FINAL REPORT

EPA Region 5 Records Ctr.
206933

Lenz Oil Settling Respondents

Remedial Investigation Report
Lenz Oil Service, Inc. Site
Lemont, Illinois

Volume 5 of 6

Revision 1

October 1992

Project No. 0252

Environmental Resources Management-North Central, Inc.
540 Lake Cook Road, Suite 300
Deerfield, Illinois 60015

ERM

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APPENDIX J

GEOTECHNICAL TESTING RESULTS

APPENDIX J

GEOTECHNICAL SAMPLE RESULTS

Soil samples were collected from the screened intervals of monitoring wells MW-1S, MW-2S, MW-4S, and MW-5S for submittal to ATEC and Associates, Inc. in Indianapolis, Indiana, for grain size, porosity, and total organic carbon (TOC) testing. A duplicate sample was obtained from the same split spoon as the investigative sample from MW-4S; however, the duplicate sample was collected from the silty-clay facies, and the investigative sample was taken from the silty-gravel facies. Therefore, the duplicate sample has been treated as an additional investigative sample rather than a means of comparison with the investigative sample from MW-4S.

The results of the geotechnical tests for porosity and TOC are summarized on Table J-1, and the complete laboratory report is included in this appendix. In general, the results of the grain size analyses agree with the field descriptions of the sample intervals. The grain size data for samples MW01S and MW04SDUP, which were collected from the silty-clay facies, show that these samples consisted of clayey silt with traces of sand and gravel. The results from samples MW02S, MW04S, and MW05S which were obtained from the silty-gravel facies show that these samples were comprised of very poorly sorted, sandy gravel with some silt and clay. These results are consistent with the definitions of the silty-clay and silty-gravel facies.

As shown on Table J-1, the porosity of the unconsolidated aquifer material samples ranges from 19.1 to 57.0 percent, and the geometric mean of the porosity results is 36.8 percent. The geometric mean was calculated by using the following equation:

$$\bar{x} = e^{p}$$

where:

$\bar{x}$ = Geometric mean

$$p = \frac{\log X_1 + \log X_2 + \log X_n}{n}$$

X = Porosity value

n = Number of porosity values

The TOC content of the samples ranges from 1,608 to 15,000 mg/Kg, and the arithmetic mean of the TOC data is 12,121 mg/Kg (i.e., 1.2 percent). The arithmetic mean was calculated using the following equation:

$$\bar{x} = \frac{\Sigma X}{n}$$

where:

$\bar{x}$ = Arithmetic mean

X = TOC value

n = Number of TOC values

The dry density (i.e., bulk density) of the samples ranges from 68.7 to 139 lbs/ft^3, and the arithmatic mean of the dry weight data is 99.075 lbs/ft^3. For the purpose of calculating the travel times of the compounds in the ground water, the bulk density was converted from lbs/ft^3 to grams/cm^3 using the following equation:

$$\bar{\rho} = \bar{\rho}_{lbs/ft3} \times \frac{0.454Kg}{1\ lb} \times \frac{1\ ft^3}{28{,}317cm^3} \times \frac{1{,}000\ gm}{1\ Kg}$$

Where:

$\bar{\rho}$ = average bulk density in gm/cm^3

$\bar{\rho}_{lbs/ft3}$ = average bulk density in lbs/ft^3

x = multiply

TABLE J-1

GEOTECHNICAL ANALYTICAL RESULTS
LENZ OIL SITE
LEMONT, ILLINOIS

Sample Number	Sample Interval (feet)	Porosity (percent)	TOC (mg/Kg)	Dry Density (lb/ft^3)
MW01S	6 - 10	31.4	15,000	116.1
MW02S	8 - 12	NA	1,608	NA
MW04S	6 - 10	57.0	14,000	68.7
MW04SDUP	6 - 10	53.7	15,000	72.5
MW05S	11 - 15	19.1	15,000	139

Key:

TOC = Total organic carbon.
NA = Not analyzed.

ATEC Associates, Inc.
5150 East 65th Street
Indianapolis, Indiana 46220-4871
[317] 849-4990, FAX # [317] 849-4278

RECEIVED
JUN 17 1991
ERM-NORTH CENTRAL, INC.

June 12, 1991

ERM North Central
102 Wilmot, Suite 300
Deerfield, IL 60015

Attention: Mr. Dave Edwards

Re: Lenz Oil
ATEC Project No. 21-02463

Gentlemen:

Enclosed are the laboratory results of the tests of the materials shown below.

Number	Test	Material
5	Grain-size Analysis	Soil Samples
4	Porosity (Moisture Content, Density, & Specific Gravity)	Soil Samples
4	TOC	Soil Samples

We appreciate the opportunity to be of service to you on this project. If you have any questions, please feel free to contact our office.

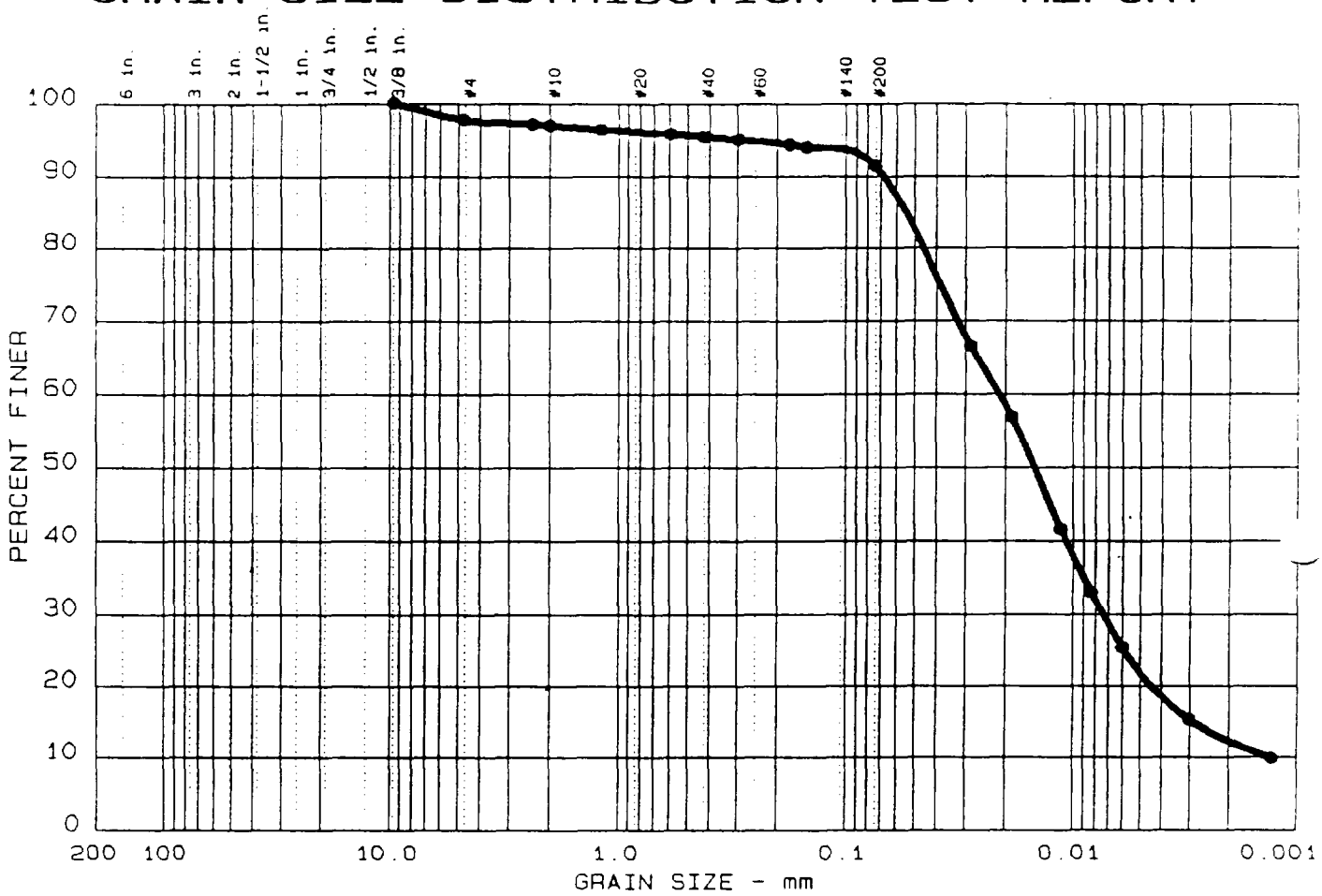
Very truly yours,
ATEC Associates, Inc.

Gordon L. Pickett
Laboratory Manager

James T. Sherer, P.E.
Assistant Vice President

copies: (2) Client

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	2.3	6.4	69.6	21.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●					0.01	0.007	0.0029	0.0013	1.97	16.1

MATERIAL DESCRIPTION	USCS	AASHTO
●		

Project No.: 21-02463
Project: Lenz Oil / ERM Project No. 0252JI
● Location: LO MW 01S (3-11-91)

Date: 6-12-91

Remarks:
Moisture Content: 16.4%
Dry Density (pcf): 115.1
Porosity: 0.314

GRAIN SIZE DISTRIBUTION TEST REPORT

ATEC Associates, Inc.

Figure No.

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 14

Date: 6-12-91
Project No.: 21-02463
Project: Lenz Oil / ERM Project No. 0252JI

Sample Data

Location of Sample: LO MW 01S (3-11-91)
Sample Description:
USCS Class: Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks: Moisture Content: 16.4% Dry Density (pcf): 116.1
Porosity: 0.314
Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	243.82
Tare =	2.17
Dry sample weight =	241.65

Sample split on number 10 sieve
Split sample data:
Sample and tare = 173.28 Tare = 123.4 Sample weight = 49.88
Cumulative weight retained tare= 123.4
Tare for cumulative weight retained= 2.17

Sieve	Cumul. Wt. retained	Percent finer
0.375 inches	2.17	100.0
# 4	7.76	97.7
8	9.21	97.1
# 10	9.63	96.9
# 16	123.70	96.3
# 30	124.03	95.7
# 40	124.21	95.3
# 50	124.39	95.0
# 80	124.76	94.3
# 100	124.96	93.9
# 200	126.29	91.3

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 96.9
Weight of hydrometer sample: 50.03
Hygroscopic moisture correction:
Moist weight & tare = 35.00

Dry weight & tare = 34.92
Tare = 11.31
Hygroscopic moisture= 0.3 %
Calculated biased weight= 51.45
Table of composite correction values:
Temp, deg C: 20.0 27.0
Comp. corr: - 6.5 - 4.5
Meniscus correction only= 0
Specific gravity of solids= 2.71
Specific gravity correction factor= 0.987
Hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

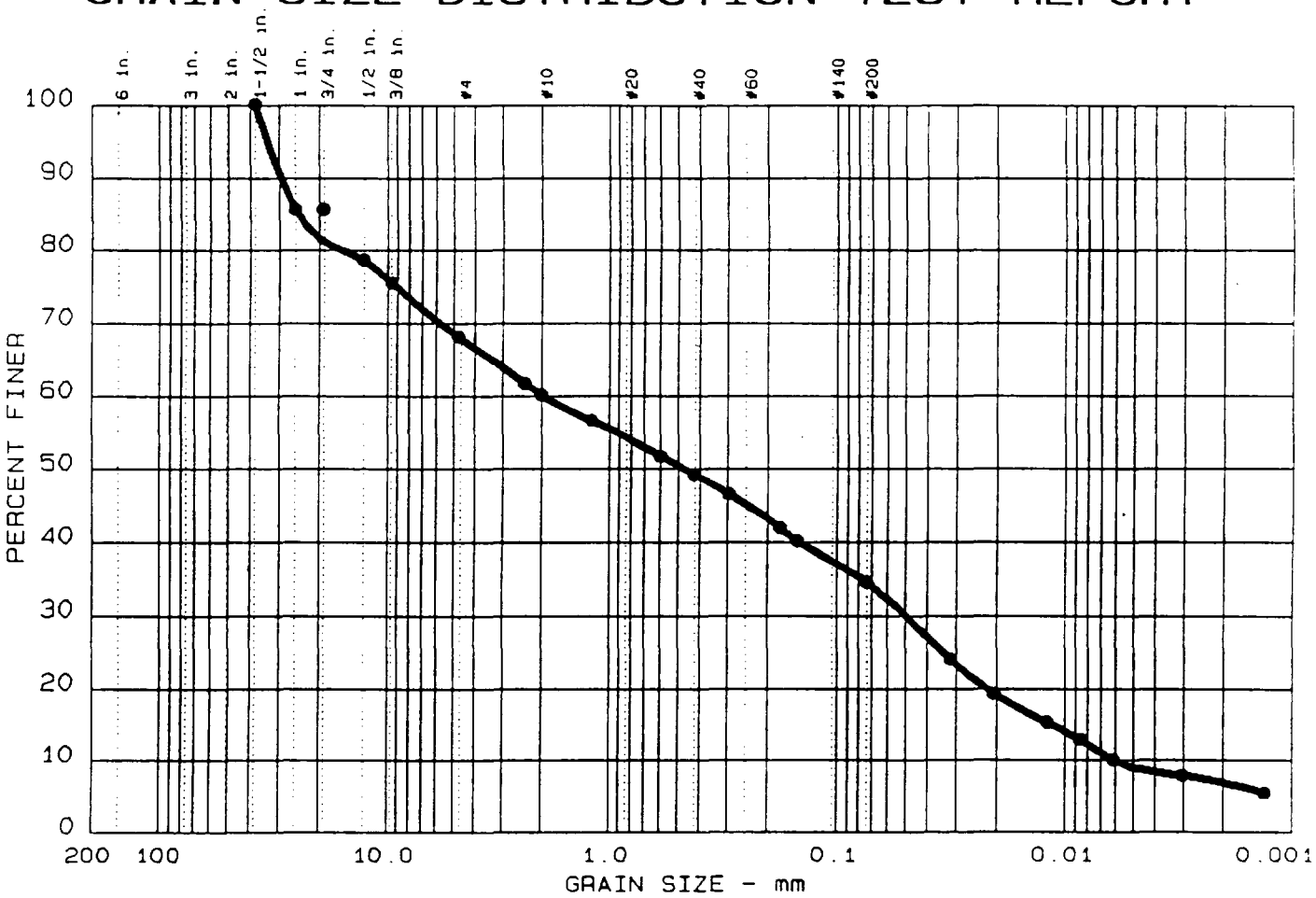
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	24.0	40.0	34.6	0.0128	40.0	9.7	0.0282	66.4
5.0	24.0	35.0	29.6	0.0128	35.0	10.6	0.0186	56.9
15.0	24.0	27.0	21.6	0.0128	27.0	11.9	0.0114	41.5
30.0	24.0	22.5	17.1	0.0128	22.5	12.6	0.0083	32.9
60.0	24.0	18.5	13.1	0.0128	18.5	13.3	0.0060	25.2
250.0	25.0	13.0	7.9	0.0126	13.0	14.2	0.0030	15.2
1440.0	24.0	10.5	5.1	0.0128	10.5	14.6	0.0013	9.9

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 2.3 % SAND = 6.4
% SILT = 69.6 % CLAY = 21.7

D95= 0.05 D60= 0.021 D50= 0.015
D30= 0.0074 D15= 0.00294 D10= 0.00131
Cc = 1.9679 Cu = 16.0694

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	31.9	33.6	25.6	8.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			24.77	1.97	0.47	0.049	0.0116	0.0061	0.20	323.6

MATERIAL DESCRIPTION	USCS	AASHTO
●		

Project No.: 21-02463
Project: Lenz Oil / ERM Project No. 0252JI
● Location: LO MW 02S

Date: 6-12-91

Remarks:
Moisture Content: 10.4%
This sample was not suitable for density, sp. grav. & porosity.

GRAIN SIZE DISTRIBUTION TEST REPORT
ATEC Associates, Inc.

Figure No.

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 11

Date: 6-12-91
Project No.: 21-02463
Project: Lenz Oil / ERM Project No. 0252JI

Sample Data

Location of Sample: LO MW 02S
Sample Description:
USCS Class: Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks: Moisture Content: 10.4% This sample was not suitable for density, sp. grav, & porosity.
Lab. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	687.60
Tare =	106.70
Dry sample weight =	580.90

Sample split on number 10 sieve
Split sample data:
Sample and tare = 157.53 Tare = 107.63 Sample weight = 49.9
Cumulative weight retained tare= 107.63
Tare for cumulative weight retained= 106.7

Sieve		Cumul. Wt. retained	Percent finer
1.5	inches	106.70	100.0
1	inches	190.40	85.6
0.75	inches	190.40	85.6
0.5	inches	230.80	78.6
0.375	inches	248.70	75.6
# 4		292.00	68.1
# 8		328.80	61.8
# 10		338.60	60.1
# 16		110.54	56.6
# 30		114.67	51.6
# 40		116.72	49.1
# 50		118.92	46.5
# 80		122.77	41.9
# 100		124.23	40.1
# 200		128.87	34.5

Hydrometer Analysis Data

S paration sieve is number 10
Percent -# 10 based on complete sample= 60.1
W ight of hydrometer sample: 50
H groscopic moisture correction:
Moist weight & tare = 34.89
Dry weight & tare = 34.84
Tare = 11.80
Hygroscopic moisture= 0.2 %
Calculated biased weight= 83.04
T ble of composite correction values:
Temp, deg C: 20.0 27.0
Comp. corr: - 6.5 - 4.5
M niscus correction only= 0
S ecific gravity of solids= 2.7
Specific gravity correction factor= 0.989
Hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

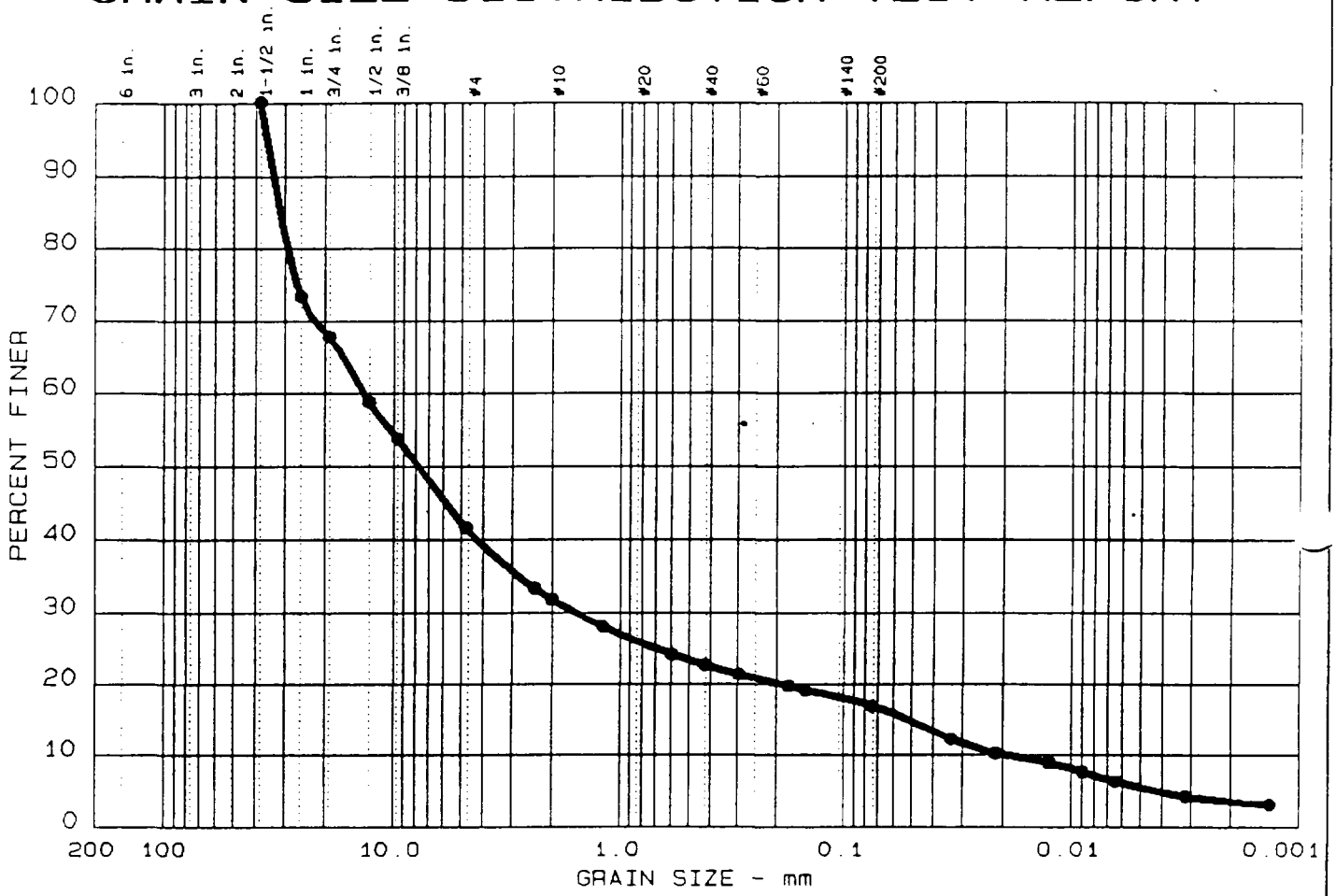
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	24.0	25.5	20.1	0.0128	25.5	12.1	0.0316	24.0
5.0	24.0	21.5	16.1	0.0128	21.5	12.8	0.0205	19.2
15.0	24.5	18.0	12.8	0.0127	18.0	13.3	0.0120	15.2
30.0	24.5	16.0	10.8	0.0127	16.0	13.7	0.0086	12.8
60.0	25.0	13.5	8.4	0.0127	13.5	14.1	0.0061	10.0
250.0	25.5	11.5	6.6	0.0126	11.5	14.4	0.0030	7.8
1440.0	22.0	10.5	4.6	0.0131	10.5	14.6	0.0013	5.4

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 31.9 % SAND = 33.6
% SILT = 25.6 % CLAY = 8.9

D85= 24.77 D60= 1.968 D50= 0.467
D 0= 0.0494 D15= 0.01159 D10= 0.00608
C = 0.2042 Cu = 323.5937

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	58.5	24.8	11.3	5.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			31.26	13.34	7.67	1.585	0.0519	0.0191	9.89	699.8

MATERIAL DESCRIPTION	USCS	AASHTO
●		

Project No.: 21-02463
Project: Lenz Oil / ERM Project No. 0252JI
● Location: LO MW 04S

Date: 6-12-91

Remarks:
Moisture Content: 51.1%
Dry Density (pcf): 68.7
Porosity: 0.570

GRAIN SIZE DISTRIBUTION TEST REPORT

ATEC Associates, Inc.

Figure No.

