dinitro-o-cresol	8.8000	10.0000	88.0	10.0	181.0
	N-Nitrosodiphenylamine	10.6200	10.0000	106.2	53.0	114.0
	Pentachlorophenol	10.5800	10.0000	105.8	14.0	176.0
	Phenanthrene	9.6200	10.0000	96.2	54.0	120.0
	Anthracene	10.1600	10.0000	101.6	27.0	133.0
	Di-n-butyl phthalate	11.1400	10.0000	111.4	10.0	118.0
	Fluoranthene	10.8200	10.0000	108.2	26.0	137.0
	Pyrene	10.0000	10.0000	100.0	52.0	115.0
	Benzo(a)anthracene	9.7800	10.0000	97.8	33.0	143.0
	bis(2-Ethylhexyl)phthalate	10.4400	10.0000	104.4	10.0	158.0
	Chrysene	10.2600	10.0000	102.6	17.0	168.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:13
Group: 59136

Analysis Batch Number: 0923 -04/12/00-1005-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103a.bQ
Number of Samples : 4
Batch Data-Date/Time : 04/14/00 / 11:07:56

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-04/05	Benzo(a)pyrene	9.6000	10.0000	96.0	17.0	163.0
59188-LCS-2	Phenol	5.9400	10.0000	59.4	10.0	112.0
	Nitrobenzene	10.6200	10.0000	106.2	35.0	180.0
	2,4-Dimethylphenol	4.0800	10.0000	40.8	32.0	119.0
	bis(2-Chloroethoxy)methane	11.7200	10.0000	117.2	33.0	184.0
	Naphthalene	7.4200	10.0000	74.2	21.0	133.0
	2-Methylnaphthalene	7.2400	10.0000	72.4	57.0	129.0
	2-Chloronaphthalene	7.5600	10.0000	75.6	60.0	118.0
	Acenaphthylene	8.1200	10.0000	81.2	33.0	145.0
	2,6-Dinitrotoluene	12.8800	10.0000	128.8	50.0	158.0
	Acenaphthene	8.2000	10.0000	82.0	47.0	145.0
	4-Nitrophenol	4.7600	10.0000	47.6	10.0	132.0
	Dibenzofuran	8.5800	10.0000	85.8	65.0	127.0
	2,4-Dinitrotoluene	12.2800	10.0000	122.8	39.0	139.0
	Fluorene	9.4800	10.0000	94.8	59.0	121.0
	4,6-Dinitro-o-cresol	10.3000	10.0000	103.0	10.0	181.0
	N-Nitrosodiphenylamine	12.9000	10.0000	129.0(J)	53.0	114.0
	Pentachlorophenol	11.1400	10.0000	111.4	14.0	176.0
	Phenanthrene	10.8200	10.0000	108.2	54.0	120.0
	Anthracene	11.6400	10.0000	116.4	27.0	133.0
	Di-n-butyl phthalate	13.9400	10.0000	139.4(J)	10.0	118.0
	Fluoranthene	13.0000	10.0000	130.0	26.0	137.0
	Pyrene	13.0200	10.0000	130.2(J)	52.0	115.0
	Benzo(a)anthracene	12.2800	10.0000	122.8	33.0	143.0
	bis(2-Ethylhexyl)phthalate	13.7400	10.0000	137.4	10.0	158.0
	Chrysene	12.6000	10.0000	126.0	17.0	168.0
	Benzo(a)pyrene	12.1200	10.0000	121.2	17.0	163.0

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59122-305895	61	42	75	70	87	87
SAMPLE 59122-305894	56	41	99	92	117	128
SAMPLE 59136-305989	50	39	95	97	117	119
SAMPLE 59188-306780	36	32	85	82	104	101
BLK 1 SBLKW-04/05	12(S1)	19	47	67	79	101
BLK 2 SBLKW-03/31	57	40	95	84	99	118
SPK 1 BS-04/05	40	33	82	80	81	84
CTL 1 LCS-04/05	46	36	85	79	84	84
CTL 2 59188-LCS	60	44	103	90	109	113
MSD 1 BSD-04/05	38	32	85	82	65	89

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:13
Group: 59136

Analysis Batch Number: 0923 -04/12/00-1005-1
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg103a.bQ
Number of Samples : 4
Batch Data-Date/Time : 04/14/00 / 11:07:56

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES

SRG ABRV	SURROGATE DESCRIPTION	QC LIMITS LOWER	QC LIMITS UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(K1) - See comment for explanation
(J) - Within in-house statistical limits
(S1) - Surrogate not associated with reported analytes.

