THIRD QUARTER 1993 PROGRESS REPORT
L.E. CARPENTER SITE
WHARTON, NEW JERSEY

Prepared on behalf of L.E. CARPENTER AND COMPANY
for the New Jersey Department of Environmental
Protection and Energy

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W.O. No.: 06720-013-001

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346079

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TABLE OF CONTENTS

Section	Title	Page
1.0	Groundwater Activities	1-1
	1.1 Groundwater Level Measurement	1-1
	1.2 Groundwater Sampling	1-1
	1.3 Product Recovery	1-1
	1.4 Caisson Well Installation	1-2
	1.5 Soil Sampling (Air Products Drainage Ditch)	1-2
2.0	Results	2-1
	2.1 Groundwater Elevation Data	2-1
	2.2 BTEX Analytical Results	2-1
3.0	Discussion	3-1
	3.1 Groundwater Flow Measurements	3-1
	3.2 Product Delineation Activities	3-1
	3.3 Summary	3-2

APPENDICES

APPENDIX A	Water Level and Product Thickness Data
APPENDIX B	Equipotential and Product Thickness Isopach Maps
APPENDIX C	BTEX Analytical Results

LIST OF TABLES

Table No.	Title	Page
2-1	Summary of BTEX Analytical Results, Third Quarter 1993, L.E. Carpenter Site, Wharton, New Jersey	2-2
3-1	Comparison of Monitoring Well Data Since Fourth Quarter 1992	3-3

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L.E. CARPENTER QUARTERLY REPORT

1.0 GROUNDWATER ACTIVITIES

On 24 September 1993, WESTON personnel conducted quarterly groundwater levels and product thickness measurements at the L.E. Carpenter site. Routine quarterly sampling of groundwater monitoring wells MW-4, MW-14S, MW-22, MW-25, and biannual sampling of MW-15S occurred on 16 September 1993. All groundwater samples collected from the above mentioned monitoring wells were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX). In addition, this report presents a summary of product recovery activities, the installation of three product recovery wells, and the soil sampling event conducted at the Air Products drainage ditch.

1.1 GROUNDWATER LEVEL MEASUREMENTS

Water level and product thickness measurements were conducted at all of the monitoring wells and well points at the L.E. Carpenter site on 24 September 1993. Water level measurements were also conducted at (8) eight staff gauges and the RP-1 measurement point on the concrete wall adjacent to the Rockaway River. Surface water elevations were determined by measuring the vertical distance between the top of the staff gauge (or paint mark) and the water surface. It should be noted that the water level and product thickness measurements were conducted after a period of heavy precipitation.

1.2 GROUNDWATER SAMPLING

Groundwater monitoring wells MW-4, MW-14S, MW-22, and MW-25 were sampled for benzene, toluene, ethylbenzene, and xylene (BTEX) analysis (EPA Method 602) on 16 September 1993. Dedicated Well Wizard® bladder pumps were utilized to purge a minimum of three well volumes prior to sampling from these groundwater monitoring wells.

Additionally, groundwater monitoring well MW-15S was sampled for BTEX. MW-15S is sampled bi-annually as requested by NJDEPE. A laboratory decontaminated bailer was used to purge at least three well volumes prior to sampling. Samples were collected in accordance with NJDEPE "Field Sampling Procedures Manual" dated May 1992. All samples were placed into 40 milliliter glass vials which contained a sufficient amount of hydrochloric acid to achieve a sample pH of 2 or less. After collection, the samples were immediately placed in a designated sample cooler and preserved at four degrees centigrade.

All samples were shipped with the necessary trip and field blanks to the Weston Analytical Laboratory in Lionville, PA via overnight courier following chain-of-custody procedures.

1.3 PRODUCT RECOVERY

Operational difficulties were encountered with the Enhanced Immiscible Product Recovery System (EIPRS) during the reporting period. Specifically on 24 September 1993, a malfunction in the central pneumatic control unit rendered the system temporarily inoperable. The unit was immediately shipped to the manufacturer for service. The control unit was reinstalled on 22 October 1993 and the EIPRS has been successfully recovering product since reinstallation. Approximately 70 gallons of product has been recovered since the reinstallation of the pneumatic control unit.

1.4 RECOVERY WELL INSTALLATION

Three large diameter recovery wells were installed on 26 and 27 October 1993. The new recovery wells were installed to enhance the passive recovery of the light non-aqueous phase liquid (LNAPL) at the site. These wells will also be utilized during the active recovery of LNAPL.

The three 24-inch diameter recovery wells were installed under well permit numbers 25-44147, 25-44148, and 25-44149. The well permit forms indicate the owners well number for these caissons as RW-1, RW-2 and RW-3, respectively. These owner designations have previously been assigned to the eight-inch recovery wells installed at the site in June 1991. In order to avoid confusion on site maps and future documents and reports, these caissons are being redesignated as RW-4 (Permit No. 25-44147), RW-5 (Permit No. 25-44148), and RW-6 (Permit No. 25-44149).

The caissons were installed with a trackhoe by WESTON personnel under the direct supervision of a New Jersey licensed well driller from Summit Drilling, Inc. The wells were installed in accordance with specifications presented in the WESTON's work plan to the New Jersey Department of Environmental Protection and Energy dated 9 July 1993.

On 28 and 29 October 1993, the new recovery wells were developed utilizing overpumping, and the pump and surge methods of development. Approximately 2,250 gallons of liquid were pumped from the wells into a 6,500 gallon tanker. On 9 November 1993, the tanker contents were removed off-site for proper disposal. In the near future, the new recovery wells will be surveyed, at which time the NJDEPE Forms A and B will be completed.

1.5 SOIL SAMPLING (AIR PRODUCTS DRAINAGE DITCH)

On 27 October, 1993, three soil borings were completed by a New Jersey licensed well driller on the Air Products property adjacent to the drainage ditch. The borings, designated B-1, B-2, and B-3 were split spoon sampled to their respective completion depth of five feet below grade. Borehole advancement was attempted with 4.25 inch inner diameter hollow stem augers, however, due to subsurface conditions encountered, the direct air rotary drilling method for borehole advancement was required.

Recovered soils were field screened with a calibrated Organic Vapor Analyzer (OVA). One sample from each boring was collected for volatile organics and xylene analyses by EPA Method 8240. All samples were collected in accordance with NJDEPE "Field Sampling Procedures Manual" dated May 1992.

Upon completion of drilling activities, the boreholes were sealed with grout and the boring locations were field surveyed with a tape measure. Analytical results are expected on or about 1 December 1993.

2.0 RESULTS

2.1 GROUNDWATER ELEVATION DATA

Groundwater level elevation and product thickness data for the 24 September 1993 measurement event are presented in Table 1 in Appendix A. Correction of water level elevations for monitoring points containing a LNAPL were performed using the method presented in previous quarterly reports (WESTON, April 1992).

2.2 BTEX ANALYTICAL RESULTS

Analytical results for groundwater samples collected from MW-4, MW-14S, MW-15S, MW-22, and MW-25 are presented in Appendix C. The data is summarized in Tables 2-1 and 3-1. It should be noted that analysis for benzene and toluene in MW-22 was completed one day in excess of the required holding times. Thus, the actual values of these analytes in the groundwater sample collected from MW-22 may be slightly higher than the concentrations being reported. The highest BTEX concentration was detected in MW-22 (1.5 ppm total). BTEX was detected in MW-4 and MW-15S at low concentrations of 0.0135 ppm and .0068 ppm respectively. BTEX was not detected in MW-14S or MW-25.

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TABLE 2-1

SUMMARY OF BTEX ANALYTICAL RESULTS
THIRD QUARTER 1993
L.E. CARPENTER SITE, WHARTON, NEW JERSEY

Parameter	Concentration (ppm)				
	MW-4	MW-14S	MW-15S	MW-22	MW-25
Benzene	ND	ND	ND	ND	ND
Toluene	.002	ND	ND	.0012	ND
Ethylbenzene	.0054	ND	.0017	.3000[1]	ND
Xylene	.0061	ND	.0051	1.200[2]	ND
Total BTEX	.0135	ND	.0068	1.50	ND

Data Qualifiers

ND = Compound was analyzed for but not detected.

[1] = Sample dilution factor of 10.

[2] = Sample dilution faction of 50.

3.0 DISCUSSION

3.1 GROUNDWATER FLOW MEASUREMENT

Groundwater and product levels were measured at each monitoring well, well point, and stream gauge on 24 September 1993. Appendix A presents the water level measurement data. Equipotential maps of the shallow, intermediate, and deep aquifer zone are presented in Figures 1, 2, and 3; respectively in Appendix B.

Corrected water level elevations were compared to findings from the 24 June 1993 measurement event (second quarter 1993). At the majority of monitoring points (monitoring wells, well points, and staff gauges), corrected water level elevations declined possibly reflective of seasonal variation. The range of these downward fluctuations were calculated to be between 0.09 feet at WP-B8 to 4.22 feet at WP-A8.

At monitoring points MW-12S, WP-B4, and RP-02, a downward trend in corrected water level elevations were not noted. At MW-12S, data from the measuring events are questionable, because product thickness measurements to 0.01 feet could not be duplicated and therefore, a comparison cannot be made. At WP-B4 there is no measured difference in water level elevations. At staff gauge RP-02, a 0.08 foot upward fluctuation was measured.

Equipotential maps for the three aquifer zones were constructed based on the results of the 24 September 1993 measurement event. These maps were compared to equipotential maps constructed for the second quarter. Groundwater flow in the shallow aquifer zone measured during this reporting period is generally consistent with second quarter 1993 maps. Groundwater flow across the site is generally toward the northeast. The recent equipotential maps indicates groundwater depression in close proximity to MW-11S, which contains a product skimmer pump. This depression is thought to be the result of the product/water level not reaching equilibrium conditions prior to field measurements being conducted. Groundwater flow in the intermediate and deep aquifer zones is toward the southeast and northwest respectively, and is consistent with second quarter results.

3.2 PRODUCT DELINEATION ACTIVITIES

Product delineation was performed by measuring for LNAPL at each monitoring point. At each location where product was encountered, its thickness was measured with an oil/water interface probe to one hundredth (0.01) of a foot. Appendix A provides the product thickness measurements. Figure 4 in Appendix B provides a isopach map depicting product thickness.

Product thickness varied between a sheen (RW-003) to 4.41 feet at MW-11S. Product level thicknesses varied between the 24 September 1993 and the 24 June 1993 event. LNAPL thickness increased at certain monitoring points and decreased at others. There is no generalizing trend for product thickness fluctuation between the two synoptic rounds. Fluctuations in product thickness at MW-12S could not be quantified because of the questionable

product readings due to the physical characteristics of the product which makes accurate field measurements difficult to obtain.

An increase in product thickness was noted at monitoring points MW-03, MW-04, MW-10, RW-002, WP-A2, WP-A5, WP-B1, WP-B5, WP-B7, and WP-B9. The product thickness fluctuations ranged between 0.09 feet at RW-002 to 3.22 feet at MW-003.

A decrease in product thickness was measured at monitoring points MW-01, MW-11S, WP-A1, WP-A4, WP-A6, WP-A7, WP-A8, WP-B3, WP-B4, WP-B6. The product thickness fluctuations ranged between 0.10 feet at MW-001 and 2.70 feet at WP-A7.

3.3 SUMMARY

The analytical results for the third quarter 1993 are presented in Table 2-1. A summary of analytical data collected since third quarter 1992 is presented in Table 3-1. In general, total BTEX concentrations were greater in MW-4 and MW-2 in comparison with total BTEX concentrations found in the second quarter 1993. The concentrations of total BTEX was lower in MW-15S last sampled in the first quarter of 1993 and total BTEX was undetected in MW-14S and MW-25, consistent with data from the second quarter of 1993. Ethylbenzene and xylene were detected in MW-22 at concentrations of 0.30 ppm and 1.2 ppm, respectively. In comparison with the most recent analytical data, ethylbenzene and xylene are present in slightly higher concentrations in MW-4, MW-15S and MW-22 than those found in the second quarter of 1993. Toluene was present in MW-22 (.0012 ppm) at a concentration much lower than the second quarter of 1993 (.340 ppm). A slight increase in ethylbenzene and xylene was also observed in MW-4. Ethylbenzene was present in MW-4 at a concentration of .0054 ppm during this round of sampling as compared to being undetected in the second quarter of 1993. Xylene was detected in MW-4 at a concentration of .0061 ppm compared to .0024 ppm during the second quarter of 1993. Ethylbenzene (.0017 ppm) and xylene (.0051 ppm) were detected at lower concentrations in MW-15S last sampled in the 1st quarter of 1993. Benzene, toluene, ethylbenzene, and xylene were not detected in MW-14S and MW-25 during this round of sampling.

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TABLE 3-1

COMPARISON OF MONITORING WELL DATA SINCE FOURTH QUARTER 1992
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All results in mg/l (ppm)

	4thQ92	1stQ93	2ndQ93	3rdQ93
MW-4				
Benzene	ND	ND	ND	ND
Toluene	ND	ND	.002	.002
Ethylbenzene	.0039	.012	ND	.0054
Xylene	.006	.0054	.0024	.0061
Total BTEX	.001	.0174	.0044	.0135
MW-14S				
Benzene	ND	ND	ND	ND
Toluene	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND
Xylene	ND	.014	ND	ND
Total BTEX	ND	.014	ND	ND
MW-22				
Benzene	ND	ND	ND	ND
Toluene	ND	ND	.340	.0012
Ethylbenzene	.470	.120	ND	.3000*
Xylene	2.60	.440	1.0	1.200**
Total BTEX	3.07	.560	1.34	1.50
MW-25				
Benzene	ND	ND	ND	ND
Toluene	ND	ND	ND	ND
Ethylbenzene	ND	.013	ND	ND
Xylene	ND	.024	ND	ND
Total BTEX	ND	.037	ND	ND
MW-15S				
Benzene	na	ND	na	ND
Toluene	na	ND	na	ND
Ethylbenzene	na	.280	na	.0017
Xylene	na	.810	na	.0051
Total BTEX	na	1.09	na	.0068

*- Sample Dilution Factor of 10
**- Sample Dilution Factor of 50
ND- Not detected

APPENDIX A

WATER LEVEL AND PRODUCT THICKNESS DATA

TABLE 1. DEPTH TO WATER, WATER LEVEL ELEVATION AND PRODUCT THICKNESS DATA, MEASURED ON SEPTEMBER 24, 1993, L.E. CARPENTER SITE, WHARTON, NEW JERSEY

WELL	MEASURING PT. ELEVATION (FT MSL)	DEPTH TO PRODUCT (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS OR SHEEN OBSERVATIONS (FT)	OBSERVED WATER LEVEL ELEVATION (FT MSL)	CORRECTED WATER LEVEL ELEVATION * (FT MSL)
MW-001	638.97	15.29	15.90	0.61	623.07	623.59
MW-002	633.39		10.20	none	623.19	623.19
MW-003	632.27	8.85	12.25	3.40	620.02	622.94
MW-004	632.31	9.11	9.14	0.03	623.17	623.20
MW-005	632.20		8.54	none	623.66	623.66
MW-006	632.77		9.30	none	623.47	623.47
MW-007	630.68		7.17	none	623.51	623.51
MW-008	630.56		5.44	none	625.12	625.12
MW-009	631.69		7.30	none	624.39	624.39
MW-010	633.65	10.22	11.51	1.29	622.14	623.25
MW-11S	632.96	9.57	13.98	4.41	618.98	622.77
MW-11I	632.82		9.48	none	623.34	623.34
MW-11D	632.42		7.14	none	625.28	625.28
MW-12S	633.18	equipment	failure	unknown	633.18	633.18
MW-12I	633.06		9.72	none	623.34	623.34
MW-13S	631.23		7.76	none	623.47	623.47
MW-13I	630.66		7.44	none	623.22	623.22
MW-14S	628.41		5.41	none	623.00	623.00
MW-14I	628.23		5.15	none	623.08	623.08
MW-14D	628.53		3.40	none	625.13	625.13
MW-15S	636.77		13.18	none	623.59	623.59
MW-15I	636.66		13.05	none	623.61	623.61
MW-16S	634.47		10.46	none	624.01	624.01
MW-16I	634.96		10.91	none	624.05	624.05
MW-17S	634.79		11.07	none	623.72	623.72
MW-17D	634.86		11.14	none	623.72	623.72
MW-18S	631.26		7.54	none	623.72	623.72
MW-18I	631.04		7.34	none	623.70	623.70
MW-18D	630.77		6.17	none	624.60	624.60
MW-019	638.88		14.50	none	624.38	624.38
MW-020	636.77		12.65	none	624.12	624.12
MW-021	628.80		5.95	none	622.85	622.85
MW-022	628.74		5.68	none	623.06	623.06
MW-023	630.64		4.30	none	626.34	626.34
MW-024	629.03		5.64	none	623.39	623.39
MW-025	627.33		4.44	SHEEN	622.89	622.89
RW-001	637.38		13.82	none	623.56	623.56
RW-002	631.68	8.50	8.59	0.09	623.09	623.17
RW-003	631.99		8.70	SHEEN	623.29	623.29
GEI-1I	630.78		7.02	none	623.76	623.76
GEI-2S	637.67		13.38	none	624.29	624.29
GEI-2I	638.20		13.44	none	624.76	624.76
GEI-3I	639.85		15.62	none	624.23	624.23

* Estimated water level elevation calculated using a product specific gravity of 0.86.

TABLE 1, CONTINUED. DEPTH TO WATER, WATER LEVEL ELEVATION AND PRODUCT THICKNESS DATA, MEASURED ON SEPTEMBER 24, 1993, L.E. CARPENTER SITE, WHARTON, NEW JERSEY

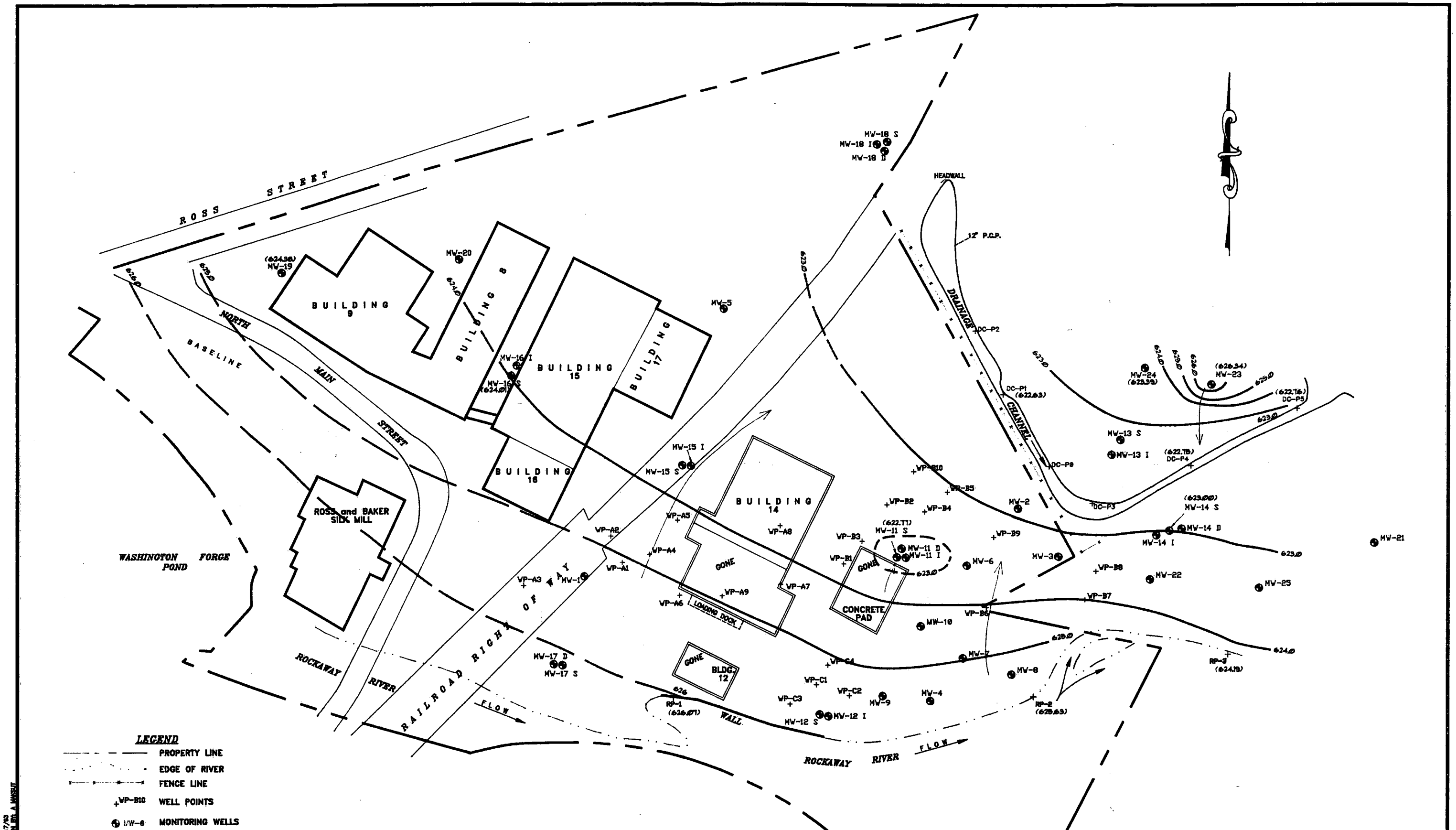
WELL POINT	MEASURING PT. ELEVATION (FT MSL)	DEPTH TO PRODUCT (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS OR SHEEN OBSERVATIONS (FT)	OBSERVED WATER LEVEL ELEVATION (FT MSL)	CORRECTED WATER LEVEL ELEVATION * (FT MSL)
WP-A1	635.81	12.13	12.16	0.03	623.65	623.68
WP-A2	639.20	15.53	16.41	0.88	622.79	623.55
WP-A3	635.56		11.81	none	623.75	623.75
WP-A4	635.10	11.40	13.08	1.68	622.02	623.46
WP-A5	637.85	14.33	14.35	0.02	623.50	623.52
WP-A6	637.28	13.66	14.24	0.58	623.04	623.54
WP-A7	634.88	11.35	13.27	SHEEN	621.61	621.61
WP-A8	637.56	13.97	17.16	SHEEN	620.40	620.40
WP-A9	639.45	15.87	17.70	SHEEN	621.75	621.75
WP-B1	633.65	10.02	12.03	2.01	621.62	623.35
WP-B2	632.25		8.85	none	623.40	623.40
WP-B3	633.33	9.65	12.65	3.00	620.68	623.26
WP-B4	631.92	8.23	10.05	1.82	621.87	623.44
WP-B5	632.11	9.45	11.20	1.75	620.91	622.42
WP-B6	631.86	8.42	8.55	0.13	623.31	623.42
WP-B7	629.49	6.02	9.60	3.58	619.89	622.97
WP-B8	629.29		6.19	none	623.10	623.10
WP-B9	632.37	8.71	12.50	3.79	619.87	623.13
WP-B10	632.63		9.27	none	623.36	623.36
WP-C1	634.44		11.11	none	623.33	623.33
WP-C2	634.46		10.32	none	624.14	624.14
WP-C3	632.64		9.16	none	623.48	623.48
WP-C4	634.59		11.25	none	623.34	623.34

* Estimated water level elevation calculated using a product specific gravity of 0.86.

MEASURING POINT	ELEVATION OF MEASURING POINT	DEPTH TO WATER	WATER LEVEL ELEVATION
DC-P0	625.75	DRY	0.00
DC-P1	625.26	2.63	622.63
DC-P2	626.79	DRY	0.00
DC-P3	625.22	DRY	0.00
DC-P4	625.10	2.35	622.75
DC-P5	625.16	2.40	622.76
RP-01	629.65	3.58	626.07
RP-02	627.75	2.12	625.63
RP-03	627.11	2.92	624.19

APPENDIX B

EQUIPOTENTIAL AND PRODUCT THICKNESS DATA



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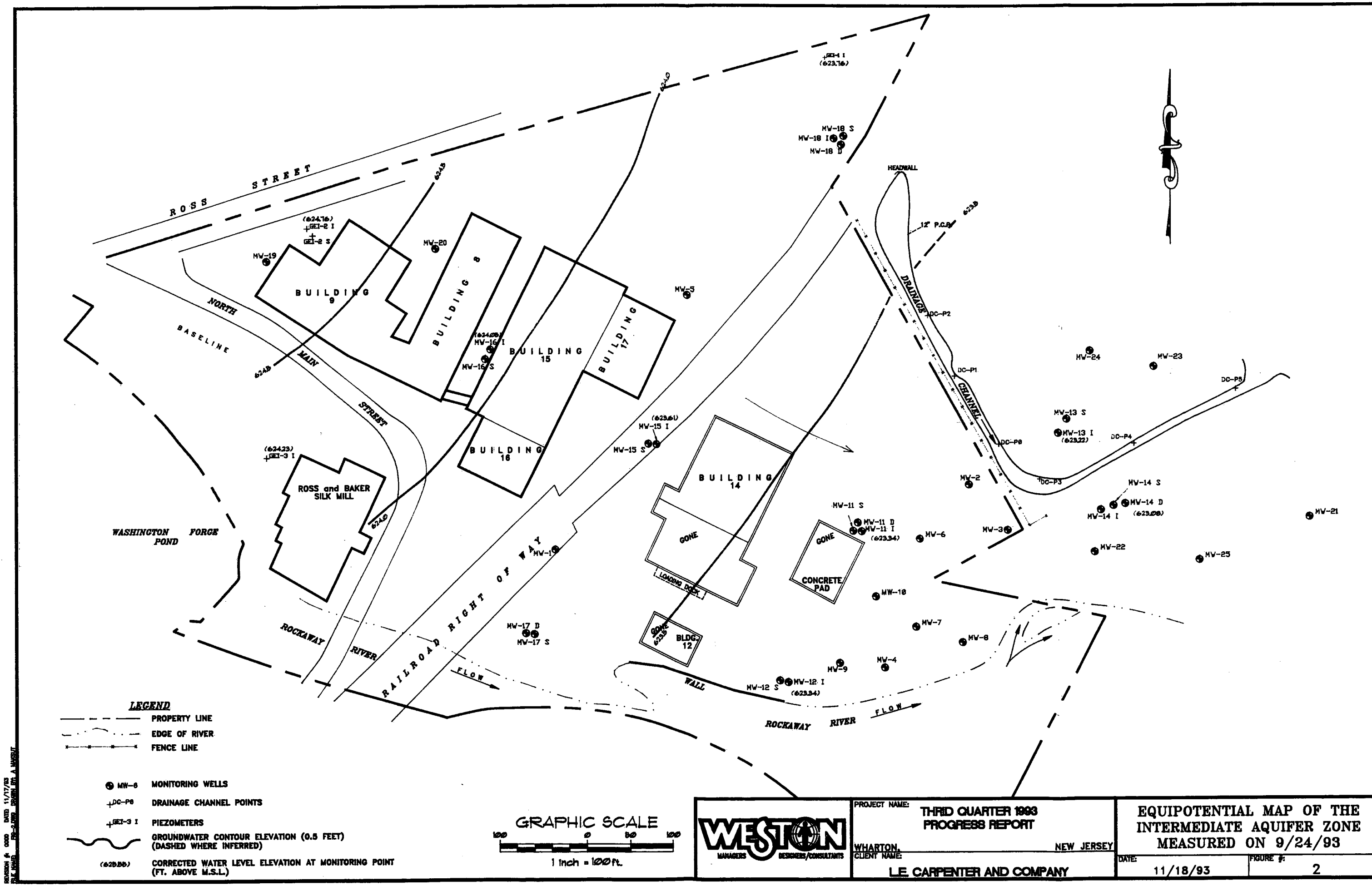
EQUIPOTENTIAL MAP OF THE SHALLOW AQUIFER ZONE MEASURED ON 9/24/93

DATE: 11/18/93

FIGURE #: 1



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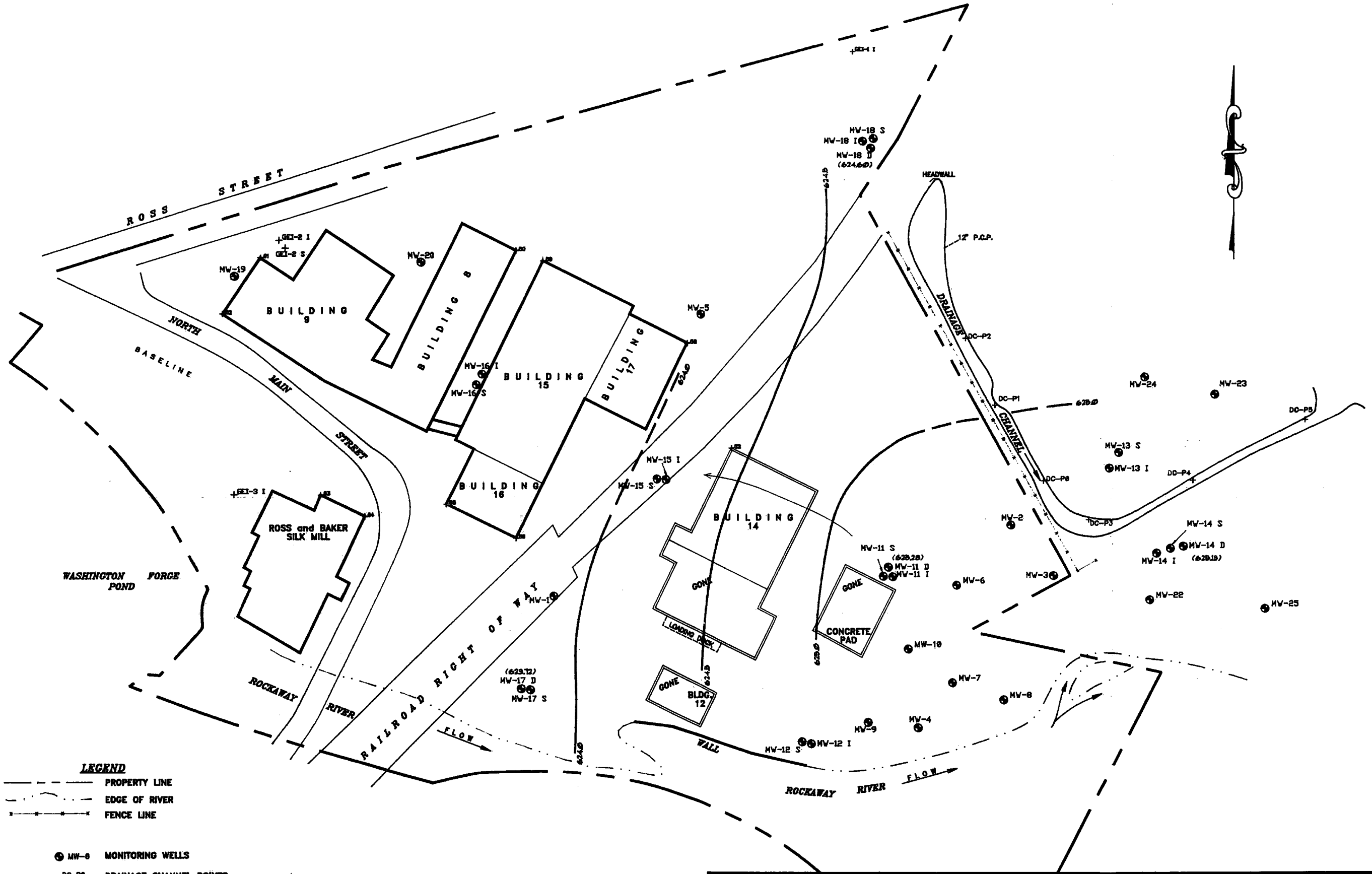
EQUIPOTENTIAL MAP OF THE INTERMEDIATE AQUIFER ZONE MEASURED ON 9/24/93

DATE: 11/18/93
FIGURE #: 2



LEGEND

- PROPERTY LINE
- EDGE OF RIVER
- FENCE LINE
- MW-6 MONITORING WELLS
- DC-P6 DRAINAGE CHANNEL POINTS
- GEI-3 I PIEZOMETERS
- GROUNDWATER CONTOUR ELEVATION (0.5 FEET) (DASHED WHERE INFERRED)
- (628.56) CORRECTED WATER LEVEL ELEVATION AT MONITORING POINT (FT. ABOVE M.S.L.)