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 13

Date: 6-12-91
Project No.: 21-02463
Project: Lenz Oil / ERM Project No. 0252JI

Sample Data

Location of Sample: LO MW 04S
Sample Description:
USCS Class: Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks: Moisture Content: 51.1% Dry Density (pcf): 68.7
Porosity: 0.570
Flag No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	714.90
Tare =	110.40
Dry sample weight =	604.50

Sample split on number 10 sieve
Split sample data:
Sample and tare = 172.57 Tare = 122.97 Sample weight = 49.6
Cumulative weight retained tare= 122.97
Tare for cumulative weight retained= 110.4

Sieve		Cumul. Wt. retained	Percent finer
1.5	inches	110.40	100.0
1	inches	271.30	73.4
.75	inches	305.30	67.8
0.5	inches	359.80	58.7
0.375	inches	390.60	53.6
# 4		463.80	41.5
# 8		513.60	33.3
# 10		523.00	31.7
# 16		129.02	27.9
# 30		135.10	24.0
# 40		137.39	22.5
# 50		139.46	21.2
# 80		141.97	19.6
# 100		142.88	19.0
# 200		146.36	16.8

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 31.7
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 29.53
Dry weight & tare = 29.38
Tare = 11.49
Hygroscopic moisture= 0.8 %
Calculated biased weight= 156.19
Table of composite correction values:
Temp, deg C: 20.0 27.0
Comp. corr: - 6.5 - 4.5
Meniscus correction only= 0
Specific gravity of solids= 2.57
Specific gravity correction factor= 1.019
Hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

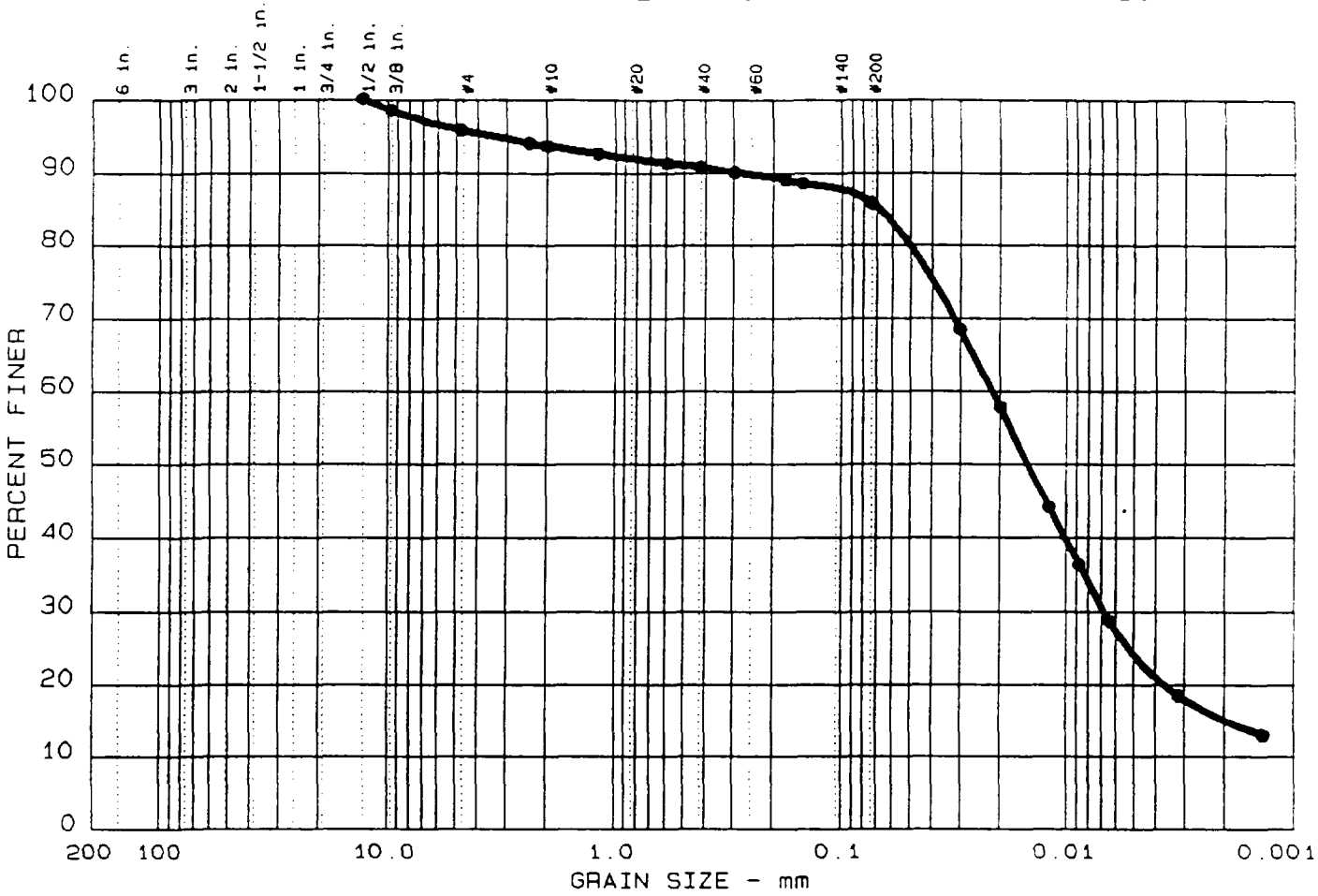
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	24.0	24.0	18.6	0.0133	24.0	12.4	0.0332	12.2
5.0	24.0	21.0	15.6	0.0133	21.0	12.9	0.0214	10.2
15.0	24.0	19.0	13.6	0.0133	19.0	13.2	0.0125	8.9
30.0	24.0	17.0	11.6	0.0133	17.0	13.5	0.0090	7.6
60.0	24.0	15.0	9.6	0.0133	15.0	13.8	0.0064	6.3
250.0	25.0	11.5	6.4	0.0132	11.5	14.4	0.0032	4.2
1440.0	24.0	10.0	4.6	0.0133	10.0	14.7	0.0013	3.0

Fractional Components

% > 3 in. = 0.0 % GRAVEL = 58.5 % SAND = 24.8
% SILT = 11.3 % CLAY = 5.4

D85= 31.26 D60= 13.335 D50= 7.674
D30 = 1.5849 D15= 0.05188 D10= 0.01905
Cc = 9.8855 Cu = 699.8420

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	4.2	10.0	61.8	24.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●					0.01	0.007	0.0020			

MATERIAL DESCRIPTION	USCS	AASHTO
●		

Project No.: 21-02463
Project: Lenz Oil / EAM Project No. 0252JI
● Location: LO MW 04S-D

Date: 6-12-91

Remarks:
Moisture Content: 42.5%
Dry Density (pcf): 72.5
Porosity: 0.537

GRAIN SIZE DISTRIBUTION TEST REPORT

ATEC Associates, Inc.

Figure No.

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 12

ıte: 6-12-91
Project No.: 21-02463
Project: Lenz Oil / ERM Project No. 0252JI

Sample Data

Location of Sample: LO MW 04S-D
Sample Description:
USCS Class: Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks: Moisture Content: 42.5% Dry Density (pcf): 72.5
Porosity: 0.537
Lab. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	238.97
Tare =	2.07
Dry sample weight =	236.90

Sample split on number 10 sieve
Split sample data:
Sample and tare = 172.7 Tare = 123.02 Sample weight = 49.68
Cumulative weight retained tare= 123.02
Tare for cumulative weight retained= 2.07

Sieve	Cumul. Wt. retained	Percent finer
0.5 inches	2.07	100.0
0.375 inches	5.80	98.4
# 4	12.10	95.8
# 8	16.38	94.0
# 10	17.37	93.5
# 16	123.55	92.5
# 30	124.25	91.2
# 40	124.53	90.7
# 50	124.89	90.0
# 80	125.46	88.9
# 100	125.72	88.5
# 200	127.14	85.8

Hydrometer Analysis Data

S paration sieve is number 10
Percent -# 10 based on complete sample= 93.5
Weight of hydrometer sample: 50.03
H groscopic moisture correction:
Moist weight & tare = 31.24
Dry weight & tare = 31.11
Tare = 11.64
Hygroscopic moisture= 0.7 %
Calculated biased weight= 53.13
Table of composite correction values:
Temp, deg C: 20.0 27.0
Comp. corr: - 6.5 - 4.5
Meniscus correction only= 0
S ecific gravity of solids= 2.51
Specific gravity correction factor= 1.035
Hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

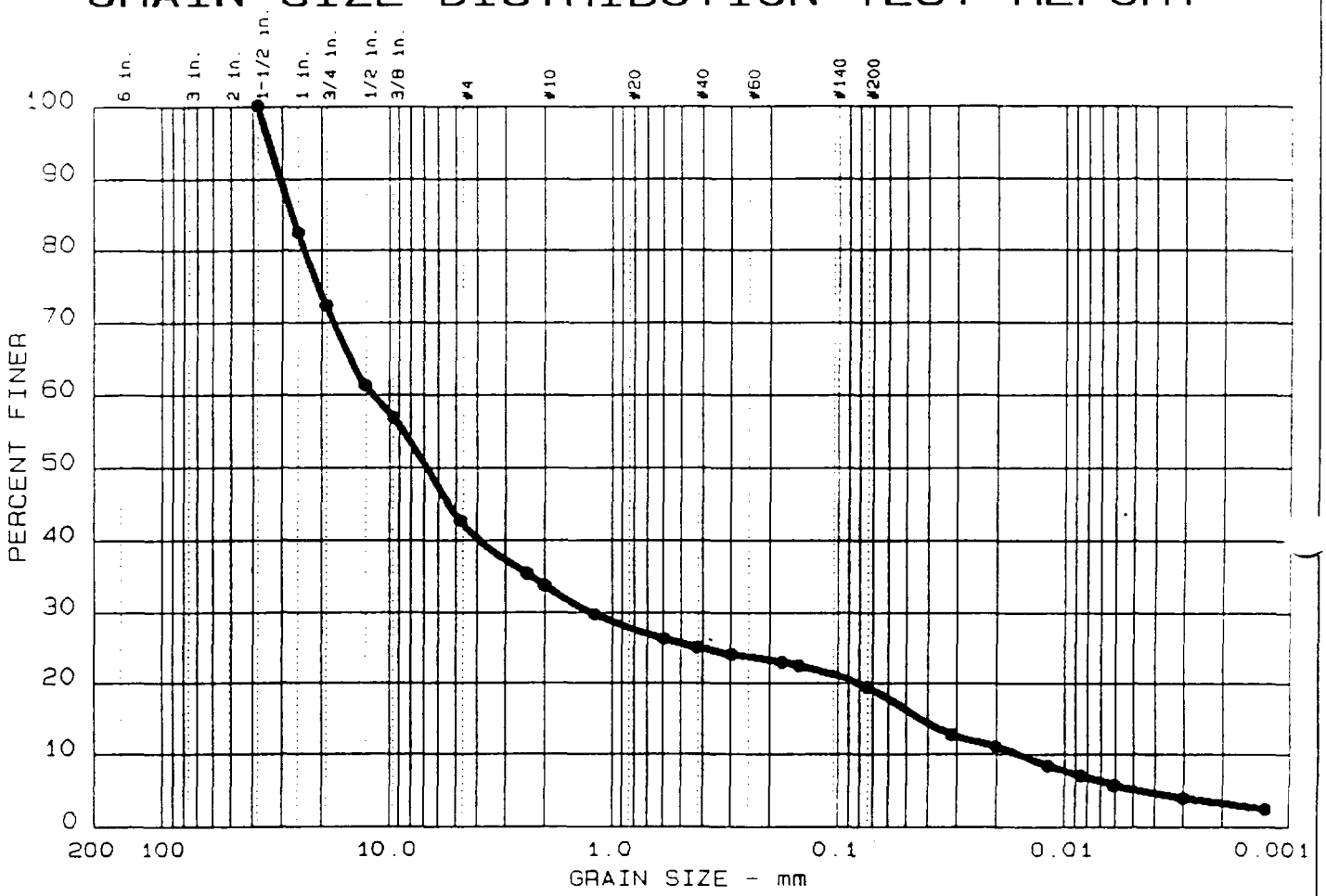
Elapsed ie, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	24.0	40.5	35.1	0.0136	40.5	9.7	0.0299	68.5
5.0	24.0	35.0	29.6	0.0136	35.0	10.6	0.0198	57.7
15.0	24.0	28.0	22.6	0.0136	28.0	11.7	0.0120	44.1
30.0	24.0	24.0	18.6	0.0136	24.0	12.4	0.0087	36.3
60.0	24.0	20.0	14.6	0.0136	20.0	13.0	0.0063	28.5
250.0	25.0	14.5	9.4	0.0134	14.5	13.9	0.0032	18.4
1440.0	24.0	12.0	6.6	0.0136	12.0	14.3	0.0014	12.9

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 4.2 % SAND = 10.0
% SILT = 61.8 % CLAY = 24.0

D85= 0.07 D60= 0.021 D50= 0.015
D 0= 0.0068 D15= 0.00199

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	57.4	23.3	14.2	5.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			27.10	11.69	6.73	1.253	0.0435	0.0158	8.51	741.3

MATERIAL DESCRIPTION	USCS	AASHTO
●		

Project No.: 21-02463
Project: Lenz Oil / ERM Project No. 0252JI
● Location: LO MW 05S (3-5-91)

Date: 6-12-91

Remarks:
Moisture Content: 8 4%
Dry Density (pcf): 139.0
Porosity: 0 191

GRAIN SIZE DISTRIBUTION TEST REPORT

ATEC Associates, Inc.

Figure No.

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 15

Date: 6-12-91
Project No.: 21-02463
Project: Lenz Oil / ERM Project No. 0252JI

Sample Data

Location of Sample: LO MW 05S (3-5-91)
Sample Description:
USCS Class: Liquid limit:
AASHTO Class: Plasticity index:

Notes

Remarks: Moisture Content: 8.4% Dry Density (pcf): 139.0
Porosity: 0.191
Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	808.30
Tare =	105.50
Dry sample weight =	702.80

Sample split on number 10 sieve
Split sample data:
Sample and tare = 157.47 Tare = 107.84 Sample weight = 49.63
Cumulative weight retained tare= 107.84
Tare for cumulative weight retained= 105.5

Sieve		Cumul. Wt. retained	Percent finer
1.5	inches	105.50	100.0
1	inches	229.20	82.4
.75	inches	299.80	72.4
.5	inches	377.90	61.2
0.375	inches	408.90	56.8
# 4		508.70	42.6
# 8		560.40	35.3
# 10		571.90	33.6
# 16		113.81	29.6
# 30		119.07	26.0
# 40		120.75	24.9
# 50		122.15	23.9
# 80		123.81	22.8
# 100		124.61	22.3
# 200		128.97	19.3

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 33.6
Weight of hydrometer sample: 50.03
Hygroscopic moisture correction:
  Moist weight & tare = 35.37
  Dry weight & tare = 35.18
  Tare = 11.75
  Hygroscopic moisture= 0.8 %
Calculated biased weight= 147.54
Table of composite correction values:
  Temp, deg C: 20.0 27.0
  Comp. corr: - 6.5 - 4.5
Meniscus correction only= 0
Specific gravity of solids= 2.76
Specific gravity correction factor= 0.976
Hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	24.0	24.5	19.1	0.0126	24.5	12.3	0.0312	12.7
5.0	24.0	22.0	16.6	0.0126	22.0	12.7	0.0201	11.0
15.0	24.0	18.0	12.6	0.0126	18.0	13.3	0.0119	8.4
30.0	24.0	16.0	10.6	0.0126	16.0	13.7	0.0085	7.0
60.0	24.0	14.0	8.6	0.0126	14.0	14.0	0.0061	5.7
250.0	25.0	11.0	5.9	0.0125	11.0	14.5	0.0030	3.9
1440.0	24.0	9.0	3.6	0.0126	9.0	14.8	0.0013	2.4

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 57.4 % SAND = 23.3
% SILT = 14.2 % CLAY = 5.1

D85= 27.10 D60= 11.695 D50= 6.730
D30= 1.2531 D15= 0.04345 D10= 0.01578
Cc = 8.5114 Cu = 741.3102

REPORT OF TEST RESULTS

ATEC Project Number 21-02463

Date: April 8, 1991

Client: ERM North Central
102 Wilmot
Suite 300
Deerfield, IL 60015

Sample Identification: Total Organic Carbon Analysis
SW 846 Method 9060

Sample Matrix: Soil
Date Received: March 14, 1991
Date Analyzed: March 21, 1991
Analyst: KAW
Verified By: DSS
ATEC Lab Number: 9103184

Sample I.D.	TOC	Detection Limit
LOMW01S	15,000 ppm	100 ppm

Respectfully submitted,
ATEC Associates, Inc.

Environmental/Analytical Testing Division

Date: May 28, 1991

Client: ERM North Central
102 Wilmot Road, Suite 300
Deerfield, IL 60015

Client Project Number: 21-02463
Sample Matrix: Soil
Date Sample Received: April 26, 1991
Date Sample Analyzed: April 26, 1991
Analytical Equipment: Dohrmann DC-80

TOTAL ORGANIC CARBON
ANALYTICAL RESULTS

ATEC Lab No. 9104283

Sample I.D.	Concentration (mg/L or mg/kg)	Detection Limit (mg/L or mg/kg)
MW02S	1608	100

Analytical Method: SW 846 Method 9060

Analyst: K. Kline
Verified: R. Gehlbach
Date Verified: May 24, 1991

Respectfully submitted,

Environmental/Analytical Testing Division

REPORT OF TEST RESULTS

ATEC Project Number 21-02463

Date: April 11, 1991

Client: ERM North Central
102 Wilmot Road, Suite 300
Deerfield, IL 60015

Sample Identification: Lenz Oil
Total Organic Carbon Analysis
SW 846 Method 9060

Sample Matrix: Soil
Date Received: March 19, 1991
Date Analyzed: April 9, 1991
Analyst: LLS
Verified By: DSS
ATEC Lab Number: 9103228

Sample I.D.	TOC	Detection Limit
LOMW04S	14,000 ppm	100 ppm
LOMW04S-D	15,000 ppm	100 ppm

Respectfully submitted,
ATEC Associates, Inc.

Environmental/Analytical Testing Division

REPORT OF TEST RESULTS

ATEC Project Number 21-02463

Date: April 1, 1991

Client: ERM-North Central
102 Wilmont Road
Suite 300
Deerfield, IL 60015

Sample Identification: Total Organic Carbon Analysis
SW 846 Method 9060

Sample Matrix: Soil
Date Received: March 11, 1991
Date Analyzed: March 21, 1991
Analyst: KAW
Verified By: DSS
ATEC Lab Number: 9103138

==========

Sample I.D.	TOC	Detection Limit
LOMW05S	21,000 ppm	100 ppm

Respectfully submitted,
ATEC Associates, Inc.

Environmental/Analytical Testing Division

#14

PARTICLE SIZE

Date: 4/15/91 Project No.: 21-02463 (Graduate No.: 85)

Project: Lenz Oil /ERW Project No. 0252 JI

Location of Sample: LO MW 015 (3-11-91)

Sample Description:

USCS: AASHTO: LL: PI:

Remarks:
1(client): Moisture Content(%): 16.4 2: Dry Density(pcf): 116.1

3:sample no. Porosity: 0.314 4:

Fig. 13 Specification? Y / (N) Mechanical Analysis? (Y) / N Hydrometer Analysis? (Y) / N
(-200 Only? Y / (N)) (Hydrometer No. 90-6725)

	Initial	After Wash		Split Sieve
Dry Sample & Tare:	243.82		Dry Sample & Tare:	173.28
Tare (+10):	2.17		63 Tare (-10):	123.40

(Use Cummulative Basis for Calculations!)

Sieve	Cummul. Wt. Retained	% Finer
1 1/2 (1.5)	–	
1	–	
3/4 (.75)	–	
1/2 (.5)	–	
/8 (.375)	– 2.17	
#4	7.76	
#8	9.21	
#10	9.63	
#16	123.70	
#30	124.03	
#40	124.21	
#50	124.39	
#80	124.76	
#100	124.96	
#200	126.29	

Hydrometer Sample Wt.: 50.03

Moist Wt. & Tare:	35.00
Dry Wt. & Tare:	34.92
172 Tare Wt.:	11.31
Hygroscopic Moisture %:	.3

Correction @ 20: -6 Meniscus = 0
Specific Gravity: 2.71 (Hydrometer = 152H)

(Time)	Time min.	Temp C	Actual Reading	Diam. (mm)	% Finer
9:22	0	24	0		
9:24	2	24	40		
9:27	5	24	35		
9:37	15	24	27		
9:52	30	24	22.5		
10:22	60	24	18.5		
[illegible]	250	25	13		
[illegible]	1440	24	10.5		

Print test summary? (Y) / N

Date: 5/2/91 PARTICLE SIZE Project No.: 21-02463 (Graduate No.: 1)

Project: Long Oil / ERM Project No. 0252 II

Location of Sample: LO MW 025

Sample Description:

USCS: AASHTO: LL: PI:

Remarks:

1(client): Moisture Content (%): 10.4 2: Dry Density (pcf): not suitable

3:sample no. Porosity: Not Suitable 4:

Fig. Specification? Y / (N) (-200 Only? Y / (N)) Mechanical Analysis? (Y) / N Hydrometer Analysis? (Y) / N (Hydrometer No. 90-6725

	Initial	After Wash
Dry Sample & Tare:	687.6	
Tare (+10):	106.7 (155)	

(Use Cummulative Basis for Calculations!)

Split Sieve

Dry Sample & Tare: 157.53

Tare (-10): 107.63 (171)

Sieve	Cummul. Wt. Retained	% Finer
1 1/2 (1.5)	106.7	
1	190.4	
3/4 (.75)	—	
1/2 (.5)	230.8	
3/8 (.375)	248.7	
#4	292.0	
#8	328.8	
#10	338.6	
#16	110.54	
#30	114.67	
#40	116.72	
#50	118.92	
#80	122.77	
#100	124.23	
#200	128.87	

Hydrometer Sample Wt.: 50.00

Moist Wt. & Tare:	34.89
Dry Wt. & Tare:	34.84
Tare Wt.:	11.80 (193)
Hygroscopic Moisture %:	.2

Correction @ 20: -6.0 Meniscus = 0

Specific Gravity: 2.7 (Hydrometer = 152H)

(Time)	Time min.	Temp C	Actual Reading	Diam. (mm)	% Finer
9.42	0	24	0		
9.44	2	24	25.5		
9.47	5	24	21.5		
9.57	15	24.5	18.0		
10.12	30	24.5	16.0		
[illegible]	60	25	13.5		
-	250	25.5	11.5		
-	1440	[illegible]	10.5		

Print test summary? Y / N

PARTICLE SIZE

Date: 4/15/91 Project No.: 21-02463 (Graduate No.: 30)

Project: Lenz Oil / ERM Project No. 0252 II

Location of Sample: LO MW 045 (3-15-91)

Sample Description:

USCS: AASHTO: LL: PI:

Remarks:

1(client): Moisture Content (%): 51.1 2: Dry Density (pcf): 68.7

3:sample no. Porosity: 0.570 4:

Fig. 12 Specification? Y / (N) Mechanical Analysis? (Y) / N Hydrometer Analysis? (Y) / N

(-200 Only? Y / (N)) (Hydrometer No. 70-6725)

	Initial	After Wash		Split Sieve
Dry Sample & Tare:	714.9		Dry Sample & Tare:	172.57
13 Tare (+10):	110.4		18 Tare (-10):	122.97

(Use Cummulative Basis for Calculations!)

Sieve	Cummul. Wt. Retained	% Finer
1 1/2 (1.5)	110.4	
1	271.3	
3/4 (.75)	305.3	
1/2 (.5)	359.8	
3/8 (.375)	390.6	
#4	463.8	
#8	513.6	
#10	[illegible]	
#16	129.02	
#30	135.10	
#40	137.39	
#50	139.46	
#80	141.97	
#100	142.88	
#200	146.36	

Hydrometer Sample Wt.: 50.00

Moist Wt. & Tare:	29.53
Dry Wt. & Tare:	29.38
142 Tare Wt.:	11.49
Hygroscopic Moisture %:	.8

Correction @ 20: -6 Meniscus = 0

Specific Gravity: 2.57 (Hydrometer = 152H)

(Time)	Time min.	Temp C	Actual Reading	Diam. (mm)	% Finer
9:26	0	24	0		
9:28	2	24	24		
9:31	5	24	21		
9:41	15	24	19		
9:56	30	24	17		
10:26	60	24	15		
[illegible]	250	25	11.5		
[illegible]	1440	24	10		

Print test summary? (Y) / N

#3

PARTICLE SIZE

Date: 4/15/91 Project No.: 21-C2463 (Graduate No.: 1)

Project: Long Oil / Ferm 10 MW 045-2

Location of Sample: LO MW 045-2 (3-15-91)

Sample Description:

USCS: AASHTO: LL: PI:

Remarks:

1(client): Moisture Content (%): 42.5 2: Dry Density (pcf): 72.5

3: sample no. Porosity: 0.537 4:

Fig. Specification? Y / (N) (-200 Only? Y / (N)) Mechanical Analysis? (Y) / N Hydrometer Analysis? (Y) / N (Hydrometer No. 90-6725)

	Initial	After Wash
Dry Sample & Tare:	238.97	
50 Tare (+10):	2.07	

(Use Cummulative Basis for Calculations!)

	Split Sieve
Dry Sample & Tare:	172.70
57 Tare (-10):	123.02

Sieve	Cummul. Wt. Retained	% Finer
1 1/2 (1.5)	—	
1	—	
3/4 (.75)	—	
1/2 (.5)	— 2.07	
3/8 (.375)	5.80	
#4	12.10	
#8	16.38	
#10	17.37	
#16	123.55	
#30	124.25	
#40	124.53	
#50	124.89	
#80	125.46	
#100	125.72	
#200	127.14	

Hydrometer Sample Wt.: 50.03

Moist Wt. & Tare: 31.24

Dry Wt. & Tare: 31.11

218 Tare Wt.: 11.64

Hygroscopic Moisture %: .7

Correction @ 20: - 6 Meniscus = 0

Specific Gravity: 2.51 (Hydrometer = 152H)

(Time)	Time min.	Temp C	Actual Reading	Diam. (mm)	% Finer
9:24	0	24	C		
9:26	2	24	40.5		
9:29	5	24	35		
9:39	15	24	28		
9:54	30	24	24		
10:24	60	24	20		
[illegible]	250	25	14.5		
[illegible]	1440	24	12		

Print test summary? (Y) / N

#15

PARTICLE SIZE

Date: 4/15/91 Project No.: 21-02463 (Graduate No.: 40)

Project: [illegible] Project No. 0252JF

Location of Sample: LO MW 055 (2-5-91)

Sample Description:

USCS: AASHTO: LL: PI:

Remarks:
1(client): Moisture Content(%): 8.4 2: Dry Density(pcf): 139.0

3:sample no. Porosity : 0.191 4:

Fig. 11 Specification? Y / (N) Mechanical Analysis? (Y) / N Hydrometer Analysis? (Y) / N
(-200 Only? Y / (N)) (Hydrometer No. 90-6725)

	Initial	After Wash		Split Sieve
Dry Sample & Tare:	808.3		Dry Sample & Tare:	157.47
6 Tare (+10):	105.50		143 Tare (-10):	107.84

(Use Cummulative Basis for Calculations!)

Sieve	Cummul. Wt. Retained	% Finer
1 1/2 (1.5)	705.50	
1	229.2	
3/4 (.75)	299.8	
1/2 (.5)	377.9	
8 (.375)	408 9	
#4	508.7	
#8	560.4	
#10	571.9	
#16	113.81	
#30	119.07	
#40	120.75	
#50	122.15	
#80	123.81	
#100	124.61	
#200	128.97	

Hydrometer Sample Wt.: 50.03

Moist Wt. & Tare:	35.37
Dry Wt. & Tare:	35.18
306 Tare Wt.:	11.75
Hygroscopic Moisture %:	.8

Correction @ 20:- 6 Meniscus = 0
Specific Gravity: 2.76 (Hydrometer = 152H)

(Time)	Time min.	Temp C	Actual Reading	Diam. (mm)	% Finer
9:20	0	24	[illegible]		
9:22	2	24	24.5		
9:25	5	24	22		
9:35	15	24	18		
9:50	30	24	16		
10:20	60	24	14		
[illegible]	250	25	11		
[illegible]	1440	24	9		

Print test summary? (Y) / N

ATEC Associates, Inc.