---------- Batch Notes ----------
Compounds met recovery criteria in the LCS.

Groups & Samples

59122-305894 59122-305895 59136-305989 59188-306780

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:14
Group: 59136

Analysis Batch Number: 0923 -04/14/00-1005-2
Test Identification : 0923 -Semivolatiles - Water Units: ug/l Sequence: sg105a.bQ
Number of Samples : 3
Batch Data-Date/Time : 04/19/00 / 11:23:01

SURG #:35-0923 -W-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 59188-306780	45	34	90	89	113	117
SAMPLE 59136-305989	57	38	99	100	118	146(D)
SAMPLE 59133-305974	52	37	95	90	100	117

35-0923 -W-SU - SEMIVOLATILE WATER SURROGATES

SRG ABRV =	SURROGATE DESCRIPTION	QC LIMITS LOWER	QC LIMITS UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(D) - Surrogate is diluted out

Groups & Samples

59133-305974 59136-305989 59188-306780

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:14
Group: 59136

Analysis Batch Number: 8261B-03/30/00-1272-2
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: 1090.bQ
Number of Samples : 19
Batch Data-Date/Time : 04/07/00 / 11:57:07

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
1090-VBLK	1,2,4-Trichlorobenzene	1.1600	5.0000

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
59152-306050	1,1-Dichloroethene	50.0000	0.0000	47.7800	95.6	70.0	130.0
	Trichloroethene	50.0000	0.0000	50.3300	100.7	70.0	130.0
	Benzene	50.0000	0.0000	50.7800	101.6	70.0	130.0
	Toluene	50.0000	0.0000	50.7700	101.5	70.0	130.0
	Chlorobenzene	50.0000	0.0000	47.8900	95.8	70.0	130.0

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
59078-305599	1,1-Dichloroethene	50.0000	0.0000	14.2600	28.5(A)	70.0	130.0	200.0(A)	20.0
	Trichloroethene	50.0000	0.0000	39.6000	79.2	70.0	130.0	200.0(A)	20.0
	Benzene	50.0000	0.0000	37.8800	75.8	70.0	130.0	200.0(A)	20.0
	Toluene	50.0000	0.0000	41.5200	83.0	70.0	130.0	200.0(A)	20.0
	Chlorobenzene	50.0000	0.0000	44.2200	88.4	70.0	130.0	200.0(A)	20.0
59152-306051-2	1,1-Dichloroethene	50.0000	0.0000	48.1400	96.3	70.0	130.0	0.7	20.0
	Trichloroethene	50.0000	0.0000	50.5500	101.1	70.0	130.0	0.4	20.0
	Benzene	50.0000	0.0000	52.1100	104.2	70.0	130.0	2.5	20.0
	Toluene	50.0000	0.0000	51.0800	102.2	70.0	130.0	0.7	20.0
	Chlorobenzene	50.0000	0.0000	47.6800	95.4	70.0	130.0	0.4	20.0