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EQUIPOTENTIAL MAP OF THE DEEP AQUIFER ZONE MEASURED ON 9/24/93

DATE: 11/18/93

FIGURE #: 3

REVISION #: 0000 DATE: 11/17/93
FILE NAME: FIG-3.DWG DRAWN BY: A. MANSUR

ROSS STREET
NORTH BASELINE
MAIN STREET
BUILDING 9
BUILDING 8
BUILDING 15
BUILDING 17
BUILDING 16
BUILDING 14
ROSS and BAKER SILK MILL
WASHINGTON FORGE POND
ROCKAWAY RIVER
RAILROAD RIGHT OF WAY
FLOW
GONE
LOADING DOCK
CONCRETE PAD
BLDG. 12
WALL
HEADWALL
12" P.C.P.
DRAINAGE CHANNEL
APPOXIMATE LIMIT OF PRODUCT
MW-18 S
MW-18 I
MW-18 D
MW-20
MW-19
MW-5
MW-16 I
MW-16 S
MW-15 I
MW-15 S
MW-24
MW-23
MW-13 S
MW-13 I
MW-14 S
MW-14 D
MW-14 I
MW-21
MW-22
MW-25
MW-2
MW-3
MW-6
MW-11 S
MW-11 D
MW-11 I
MW-10
MW-1
MW-17 D
MW-17 S
MW-7
MW-8
MW-4
MW-9
MW-12 I
MW-12 S
VP-A1
VP-A2
VP-A3
VP-A4
VP-A5
VP-A6
VP-A7
VP-A8
VP-A9
VP-B1
VP-B2
VP-B3
VP-B4
VP-B5
VP-B6
VP-B7
VP-B8
VP-B9
VP-B10
VP-C1
VP-C2
VP-C3
VP-C4
1.0
2.0
3.0
4.0

LEGEND

- PROPERTY LINE
- EDGE OF RIVER
- FENCE LINE
- VP-B10 WELL POINTS
- MW-6 MONITORING WELLS
- 1.0 [PRODUCT THICKNESS CONTOUR INTERVAL = 1.0 FEET]
- APPOXIMATE LIMIT OF PRODUCT BOUNDARY

GRAPHIC SCALE

100 0 50 100

1 inch = 100 ft.

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ISOPACH MAP OF PRODUCT THICKNESS MEASURED ON 9/24/93

DATE: 11/18/93

FIGURE #: 4

REVISION #: 0000 DATED: 11/17/93
FILE NAME: FIG-4.DWG DRAWN BY: A. WRIGHT

APPENDIX C

BTEX ANALYTICAL RESULTS

Inter-Office Memorandum

WESTON
MANAGERS DESIGNERS/CONSULTANTS

TO: MARTIN O'NEILL

FROM: Mike Young

DATE: 20 OCTOBER 1993

PROJECT: LE CARPENTER

W.O. NO.:

W.O. NO.:

SUBJECT: QUARTERLY BTEX RFW# 9309L956

ACTION:

ENCLOSED ARE THE ABOVE REFERENCED RESULTS. PLEASE CALL IF YOU HAVE ANY QUESTIONS.

GC VOLATILES: COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME: Roy F. Weston, Inc., Analytics Division
CITY/STATE: Lionville, PA
CASE/SDG NO.:
CLIENT NAME: LE CARPENTER
WORK ORDER NO.: 03720013001
METHOD BASED ON: 602

R3092956

All documents in the Client's copy of the complete SDG file must be legible, clearly labeled, paginated, single-sided original documents; or of sufficient copy quality to be reproducible to fourth generation copies. (Purge file documents, e.g., original-copy chain-of-custody, etc. assembled per specific contract request only.)

CLIENT: LE CARPENTER SDG No.:		Page Nos From	Page Nos To	Check (initials/date) Lab	Check (initials/date) Client
1	Cover Page (Lab Chron)	0001	0002	LKD 10/17/93	
2	Table of Contents (Document Inventory Sheet)	0003	0003	MT 10/20/93	
3	Case Narrative w/ control limits	0004	0007	LKD 10/17/93	
4	Lab Chain of Custody/Work Request	0008	0008-A		
5	GC Volatiles Sample QC/Data Summary	0009	0014		
	• Data Summary (LIMS Summary Report) ~~FORM~~ DKC			LKD	
	• Surrogate Recovery Summary FORM 2 10/19/93			10/17/93	
	• Matrix Spike/Matrix Spike Duplicate Recovery Summary				
	• Blank Spike Recovery Summary FORM 3				
6	Sample Data, for each Sample:	0015	0039		
	• Target Compound Results - Organic Analysis Data Sheet (Form I)			LKD 10/17/93	
	• Chromatogram/Quant Report, 1° column				
	• Chromatogram/Quant Report, 2° column confirmation			NA	
7	Calibration Standard Data	0040	0088		
	1° Column Standards Data	N/A	N/A		
	Initial Calibration (ICAL): • Compound/Concentration/Curve Summary • Retention Time Window Summary • Chromatograms/Quant Reports			LKD 10/17/93	
	ICAL Second Source Calibration Verification (ICV): • Summary Form • Chromatograms/Quant Reports				
	Daily Analytical Sequence (Run Log)			na	
	Daily Calibration Verification (DCV): • Summary Form • Chromatograms/Quant Reports			LKD 10/17/93	
	Continuing Calibration Verification (CCV): • Summary Form • Chromatograms/Quant Reports				

CLIENT: LE CARPENTER SDG No.:		Page Nos From	Page Nos To	Check (initials/date) Lab	Check (initials/date) Client
	2° Column Standards Data	N/A	N/A		
	Initial Calibration (ICAL): • Compound/Concentration/Curve Summary • Retention Time Window Summary • Chromatograms/Quant Reports			NA 10/12/93	
	ICAL Second Source Calibration Verification (ICV): • Summary Form • Chromatograms/Quant Reports				
	Daily Analytical Sequence (Run Log)			na	
	Daily Calibration Verification (DCV): • Summary Form • Chromatograms/Quant Reports			10/17/93	
	Continuing Calibration Verification (CCV): • Summary Form • Chromatograms/Quant Reports				
8	Raw QC Data: Blank and Matrix Spike Data	0089			
	Blank Data	0090	~~0095~~ 0092		
	• Target Compound Results Form			LKD 10/12/93	
	• Chromatogram/Quant Report, 1° column				
	• Chromatogram/Quant Report, 2° column confirmation			na	
	Blank Spike (in some instances, will be same data presented in standards section for CCV)	0093	0095		
	• Target Compound Results Form			LKD 10/17/93	
	• Chromatogram/Quant Report, 1° column				
	Matrix Spike/Matrix Spike Duplicate	0096	0101		
	• Target Compound Results Form			LKD 10/17/93	
	• Chromatogram/Quant Report, 1° column				
9	Analysis Logbook Pages	N/A	N/A	na	
10	Standards Preparation Records	N/A	N/A		
	• Surrogate and Target Analyte Spike Solutions			na	
	• Calibration Standards			na	
11	Preparation Logs	0102	0103		
	• Sample Prep Records			10/17/93 LKD	
	• Screening Records (Logs, Chromatograms)			na	
	• % Moisture Records			na	
12	Shipping, Receiving, and Custody Records	0008	0008-A		
	• Lab Chain of Custody			MC 10/20/93	
	• Client Custody Reports/Packing Lists			N/A	
	• Airbills				

COMMENTS: Package contains page 0008-A

Checked by: (Laboratory)	Mary M. Zieglen Signature	Mary M. Zieglen / Associate Business Professional Printed Name/Title	10/20/93 Date
Checked by: (Client)	Signature	Printed Name/Title	Date

I. Cover Page (Lab Chron)

Roy F. Weston, Inc. - Lionville Laboratory
602X ANALYTICAL DATA PACKAGE FOR
LE CARPENTER

DATE RECEIVED: 09/17/93 RFW LOT # :9309L956

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MW-14S	001	W	93LV5148	09/16/93	N/A	09/30/93
MW-14S	001 MS	W	93LV5148	09/16/93	N/A	09/30/93
MW-14S	001 MSD	W	93LV5148	09/16/93	N/A	10/01/93
MW-22	002	W	93LV5148	09/16/93	N/A	10/01/93
MW-22	002 D1	W	93LV5148	09/16/93	N/A	09/30/93
MW-22	002 D2	W	93LV5148	09/16/93	N/A	09/30/93
MW-25	003	W	93LV5148	09/16/93	N/A	09/30/93
MW-4	004	W	93LV5148	09/16/93	N/A	09/30/93
MW-15S	005	W	93LV5148	09/16/93	N/A	09/30/93
TRIP BLANK	006	W	93LV5148	09/16/93	N/A	09/30/93

LAB QC:

BLK	MB1	W	93LV5148	N/A	N/A	09/30/93
BLK	MB1 BS	W	93LV5148	N/A	N/A	09/30/93

TABLE OF CONTENTS

GC Volatiles

		Page No.
I.	Cover Page (Lab Chron).....	0001
II.	Table of Contents.....	0003
III.	Case Narrative.....	0004
IV.	Lab Chain of Custody/Work Request.....	0008
V.	GC Volatiles Sample QC/Data Summary.....	0009
VI.	Sample Data, for each Sample.....	0015
VII.	Calibration Standard Data.....	0040
VIII.	Raw QC Data: Blank and Matrix Spike Data.....	0089
IX.	Analysis Logbook Pages.....	N/A
X.	Standards Preparation Records.....	N/A
XI.	Preparation Logs.....	0102
XII.	Other/Miscellaneous.....	0104

mmz\pas\10-93\table.gcv

III. Case Narrative

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: LE CARPENTER
RFW #: 9309L956

W.O. #: 06720-013-001-0003-00
Date Received: 09-17-93

GC VOLATILE

The set of samples consisted of six (6) water samples collected on 09-16-93.

The samples were analyzed according to criteria set forth in Method 602 for Selected Aromatic Volatile Organic target compounds on 09-30-93 and 10-01-93.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All samples were preserved with HCl, packaged, and stored as specified in the QAPP/SW-846 protocol.

2. The six (6) samples were analyzed at least once within holding time. Multiple dilutions were required to quantitate all analytes of interest. High concentrations of target analytes required this approach.

   Sample MW-14S MSD was analyzed one (1) day outside of holding time.

   Sample MW-22 was analyzed undiluted one (1) day outside of holding time; however, two (2) dilution levels were analyzed within holding time.

3. All surrogate recoveries were within laboratory control limits.

4. All blank spike recoveries were within method control limits.

5. All matrix spike recoveries were within laboratory control limits.

6. The following sample required dilutions because it contained high levels of target compounds:

Sample ID	Dilution Required
MW-22	10, 50

7. The linearity criteria for initial calibration were met for all analytes with a coefficient of determination (r^2) greater than or equal to 0.992. A seven-point linear regression analysis was performed for primary analyses over the concentration range of .5 ug/L to 80 ug/L.

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

10.20.93
Date

sma/mmz/gcv/09-956vo.cn

WESTON

GLOSSARY OF GC VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

N = Not Confirmed.

Y = Confirmed Positive.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

IV. Lab Chain of Custody/Work Request

WESTON Analytics Use Only

9309L956

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

0008-A

Client: M.A. Harvey - LEC Carpenter
Est. Final Proj. Sampling Date: 9/17/93
Work Order #: 06720 013.001.0003 L60
Project Contact/Phone #: Owen/ Andrew EDC
AD Project Manager: Mike Young
QC: CLP Del: CLP TAT: 30 Days
Date Rec'd: 9/17/93 Date Due: 10/17/93
Account #: LECARP-CLP

Refrigerator #: 1

#/Type Container	Liquid	3x40
	Solid	
Volume	Liquid	40ml
	Solid	
Preservatives		HCL

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

WESTON Analytics Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA 8260	BNA 8270
001	MW-14S	✓	✓	H2O	9/16/93	1245	3	
002	MW-22					1320		
003	MW-25					1400		
004	MW-4					1430		
005	MW-15S					1500		
006	TRIP BLANK					0800	✓	

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

All samples for BTEX - EPA-602 Standard TAT

DATE/REVISIONS:
1. 0602X = BTEX
2. Client Name: VE Carpenter
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ✓ or Hand Delivered
Airbill # 0575533052
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec'd Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES

Relinquished by	Received by	Date	Time
FedEx	M. Harvey	9/17/93	1000
	[illegible]	9/17/93	

Relinquished by	Received by	Date	Time
	[illegible]	9/17/93	

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

V. GC Volatiles Sample QC/Data Summary

km t
10/20/93

0009
~~0010~~

Roy F. Weston, Inc. - Lionville Laboratory
Purgeable Aromatics by GC, Method 602

RFW Batch Number: 9309L956 Client: LE CARPENTER Work Order: 06720013001 Page: 1 Report Date: 10/20/93 14:37

	Cust ID:	MW-14S	MW-14S	MW-14S	MW-22	MW-22	MW-22
Sample Information	RFW#:	001	001 MS	001 MSD	002	002 DL	002 DL
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	10.0	50.0
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
aaa-Trifluorotoluene		62 %	93 %	85 %	91 %	96 %	91 %
Benzene		1.0 U	93 %	79 %	1.0 U	NA	NA
Ethylbenzene		1.0 U	96 %	81 %	E	300	NA
Toluene		1.0 U	95 %	80 %	1.2	NA	NA
Xylene (total)		2.0 U	95 %	81 %	E	E	1200

	Cust ID:	MW-25	MW-4	MW-15S	TRIP BLANK	BLK	BLK BS
Sample Information	RFW#:	003	004	005	006	93LV5148-MB1	93LV5148-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
aaa-Trifluorotoluene		97 %	71 %	87 %	95 %	89 %	100 %
Benzene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	101 %
Ethylbenzene		1.0 U	5.4	1.7	1.0 U	1.0 U	98 %
Toluene		1.0 U	2.0	1.0 U	1.0 U	1.0 U	100 %
Xylene (total)		2.0 U	6.1	5.1	2.0 U	2.0 U	98 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

GC-VOA

SURROGATE RECOVERY (%) CONTROL LIMITS

COMPOUND	BLANKS, BS/BSD	WATER MS/MSD	SOILS MS/MSD
Bromochloromethane	60-130	60-140	40-130
aaa-Trifluorotoluene	70-130	60-140	40-130

SPIKE RECOVERIES (%) CONTROL LIMITS
MIX B EFFECTIVE DATE: 04-01-93

COMPOUND	BLANKS, BS/BSD	WATER MS/MSD	SOILS MS/MSD
trans-1,2-Dichloroethene	64-136	73-106	33-117
1,2-Dichloroethane	71-128	47-137	36-114
1,1,1-Trichloroethane	71-129	71-120	50-106
Bromodichloromethane	76-124	67-131	27-107
cis-1,3-Dichloropropene	64-136	70-126	22-108
trans-1,3-Dichloropropene	64-136	59-118	20-95
Bromoform	73-126	32-132	5-104
1,1,2,2-Tetrachloroethane	49-151	30-175	0-176
Benzene	77-123	71-112	36-101
Toluene	77-122	68-114	18-114
Ethylbenzene	63-137	72-127	9-106
Xylenes (total)	49-148	68-123	6-100

WATER VOLATILE SURROGATE RECOVERY

Lab Name: Roy F. Weston, Inc. Contract: 6720-13-01

Case No.: LE CARPENTER

RFW Lot No.: 9309L956

	CLIENT SAMPLE NO.	S1 (TFT)#	S2 ( )#	S3 ( )#	OTHER	TOT OUT
01	MW-14S	62				0
02	MW-14SMS	93				0
03	MW-14SMSD	85				0
04	MW-22	91				0
05	MW-22DL	96				0
06	MW-22DL	91				0
07	MW-25	97				0
08	MW-4	71				0
09	MW-15S	87				0
10	TRIP BLANK	95				0
11	BLKLV5148-MB1	89				0
12	BLKLV5148-MB1 BS	100				0

S1 (TFT) = aaa-Trifluorotoluene QC LIMITS (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Roy F. Weston, Inc. Contract: 6720-13-01

Case No.: LE CARPENTER RFW Lot No.: 9309L956-001

MATRIX Spike - Sample No.: MW-14S Level:(low/med) LOW

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	MS CONCENTRATION UG/L	MS % REC #	QC LIMITS REC
Benzene	20.0	0	18.5	93	77 -123
Ethylbenzene	20.0	0	19.2	96	63 -137
Toluene	20.0	0	19.0	95	77 -123
Xylene (total)	20.0	0	19.0	95	49 -148

COMPOUND	SPIKE ADDED UG/L	MSD CONCENTRATION UG/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
Benzene	20.0	15.9	79	16	50	77 -123
Ethylbenzene	20.0	16.3	81	17	50	63 -137
Toluene	20.0	15.9	80	17	50	77 -123
Xylene (total)	20.0	16.2	81	15	50	49 -148

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 4 outside limits
Spike Recovery: 0 out of 8 outside limits

COMMENTS:

WATER VOLATILE BLANK SPIKE RECOVERY

Lab Name: Roy F. Weston, Inc. Contract: 6720-13-01

Case No.: LE CARPENTER RFW Lot No.: 9309L956

BLANK Spike - Sample No.: BLKLV5148-MB1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	BS CONCENTRATION UG/L	BS % REC #	QC LIMITS REC
Benzene	20.0	0	20.2	101	77 -123
Ethylbenzene	20.0	0	19.5	98	63 -137
Toluene	20.0	0	20.1	100	77 -123
Xylene (total)	20.0	0	19.5	98	49 -148

Column to be used to flag recovery value with an asterisk
* Values outside of QC limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

VI. Sample Data, for each Sample

CLIENT SAMPLE NO.

GC VOLATILES SHEET

MW-14S

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-001

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337463

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PAC
Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
108-88-3	Toluene	1.0	U
1330-20-7	Xylene (total)	2.0	U

12/88 Rev.

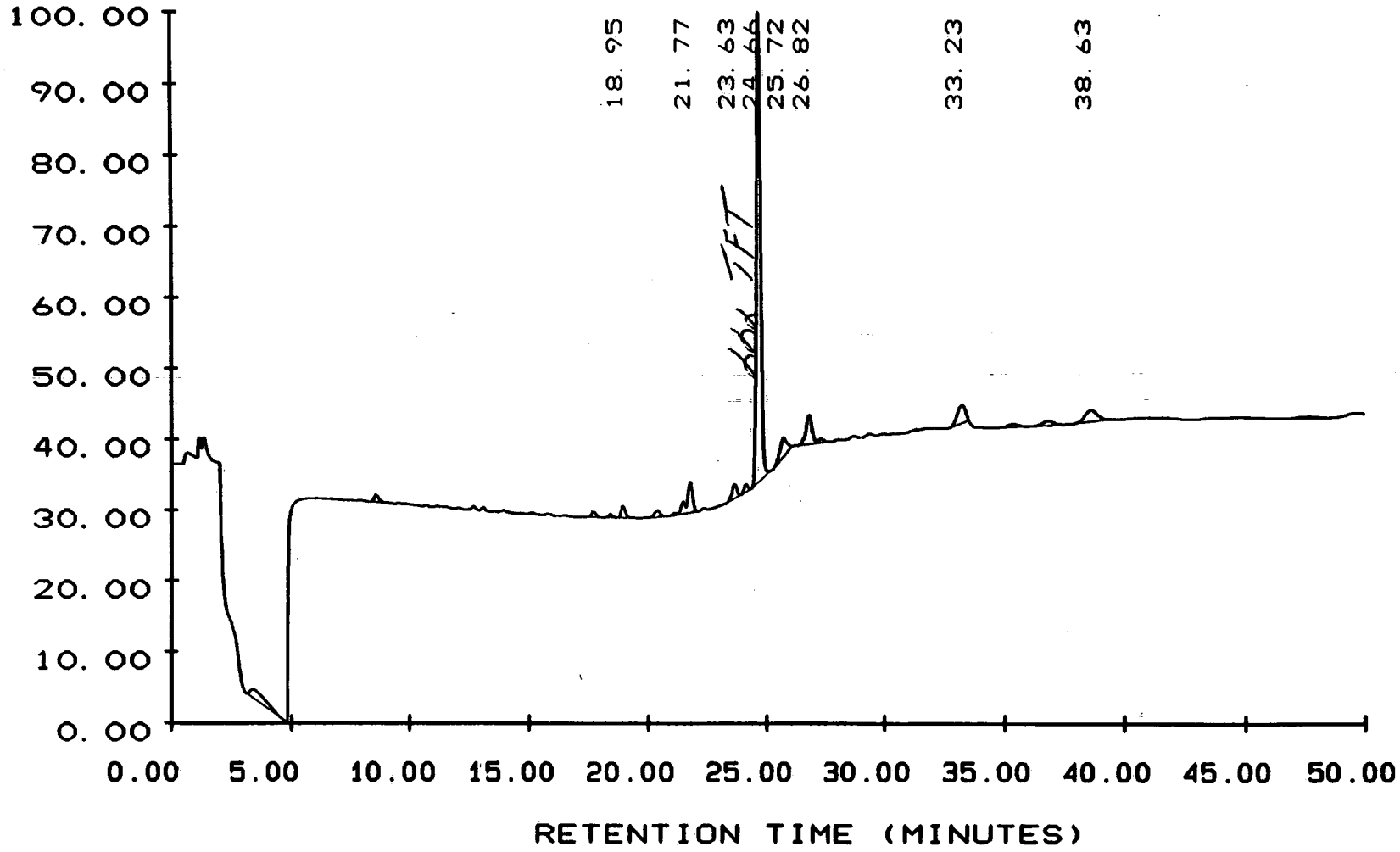
9309L956-001

SAMPLE NO. : 09309320 . 12 INSTRUMENT: 20

TEST NO. : DATE TIME: 09/30/93 21:17:16

METHOD NO. : 20 / 20 PAGE NO. : 01

0017



Y MAXIMUM: 8995. START TIME: 0.00

Y MINIMUM: 6026. END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 22:07:41

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .12 INST:20 VIAL:F0 SEQ NUMBER:012
TEST : 0602X DATE-TIME INJECTED : 09/30/93 21:17:16
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 22:07:41
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: MW-14S SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-001 RAW FILE: RAW2:IU337463
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
				10.730	M	1,1-DICHLOROETHENE	
				12.713	M	TRANS-1,2-DICHLOROET	
				18.409	M	TRICHLOROETHENE	
004	6436	489	V	18.945	M	BENZENE	~~0.219~~ dl
				20.214	M	2-CHLOROETHYLVINYLET	
006	23506	1269	V	21.767			
007	8744	590	V	23.632			
				24.130	M	TETRACHLOROETHENE	
009	237814	19487	V	24.661	M	aaa-TRIFLUOROTOLUENE	11.116 ✓
010	16027	764	V	25.719	M	TOLUENE	~~0.534~~ dl
011	24714	1204		26.817	M	CHLOROBENZENE	
				29.389	M	ETHYLBENZENE	
012	17332	759		33.227			
				35.287	M	M - XYLENE	
				36.623	M	O - XYLENE	
				36.855	M	P - XYLENE	
015	18134	483		38.628			
				42.154	M	1,3-DICHLOROBENZENE	
				43.456	M	1,2-DICHLOROBENZENE	
				44.609	M	1,4-DICHLOROBENZENE	

LKD 10/15/93

DP 12.396

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-22

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-002

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: J1337513

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 10/01/93

Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
100-41-4	Ethylbenzene		E
108-88-3	Toluene	1.2	
1330-20-7	Xylene (total)		E

12/88 Rev.

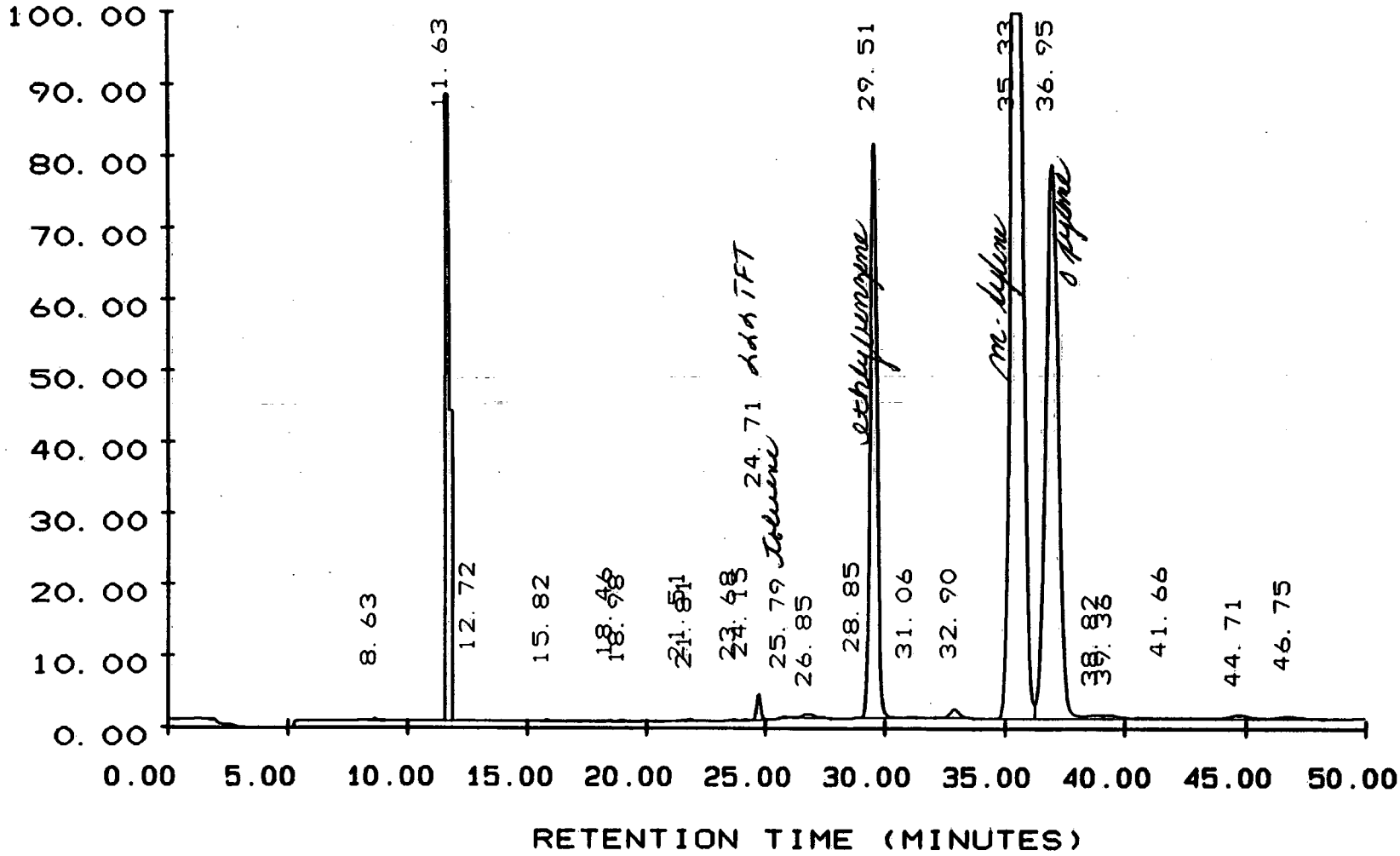
9309L956-002

0020

SAMPLE NO. : 09309320 . 16 INSTRUMENT: 20

TEST NO. : DATE TIME: 10/01/93 01:09:48

METHOD NO. : 20 / 20 PAGE NO. : 01



Y MAXIMUM: 97266. START TIME: 0.00

Y MINIMUM: 6087. END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/01/93 02:00:04

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .16 INST:20 VIAL:F0 SEQ NUMBER:016
TEST : 0602X DATE-TIME INJECTED : 10/01/93 01:09:48
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/01/93 02:00:04
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: MW-22 SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-002 RAW FILE: RAW2:J1337513
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
002	35357	2302	V	8.625			
				10.730		1,1-DICHLOROETHENE	
003	0473237	799911	T	11.627			
004	14852	632	V	12.724		TRANS-1,2-DICHLOROET	~~0.161~~
006	26682	2244	T	15.817			
009	16046	1277	T	18.457		TRICHLOROETHENE	~~0.198~~
010	27796	2141	V	18.975		BENZENE	~~0.491~~ LDL
				20.214		2-CHLOROETHYLVINYLET	
012	23393	1700	T	21.511			
013	33417	2648	V	21.808			
015	30938	1673	V	23.676			
016	14561	1258	V	24.147		TETRACHLOROETHENE	~~0.337~~
017	417938	32633	V	24.711		aaa-TRIFLUOROTOLUENE	18.153 ✓
018	55172	2633	V	25.785		TOLUENE	0.948 DP 1.211 ✓
019	190023	4854	V	26.855		CHLOROBENZENE	~~0.883~~
020	8782	571	V	28.846			
021	4341709	732019	V	29.511		ETHYLBENZENE	275.605 E
022	32153	1306	V	31.061			
023	313685	10840		32.901			
025	7127120	899310	T	35.328		M - XYLENE	444.557
			T	36.850		P - XYLENE	
026	5593520	707026		36.945		O - XYLENE	418.557
027	204760	4692	T	38.819			
028	231668	4538	T	39.360			
029	97810	1050	T	41.664		1,3-DICHLOROBENZENE	
				43.456		1,2-DICHLOROBENZENE	
030	304676	4781	T	44.708		1,4-DICHLOROBENZENE	4.061
031	194138	2702		46.754			

863.114 E

LKD 10/17/93

All compounds were quantitated using method 20
except those which are labeled.