LABORATORY THINWALL TUBE LOG

Client: ERM North Central
Project: Long Oil
Location:
Boring No.: Sample No.: Depth: ft. Recovery: in.
Ground Surface Elevation: MW015 Datum: Logged By:

ATEC Project No.: 21-02463
Client Job No.:
Date: 5-6-91

Scale, inches	Soil Description	Laboratory Tests / Remarks
0		length of tube 6.00"
		inside diam of tube 1.38"
		wt of tube & soil 566.7
		wt of empty tube = 248.26
6		
12		
18		
24		
30		

WATER CONTENT

Can No.	107
Weight - Wet (Gm.)	77.41
Weight - Dry (Gm.)	69.24
Weight Water (Gm.)	
Weight Can (Gm.)	19.46
Weight Solids (Gm.)	
Moisture (%)	16.4

UNIT WEIGHT

Diameter - Av. (in.)	1.38
Area - Av. (Sq. cm.)	
Height (in.)	6.00
Volume (cu. cm.)	147.06
Weight - Wet (Gm.)	318.44
Weight - Dry (Gm.)	272.57
Density - Dry (Lbs./cu. ft.)	116.1

0.314

ATEC Associates, Inc.

LABORATORY THINWALL TUBE LOG

Client ERM North Central

ATEC Project No. 21-02463

Project Lenz Oil

Client Job No.

Location

Date 4-30-91

Boring No. MW025 Sample No. Depth ft. Recovery in.

Ground Surface Elevation Datum Logged By

Scale, inches	Soil Description	Laboratory Tests / Remarks
0	Brownsand + gravel.	unsuitable for density and specific gravity tests
6		
12		
18		
24		
30		

WATER CONTENT

Can No.	602
Weight - Wet (Gm.)	49.78
Weight - Dry (Gm.)	47.06
Weight Water (Gm.)	
Weight Can (Gm.)	20.84
Weight Solids (Gm.)	
Moisture (%)	10.4

UNIT WEIGHT

Diameter - Av. (in.)	
Area - Av. (Sq. cm.)	
Height (in.)	
Volume (cu. cm.)	
Weight - Wet (Gm.)	
Weight - Dry (Gm.)	
Density - Dry (Lbs./cu. ft.)	

ATEC Associates, Inc.

LABORATORY THINWALL TUBE LOG

Client: ERM North Central
ATEC Project No.: 21-02463
Project: Lenz Oil
Client Job No.:
Location:
Date: 5-6-91
Boring No.: Sample No.: Depth: ft. Recovery: in.
Ground Surface Elevation: MW-04/5 Datum: Logged By:

Scale, inches	Soil Description	Laboratory Tests/Remarks
0		length of tube = 5.98"
		inside diam of tube 1.38"
		wt of tube + soil 491.6 gm
		wt empty tube = 247.8
6		
12		
18		
24		
30		

WATER CONTENT

Can No.	602
Weight - Wet (Gm.)	63.41
Weight - Dry (Gm.)	49.04
Weight Water (Gm.)	
Weight Can (Gm.)	20.90
Weight Solids (Gm.)	
Moisture (%)	51.1

UNIT WEIGHT

Diameter - Av. (in.)	1.38
Area - Av. (Sq. cm.)	
Height (in.)	5.98
Volume (cu. cm.)	146.57
Weight - Wet (Gm.)	243.80
Weight - Dry (Gm.)	161.35
Density - Dry (Lbs./cu. ft.)	68.7

Density 0.570

ATEC Associates, Inc.

LABORATORY THINWALL TUBE LOG

Client: ERM North Central
ATEC Project No.: 21-02463
Project: Lenz Oil
Client Job No.:
Location:
Date: 5-6-91
Boring No.: Sample No.: Depth: ft. Recovery: in.
Ground Surface Elevation: MW-045-D Datum: Logged By: TR

Scale, inches	Soil Description	Laboratory Tests / Remarks
0		length of tube 5.98"
		inside diam of tube 1.38
		wt tube + soil = 494.3 gm
6		wt empty tube = 251.72
12		
18		
24		
30		

WATER CONTENT

Can No.	529
Weight - Wet (Gm.)	74.49
Weight - Dry (Gm.)	59.75
Weight Water (Gm.)	
Weight Can (Gm.)	25.08
Weight Solids (Gm.)	
Moisture (%)	42.5

UNIT WEIGHT

Diameter - Av. (in.)	1.38
Area - Av. (Sq. cm.)	
Height (in.)	5.98
Volume (cu. cm.)	146.57
Weight - Wet (Gm.)	242.58
Weight - Dry (Gm.)	170.22
Density - Dry (Lbs./cu. ft.)	72.5

porosity 0.537

ATEC Associates, Inc.

LABORATORY THINWALL TUBE LOG

Client ERM North Central

ATEC Project No. 21-02463

Project Lenz Oil

Client Job No.

Location

Date 5-6-91

Boring No. Sample No. Depth ft. Recovery in.

Ground Surface Elevation MW 055

Datum

Logged By

Scale, inches	Soil Description	Laboratory Tests / Remarks
0		length of tube 6.00 inside diam of tube 1.38 wt of tube + soil 601.6 wt of empty tube 246.66
6		
12		
18		
24		
30		

WATER CONTENT

Can No.	528
Weight - Wet (Gm.)	121.36
Weight - Dry (Gm.)	113.90
Weight Water (Gm.)	
Weight Can (Gm.)	25.15
Weight Solids (Gm.)	
Moisture (%)	4.4

UNIT WEIGHT

Diameter - Av. (in.)	1.38
Area - Av. (Sq. cm.)	
Height (in.)	6.00
Volume (cu. cm.)	147.06
Weight - Wet (Gm.)	354.94
Weight - Dry (Gm.)	327.44
Density - Dry (Lbs./cu. ft.)	139.0

SPECIFIC GRAVITY
SOIL

PROJECT Lenz Oil NO. 21-02463

CLIENT ERM N.C. TECHNICIAN T+T

SAMPLE

TEST (ASTM NO. & TITLE)

DATE 5-6-91

Sample no.	MW015
Pycnometer no.	151
Pycnometer wt.	178.53
Pycn+wter wt.	676.1
Pycn+water+ sample wt.	709.8
Water temp. (C)	[illegible]
Tare no.	140
Tare wt.	107.11
Dry sample+tare wt.	59.27
Dry sample wt.	[illegible]
Correction factor K	0.9993 BSG = 2.705

SPECFIC GRAVITY (20 deg.) 2.7061044

SPECIFIC GRAVITY
SOIL

PROJECT Lewis Oil NO. 21-32 462

CLIENT ERM INC. TECHNICIAN

SAMPLE

TEST (ASTM NO. & TITLE)

DATE 5-6-91

Sample no.	MW045
Pycnometer no.	151
Pycnometer wt.	178.53
Pycn+wter wt.	676.9
Pycn+water+ sample wt.	701.3
Water temp. (C)	23
Tare no.	150
Tare wt.	107.59
Dry sample+tare wt.	157.56
Dry sample wt.	49.97
Correction factor K	.9993 / 99+6.56

SPECFIC GRAVITY (20 deg.) 2.8[illegible]

SPECIFIC GRAVITY
SOIL

PROJECT Lenz OIC NO. 21-02463

CLIENT [illegible] N.C. TECHNICIAN TET

SAMPLE

TEST (ASTM NO. & TITLE)

DATE 5-6-91

Sample no.	MW 045-[illegible]
Pycnometer no.	151
Pycnometer wt.	178.53
Pycn+wter wt.	676.9
Pycn+water+ sample wt.	701.0
Water temp. (C)	23
Tare no.	144
Tare wt.	108.94
Dry sample+tare wt.	149.95
Dry sample wt.	40.01
Correction factor K	.9993 / 0.5616[illegible]

SPECFIC GRAVITY (20 deg.) 2.5132[illegible]

SPECIFIC GRAVITY
SOIL

PROJECT Lenz oil NO. 21-02463

CLIENT ERM N.C. TECHNICIAN TT

SAMPLE

TEST (ASTM NO. & TITLE)

DATE 5-6-91

Sample no.	MW055
Pycnometer no.	151
Pycnometer wt.	178.53
Pycn+wter wt.	676.9
Pycn+water+ sample wt.	699.0
Water temp. (C)	23
Tare no.	153
Tare wt.	106.14
Dry sample+tare wt.	[illegible]
Dry sample wt.	[illegible]
Correction factor K	[illegible]

SPECFIC GRAVITY (20 deg.) [illegible]

ERM-North Central, inc.

Sample Chain of Custody

W.O.No.: 0252JI

Project Name: LENZ OIL RI/FS

Sampler: DIRK KAISER

ERM Sample Number	Date	Time	COMP	GRAB	Station Location	Number of Containers	6" BRASS TOTAL POROSITY (TP)	1 QT. PARTICLE SIZE (PS)	4 OZ T.O.C.				Remarks MATRIX
LO-MW05 S.	03/05/91	09:30		X	MONITORING WELL #5 SHALLOW	1	✓						SOIL
LO MW05 D	03/05/91	09:30		X	MONITORING WELL #5 SHALLOW	1		✓					SOIL
LO-MW05 S	03/05/91	09:30		X	MONITORING WELL #5 SHALLOW	1			✓				SOIL

SAMPLES ICED TO 4°C
SAMPLES SHIPPED VIA
FED EX AIRBILL #8194625396
TO ATEC, INDIANAPOLIS

Sample Relinquished by:	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
[signature]	3/5/91	1300	[signature]	3-6-91		

COPIES: White & Yellow copies accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be returned to ERM for files. Pink copy retained by sampler. Gold copy extra copy as needed

ERM-North Central, inc.

Sample Chain of Custody

W.O.No.: 0252JI

Project Name: Lenz Oil

Sampler: Dirk Kaiser

ERM Sample Number	Date	Time	COMP	GRAB	Station Location	Number of Containers	1 qt Plastic Sealed	6 1" Glass Bottles Total Organic Carbon	4 oz Total Organic Carbon Jar				Remarks
													MATRIX
MW055-S	3/11/91	0915		X	Monitoring Well Olsmann	3	1	1	1				SOIL
													ALL SAMPLES ICED TO 4°C
													SHIPPED TO ATEC, INDIANAPOLIS
													AIRBILL # 8194625353

Sample Relinquished by:	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
[signature]	3/11/91	11:20	Gordon C Pickett	3-12-91		

COPIES: White & Yellow copy accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be returned to ERM for files. Pink copy retained by sampler. Gold copy extra copy as needed

ERM-North Central, inc.

1 OF 1 21-02463

Sample Chain of Custody

W.O.No.: 0252JI

Project Name: LENZ OIL

Sampler: [signature]

ERM Sample Number	Date	Time	COMP	GRAB	Station Location	Number of Containers	40z TOC	1QT Petroleum 5.3.3	6" Brass Bottom				Remarks
LO-MW 045	3/15/91	1200		X	LO-MW045	3	1	1	1				SOIL
LO-MW 045-D	3/15/91	1200		X	LO-MW045-D	3	1	1	1				
													ALL SAMPLES ICED TO 4°C. SHIPPED VIA FED EX TO ATEL, INDIANAPOLIS AIRBILL #: 8194625375

Sample Relinquished by:	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
[signature]	3/15/91	15:00	[signature]	3-19-91		

COPIES: White & Yellow copies ...mpany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be ret... to ERM for files. Pink copy retained by sampler. Gold copy extra copy as needed

ERM-North Central, inc.

Sample Chain of Custody

W.O.No.: 0252JI

Project Name: LENZ OIL

Sampler: DIRK KAISER

ERM Sample Number	Date	Time	COMP	GRAB	Station Location	Number of Containers	1 qt. Tantum size	6" Brass Tube Porosity	40z. T.O.C.				Remarks
													MATRIX
MW02S	4/25/91	1245		X	Monitoring Well MW02S								SOIL
													- SAMPLES ICED TO 4°C
													- SHIPPED FED EX TO ATEL
													AIRBILL # 8194625342
													- SHIPMENT COMPLETE
													THIS IS THE LAST SAMPLE
													SEND RESULTS UPON COMPLETION

Sample Relinquished by:	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
[illegible]	4/25/91	1615	[illegible]	4-26-91	11:00	

COPIES: White & Yellow copies accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be returned to ERM for files. Pink copy retained by sampler. Gold copy extra copy as needed

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE TRACKING NUMBER 8194625386

205M 8194625386

Date 03/05/91

RECIPIENT'S COPY

From (Your Name) Please Print: DIRK KAISER
Your Phone Number (Very Important): (703) 940-7200
Company: E R M NORTH CENTRAL
Department/Floor No.:
Street Address: 102 WILMOT RD STE 300
City: DEERFIELD State: IL ZIP Required: 6 0 0 1 5

2 To (Recipient's Name) Please Print: GORDON PICKETT
Recipient's Phone Number (Very Important): (317) 849-4514
Company: ATEC
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip + Codes.): 5150 E. 65 ST
City: INDIANAPOLIS State: IN ZIP Required: 46220

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): LOTZ OIL - 0252 JT

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

PAYMENT 1 ☐ Bill Sender 2 ☐ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card
5 ☐ Cash/Check

4 SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†)
- ☒ YOUR PACKAGING
- 16 ☐ FEDEX LETTER *
- 12 ☐ FEDEX PAK *
- 13 ☐ FEDEX BOX
- 14 ☐ FEDEX TUBE

Standard Overnight Service (Delivery by next business afternoon†)
- 51 ☐
- 56 ☐ FEDEX LETTER *
- 52 ☐ FEDEX PAK *
- 53 ☐ FEDEX BOX
- 54 ☐ FEDEX TUBE

Economy Distribution Service (formerly Standard Air) (Delivery by second business day†)
- 30 ☐ ECONOMY DIST. SVC.

Heavyweight Service (for Extra Large or any package over 150 lbs.)
- 70 ☐ HEAVYWEIGHT **
- 80 ☐ DEFERRED HEAVYWEIGHT **

†Delivery commitment may be later in some areas. *Declared Value Limit $100. **Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING (Check services required)
1 ☐ HOLD FOR PICK-UP (Fill in Box H)
2 ☒ DELIVER WEEKDAY
3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)
4 ☐ DANGEROUS GOODS (Extra charge)
5 ☐
6 ☐ DRY ICE _____ Lbs.
7 ☐ OTHER SPECIAL SERVICE _____
8 ☐
9 ☐ SATURDAY PICK-UP (Extra charge)
10 ☐
11 ☐
12 ☐ HOLIDAY DELIVERY (Extra charge)

PACKAGES	WEIGHT in Pounds/Day	YOUR DECLARED VALUE
1	12	
Total 1	Total 12	Total

DIM SHIPMENT (Chargeable Weight) ☐ _____ lbs.

Received At: 1 ☐ Regular Stop 3 ☐ Drop Box 4 ☐ B.S.C. 2 ☐ On-Call Stop 5 ☐ Station

FedEx Emp. No.: Date/Time:

Emp. No.: Date:
☐ Cash Received
☐ Return Shipment
☐ Third Party ☐ Chg. To Del. ☐ Chg. To Hold
Street Address:
City: State: Zip:
Received By: X
Date/Time Received: FedEx Employee Number:

5 Release Signature:

Federal Express Use: Base Charges; Declared Value Charge; Other 1; Other 2; Total Charges

REVISION DATE 4/90 PART #119500 FXEM 7/90 FORMAT #027

027

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FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE TRACKING NUMBER 8194625353

205M 8194625353

Date ~~3/1/91~~ 3/11/91

RECIPIENT'S COPY

From (Your Name) Please Print: DIRK KAISER
Your Phone Number (Very Important): (703) 940-7200
Company: E R M NORTH CENTRAL
Department/Floor No.:
Street Address: 102 WILMOT RD STE 300
City: DEERFIELD State: IL ZIP Required: 6 0 0 1 5

2 To (Recipient's Name) Please Print: GORDON PICKETT
Recipient's Phone Number (Very Important): 317 849-4514
Company: ATEC
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip + Codes.): 5150 E. 65TH STREET
City: INDIANAPOLIS State: IN ZIP Required: 46220

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): LOTZ OIL - 0252 JT

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

PAYMENT 1 ☒ Bill Sender 2 ☐ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card
5 ☐ Cash/Check

4 SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†)
- ☒ YOUR PACKAGING
- 16 ☐ FEDEX LETTER *
- 12 ☐ FEDEX PAK *
- 3 ☐ FEDEX BOX
- 14 ☐ FEDEX TUBE

Standard Overnight Service (Delivery by next business afternoon†)
- 51 ☐
- 56 ☐ FEDEX LETTER *
- 52 ☐ FEDEX PAK *
- 53 ☐ FEDEX BOX
- 54 ☐ FEDEX TUBE

Economy Distribution Service (formerly Standard Air) (Delivery by second business day†)

Heavyweight Service (for Extra Large or any package over 150 lbs.)
- 70 ☐ HEAVYWEIGHT **

DELIVERY AND SPECIAL HANDLING (Check services required)
1 ☐ HOLD FOR PICK-UP (Fill in Box H)
2 ☒ DELIVER WEEKDAY
3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)
4 ☐ DANGEROUS GOODS (Extra charge)
5 ☐
6 ☐ DRY ICE _____ Lbs.
7 ☐ OTHER SPECIAL SERVICE _____
8 ☐
9 ☐ SATURDAY PICK-UP (Extra charge)
10 ☐

PACKAGES	WEIGHT in Pounds/Day	YOUR DECLARED VALUE
1		
Total 1	Total 13	Total

DIM SHIPMENT (Chargeable Weight) ☐ _____ lbs.

Received At: 1 ☐ Regular Stop 3 ☐ Drop Box 4 ☐ B.S.C.

Emp. No.: Date:
☐ Cash Received
☐ Return Shipment
☐ Third Party ☐ Chg. To Del. ☐ Chg. To Hold
Street Address:
City: State: Zip:
Received By: X
Date/Time Received: FedEx Employee Number:

5 Release

Federal Express Use: Base Charges; Declared Value Charge; Other 1; Other 2; Total Charges

REVISION DATE 4/90 PART #119500 FXEM 7/90 FORMAT #027

027

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 8194625375

205M 8194625375

Date 3/18/91

RECIPIENT'S COPY

1 From (Your Name) Please Print: DIRK KNIGHT — Your Phone Number (Very Important): (708) 940-7722

Company: E & M NORTH CENTRAL — Department/Floor No.

Street Address: 102 WILMOT RD STE 300

City: DEERFIELD — State: IL — ZIP Required: 60015

2 To (Recipient's Name) Please Print: GORDON PICKETT — Recipient's Phone Number (Very Important): (317) 849-4770

Company: ATEC — Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip + Codes.): 5150 E. 65TH STREET

City: INDIANAPOLIS — State: IN — ZIP Required: 46220

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): LONZ OIL - 0252JI

3 PAYMENT: 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

H IF HOLD FOR PICK-UP, Print FEDEX Address Here — Street Address — City — State — ZIP Required

4 SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†): 11 [X] YOUR PACKAGING; 16 [ ] FEDEX LETTER *; 12 [ ] FEDEX PAK *; 13 [ ] FEDEX BOX; 14 [ ] FEDEX TUBE

Standard Overnight Service (Delivery by next business afternoon†): 51 [ ]; 56 [ ] FEDEX LETTER *; 52 [ ] FEDEX PAK *; 53 [ ] FEDEX BOX; 54 [ ] FEDEX TUBE

Economy Distribution Service (formerly Standard Air) (Delivery by second business day†): 30 [ ] ECONOMY/DIST. SVC.

Heavyweight Service (for Extra Large or any package over 150 lbs.): 70 [ ] HEAVYWEIGHT **; 80 [ ] DEFERRED HEAVYWEIGHT **

† Delivery commitment may be later in some areas. * Declared Value Limit $100. ** Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING (Check services required)

1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charges) [ ] (Not available to all locations)
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE _____ Lbs.
7 [ ] OTHER SPECIAL SERVICE _____
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

PACKAGES	WEIGHT in Pounds Only	YOUR DECLARED VALUE
1	15	
Total	Total 15	Total

DIM SHIPMENT (Chargeable Weight) [ ] _____ lbs.

Received At: 1 [ ] Regular Stop 2 [ ] On-Call Stop 3 [ ] Drop Box 4 [ ] B.S.C. 5 [ ] Station

FedEx Emp. No. — Date/Time

5 Release Signature

Emp. No. — Date

[ ] Cash Received [ ] Return Shipment [ ] Third Party [ ] Chg. To Del [ ] Chg. To Hold

Street Address

City — State — Zip

Received By: X

Date/Time Received — FedEx Employee Number

Federal Express Use: Base Charges; Declared Value Charge; Other 1; Other 2; Total Charges

REVISION DATE 4/90 PART #119500 FXEM 7/90 FORMAT #027

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FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 8194625342

205M 8194625342

Date 4/25/91

RECIPIENT'S COPY

1 From (Your Name) Please Print: DIRK KNIGHT — Your Phone Number (Very Important): (708) 912-7722

Company: E & M NORTH CENTRAL — Department/Floor No.

Street Address: 102 WILMOT RD STE 300

City: DEERFIELD — State: IL — ZIP Required: 60015

2 To (Recipient's Name) Please Print: GORDON PICKETT — Recipient's Phone Number (Very Important): (317) 849-4770

Company: ATEC — Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip + Codes.): 5150 E. 65TH STREET

City: INDIANAPOLIS — State: IN — ZIP Required: 46220

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): LONZ OIL - 0252JI

3 PAYMENT: 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

H IF HOLD FOR PICK-UP, Print FEDEX Address Here — Street Address — City — State — ZIP Required

4 SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†): 11 [X] YOUR PACKAGING; 16 [ ] FEDEX LETTER *; 2 [ ] FEDEX PAK *; 3 [ ] FEDEX BOX; 14 [ ] FEDEX TUBE

Standard Overnight Service (Delivery by next business afternoon†): 51 [ ]; 56 [ ] FEDEX LETTER *; 52 [ ] FEDEX PAK *; 53 [ ] FEDEX BOX; 54 [ ] FEDEX TUBE

Economy Distribution Service (formerly Standard Air) (Delivery by second business day†)

Heavyweight Service (for Extra Large or any package over 150 lbs.): 70 [ ] HEAVYWEIGHT **

DELIVERY AND SPECIAL HANDLING (Check services required)

1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charges) [ ] (Not available to all locations)
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE _____ Lbs.
7 [ ] OTHER SPECIAL SERVICE _____
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]

PACKAGES	WEIGHT in Pounds Only	YOUR DECLARED VALUE
1	17	
Total	Total	Total

DIM SHIPMENT (Chargeable Weight) [ ] _____ lbs.

Received At: 1 [ ] Regular Stop 3 [ ] Drop Box 4 [ ] B.S.C.

5 Release

Emp. No. — Date

[ ] Cash Received [ ] Return Shipment [ ] Third Party [ ] Chg. To Del [ ] Chg. To Hold

Street Address

City — State — Zip

Received By: X

Date/Time Received — FedEx Employee Number

Federal Express Use: Base Charges; Declared Value Charge; Other 1; Other 2; Total Charges

REVISION DATE 4/90 PART #119500 FXEM 7/90 FORMAT #027

027

APPENDIX K

APPENDIX K

GROUND WATER AND NAPL SAMPLING FORMS

PHASE I GROUND WATER SAMPLING FORMS

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1MW07S-GW DATE: 7 May 1991 TIME: 13:15

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
RLL	ERM		
BBM	ERM		

WELL NUMBER: MW07S TOTAL DEPTH: 32.5 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 15.72 POST-PURGE: ___ SAMPLING: ___

THICKNESS OF WATER COLUMN: 16.78 (ft) CASING VOLUME: 2.7 (gal) 3 Vol. = 8.1 Gal.