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
1090-LCS	Acetone	29.8000	50.0000	59.6(P1)	70.0	130.0
	Benzene	46.1300	50.0000	92.3	70.0	130.0
	Bromodichloromethane	44.6000	50.0000	89.2	70.0	130.0
	Bromoform	45.3300	50.0000	90.7	70.0	130.0
	Bromomethane (Methyl bromide)	28.1000	50.0000	56.2(N1)	70.0	130.0
	2-Butanone (MEK)	44.3200	50.0000	88.6	70.0	130.0
	Carbon disulfide	58.2500	50.0000	116.5	70.0	130.0
	Carbon tetrachloride	43.5000	50.0000	87.0	70.0	130.0
	Chlorodibromomethane	44.5000	50.0000	89.0	70.0	130.0
	Chlorobenzene	44.8700	50.0000	89.7	70.0	130.0
	Chloroethane (Ethyl chloride)	44.6300	50.0000	89.3	70.0	130.0
	Chloroform	44.0700	50.0000	88.1	70.0	130.0
	Chloromethane (Methyl chloride)	41.9800	50.0000	84.0	70.0	130.0
	1,1-Dichloroethane	52.5000	50.0000	105.0	70.0	130.0
	1,2-Dichloroethane	47.2100	50.0000	94.4	70.0	130.0
	1,1-Dichloroethene	58.0100	50.0000	116.0	70.0	130.0
	cis-1,2-Dichloroethene	47.0700	50.0000	94.1	70.0	130.0
	trans-1,2-Dichloroethene	48.5700	50.0000	97.1	70.0	130.0
	1,2-Dichloropropane	46.3200	50.0000	92.6	70.0	130.0
	cis-1,3-Dichloropropene	38.9500	50.0000	77.9	70.0	130.0
	trans-1,3-Dichloropropene	37.3900	50.0000	74.8	70.0	130.0
	Ethylbenzene	44.2000	50.0000	88.4	70.0	130.0
	2-Hexanone	46.1100	50.0000	92.2	70.0	130.0
	Dichloromethane	44.0400	50.0000	88.1	70.0	130.0
	4-Methyl-2-pentanone (MIBK)	45.7400	50.0000	91.5	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:15
Group: 59136

Analysis Batch Number: 8261B-03/30/00-1272-2
Test Identification : 8261B-Volatiles, TCL List Units: ug/l Sequence: 1090.bQ
Number of Samples : 19
Batch Data-Date/Time : 04/07/00 / 11:57:07

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
1090-LCS	Styrene	44.2000	50.0000	88.4	70.0	130.0
	1,1,2,2-Tetrachloroethane	41.0700	50.0000	82.1	70.0	130.0
	Tetrachloroethene	42.6800	50.0000	85.4	70.0	130.0
	Toluene	43.8700	50.0000	87.7	70.0	130.0
	1,1,1-Trichloroethane	44.1400	50.0000	88.3	70.0	130.0
	1,1,2-Trichloroethane	44.4000	50.0000	88.8	70.0	130.0
	Trichloroethene	45.2500	50.0000	90.5	70.0	130.0
	Vinyl chloride	39.6600	50.0000	79.3	70.0	130.0
	o-Xylene	45.3300	50.0000	90.7	70.0	130.0
	m,p-Xylene	89.7900	100.0000	89.8	70.0	130.0

SURG #:30-8260 -W-SU

SAMPLE#	DBFM #	DCE #	TOL #	BFB #
SAMPLE 59152-306058	98	96	92	94
SAMPLE 59088-305647	105	97	94	94
SAMPLE 59040-305374	105	100	95	100
SAMPLE 59076-305577	92	92	88	95
SAMPLE 59152-306053	102	99	95	96
SAMPLE 59152-306055	106	100	94	95
SAMPLE 59152-306057	102	100	94	93
SAMPLE 59129-305939	103	102	91	97
SAMPLE 59122-305896	99	94	92	96
SAMPLE 59122-305897	100	101	93	94
SAMPLE 59122-305893	108	108	98	103
SAMPLE 59122-305895	105	97	92	94
SAMPLE 59122-305894	102	102	95	96
SAMPLE 59151-306040	100	95	90	90
SAMPLE 59136-305988	97	96	87	95
SAMPLE 59136-305989	98	95	89	87
SAMPLE 59136-305990	108	104	97	98
SAMPLE 59133-305960	106	100	97	96
SAMPLE 59133-305961	105	101	97	96
BLK 1 1090-VBLK	113	108	106	105
SPK 1 59152-306050	99	97	96	93
CTL 1 1090-LCS	114	109	102	101
MSD 1 59078-305599	93	86	86	89
MSD 2 59152-306051	104	98	97	94