CLIENT SAMPLE NO.

GC VOLATILES SHEET

MW-22DL

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-002 DL

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337415

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PACK

Dilution Factor: 10.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene	NA	
100-41-4	Ethylbenzene	300	
108-88-3	Toluene	NA	
1330-20-7	Xylene (total)		E

12/88 Rev.

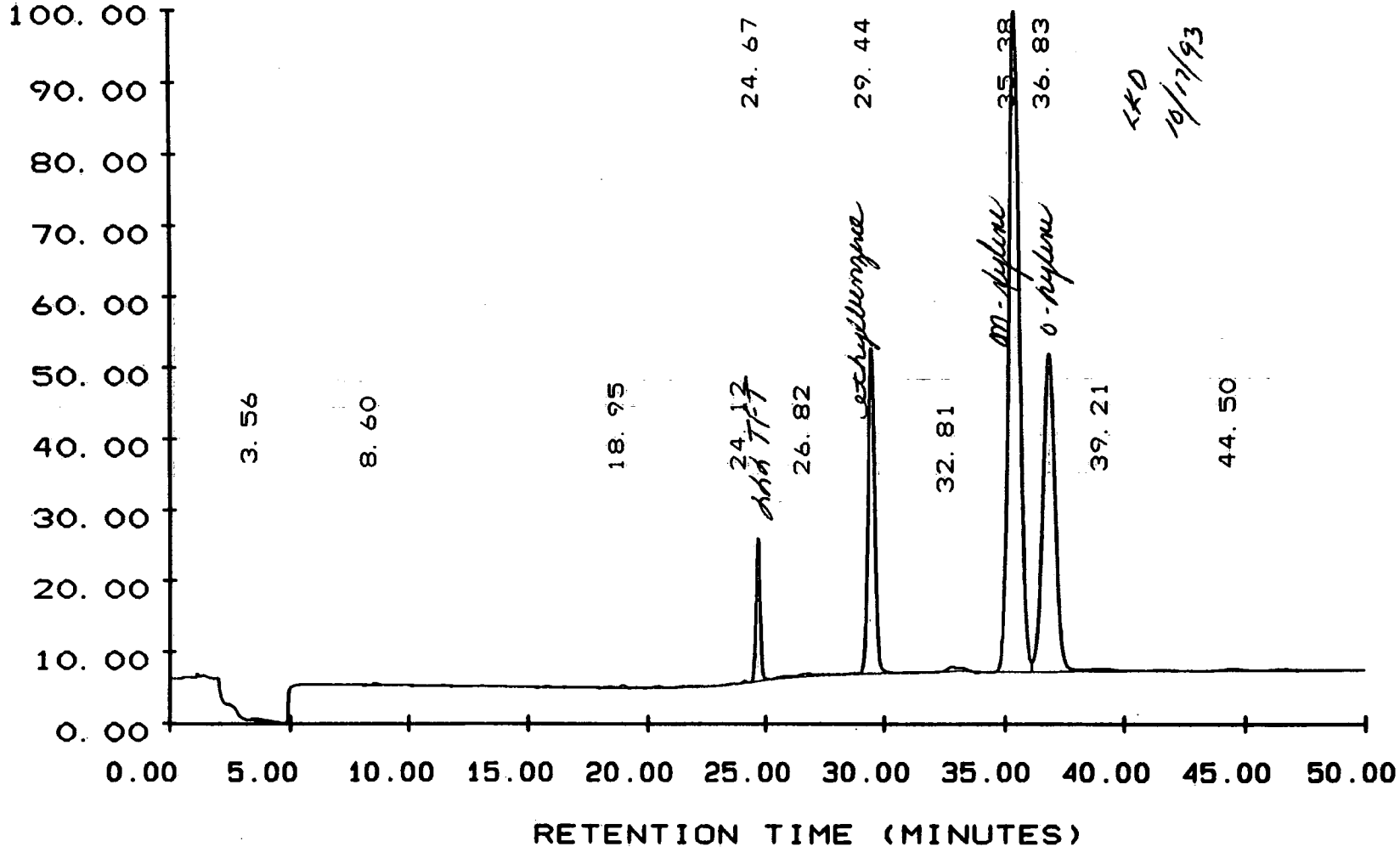
9309L956-002

SAMPLE NO. : 09309320 . 08 INSTRUMENT: 20

TEST NO. : DATE TIME: 09/30/93 17:29:15

METHOD NO. : 20 / 20 PAGE NO. : 01

0023



Y MAXIMUM: 23467. START TIME: 0.00

Y MINIMUM: 6021. END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 18:19:37

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .08 INST:20 VIAL:F0 SEQ NUMBER:008
TEST : 0602X DATE-TIME INJECTED : 09/30/93 17:29:15
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 18:19:37
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: MW-22 SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-002 D| RAW FILE: RAW2:IU337415
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 10.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	21696	417		3.563			
002	8512	514		8.600			
				10.730		1,1-DICHLOROETHENE	
				12.713		TRANS-1,2-DICHLOROET	
				18.409		TRICHLOROETHENE	
006	8313	644	V	18.948		BENZENE	~~2.448~~
				20.214		2-CHLOROETHYLVINYLET	
009	6985	594	V	24.117		TETRACHLOROETHENE	~~0.096~~
010	421962	34715	V	24.671		aaa-TRIFLUOROTOLUENE	192.675 /10 = 19.24
				25.469		TOLUENE	
011	53566	704	V	26.815		CHLOROBENZENE	
012	1585167	79554	V	29.440		ETHYLBENZENE	302.785 ✓
014	42956	1128		32.810			
015	5069939	161913	T	35.376		M - XYLENE	803.570] 1267.581 E
016	2838243	77959		36.828		O - XYLENE	464.011]
			T	36.850		P - XYLENE	
017	55348	592	T	39.214			
				42.154		1,3-DICHLOROBENZENE	
				43.456		1,2-DICHLOROBENZENE	
019	26810	505	T	44.501		1,4-DICHLOROBENZENE	

LKD 10/17/93

All compounds were quantitated using method 20
except those which are labeled.

CLIENT SAMPLE NO.

MW-22DL

GC VOLATILES SHEET

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-002 DL

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337451

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PACK

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene	NA	
100-41-4	Ethylbenzene	NA	
108-88-3	Toluene	NA	
1330-20-7	Xylene (total)	1200	

12/88 Rev.

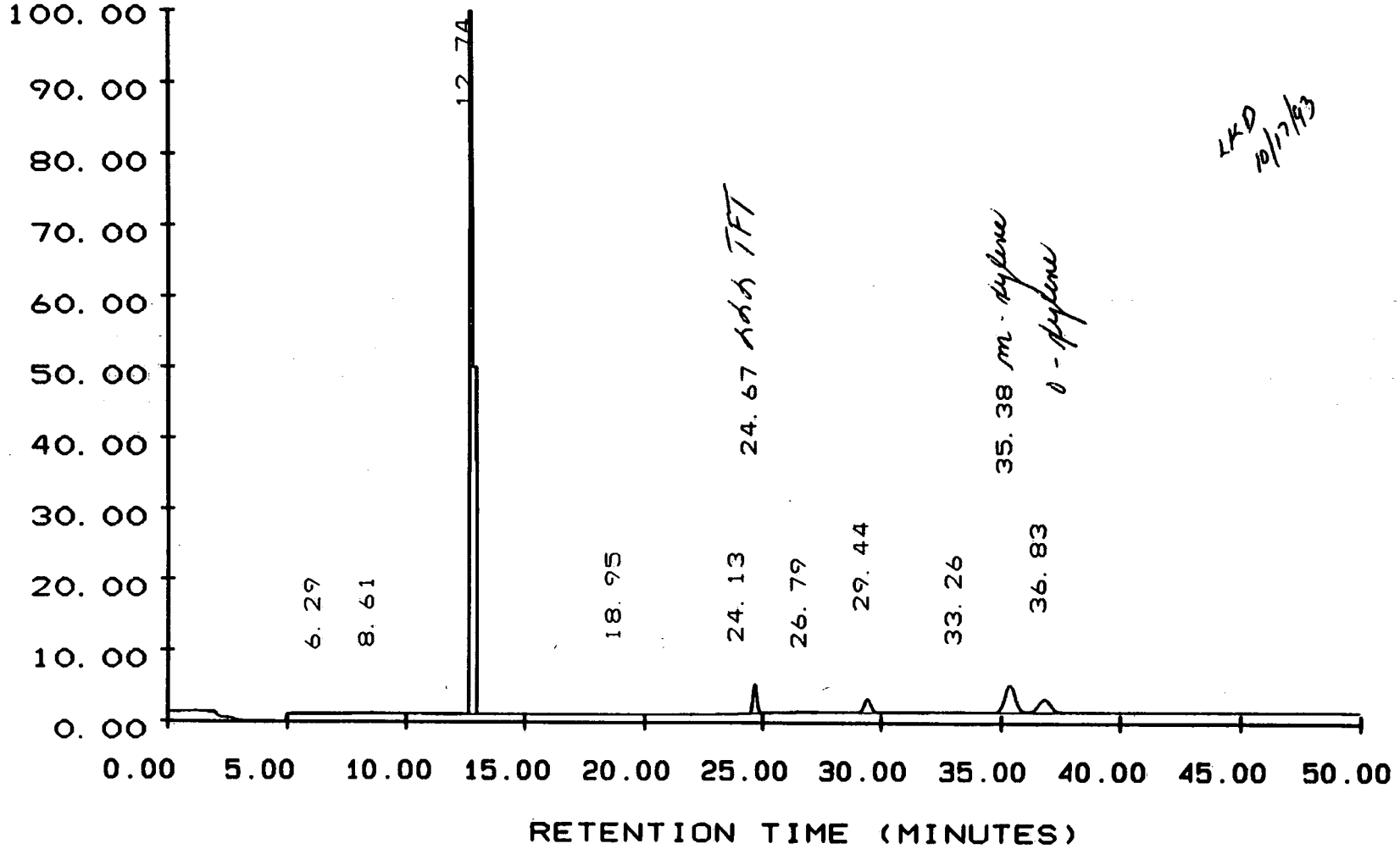
9309L956-002 D2

0026

SAMPLE NO. : 09309320 . 11 INSTRUMENT: 20

TEST NO. : DATE TIME: 09/30/93 20:20:21

METHOD NO. : 20 / 20 PAGE NO. : 01



LKD 10/17/93

Y MAXIMUM: 86824. START TIME: 0.00

Y MINIMUM: 6021. END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 21:10:43

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .11 INST:20 VIAL:F0 SEQ NUMBER:011
TEST : 0602X DATE-TIME INJECTED : 09/30/93 20:20:21
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 21:10:43
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: MW-22 SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-002 b2 RAW FILE: RAW2:IU337451
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 50.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
002	249523	1405	T	6.293			
003	53822	1102		8.607			
				10.730		1,1-DICHLOROETHENE	
005	0472333	799071		12.736		TRANS-1,2-DICHLOROET7	~~.390E+3~~
				18.409		TRICHLOROETHENE	
007	6078	486	V	18.948		BENZENE	~~10.942~~
				20.214		2-CHLOROETHYLVINYLET	
009	5682	480	V	24.125		TETRACHLOROETHENE	
010	396390	32875	V	24.673		aaa-TRIFLUOROTOLUENE	914.130 /50 = 18.25 ✓
				25.469		TOLUENE	
011	93370	1131	V	26.786		CHLOROBENZENE	
012	303446	15160	V	29.443		ETHYLBENZENE	~~303.318~~
013	17770	674		33.260			
014	971529	30912	T	35.381		M - XYLENE	782.782] 1240.956 ✓
015	549420	15015		36.831		O - XYLENE	458.174]
			T	36.850		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
				43.456		1,2-DICHLOROBENZENE	
				44.609		1,4-DICHLOROBENZENE	

LKD 10/12/93

All compounds were quantitated using method 20
except those which are labeled.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-25

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337380

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

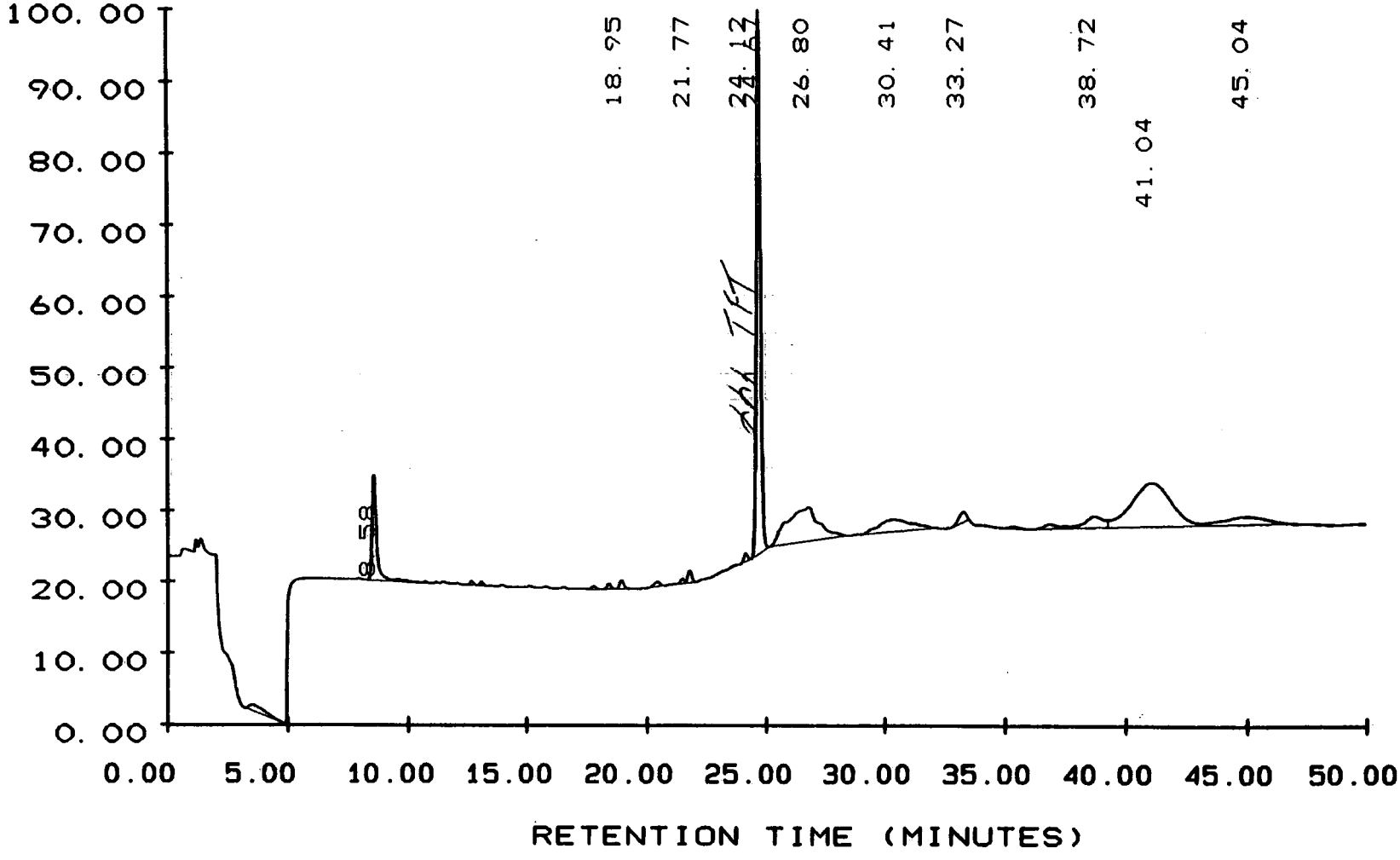
CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
108-88-3	Toluene	1.0	U
1330-20-7	Xylene (total)	2.0	U

12/88 Rev.

9309L956-003

SAMPLE NO. : 09309320 . 06
TEST NO. :
METHOD NO. : 20 / 20

INSTRUMENT: 20
DATE TIME: 09/30/93 15:35:25
PAGE NO. : 01



Y MAXIMUM: 10637.
Y MINIMUM: 6021.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 16:25:52

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .06 INST:20 VIAL:F0 SEQ NUMBER:006
TEST : O602X DATE-TIME INJECTED : 09/30/93 15:35:25
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 16:25:52
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: MW-25 SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-003 RAW FILE: RAW2:IU337380
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
002	93361	6770	V	8.580			
				10.730		1,1-DICHLOROETHENE	10/15/93 LKD
				12.713		TRANS-1,2-DICHLOROET	
				18.409		TRICHLOROETHENE	
007	7328	560	V	18.946		BENZENE	0.231 LDL
				20.214		2-CHLOROETHYLVINYLET	
009	12702	786	V	21.775			
010	9827	532	V	24.122		TETRACHLOROETHENE	
011	418614	34904	V	24.672		aaa-TRIFLUOROTOLUENE	19.369 ✓
				25.469		TOLUENE	
012	213184	2242	V	26.805		CHLOROBENZENE	~~0.154~~
				29.389		ETHYLBENZENE	
013	80794	784		30.411			
014	14435	662		33.270			
				35.287		M - XYLENE	
				36.623		O - XYLENE	
				36.855		P - XYLENE	
017	45385	763	T	38.720			
018	330010	2872	T	41.045			
				42.154		1,3-DICHLOROBENZENE	
				43.456		1,2-DICHLOROBENZENE	
019	69056	526		45.035		1,4-DICHLOROBENZENE	

All compounds were quantitated using method 20
except those which are labeled.

CLIENT SAMPLE NO.

GC VOLATILES SHEET

MW-4

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-004

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337362

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
100-41-4	Ethylbenzene	5.4	
108-88-3	Toluene	2.0	
1330-20-7	Xylene (total)	6.1	

12/88 Rev.

9309L956-004

SAMPLE NO. : 09309320 . 05

TEST NO. :

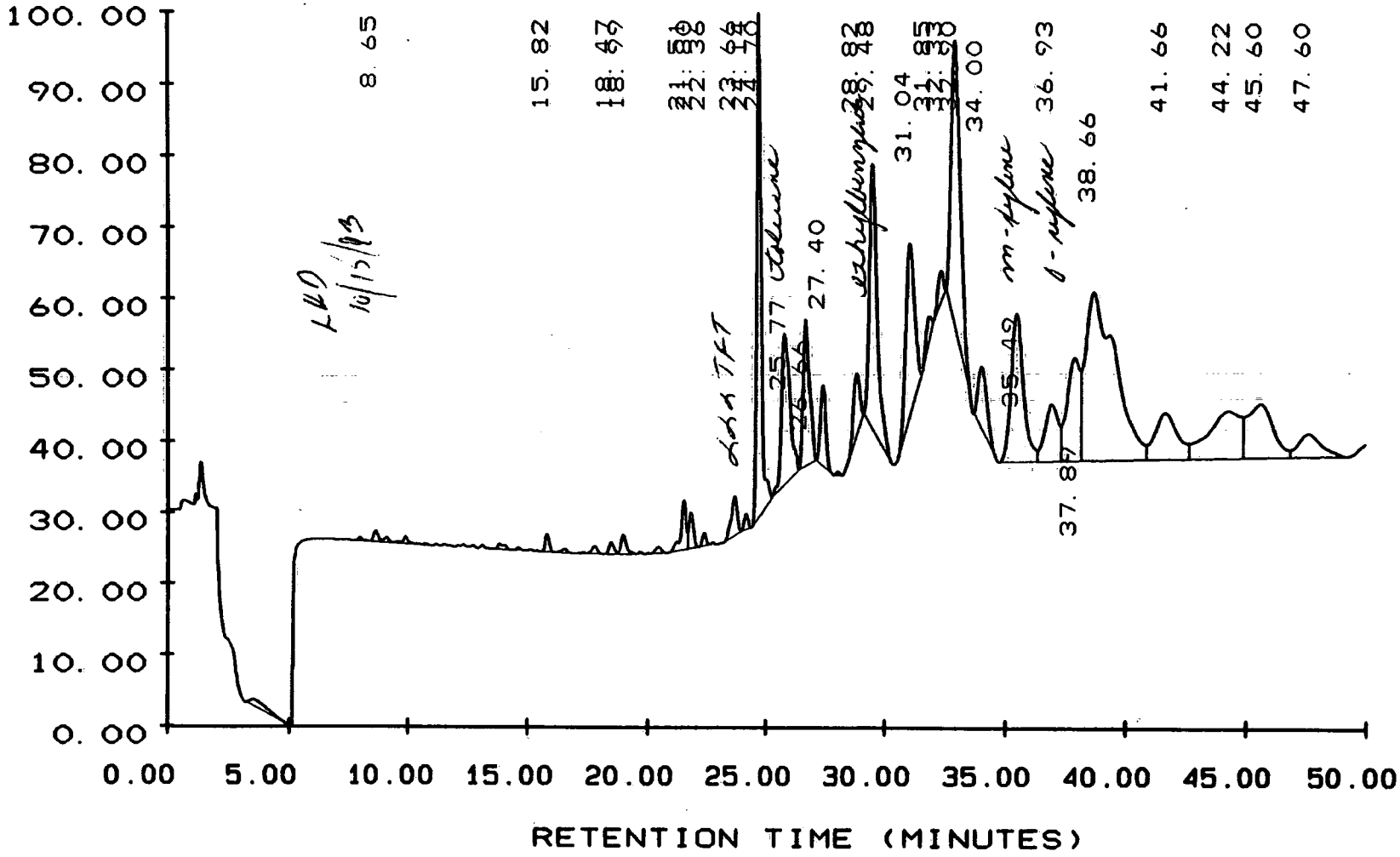
METHOD NO. : 20 / 20

INSTRUMENT: 20

DATE TIME: 09/30/93 14:38:26

PAGE NO. : 01

0032



Y MAXIMUM: 9614.

Y MINIMUM: 6013.

START TIME: 0.00

END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 15:32:07

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .05 INST:20 VIAL:F0 SEQ NUMBER:005
TEST : 0602X DATE-TIME INJECTED : 09/30/93 14:38:26
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 15:32:07
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: MW-4 SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-004 RAW FILE: RAW2:IU337362
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
003	12538	566	T	8.654			
				10.730		1,1-DICHLOROETHENE	
				12.713		TRANS-1,2-DICHLOROET	
006	10566	898	T	15.816			
009	8872	588	T	18.473		TRICHLOROETHENE	
010	14761	967	V	18.989		BENZENE	~~0.298~~
				20.214		2-CHLOROETHYLVINYLET	
012	38479	2504	T	21.508			
013	23512	1815	V	21.804			
014	7602	662	V	22.358			
015	35982	1982	V	23.661			
016	9050	801	V	24.142		TETRACHLOROETHENE	0.112
017	323655	25234	V	24.702		aaa-TRIFLUOROTOLUENE	14.192
018	185213	7557	V	25.775		TOLUENE	2.038
019	136436	7355	V	26.662		CHLOROBENZENE	1.581
020	61995	4060	V	27.395			
022	55591	3067	V	28.815			
023	300196	13372	V	29.480		ETHYLBENZENE	5.394
024	221077	8712	V	31.035			
025	18146	953	V	31.852			
026	22494	1471	V	32.329			
027	382608	14612		32.896			
028	79890	3158	V	33.997			
029	269269	7475	T	35.488		M - XYLENE	4.080
			T	36.850		P - XYLENE	
030	113148	2877		36.926		O - XYLENE	1.983
031	196962	5202	T	37.888			
032	729890	8512	T	38.664			
033	154722	2350	T	41.660		1,3-DICHLOROBENZENE	1.077
				43.456		1,2-DICHLOROBENZENE	
034	223607	2387	T	44.224		1,4-DICHLOROBENZENE	1.619
035	206382	2723	T	45.600			
036	80595	1174		47.595			

LKD 10/17/93

6.063

All compounds were quantitated using method 20
except those which are labeled.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-15S

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-005

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337439

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
100-41-4	Ethylbenzene	1.7	
108-88-3	Toluene	1.0	U
1330-20-7	Xylene (total)	5.1	

12/88 Rev.

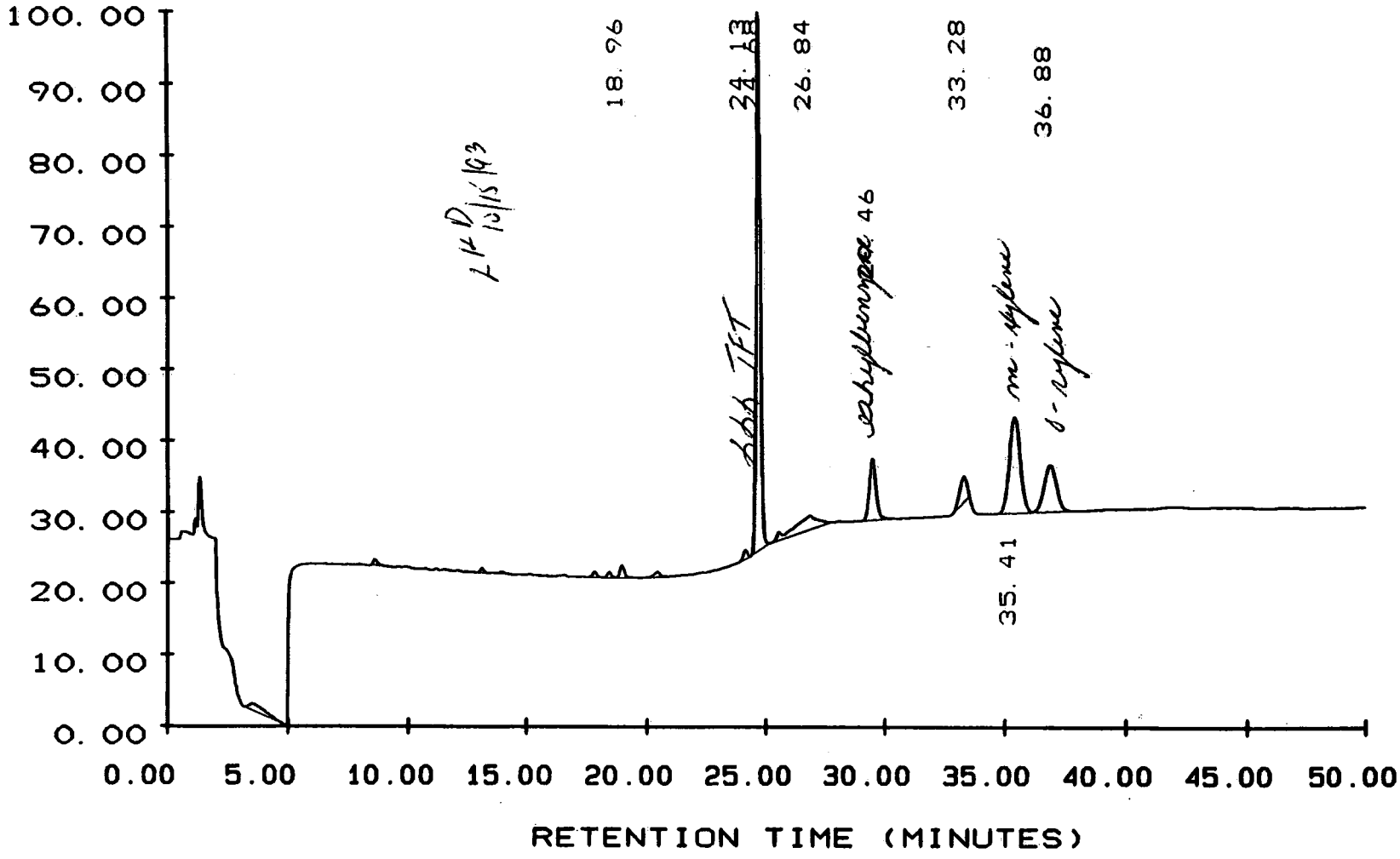
9309L956-005

0035

SAMPLE NO. : 09309320 . 10 INSTRUMENT: 20

TEST NO. : DATE TIME: 09/30/93 19:23:22

METHOD NO. : 20 / 20 PAGE NO. : 01



Y MAXIMUM: 10193. START TIME: 0.00

Y MINIMUM: 6017. END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 20:13:36

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .10 INST:20 VIAL:F0 SEQ NUMBER:010
TEST : 0602X DATE-TIME INJECTED : 09/30/93 19:23:22
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 20:13:36
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: MW-15S SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-005 RAW FILE: RAW2:IU337439
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
				10.730		1,1-DICHLOROETHENE	
				12.713		TRANS-1,2-DICHLOROET	
				18.409		TRICHLOROETHENE	
006	9280	718	V	18.959		BENZENE	~~0.257~~
				20.214		2-CHLOROETHYLVINYLET	
008	6296	537	V	24.128		TETRACHLOROETHENE	
009	379321	31322	V	24.679		aaa-TRIFLUOROTOLUENE	17.451 ✓
				25.469		TOLUENE	
010	62890	816	V	26.841		CHLOROBENZENE	
011	73470	3579		29.462		ETHYLBENZENE	1.712 ✓
012	31575	1462		33.280			
013	177965	5605	T	35.413		M - XYLENE	3.157
				36.850		P - XYLENE	
014	98417	2746		36.882		O - XYLENE	1.905
				42.154		1,3-DICHLOROBENZENE	
				43.456		1,2-DICHLOROBENZENE	
				44.609		1,4-DICHLOROBENZENE	

LKD 10/17/93

5.062 ✓

All compounds were quantitated using method 20
except those which are labeled.

CLIENT SAMPLE NO.

GC VOLATILES SHEET

TRIP BLANK

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-006

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337320

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
108-88-3	Toluene	1.0	U
1330-20-7	Xylene (total)	2.0	U

12/88 Rev.