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
13:00	7.18	1730	13.5°C	0 Gal.
13:05	7.10	1750	12.2°C	2.7 Gal.
13:10	7.05	1780	12.0°C	5.4 Gal.
13:15	7.06	1780	12.0°C	8.1 Gal.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(2) VOA, Clear, Glass	40 ML	No
(3) SVOA, Amber, Glass	1 Liter	No
(2) Pest./PCBs Amber, Glass	1 Liter	No
(2) Metals Plastic	1 Liter	HNO_3
(1) CN. Clear Glass	1 Liter	NaOH

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ____

OBSERVATIONS:

Cloudy pale gray.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

LO-1MW07D-FB

SAMPLE I.D.: LO-1MW07D-GW DATE: 7 May 1991 TIME: 12:20

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
RLL	ERM	H.W.H	EBASCO
BBM	ERM		

WELL NUMBER: 4W17D TOTAL DEPTH: 54.5 (ft) I.D.: 2 (in)

MATERIAL: Stain Steel SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 15.05 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 39.45 (ft) CASING VOLUME: 6.3 (gal)

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
11:55	8.14	600	13°C	0 Gal.
12:00	7.45	725	12.5°C	6 Gal.
12:10	7.13	775	12.2°C	12 Gal
12:15	7.04	780	12.2°C	18 Gal.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(2) VOA, clear glass	40 ml	ice
(3) SVOA, amber glass	1 Liter	ice
(2) Pest, PCB, amber glass	1 Liter	ice
(2) Metals, Plastic	1 Liter	HNO3
(1) CN, Glass, clear	1 Liter	NaOH

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ____

OBSERVATIONS: Cloudy, yel. gray, after 3 Gal

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: ~~9292~~ 0252

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1G01M-GW DATE: 5-6-91 TIME: 1120

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
TBT	ERM-NC	KM	Ebasco
BBM	ERM-NC		

WELL NUMBER: G-101M TOTAL DEPTH: 33.65 (ft) I.D.: 2 (in)

MATERIAL: Steel SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

4/24
PRE-PURGE: 15.31 ~~POST~~ 5/6 -PURGE: 15.33 SAMPLING: _____

THICKNESS OF WATER COLUMN: _____(ft) CASING VOLUME: 1.4 (gal)

PURGING METHOD: _____ SAMPLING METHOD: Teflon bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)		Cumulative Volume (gal)
			Spc	[illegible]	
1116	7.57	432	3.5	3.6	0 (initial)
[illegible]	7.51	42[illegible]	3.7	3.7	1.5
[illegible]	7.46	43[illegible]	3.8	[illegible]	3.0
[illegible]	7.[illegible]	46[illegible]	3.9	3.0	4.5
1120	7.34	466	3.9	3.[illegible]	5.0

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES _____ NO ____

OBSERVATIONS: [illegible]

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: ~~9292~~ 02525

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1G101L-SW DATE: 5-6-91 TIME: [illegible]

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
JB	EKU-NC	KM	Ebasco
BBM	ERM-NC		

WELL NUMBER: [illegible] TOTAL DEPTH: 34.35 (ft) I.D.: 2 (in)

MATERIAL: Steel SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

4/24 PRE-PURGE: 14.56 ~~POST~~ PRE 5/6-PURGE: 15.08 SAMPLING: ____

THICKNESS OF WATER COLUMN: ____ (ft) CASING VOLUME: 3.2 (gal)

PURGING METHOD: ____ SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg ~~F~~ C)	Cumulative Volume (gal)
[illegible]	8.12	496	8.5 7.9	0 (initial)
[illegible]	7.65	550	9.3 9.4	3.5
1003	7.34	598	9.5 [illegible]	[illegible]
[illegible]	[illegible]	[illegible]	9.9 [illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	7.23	[illegible]	10.0 [illegible]	[illegible]

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
VOC vials - 2	40 mL	none
Semi-volatiles - 3	1L amber	none
[illegible] - 2	1L amber	none
Metals [illegible]	[illegible]	HNO_3 [illegible] → [illegible]
Cyanide	[illegible]	NaOH [illegible]
[illegible]	500 mL [illegible]	None

METALS SAMPLE FILTERED IN FIELD? YES _____ NO ✓

OBSERVATIONS: Low [illegible]

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-16/16/D-GW DATE: 5-6-91 TIME: 1240

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
JPR	[illegible]	[illegible]	[illegible]
JAH	[illegible]		

WELL NUMBER: [illegible] TOTAL DEPTH: 41.02 (ft) I.D.: 2 (in)

MATERIAL: Stee SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 14.41 (4/21/91) ~~POST~~-PURGE: 15.02 (5/6 PRE-) SAMPLING: ___

THICKNESS OF WATER COLUMN: ___ (ft) CASING VOLUME: [illegible] (gal)

PURGING METHOD: ___ SAMPLING METHOD: ___

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
1200	7.87	520	9.4 / 9.2	0 (initial)
1215	7.53	[illegible]	[illegible] / 9.8	4.5
1225	7.21	[illegible]	10.5 / 10.2	[illegible]
1235	7.03	[illegible]	10.6 / [illegible]	13.5
1236	7.13	[illegible]	[illegible] / 9.2	17.[illegible]

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES ____ NO ✓

OBSERVATIONS: Mostly clear - very [illegible]

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1G102L-GW DATE: 5/6/91 TIME: 12:05 PM

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
RLL	ERM-N.C.		
VAH/	ERM-N.C		
BBM	ERM-NC		

WELL NUMBER: G102L TOTAL DEPTH: 6.35 (ft) I.D.: 2 (in)

MATERIAL: Stain Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 7.77 POST-PURGE: ___ SAMPLING: ___

THICKNESS OF WATER COLUMN: 8.58 (ft) CASING VOLUME: 1.4 (gal)

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
12:00	6.70	1050	11°C	0
12:05	6.78	1100	9.8°C	1.5
12:08	6.95	1100	9.0°C	3.0
12:10	6.95	1100	9.0°C	4.5

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(2) Glass VOA	40 ML	No
(3) Amber Glass ~~Plastic~~ SVOA	1 L.	No
(1) Clear Glass CN	1 L.	No
(2) Plastic Metals	1 L.	~~NO~~ HNO_3
(2) Pest./PCB Amber Glass	1 L.	NO

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ____

OBSERVATIONS:

Rusty

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1G-102D-G1 DATE: 6 May 1991 TIME: 12:55

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
BLL	ERM	K. Mc.	Ebasco
VAL	ERM		
BBM	ERM		

WELL NUMBER: G-102-D TOTAL DEPTH: 21.17 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 8.73 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 12.5 (ft) CASING VOLUME: 2.0 (gal)

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
12:35	7.30	1150	10°C	0
12:40	7.26	1190	9.2°C	2 Gal.
12:45	7.16	1150	9.0°C	4 Gal.
12:50	7.29	1150	9.0°C	5 Gal.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(2) VOA Glass	40 ML	No
(3) Amber Glass SVOA	1 Liter	No
(2) Pest./PCB. Amb. Glass	1 Liter	No
(1) CN, Clear Glass	1 Liter	NaOH pH 12+
(2) Plastic Metals	1 Liter	HNO_3

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ____

OBSERVATIONS: Bailed dry in 4 Gal., W.C. recovery to obtain sample

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1G1C4L-GW DATE: 5/7/91 TIME: Start 2:00 Finished 14:15

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
JR	FRM-NC		
MAH	FRM-NC		

WELL NUMBER: G1C4L TOTAL DEPTH: 12.52 (ft) I.D.: 2 (in)

MATERIAL: STEEL SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 3.12 (4/24) ~~POST~~-PURGE: 3.45 (5/7 PRE-) SAMPLING: _____

THICKNESS OF WATER COLUMN: _____(ft) CASING VOLUME: 1.2 (gal)

PURGING METHOD: _____ SAMPLING METHOD: Teflon bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg ~~F~~) °C		Cumulative Volume (gal)
			SPC METER	pH METER	
11:07	6.96	3300	13.0	11.8	0
11:12	6.96	3320	13.1	11.3	1.5
11:17	7.11	3300	11.9	11.0	3.0 BAILED DRY

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

All [illegible] 12:00 – 12:30
All [illegible] 14:15

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES ____ NO ✓ IN TRAILER.

OBSERVATIONS: [illegible] BROWN [illegible], Slight [illegible] water.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-G104D-GW DATE: 5/7/91 TIME: 11:45

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
JR	ERM-NC		
MAH	ERM-NC		

WELL NUMBER: G104D TOTAL DEPTH: 16.40 (ft) I.D.: 2 (in)

MATERIAL: Steel SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 4/24 6.23 ~~POST~~ 5/7 POE-PURGE: 6.92 SAMPLING: _____

THICKNESS OF WATER COLUMN: _____(ft) CASING VOLUME: 1.7 (gal)

PURGING METHOD: _____ SAMPLING METHOD: Teflon bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F) SAC METER	Temperature (deg F) PH METER	Cumulative Volume (gal)
11:21	8.97	1020	12.0	10.6	0
11:24	9.52	980	10.8	10.1	2.0
11:27	8.39	1100	10.0	9.8	4.0
11:31	7.73	1190	10.0	10.1	6.0
11:35	7.54	1190	10.0	9.8	8.0
11:39	7.41	1220	10.8	9.7	9.0
11:42	7.41	1220	10.0	9.7	10.0

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES ____ NO ✓ IN TRAILER

OBSERVATIONS: TYPICAL RUSTY/RUSTY BROWN, SILTY — LIGHT BROWN, SILTY

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: [illegible] DATE: 5-7-91 TIME: _____

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
[illegible]	[illegible]	HW	[illegible]
[illegible]	[illegible]		

WELL NUMBER: [illegible] TOTAL DEPTH: [illegible] (ft) I.D.: [illegible] (in)

MATERIAL: [illegible] SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 10.00 (4/24) ~~POST~~-PURGE: ~11.4 (5/7 PRE-) SAMPLING: _____

THICKNESS OF WATER COLUMN: _____(ft) CASING VOLUME: 0.8 (gal)

PURGING METHOD: _____ SAMPLING METHOD: [illegible]

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES _____ NO ____

OBSERVATIONS: _____

_____

_____

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: G106S-WO DATE: 5/5/91 TIME: 9:50

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
[illegible]	ETM	[illegible]	ERASCO
Vic [illegible]	↓		

WELL NUMBER: G106S TOTAL DEPTH: _____(ft) I.D.: 2" (in)

MATERIAL: #316 STAINLESS STEEL SCREENED INTERVAL: ____-_____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: DRY 1/2 car on 5/8/91 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: _____(ft) CASING VOLUME: _____(gal)

PURGING METHOD: BAILING SAMPLING METHOD: _____

STABILIZATION TEST

NONE

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(2) 40ml VOA		
(1) 1l A/B/N, PEST/PCB		
(1) 1l METALS, CN-		

METALS SAMPLE FILTERED IN FIELD? YES ____ NO ✓

OBSERVATIONS: SHIPPED UNPRESERVED AS HIGH CONC. SAMPLE. SAMPLE IS OF WASTE OIL

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

LO-1G106 OR-MS/MSD

SAMPLE I.D.: LO-1G106DR-GW DATE: 5-7-91 TIME: 1015

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
JBT	EKM-NC	HL	Ebon
YAH	EKM-NC		

WELL NUMBER: G106DR TOTAL DEPTH: 47.45 (ft) I.D.: 2 (in)

MATERIAL: Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 9.71 (4/24) POST-PURGE: 10.28 (5/7) SAMPLING: ___

THICKNESS OF WATER COLUMN: ___ (ft) CASING VOLUME: 6.2 (gal)

PURGING METHOD: ___ SAMPLING METHOD: Dedicated Teflon bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg ~~F~~) °C Spc Meter	PH Meter	Cumulative Volume (gal)
0945	7.41	1390	11.1	10.5	0 (initial)
0955	7.30	1380	10.9	10.5	6.5
1002	7.20	1380	10.9	10.8	13.0
1012	7.16	1350	11.0	11.1	19.5

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
VOCs – [illegible]	40 mL – 2	None
[illegible] – Amber	1L – 2	None
[illegible] – Amber	1L – 2	None
[illegible] – Plastic	T/2 [illegible]	[illegible]
[illegible] – UVE [illegible]	1L	[illegible]
[illegible] – Clear [illegible]	1L	NaOH [illegible]

METALS SAMPLE FILTERED IN FIELD? YES _____ NO ✓ IN TRAILER

OBSERVATIONS: Low [illegible] slightly brown

_____

_____

[illegible]

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

LO-1MW025-MS/MSD

SAMPLE I.D.: LO-1MW025-GW1 DATE: 8 May 1991 TIME: 10:45

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
RLL	ERM	K. HS	EBASCO
BBM	ERM		

WELL NUMBER: MW25 TOTAL DEPTH: 18.0 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 7.80 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 10.20 (ft) CASING VOLUME: 1.6 (gal) 3V = 4.8 Gal.

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
10:20	7.47	1075	12.2°C	0 Gal
10:25	7.27	900	11.0°C	2 Gal
10:30	7.22	950	11.0°C	4 Gal
10:33	7.13	1150	11.0°C	6 Gal
10:35	7.13	1125	11.0°C	8 Gal.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(4) VOA Glass, Clear	40 ML	NO
(6) SVOA Amber Glass	1 Liter	NO
(2) Pest./PCB	1 Liter	NO
(2) Metals plastic	1 Liter	HNO_3
(1) CN, Glass, clear	1 Liter	NaOH

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ____

OBSERVATIONS: Muddy, Yel.-Brown., Silty
Split w/EPA

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1MW02D-GW DATE: 7 May 1991 TIME: 14:30

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
BBH	ERM		
BBH	ERM		

WELL NUMBER: MW-02D TOTAL DEPTH: 43.5 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 9.13 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 34.37 (ft) CASING VOLUME: 5.5 (gal)

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
14:10	7.42	750	13.5°C	0 Gal.
14:15	7.13	750	13.0°C	5.5 Gal.
14:20	7.13	750	13.0°C	11.0 Gal
14:25	7.05	750	12.5°C	16.5 Gal

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES _____ NO _____

OBSERVATIONS: _____

_____

_____

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

H(Nu = Ø Uppm

LO-GW1-FB-1500

SAMPLE I.D.: LO-1MW1S-GW-1540 DATE: 5/6/91 TIME: 1540

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
JBT	ERM-NC		
VAH	ERM-NC		

WELL NUMBER: MW 1S TOTAL DEPTH: 18.30 (ft) I.D.: 2 (in)

MATERIAL: Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 4/24 6.21 ~~POST~~ 5/6 pre PURGE: 6.78 SAMPLING: ___

THICKNESS OF WATER COLUMN: ___(ft) CASING VOLUME: 2.0 (gal)

PURGING METHOD: ___ SAMPLING METHOD: ___

STABILIZATION TEST

Time	pH	Conductance. (umhos/sq cm)	Temperature (deg F) Spc	pH meter	Cumulative Volume (gal)
1527	7.04	1780	10.2	10.1	0
1531	7.10	1450	10.0	10.0	2
1534	7.05	1400	10.0	10.0	4
1537	7.02	1370	9.9	9.8	6

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES ____ NO ✓

OBSERVATIONS: very silty, turbid, lt. grey color

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

HNu 0Uppm

SAMPLE I.D.: LO-1MW1D-GW DATE: 5-6-91 TIME: 1650

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
JBT	ERM-NC		
VAH	ERM-NC		

WELL NUMBER: MW 1D TOTAL DEPTH: 48.14 (ft) I.D.: 2 (in)

MATERIAL: _____ SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

4/24 PRE-PURGE: 6.28 5/6/91 POST-PURGE: 7.84 SAMPLING: _____

THICKNESS OF WATER COLUMN: _____(ft) CASING VOLUME: 6.8 (gal)

PURGING METHOD: _____ SAMPLING METHOD: _____

STABILIZATION TEST

Time	pH	Conductance. (umhos/sq cm)	Temperature (deg F) SpC	Temperature (deg F) pH	Cumulative Volume (gal)
1613	10.84	580	10.0	10.0	0
1622	7.81	930	10.6	10.6	7
1630	7.50	980	10.9	10.8	14
1642	7.06	990	11.0	10.9	21
1646	7.10	990	11.1	11.1	25

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES _____ NO ____

OBSERVATIONS: _____

_____

_____

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1GW1-FB / LO-1MW03S-GW1 DATE: 6 May 91 TIME: 16:45

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
SLL	ERM	K Hc	EBASCO
BRM	ERM		

WELL NUMBER: MW03S TOTAL DEPTH: 21.15 (ft) I.D.: 2" (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 5:13 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 16.02 (ft) CASING VOLUME: 2.52 (gal) 7.5

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
~~16:25~~	~~7.66~~	~~510~~	~~9°~~	~~0~~
16:30	7.53	450	9°	2½ Gal.
16:35	7.34	575	9°	5 Gal.
16:40	7.48	575	9°	7½ Gal.
16:45	7.42	600	9°	10 Gal.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(4) VOA, glass, clear	40 ml	No
(2) SVOA, Amber, glass	1 Liter	No
(4) Pest./PCB, Amber, glass	1 Liter	No
(4) Metals, plastic	1 Liter	HNO_3 ph -2
(2) CN, Glass, clear	1 Liter	NaOH ph 12+

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ___

OBSERVATIONS: HNu = 0.0 ppm

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1MW03D-GW DATE: 6 Aug 91 TIME: 15:50

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
RLL	ERM	KHE	Exxon
BBM	ERM		

WELL NUMBER: MW03D TOTAL DEPTH: 47.13 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 4.78 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 42.35 (ft) CASING VOLUME: 6.8 (gal) x 3 = 20

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
15:25	7.30	1000	9.5°C	0
15:30	7.14	900	10.0°C	7 Gal.
15:35	7.19	900	10.0°C	14 Gal.
15:40	7.10	1110	10.0°C	21 Gal.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(2) VOAs, Glass	40 ml	No
(3) SVOAs, Amber Glass	1 liter	No
(1) CN, Glass Clear	1 liter	~~HNO3~~ NaOH ph 12+
(2) Pest/PCBs, Amber Glass	1 liter	HNO_3
(2) Metals, Plastic	2 liter	

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ____

OBSERVATIONS: turb = 0.2 ppm

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

LO-1MW04S-FD
LO-1GW03-FB

SAMPLE I.D.: LO-1MW04S-GW DATE: 8 May 1991 TIME: 08:15 (GW-03-FB) 09:15 (MW04S) (FD)

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
RLL	ERM	H.W.H.	EBASCO
BBM	ERM	K. McC.	EBASCO

WELL NUMBER: MW04S TOTAL DEPTH: 18.6 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 7.86 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 10.74 (ft) CASING VOLUME: 1.7 (gal) Vol. x 3 = 5.1 Gal.

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
08:45	7.0	1800	12.0°C	0 Gal.
08:50	7.2	1925	11.0°C	1.75
08:55	7.45	2100	11.0°C	4.0
09:00	7.50	2125	11.0°C	6.0

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(6) VOA Glass Clear	40 ML	NC
(9) SVOA, Amber Glass	1 Liter	NO
(6) Pest./PCB Amber Glass	1 Liter	NO
(6) Metals, plastic	1 Liter	HNO_3
(3) CN, Glass Clear	1 Liter	NaOH

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ____

OBSERVATIONS: 0 Gal. - Blk. to Dk. Gry., Slight Fuel Oil Smell
Fuel Oil smell stronger, water darker
the more bailed

Split FB w/EPA
Split MW04S & F.D. w/EPA

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1MW04D-GW DATE: 7 May 1991 TIME: 15:30

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
RHL	ERH		
BBH	ERH		

WELL NUMBER: MW04D TOTAL DEPTH: 45.7 (ft) I.D.: _____ (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ____-_____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 9.05 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 36.65 (ft) CASING VOLUME: 5.8 (gal) 3 Vol. = 17.4 Gal.

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
15:15	7.29	800	14°C	0 Gal.
15:20	7.13	1050	14°C	6 Gal.
15:25	7.14	1050	14°C	12 Gal.
15:30	7.07	1000	13.5°C	18 Gal.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(2) VOA Glass, Clear	40 ML	NO
(3) SVOA Glass, Amber	1 Liter	No
(2) Pest./PCB Glass Amber	1 Liter	NO
(2) Metals, plastic	1 Liter	HNO_3
(1) CN, Glass clear	1 Liter	NaOH

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ____

OBSERVATIONS: _____

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

LO-1MW055-FD

SAMPLE I.D.: LO-1MW055-GW DATE: 14 Jan 1991 TIME: 09:30

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
RLL	ERM	H.W.H.	EBASCO
BRM	ERM		

WELL NUMBER: MW055 TOTAL DEPTH: 21.2 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: +9 Ft. POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 12.2 (ft) CASING VOLUME: 2 (gal)

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
09:05	6.68	890	12.2°C	0*
09:10	6.81	1000	11.0°C RLL	2 Gal.*
09:15	6.95	1150	11.0°C	4 Gal.*
09:20	6.99	1120	10.8°C	6 Gal.*

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(4) 40 ml clear glass VOA	40 ml	No / No
(6) SVOA, amber glass	1 Liter	
(4) Pest. / PCB, amber glass	1 Liter	
(4) Plastic metals	1 Liter	HNO3
(2) CN, clear glass	1 Liter	NaOH

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ___

OBSERVATIONS: SWL - ±9 Ft., layer of oil on water surface, cannot get accurate Top

* 0 Gal. - Strong fuel oil smell, free product on water surface, water is murky
* 2 Gal. - As above, not as bad
* 4 Gal. - As above
* 6 Gal. - As above

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1MW05D-GW DATE: 7 May 1991 TIME: 11:00

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
BW	ERM	HWW	EBASCO
BBM	ERM		

WELL NUMBER: MW05D TOTAL DEPTH: 46.5 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 10.75 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 35.75 (ft) CASING VOLUME: 5.75 (gal)

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Teflon Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
10:30	7.39	500	12.5°C	0 Gal.
10:35	7.00	1500	12.0°C	6 Gal.
10:40	6.99	1300	12.0°C	12 Gal.
10:45	6.93	1200	12.0°C	18 Gal.

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
(2) VOA, Glass, clear	40 ML	NO
(3) SVOA, Glass Amber	1 Liter	No
(2) Pest./PCB Glass Amber	1 Liter	No
(2) Metals, Plastic	1 Liter	HNO3
(1) C.N. Glass, clear	1 Liter	NaOH

METALS SAMPLE FILTERED IN FIELD? YES ✓ NO ___

OBSERVATIONS: Clear 0-7 Gal., murky pale-gray after

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-IMW065-SW DATE: 5/8/01 TIME: 1200
+ split + MS/MSD for Fbo...

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
TB	FGW-NC		
VA...	FGW-NC		

WELL NUMBER: IMW065 TOTAL DEPTH: 15.52 (ft) I.D.: 2 (in)

MATERIAL: Steel SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 11/2/01 0.51 ~~POST~~-PURGE: 5/8/01 1.49 SAMPLING: _____

THICKNESS OF WATER COLUMN: _____ (ft) CASING VOLUME: 2.6 (gal)

PURGING METHOD: _____ SAMPLING METHOD: _____

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg ~~F~~) °C		Cumulative Volume (gal)
			°F	°C	
0935	7.82	550	12.5	11.7	0 (...)
0938	7.64	440	11.9	11.4	2.5
0942	7.57	44[illegible]	11.5	11.1	5.0
0946	7.32	[illegible]	11.2	10.9	7.5
0950	7.41	439	11.1	10.8	10.0

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES _____ NO _____

OBSERVATIONS: [illegible]

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: ~~9292~~ 0252

HNO = 0 [illegible]

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-1MW060-GW DATE: 5/8/91 TIME: [illegible]

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
JBT	ERM-NC		
VAH	ERM-NC		

WELL NUMBER: MW60 TOTAL DEPTH: 16.26 (ft) I.D.: 2 (in)

MATERIAL: Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

4/24/91 PRE-PURGE: 3.10 ~~POST~~-PURGE: PRE - 5/8 4.01 SAMPLING: _____

THICKNESS OF WATER COLUMN: _____(ft) CASING VOLUME: 7.0 (gal)

PURGING METHOD: _____ SAMPLING METHOD: Teflon bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F) SpC	Temperature (deg F) pH	Cumulative Volume (gal)
0820	6.55	1000	10.2	9.8	0 (initial)
0830	6.83	1180	10.7	10.5	7
0838	6.93	1180	11.0	10.8	14
0847	7.00	1180	11.1	10.9	21

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.