30-8260 -W-SU - VOLATILES BY 8260 SURROGATES

SRG ABRV =	SURROGATE DESCRIPTION	QC LIMITS LOWER	QC LIMITS UPPER
DBFM	Dibromofluoromethane	70.0	130.0
DCE	1,2-Dichloroethane-d4	70.0	130.0
TOL	Toluene-d8	70.0	130.0
BFB	p-Bromofluorobenzene	70.0	130.0

Severn Trent Laboratories
Daily QC Batching Data
Data Released for Reporting

07/21/00
16:14:16
Group: 59136

Analysis Batch Number: 8261B-03/30/00-1272-2
Test Identification : 8261B-Volatiles. TCL List Units: ug/l Sequence: 1090.bQ
Number of Samples : 19
Batch Data-Date/Time : 04/07/00 / 11:57:07

---------- Result Footnotes ----------
(A) - Matrix Interference
(P1) - Ketone compounds have poor purge efficiency. In-house QC limits are being established.
(N1) - Unstable gaseous compound

Groups & Samples

59040-305374	59076-305577	59078-305599	59088-305647	59122-305893	59122-305894	59122-305895	59122-305896
59122-305897	59129-305939	59133-305960	59133-305961	59136-305988	59136-305989	59136-305990	59151-306040
59152-306050	59152-306051	59152-306053	59152-306055	59152-306057	59152-306058		

SEVERN TRENT LABORATORIES
6310 Rothway Center
Houston, TX 77040
(713) 690-4444, Fax (713) 690-5646

STL — Committed To Your Success

Company: ❶ ERM-SW	Address:	Tele #: 281-600-1000 Fax #: 281-600-1001
Reports Sent To: Peter Gagnon	PO #:	Project #: 422-09
Project Name: HWPW	Project Location: Houston, TX	
Sampler(s) Name: (Signature) Andy Waters / Rita Nokes		
Courier:		

❷ Field Sample ID	❸ Sampling Date	❸ Sampling Time	❹ Matrix: Water	Soil	Sludge	Oil	Other	# of Containers	Haz. Sample (Y/N)	❺ Request for Analysis: 8270	OLSS
1. MW 8	3/27/00	1540	X					5		X	X
2. MW 1A	3/27/00	1435	X					5		X	X
3. MW 2	3/27/00	1550	X					5		X	X
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
❼ Relinquished by Sampler: (Signature)	Date: 3/27/00	Time: 1808	Received by: (Signature)	Date:	Time:
Received by Laboratory: (Signature)	Date: 3/27/00	Time: 1808			

❻ Remarks:

Requested Turnaround: standard

STL Group: [signature] 3-4-00

Special Detection Limits: low limits

QC Package: (check one)
❑ CLP ❑ Site Specific
❑ Tier 1 ❑ Tier 2 ❑ QC Summary

White Copy to Accompany Samples to Lab — Yellow Copy Retained by Client — Pink Copy Retained by Sampler

93

SEVERN TRENT LABORATORIES
SAMPLE RECEIPT CHECKLIST

CLIENT: ERM-SW CONTACT: Peter Gagnon

PROJECT: HWPW CARRIER: client

DATE RECEIVED: [illegible] UNPACKED STAMP: [illegible]

DATE SHIPPED: 3-27-00 UNPACKED BY: ✓

NUMBER OF KITS RECEIVED: 1 GROUP# ~~59122~~ 59136 B.O.# T0148G4

KIT CHECKLIST

KIT ID	COC PRESENT	CUSTODY TAPE PRESENT?	CUSTODY TAPE INTACT?	COOLER TEMP Thermometer # 325	# OF SAMPLE CONTAINERS
RW Rubbermaid	YES	C No	No	2.2°C	12
		B No	No		
1379	YES	C No	No	1.8°C	22
		B No	No		
		C			
		B			