9309L956-006

SAMPLE NO. : 09309320 . 03

TEST NO. :

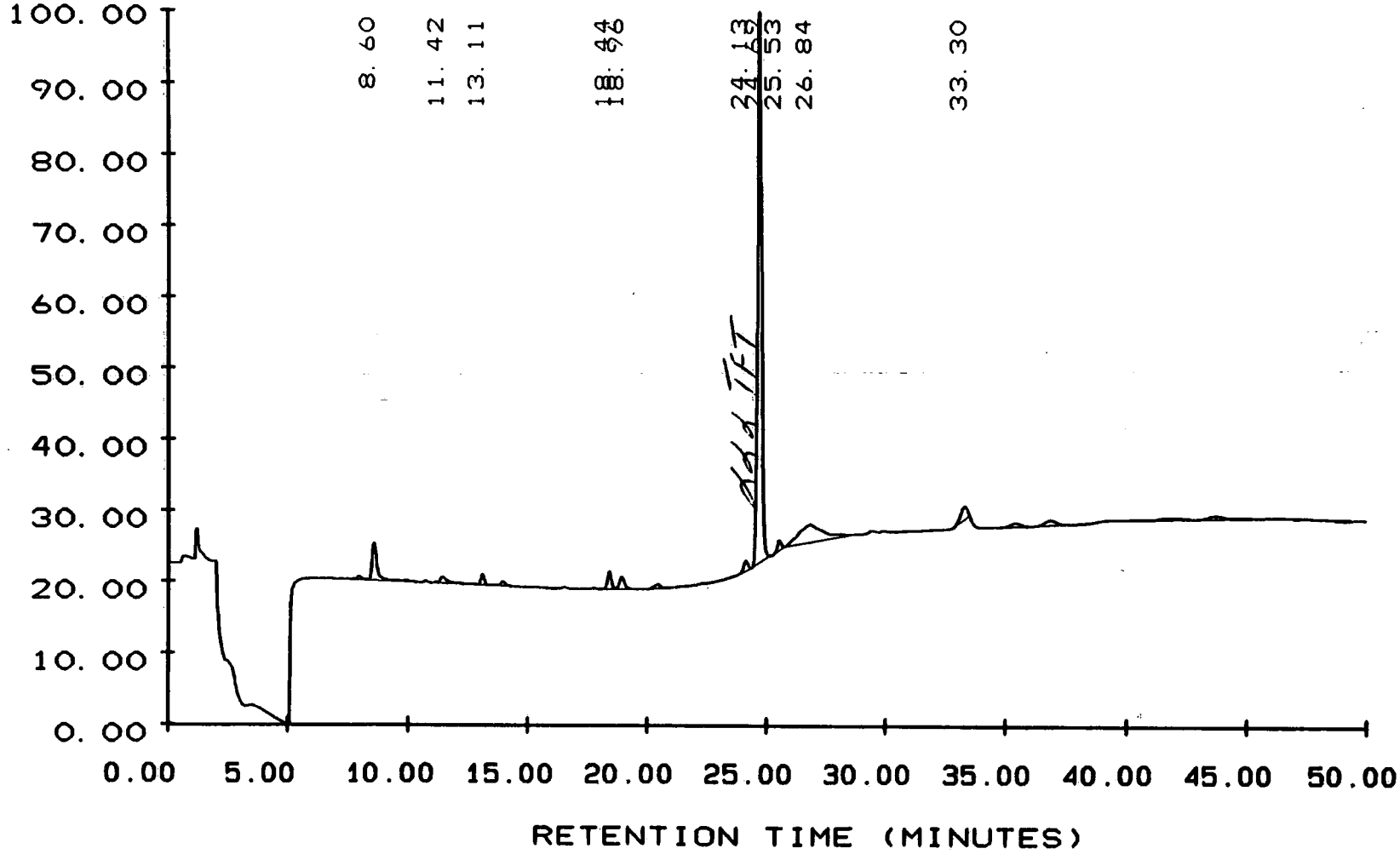
METHOD NO. : 20 / 20

INSTRUMENT: 20

DATE TIME: 09/30/93 12:43:50

PAGE NO. : 01

0038



Y MAXIMUM: 10576.

Y MINIMUM: 6102.

START TIME: 0.00

END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 13:34:12

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .03 INST:20 VIAL:F0 SEQ NUMBER:003
TEST : 0602X DATE-TIME INJECTED : 09/30/93 12:43:50
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 13:34:12
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: TRIP BLANK SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-006 RAW FILE: RAW2:IU337320
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
002	34967	2313	V	8.604			
				10.730	M	1,1-DICHLOROETHENE	LKD 10/15/93
003	11585	414	T	11.420			
				12.713	M	TRANS-1,2-DICHLOROET	
004	7318	669	T	13.112			
006	13212	1103	T	18.440	M	TRICHLOROETHENE	~~0.142~~
007	11750	755	V	18.959	M	BENZENE	~~0.263~~ <dl
				20.214	M	2-CHLOROETHYLVINYLET	
009	7603	625	V	24.131	M	TETRACHLOROETHENE	~~0.025~~
010	415381	34375	V	24.689	M	aaa-TRIFLUOROTOLUENE	19.086
011	7450	620	V	25.533	M	TOLUENE	~~0.502~~ <dl
012	79681	1103		26.837	M	CHLOROBENZENE	
				29.389	M	ETHYLBENZENE	
013	16636	794		33.305			
				35.287	M	M - XYLENE	
				36.623	M	O - XYLENE	
				36.855	M	P - XYLENE	
				42.154	M	1,3-DICHLOROBENZENE	
				43.456	M	1,2-DICHLOROBENZENE	
				44.609	M	1,4-DICHLOROBENZENE	

VII. Calibration Standard Data

WESTON ANALYTICS - LIONVILLE LABORATORY
GC VOLATILES - ICAL PREPARATION & DATA REVIEW CHECKLIST

INITIAL CALIBRATION CURVE (ICAL) INSTRUMENT # 20

Column: 1% SP1000 carbo pack B # 297
Conditions: 45°C for 3 min · 8°/min to 220°C
Detectors: Hall(Electrolytic Conductivity Detector for halogenated compounds)
PID(Photoionization Detector for aromatic compounds)
FID(Flame ioniation Detector)

Analyte list included in ICAL (EPA Method #):

601	8010	502.2	501	other:
602	8020	8021	503	

ICAL QC EVALUATION FOR LIMS METHOD # 20 ,composed of individual methods 20B, 20A, ____, ____.

ICAL Updated: 9/21/93
Standard solution ID: 602 SURR ; MIX B MIX A MIX C Prep#: 3053-16-01 ; 3053-16-05 3053-17-01 ; 3053-13-01

ICAL Range (ug/L): .5ug/L → 80 ug/L LKD 9/14/93
ICAL curve generated using peak height or peak area: peak height
Linearity criteria met for all analytes (r^2>0.992): for all analytes
Non-compliant analytes:

No. of points used to generate curve: 7

Second source ICAL concentration verification (ICV): 3053-15-01
Source: Restek 2+4 Restek 3+5 Standard Prep #: 3053-14-06
Within QC limits: Yes Non-compliant analytes:

CLP PACKAGE COMPLETENESS:

(1)	(2)	
✓		Concentration of each analyte is listed
✓		Print out of the LIMS method is present
		Retention Time Window (RTW) or FORM9GC is present
✓		Multilevel Calibration Curve Summary is present
		Manual calculation(s) to verify LIMS ICAL data is/are present
✓		Chromatograms were correctly labeled
✓		Report sheets were correct
✓		Second Source ICAL Concentration Verification (ICV)

Comments:

(1) Analyst Reviewer: [signature] Date: 10/14/93
(2) Peer/Unit Leader Reviewer: _____ Date: ·

MULTILEVEL CALIBRATION METHOD 20A 09/21/93 13:28:36
1ST ORDER EXTERNAL STANDARD CALIBRATION USING PEAK HEIGHT

TEST:

LEVEL	REPLICATE 1	REPLICATE 2	REPLICATE 3
A	09209320.01		
B			
C	09209320.03		
D	09209320.05		
E	Bad purge LKD 10/15/93		
F	09209320.07		
G	09209320.08		
H	D.D not run LKD 10/15/93		
I	09209320.09		
J	09209320.10		

PEAK NAME	COEFFICIENTS a	b	c	d	SD OF FIT	CORR COEFF
1,1-DICHLOROETHENE			4.027E-04	-6.065E-01	0.75692	0.99951
TRICHLOROETHENE			3.163E-04	-2.064E-01	0.61573	0.99967
2-CHLOROETHYLVINYLET			8.496E-04	-3.505E-02	1.49232	0.99810
TETRACHLOROETHENE			4.924E-04	-2.829E-01	0.82616	0.99941
CHLOROBENZENE			2.789E-04	-4.708E-01	1.0822	0.99900
P - XYLENE			6.428E-04	-6.692E-01	1.22341	0.99884
1,3-DICHLOROBENZENE			9.235E-04	-1.093E+00	0.90929	0.99945
1,4-DICHLOROBENZENE			1.020E-03	-8.158E-01	0.96189	0.99933

Roy F. Weston, Inc. - Lionville Laboratory DISPLAY

001 - METHOD NUMBER : 20A
002 - METHOD TITLE : 5.0 ML, 1%SP1000, PID
003 - ENTERED BY : B. SUSAN YATES
004 - DATE-TIME ENTERED : 10/13/92 18:18:17
005 - MODIFIED BY : Maria T. White
006 - DATE-TIME MODIFIED : 09/21/93 12:54:51
007 - # TIMES MODIFIED : 014
008 - CALIBRATION SMP : 03229320.07
009 - # TIMES CALIBRATED : 1
010 - CALIBRATION DATE : 03/22/93
011 - USER PROGRAMS : USER:MULTIV10
012 - PURGE : TOP
013 - TEST :

DATA COLLECTION PARAMETERS

014 - END COLLECTION TIME : 50.00 015 - SAMPLING RATE : 8

TIMED EVENTS

TIME	EVENT	VALUE	DESCRIPTION

DATA ANALYSIS PARAMETERS

016 - BASELINE SENSITIVITY : 50.00 017 - AREA SENSITIVITY : 200
018 - REJECTION MINIMUM : 400
019 - CALCULATION TYPE : E 020 - PEAK AREA HEIGHT : H

021 - PEAK MATCH WINDOW : 0.080 022 - % MATCH WINDOW : 2.0

023 - RF UPDATE : N 024 - RET TIME UPDATE : Y
025 - UNKNOWN RF TREATMENT : 0.00000
026 - RRT DISPLAY UNITS : MINUTES 027 - CONCENTRATION UNITS : PPB

TIMED EVENTS

	TIME	EVENT	VALUE	DESCRIPTION
028 -	0.100	PKDET	OFF	
029 -	3.000	PKDET	ON	ENABLE
030 -	3.010	BASE	A	ABSOLUTE BASELINE
031 -	5.000	BASE	A	
032 -	22.000	BASAV	ON	ALL VALLEYS
033 -	33.000	BASAV	OFF	
034 -	33.500	BASE	A	ABSOLUTE BASELINE

REFERENCE PEAKS

035 - UNRETAINED PK RT : 0.000
036 - % REF RT WINDOW : 10.0

REF PK NO.	REF PK RT	END TIME	REF PK REL VALUE

COMPONENT TABLE

	NAME	GROUP	RET TIME	CAL WT	RESP FACT
037 -	1,1-DICHLOROETHENE	M	10.730	0.0000	0.00000E+0

038 - TRICHLOROETHENE	M	18.409	0.0000	0.00000E+0
039 - 2-CHLOROETHYLVINYLET	M	20.214	0.0000	0.00000E+0
040 - TETRACHLOROETHENE	M	24.130	0.0000	0.00000E+0
041 - CHLOROBENZENE	M	26.830	0.0000	0.00000E+0
042 - P - XYLENE	M	36.855	0.0000	0.00000E+0
043 - 1,3-DICHLOROBENZENE	M	42.154	0.0000	0.00000E+0
044 - 1,4-DICHLOROBENZENE	M	44.609	0.0000	0.00000E+0

GROUP NAME TABLE

GROUP NAME GROUP NUMBER

REPORT PARAMETERS

045 - REPORT PARAMETERS :
046 - PLOTTER :

047 - START-TIME : 0.00 048 - END TIME : 50.00
049 - %Y MINIMUM : 0.00 050 - %Y MAXIMUM : 100.00

Roy F. Weston, Inc. - Lionville Laboratory

METHOD NUMBER	: 20A
METHOD TITLE	: 5.0 ML, 1%SP1000,
USER PROGRAMS	: USER:MULTIV10
ORDER OF FIT	: 1
NUMBER OF LEVELS	: 10
REPORT PARAMETERS	:
NO.OF TIMES MODIFIED	: 6
NO.OF TIMES CALIBRAT	: 10

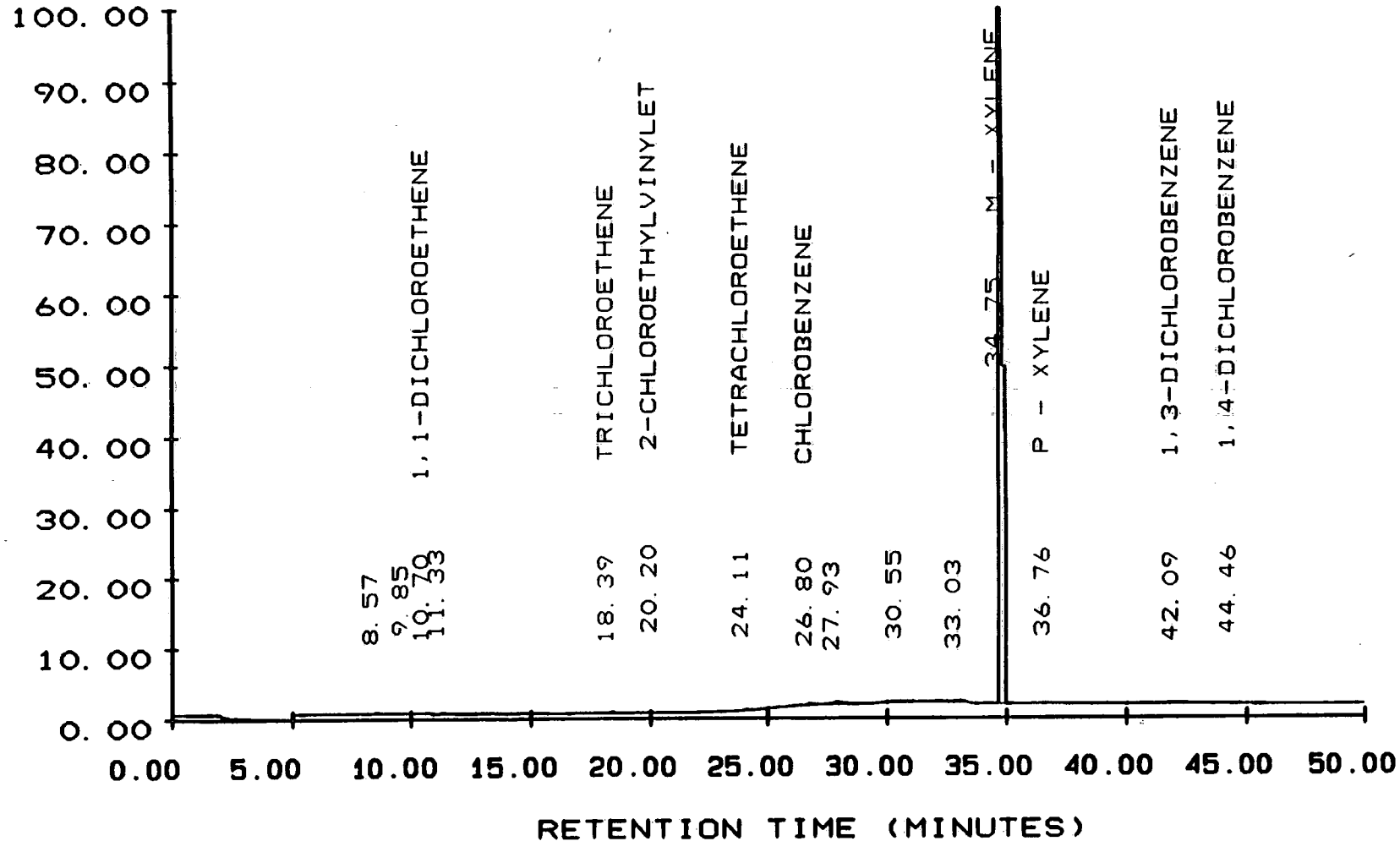
#	COMPONENT NAME	LEVEL A LEVEL F	LEVEL B LEVEL G	LEVEL C LEVEL H	LEVEL D LEVEL I	LEVEL E LEVEL J
1	1,1-DICHLOROETHENE	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
2	TRICHLOROETHENE	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
3	2-CHLOROETHYLVINYLET	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
4	TETRACHLOROETHENE	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
5	CHLOROBENZENE	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
6	P - XYLENE	0.5260 21.0400	1.0520 42.0800	2.1040 52.6000	5.2600 63.1200	10.5200 84.1600
7	1,3-DICHLOROBENZENE	0.5670 22.6800	1.1340 45.3600	2.2680 56.7000	5.6700 68.0400	11.3400 90.7200
8	1,4-DICHLOROBENZENE	0.5440 21.7600	1.0880 43.5200	2.1760 54.4000	5.4400 65.2800	10.8800 87.0400

STD AC . 5PPB

SAMPLE NO. : 09209320 . 01
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/20/93 11:22:47
PAGE NO. : 01

0046



Y MAXIMUM: 86708.
Y MINIMUM: 6527.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/21/93 14:42:51

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .01 INST:20 VIAL:F0 SEQ NUMBER:001
TEST : DATE-TIME INJECTED : 09/20/93 11:22:47
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/21/93 14:42:51
METHOD: 202 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD AC .5PPB RAW FILE: RAW1:IK341380
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

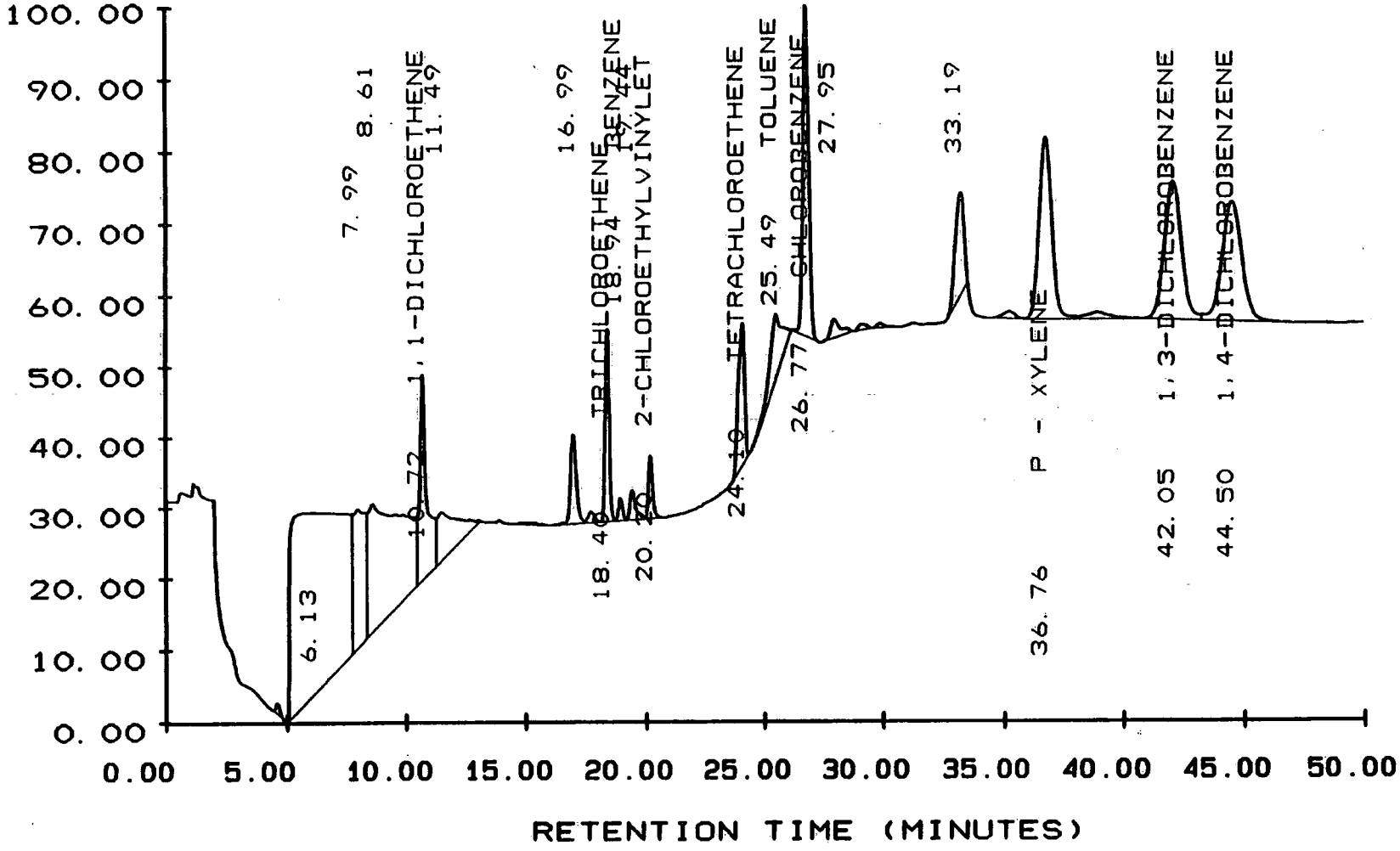
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
002	23126	1525	T	8.566			
003	11014	572	T	9.851			
004	15066	1390	V	10.698	M	1,1-DICHLOROETHENE	
005	30451	903	V	11.328			
				12.713	M	TRANS-1,2-DICHLOROET	
008	19012	1632	T	18.388	M	TRICHLOROETHENE	0.310
				18.910	M	BENZENE	
010	7062	410	V	20.196	M	2-CHLOROETHYLVINYLET	0.313
011	11722	996	V	24.108	M	TETRACHLOROETHENE	0.208
				24.644	M	aaa-TRIFLUOROTOLUENE	
				25.469	M	TOLUENE	
012	84319	1998	V	26.801	M	CHLOROBENZENE	0.086
013	87232	2543	V	27.931			
				29.389	M	ETHYLBENZENE	
014	102185	1213	V	30.549			
015	132798	2307		33.032			
016	10275673	786128	V	34.752	M	M - XYLENE	~~388.657~~ electronic spike DKC 10/19/93
				36.623	M	O - XYLENE	
017	29497	898		36.757	M	P - XYLENE	
019	140119	1523	T	42.091	M	1,3-DICHLOROBENZENE	0.313
				43.456	M	1,2-DICHLOROBENZENE	
020	46453	744		44.459	M	1,4-DICHLOROBENZENE	

STD AC 2 PPB

SAMPLE NO. : 09209320 . 03
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/20/93 13:24:23
PAGE NO. : 01

0048



Y MAXIMUM: 8812.
Y MINIMUM: 6346.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/21/93 14:43:11

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .03 INST:20 VIAL:F0 SEQ NUMBER:003
TEST : DATE-TIME INJECTED : 09/20/93 13:24:23
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/21/93 14:43:11
METHOD: 202 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD AC 2 PPB RAW FILE: RAW1:IK345035
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

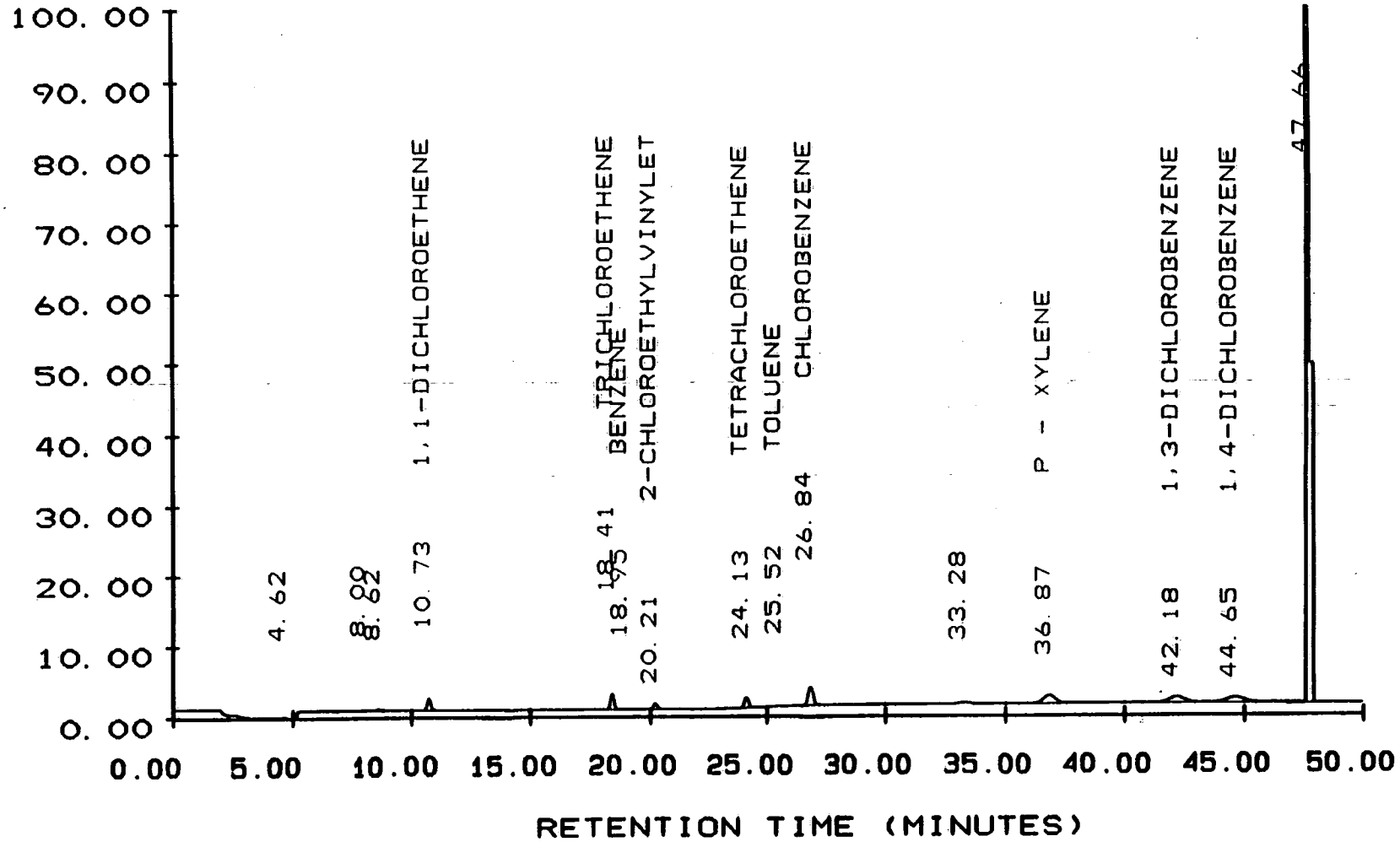
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
002	949805	6246	T	6.133			
003	177450	4775	T	7.990			
004	425866	4429	T	8.613			
005	150219	7078	T	10.716	M	1,1-DICHLOROETHENE	2.244
006	97472	1685		11.494			
				12.713	M	TRANS-1,2-DICHLOROET	
008	51941	3116	T	16.993			
010	74893	6647	T	18.396	M	TRICHLOROETHENE	1.896
011	9049	771	T	18.942	M	BENZENE	0.266
012	15850	1026	V	19.439			
013	25157	2152		20.201	M	2-CHLOROETHYLVINYLET	1.793
014	88833	4916	V	24.100	M	TETRACHLOROETHENE	2.138
				24.644	M	aaa-TRIFLUOROTOLUENE	
015	75831	2131	V	25.495	M	TOLUENE	0.837
016	195044	11327	V	26.769	M	CHLOROBENZENE	2.688
017	18651	643	V	27.946			
				29.389	M	ETHYLBENZENE	
020	86159	3519		33.190			
				35.287	M	M - XYLENE	
				36.623	M	O - XYLENE	
022	227717	6238	T	36.763	M	P - XYLENE	3.341
024	236869	4749	T	42.047	M	1,3-DICHLOROBENZENE	3.293
				43.456	M	1,2-DICHLOROBENZENE	
025	232858	4108		44.501	M	1,4-DICHLOROBENZENE	3.374

STD AC 5 PPB

SAMPLE NO. : 09209320 .05
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/20/93 15:34:31
PAGE NO. : 01

0050



Y MAXIMUM: 86406.
Y MINIMUM: 6142.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/21/93 14:43:33

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .05 INST:20 VIAL:F0 SEQ NUMBER:005
TEST : DATE-TIME INJECTED : 09/20/93 15:34:31
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/21/93 14:43:33
METHOD: 202 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD AC 5 PPB RAW FILE: RAW1:IK345076
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