METALS SAMPLE FILTERED IN FIELD? YES _____ NO _____

OBSERVATIONS: _____

PHASE II GROUND WATER SAMPLING FORMS

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

LO-2015-FB 8:45

SAMPLE I.D.: LO-2015-GW DATE: 2/17/92 TIME: 9:40

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
DAK	ERM-NC	KJF	PRC
BBM	ERM-NC		

WELL NUMBER: MW015 TOTAL DEPTH: 21.2 (ft) I.D.: 2 (in)

MATERIAL: SS SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 3.99 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 12.21 (ft) CASING VOLUME: 2.1 x 3 = 6.3 (gal)

PURGING METHOD: BAILER SAMPLING METHOD: BAILER

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
9:20	5.97	1400	8°C	0
9:25	6.74	1500	9°C	2
9:30	6.99	1500	9°C	4
9:35	7.07	1500	9	6
9:40	7.09	1500	9	7

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-201D-GW DATE: 2/17/92 TIME: 1050

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
DHK	ERM-NC	KJF	FRK
BBM	ERM-NC		

WELL NUMBER: MW-01D TOTAL DEPTH: 48.15 (ft) I.D.: 2.0 (in)

MATERIAL: SS SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 10.23 SOFT BOTTOM POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 37.93 (ft) CASING VOLUME: 6.25 x 3 = 18.75 (gal)

PURGING METHOD: BAILER SAMPLING METHOD: BAILER

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg ~~F~~ C	Cumulative Volume (gal)
1005	7.65	1010	10.8°C	-0-
1030	7.42	830	10.0°C	6.25
1040	7.39	850	10.5	12.5
1050	7.41	850	10.5	19.0

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: MW-25 DATE: 2/17/92 TIME: 1500

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
DK	ERM	KJF	PRC
BMM	ERM		

WELL NUMBER: MW-25 TOTAL DEPTH: 15.0 SOFT BOTTOM (ft) I.D.: 2 (in)

MATERIAL: _____ SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 9.55 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 5.45 (ft) CASING VOLUME: 1x3=3 (gal)

PURGING METHOD: BAILER SAMPLING METHOD: BAILER

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
2:45	7.75	1380	9.1	-0-
2:46	7.60	1250	9.0	1
2:48	7.47	1250	9.0	2
2:50	7.48	1250	9.0	3

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-202D-GW DATE: 4/17/92 TIME: 1545

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
BBM	ERM-NC	KJD	DRC
DAK	ERM-NC		

WELL NUMBER: MW-04D TOTAL DEPTH: 46.0 (ft) I.D.: 2.0 (in)

MATERIAL: SS SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 10.99 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 36.01 (ft) CASING VOLUME: 6x3=18 (gal)

PURGING METHOD: BAILER SAMPLING METHOD: BAILER

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
1505	8.01	900	11.5°C	-0-
1520	7.62	1050	12.5	6
1540	7.28	1050	13	12
1545	7.28	1100	13	15
1550	7.25	1100	13	18

MW-035

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

LO-2035-FB 7:30
LO-2035-FD 8:45

SAMPLE I.D.: LO-2035-GW DATE: 2/19/92 TIME: 8:45

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
DK	ERM	KJF	EBASCO
BB "	ERM		

WELL NUMBER: MW035 TOTAL DEPTH: 31.25 (ft) I.D.: 2" (in)

MATERIAL: SS SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 6.69 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 15' (ft) CASING VOLUME: 2.5 (gal)

PURGING METHOD: BAILING SAMPLING METHOD: BAILING

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
8:10	8.50	400	8°	0
8:20	8.09	400	7.5	2.5
8:30	7.87	500	8.0	5.0
8:40	7.88	500	8.1	8.0

MW-03D

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-203-D DATE: 2-19-92 TIME: 0900

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
DK	ERM	KJF	EBASCO
BBM	ERM		

WELL NUMBER: MW03D TOTAL DEPTH: 47.6 (ft) I.D.: 2" (in)

MATERIAL: SS SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 6.44 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 41' (ft) CASING VOLUME: 7 (gal)

PURGING METHOD: Bailer SAMPLING METHOD: Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
8:15	7.94	890	8.0	0
8:20	7.71	900	9.5	7
8:30	7.65	900	9.0	14
8:40	7.68	900	9.1	22

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-2045-GW DATE: 2/17/97 TIME: 11:30

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
BDM	EKM-NC	KJF	ERASCO
DHK	EKM-NC		

WELL NUMBER: MW-045 TOTAL DEPTH: 21.70 (ft) I.D.: 2 (in)

MATERIAL: SS SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 9.71 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 11.99 (ft) CASING VOLUME: 2x3=6 (gal)

PURGING METHOD: BAILER SAMPLING METHOD: BAILER

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg ~~F~~ C)	Cumulative Volume (gal)
1120	6.77	3350	10.9 °C	-0-
1122	7.11	3400	10.0	2
1124	7.26	3510	10	4
1127	7.27	3500	10	6

MW05S
NAPL & GW

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

10.29 oil
11.60

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-2055-GW (LO-2055-) DATE: 2-13-92 TIME: 13:45

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
DK	OTM	KJF	EBASCO
BMA	OTM		

WELL NUMBER: MW05S TOTAL DEPTH: _____ (ft) I.D.: 2" (in)

MATERIAL: SS SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 10.29 oil 11.60 water POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 23' (ft) CASING VOLUME: 4.5 (gal)

PURGING METHOD: Bailer SAMPLING METHOD: Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
1:30	7.93	700	9	0
1:32	7.87	800	8	1.5
1:33	7.87	900	8	3
1:35	7.80	900	8	4.5

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-~~MW0~~ 205D - GW DATE: Feb 17, 1992 TIME: 1500

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
B. Lithic	ERM-NC	Kathy Foszcz	PRC
W.A. Hammer	ERM-NC		

WELL NUMBER: MW05D TOTAL DEPTH: 48.8 (ft) I.D.: 2 (in)

MATERIAL: PVC SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 12.51 POST-PURGE: ___ SAMPLING: ___

THICKNESS OF WATER COLUMN: 36.29 (ft) CASING VOLUME: 6.0 (gal)

PURGING METHOD: Bailer SAMPLING METHOD: Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
14:55	~~6.84~~ Error	2200	9.8	0
15:05	~~5.89~~ Error	1550	10.6	6
15:15	~~7.08~~	1100	10.8	12
15:20	7.09	1400	10.6	18
15:25	7.08	1400	10.7	20

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-2065-GW DATE: 2-18-92 TIME: 14:25

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
VAH	ERM	KJF	OBASCO
RLL	ERM		

WELL NUMBER: MW065 TOTAL DEPTH: 15.90 (ft) I.D.: 2" (in)

MATERIAL: SS SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 2.68 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 13.22 (ft) CASING VOLUME: 2.25 (gal)

PURGING METHOD: BAILING SAMPLING METHOD: BAILING

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
	8.10	325	6.5	0
	7.94	375	5.5	2.25
	7.90	375	5.7	4.5
	7.76	400	6.4	6.75
	7.82	375	5.5	8.0

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-206D-GW DATE: Feb. 13, 1992 TIME: 14:20

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
B. Meinen	ERM North Central	Keith Foszcz	PRC
D. Kaisos	ERM North Central		

WELL NUMBER: MW06D TOTAL DEPTH: 46.0 (ft) I.D.: 2" (in)

MATERIAL: S.S. SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 5.05 POST-PURGE: ___ SAMPLING: ___

THICKNESS OF WATER COLUMN: 40.5 (ft) CASING VOLUME: 7 (gal)

PURGING METHOD: Bailer SAMPLING METHOD: Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
14:05	8.29	475	6.6°C	0
14:10	7.72	700	8.8°C	7
14:15	7.47	1100	9.8°C	14
14:20	7.43	1100	9.6°C	21

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: MW07S DATE: 2/19/92 TIME: 10:00

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
R.L. Little	ERM-NC	KF	EBASCO
V.A. Hammer	ERM-NC		

WELL NUMBER: MW07S TOTAL DEPTH: 24.5 (ft) I.D.: 2 (in)

MATERIAL: Stainless Steel SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 17.24 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 17.26 (ft) CASING VOLUME: 3 (gal)

PURGING METHOD: Bailer SAMPLING METHOD: Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
10:15	7.60	2600	10.9°C	0
10:20	7.42	2700	11.1°C	3
10:25	7.31	2550	11.0°C	6
10:30	7.20	2850	11.5°C	9
10:35	7.17	2800	11.3°C	10

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-207D-GW DATE: 2/10/92 TIME: 11:30

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
R. L. [illegible]	ERM-NC	KJF	EBASCO
V. A. [illegible]	ERM-NC		

WELL NUMBER: 4W07D TOTAL DEPTH: 57.0 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 16.82 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 40.18 (ft) CASING VOLUME: 7 (gal)

PURGING METHOD: Bailing SAMPLING METHOD: Bailing

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
10:55	7.26	950	10.9°C	0
11:05	7.16	950	11.0°C	7
11:15	7.12	1050	11.1°C	14
11:25	7.12	975	11.1°C	21

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

N 'LE I.D.: LO-2085-GW DATE: 2/18/92 TIME: 830

J 'LERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
AK	ERM-NC	KJF	GBASCO
M	ERM-NC		

ELL NUMBER: MW 085 TOTAL DEPTH: 24.20 (ft) (Est Bottom) I.D.: _____ (in)

A ERIAL: SS SCREENED INTERVAL: ____-_____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

F -PURGE: 3.74 POST-PURGE: _____ SAMPLING: _____

HICKNESS OF WATER COLUMN: 15.54 (ft) CASING VOLUME: 2 5x3=7.5 (gal)

U GING METHOD: BAILER SAMPLING METHOD: BAILER

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
810	7.17	1350	9.2	-0-
12	7.25	1320	8.0	2.5
815	7.30	1320	8.1	5.0
20	7.29	1310	8.1	7.5

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-2101L-GW DATE: 2/18/92 TIME: 9:30

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
BBM	ERM-NC	KJF	EBASCO
DAK	ERM-NC		

WELL NUMBER: ~~MW~~ G101L TOTAL DEPTH: ~~39.40~~ 30.4 (ft) I.D.: 2" (in)

MATERIAL: SS SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 17.22 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 17.18 (ft) CASING VOLUME: ~~20~~ 3x3=9 (gal)

PURGING METHOD: BAILER SAMPLING METHOD: BAILER

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
9:05	8.49	500	10	3
9:15	7.58	650	11	3
9:18	7.58	650	11	6
9:20	7.58	700	11	9

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-G101M-GW DATE: 2-18-92 TIME: 1000

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
DAK	ERM-NC	KJF	EBASCO
BBM	ERM-NC		

WELL NUMBER: G101M TOTAL DEPTH: 23.75 (ft) 50FT I.D.: 2.0 (in)

MATERIAL: SS SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 17.96 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 5.79 (ft) CASING VOLUME: 1 x3 = 3 (gal)

PURGING METHOD: BAILING SAMPLING METHOD: BAILING

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
9:30	7.91	500	9	-0-
9:33	7.69	750	11	1
9:45	7.63	600	10	2
9:50	7.57	650	11	3

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-2101D-GW DATE: 2-18-92 TIME: 9:50

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
DAK	ERM-NC	KJF	EBASCO
BBM	ERM-NC		

WELL NUMBER: 9101D TOTAL DEPTH: 41.10 (ft) 30FT I.D.: 2.0 (in)

MATERIAL: SS SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 17.16 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 23.96 (ft) CASING VOLUME: 4 x 3 = 12 (gal)

PURGING METHOD: BAILER SAMPLING METHOD: BAILER

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
9:30	8.09	600	11	0
9:34	7.56	750	11	4
9:45	7.57	600	11	8
9:50	7.49	650	11	12

GW2L

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: CO-2102L-GW DATE: 2-18-92 TIME: 11:30

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
DK	ERM	KJD	RLC
BWM	ERM		

WELL NUMBER: GW2L TOTAL DEPTH: 16.75 (ft) HARD BOTTOM I.D.: _____ (in)

MATERIAL: SS SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 9.60 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 24 (ft) CASING VOLUME: 4 (gal)

PURGING METHOD: Bailer SAMPLING METHOD: Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
11:15	8.09	800	9	0
11:18	7.80	1000	9	1.5
11:20	7.59	1000	9	3
11:21	7.58	1000	9.5	4.5

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-2102D-GW DATE: 2-18-92 TIME: 13:15

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
R.L. Little	ERM	KJF	Emasco
V.A. Hammer	ERM		

WELL NUMBER: G102D TOTAL DEPTH: 19.95 (ft) I.D.: 2" (in)

MATERIAL: SS SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 10.52 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 9.4 (ft) CASING VOLUME: 1½ (gal)

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
13:25	8.20	975	9.2°C	0
13:30	7.80	975	9.2°C	1½
13:35	7.64	875	9.4°C	3
13:40	7.56	975	9.7°C	4.5

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: G106 L DATE: 2/17/92 → 2/18/92 TIME: 11:35

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
[illegible]	ERM-NC	[illegible]	EPA
[illegible]	ERM-NC	Keith Foszcz	PRC

WELL NUMBER: G106 L TOTAL DEPTH: 14.93 (ft) I.D.: 2" (in)

MATERIAL: PVC SS SCREENED INTERVAL: ____-____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 10.69 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 4.2 (ft) CASING VOLUME: 1 (gal)

PURGING METHOD: Bailer SAMPLING METHOD: Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
[illegible]	7.3	1250	[illegible]	0 Frose
08:05	7.3	1250	7.3	1 Brown
08:10	7.42	1150	7.0	2 Dark
08:10	7.41	1150	7.1	3 Blows

Sample at 08:15

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: LO-2106DR-GW DATE: Feb 18 1992 TIME: 0825

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
R.L. Little	ERM-NC	Kathy Eastes	PRC
Y.A. Hawkins	ERM-NC		

WELL NUMBER: G-106 DR TOTAL DEPTH: 46.8 (ft) I.D.: 2 (in)

MATERIAL: Stain. Steel SCREENED INTERVAL: ___-___ (ft)

WATER LEVEL TO TOP OF CASING (ft)

PRE-PURGE: 11.87 POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: 35.0 (ft) CASING VOLUME: 6 (gal)

PURGING METHOD: Teflon Bailer SAMPLING METHOD: Bailer

STABILIZATION TEST

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
08:20	6.92	1050	10.2	0
08:25	7.27	1100	10.1	6
08:35	7.34	1100	9.3	12
08:45	7.31	1050	10.0	18

APPENDIX L

APPENDIX L

MONTHLY CLIMATOLOGICAL DATA SUMMARIES

JAN 1991
CHICAGO, IL
NAT'L WEA SER OFC
10600 WEST HIGGINS RD

ISSN 0198-1854

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

O'HARE INTERNATIONAL AIRPORT

LATITUDE 41° 59'N LONGITUDE 87° 54'W ELEVATION GROUND 658 FEET TIME ZONE CENTRAL 94846

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WEATHER TYPES 1 FOG 2 HEAVY FOG 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE, HAZE 9 BLOWING SNOW	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 INCHES	PRECIPITATION WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE IN INCHES ELEV 674 FEET ABOVE M.S.L.	WIND M.P.H. RESULTANT DIR	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST SPEED	PEAK GUST DIRECTION	FASTEST 1-MIN SPEED	FASTEST 1-MIN DIRECTION	SUNSHINE MINUTES	PERCENT OF TOTAL POSSIBLE	SKY COVER TENTHS SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
01	33	12	23	-2	14	42	0			0.00	0.0	29.540	21	12.0	12.6	40	SW	21	21	521	44	5	4
02	24	5	15	-7	11	50	0			T	T	29.710	34	13.0	13.6	24	N	18	35	525	47	10	7
03	16	12	14*	-15	-3	58	0	*		0.00	0.0	29.840	27	13.3	11.5	20	W	15	26	552	100	2	3
04	24	5	14	-8	5	51	0			0.00	0.0	29.760	24	7.4	9.7	18	W	14	28	533	91	3	5
05	30	1	16	4	22	49	0	2 6		0.26	3.1	29.480	22	7.7	9.4	17	W	16	22	0	0	10	10
06	25	15	20	-2	13	45	0			0.00	0.0	29.750	34	11.6	11.9	23	N	17	35	497	90	10	2
07	29	13	21	-1	16	44	0			0.00	0.0	29.930	07	10.1	13.7	25	E	18	40	476	85	7	4
08	30	20	25	4	23	40	0	* 5 8		0.01	T	29.570	16	7.9	10.5	20	SE	15	12	0	0	10	9
09	30	15	23	2	22	42	0	* 5		T	T	29.690	29	8.2	9.3	17	W	13	30	0	0	10	9
10	31	13	22	1	22	43	0	* 5		0.09	T	29.720	08	10.9	13.8	37	E	24	40	0	0	10	10
11	32	26	29	8	28	36	0	2 4 6		0.50	5.1	29.245	04	7.7	12.8	35	E	21	10	0	0	10	10
12	29	22	26	5	23	39	0	1		0.05	0.7	29.300	32	10.3	11.1	22	NW	20	33	0	0	10	10
13	32	16	24	3	23	41	0	1		T	T	29.225	20	15.6	16.1	37	S	25	13	0	0	10	10
14	38	23	31	10	27	34	0	* 3		0.00	0.0	29.150	22	11.7	12.0	30	SW	21	22	409	72	3	6
15	37	22	30	9	29	35	0	2		0.07	0.0	29.210	04	6.5	7.4	16	NE	16	03	0	0	10	10
16	36	25	31	10	30	34	0	1		0.39	T	29.110	34	12.0	15.1	28	N	20	35	0	0	10	10
17	30	22	25	4	21	40	0	1 5		T	T	29.330	27	13.6	14.1	26	W	20	29	0	0	10	9
18	29	14	22	1	19	43	0	2		0.00	0.0	29.380	24	13.6	14.1	28	W	25	27	12	2	8	5
19	44*	29	37*	16	30	28	0	2		0.00	0.0	29.070	23	17.0	17.6	37	SW	24	24	470	82	5	7
20	36	17	27	6	24	38	0	1		0.04	0.7	29.090	34	13.5	14.8	37	N	25	36	140	24	10	10
21	17	3	10	-11	1	55	0			0.00	0.0	29.430	32	14.4	15.2	33	N	24	33	450	78	6	5
22	26	-1*	12	-9	2	53	0			T	0.2	29.240	20	15.9	16.7	38	SW	28	19	355	61	8	6
23	32	10	21	0	12	44	0			T	T	29.110	26	18.9	20.5	45	W	30	28	58	10	4	4
24	14	2	8	-13	-1	57	0			0.00	0.0	29.560	30	11.2	11.4	22	W	16	29	12	2	0	7
25	16	1	9	-13	-6	57	0			T	T	29.680	28	6.9	8.7	16	NW	12	33	101	17	4	6
26	22	8	15	-6	7	50	0			T	T	29.360	24	14.5	14.9	31	SW	22	24	499	85	4	4
27	33	13	23	2	14	42	0			0.00	0.0	29.055	23	14.3	14.8	33	SW	20	25	174	29	9	4
28	35	14	25	3	17	40	0			0.00	0.0	29.210	25	8.0	12.9	31	SW	21	26	489	82	3	4
29	22	12	16	-3	13	46	0	*		T	0.1	29.370	36	15.4	15.6	28	N	20	36	214	36	10	10
30	25	8	16	-3	5	49	0			T	0.1	29.310	28	9.2	13.0	33	W	21	25	540	91	3	5
31	33	12	23	-5	6	48	0			0.00	0.0	29.590	25	11.1	14.3	32	NW	20	29	557	93	2	2
	SUM 379	SUM 305				TOTAL 1365	TOTAL 0	NUMBER OF DAYS		TOTAL 1.41	TOTAL 11.1	FOR THE MONTH: 29.420	27	5.7	13.2	45	W	30	28	TOTAL 7254	% FOR MONTH	SUM 215	SUM 207
	AVG 28.4	AVG 13.1	AVG 20.8	DEP -0.6	AVG 15.0	DEP 13	DEP 0	PRECIPITATION ≥ .01 INCH 8		DEP -0.19						DATE 23		DATE 23		POSSIBLE 17757	41	AVG 6.9	AVG 5.7

NUMBER OF DAYS				SEASON TO DATE TOTAL	SEASON TO DATE TOTAL
MAXIMUM TEMP ≥ 90°	MAXIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 0°	3633	0
DEP	DEP				
0	25	31	0	-83	0

SNOW, ICE PELLETS ≥ 1.0 INCH	3
THUNDERSTORMS	0
HEAVY FOG	5
CLEAR 7 PARTLY CLOUDY 7 CLOUDY 17	

GREATEST IN 24 HOURS AND DATES		
PRECIPITATION	SNOW, ICE PELLETS	
0.58	10-11	5.8
10-11		

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE: 8 14+

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE
T TRACE AMOUNT
+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA.

DATA IN COLS 6 AND 12-15 ARE BASED ON 21 OR MORE OBSERVATIONS AT HOURLY INTERVALS. RESULTANT WIND IS THE VECTOR SUM OF WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS. COLS 16 & 17: PEAK GUST - HIGHEST INSTANTANEOUS WIND SPEED ONE OF TWO. WIND SPEEDS IS GIVEN UNDER COLS 18 & 19: FASTEST MILE - HIGHEST RECORDED SPEED FOR WHICH A MILE OF WIND PASSES STATION (DIRECTION IN COMPASS POINTS). FASTEST OBSERVED ONE MINUTE WIND - HIGHEST ONE MINUTE SPEED (DIRECTION IN TENS OF DEGREES). ERRORS WILL BE CORRECTED IN SUBSEQUENT PUBLICATIONS.

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER.

Kenneth D. Wadleigh
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE
NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

JAN 1991
CHICAGO, IL

FEB 1991
CHICAGO, IL
NAT'L WEA SER OFC
10600 WEST HIGGINS RD

ISSN 0198-1864

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

CHARE INTERNATIONAL AIRPORT

LATITUDE 41° 59'N LONGITUDE 87° 54'W ELEVATION GROUND: 658 FEET TIME ZONE CENTRAL 94846

DATE 1	TEMPERATURE °F MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEPARTURE FROM NORMAL 5	AVERAGE DEW POINT 6	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL) 7A	COOLING (SEASON BEGINS WITH JAN) 7B	WEATHER TYPES (1 FOG, 2 HEAVY FOG, 3 THUNDERSTORM, 4 ICE PELLETS, 5 HAIL, 6 GLAZE, 7 DUSTSTORM, 8 SMOKE, HAZE, 9 BLOWING SNOW) 8	9	SNOW, ICE PELLETS, ICE ON GROUND AT 2600 INCHES 9	PRECIPITATION WATER EQUIVALENT (INCHES) 10	SNOW, ICE PELLETS (INCHES) 11	AVERAGE STATION PRESSURE IN INCHES ELEV 674 FEET ABOVE M S L 12	WIND M P H RESULTANT DIR 13	RESULTANT SPEED 14	AVERAGE SPEED 15	PEAK GUST SPEED 16	DIRECTION 17	FASTEST 1-MIN SPEED 18	DIRECTION 19	SUNSHINE MINUTES 20	PERCENT OF TOTAL POSSIBLE 21	SKY COVER TENTHS SUNRISE TO SUNSET 22	MIDNIGHT TO MIDNIGHT 23
21	39	18	29	9	21	36	0	1	9	T	0.00	0.0	29.600	19	10.3	10.8	26	SW	17	21	498	83	7	5
22	49	30	40	12	29	25	0	1		T	0.00	0.0	29.560	22	10.3	10.8	24	SW	17	21	554	92	3	3
23	52	34	43	13	30	23	0			T	0.00	0.0	29.480	21	14.0	14.3	26	SW	18	22	504	86	6	4
24	51	36	43	21	36	21	0	1		T	0.00	0.0	29.410	22	14.2	14.7	29	SW	21	25	434	71	3	3
25	52	16	34	6	34	26	0	2	9	T	0.00	0.0	29.500	03	6.3	9.8	23	NE	20	23	455	74	8	8
26	37	32	35	11	34	30	0	2		T	0.00	0.0	29.530	02	13.0	13.6	25	NE	17	22	118	19	10	10
27	36	26	32	8	32	33	0	2	9	T	0.00	0.0	29.570	36	5.0	7.6	21	NE	15	26	141	23	9	9
28	40	25	33	10	30	31	0	1	9	T	0.00	0.0	29.420	24	11.2	11.8	25	SW	18	25	582	94	4	5
29	47	28	38	14	32	27	0	1	9	0	0.00	0.0	29.310	31	4.0	6.9	21	SW	15	23	513	83	10	9
30	35	25	30	5	30	35	0			0	0.00	0.0	29.360	31	13.4	13.7	31	NW	23	31	582	93	1	3
31	28	18	23	-3	4	43	0			0	0.00	0.0	29.470	32	11.9	12.2	24	NW	16	32	599	96	1	2
32	36	12	24	-1	13	41	0			0	0.00	0.0	29.290	19	6.6	9.9	23	S	17	20	586	93	5	4
33	38	27	33	8	26	32	0			0	0.05	0.4	28.750	04	11.8	13.6	26	NE	21	34	21	3	10	10
34	30	15	22	-4	19	43	0	1	9	T	0.14	2.4	28.730	33	17.8	18.4	44	N	29	34	0	0	10	10
35	13		8*	-18	-3	57				3	T	T	29.240	31	20.6	21.1	38	NW	28	33	519	82	5	5
36	31	1*	16	-10	3	49	0			1	T	T	29.220	22	16.8	17.1	39	SW	28	22	455	71	6	6
37	42	28	35	8	25	30	0	1		0	0.00	0.0	29.180	16	7.0	10.0	23	SW	16	21	295	46	10	10
38	43	34	39	12	35	26	0	2		0	0.09	0.0	29.100	10	8.7	12.5	28	E	23	38	0	0	10	10
39	41	30	36	9	29	29	0		8	T	T	0.0	29.230	26	15.3	15.9	31	W	22	26	6	1	10	10
40	46	28	37	10	27	28	0			0	0.00	0.0	29.310	22	15.8	16.7	40	SW	25	31	350	54	7	7
41	53*	34	46*	18	36	19	0			0	0.00	0.0	29.270	24	11.6	12.3	24	SW	18	26	424	65	4	3
42	44	24	34	5	21	31	0			0	0.00	0.0	29.480	32	13.0	14.3	32	NW	27	32	450	69	3	3
43	34	20	27	-1	16	38	0			0	T	T	29.460	15	8.0	12.1	32	SE	17	15	330	50	10	8
44	35	21	28	-1	19	37	0			0	0.00	0.0	29.400	32	10.3	12.6	28	NW	18	33	445	67	8	6
45	27	16	22	-9	9	44	0			T	0.00	0.0	29.530	34	10.9	11.3	22	N	15	33	501	76	1	2
46	27	11	20	-9	12	45	0	1		0	0.01	0.1	29.370	28	6.6	8.9	18	NW	12	26	410	62	9	9
47	30	16	25	-5	8	40	0	1		T	T	T	29.260	25	9.7	11.1	24	W	17	24	465	70	1	2
48	49	28	39	9	30	26	0	1	9	T	0.03	0.4	29.130	15	9.1	10.9	36	S	24	19	416	62	9	1
SUM	SUM					TOTAL	TOTAL	NUMBER OF DAYS			TOTAL	TOTAL	FOR THE MONTH:								TOTAL	%	SUM	SUM
1092	643					945	0				0.62	3.3	29.330	27	4.5	12.7	44	N	29	34	10673	FOR	92	
AVG	AVG	AVG	DEP	AVG		DEP	DEP	PRECIPITATION			DEP						DATE: 14		DATE 14		POSSIBLE	MONTH	AVG	AVG
39.0	23.0	31.0	5.0	22.5		-147	0	≥ .01 INCH		5	-0.69										17816	60	6.9	6.3

NUMBER OF DAYS				SEASON TO DATE TOTAL	SEASON TO DATE TOTAL
MAXIMUM TEMP		MINIMUM TEMP			
≥ 90°	≤ 32°	≤ 32°	≤ 0°	DEP	DEP
0	4	24	2	4578	0
				-230	0

SNOW, ICE PELLETS ≥ 1.0 INCH			
THUNDERSTORMS	0	HEAVY FOG	4
CLEAR	5	PARTLY CLOUDY	9
CLOUDY	14		

GREATEST IN 24 HOURS AND DATES			
PRECIPITATION		SNOW, ICE PELLETS	
0.39	18	3.6	13-14

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE	
3	15+

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE
T TRACE AMOUNT
+ ALSO ON EARLIER DATE(S)
HEAVY FOG VISIBILITY 1/4 MILE OR LESS.
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

DATA IN COLS 6 AND 12-15 ARE BASED ON 21 OR MORE OBSERVATIONS AT HOURLY INTERVALS. RESULTANT WIND IS THE VECTOR SUM OF WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS (COLS 16 & 17: PEAK GUST - HIGHEST INSTANTANEOUS WIND SPEED. ONE OF TWO WIND SPEEDS IS GIVEN UNDER COLS 18 & 19: FASTEST MILE - HIGHEST RECORDED SPEED FOR WHICH A MILE OF WIND PASSES STATION (DIRECTION IN COMPASS POINTS) FASTEST OBSERVED ONE MINUTE WIND - HIGHEST ONE MINUTE SPEED (DIRECTION IN TENS OF DEGREES). ERRORS WILL BE CORRECTED IN SUBSEQUENT PUBLICATIONS.