C = COOLER B= BOTTLES

INCONSISTENCIES

SAMPLE	PARAMETER	INCONSISTENCY

pH OF WATER SAMPLES CHECKED YES ✓ NO ___ SAMPLE(S) SCREENED FOR RADIATION YES ___ NO ___
VOLATILE HEAD SPACE CHECKED YES ___ NO ___ SEE ATTACHED WORKSHEET ___

ACTION TAKEN

PERSON CONTACTED: ___ DATE: ___
RESOLUTION ___

CORE / GSA EMPLOYEE ✓ DATE: ___

☐ HNO3 ☒ HCL ☐ H2SO4 ☐ NaOH ☒ Na2S2O3 ☐ NEAT ☐ NaHSO4 ☐ OT/PRE.

(9) (Water Only) (6)

___VOA
___OTHER

___VOA
___OTHER (15)

# Cont.	Matrix
34	WG
Total 34	

Remaining Samples in Group 59122

Project Manager ___

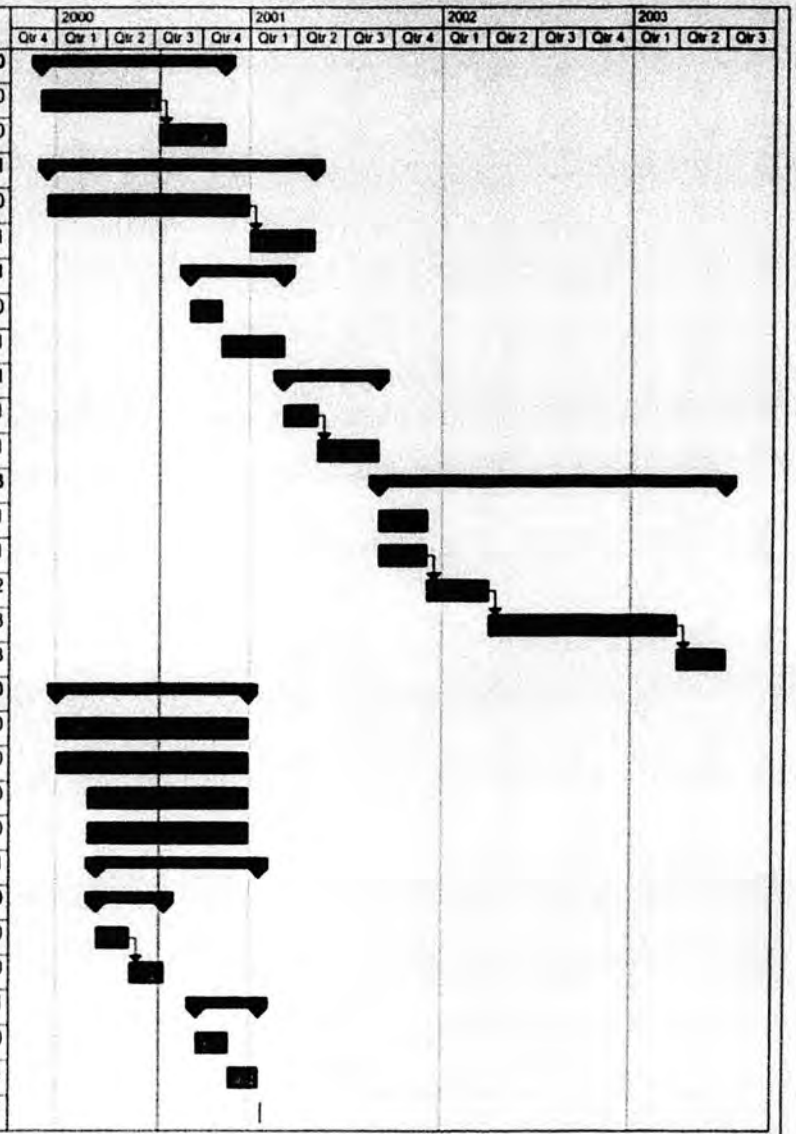
Updated Compliance Schedule

Appendix D

July 21, 2000
W.O. #422-009

Environmental Resources Management
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