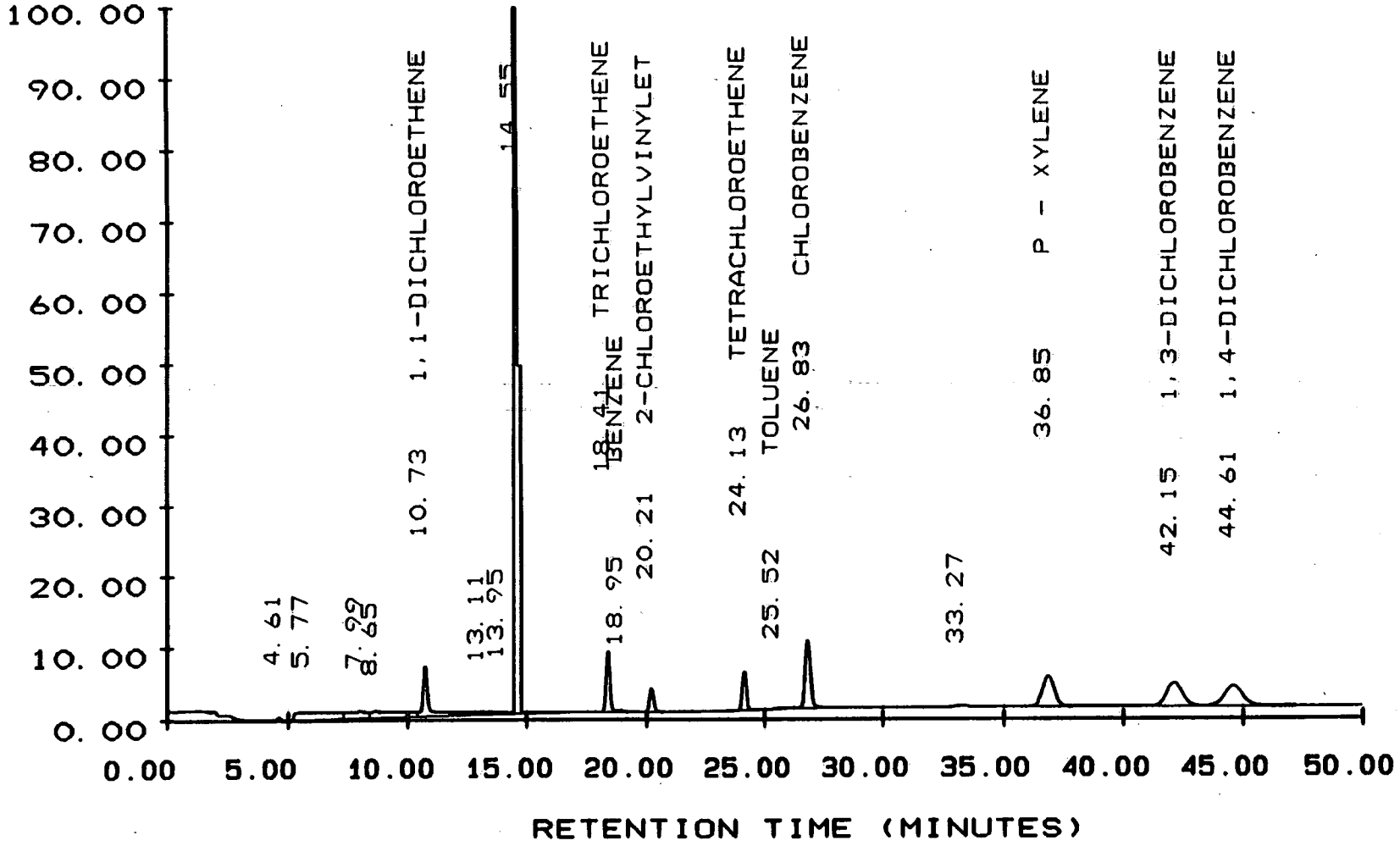
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
002	11715	934		4.624			
003	5398	401	T	8.003			
004	16465	847		8.622			
005	148522	12582		10.734	M	1,1-DICHLOROETHENE	4.460
				12.713	M	TRANS-1,2-DICHLOROET	
006	192370	16654	T	18.410	M	TRICHLOROETHENE	5.061
007	11528	748	V	18.952	M	BENZENE	0.262
008	75795	6317		20.213	M	2-CHLOROETHYLVINYLET	5.332
009	135000	11275	V	24.131	M	TETRACHLOROETHENE	5.269
				24.644	M	aaa-TRIFLUOROTOLUENE	
010	5501	435	V	25.525	M	TOLUENE	0.461
011	334542	20182	V	26.835	M	CHLOROBENZENE	5.158
				29.389	M	ETHYLBENZENE	
013	26171	1225		33.276			
				35.287	M	M - XYLENE	
				36.623	M	O - XYLENE	
015	332557	9297		36.868	M	P - XYLENE	5.307
016	320506	6751	V	42.183	M	1,3-DICHLOROBENZENE	5.142
				43.456	M	1,2-DICHLOROBENZENE	
017	287205	5615		44.646	M	1,4-DICHLOROBENZENE	4.912
018	10272955	789277		47.659			

STD AC 20 PPB

SAMPLE NO. : 09209320 .07
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/20/93 17:43:44
PAGE NO. : 01

0052



Y MAXIMUM: 86395.
Y MINIMUM: 6074.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/21/93 14:44:05

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .07 INST:20 VIAL:F0 SEQ NUMBER:007
TEST : DATE-TIME INJECTED : 09/20/93 17:43:44
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/21/93 14:44:05
METHOD: 202 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD AC 20 PP RAW FILE: RAW1:IK345143
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

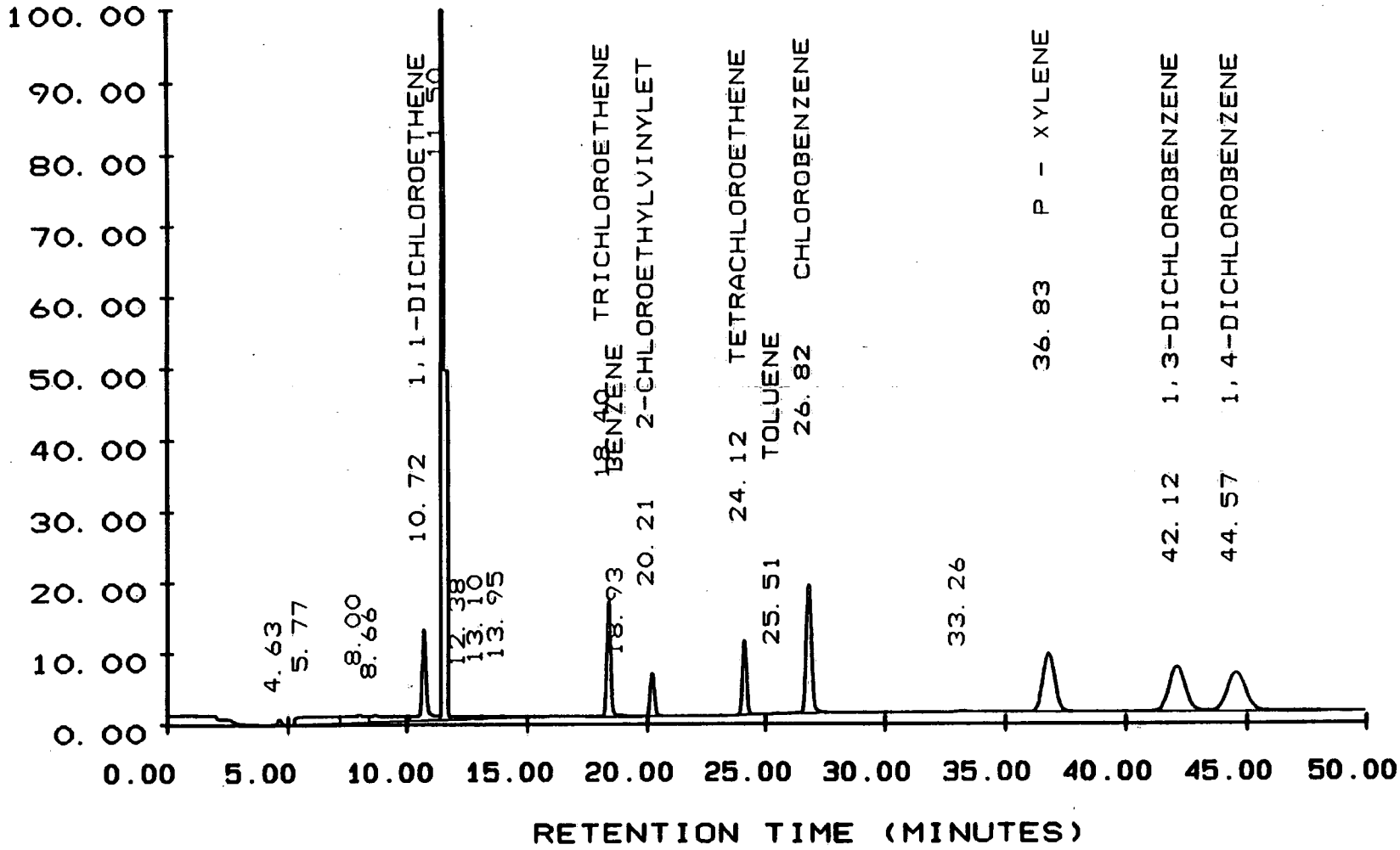
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	52809	3498		4.615			
002	994754	8439	T	5.768			
003	491478	8213	T	7.995			
004	722030	7564	T	8.647			
005	1191637	54437	T	10.730	M	1,1-DICHLOROETHENE	21.315
				12.713	M	TRANS-1,2-DICHLOROET	
006	144482	3348	T	13.107			
007	102730	2932	T	13.955			
008	10616591	796849		14.549			
010	751660	65728	T	18.409	M	TRICHLOROETHENE	20.583
011	26349	1601	V	18.946	M	BENZENE	0.402
012	285300	24735		20.214	M	2-CHLOROETHYLVINYLET	20.980
013	502118	41898	V	24.130	M	TETRACHLOROETHENE	20.348
				24.644	M	aaa-TRIFLUOROTOLUENE	
014	9810	783	V	25.518	M	TOLUENE	0.538
015	1211981	74619		26.831	M	CHLOROBENZENE	20.340
				29.389	M	ETHYLBENZENE	
016	28721	1346		33.273			
				35.287	M	M - XYLENE	
				36.623	M	O - XYLENE	
018	1192525	34088		36.855	M	P - XYLENE	21.243
019	1242043	26079	T	42.154	M	1,3-DICHLOROBENZENE	22.991
				43.456	M	1,2-DICHLOROBENZENE	
020	1229491	22608		44.609	M	1,4-DICHLOROBENZENE	22.244

STD AC 40PPB

SAMPLE NO. : 09209320 . 08
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/20/93 18:40:51
PAGE NO. : 01

0054



Y MAXIMUM: 86431.
Y MINIMUM: 6057.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/21/93 14:44:31

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .08 INST:20 VIAL:F0 SEQ NUMBER:008
TEST : DATE-TIME INJECTED : 09/20/93 18:40:51
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/21/93 14:44:31
METHOD: 202 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD AC 40PPB RAW FILE: RAW1:IK345167
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

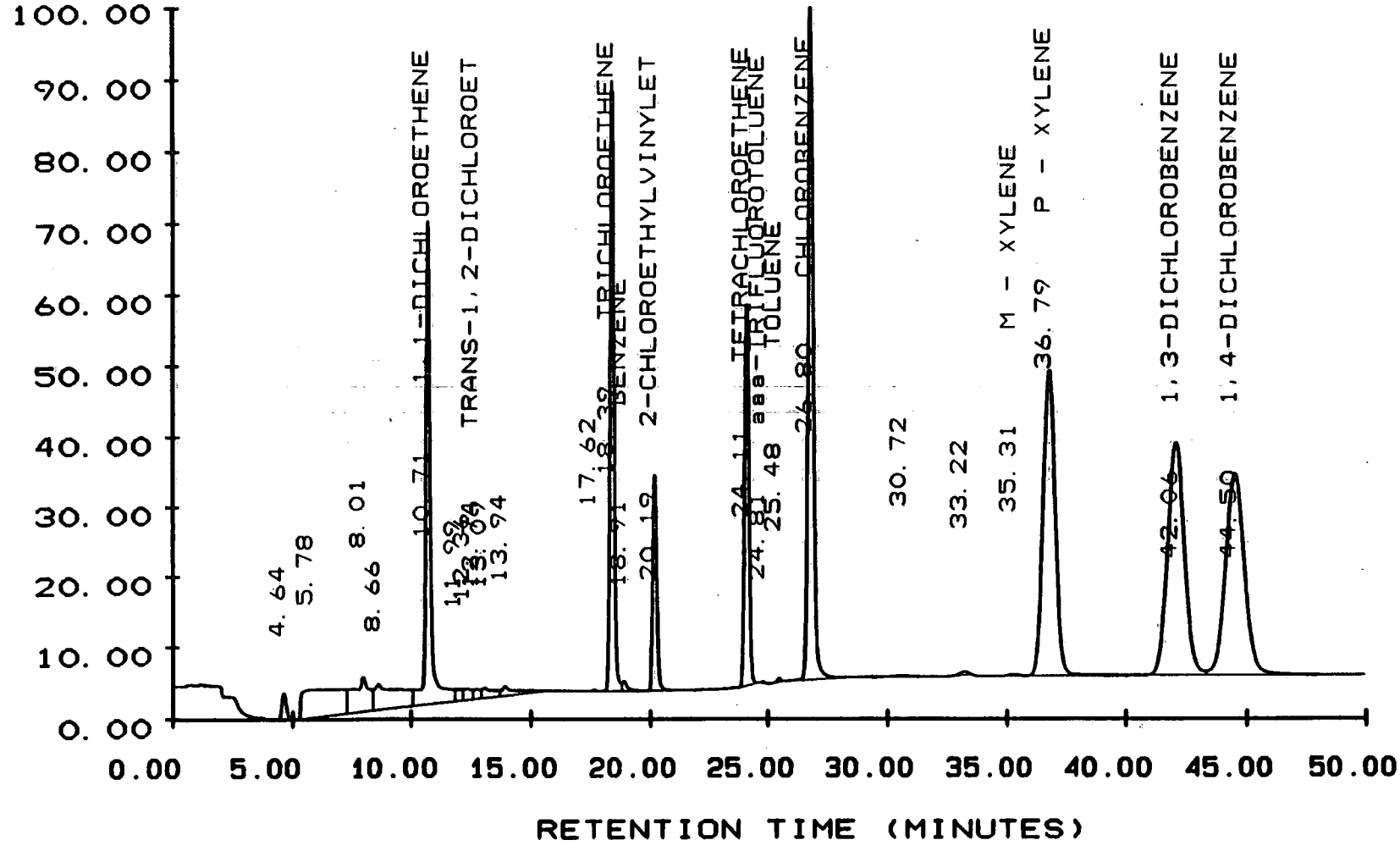
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	76620	5910		4.627			
002	927730	8610	T	5.775			
003	552630	9251	T	7.999			
004	598766	7751	T	8.661			
005	1399935	100964	T	10.724	M	1,1-DICHLOROETHENE	40.052
006	10569387	798637	T	11.499			
007	74822	3215	T	12.377			
				12.713	M	TRANS-1,2-DICHLOROET	
008	155221	2789	T	13.104			
009	121043	2416		13.955			
011	1447539	127665	T	18.403	M	TRICHLOROETHENE	40.174
012	33498	2010	V	18.925	M	BENZENE	0.470
013	549228	47523		20.208	M	2-CHLOROETHYLVINYLET	40.340
014	981095	82065	V	24.123	M	TETRACHLOROETHENE	40.126
				24.644	M	aaa-TRIFLUOROTOLUENE	
016	9290	760	V	25.507	M	TOLUENE	0.533
017	2240873	144060		26.821	M	CHLOROBENZENE	39.708
				29.389	M	ETHYLBENZENE	
018	21062	961		33.259			
				35.287	M	M - XYLENE	
				36.623	M	O - XYLENE	
020	2291315	65738		36.834	M	P - XYLENE	41.587
021	2367727	50036	T	42.123	M	1,3-DICHLOROBENZENE	45.115
				43.456	M	1,2-DICHLOROBENZENE	
022	2347635	43366		44.572	M	1,4-DICHLOROBENZENE	43.418

STD AC 60 PPB

SAMPLE NO. : 09209320 .09
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/20/93 19:52:48
PAGE NO. : 01

0056



Y MAXIMUM: 28370.
Y MINIMUM: 6090.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/21/93 14:45:03

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .09 INST:20 VIAL:F0 SEQ NUMBER:009
TEST : DATE-TIME INJECTED : 09/20/93 19:52:48
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/21/93 14:45:03
METHOD: 202 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD AC 60 PP RAW FILE: RAW1:IK345193
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

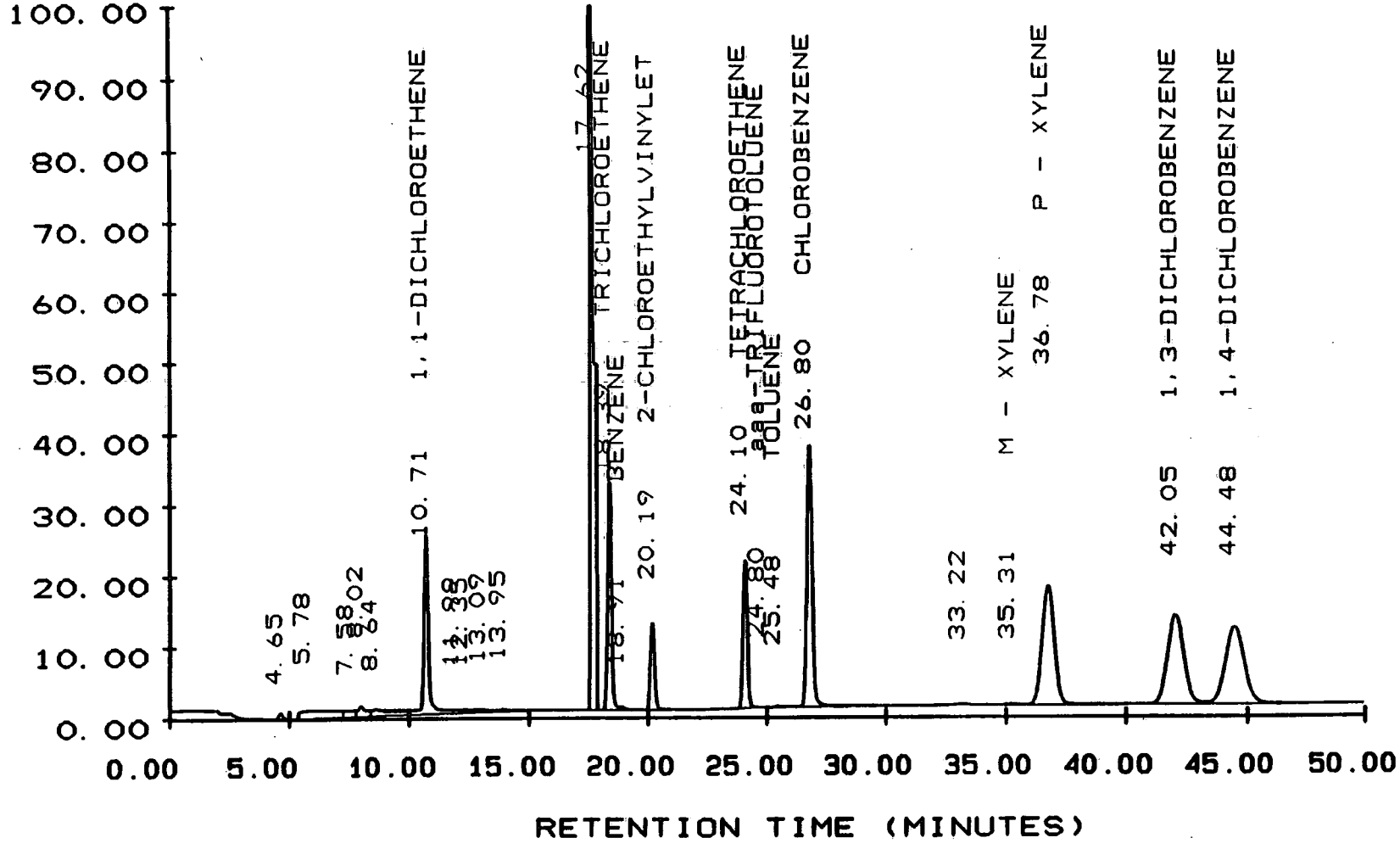
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	93402	7664		4.635			
002	952930	8681	T	5.776			
003	512049	10495	T	8.008			
004	587908	7821	T	8.657			
005	2067223	148810	T	10.709	M	1,1-DICHLOROETHENE	59.319
006	72670	3665	T	11.992			
007	82594	3429	T	12.363			
008	62744	3021	T	12.745	M	TRANS-1,2-DICHLOROET	0.602
009	105594	3031	T	13.092			
010	124572	2819		13.945			
012	5099	404	V	17.622			
013	2134037	186921	T	18.389	M	TRICHLOROETHENE	58.917
014	50129	2986	V	18.908	M	BENZENE	0.630
015	777037	67414	V	20.192	M	2-CHLOROETHYLVINYLET	57.240
016	1433181	119377	V	24.108	M	TETRACHLOROETHENE	58.498
017	5402	494	V	24.807	M	aaa-TRIFLUOROTOLUENE	0.949
018	14861	1210	V	25.484	M	TOLUENE	0.633
019	3207711	210311	V	26.800	M	CHLOROBENZENE	58.185
				29.389	M	ETHYLBENZENE	
020	33990	404	V	30.720			
021	27239	1126		33.222			
022	17709	586	T	35.310	M	M - XYLENE	0.678
				36.623	M	O - XYLENE	
023	3358349	96438		36.785	M	P - XYLENE	61.321
024	3471263	73467	T	42.060	M	1,3-DICHLOROBENZENE	66.754
				43.456	M	1,2-DICHLOROBENZENE	
025	3441191	63583		44.502	M	1,4-DICHLOROBENZENE	64.039

STD AC 80 PPB

SAMPLE NO. : 09209320 . 10
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/20/93 21:04:53
PAGE NO. : 01

0058



Y MAXIMUM: 86508.
Y MINIMUM: 6081.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/21/93 14:45:52

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .10 INST:20 VIAL:F0 SEQ NUMBER:010
TEST : DATE-TIME INJECTED : 09/20/93 21:04:53
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/21/93 14:45:52
METHOD: 202 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD AC 80 PP RAW FILE: RAW1:IK345225
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

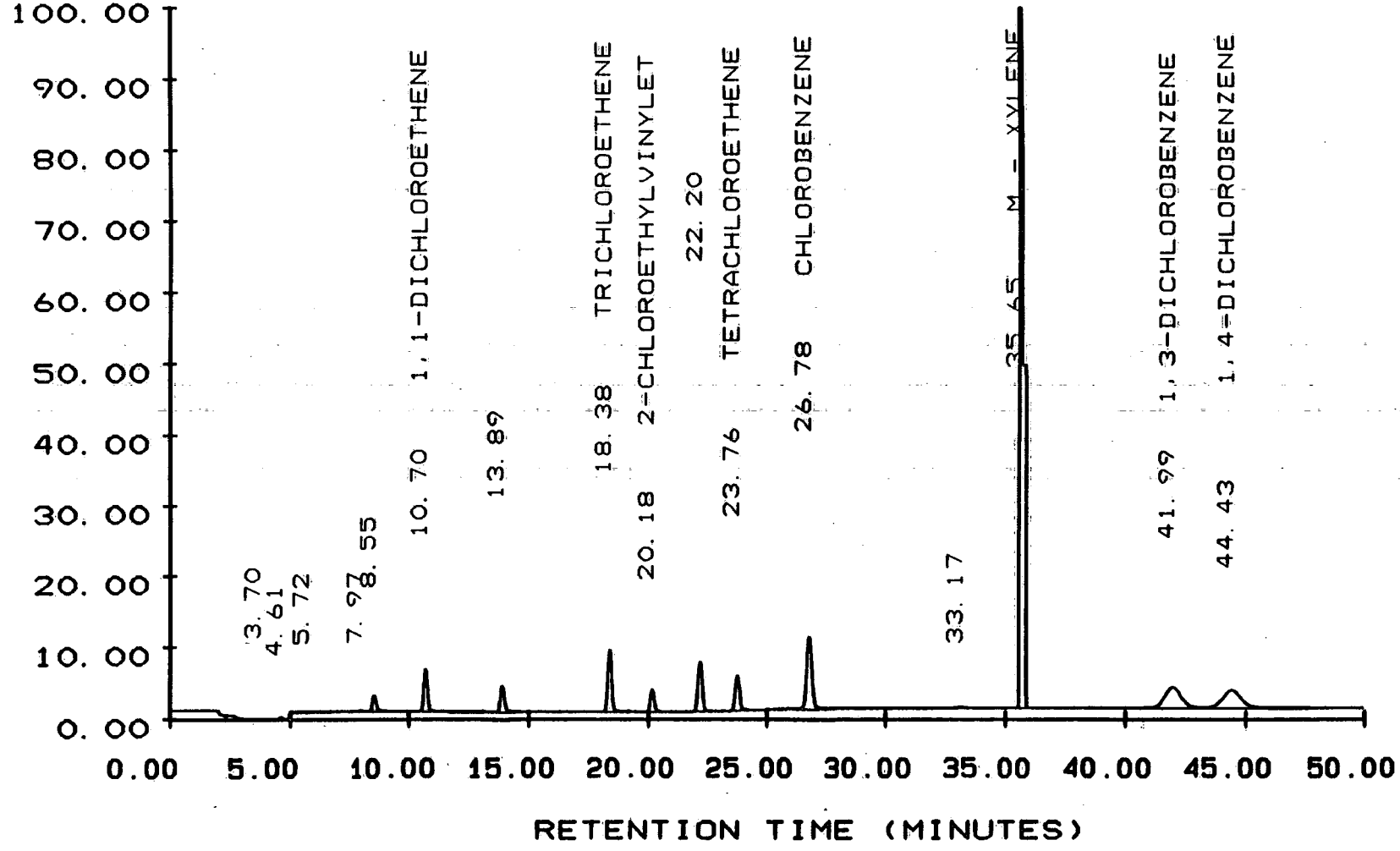
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	78705	6477		4.647			
002	924487	8817	T	5.781			
003	236345	7469	T	7.578			
004	317500	11755	T	8.019			
005	585348	8030	T	8.640			
006	2677975	200508	T	10.707	M	1,1-DICHLOROETHENE	80.138
007	75201	3828	T	11.995			
008	90066	3899	T	12.353			
				12.713	M	TRANS-1,2-DICHLOROET	
009	178812	3429	T	13.090			
010	132710	3148		13.946			
013	10406779	795685	V	17.621			
014	2903185	255311	T	18.387	M	TRICHLOROETHENE	80.548
015	63761	3804	V	18.906	M	BENZENE	0.765
016	1104525	95970	V	20.190	M	2-CHLOROETHYLVINYLET	81.501
017	1976927	164910	V	24.104	M	TETRACHLOROETHENE	80.919
018	6758	647	V	24.800	M	aaa-TRIFLUOROTOLUENE	1.031
019	19134	1545	V	25.480	M	TOLUENE	0.707
020	4464257	293191	V	26.796	M	CHLOROBENZENE	81.300
				29.389	M	ETHYLBENZENE	
022	27934	1076		33.217			
023	27981	930	V	35.308	M	M - XYLENE	0.848
				36.623	M	O - XYLENE	
024	4657729	134196		36.778	M	P - XYLENE	85.592
025	4737123	100463	T	42.047	M	1,3-DICHLOROBENZENE	91.685
				43.456	M	1,2-DICHLOROBENZENE	
026	4691021	86992		44.484	M	1,4-DICHLOROBENZENE	87.916

RESTEK AC 20

SAMPLE NO. : 09209320 . 13
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/21/93 00:41:10
PAGE NO. : 01

0060



Y MAXIMUM: 86587.
Y MINIMUM: 6122.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/21/93 14:59:07

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .13 INST:20 VIAL:FO SEQ NUMBER:013
TEST : DATE-TIME INJECTED : 09/21/93 00:41:10
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/21/93 14:59:07
METHOD: 202 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: RESTEK AC 20 RAW FILE: RAW1:IL345313
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	18538	640	V	3.703			
002	29215	2612		4.611			
003	127558	1299		5.715			
004	14713	1225	T	7.965			
005	222548	17395	T	8.550			
006	526112	46299		10.705	M	1,1-DICHLOROETHENE	18.038
				12.713	M	TRANS-1,2-DICHLOROET	
007	331688	27375		13.887			
010	782842	67578	V	18.379	M	TRICHLOROETHENE	21.169
				18.910	M	BENZENE	
011	274950	24086	V	20.181	M	2-CHLOROETHYLVINYLET	20.428
012	644327	54249	V	22.195			
013	477168	37897	V	23.758	M	TETRACHLOROETHENE	18.378
				24.644	M	aaa-TRIFLUOROTOLUENE	
				25.469	M	TOLUENE	
014	1326811	79986		26.781	M	CHLOROBENZENE	21.837
				29.389	M	ETHYLBENZENE	
015	30350	1242		33.173			
016	10304467	792132	V	35.648	M	M - XYLENE	~~391.622~~
				36.623	M	O - XYLENE	
				36.855	M	P - XYLENE	
018	1085263	22874	T	41.992	M	1,3-DICHLOROBENZENE	20.031
				43.456	M	1,2-DICHLOROBENZENE	
019	1057037	19478		44.430	M	1,4-DICHLOROBENZENE	19.052

electronic spike
PKC
10/19/93

MULTILEVEL CALIBRATION METHOD 20B 09/21/93 14:33:23
1ST ORDER EXTERNAL STANDARD CALIBRATION USING PEAK HEIGHT

TEST:

LEVEL	REPLICATE 1	REPLICATE 2	REPLICATE 3
A	09209320.14		
B	09209320.15		
C	09209320.16		
D	09209320.17		
E	09209320.18		
F	09209320.19		
G			
H			
I	09209320.22		
J			

PEAK NAME	a	b	COEFFICIENTS c	d	SD OF FIT	CORR COEFF
TRANS-1,2-DICHLOROET			1.849E-04	4.383E-02	0.44662	0.99963
BENZENE			1.645E-04	1.389E-01	0.34455	0.99978
aaa-TRIFLUOROTOLUENE			5.353E-04	6.846E-01	1.26782	0.99707
TOLUENE			2.214E-04	3.651E-01	0.58232	0.99938
ETHYLBENZENE			3.760E-04	3.662E-01	0.56471	0.99941
M - XYLENE			4.939E-04	3.882E-01	0.60764	0.99947
O - XYLENE			5.916E-04	2.806E-01	0.47987	0.99974
1,2-DICHLOROBENZENE			8.746E-04	4.758E-01	0.61925	0.99967

Roy F. Weston, Inc. - Lionville Laboratory

METHOD NUMBER	: 20B
METHOD TITLE	: 5.0 ML, 1% SP1000,
USER PROGRAMS	: USER:MULTIV10
ORDER OF FIT	: 1
NUMBER OF LEVELS	: 10
REPORT PARAMETERS	:
NO.OF TIMES MODIFIED	: 5
NO.OF TIMES CALIBRAT	: 10

#	COMPONENT NAME	LEVEL A LEVEL F	LEVEL B LEVEL G	LEVEL C LEVEL H	LEVEL D LEVEL I	LEVEL E LEVEL J
1	TRANS-1,2-DICHLOROET	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
2	BENZENE	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
3	aaa-TRIFLUOROTOLUENE	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
4	TOLUENE	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
5	ETHYLBENZENE	0.5000 20.0000	1.0000 40.0000	2.0000 50.0000	5.0000 60.0000	10.0000 80.0000
6	M - XYLENE	0.5673 22.6900	1.1345 45.3800	2.2690 56.7250	5.6725 68.0700	11.3450 90.7600
7	O - XYLENE	0.6420 25.6800	1.2840 51.3600	2.5680 64.2000	6.4200 77.0400	12.8400 102.7200
8	1,2-DICHLOROBENZENE	0.7320 29.3280	1.4640 58.5600	2.9328 73.2000	7.3200 87.8400	14.6400 117.1200

001 - METHOD NUMBER : 20B
002 - METHOD TITLE : 5.0 ML, 1% SP1000, PID
003 - ENTERED BY : B. SUSAN YATES
004 - DATE-TIME ENTERED : 10/13/92 18:10:00
005 - MODIFIED BY : LINDA DRURY
006 - DATE-TIME MODIFIED : 09/21/93 13:53:03
007 - # TIMES MODIFIED : 016
008 - CALIBRATION SMP :
009 - # TIMES CALIBRATED :
010 - CALIBRATION DATE :
011 - USER PROGRAMS : USER:MULTIV10
012 - PURGE : TOP
013 - TEST :