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FEB 1991
CHICAGO, IL

MAR 1991
CHICAGO,IL
NATL WEATHER SERV
7600 WEST HIGGINS RD

ISSN 0198-1854

LOCAL CLIMATOLOGICAL DATA
Monthly Summary

O'HARE INTERNATIONAL AIRPORT

LATITUDE 41° 59'N LONGITUDE 87° 54'W ELEVATION (GROUND) 658 FEET TIME ZONE CENTRAL 94846

MAR 1991
CHICAGO,IL

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WEATHER TYPES* 1 FOG 2 HEAVY FOG 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE, HAZE 9 BLOWING SNOW	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 INCHES	PRECIPITATION WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE IN INCHES ELEV 674 FEET ABOVE S.L.	WIND MPH RESULTANT DIR	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST SPEED	DIRECTION	FASTEST MIN SPEED	DIRECTION	SUNSHINE MINUTES	PERCENT OF TOTAL POSSIBLE	SKY COVER TENTHS SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
01	51	45	48	18	44	17	0	8	0	0.47	0.0	28.85	18	14.4	15.9	30	S	22	22	0	0	10	9
02	41	22	32	6	33	29	0	6	0	0.08	0.0	28.91	35	15.7	19.7	45	N	32	36	0	0	10	10
03	32	21	26*	-6	19	39	0	6	0	T	T	29.16	35	17.5	17.8	32	N	22	36	0	0	10	9
04	43	22	33	1	19	33	0		0	0.00	0.0	29.25	31	7.4	9.8	21	NW	16	30	559	82	7	1
05	52	25	39	1	28	26	0		0	T	0.0	28.81	17	15.7	15.8	40	S	24	17	605	74	9	1
06	51	25	38	6	31	27	0		0	T	0.0	28.69	29	14.4	18.4	37	E	23	32	5	1	10	9
07	35	21	28	-4	11	37	0		0	0.00	0.0	29.21	30	10.4	11.6	28	NW	22	32	65	94	1	1
08	45	19*	32	1	23	33	0		0	0.04	T	29.27	23	12.4	13.1	33	S	22	33	462	67	3	1
09	38	29	34	1	25	31	0		0	T	T	29.30	28	14.2	15.6	32	W	29	33	327	47	8	
10	46	23	35	1	24	30	0		0	0.00	0.0	29.52	09	4.1	9.8	21	E	16	11	584	84	4	5
11	48	31	40	6	27	25	0		0	0.03	0.0	29.41	13	15.8	16.9	30	SE	23	11	433	62	10	10
12	34	30	32	-2	25	33	0	3 6	0	0.44	4.4	29.19	09	19.1	19.6	39	E	29	09	0	0	10	10
13	36	29	33	-2	25	32	0	9	5	0.08	0.9	29.05	05	24.1	24.9	43	NE	31	04	166	23	10	10
14	38	29	34	-1	26	31	0		0	0.00	0.0	29.31	03	16.9	17.3	32	NE	24	03	684	96	2	1
15	44	24	34	-1	26	31	0		1	0.00	0.0	29.58	05	8.0	9.2	22	E	15	06	686	96	5	3
16	52	27	40	4	29	25	0		1	0.00	0.0	29.59	12	5.0	7.7	20	S	12	16	565	79	5	6
17	43	34	39	3	35	26	0		1	0.59	0.0	29.26	07	9.8	10.7	22	E	16	06	0	0	10	10
18	49	36	43	6	35	22	0	8	0	0.02	0.0	29.15	31	10.9	13.4	25	NW	18	36	372	43	9	4
19	57	32	45	8	36	20	0		0	0.00	0.0	29.25	27	11.1	11.8	28	W	17	26	674	93	0	2
20	61	32	47	10	41	18	0	6	0	T	0.0	29.13	16	12.9	14.0	39	S	25	15	560	77	9	5
21	71	49	60	22	49	5	0		0	0.00	0.0	28.95	20	14.6	15.4	35	SW	25	21	684	94	2	2
22	64	46	55	17	54	10	0		0	0.16	0.0	28.96	16	13.9	15.7	46	S	30	16	180	25	10	9
23	58	35	47	8	37	18	0		0	0.14	T	28.78	24	24.1	25.9	55	SW	35	25	83	11	10	8
24	54	36	45	6	33	20	0	8	0	0.00	0.0	29.16	28	13.7	14.7	33	W	24	28	337	46	8	6
25	65	33	49	9	37	16	0		0	0.00	0.0	29.31	13	6.3	8.4	22	E	16		490	66		
26	75*	52	64*	24	56		0	1 3 8	0	0.41	0.0	28.98	18	13.6	15.0	36	SW	27	18	426	57	7	9
27	74	38	56	15	52	9	0	1 3 5 8	0	0.05	T	28.58	22	17.7	22.0	84	SW	39	20	240	32	8	9
28	52	30	41	0	26	24	0		0	T	0.0	29.00	28	18.1	21.7	44	W	30	26	622	83	3	3
29	37	24	31	-10	18	34	0		0	T	T	29.24	36	13.3	14.2	31	N	24	31	544	72	6	5
30	42	22	32	-10	18	33	0		1	T	T	29.46	28	4.4	7.9	21	SW	13	24	665	88	3	4
31	54	32	43	1	29	22	0	3	1	0.03	0.6	29.31	25	9.2	13.7	36	NW	23	29	481	64	7	7
	SUM 1550	SUM 952				TOTAL 156	TOTAL 0	NUMBER OF DAYS		TOTAL 3.54	TOTAL 5.9	29.140	25	FOR THE MONTH: 17.7	15.1	84	SW	39	20	TOTAL 11930	% POSSIBLE 219	SUM AVG 204	
	AVG 50.0	AVG 30.7	AVG 40.4	DEP 4.4	AVG 31.2	DEP -143	DEP 0	PRECIPITATION ≥ .01 INCH 13		DEP 0.95						DATE: 27		DATE: 27			MONTH 54	AVG 7.1	AVG 5.8

NUMBER OF DAYS				SEASON TO DATE TOTAL	TOTAL				GREATEST IN 24 HOURS AND DATES			GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE
MAXIMUM TEMP ≥ 90°	≤ 32°	MINIMUM TEMP ≤ 32°	≤ 0°	5334	0	SNOW, ICE PELLETS ≥ 1.0 INCH	1		PRECIPITATION	SNOW, ICE PELLETS		
				DEP -373	DEP 0	THUNDERSTORMS	4		1.06 26-27	5.3 12-13		5 13
						HEAVY FOG	0					
9		21	0			CLEAR 6	PARTLY CLOUDY 8	CLOUDY 17				

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
T TRACE AMOUNT
+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

DATA IN COLS 6 AND 12-15 ARE BASED ON 21 OR MORE OBSERVATIONS AT HOURLY INTERVALS. RESULTANT WIND IS THE VECTOR SUM OF WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS. COLS 16 & 17: PEAK GUST - HIGHEST INSTANTANEOUS WIND SPEED. ONE OF TWO WIND SPEEDS IS GIVEN UNDER COLS 18 & 19: FASTEST MILE - HIGHEST RECORDED SPEED FOR WHICH A MILE OF WIND PASSES STATION (DIRECTION IN COMPASS POINTS). FASTEST OBSERVED ONE MINUTE WIND - HIGHEST ONE MINUTE SPEED. (DIRECTION IN TENS OF DEGREES). ERRORS WILL BE CORRECTED IN SUBSEQUENT PUBLICATIONS.

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER

Kenneth D. Wadsen
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

noaa
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE
NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

APR 1991

CHICAGO, IL

O'HARE INTERNATIONAL AIRPORT

LATITUDE [illegible] LONGITUDE [illegible] ELEVATION (GROUND) [illegible] FEET TIME ZONE CENTRAL 94846

DATE	TEMPERATURE °F: MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65 °F: HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WEATHER TYPES	SNOW, ICE PELLETS OR ICE ON GROUND AT 0600 (INCHES)	PRECIPITATION: WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE (INCHES, ELEV. FEET ABOVE M.S.L.)	WIND: RESULTANT DIR	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST: SPEED	DIRECTION	FASTEST MILE: SPEED	DIRECTION	SUNSHINE: MINUTES	PERCENT OF TOTAL POSSIBLE	SKY COVER (TENTHS): SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
1	[illegible]	[illegible]	40	[illegible]	28	25	[illegible]		[illegible]	0.00	0.0	29.53	[illegible]	[illegible]	[illegible]	[illegible]	NW	[illegible]	[illegible]	[illegible]	81	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	0.00	0.0	29.56	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	0.00	0.0	29.58	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	0.0	29.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	0.00	0.0	29.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W	[illegible]	[illegible]	[illegible]	80	[illegible]	[illegible]
6	[illegible]*	[illegible]	[illegible]*	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	0.00	0.0	29.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	29.[illegible]	[illegible]	[illegible]	15.5	33	W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	29.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	54	[illegible]	[illegible]
9	[illegible]	[illegible]	44	[illegible]	32	[illegible]			[illegible]	[illegible]	[illegible]	29.[illegible]	34	[illegible]	[illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	44	[illegible]	29	[illegible]			[illegible]	[illegible]	[illegible]	29.40	34	[illegible]	12.6	30	NW	[illegible]	[illegible]	[illegible]	4[illegible]	[illegible]	4
11	[illegible]	[illegible]	39*	[illegible]	[illegible]	[illegible]			[illegible]	0.00	[illegible]	29.70	06	13.4	[illegible]	31	E	[illegible]	18	[illegible]	0	[illegible]	[illegible]
12	[illegible]	[illegible]	44	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	29.61	09	16.5	15.9	33	SE	24	[illegible]	[illegible]	[illegible]	10	[illegible]
13	[illegible]	[illegible]	46	[illegible]	40	19			[illegible]	0.02	0.0	29.35	06	13.0	12.5	26	NE	18	[illegible]	[illegible]	0	10	[illegible]
14	[illegible]	[illegible]	59	[illegible]	51	[illegible]			[illegible]	[illegible]	0.0	29.07	21	[illegible]	14.3	37	SW	29	[illegible]	183	22	10	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	40	[illegible]			[illegible]	.36	0.0	29.07	29	12.5	18.3	37	SW	26	[illegible]	783	48	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	38	[illegible]			[illegible]	[illegible]	0.0	29.30	25	5	8.4	[illegible]	W	[illegible]	[illegible]	[illegible]	25	8	8
17	[illegible]	[illegible]	[illegible]	[illegible]	36	18			[illegible]	0.00	0.0	29.38	04	10.8	[illegible]	[illegible]	NE	[illegible]	[illegible]	744	93	[illegible]	[illegible]
18	[illegible]	[illegible]	46	[illegible]	38	19			[illegible]	0.00	0.0	29.29	06	13.5	14.5	33	NE	[illegible]	[illegible]	586	73	10	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	39	18			[illegible]	0.00	0.0	29.28	03	20.4	21.[illegible]	41	NE	28	[illegible]	[illegible]	29	4	10
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	24			[illegible]	0.00	0.0	29.40	02	15	[illegible]	[illegible]	N	[illegible]	[illegible]	765	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	45	-5	36	[illegible]			[illegible]	0.00	0.0	29.24	01	[illegible]	12.8	31	N	[illegible]	[illegible]	637	78	3	4
22	63	[illegible]	48	[illegible]	[illegible]	[illegible]			[illegible]	0.00	0.0	28.98	26	8.0	9.5	32	NW	[illegible]	[illegible]	758	93	[illegible]	[illegible]
23	[illegible]	[illegible]	50	[illegible]	38	15			[illegible]	0.31	0.0	28.92	[illegible]	[illegible]	[illegible]	48	W	35	[illegible]	480	59	8	[illegible]
24	54	[illegible]	[illegible]	[illegible]	37	14			[illegible]	[illegible]	0.0	29.08	35	[illegible]	9.3	18	W	14	[illegible]	735	87	[illegible]	[illegible]
25	[illegible]	[illegible]	64	[illegible]	36	[illegible]			[illegible]	[illegible]	0.0	29.35	[illegible]	[illegible]	8.9	[illegible]	S	14	[illegible]	683	84	10	4
26	[illegible]	[illegible]	59	[illegible]	46	[illegible]			[illegible]	[illegible]	0.0	29.20	09	10	[illegible]	24	E	[illegible]	[illegible]	762	82	5	[illegible]
27	[illegible]	[illegible]	65	[illegible]	50	[illegible]			[illegible]	[illegible]	0.0	29.05	15	11	[illegible]	28	SE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	74	[illegible]	64	[illegible]	58	[illegible]			[illegible]	[illegible]	0.0	29.11	08	5	[illegible]	33	E	[illegible]	[illegible]	[illegible]	[illegible]	4	[illegible]
29	[illegible]	[illegible]	64	[illegible]	59	[illegible]			[illegible]	[illegible]	0.0	28.91	18	11	15.5	44	[illegible]	[illegible]	[illegible]	[illegible]	9	[illegible]	[illegible]
30	66	[illegible]	58	4	40	[illegible]			[illegible]	0.20	0.0	29.08	24	19.5	10.9	46	SW	[illegible]	[illegible]	412	48	[illegible]	5

SUM 1845	SUM [illegible]				TOTAL 393	TOTAL [illegible]	NUMBER OF DAYS
AVG 61.5	AVG 42.5	AVG 52.0	DEP 3.2	AVG 40.2	DEP -93	DEP [illegible]	PRECIPITATION ≥ .01 INCH [illegible]

PRECIPITATION TOTAL 4.00	SNOW TOTAL [illegible]	FOR THE MONTH: 29.26	[illegible]	13.4
DEP 0.34		PEAK GUST 48 W DATE [illegible]	FASTEST MILE 35 DATE [illegible]	

SUNSHINE TOTAL	% FOR MONTH	SKY COVER SUM	SUM
11593	48	[illegible]	[illegible]
POSSIBLE 24025		AVG 7.[illegible]	AVG 6.9

NUMBER OF DAYS

MAXIMUM TEMP ≥ 90°	MAXIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 0°
0	0	4	0

SEASON TO DATE	
TOTAL	TOTAL
5727	[illegible]
DEP	DEP
466	[illegible]

SNOW, ICE PELLETS ≥ 1.0 INCH [illegible]
THUNDERSTORMS 5
HEAVY FOG [illegible]
CLEAR [illegible] PARTLY CLOUDY 6 CLOUDY [illegible]

GREATEST IN 24 HOURS AND DATES

PRECIPITATION		SNOW, ICE PELLETS	
1.34	08-09	trace	10+

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE: [illegible]

* EXTREME FOR THE MONTH - LAST OCCURRENCE OF MORE THAN ONE
T TRACE AMOUNT
+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

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MAY 1991
CHICAGO, IL

NWS 1398
CHICAGO, IL
NATL WEA SER OFC
6600 WEST HIGGINS RD

ISSN 0198-7054

LOCAL CLIMATOLOGICAL DATA
Monthly Summary

CHARE INTERNATIONAL AIRPORT

LATITUDE 41° 59'N LONGITUDE 87° 54'W ELEVATION (GROUND) 658 FEET TIME ZONE CENTRAL 94846

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WEATHER TYPES 1 FOG 2 HEAVY FOG 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE, HAZE 9 BLOWING SNOW	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 (INCHES)	PRECIPITATION WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE IN INCHES ELEV. 674 FEET ABOVE M.S.L.	WIND M.P.H. RESULTANT DIR	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST SPEED	PEAK GUST DIRECTION	FASTEST 1-MIN SPEED	FASTEST 1-MIN DIRECTION	SUNSHINE MINUTES	PERCENT OF TOTAL POSSIBLE	SKY COVER TENTHS SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
	2	3	4	5	6	7A	7B	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	60	44	52	-2	38	13	0		0	0.03	0.0	29.985	26	14.3	14.9	37	W	23	29	385	46	8	9
02	69	40	55	0	35	10	0		0	0.00	0.0	29.320	30	8.6	13.8	37	W	21	27	276	33	2	1
03	56	40*	48	-7	35	17	0		0	0.01	0.0	29.390	06	12.2	13.3	28	E	19	09	125	15	8	8
04	59	45	52	-3	43	13	0	8	0	0.00	0.0	29.330	07	11.2	12.2	22	E	17	08	44	17	10	10
05	67	42	55	-1	48	10	0	3	0	1.29	0.0	29.060	16	2.7	13.3	33	W	22	25	75	9	10	10
06	48	42	45*	-11	36	20	0		0	0.00	0.0	29.180	25	19.3	19.5	37	SW	25	24	0	0	10	9
07	64	42	53	-3	38	12	0		0	0.00	0.0	29.460	26	7.3	12.5	29	W	18	27	170	90	2	1
08	63	48	56	0	45	9	0	8	0	0.04	0.0	29.530	08	9.6	11.1	27	E	15	[illegible]	6	1	10	9
09	76	47	62	5	52	3	0	8	0	0.00	0.0	29.470	14	6.1	7.7	16	E	13	10	653	76	2	3
10	78	51	65	8	55	0	0	8	0	0.00	0.0	29.510	09	7.3	9.2	30	SE	17	12	417	48	4	4
11	85	56	71	14	62	0	6	8	0	0.00	0.0	29.430	18	4.5	6.6	16	S	12	20	350	41	4	3
12	84	63	74	16	64	0	9	8	0	0.00	0.0	29.270	19	6.0	6.9	21	S	10	20	558	64	4	3
13	89	64	77	19	65	0	12		0	0.00	0.0	29.170	25	3.6	5.4	18	SW	12	27	286	33	6	6
14	87	60	74	16	59	0	9		0	0.00	0.0	29.190	22	1.4	7.0	17	SW	13	11	298	34	9	8
15	97	57	72	13	57	0	7		0	0.00	0.0	29.240	16	6.1	7.6	23	SE	16	12	609	70	6	7
16	86	63	75	16	63	0	10	3 8	0	0.91	0.0	29.170	22	1.5	5.5	33	SE	29	14	21	2	10	9
17	73	47	60	1	53	5	0	1 3 8	0	0.44	0.0	29.300	03	12.9	16.4	37	NE	25	04	106	12	9	9
18	54	45	50	-10	45	15	0	1	0	0.06	0.0	29.510	05	14.3	14.9	28	E	21	06	0	0	10	10
19	61	47	54	-6	41	11	0		0	0.00	0.0	29.570	04	11.5	11.8	25	NE	16	04	320	36	6	6
20	74	47	61	1	51	4	0	8	0	0.00	0.0	29.510	05	8.1	8.8	21	NE	14	04	744	84	3	4
21	84	54	69	8	59	0	4	8	0	0.00	0.0	29.430	15	6.3	8.6	20	SE	14	15	181	20	9	9
22	84	67	76	15	67	0	11	1 3 8	0	0.34	0.0	29.400	17	4.4	8.2	24	E	16	10	195	22	10	10
23	82	66	74	13	68	0	9	1	0	0.26	0.0	29.340	19	11.9	12.3	30	S	21	18	124	14	9	8
24	85	68	77	15	67	0	12	1 3 8	0	0.65	0.0	29.230	22	10.7	12.3	29	W	18	25	426	48	7	7
25	77	55	66	4	64	0	1	1 3 8	0	0.98	0.0	29.170	07	3.2	8.2	20	S	14	04	32	4	9	9
26	82	69	76	14	68	0	11	1 8	0	T	0.0	29.090	20	12.7	13.3	37	SW	22	20	135	15	9	9
27	88	66	77	14	69	0	12	1	0	0.00	0.0	29.230	22	8.3	8.5	28	SW	14	22	680	76	4	4
28	91*	69	80*	17	70	0	15		0	0.00	0.0	29.310	22	9.7	9.0	25	SW	16	24	325	81	3	2
29	87	71	79	15	69	0	14	8	0	T	0.0	29.205	20	8.7	9.6	33	S	18	18	374	42	7	7
30	88	66	77	13	67	0	12	3	0	0.09	0.0	29.020	22	7.3	10.3	47	W	32	26	629	70	6	7
31	89	67	78	14	68	0	13	3	0	0.10	0.0	29.090	21	6.8	9.2	44	SW	16	17	602	67	5	6
	SUM 2357	SUM 1708				TOTAL 142	TOTAL 167	NUMBER OF DAYS		TOTAL 5.20	TOTAL 0.0	FOR THE MONTH: 29.300	18	1.9	10.6	47	W	32	26	TOTAL 10246	% FOR MONTH 212	SUM 206	
	AVG 76.0	AVG 55.1	AVG 65.6	DEP 6.5	AVG 55.4	DEP -82	DEP 126	PRECIPITATION ≥ .01 INCH 13		DEP 2.05						DATE:30		DATE: 30		POSSIBLE 27050		AVG 6.8	AVG 6.5

NUMBER OF DAYS				SEASON TO DATE TOTAL	TOTAL
MAXIMUM TEMP ≥ 90°	≤ 32°	MINIMUM TEMP ≤ 32°	≤ 0°	5869	178
1	0	0	0	DEP -548	DEP 137

NUMBER OF DAYS	
SNOW, ICE PELLETS ≥ 1.0 INCH	0
THUNDERSTORMS	8
HEAVY FOG	0
CLEAR 5	PARTLY CLOUDY 11

GREATEST IN 24 HOURS AND DATES			
PRECIPITATION		SNOW, ICE PELLETS	
1.63	24-25	0.0	

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE(S)	
0	

CLOUDY 15

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
T TRACE AMOUNT.
+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

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NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