ID	Task Name/Permit or CP Section No.	Duration	Start	Finish
1	**On-Site Risk Assessment (Permit VIII.I)**	**248 days**	**Thu 12/02/99**	**Mon 11/13/00**
2	Submit RFI Risk Assessment	158 days	Thu 12/02/99	Mon 07/10/00
3	TNRCC Review Process	90 days	Tue 07/11/00	Mon 11/13/00
4	**RFI/EOC Phase 2-C Implementation(Permit VIII.D. and CP VIII)**	**360 days**	**Wed 12/15/99**	**Tue 05/01/01**
5	Complete Phase 2-C RFI/EOC	273 days	Wed 12/15/99	Fri 12/29/00
6	Submit RFI/EOC Progress Report to TNRCC	87 days	Mon 01/01/01	Tue 05/01/01
7	**Off-Site Risk Assessment (Permit VIII.I)**	**129 days**	**Fri 09/08/00**	**Wed 03/07/01**
8	Submit RFI Risk Assessment	43 days	Fri 09/08/00	Tue 11/07/00
9	TNRCC Review Process	87 days	Tue 11/07/00	Wed 03/07/01
10	**Corrective Measures Study (Permit VIII.I and CP IX)**	**130 days**	**Wed 03/07/01**	**Tue 09/04/01**
11	Submit Corrective Measures Study	44 days	Wed 03/07/01	Mon 05/07/01
12	TNRCC Review Process	86 days	Tue 05/08/01	Tue 09/04/01
13	**Corrective Measures Implementation (Permit VIII.J and CP X)**	**476 days**	**Wed 09/05/01**	**Wed 07/02/03**
14	Submit Proposed Permit Modification	65 days	Wed 09/05/01	Tue 12/04/01
15	Submit Corrective Measures Implementation Work Plan	64 days	Wed 09/05/01	Mon 12/03/01
16	TNRCC Review Process	88 days	Tue 12/04/01	Thu 04/04/02
17	Perform Corrective Action	258 days	Fri 04/05/02	Tue 04/01/03
18	Submit Corrective Measures Report	66 days	Wed 04/02/03	Wed 07/02/03
19	**Compliance Activities (Permit IV,C and CP VI)**	**260 days**	**Mon 01/03/00**	**Fri 12/29/00**
20	Impoundment Inspections (weekly)	260 days	Mon 01/03/00	Fri 12/29/00
21	Water Level Measurements (Monthly)	260 days	Mon 01/03/00	Fri 12/29/00
22	Monitor Well Inspections (Quarterly)	218 days	Wed 03/01/00	Fri 12/29/00
23	Ground Water Sampling (Semiannual)	218 days	Wed 03/01/00	Fri 12/29/00
24	**Post-Closure Care Reporting 2000-2001**	**221 days**	**Fri 03/17/00**	**Fri 01/19/01**
25	**Semiannual Report - July 21, 2000 (CP VII.B.2)**	**91 days**	**Fri 03/17/00**	**Fri 07/21/00**
26	Perform Data Evaluation	44 days	Fri 03/17/00	Wed 05/17/00
27	Submit Report to TNRCC	47 days	Thu 05/18/00	Fri 07/21/00
28	**Semiannual Report - January 21, 2001 (CP VII.B.2)**	**86 days**	**Fri 09/22/00**	**Fri 01/19/01**
29	Perform Data Evaluation	43 days	Fri 09/22/00	Tue 11/21/00
30	Submit Report to TNRCC	44 days	Tue 11/21/00	Fri 01/19/01
31	2000 Annual Report - January 25, 2001 (Permit V.F and III.B.1)	1 day	Thu 01/25/01	Thu 01/25/01



Project: sch_7_5_00
Date: Mon 07/10/00

Task | Milestone | Rolled Up Task | Rolled Up Progress | External Tasks
Progress | Summary | Rolled Up Milestone | Split | Project Summary