DATA COLLECTION PARAMETERS

014 - END COLLECTION TIME : 50.00 015 - SAMPLING RATE : 8

TIMED EVENTS

TIME	EVENT	VALUE	DESCRIPTION

DATA ANALYSIS PARAMETERS

016 - BASELINE SENSITIVITY : 50.00 017 - AREA SENSITIVITY : 200
018 - REJECTION MINIMUM : 400
019 - CALCULATION TYPE : E 020 - PEAK AREA HEIGHT : H

021 - PEAK MATCH WINDOW : 0.200 022 - % MATCH WINDOW : 5.0

023 - RF UPDATE : N 024 - RET TIME UPDATE : Y
025 - UNKNOWN RF TREATMENT : 0.00000
026 - RRT DISPLAY UNITS : MINUTES 027 - CONCENTRATION UNITS : PPB

TIMED EVENTS

	TIME	EVENT	VALUE	DESCRIPTION
028 -	0.100	PKDET	OFF	DISABLE PEAK DETECTION
029 -	3.000	PKDET	ON	ENABLE PEAK DETECTION
030 -	3.010	BASE	A	ABSOLUTE
031 -	5.000	BASE	A	
032 -	22.000	BASAV	ON	ALL VALLEYS
033 -	33.000	BASE	A	ABSOLUTE
034 -	33.500	BASAV	OFF	

REFERENCE PEAKS

035 - UNRETAINED PK RT : 0.000
036 - % REF RT WINDOW : 10.0

REF PK NO.	REF PK RT	END TIME	REF PK REL VALUE

COMPONENT TABLE

	NAME	GROUP	RET TIME	CAL WT	RESP FACT
037 -	TRANS-1,2-DICHLOROET	M	12.713	0.0000	0.00000E+0

038 - BENZENE	M	18.910	0.0000	0.00000E+0
039 - aaa-TRIFLUOROTOLUENE	M	24.644	0.0000	0.00000E+0
040 - TOLUENE	M	25.469	0.0000	0.00000E+0
041 - ETHYLBENZENE	M	29.389	0.0000	0.00000E+0
042 - M - XYLENE	M	35.287	0.0000	0.00000E+0
043 - O - XYLENE	M	36.623	0.0000	0.00000E+0
044 - 1,2-DICHLOROBENZENE	M	43.456	0.0000	0.00000E+0

GROUP NAME TABLE

GROUP NAME	GROUP NUMBER

REPORT PARAMETERS

045 - REPORT PARAMETERS :
046 - PLOTTER :

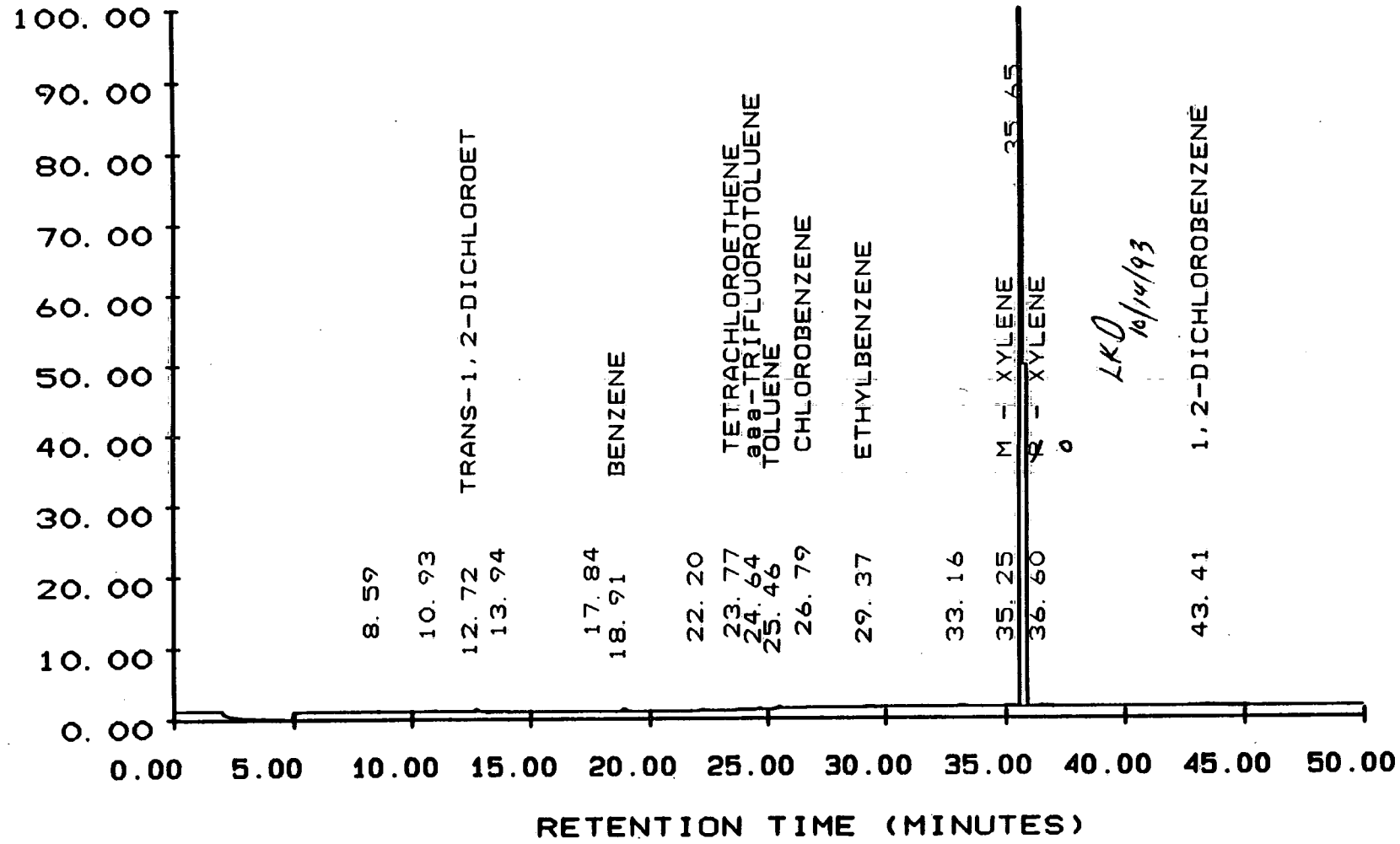
047 - START-TIME	:	0.00	048 - END TIME	:	50.00
049 - %Y MINIMUM	:	0.00	050 - %Y MAXIMUM	:	100.00

STD . 5PPB

SAMPLE NO. : 09209320 . 14
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/21/93 01:53:15
PAGE NO. : 01

0066



Y MAXIMUM: 86608.
Y MINIMUM: 6114.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/07/93 11:11:24

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .14 INST:20 VIAL:F0 SEQ NUMBER:014
TEST : DATE-TIME INJECTED : 09/21/93 01:53:15
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/07/93 11:11:24
METHOD: 202 / 20 REV #: 00016 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD .5PPB RAW FILE: RAW1:IL345341
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	9286	432	V	8.593			
				10.730		1,1-DICHLOROETHENE	
002	21244	774	T	10.934			
003	35879	2654	T	12.721		TRANS-1,2-DICHLOROET	0.535
004	8196	509		13.938			
005	5107	434	T	17.841			
				18.409		TRICHLOROETHENE	
007	43994	3227	V	18.910		BENZENE	0.670
				20.214		2-CHLOROETHYLVINYLET	
009	13226	1125	V	22.204			
010	7892	691	V	23.773		TETRACHLOROETHENE	0.057
011	15826	1350	V	24.636		aaa-TRIFLUOROTOLUENE	1.407
012	30723	2475	V	25.461		TOLUENE	0.913
013	12722	434	V	26.787		CHLOROBENZENE	
014	29569	1330		29.371		ETHYLBENZENE	0.866
015	29042	1177		33.163			
016	33758	1197	T	35.253		M - XYLENE	0.979
017	0309239	792421	T	35.648			
018	42906	1167		36.595		O - XYLENE	0.971
				36.850		P - XYLENE	
				36.855		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
020	55322	834		43.413		1,2-DICHLOROBENZENE	1.205
				44.609		1,4-DICHLOROBENZENE	

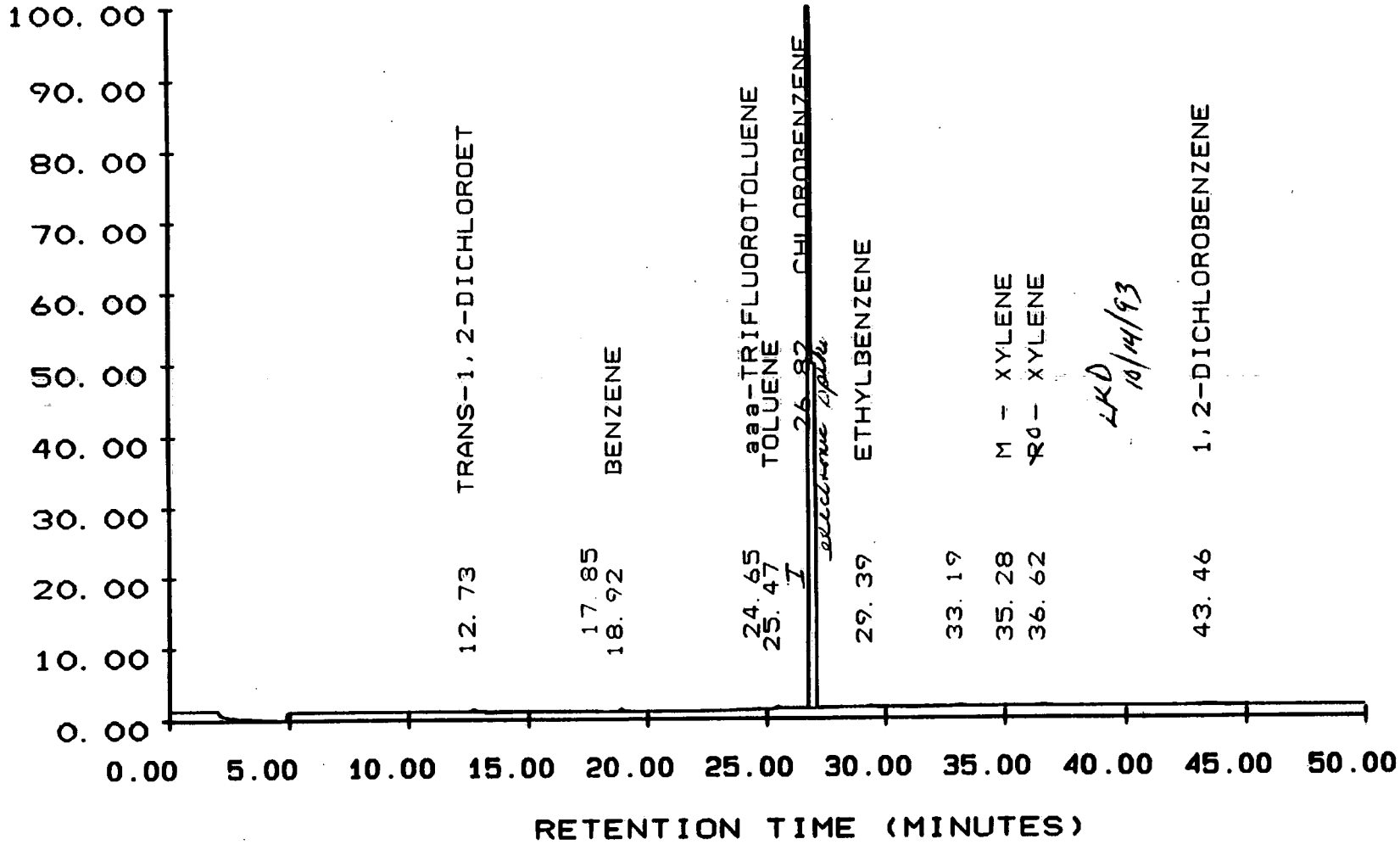
All compounds were quantitated using method 20
except those which are labeled.

STD B 1PPB

SAMPLE NO. : 09209320 . 15
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/21/93 02:50:09
PAGE NO. : 01

0068



LKD 10/14/93

Y MAXIMUM: 86605.
Y MINIMUM: 6065.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/07/93 11:11:54

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .15 INST:20 VIAL:F0 SEQ NUMBER:015
TEST : DATE-TIME INJECTED : 09/21/93 02:50:09
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/07/93 11:11:54
METHOD: 202 / 20 REV #: 00016 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD B 1PPB RAW FILE: RAW1:IL345369
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
				0.000		P - XYLENE	
				10.730		1,1-DICHLOROETHENE	
002	31678	2452		12.728		TRANS-1,2-DICHLOROET	0.497
003	5839	410	V	17.850			
				18.409		TRICHLOROETHENE	
004	39578	2818	V	18.919		BENZENE	0.602
				20.214		2-CHLOROETHYLVINYLET	
				24.130		TETRACHLOROETHENE	
006	8449	726	V	24.651		aaa-TRIFLUOROTOLUENE	1.073
007	27155	2174	V	25.473		TOLUENE	0.846
008	0359515	793958	V	26.816		CHLOROBENZENE	~~220.964~~
009	30846	1347		29.388		ETHYLBENZENE	0.873
010	24070	1006		33.191			
011	37150	1184	T	35.279		M - XYLENE	0.973
012	40100	1172		36.622		O - XYLENE	0.974
				36.850		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
013	51763	971		43.456		1,2-DICHLOROBENZENE	1.325
				44.609		1,4-DICHLOROBENZENE	

LRD 10/14/93

Incorrect spike

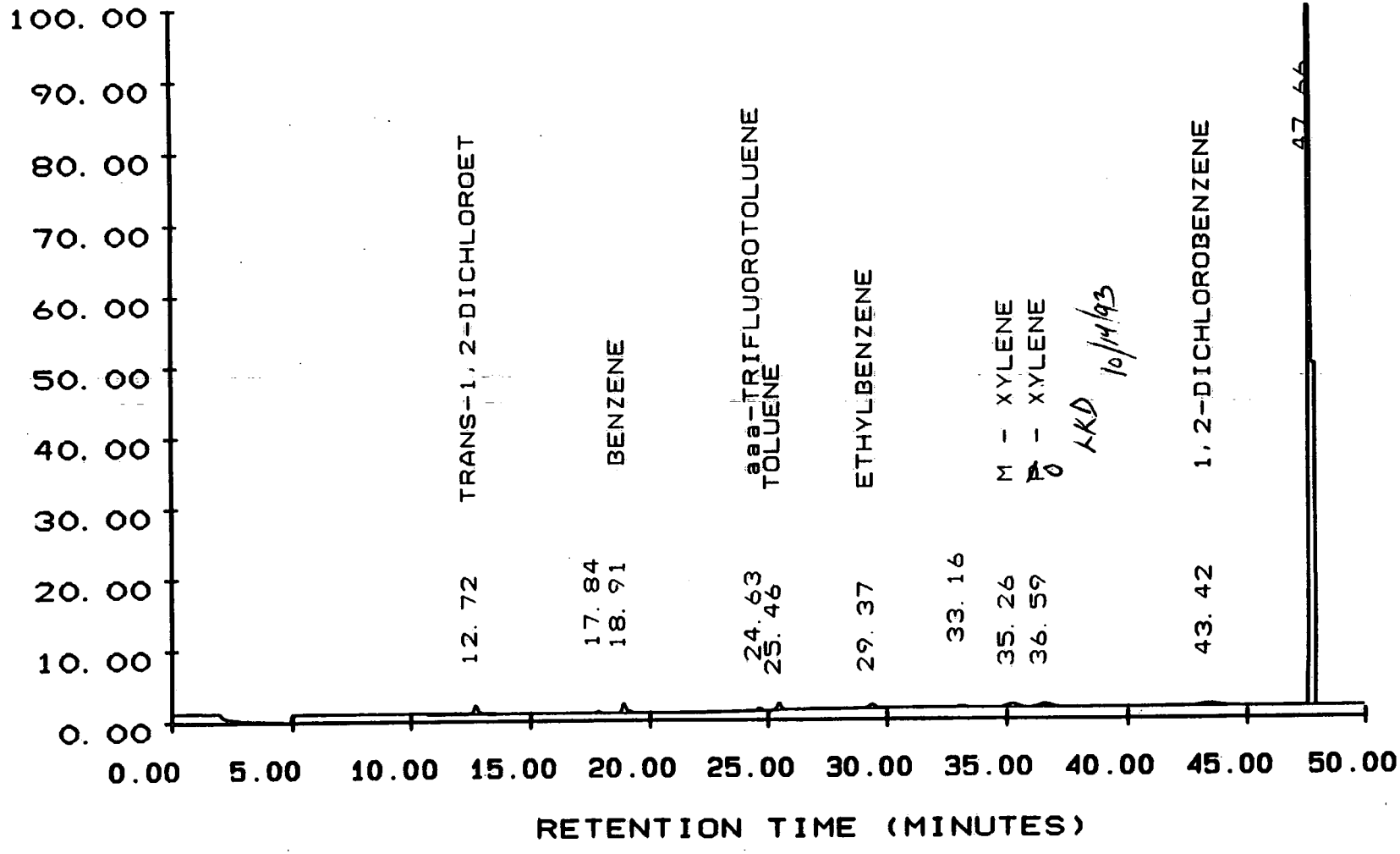
All compounds were quantitated using method 20
except those which are labeled.

STD B 2PPB

SAMPLE NO. : 09209320 . 16
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/21/93 03:59:24
PAGE NO. : 01

0070



LKD 10/14/93

Y MAXIMUM: 86666.
Y MINIMUM: 6101.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/07/93 11:12:13

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .16 INST:20 VIAL:F0 SEQ NUMBER:016
TEST : DATE-TIME INJECTED : 09/21/93 03:59:24
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/07/93 11:12:13
METHOD: 202 / 20 REV #: 00016 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD B 2PPB RAW FILE: RAW1:IL345389
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
				10.730		1,1-DICHLOROETHENE	
002	111450	8773		12.718		TRANS-1,2-DICHLOROET	1.666
003	17936	1563	T	17.841			
				18.409		TRICHLOROETHENE	
005	143475	10447	V	18.909		BENZENE	1.857
				20.214		2-CHLOROETHYLVINYLET	
				24.130		TETRACHLOROETHENE	
007	36915	3117	V	24.635		aaa-TRIFLUOROTOLUENE	2.353
008	94090	7543	V	25.460		TOLUENE	2.035
				26.830		CHLOROBENZENE	
009	125184	4442		29.373		ETHYLBENZENE	2.036
010	29097	1184		33.165			
011	119508	3809	T	35.256		M - XYLENE	2.269
012	131112	3751		36.593		O - XYLENE	2.500
				36.850		P - XYLENE	
				36.855		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
013	156416	2819		43.417		1,2-DICHLOROBENZENE	2.941
				44.609		1,4-DICHLOROBENZENE	
014	0352525	792870		47.659			

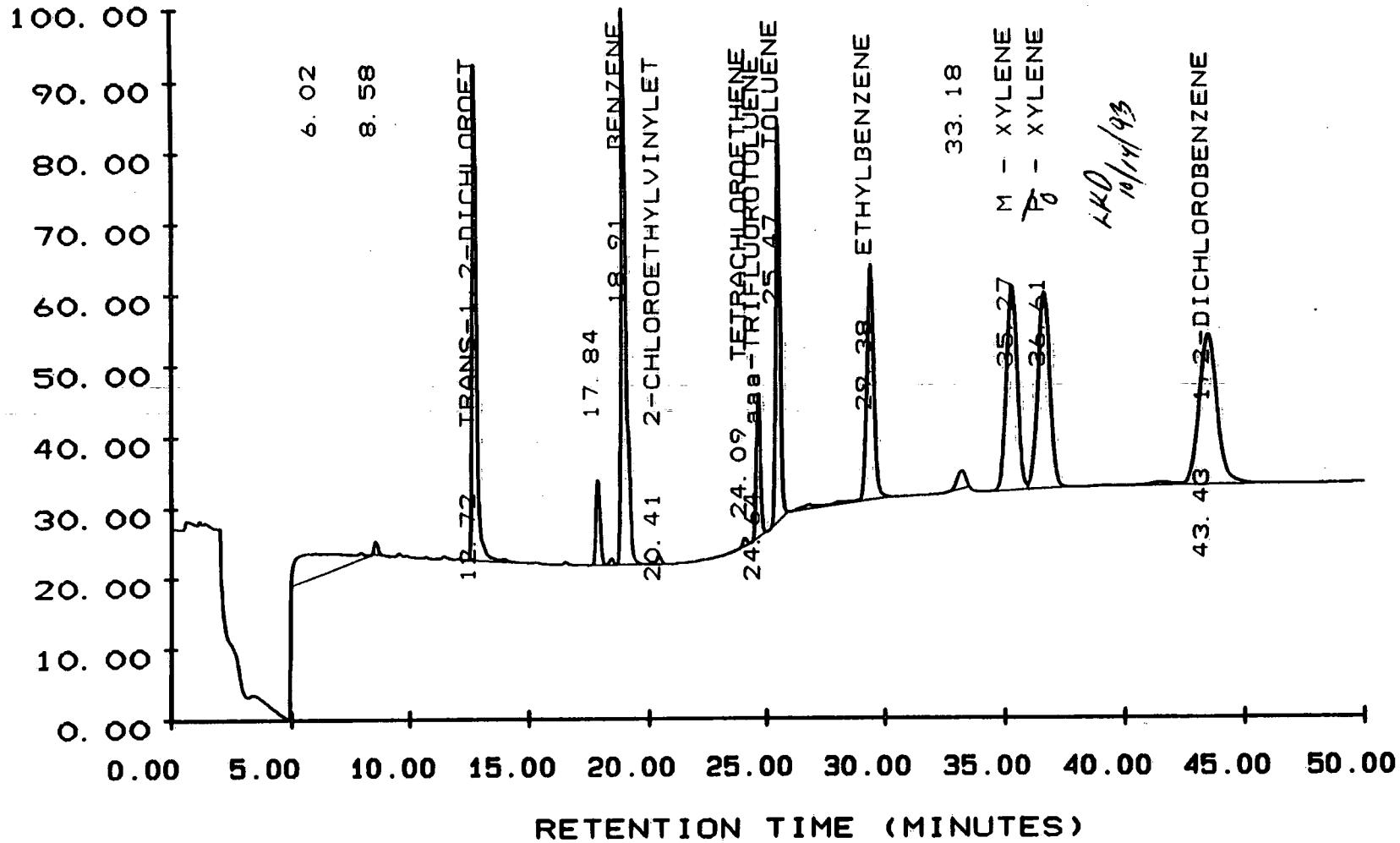
All compounds were quantitated using method 20
except those which are labeled.

STD B 5 PP

SAMPLE NO. : 09209320 . 17
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/21/93 04:56:16
PAGE NO. : 01

0072



KKD 10/14/93

Y MAXIMUM: 9925.
Y MINIMUM: 6062.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/07/93 11:12:28

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .17 INST:20 VIAL:F0 SEQ NUMBER:017
TEST : DATE-TIME INJECTED : 09/21/93 04:56:16
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/07/93 11:12:28
METHOD: 202 / 20 REV #: 00016 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD B 5 PP RAW FILE: RAW1:IL345415
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	15643	757	V	8.577			
				10.730		1,1-DICHLOROETHENE	
002	328960	26780		12.719		TRANS-1,2-DICHLOROET	4.995
003	52594	4595	T	17.844			
				18.409		TRICHLOROETHENE	
005	412592	29991	V	18.913		BENZENE	5.072
006	6874	472		20.412		2-CHLOROETHYLVINYLET	0.366
007	5399	423	V	24.085		TETRACHLOROETHENE	
008	92967	7745	V	24.640		aaa-TRIFLUOROTOLUENE	4.830
009	270076	21428	V	25.466		TOLUENE	5.109
				26.830		CHLOROBENZENE	
010	276634	12764		29.382		ETHYLBENZENE	5.165
011	23948	969		33.184			
012	348044	11086	T	35.270		M - XYLENE	5.864
013	367396	10615		36.606		O - XYLENE	6.560
				36.850		P - XYLENE	
				36.855		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
015	422118	8101		43.433		1,2-DICHLOROBENZENE	7.561
				44.609		1,4-DICHLOROBENZENE	

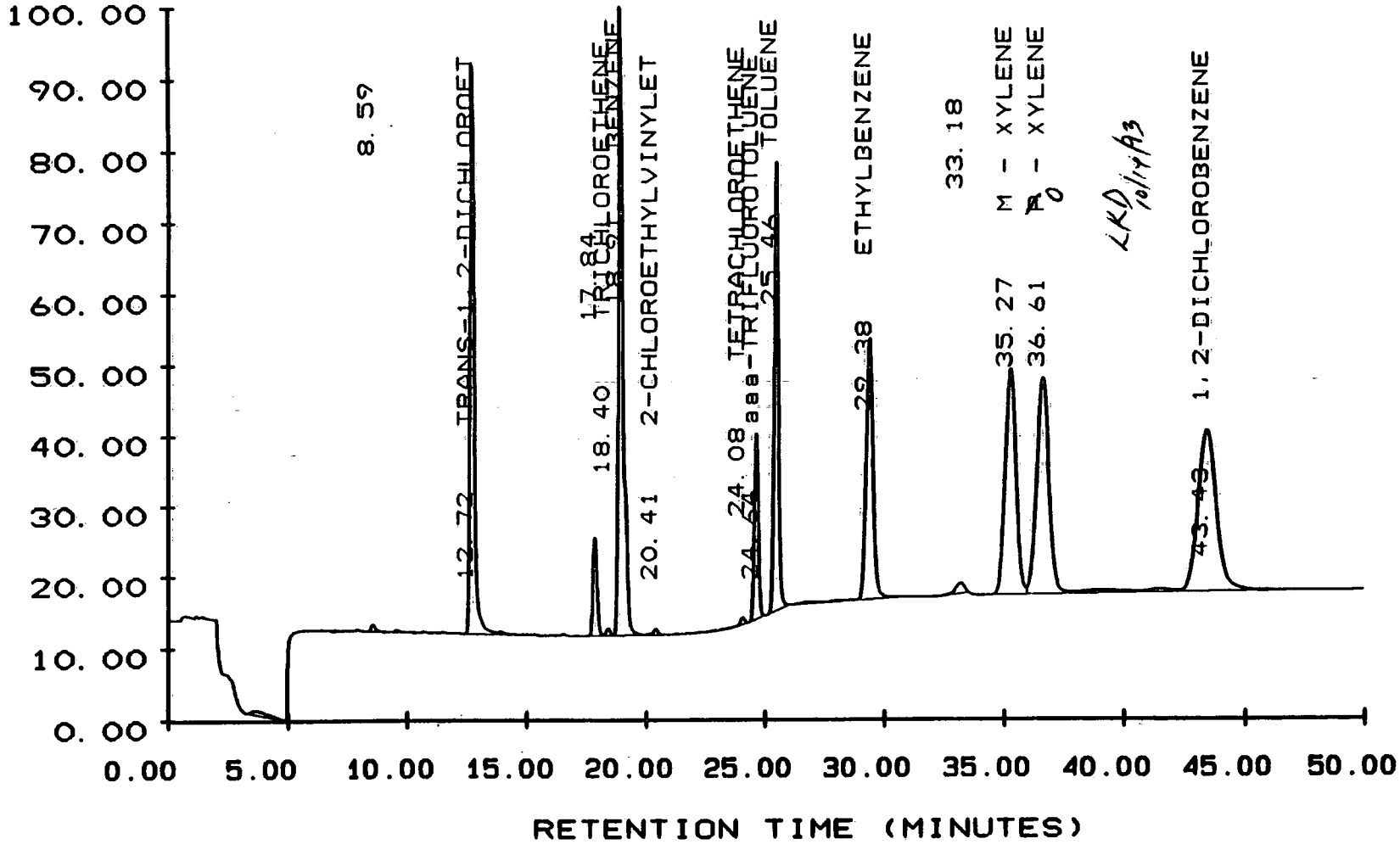
All compounds were quantitated using method 20
except those which are labeled.