JUN 1991
CHICAGO, IL
NAT'L WEA SER OFC
10600 WEST HIGGINS RD

ISSN 0198-1854

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

O'HARE INTERNATIONAL AIRPORT

LATITUDE 41° 59'N LONGITUDE 87° 54'W ELEVATION (GROUND) 658 FEET TIME ZONE CENTRAL 94846

JUN 1991
CHICAGO, IL

DATE 1	TEMPERATURE °F MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEPARTURE FROM NORMAL 5	AVERAGE DEW POINT 6	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL) 7A	COOLING (SEASON BEGINS WITH JAN) 7B	WEATHER TYPES 1 FOG 2 HEAVY FOG 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE, HAZE 9 BLOWING SNOW 8	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 (INCHES) 9	PRECIPITATION WATER EQUIVALENT (INCHES) 10	SNOW, ICE PELLETS (INCHES) 11	AVERAGE STATION PRESSURE (IN INCHES ELEV. 674 FEET ABOVE M S L) 12	RESULTANT DIR 13	RESULTANT SPEED 14	AVERAGE SPEED 15	WIND M.P.H. PEAK GUST SPEED 16	PEAK GUST DIRECTION 17	FASTEST 1-MIN SPEED 18	FASTEST 1-MIN DIRECTION 19	SUNSHINE MINUTES 20	PERCENT OF TOTAL POSSIBLE 21	SKY COVER (TENTHS) SUNRISE TO SUNSET 22	MIDNIGHT TO MIDNIGHT 23
01	86	62	74	9	66	0	9	1 3 8	0	0.40	0.0	29.160	07	3.1	6.6	26	NW	18	35	719	80	9	9
02	83	60	72	7	66	0	7	1 8	0	0.00	0.0	29.140	02	6.3	8.8	21	NE	16	03	570	63	7	7
03	77	60	69	4	61	0	4	1 8	0	0.00	0.0	29.200	03	11.7	12.0	26	NE	27	03	557	62	8	8
04	69	51	60*	-5	47	5	0		0	0.00	0.0	29.370	05	14.8	15.9	35	NE	21	02	766	87	7	7
05	77	51	64	-5	48	4	0		0	0.00	0.0	29.510	04	11.8	12.6	26	NE	20	04	844	93	4	4
06	74	50*	62	-4	48	3	0		0	0.00	0.0	29.610	04	9.1	10.0	21	NE	15	05	840	93	2	2
07	80	51	66	-1	50	0	1		0	0.00	0.0	29.570	09	4.9	6.7	17	E	14	08	685	76	2	2
08	82	53	68	1	51	0	3		0	0.00	0.0	29.490	11	5.3	6.3	21	E	15	11	720	79	5	4
09	86	56	71	4	53	0	6		0	0.00	0.0	29.440	21	7.3	7.7	23	S	15	21	611	67	8	7
10	86	65	76	9	60	0	11	8	0	0.01	0.0	29.320	23	10.7	11.5	33	SW	21	25	411	45	9	8
11	82	62	72	4	64	0	7	1 8	0	0.54	0.0	29.220	21	5.5	8.3	24	SW	15	26	253	28	8	7
12	83	60	72	4	60	0	7		0	0.00	0.0	29.280	04	4.9	7.3	22	E	15	05	296	32	6	5
13	89	60	75	7	63	0	10		0	0.00	0.0	29.305	13	8.5	10.9	23	SE	16	10	585	64	3	4
14	93	69	81	13	68	0	16	3 8	0	T	0.0	29.160	19	11.0	15.6	35	N	23	20	737	80	3	4
15	87	67	77	8	67	0	12	8	0	0.00	0.0	29.080	24	6.6	11.8	30	W	20	23	185	20	9	9
16	80	58	69	0	58	0	4		0	0.00	0.0	29.230	01	8.4	10.4	23	N	15	02	574	63	8	7
17	82	55	69	0	53	0	4		0	0.00	0.0	29.330	05	5.7	7.5	21	E	12	05	856	94	2	1
18	85	57	71	2	57	0	6		0	0.00	0.0	29.350	03	5.3	6.6	18	NE	12	04	780	85	3	2
19	87	57	72	2	59	0	7		0	0.00	0.0	29.410	03	6.6	8.0	22	NE	14	04	843	92	0	1
20	94	62	78	8	62	0	13	2	0	0.00	0.0	29.340	10	4.1	6.9	20	NE	15	05	720	79	5	5
21	93	63	78	8	62	0	13	1 8	0	0.00	0.0	29.220	04	5.9	7.4	23	NE	15	02	480	53	5	6
22	67	60	64	-6	59	1	0	1	0	T	0.0	29.270	03	15.2	15.6	31	NE	22	05	0	0	10	10
23	76	60	68	-2	52	0	3		0	0.00	0.0	29.425	05	12.0	12.6	25	NE	16	04	798	87	6	6
24	81	57	69	-2	53	0	4		0	0.00	0.0	29.450	07	5.0	6.3	17	NE	14	08	736	81	5	3
25	86	57	72	1	54	0	7		0	0.00	0.0	29.410	08	5.2	6.1	17	E	10	05	539	59	2	1
26	92	63	78	7	65	0	13	1 8	0	0.00	0.0	29.320	19	11.1	11.3	25	S	18	19	295	32	3	2
27	93	68	81	10	65	0	16	8	0	0.00	0.0	29.350	21	12.7	12.9	26	S	16	20	647	71	5	3
28	89	70	80	9	64	0	15		0	0.00	0.0	29.350	21	10.8	11.5	28	SW	16	21	560	61	5	5
29	96*	71	84*	12	68	0	19		0	0.00	0.0	29.250	23	8.3	8.8	24	SW	14	24	633	69	4	4
30	81	67	74	2	67	0	9	1	0	0.00	0.0	29.210	02	7.2	9.1	21	NE	16	01	567	62	7	7
	SUM 2510	SUM 1802				TOTAL 13	TOTAL 226	NUMBER OF DAYS		TOTAL 0.95	TOTAL 0.0	FOR THE MONTH: 29.330	07	2.3	9.8	35	N	23	20	TOTAL 17826	% FOR MONTH 65	SUM 153	SUM 147
	AVG 83.7	AVG 60.1	AVG 71.9	DEP. 3.3	AVG. 58.9	DEP -25	DEP. 80	PRECIPITATION ≥ .01 INCH 3		DEP -3.13						DATE: 14+		DATE: 14		POSSIBLE 27280		AVG 5.7	AVG 4.9

NUMBER OF DAYS				SEASON TO DATE TOTAL	TOTAL	SNOW, ICE PELLETS ≥ 1.0 INCH 0	GREATEST IN 24 HOURS AND DATES		GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE
MAXIMUM TEMP ≥ 90°	MAXIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 0°	5882	404	THUNDERSTORMS 2	PRECIPITATION	SNOW, ICE PELLETS	
				DEP -573	DEP 217	HEAVY FOG 1	0.55 10-11	0.0	0
6	0	0	0			CLEAR 9 PARTLY CLOUDY 14 CLOUDY 7			

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE
T TRACE AMOUNT
+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

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ASHEVILLE NORTH CAROLINA

JUL 1991
CHICAGO,IL
NATL WEA SER OFC
10600 WEST HIGGINS RD

SSN 0198-1854

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

CHARE INTERNATIONAL AIRPORT

LATITUDE 41° 59'N LONGITUDE 87° 54'W ELEVATION (GROUND) 658 FEET TIME ZONE CENTRAL 94846

JUL 1991
CHICAGO,IL

DATE 1	TEMPERATURE °F MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEPARTURE FROM NORMAL 5	AVERAGE DEW POINT 6	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL) 7A	COOLING (SEASON BEGINS WITH JAN) 7B	WEATHER TYPES 2 FOG 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE, HAZE 9 BLOWING SNOW 8	SNOW, ICE PELLETS OR ICE ON GROUND AT 0600 INCHES 9	PRECIPITATION WATER EQUIVALENT (INCHES) 10	SNOW, ICE PELLETS (INCHES) 11	AVERAGE STATION PRESSURE IN INCHES ELEV 674 FEET ABOVE S.L. 12	RESULTANT DIR 13	RESULTANT SPEED 14	AVERAGE SPEED 15	PEAK GUST SPEED 16	PEAK GUST DIRECTION 17	FASTEST 1-MIN SPEED 18	FASTEST 1-MIN DIRECTION 19	SUNSHINE MINUTES 20	PERCENT OF TOTAL POSSIBLE 21	SKY COVER TENTHS SUNRISE TO SUNSET 22	MIDNIGHT TO MIDNIGHT 23
01	97	67	82	10	68	0	12	1 8	0	0.00	0.0	29.110	21	4.6	7.4	28	SW	20	22	538	59	7	7
02	96	68	82	10	62	0	17		0	T	0.0	29.130	26	4.9	6.3	22	N	17	21	660	72	5	5
03	91	67	79	7	62	0	14		0	0.24	0.0	29.100	24	6.2	6.7	38	NW	25	28	662	73	4	5
04	84	63	74	2	61	0	9	3	0	0.09	0.0	29.090	24	8.4	8.9	35	NW	23	23	487	54	5	5
05	89	63	76	4	63	0	11		0	0.00	0.0	29.120	25	5.5	5.6	27	W	13	24	797	88	2	2
06	96	67	82	10	69	0	17		0	0.00	0.0	29.090	21	7.2	7.9	26	SW	15	23	521	57	7	5
07	94	67	81	8	68	0	16	3	0	0.35	0.0	29.140	24	4.9	8.0	38	NW	20	32	350	39	7	5
08	78	63	71	-2	60	0	6		0	0.00	0.0	29.290	02	7.7	9.1	23	N	15	03	784	87	3	4
09	81	59	70	-3	55	0	5		0	0.00	0.0	29.300	13	4.2	5.5	20	S	12	11	330	36	3	5
10	84	57	71	-2	57	0	6		0	0.00	0.0	29.250	07	5.3	5.9	16	E	10	07	801	89	3	4
11	86	66	76	3	63	0	11	*	0	T	0.0	29.260	09	6.5	7.7	22	E	13	36	589	65	7	7
12	88	69	79	6	67	0	14	1 8	0	0.00	0.0	29.100	25	5.9	9.7	25	NW	16	28	302	34	8	7
13	78	64	71	-2	61	0	6	*	0	T	0.0	29.240	01	10.7	11.6	23	NE	20	07	298	33	8	7
14	79	60	70	-3	57	0	5		0	0.00	0.0	29.430	02	7.3	8.5	17	NE	16	07	715	80	3	3
15	87	54	71	-2	54	0	6		0	0.00	0.0	29.500	11	3.5	4.3	18	SE	12	08	918	91	0	2
16	91	62	77	4	58	0	12		0	0.00	0.0	29.470	23	6.7	7.0	21	W	15	24	790	88	1	2
17	89	68	79	6	63	0	14	1	0	0.00	0.0	29.335	23	6.9	7.8	24	SW	16	23	345	39	7	6
18	96	70	83	10	65	0	18	* 8	0	0.00	0.0	29.230	22	7.7	8.2	17	SW	13	22	620	69	4	5
19	99	72	86	13	65	0	21	8	0	0.00	0.0	29.230	22	10.2	10.8	24	SW	17	24	655	74	1	2
20	96	74	85	12	66	0	20	8	0	0.00	0.0	29.290	21	11.8	12.1	32	SW	18	18	572	64		
21	90	75	83	10	71	0	18	1 8	0	0.16	0.0	29.320	16	2.2	5.9	21	N	12	01	45	5	10	3
22	101*	74	88*	15	71	0	23	* 3 8	0	0.43	0.0	29.230	24	9.0	10.0	46	W	26	29	302	34	7	6
23	85	64	75	2	55	0	10		0	0.00	0.0	29.290	33	8.1	9.4	23	N	16	35	765	87	4	5
24	83	59	71	-2	53	0	6		0	0.00	0.0	29.270	26	5.9	7.7	20	W	10	01	564	64	7	5
25	77	58	68	-5	53	0	3		0	0.00	0.0	29.370	01	8.0	8.9	21	NE	14	06	580	66	5	3
26	78	53*	66	-8	52	0	*		0	0.00	0.0	29.520	03	5.9	7.4	23	NE	16	04	666	76	4	3
27	77	55	66*	-8	52	0	*		0	0.00	0.0	29.530	02	7.2	8.2	20	NE	14	03	670	76	4	4
28	84	62	73	-1	55	0	8		0	0.05	0.0	29.360	12	5.7	9.0	24	S	14	08	225	26	4	4
29	79	60	70	-4	58	0	5		0	T	0.0	29.260	35	5.6	11.9	31	N	20	35	250	29	6	5
30	79	56	68	-5	54	0	3		0	0.00	0.0	29.340	06	2.1	7.3	16	E	10	09	320	82	4	3
31	92	59	76	3	58	0	11		0	0.00	0.0	29.310	23	11.3	12.1	28	SW	22	24	725	83	7	5
SUM	SUM					TOTAL	TOTAL	NUMBER OF DAYS		TOTAL	TOTAL	FOR THE MONTH:								TOTAL	%	SUM	SUM
2704	1975					0	334			1.32	0.0	29.270	25	1.8	8.3	46	W	26	29	17126	100	168	157
AVG.	AVG	AVG	DEP	AVG.		DEP.	DEP	PRECIPITATION		DEP						DATE: 22		DATE: 22		POSSIBLE	MONTH	AVG	AVG
87.2	63.7	75.5	2.5	60.5		0	82	≥ .01 INCH	6	-2.31										27642	62	5.4	4.5

NUMBER OF DAYS				SEASON TO DATE TOTAL	TOTAL
MAXIMUM TEMP		MINIMUM TEMP		0	738
≥ 90°	≤ 32°	≤ 32°	≤ 0°	DEP.	DEP.
12	0	0	0	0	299

SNOW, ICE PELLETS ≥ 1.0 INCH	0
THUNDERSTORMS	3
HEAVY FOG	0
CLEAR 7 PARTLY CLOUDY 18 CLOUDY 6	

GREATEST IN 24 HOURS AND DATES		
PRECIPITATION		SNOW, ICE PELLETS
0.43	22	0.0

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE(S): 0

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE
T TRACE AMOUNT
\+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS
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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

Kenneth S. Friedman
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

AUG 1991
CHICAGO,IL
NAT'L WEA SER OFC
10600 WEST HIGGINS RD

ISSN 0198-1854

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

OHARE INTERNATIONAL AIRPORT

LATITUDE 41° 59'N LONGITUDE 87° 54'W ELEVATION (GROUND) 658 FEET TIME ZONE CENTRAL 94846

AUG 1991
CHICAGO,IL

DATE 1	TEMPERATURE °F MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEPARTURE FROM NORMAL 5	AVERAGE DEW POINT 6	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL) 7A	COOLING (SEASON BEGINS WITH JAN) 7B	WEATHER TYPES (1 FOG, 2 HEAVY FOG, 3 THUNDERSTORM, 4 ICE PELLETS, 5 HAIL, 6 GLAZE, 7 DUSTSTORM, 8 SMOKE, HAZE, 9 BLOWING SNOW) 8	9	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 INCHES 9	PRECIPITATION WATER EQUIVALENT (INCHES) 10	SNOW, ICE PELLETS (INCHES) 11	AVERAGE STATION PRESSURE IN INCHES ELEV 674 FEET ABOVE M.S.L. 12	WIND (M.P.H.) RESULTANT DIR 13	RESULTANT SPEED 14	AVERAGE SPEED 15	PEAK GUST SPEED 16	PEAK GUST DIRECTION 17	FASTEST 1-MIN SPEED 18	FASTEST 1-MIN DIRECTION 19	SUNSHINE MINUTES 20	PERCENT OF TOTAL POSSIBLE 21	SKY COVER (TENTHS) SUNRISE TO SUNSET 22	MIDNIGHT TO MIDNIGHT 23
01	95	63	79	6	53	0	14			0	0.00	0.0	29.300	09	0.5	5.8	15	E	9	10	706	82	5	4
02	101*	67	84*	11	62	0	19	3	8	0	0.02	0.0	29.170	20	5.7	10.1	35	S	20	23	292	34	10	9
03	80	62	71	-2	62	0	6			0	0.00	0.0	29.250	03	7.1	8.7	16	NE	15	35	26	3	10	10
04	76	61	69	-4	55	0	4			0	0.00	0.0	29.390	03	10.4	10.9	26	NE	16	03	530	62	9	8
05	75	62	69	-4	51	0	4			0	0.00	0.0	29.470	06	9.5	10.1	20	E	14	05	251	29	9	9
06	77	66	72	-1	57	0	7			0	0.00	0.0	29.485	11	9.2	10.2	21	E	15	08	84	10	9	10
07	80	65	73	0	63	0	8	1	8	0	0.16	0.0	29.495	12	6.0	7.2	16	SE	10	09	38	4	10	10
08	72	62	67	-6	63	0	2	23		0	1.74	0.0	29.270	07	8.4	12.3	39	SW	20	04	0	0	10	10
09	79	58	69	-4	57	0	4			0	0.01	0.0	29.300	02	12.2	12.7	28	N	18	03	655	77	2	3
10	82	57	70	-3	55	0	5			0	0.00	0.0	29.380	01	7.6	8.7	22	NE	14	05	570	67	4	2
11	83	54	69	-4	50	0	4			0	0.00	0.0	29.480	01	4.6	5.3	20	N	14	02	643	76	3	2
12	82	54	68	-5	55	0	3			0	0.00	0.0	29.490	02	6.2	6.6	21	NE	14	02	607	72	0	1
13	82	59	71	-2	57	0	6			0	0.00	0.0	29.385	03	6.9	8.4	21	NE	15	05	479	57	4	3
14	86	57	72	-1	53	0	7			0	0.00	0.0	29.290	24	2.6	3.6	17	W	9	25	446	53	4	3
15	88	66	77	5	62	0	12			0	0.00	0.0	29.260	25	7.5	8.0	20	W	12	26	405	49	5	5
16	89	62	76	4	60	0	11			0	0.00	0.0	29.210	22	9.3	9.7	25	SW	17	24	317	38	10	9
17	83	67	75	3	64	0	10	1		0	0.09	0.0	29.080	27	8.0	10.2	24	SW	16	28	305	37	7	7
18	86	63	75	3	61	0	10			0	0.00	0.0	29.170	34	5.9	9.8	28	N	20	03	471	57	6	5
19	70	60	65*	-7	58	0	0	1 3	8	0	0.27	0.0	29.250	35	15.4	16.1	30	N	23	33	223	27	9	9
20	76	56	66	-6	56	0	1			0	0.00	0.0	29.330	01	8.2	9.2	23	NE	14	03	320	39	7	7
21	85	53*	69	-3	57	0	4			0	0.00	0.0	29.290	21	7.2	7.4	24	SW	14	21	528	64	4	2
22	89	63	76	5	60	0	11			0	0.00	0.0	29.300	36	3.5	8.7	33	N	14	32	495	61	1	2
23	81	61	71	0	58	0	6			0	0.00	0.0	29.480	06	8.1	9.2	22	NE	13	07	375	46	8	5
24	87	66	77	6	62	0	12			0	0.00	0.0	29.555	10	8.3	9.2	21	E	13	08	452	56	2	3
25	95	66	81	10	62	0	16		8	0	0.00	0.0	29.500	16	8.1	8.8	17	SE	13	13	295	36	0	0
26	93	65	79	9	63	0	14	1	8	0	0.00	0.0	29.440	18	7.6	7.9	21	S	14	17	245	30	1	1
27	92	70	81	11	66	0	16			0	0.00	0.0	29.400	18	8.1	8.7	18	S	14	21	185	23	3	2
28	95	71	83	13	68	0	18	1	8	0	0.00	0.0	29.430	12	4.4	6.6	18	E	14	09	222	28	2	2
29	92	73	83	13	69	0	18	1 3	8	0	0.52	0.0	29.410	21	4.7	7.2	24	N	12	23	207	26	6	1
30	87	71	79	9	71	0	14	1 3	8	0	T	0.0	29.300	16	2.2	4.4	17	NE	12	02	0	0	10	8
31	78	66	72	3	64	0	7	1		0	T	0.0	29.410	03	14.8	15.5	21	NE	24	02	301	38	6	5
SUM		SUM				TOTAL	TOTAL	NUMBER OF DAYS			TOTAL	TOTAL	FOR THE MONTH:								TOTAL	%	SUM	SUM
2616		1946				0	273				2.81	0.0	29.350	04	2.1	8.9	39	SW	24	02	10673	FOR	176	164
AVG.		AVG	AVG.	DEP.	AVG	DEP	DEP.	PRECIPITATION			DEP						DATE: 8		DATE: 31		POSSIBLE	MONTH	AVG	AVG
84.4		62.8	73.6	1.7	59.7	-9	50	≥ .01 INCH			-0.72										25704	42	5.7	5.3

NUMBER OF DAYS				SEASON TO DATE TOTAL	SEASON TO DATE TOTAL
MAXIMUM TEMP		MINIMUM TEMP		0	1011
≥ 90°	≤ 32°	≤ 32°	≤ 0°	DEP.	DEP.
7	0	0	0	-9	349

SNOW, ICE PELLETS ≥ 1.0 INCH	0
THUNDERSTORMS	5
HEAVY FOG	1
CLEAR 9	PARTLY CLOUDY 11
CLOUDY 11	

GREATEST IN 24 HOURS AND DATES		
PRECIPITATION		SNOW, ICE PELLETS
1.86	07-08	0.0

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE
0

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
T TRACE AMOUNT.
+ ALSO ON EARLIER DATE(S).
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.
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LOCAL CLIMATOLOGICAL DATA

Monthly Summary

SEP 1991

CHICAGO, IL

[illegible] LATITUDE [illegible] LONGITUDE [illegible] ELEVATION (GROUND) [illegible] FEET TIME ZONE CENTRAL [illegible]

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WEATHER TYPES	SNOW, ICE PELLETS OR ICE ON GROUND AT 0600 INCHES	PRECIPITATION WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE (INCHES, ELEV 674 FEET ABOVE M.S.L.)	WIND RESULTANT DIR	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST SPEED	PEAK GUST DIRECTION	FASTEST 1-MIN SPEED	FASTEST 1-MIN DIRECTION	SUNSHINE MINUTES	PERCENT OF TOTAL POSSIBLE	SKY COVER SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
1	[illegible]	[illegible]	[illegible]	[illegible]	57	[illegible]	[illegible]		0	0.00	[illegible]	29.540	07	9	[illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	38	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		0	0.00	[illegible]	29.470	13	8	[illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	56	[illegible]	[illegible]	1 3	0	[illegible]	[illegible]	29.350	23	6	[illegible]	[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	54	[illegible]	[illegible]		0	0.00	[illegible]	29.400	02	6	[illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		0	[illegible]	[illegible]	29.400	14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	29.470	[illegible]	4	[illegible]	[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	29.490	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	29.410	[illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	29.290	21	[illegible]	13	[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	56	[illegible]	[illegible]	53	[illegible]	8		[illegible]	[illegible]	[illegible]	29.370	01	4	9	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	54	58	[illegible]	58	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	29.430	08	9	9	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	62	[illegible]	5	1 3	[illegible]	[illegible]	[illegible]	29.300	10	6	[illegible]	30	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	65	74	[illegible]	66	[illegible]	9	23	[illegible]	[illegible]	[illegible]	29.255	07	[illegible]	[illegible]	18	E	[illegible]	08	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	63	[illegible]	14	1 3	[illegible]	[illegible]	[illegible]	29.180	18	6	[illegible]	[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	58	[illegible]	[illegible]	[illegible]	[illegible]	15	1 2	[illegible]	[illegible]	[illegible]	29.195	22	10	12	45	W	[illegible]	[illegible]	[illegible]	54	[illegible]	[illegible]
16	[illegible]	58	58	[illegible]	57	[illegible]	[illegible]		[illegible]	0	[illegible]	29.240	26	10	[illegible]	29	W	[illegible]	35	340	45	[illegible]	[illegible]
17	[illegible]	[illegible]	54	[illegible]	[illegible]	[illegible]	0		[illegible]	[illegible]	[illegible]	29.340	22	6	[illegible]	23	SW	15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	42	56	[illegible]	42	[illegible]	0		[illegible]	0	[illegible]	29.360	28	13	13	30	W	[illegible]	28	[illegible]	54	[illegible]	[illegible]
19	[illegible]	40	48	[illegible]	[illegible]	[illegible]	0		[illegible]	[illegible]	[illegible]	29.630	32	10	[illegible]	28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	48	[illegible]	33	[illegible]	0		[illegible]	0.00	[illegible]	29.680	31	[illegible]	[illegible]	13	NW	[illegible]	[illegible]	[illegible]	96	[illegible]	[illegible]
21	[illegible]	39	54	[illegible]	37	[illegible]	0		[illegible]	0.00	[illegible]	29.510	17	9	[illegible]	[illegible]	[illegible]	15	[illegible]	[illegible]	96	[illegible]	[illegible]
22	[illegible]	[illegible]	56	[illegible]	50	9	0		[illegible]	0.05	[illegible]	29.330	21	10	[illegible]	[illegible]	SW	20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	42	54	[illegible]	39	[illegible]	0		[illegible]	0.00	[illegible]	29.490	30	[illegible]	[illegible]	[illegible]	W	18	29	[illegible]	32	[illegible]	[illegible]
24	[illegible]	[illegible]	49	[illegible]	45	16	0		[illegible]	[illegible]	[illegible]	29.430	35	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	54	[illegible]	44	[illegible]	0		[illegible]	[illegible]	[illegible]	29.050	26	9	[illegible]	33	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	40	50	[illegible]	33	15	0		[illegible]	0.00	[illegible]	29.200	30	[illegible]	12	29	NW	[illegible]	[illegible]	632	88	[illegible]	[illegible]
27	[illegible]	34*	46*	[illegible]	33	19	0		[illegible]	0.00	[illegible]	29.420	02	[illegible]	[illegible]	16	NE	[illegible]	[illegible]	343	48	[illegible]	[illegible]
28	[illegible]	36	[illegible]	[illegible]	34	15	0		[illegible]	0.00	[illegible]	29.540	[illegible]	[illegible]	[illegible]	16	SE	[illegible]	[illegible]	696	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0		[illegible]	0.00	[illegible]	29.580	[illegible]	6	[illegible]	[illegible]	E	[illegible]	18	595	94	[illegible]	[illegible]
30	[illegible]	50	[illegible]	[illegible]	50	[illegible]	0		[illegible]	0.00	[illegible]	29.410	24	[illegible]	14	38	W	[illegible]	25	606	85	[illegible]	[illegible]

SUM [illegible]	SUM [illegible]				TOTAL 163	TOTAL [illegible]
AVG [illegible]	AVG [illegible]	AVG [illegible]	DEP [illegible]	AVG [illegible]	DEP 88	DEP 65

NUMBER OF DAYS: PRECIPITATION ≥ .01 INCH [illegible]; SNOW, ICE PELLETS ≥ 1.0 INCH [illegible]; THUNDERSTORMS 6; HEAVY FOG [illegible]; CLEAR [illegible] PARTLY CLOUDY [illegible] CLOUDY [illegible]