STD B 10 PPB

SAMPLE NO. : 09209320 . 18
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/21/93 06:05:32
PAGE NO. : 01

0074



Y MAXIMUM: 13329.
Y MINIMUM: 6094.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/07/93 11:12:41

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .18 INST:20 VIAL:FO SEQ NUMBER:C18
TEST : DATE-TIME INJECTED : 09/21/93 06:05:32
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/07/93 11:12:41
METHOD: 202 / 20 REV #: 00016 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD B 10 PPB RAW FILE: RAW1:IL345438
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	9026	660	T	8.591			
				10.730		1,1-DICHLOROETHENE	
003	698637	57313		12.715		TRANS-1,2-DICHLOROET	10.641
004	113172	9827	T	17.841			
005	8993	710	T	18.398		TRICHLOROETHENE	0.018
006	869413	63400	T	18.910		BENZENE	10.568
007	9110	546	V	20.406		2-CHLOROETHYLVINYLET	0.429
008	8566	671	V	24.079		TETRACHLOROETHENE	0.048
009	226782	18816	V	24.639		aaa-TRIFLUOROTOLUENE	10.757
010	575933	45544	V	25.464		TOLUENE	10.449
				26.830		CHLOROBENZENE	
011	547226	26675	V	29.381		ETHYLBENZENE	10.396
012	27203	1026		33.179			
013	723057	23094	T	35.270		M - XYLENE	11.794
014	773125	22145		36.607		O - XYLENE	13.382
			T	36.850		P - XYLENE	
				36.855		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
017	865626	16547		43.434		1,2-DICHLOROBENZENE	14.948
				44.609		1,4-DICHLOROBENZENE	

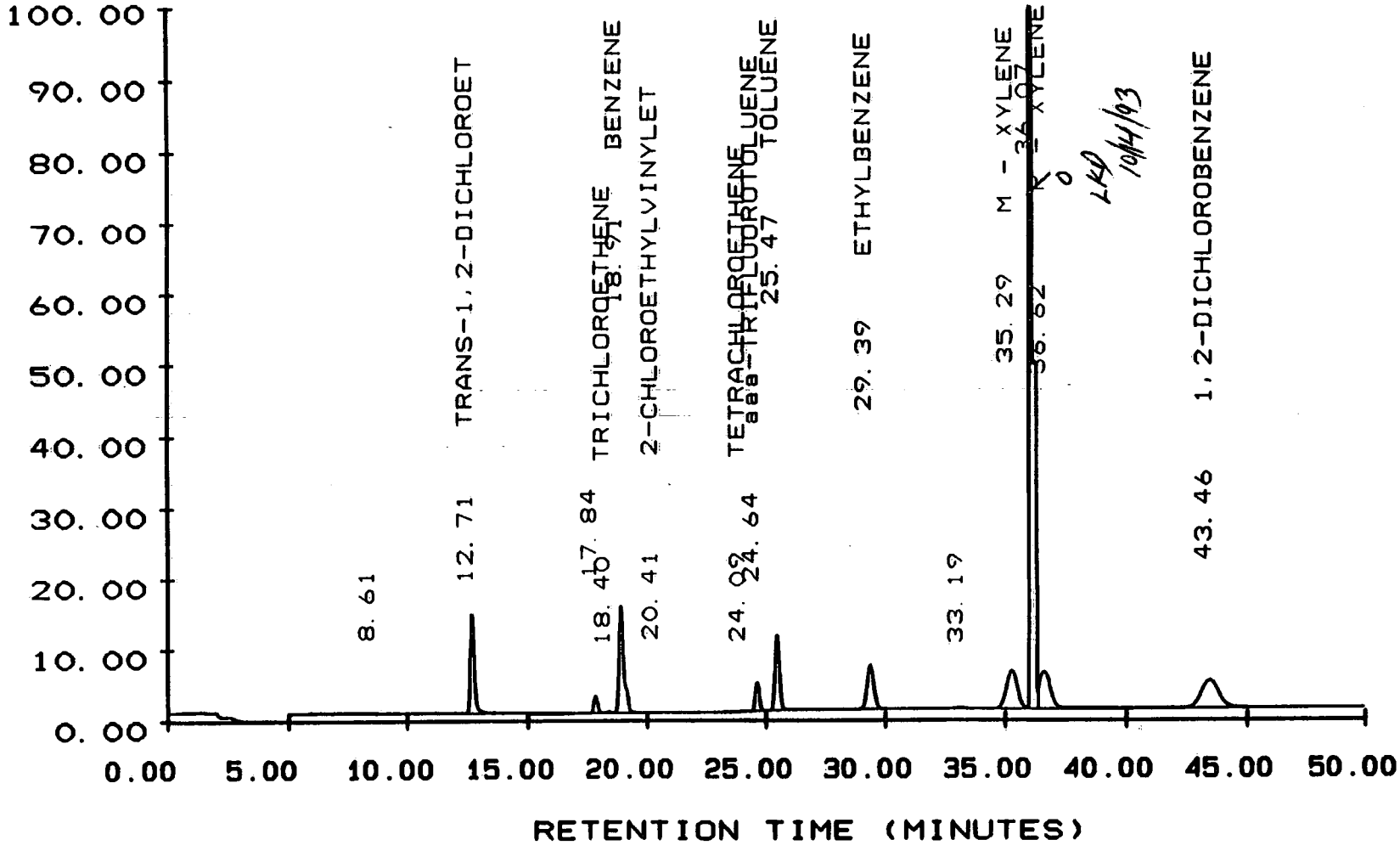
All compounds were quantitated using method 20
except those which are labeled.

STD B 20 PPB

SAMPLE NO. : 09209320 . 19
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/21/93 07:17:10
PAGE NO. : 01

0076



Y MAXIMUM: 86730.
Y MINIMUM: 6098.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/07/93 11:12:53

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .19 INST:20 VIAL:F0 SEQ NUMBER:019
TEST : DATE-TIME INJECTED : 09/21/93 07:17:10
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/07/93 11:12:53
METHOD: 202 / 20 REV #: 00016 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD B 20 PPB RAW FILE: RAW1:IL345463
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	10804	567	V	8.608			
				10.730		1,1-DICHLOROETHENE	
003	1320807	110124		12.713		TRANS-1,2-DICHLOROET	20.406
004	215414	18674	T	17.842			
005	15274	1205	T	18.397		TRICHLOROETHENE	0.175
006	1636039	119264	T	18.910		BENZENE	19.758
007	11564	569	V	20.407		2-CHLOROETHYLVINYLET	0.448
008	10927	844	V	24.088		TETRACHLOROETHENE	0.133
009	378061	31442	V	24.644		aaa-TRIFLUOROTOLUENE	17.516
010	1064609	83696	V	25.469		TOLUENE	18.895
				26.830		CHLOROBENZENE	
012	994112	49312		29.389		ETHYLBENZENE	18.908
013	28865	979		33.191			
014	1337057	42814	T	35.287		M - XYLENE	21.534
015	0401015	793744	T	36.075			
016	1256847	41616		36.623		O - XYLENE	24.901
			T	36.850		P - XYLENE	
				36.855		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
018	1636903	31621		43.456		1,2-DICHLOROBENZENE	28.132
				44.609		1,4-DICHLOROBENZENE	

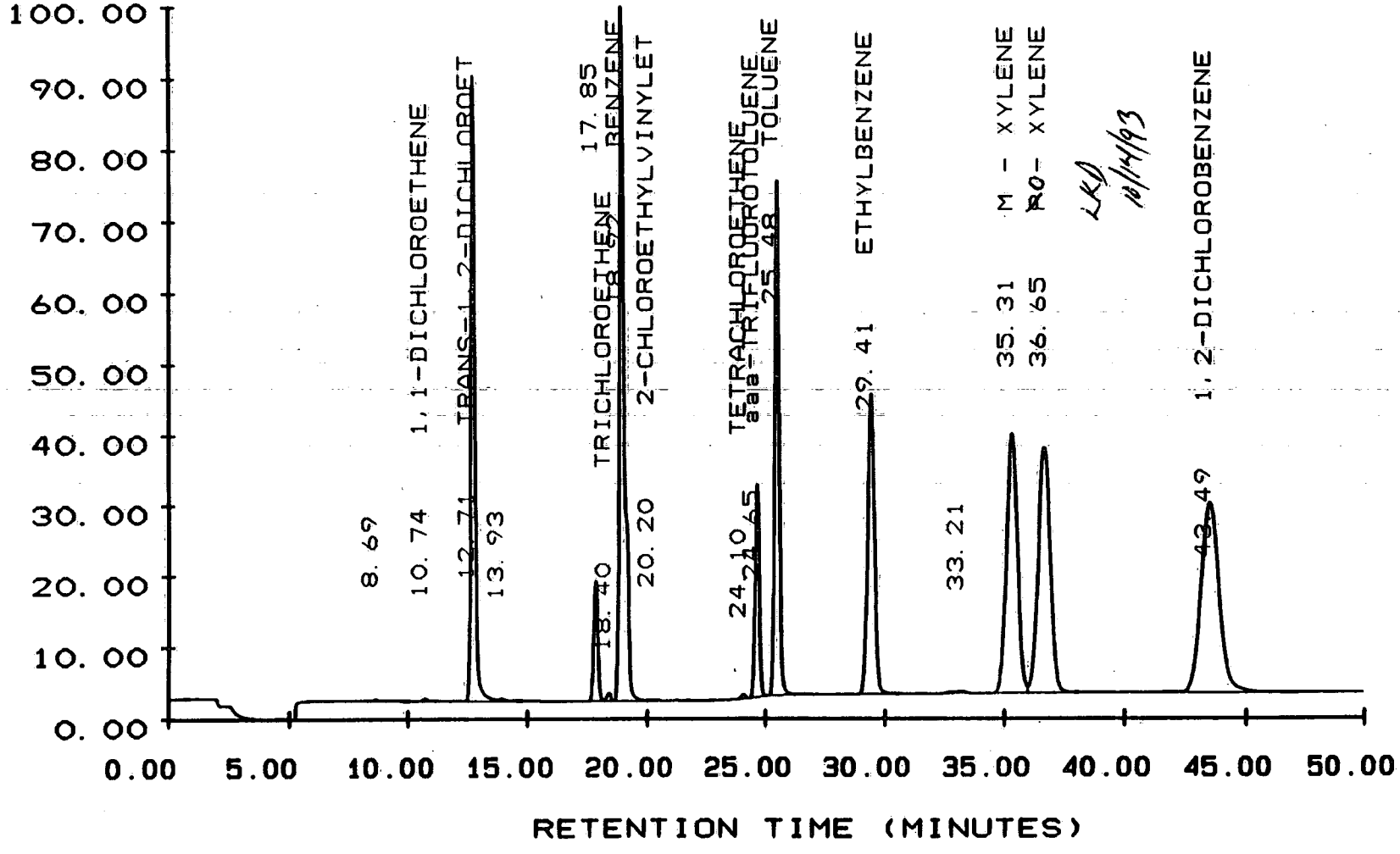
All compounds were quantitated using method 20
except those which are labeled.

STD B 60 PPB

SAMPLE NO. : 09209320 . 22
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/21/93 10:23:47
PAGE NO. : 01

0078



LKD 10/14/93

Y MAXIMUM: 43677.
Y MINIMUM: 6051.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/07/93 11:13:04

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .22 INST:20 VIAL:F0 SEQ NUMBER:022
TEST : DATE-TIME INJECTED : 09/21/93 10:23:47
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/07/93 11:13:04
METHOD: 202 / 20 REV #: 00016 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD B 60 PPB RAW FILE: RAW1:IL345520
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	12705	758	V	8.686			
002	16033	1337	T	10.739		1,1-DICHLOROETHENE	
005	3758137	322980	T	12.714		TRANS-1,2-DICHLOROET	59.763
006	54048	1483	V	13.934			
007	715896	62585	T	17.846			
008	52377	4223	T	18.403		TRICHLOROETHENE	1.129
009	5066717	363893	T	18.916		BENZENE	59.999
010	25683	826	T	20.201		2-CHLOROETHYLVINYLET	0.667
013	32011	2463	V	24.096		TETRACHLOROETHENE	0.930
014	1346323	111847	V	24.652		aaa-TRIFLUOROTOLUENE	60.556
015	3420137	270521	V	25.477		TOLUENE	60.258
				26.830		CHLOROBENZENE	
017	3158503	159279		29.406		ETHYLBENZENE	60.255
018	44782	1016		33.206			
019	4297831	137587	T	35.313		M - XYLENE	68.342
020	4525363	130002		36.651		O - XYLENE	77.190
				36.850		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
021	5174439	100236		43.494		1,2-DICHLOROBENZENE	88.142
				44.609		1,4-DICHLOROBENZENE	

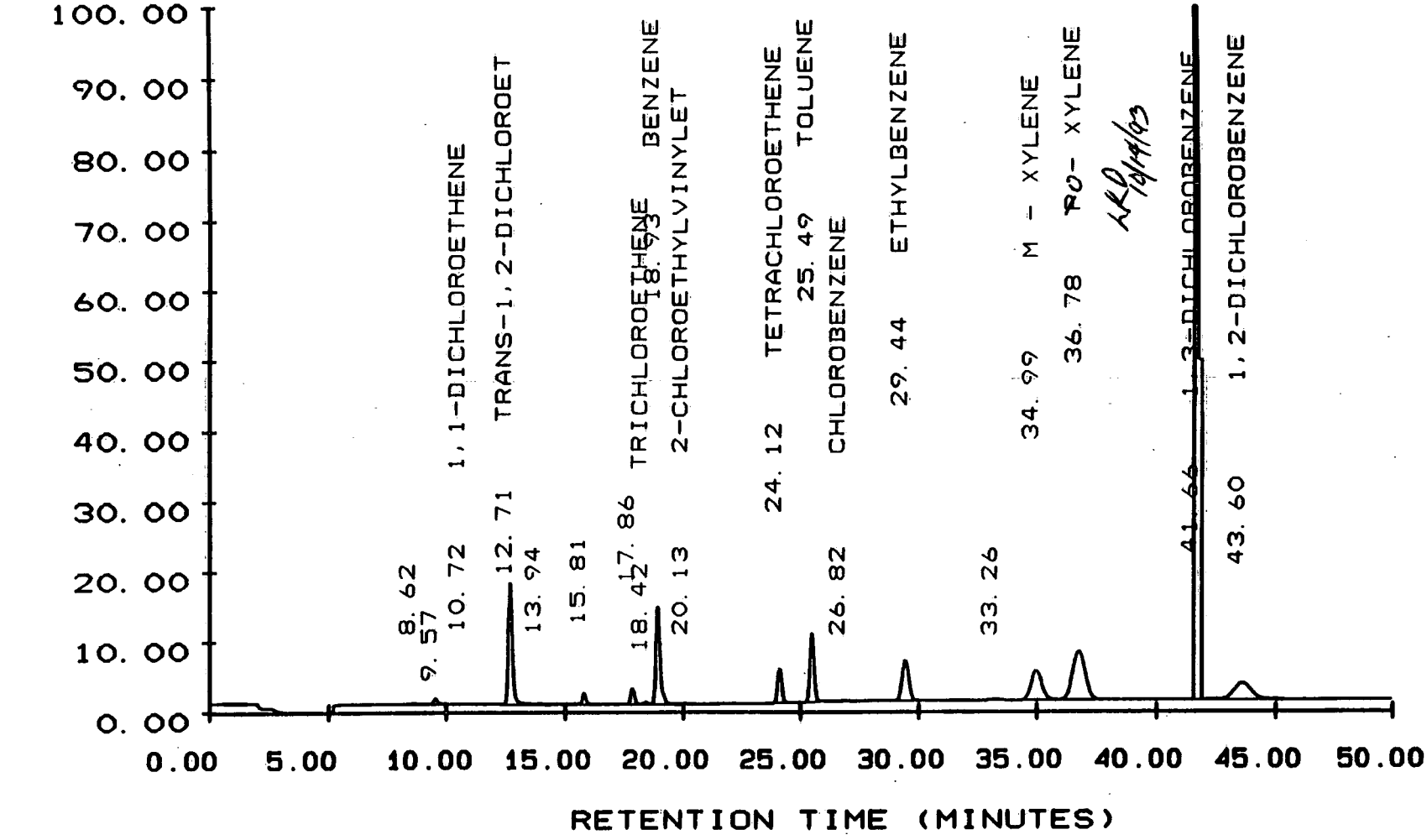
All compounds were quantitated using method 20
except those which are labeled.

RESTEK B 20

SAMPLE NO. : 09209320 . 24
TEST NO. :
METHOD NO. : 202 / 20

INSTRUMENT: 20
DATE TIME: 09/21/93 12:23:56
PAGE NO. : 01

0080



KKD 10/14/93

Y MAXIMUM: 86743.
Y MINIMUM: 6039.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/07/93 10:56:07

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09209320 .24 INST:20 VIAL:F0 SEQ NUMBER:024
TEST : DATE-TIME INJECTED : 09/21/93 12:23:56
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/07/93 10:56:07
METHOD: 202 / 20 REV #: 00016 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: RESTEK B 20 RAW FILE: RAW1:IL345567
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	9008	673	T	8.619			
002	86684	6133	T	9.572			
003	8609	430	V	10.724		1,1-DICHLOROETHENE	
004	1667675	137719	T	12.709		TRANS-1,2-DICHLOROET	25.508
005	22342	767	T	13.940			
006	140371	12425	V	15.809			
007	199952	17198	T	17.857			
008	32802	2761	T	18.417		TRICHLOROETHENE	0.667
009	1362197	109819	T	18.926		BENZENE	18.204
010	15864	840	V	20.126		2-CHLOROETHYLVINYLET	0.679
012	455790	38193	V	24.121		TETRACHLOROETHENE	18.523
				24.644		aaa-TRIFLUOROTOLUENE	
013	985813	77145	V	25.495		TOLUENE	17.445
014	27450	897	V	26.825		CHLOROBENZENE	
015	914716	45456		29.439		ETHYLBENZENE	17.458
016	21286	972		33.265			
017	1081041	33628	T	34.993		M - XYLENE	16.997
018	2048713	55805		36.784		O - XYLENE	33.295
			T	36.850		P - XYLENE	
020	0382427	793994	T	41.664		1,3-DICHLOROBENZENE	~~732.160~~
021	1016064	19167		43.596		1,2-DICHLOROBENZENE	17.239
				44.609		1,4-DICHLOROBENZENE	

electronic spike
DKC 10/19/93

All compounds were quantitated using method 20
except those which are labeled.

	SAMPLE ID	FILE ID	DATE/TIME	DESCRIPTION
01	09209320.01	RAW1:IK341380	09/20/93 11:22:47	STD AC .5PPB
02	09209320.03	RAW1:IK345035	09/20/93 13:24:23	STD AC 2 PPB
03	09209320.04	RAW1:IK345057	09/20/93 14:21:31	AIR
04	09209320.05	RAW1:IK345076	09/20/93 15:34:31	STD AC 5 PPB
05	09209320.06	RAW1:IK345109	09/20/93 16:46:36	STD AC 10PPB
06	09209320.07	RAW1:IK345143	09/20/93 17:43:44	STD AC 20 PPB
07	09209320.08	RAW1:IK345167	09/20/93 18:40:51	STD AC 40PPB
08	09209320.09	RAW1:IK345193	09/20/93 19:52:48	STD AC 60 PPB
09	09209320.10	RAW1:IK345225	09/20/93 21:04:53	STD AC 80 PPB
10	09209320.11	RAW1:IK345255	09/20/93 22:16:59	STD AC 1PPB
11	09209320.12	RAW1:IK345282	09/20/93 23:29:04	WATER
12	09209320.13	RAW1:IL345313	09/21/93 00:41:10	RESTEK AC 20
13	09209320.14	RAW1:IL345341	09/21/93 01:53:15	STD .5PPB A
14	09209320.15	RAW1:IL345369	09/21/93 02:50:09	STD B 1PPB B
15	09209320.16	RAW1:IL345389	09/21/93 03:59:24	STD B 2PPB C
16	09209320.17	RAW1:IL345415	09/21/93 04:56:16	STD B 5 PP D
17	09209320.18	RAW1:IL345438	09/21/93 06:05:32	STD B 10 PPB E
18	09209320.19	RAW1:IL345463	09/21/93 07:17:10	STD B 20 PPB F
19	09209320.20	RAW1:IL345482	09/21/93 08:17:39	AIR
20	09209320.21	RAW1:IL345500	09/21/93 09:14:39	STD B 40 PPB G
21	09209320.22	RAW1:IL345520	09/21/93 10:23:47	STD B 60 PPB I
22	09209320.23	RAW1:IL345541	09/21/93 11:23:52	STD B 80 PPB J
23	09209320.24	RAW1:IL345567	09/21/93 12:23:56	RESTEK B 20

DCV LKD 10/13/93

STD ~~CCV~~ B

SAMPLE NO. : 09299320 . 21

TEST NO. :

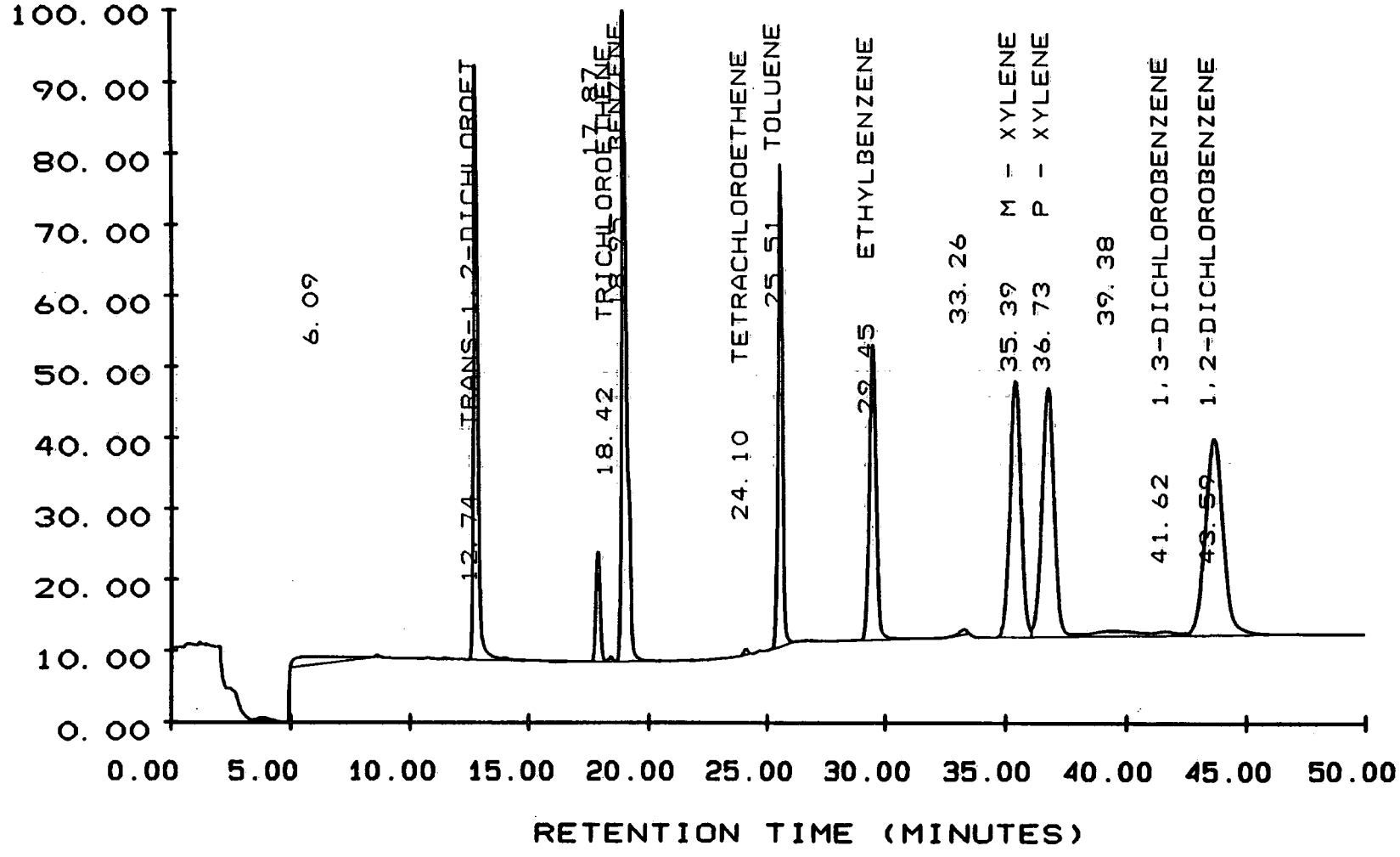
METHOD NO. : 20 / 20

INSTRUMENT: 20

DATE TIME: 09/30/93 08:26:21

PAGE NO. : 01

0083



Y MAXIMUM: 16214.

Y MINIMUM: 6041.

START TIME: 0.00

END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 09:26:07

MULTILEVEL MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299320 .21 INST:20 VIAL:F0 SEQ NUMBER:021
TEST : DATE-TIME INJECTED : 09/30/93 08:26:21
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 09:26:07
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: bcv COLUMN TYPE: 1%SP1000, PID
LAB ID: STD ~~CCV~~ B RAW FILE: RAW2:IU337247
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
002	155776	1088		6.094			
				10.730		1,1-DICHLOROETHENE	
005	1002714	84303		12.745		TRANS-1,2-DICHLOROET	15.631
006	178337	15514	T	17.870			
007	8660	710	T	18.421		TRICHLOROETHENE	~~0.018~~
008	1302777	92383	V	18.946		BENZENE	15.336
				20.214		2-CHLOROETHYLVINYLET	
009	10662	838	V	24.104		TETRACHLOROETHENE	~~0.130~~
				24.644		aaa-TRIFLUOROTOLUENE	
010	875913	68675	V	25.511		TOLUENE	15.570
				26.830		CHLOROBENZENE	
012	854362	42231		29.451		ETHYLBENZENE	16.245
013	19126	779		33.260			
014	1154011	36648	T	35.391		M - XYLENE	18.489
015	1245599	35586		36.734		O - XYLENE	21.333
			T	36.850		P - XYLENE	
016	104033	796	T	39.381			
017	43228	634	T	41.621		1,3-DICHLOROBENZENE	
018	1491931	28151		43.590		1,2-DICHLOROBENZENE	25.097
				44.609		1,4-DICHLOROBENZENE	

LKD 10/15/93

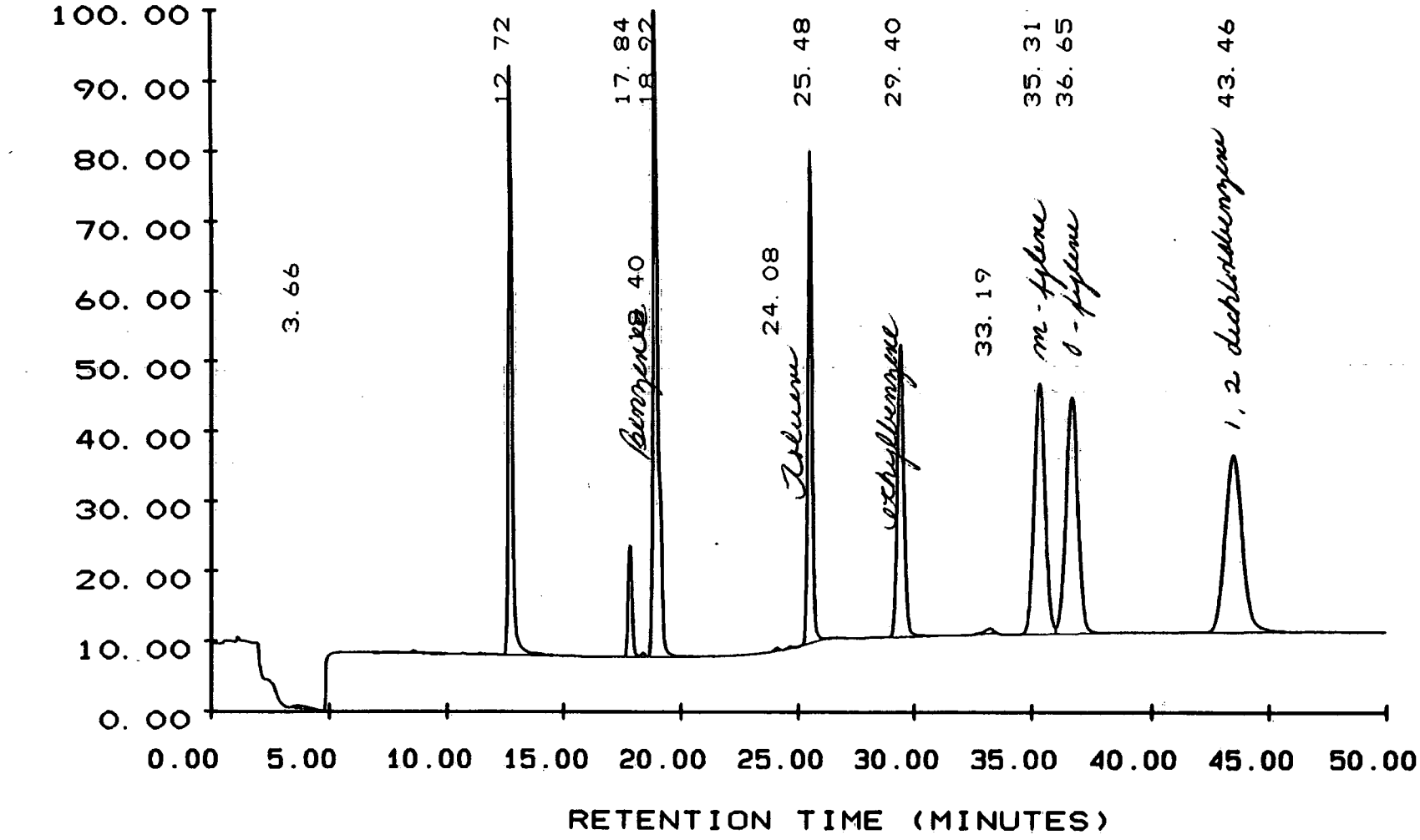
All compounds were quantitated using method 20
except those which are labeled.

CCV B

SAMPLE NO. : 09309320 . 13
TEST NO. :
METHOD NO. : 20 / 20

INSTRUMENT: 20
DATE TIME: 09/30/93 22:14:07
PAGE NO. : 01

0085



Y MAXIMUM: 17265.
Y MINIMUM: 6024.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 23:04:25

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .13 INST:20 VIAL:F0 SEQ NUMBER:013
TEST : DATE-TIME INJECTED : 09/30/93 22:14:07
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 23:04:25
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: CCV B RAW FILE: RAW2:IU337475
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

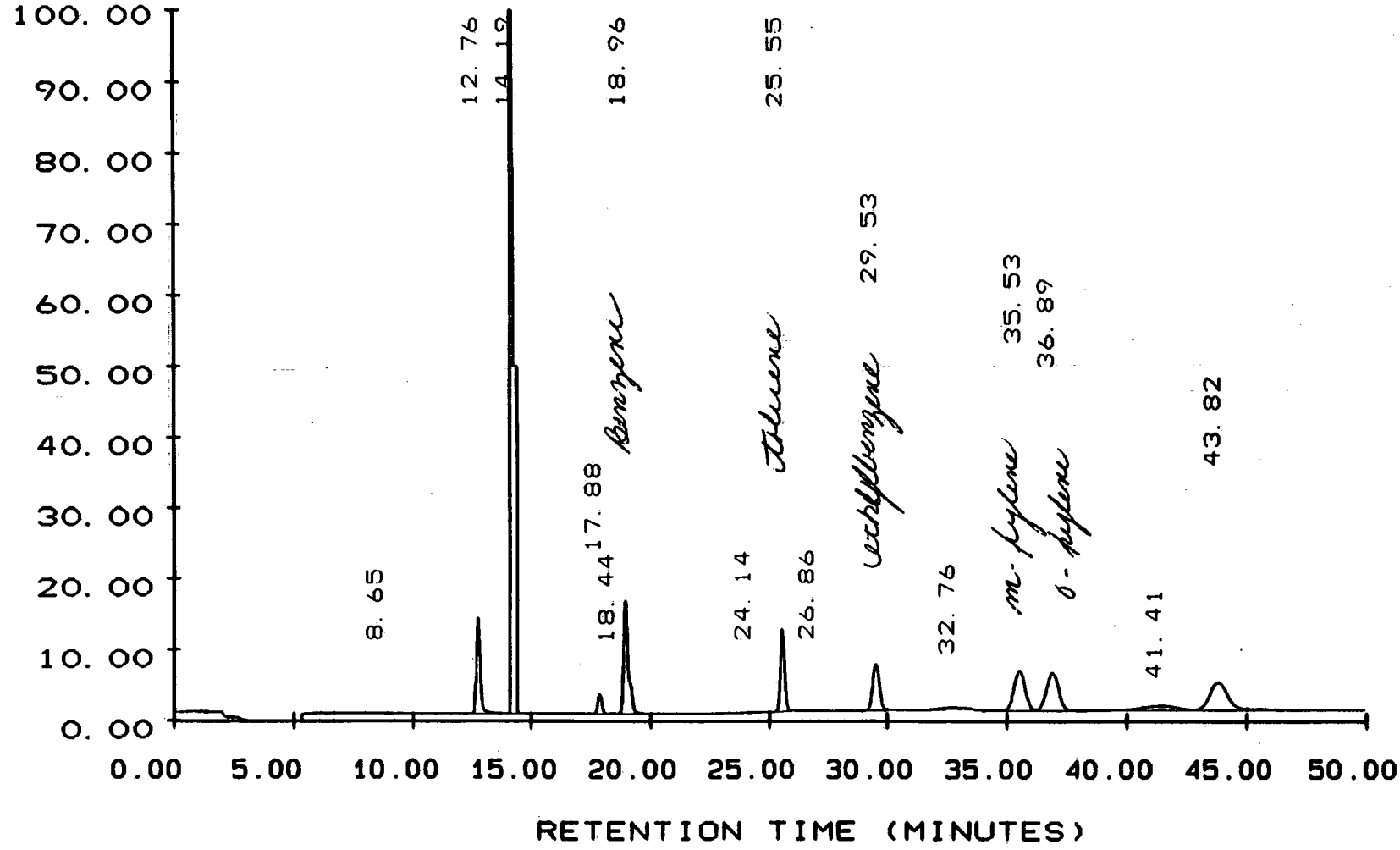
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	21890	443		3.662			
				10.730		1,1-DICHLOROETHENE	
004	1114253	93654		12.722		TRANS-1,2-DICHLOROET	17.360
005	202802	17647	T	17.844			
006	7747	619	T	18.395		TRICHLOROETHENE	
007	1445213	102810		18.921		BENZENE	17.051
				20.214		2-CHLOROETHYLVINYLET	
008	6366	479	V	24.084		TETRACHLOROETHENE	
				24.644		aaa-TRIFLUOROTOLUENE	
010	994754	78504	V	25.481		TOLUENE	17.746
				26.830		CHLOROBENZENE	
012	939328	46848		29.404		ETHYLBENZENE	17.981
013	23516	807		33.193			
014	1256483	40279	T	35.312		M - XYLENE	20.282
015	1310299	37903		36.647		O - XYLENE	22.704
				36.850		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
016	1466983	28320		43.459		1,2-DICHLOROBENZENE	25.244
				44.609		1,4-DICHLOROBENZENE	

All compounds were quantitated using method 20
except those which are labeled.

CCV B

SAMPLE NO. : 09309320 . 17
TEST NO. :
METHOD NO. : 20 / 20

INSTRUMENT: 20
DATE TIME: 10/01/93 02:07:19
PAGE NO. : 01



Y MAXIMUM: 86930.
Y MINIMUM: 6092.

START TIME: 0.00
END TIME: 50.00

0087

Roy F. Weston, Inc. - Lionville Laboratory 10/01/93 02:57:34

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .17 INST:20 VIAL:F0 SEQ NUMBER:017
TEST : DATE-TIME INJECTED : 10/01/93 02:07:19
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/01/93 02:57:34
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: CCV B RAW FILE: RAW2:J1337523
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	8761	527		8.649			
				10.730		1,1-DICHLOROETHENE	
004	1271003	107134	T	12.757		TRANS-1,2-DICHLOROET	19.853
005	0468103	800211		14.187			
006	249724	21703	T	17.885			
007	10801	865	T	18.440		TRICHLOROETHENE	0.067
008	1767025	126252	V	18.964		BENZENE	20.907
				20.214		2-CHLOROETHYLVINYLET	
010	7524	566	V	24.141		TETRACHLOROETHENE	
				24.644		aaa-TRIFLUOROTOLUENE	
011	1172943	92076	V	25.551		TOLUENE	20.751
012	27629	483	V	26.859		CHLOROBENZENE	
013	1077339	52396	V	29.531		ETHYLBENZENE	20.067
014	138190	2080		32.759			
015	1437773	45523	T	35.534		M - XYLENE	22.872
			V	36.850		P - XYLENE	
016	1498729	42726		36.893		O - XYLENE	25.557
017	502720	4825	T	41.415			
				42.154		1,3-DICHLOROBENZENE	
018	1714867	31610		43.822		1,2-DICHLOROBENZENE	28.122
				44.609		1,4-DICHLOROBENZENE	

All compounds were quantitated using method 20
except those which are labeled.

VIII. Raw QC Data: Blank and Matrix Spike Data

GC VOLATILES SHEET

CLIENT SAMPLE NO.

BLK

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 93LV5148-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337291

Level: (low/med) LOW

Date Received: 09/30/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
108-88-3	Toluene	1.0	U
1330-20-7	Xylene (total)	2.0	U

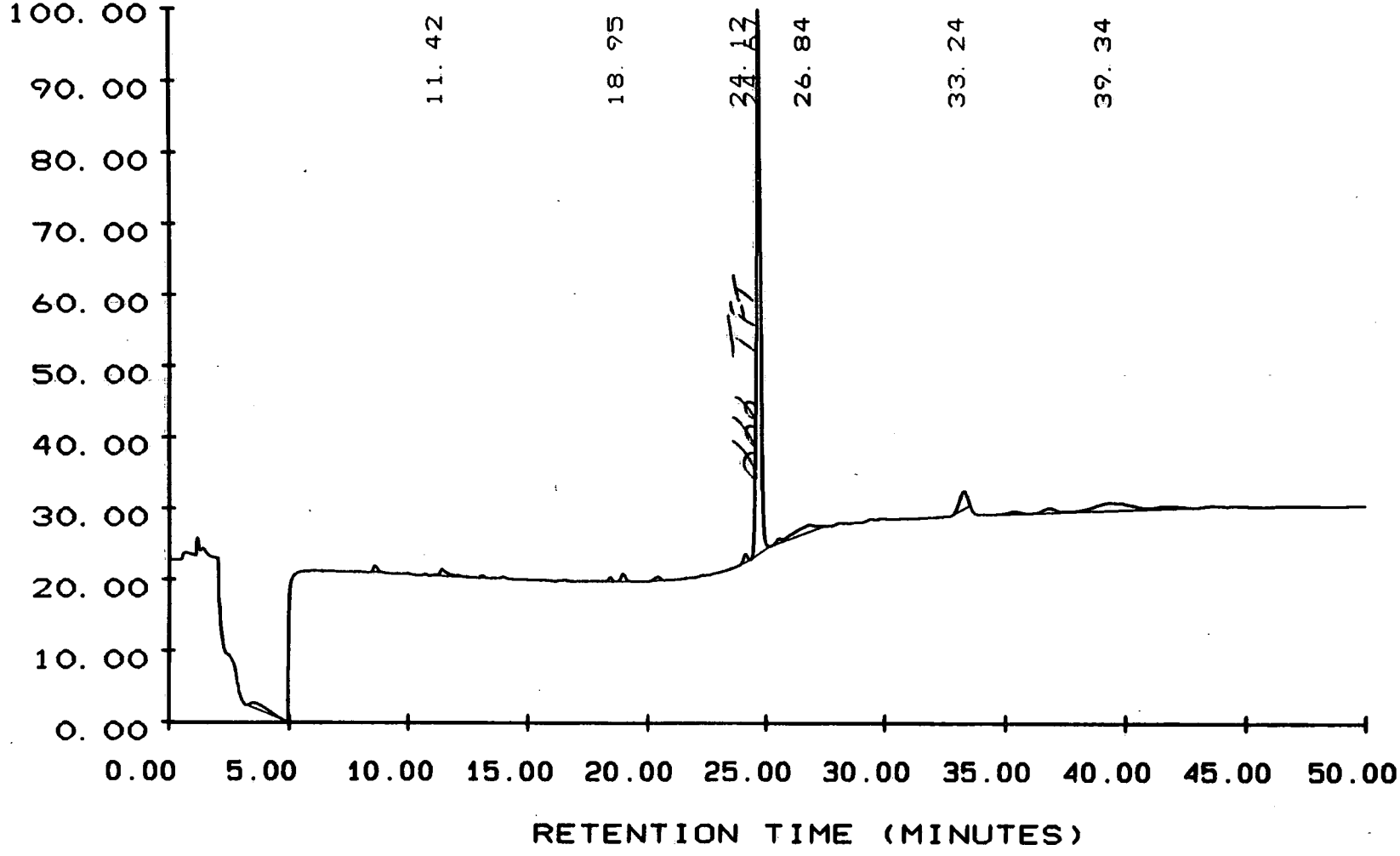
12/88 Rev.

93LV5148-MB1

SAMPLE NO. : 09309320 .01 INSTRUMENT: 20

TEST NO. : DATE TIME: 09/30/93 10:19:34

METHOD NO. : 20 / 20 PAGE NO. : 01



Y MAXIMUM: 10349. START TIME: 0.00

Y MINIMUM: 6154. END TIME: 50.00

0091

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 11:09:58

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .01 INST:20 VIAL:F0 SEQ NUMBER:001
TEST : DATE-TIME INJECTED : 09/30/93 10:19:34
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 11:09:58
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: 93LV5148-MB1 RAW FILE: RAW2:IU337291
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
				10.730	M	1,1-DICHLOROETHENE	
003	12954	409		11.420			
				12.713	M	TRANS-1,2-DICHLOROET	
				18.409	M	TRICHLOROETHENE	
005	6438	473	V	18.947	M	BENZENE	~~0.217~~
				20.214	M	2-CHLOROETHYLVINYLET	
007	5646	479	V	24.123	M	TETRACHLOROETHENE	
008	383852	31853	V	24.672	M	aaa-TRIFLUOROTOLUENE	17.736
				25.469	M	TOLUENE	
009	33523	416		26.835	M	CHLOROBENZENE	
				29.389	M	ETHYLBENZENE	
010	24014	1044		33.238			
				35.287	M	M - XYLENE	
				36.623	M	O - XYLENE	
				36.855	M	P - XYLENE	
013	49536	461	T	39.339			
				42.154	M	1,3-DICHLOROBENZENE	
				43.456	M	1,2-DICHLOROBENZENE	
				44.609	M	1,4-DICHLOROBENZENE	

LKD 10/15/93

GC VOLATILES SHEET

CLIENT SAMPLE NO.

BLKMS

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 93LV5148-MB1 BS

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337307

Level: (low/med) LOW

Date Received: 09/30/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene		SP
100-41-4	Ethylbenzene		SP
108-88-3	Toluene		SP
1330-20-7	Xylene (total)		SP

SP: SPIKE COMPOUND

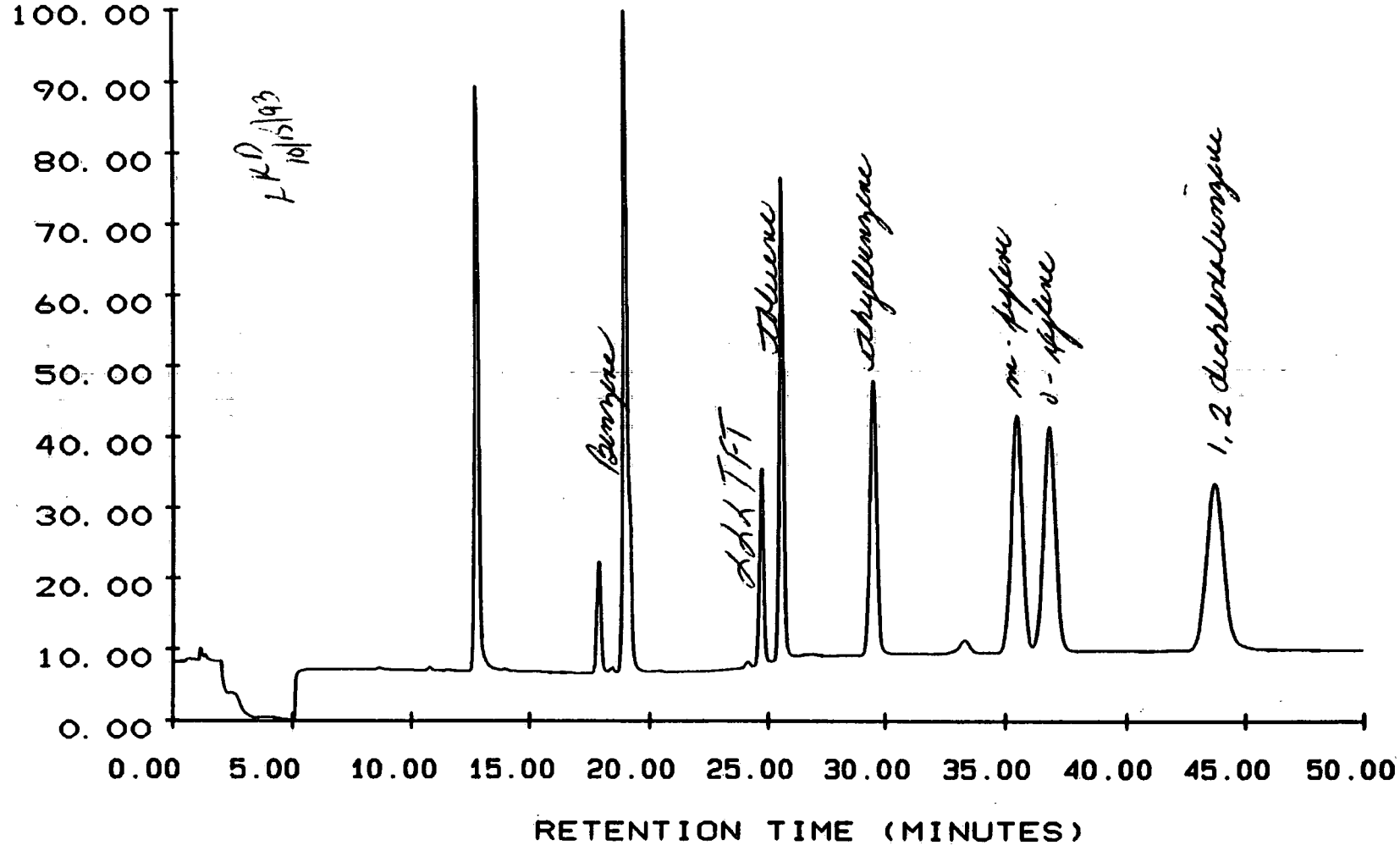
12/88 Rev.

93LV5148-MB1S

SAMPLE NO. : 09309320 .02 INSTRUMENT: 20

TEST NO. : DATE TIME: 09/30/93 11:16:41

METHOD NO. : 20 / 20 PAGE NO. : 01



Y MAXIMUM: 19180. START TIME: 0.00

Y MINIMUM: 6018. END TIME: 50.00

0094

Roy F. Weston, Inc. - Lionville Laboratory 09/30/93 12:09:23

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .02 INST:20 VIAL:F0 SEQ NUMBER:002
TEST : DATE-TIME INJECTED : 09/30/93 11:16:41
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 09/30/93 12:09:23
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: 93LV5148-MB1MS RAW FILE: RAW2:IU337307
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
003	8532	609	T	10.777		1,1-DICHLOROETHENE	
005	1278477	107576		12.749		TRANS-1,2-DICHLOROET	19.935
006	235732	20293	T	17.878			
007	11285	905	T	18.428		TRICHLOROETHENE	~~0.080~~
008	1685007	121760	T	18.955		BENZENE	20.168 ✓
				20.214		2-CHLOROETHYLVINYLET	
010	12894	998	V	24.136		TETRACHLOROETHENE	~~0.209~~
011	431949	35927	V	24.696		aaa-TRIFLUOROTOLUENE	19.916 ✓
012	1129127	89029	V	25.527		TOLUENE	20.076 ✓
				26.830		CHLOROBENZENE	
014	1027584	50902		29.482		ETHYLBENZENE	19.505 ✓
015	25042	1285		33.314			
016	1385633	44048	T	35.446		M - XYLENE	22.144 ✓ / 22.69 = 19.519] 19.518
017	1463709	41882		36.795		O - XYLENE	25.058 ✓ / 25.68 = 19.516
			T	36.850		P - XYLENE	
				42.154		1,3-DICHLOROBENZENE	
019	1642561	31116		43.682		1,2-DICHLOROBENZENE	27.690
				44.609		1,4-DICHLOROBENZENE	

LKD 10/15/93

All compounds were quantitated using method 20
except those which are labeled.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-14SMS

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-001 MS

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: IU337487

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 09/30/93

Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene		SP
100-41-4	Ethylbenzene		SP
108-88-3	Toluene		SP
1330-20-7	Xylene (total)		SP

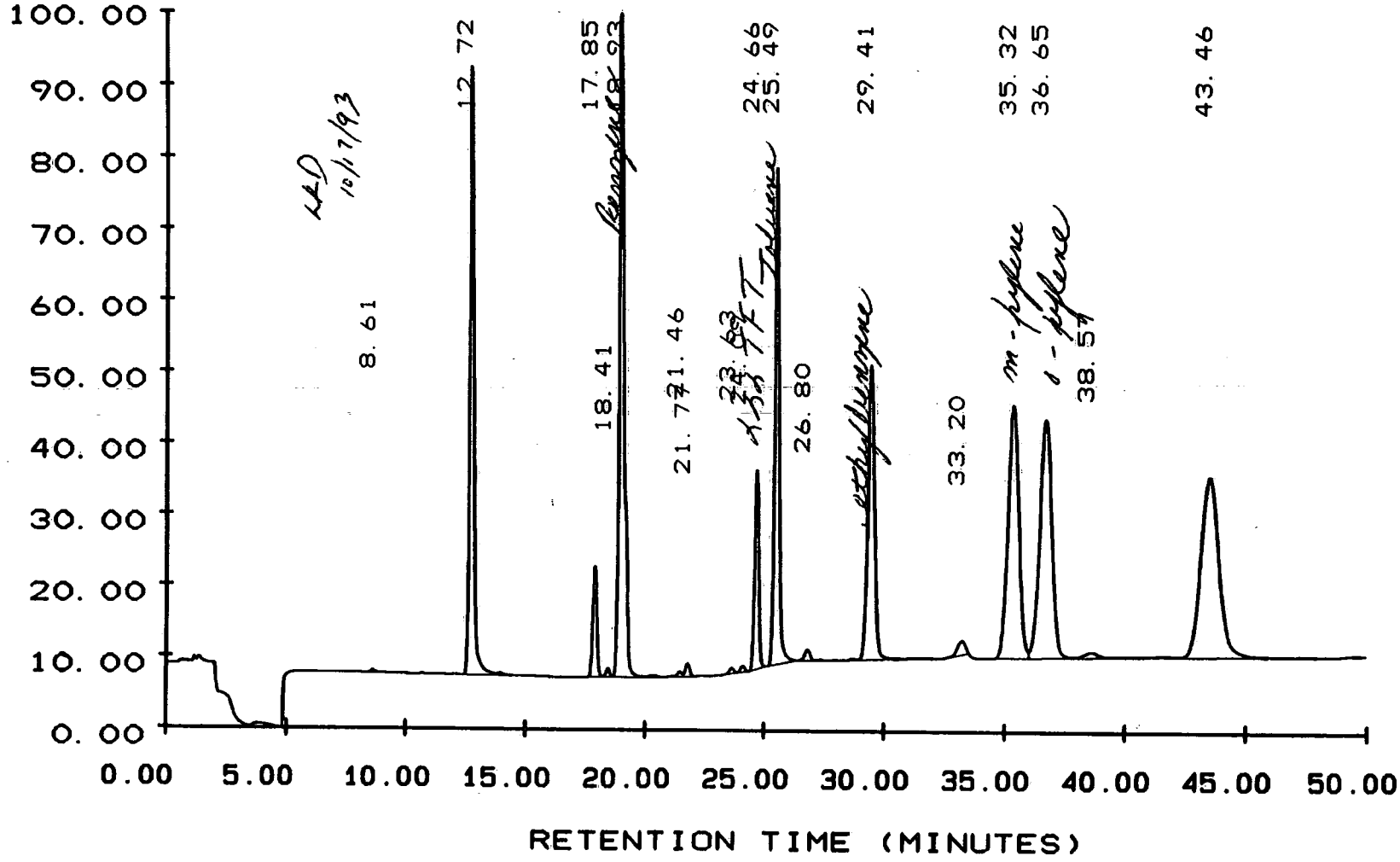
SP: SPIKE COMPOUND

12/88 Rev.

9309L956-001S

SAMPLE NO. : 09309320 . 14
TEST NO. :
METHOD NO. : 20 / 20

INSTRUMENT: 20
DATE TIME: 09/30/93 23:10:57
PAGE NO. : 01



Y MAXIMUM: 18176.
Y MINIMUM: 6025.

START TIME: 0.00
END TIME: 50.00

0097

Roy F. Weston, Inc. - Lionville Laboratory 10/01/93 07:54:47

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .14 INST:20 VIAL:F0 SEQ NUMBER:014
TEST : 0602X DATE-TIME INJECTED : 09/30/93 23:10:57
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/01/93 07:54:47
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: MW-14S SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-001MS RAW FILE: RAW2:IU337487
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	20207	466		3.861			
002	6216	448		8.609			
				10.730		1,1-DICHLOROETHENE	
003	1221261	102446	V	12.722		TRANS-1,2-DICHLOROET	18.986
004	217070	18646	T	17.848			
005	18353	1514	T	18.411		TRICHLOROETHENE	~~0.272~~
006	1556121	111831	T	18.925		BENZENE	18.535 ✓
				20.214		2-CHLOROETHYLVINYLET	
008	13910	908	T	21.457			
009	28365	2218	V	21.766			
010	13898	949	V	23.626			
011	12506	1023	V	24.090		TETRACHLOROETHENE	~~0.221~~
012	404160	33593	V	24.656		aaa-TRIFLUOROTOLUENE	18.667 ✓
013	1098747	84081	V	25.485		TOLUENE	18.981 ✓
014	29517	1836	V	26.805		CHLOROBENZENE	~~0.041~~
016	994924	50052	V	29.407		ETHYLBENZENE	19.186 ✓
018	58078	2368		33.201			
019	1342405	43082	T	35.315		M - XYLENE	21.666
020	1402079	40628		36.650		O - XYLENE	24.316
			T	36.850		P - XYLENE	
021	44318	929		38.571			
				42.154		1,3-DICHLOROBENZENE	
023	1583067	30668		43.460		1,2-DICHLOROBENZENE	27.298
				44.609		1,4-DICHLOROBENZENE	

LKD 10/17/93

/22.69 = 19.097] 19.018
/25.68 = 18.938

All compounds were quantitated using method 20
except those which are labeled.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-14SMSD

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9309L956-001 MSD

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: J1337501

Level: (low/med) LOW

Date Received: 09/17/93

% Moisture: not dec. _____

Date Analyzed: 10/01/93

Column: (pack/cap) PACK

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2	Benzene		SP
100-41-4	Ethylbenzene		SP
108-88-3	Toluene		SP
1330-20-7	Xylene (total)		SP

SP: SPIKE COMPOUND

12/88 Rev.

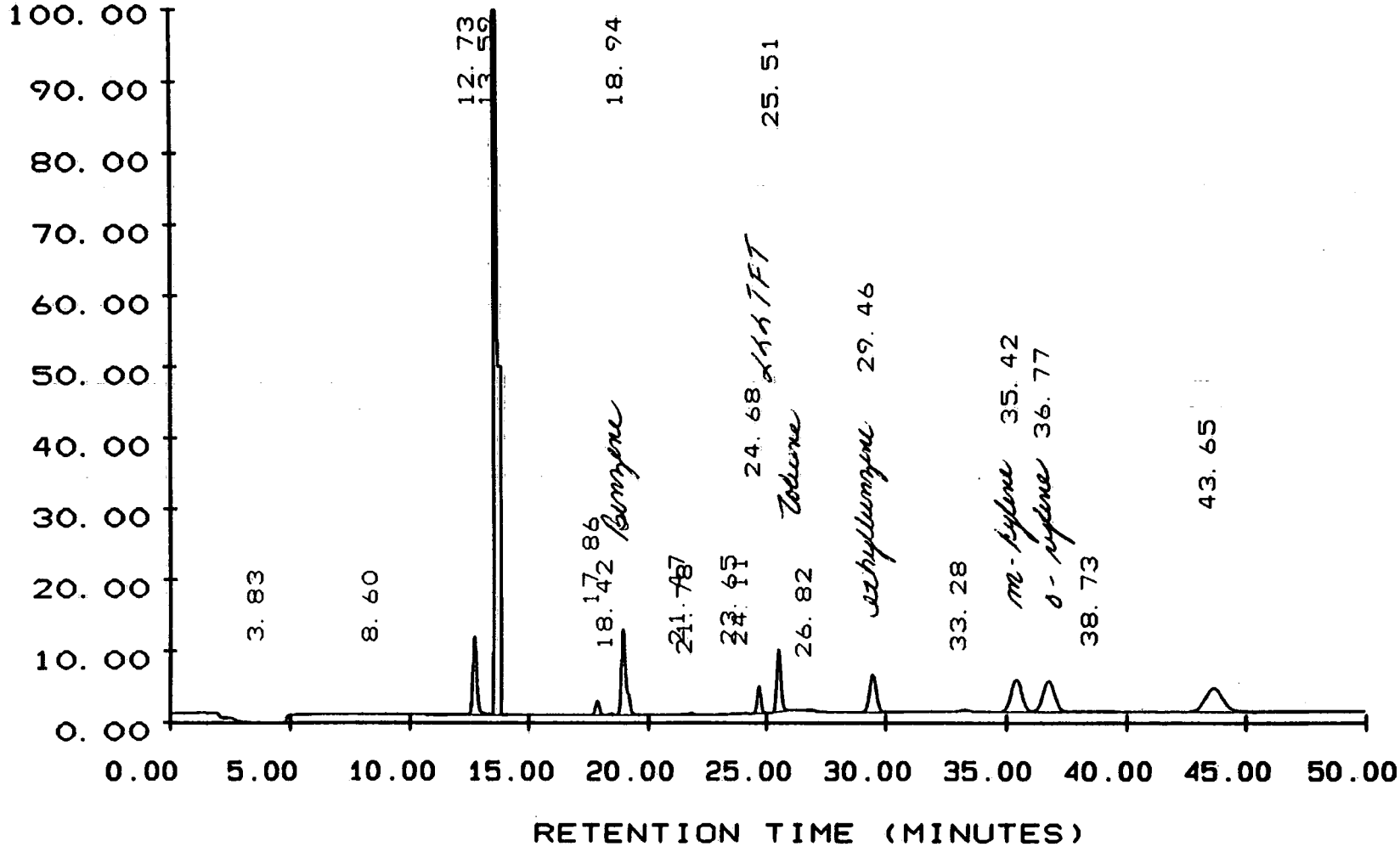
9309L956-001T

SAMPLE NO. : 09309320 . 15 INSTRUMENT: 20

TEST NO. : DATE TIME: 10/01/93 00:07:47

METHOD NO. : 20 / 20 PAGE NO. : 01

0100



Y MAXIMUM: 86920. START TIME: 0.00

Y MINIMUM: 6042. END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/01/93 00:58:03

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09309320 .15 INST:20 VIAL:F0 SEQ NUMBER:015
TEST : 0602X DATE-TIME INJECTED : 10/01/93 00:07:47
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/01/93 00:58:03
METHOD: 20 / 20 REV #: 00015 ANALYST: LINDAD SAMP RATE: 0.78
CLIENT ID: MW-14S SAMPLE VOL: 5.0 ML
CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
LAB ID: 9309L956-001MSD RAW FILE: RAW2:J1337501
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	15324	418		3.829			
002	9033	485		8.605			
				10.730		1,1-DICHLOROETHENE	
003	1017109	87051	T	12.725		TRANS-1,2-DICHLOROET	16.140
004	0500955	799939		13.589			
005	182893	15632	T	17.858			
006	16909	1411	T	18.422		TRICHLOROETHENE	~~0.240~~
007	1328121	95764	T	18.936		BENZENE	15.892 ✓
				20.214		2-CHLOROETHYLVINYLET	
009	12396	798	T	21.473			
010	24396	1899	V	21.781			
011	12231	829	V	23.646			
012	11494	943	V	24.113		TETRACHLOROETHENE	~~0.181~~
013	364675	30335	V	24.679		aaa-TRIFLUOROTOLUENE	16.923 ✓
014	911011	70214	V	25.510		TOLUENE	15.910 ✓
015	62097	2253	V	26.818		CHLOROBENZENE	~~0.158~~
016	849358	42314	V	29.457		ETHYLBENZENE	16.276 ✓
018	31022	1484		33.283			
019	1146211	36408	T	35.418		M - XYLENE	18.370 / 22.69 = 16.192] 16.231 ✓
020	1212467	34836		36.767		O - XYLENE	20.890 / 25.68 = 16.269]
			T	36.850		P - XYLENE	
021	55917	938		38.726			
				42.154		1,3-DICHLOROBENZENE	
023	1392935	26699		43.654		1,2-DICHLOROBENZENE	23.827
				44.609		1,4-DICHLOROBENZENE	

LKD 10/17/93

All compounds were quantitated using method 20
except those which are labeled.

Roy F. Weston, Inc. Lionville, Lab.

SAMPLE PREP RECORD

Sheet no.: 1

Extract. Date: 09/30/93 Extraction Batch No: 93LV5148 Analyst: LD Method: N/A

Test: 0602 Cleanup Date: Analyst: Client: LE CARPENTER

LIMS Report Date: 10/20/93 Solvent: Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
9309L956-	LE CARPENTER										
001 X	MW-14S	2.00	5	1.0		5		1.0	N	0.0	1.0
001 XS	MW-14S	2.00	5	1.0	1.0	5		1.0	N	0.0	1.0
001 XT	MW-14S	2.00	5	1.0	1.0	5		1.0	N	0.0	1.0
002 X	MW-22	2.00	5	1.0		5		1.0	N	0.0	1.0
002 X D1	MW-22	2.00	5	1.0		5		1.0	N	0.0	1.0
002 X D2	MW-22	2.00	5	1.0		5		1.0	N	0.0	1.0
003 X	MW-25	2.00	5	1.0		5		1.0	N	0.0	1.0
004 X	MW-4	2.00	5	1.0		5		1.0	N	0.0	1.0
005 X	MW-15S	2.00	5	1.0		5		1.0	N	0.0	1.0
006 X	TRIP BLANK	2.00	5	1.0		5		1.0	N	0.0	1.0
93LV5148-MB1 X		7.00	5	1.0		5		1.0	N	0.0	1.0
93LV5148-MB1 XS		7.00	5	1.0	1.0	5		1.0	N	0.0	1.0

Comments:
Surrogate: 5 UL 601/602-16/07
Spike: 10 UL MIX B-21/03

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer

0103

XII. Other/Miscellaneous

End of Data Package