SEASON TO DATE: HEATING TOTAL 163, DEP [illegible]; COOLING TOTAL 1143, DEP 415

NUMBER OF DAYS — MAXIMUM TEMP ≥ 90° [illegible], ≤ 32° 0; MINIMUM TEMP ≤ 32° [illegible], ≤ 0° [illegible]

FOR THE MONTH: precipitation total [illegible]; pressure 29.390; peak gust 46 W; sunshine total [illegible], possible 12463, percent [illegible]

GREATEST IN 24 HOURS AND DATES: PRECIPITATION [illegible]; SNOW, ICE PELLETS 0.0

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE: 0

WEATHER TYPES: 1 FOG; 2 HEAVY FOG; 3 THUNDERSTORM; 4 ICE PELLETS; 5 HAIL; 6 GLAZE; 7 DUSTSTORM; 8 SMOKE, HAZE; 9 BLOWING SNOW

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE
T TRACE AMOUNT
+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.
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CHICAGO, IL, OCT 1991

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Monthly Summary

LATITUDE 41° 59' N LONGITUDE 87° 54' W ELEVATION (GROUND) 664 FEET TIME ZONE CENTRAL 94846

DATE 1	TEMPERATURE °F MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEPARTURE FROM NORMAL 5	AVERAGE DEW POINT 6	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL) 7A	COOLING (SEASON BEGINS WITH JAN) 7B	WEATHER TYPES 8	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 INCHES 9	PRECIPITATION WATER EQUIVALENT (INCHES) 10	SNOW, ICE PELLETS (INCHES) 11	AVERAGE STATION PRESSURE IN INCHES ELEV 674 FEET ABOVE M.S.L. 12	WIND RESULTANT DIR 13	RESULTANT SPEED 14	AVERAGE SPEED 15	PEAK GUST SPEED 16	PEAK GUST DIRECTION 17	FASTEST MILE SPEED 18	FASTEST MILE DIRECTION 19	SUNSHINE MINUTES 20	PERCENT OF TOTAL POSSIBLE 21	SKY COVER SUNRISE TO SUNSET 22	MIDNIGHT TO MIDNIGHT 23
01	[illegible]	46	[illegible]	[illegible]	44	[illegible]	[illegible]		0	0.00	0.0	29.280	21	[illegible]	9.0	[illegible]	SW	18	[illegible]	416	59	[illegible]	[illegible]
02	90*	[illegible]	[illegible]*	[illegible]	57	[illegible]	[illegible]		0	0.00	0.0	29.100	21	12.[illegible]	[illegible]	[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
03	[illegible]	54	[illegible]	4	55	[illegible]	[illegible]	2	0	[illegible]	0.0	29.190	05	[illegible]	[illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
04	[illegible]	[illegible]	[illegible]	[illegible]	54	[illegible]	[illegible]	[illegible]	0	[illegible]	0.0	29.050	04	8.[illegible]	[illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05	[illegible]	[illegible]	[illegible]	[illegible]	38	[illegible]	[illegible]		[illegible]	[illegible]	0.0	29.140	27	13.4	14.0	[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
06	53	[illegible]	[illegible]	-14	33	[illegible]	[illegible]		0	[illegible]	0.0	29.370	28	[illegible]	12.3	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
07	[illegible]	[illegible]	[illegible]	[illegible]	32	[illegible]	[illegible]		0	0.00	0.0	29.440	24	6.[illegible]	8.4	[illegible]	SW	[illegible]	[illegible]	[illegible]	85	[illegible]	[illegible]
08	75	46	[illegible]	[illegible]	43	[illegible]	[illegible]		0	0.00	0.0	29.250	21	[illegible]	[illegible]	33	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
09	[illegible]	[illegible]	[illegible]	[illegible]	47	[illegible]	[illegible]		[illegible]	[illegible]	0.0	29.340	26	[illegible]	[illegible]	[illegible]	SW	[illegible]	[illegible]	[illegible]	48	[illegible]	[illegible]
10	65	42	[illegible]	[illegible]	36	[illegible]	[illegible]		[illegible]	[illegible]	0.0	29.320	31	[illegible]	[illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	66	[illegible]	[illegible]	[illegible]	42	[illegible]	[illegible]		0	0.06	0.0	29.015	26	[illegible]	[illegible]	24	NW	[illegible]	[illegible]	[illegible]	58	[illegible]	[illegible]
12	[illegible]	38	[illegible]	[illegible]	40	[illegible]	[illegible]		0	[illegible]	0.0	29.210	01	[illegible]	[illegible]	[illegible]	NE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	60	34	[illegible]	-8	36	18	[illegible]		0	[illegible]	0.0	29.320	17	6.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	58	[illegible]	[illegible]	-6	[illegible]	16	[illegible]	1 3 8	0	[illegible]	0.0	29.035	25	9.7	12.6	[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	49	[illegible]	[illegible]	-13	27	24	[illegible]		0	0.00	0.0	29.190	28	6.8	[illegible]	[illegible]	NW	[illegible]	[illegible]	345	52	[illegible]	[illegible]
16	62	28*	[illegible]	[illegible]	29	[illegible]	[illegible]		0	0.00	0.0	29.290	20	10.1	10.3	[illegible]	SW	[illegible]	[illegible]	664	100	[illegible]	[illegible]
17	74	49	[illegible]	9	38	[illegible]	0		0	0.00	0.0	29.190	20	14.5	14.9	35	S	[illegible]	[illegible]	662	100	[illegible]	[illegible]
18	55	34	[illegible]	-8	36	[illegible]	[illegible]	4	0	0.24	T	29.470	36	11.[illegible]	13.[illegible]	[illegible]	NE	19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]*	-14	24	[illegible]	[illegible]		0	0.00	0.0	29.630	33	5.5	[illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]	35	[illegible]	[illegible]
20	54	29	[illegible]	-10	25	[illegible]	[illegible]		0	0.00	0.0	29.470	21	5.5	5.9	18	SW	[illegible]	[illegible]	[illegible]	33	[illegible]	[illegible]
21	[illegible]	35	[illegible]	0	37	14	[illegible]		0	0.00	0.0	29.250	21	[illegible]	[illegible]	28	SW	[illegible]	[illegible]	618	95	[illegible]	[illegible]
22	76	50	63	12	48	0	[illegible]		0	0.00	0.0	29.225	19	[illegible]	[illegible]	28	S	[illegible]	[illegible]	605	93	[illegible]	[illegible]
23	[illegible]	55	66	15	58	0	[illegible]	8	0	0.00	0.0	29.230	18	13.[illegible]	14.[illegible]	32	S	[illegible]	[illegible]	549	85	[illegible]	[illegible]
24	74	63	[illegible]	19	63	0	4	1 3 8	0	0.35	0.0	29.200	19	15.[illegible]	15.3	35	S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	49	58	8	55	[illegible]	[illegible]	1 3	0	1.04	0.0	29.300	01	[illegible]	9.6	26	NE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	54	[illegible]	[illegible]	2	48	14	[illegible]		0	[illegible]	[illegible]	29.310	03	9.[illegible]	10.3	[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	53	[illegible]	[illegible]	[illegible]	49	15	[illegible]		0	[illegible]	[illegible]	29.450	03	[illegible]	[illegible]	[illegible]	NE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	58	[illegible]	[illegible]	[illegible]	52	10	[illegible]		0	0.13	0.0	29.450	11	13.3	14.6	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	55	63	15	58	[illegible]	[illegible]	8	0	[illegible]	0.0	29.400	17	6.9	10.3	[illegible]	SE	16	[illegible]	104	[illegible]	[illegible]	[illegible]
30	55	37	[illegible]	[illegible]	40	19	[illegible]		0	0.18	0.0	29.610	36	12.5	12.9	25	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	54	[illegible]	[illegible]	[illegible]	46	17	0	1	0	0.22	0.0	29.410	06	10.9	13.0	26	NE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SUM	1953	1346				TOTAL 367	TOTAL [illegible]			TOTAL [illegible]	TOTAL [illegible]	FOR THE MONTH: 29.290	22	2.5	10.9	[illegible]	NW	[illegible]	[illegible]	TOTAL [illegible]		SUM [illegible]	SUM [illegible]
AVG	63.0	AVG 43.4	AVG 53.2	DEP -0.3	AVG 42.9	DEP [illegible]	DEP -2			DEP [illegible]						DATE: 5		DATE: [illegible]		POSSIBLE [illegible]	FOR MONTH 44	AVG [illegible]	AVG [illegible]

NUMBER OF DAYS: PRECIPITATION ≥ .01 INCH [illegible]; SNOW, ICE PELLETS ≥ 1.0 INCH 0; THUNDERSTORMS 4; HEAVY FOG 0; CLEAR 5; PARTLY CLOUDY 10; CLOUDY 16

MAXIMUM TEMP ≥ 90°	MAXIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 0°
0	0	4	0

SEASON TO DATE: HEATING TOTAL 530, DEP 78; COOLING TOTAL 1153, DEP 413

GREATEST IN 24 HOURS AND DATES: PRECIPITATION 2.64, 03-04; SNOW, ICE PELLETS trace, 18

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE: [illegible]

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE
T TRACE AMOUNT
+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

DATA IN COLS 6 AND 12-15 ARE BASED ON 21 OR MORE OBSERVATIONS AT HOURLY INTERVALS. RESULTANT WIND IS THE VECTOR SUM OF WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS. COLS 16 & 17: PEAK GUST - HIGHEST INSTANTANEOUS WIND SPEED. ONE OF TWO WIND SPEEDS IS GIVEN UNDER COLS 18 & 19: FASTEST MILE - HIGHEST RECORDED SPEED FOR WHICH A MILE OF WIND PASSES STATION (DIRECTION IN COMPASS POINTS). FASTEST OBSERVED ONE MINUTE WIND - HIGHEST ONE MINUTE SPEED (DIRECTION IN TENS OF DEGREES). ERRORS WILL BE CORRECTED IN SUBSEQUENT PUBLICATIONS.

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Kenneth D. Hadeen
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

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NOV 1991

CHICAGO,IL

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

HARE INTERNATIONAL, IL REPORT

LATITUDE [illegible] LONGITUDE [illegible] ELEVATION (GROUND) [illegible] FEET TIME ZONE [illegible]

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WEATHER TYPE (1 FOG, 2 HEAVY FOG, 3 THUNDERSTORM, 4 ICE PELLETS, 5 HAIL, 6 GLAZE, 7 DUSTSTORM, 8 SMOKE, HAZE, 9 BLOWING SNOW)	SNOW, ICE PELLETS OR ICE ON GROUND (INCHES)	PRECIPITATION WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE (INCHES)	WIND RESULTANT SPEED	RESULTANT DIR	AVERAGE SPEED	PEAK GUST SPEED	PEAK GUST DIRECTION	FASTEST 1 MIN SPEED	FASTEST 1 MIN DIRECTION	SUNSHINE MINUTES	PERCENT OF TOTAL POSSIBLE	SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
01	57	32	44	[illegible]	42	[illegible]	[illegible]	[illegible]	[illegible]	0.38	[illegible]	28.870	19	14	5.0	22	35	SW	33	35	[illegible]	[illegible]	[illegible]
02	[illegible]	[illegible]	[illegible]	[illegible]	36	43	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29.300	25	22	[illegible]	[illegible]	44	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
03	34	[illegible]	19	-26	[illegible]	46	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29.540	25	18	8.0	[illegible]	32	[illegible]	24	24	[illegible]	[illegible]	[illegible]
04	[illegible]	[illegible]	19*	[illegible]	[illegible]	46	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29.615	25	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05	38	[illegible]	28	[illegible]	22	[illegible]	3	[illegible]	[illegible]	[illegible]	[illegible]	29.330	19	12	9.0	14	[illegible]	[illegible]	33	[illegible]	[illegible]	34	[illegible]
06	38	19	28	[illegible]	14	[illegible]	3	[illegible]	[illegible]	[illegible]	[illegible]	29.450	31	9	3.0	12	4	[illegible]	[illegible]	[illegible]	[illegible]	88	[illegible]
07	[illegible]	13	[illegible]	[illegible]	[illegible]	45	3	[illegible]	[illegible]	[illegible]	[illegible]	29.710	33	9	5.0	[illegible]	[illegible]	[illegible]	34	[illegible]	[illegible]	46	[illegible]
08	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	43	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29.780	26	4	[illegible]	[illegible]	[illegible]	SW	[illegible]	[illegible]	[illegible]	46	[illegible]
09	[illegible]	14	[illegible]	[illegible]	12	39	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29.655	19	[illegible]	[illegible]	4	[illegible]	SW	14	[illegible]	[illegible]	46	[illegible]
10	45	23	32	-4	23	32	3	[illegible]	[illegible]	[illegible]	[illegible]	29.470	33	[illegible]	5.0	[illegible]	[illegible]	[illegible]	12	14	475	74	[illegible]
11	38	32	35	-7	32	30	3	[illegible]	[illegible]	[illegible]	[illegible]	29.505	31	4	5.0	14	NW	3	33	[illegible]	25	[illegible]	[illegible]
12	[illegible]	32	35	-6	32	30	3	[illegible]	[illegible]	0.01	[illegible]	29.420	24	8	3.0	8	22	SW	16	24	[illegible]	0	[illegible]
13	56	35	46	-5	35	19	0	[illegible]	[illegible]	0.00	0.0	29.200	27	9	[illegible]	[illegible]	24	S	16	23	530	89	6
14	57	40	49	-3	47	16	0	1	[illegible]	0.62	0.0	29.190	20	6	10.0	8	35	S	16	19	358	60	5
15	57	39	48	-3	48	17	0	1	[illegible]	0.24	0.0	29.290	31	8	12.0	6	28	NE	13	33	[illegible]	[illegible]	[illegible]
16	47	35	41	[illegible]	35	24	0	[illegible]	[illegible]	0.00	0.0	29.610	04	3.0	9	11.0	3	22	N	16	32	85	14	[illegible]
17	49	34	42	3	35	23	0	[illegible]	[illegible]	0.01	0.0	29.420	13	[illegible]	[illegible]	11	[illegible]	22	SE	16	[illegible]	[illegible]	[illegible]
18	67	44	56	11	54	9	0	1	[illegible]	0.26	0.0	29.040	18	5.5	16.0	3	37	S	[illegible]	[illegible]	32	16	[illegible]
19	70*	44	57*	19	55	8	0	1 3	8	0.48	0.0	29.200	23	2.6	10.0	4	37	SW	16	36	16	[illegible]	[illegible]
20	47	31	39	[illegible]	36	26	0	1	[illegible]	0.06	0.0	29.320	07	[illegible]	6.0	3.0	29	N	[illegible]	07	00	0	0
21	54	27	41	4	[illegible]	24	0	1	8	0.00	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S	[illegible]	18	535	43	[illegible]
22	53	34	44	7	38	21	0	2	8	[illegible]	0.0	29.260	16	5.5	6.0	0	15	SE	4	18	0	0	[illegible]
23	46	24	35	-1	29	30	0	1	6 9	0.14	0.8	29.025	21	15	[illegible]	0	39	SW	24	23	0	0	10
24	28	19	24	-12	19	41	0	1	6	[illegible]	[illegible]	29.190	27	12	3.0	9	30	SW	20	23	0	0	10
25	24	13	19	-17	10	46	0	[illegible]	[illegible]	[illegible]	[illegible]	29.540	28	5	[illegible]	[illegible]	[illegible]	W	12	27	521	37	4
26	37	8*	23	-12	15	42	0	[illegible]	[illegible]	0.03	0.0	29.600	18	5	12.0	0	31	S	21	18	256	45	[illegible]
27	43	34	39	4	33	26	0	1	[illegible]	0.13	[illegible]	29.275	03	3	15.0	2	35	SW	[illegible]	27	[illegible]	5	4
28	38	32	35	[illegible]	35	30	0	1	[illegible]	0.66	[illegible]	29.350	05	8	9.0	0	23	NE	[illegible]	36	0	0	10
29	60	38	49	15	48	16	0	1 3	[illegible]	0.56	0.0	29.095	17	5	[illegible]	6	44	S	30	18	0	0	10
30	61	25	43	10	32	22	0	[illegible]	[illegible]	0.02	0.0	29.230	25	5	11.0	5	51	SW	32	24	0	0	10

	SUM	SUM				TOTAL	TOTAL	NUMBER OF DAYS	TOTAL	TOTAL	FOR THE MONTH:									TOTAL	% FOR MONTH	SUM	SUM
	1322	787				887	0		3.59	1.2	29.360	23	5.3	11.4	51	SW	32	24		1268	2.9	[illegible]	[illegible]
	AVG	AVG	AVG	DEP	AVG	DEP	DEP	PRECIPITATION	DEP						DATE	30	DATE	30		POSSIBLE	MONTH	AVG	AVG
	44.1	26.2	35.2	-4.6	28.1	131	0	≥ .01 INCH 14	-1.53											4335	40	[illegible]	[illegible]

NUMBER OF DAYS				SEASON TO DATE TOTAL	TOTAL	SNOW, ICE PELLETS ≥ 1.0 INCH	0	GREATEST IN 24 HOURS AND DATES			GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE
MAXIMUM TEMP		MINIMUM TEMP		417	1153	THUNDERSTORMS	5	PRECIPITATION	SNOW, ICE PELLETS		
≥ 90°	≤ 32°	≤ 32°	≤ 0°	DEP	DEP	HEAVY FOG	1	0.86 14-15	0.8	23	1 24+
0	7	19	0	209	413	CLEAR 3 PARTLY CLOUDY 6 CLOUDY 19					

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
T TRACE AMOUNT.
+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

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Kenneth D. Wadell

DIRECTOR
NATIONAL CLIMATIC DATA CENTER

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER
ASHEVILLE NORTH CAROLINA

DEC 1991
CHICAGO,IL
NAT'L WEA SER OFC
10600 WEST HIGGINS RD

DEC 1991
CHICAGO,IL

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

CHARE INTERNATIONAL AIRPORT

LATITUDE 42° 00'N LONGITUDE 87° 53'W ELEVATION (GROUND) 684 FEET TIME ZONE (CENTRAL) 94846

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WEATHER TYPES (1 FOG, 2 HEAVY FOG, 3 THUNDERSTORM, 4 ICE PELLETS, 5 HAIL, 6 GLAZE, 7 DUSTSTORM, 8 SMOKE, HAZE, 9 BLOWING SNOW)	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 (INCHES)	PRECIPITATION WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE IN INCHES ELEV 674 FEET ABOVE M S L	WIND M P H RESULTANT DIR	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST SPEED	PEAK GUST DIRECTION	FASTEST MILE SPEED	FASTEST MILE DIRECTION	SUNSHINE MINUTES	PERCENT OF TOTAL POSSIBLE	SKY COVER (TENTHS) SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
	2	3	4	5	6	7A	7B	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	31	23	27	-6	16	38	0		0	0.00	0.0	29.520	28	6.3	7.1	14	W	22	35	139	25	10	8
02	34	27	31	-2	24	34	0	1	0	0.49	5.6	29.275	04	11.9	13.3	25	NE	38	33	390	52	10	10
03	30	13	22	-10	20	43	0	1 3	5	0.09	0.7	29.050	27	10.8	12.8	32	W	51	26	270	48	10	10
04	13	3*	8*	-24	0	57	0	1 9	5	0.00	0.0	29.480	27	13.9	14.5	28	W	51	26	535	94		5
05	33	6	20	-11		45	0		5	T	T					32	W	22	34	430	77	10	10
06	41	5	24	-7	16	41	0		5	0.00	0.0	29.320	20	10.9	13.4	37	SW	25	21	502	90	8	5
07	49	39	44	13	43	21	0	1	4	T	0.0	29.090	21	10.4	11.1	30	S	21	33	0	0	10	9
08	60	36	48	18	49	17	0	1 3	1	0.32	0.0	29.050	23	10.3	14.1	31	SW	21	33	50	9	10	8
09	41	30	36	6	32	29	0	1 8	0	0.00	0.0	29.330	25	3.3	5.6	13	W	9	29	450	81	6	3
10	49	28	39	9	33	26	0	1	0	0.00	0.0	29.320	21	12.3	12.7	29	S	23	23	325	59	3	2
11	49	30	40	11	34	25	0		0	0.00	0.0	29.420	14	4.3	6.8	18	S	14	16	472	86	4	4
12	60*	38	49*	20	47	16	0	1	0	0.49	0.0	29.010	20	13.9	17.6	40	S	26	19	0	0	10	10
13	44	30	37	8	34	28	0	1 8	0	0.00	0.0	29.200	26	3.1	6.8	20	W	17	29	423	77	1	4
14	36	19	28	0	17	37	0	1	0	0.05	T	29.315	27	20.4	21.5	44	NW	32	26	472	86	3	4
15	30	7	19	-9	9	46	0	9	0	0.04	0.4	29.510	29	12.4	15.4	33	NW	23	22	410	75	5	3
16	35	6	21	-6	14	44	0		T	T	T	29.420	20	8.1	9.9	25	S	17	21	392	72	7	7
17	37	19	28	1	19	37	0		T	T	T	29.335	29	14.3	15.8	33	W	31	28	426	78	4	4
18	22	7	15	-12	4	50	0		T	T	T	29.860	34	11.0	11.3	32	N	20	35	487	89	0	2
19	31	6	19	-8	13	46	0		0	0.00	0.0	30.000	18	8.0	8.5	22	S	16	17	460	84	5	5
20	35	30	33	7	26	32	0	1 6	0	0.20	0.8	29.700	21	11.6	13.0	24	S	17	21	49	9	10	10
21	35	26	31	5	28	34	0	1 8	T	0.00	0.0	29.630	25	7.9	9.8	21	SW	15	23	477	87	2	5
22	36	29	33	7	32	32	0	1	T	T	0.0	29.260	22	13.7	13.7	29	SW	18	22	0	0	10	10
23	38	23	31	6	25	34	0	1	T	0.03	0.1	29.200	34	9.8	11.2	24	N	21	35	184	34	9	6
24	42	17	30	5	22	35	0		T	0.00	0.0	29.360	26	9.3	9.8	30	W	18	26	441	80	0	2
25	42	17	30	5	25	35	0	1	T	0.00	0.0	29.530	19	3.0	5.0	12	S	8	20	460	84	4	2
26	45	25	35	11	30	30	0	1 8	T	0.00	0.0	29.530	24	4.9	10.0	21	SW	20	24	450	82	2	4
27	37	34	36	12	32	29	0	1	0	0.00	0.0	29.790	08	9.2	10.3	23	NE	15	28	40	7	10	10
28	37	32	35	11	33	30	0	1	0	T	0.0	29.515	04	8.3	9.2	18	NE	15	23	83	15	10	10
29	35	30	33	9	30	32	0	1	0	0.00	0.0	29.350	32	7.6	8.3	18	N	12	36	0	0	10	10
30	37	30	34	11	29	31	0	1	0	0.00	0.0	29.600	05	2.9	6.9	25	NE	10	11	0	0	10	10
31	34	31	33	10	28	32	0	1	0	0.00	0.0	29.740	16	6.1	6.5	14	S	10	13	0	0	10	10
	SUM 1178	SUM 637				TOTAL 1066	TOTAL 0	NUMBER OF DAYS		TOTAL 1.71	TOTAL 7.6	FOR THE MONTH: 29.420	25	4.8	11.1	44	NW	32	26	TOTAL 3707	% FOR POSSIBLE	SUM 204	SUM 202
	AVG. 38.0	AVG 22.5	AVG. 30.3	DEP. 2.6	AVG 25.0	DEP. -90	DEP. 0	PRECIPITATION ≥ .01 INCH	8	DEP. -0.39						DATE: 14		DATE: 14				MONTH AVG 51	AVG 6.5

NUMBER OF DAYS				SEASON TO DATE TOTAL	SEASON TO DATE TOTAL						
MAXIMUM TEMP ≥ 90°	MAXIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 0°	2483	1153	SNOW, ICE PELLETS ≥ 1.0 INCH	1				
				DEP.	DEP.	THUNDERSTORMS	1				
0	6	27	0	119	413	HEAVY FOG	0	CLEAR 8	PARTLY CLOUDY 7	CLOUDY 16	

GREATEST IN 24 HOURS AND DATES				GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE	
PRECIPITATION		SNOW, ICE PELLETS			
0.55	02-03	6.0	02-03	6	05*

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE
T TRACE AMOUNT
\+ ALSO ON EARLIER DATE(S).
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

DATA IN COLS 6 AND 12-15 ARE BASED ON 21 OR MORE OBSERVATIONS AT HOURLY INTERVALS. RESULTANT WIND IS THE VECTOR SUM OF WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS. COLS 16 & 17: PEAK GUST - HIGHEST INSTANTANEOUS WIND SPEED. ONE OF TWO WIND SPEEDS IS GIVEN UNDER COLS 18 & 19: FASTEST MILE - HIGHEST RECORDED SPEED FOR WHICH A MILE OF WIND PASSES STATION (DIRECTION IN COMPASS POINTS) FASTEST OBSERVED ONE MINUTE WIND - HIGHEST ONE MINUTE SPEED (DIRECTION IN TENS OF DEGREES) ERRORS WILL BE CORRECTED IN SUBSEQUENT PUBLICATIONS

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Kenneth D. Wadlean
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

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NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE
NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

JAN 1992
CHICAGO,IL
NAT'L WEA SER OFC
10600 WEST HIGGINS RD

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

CHARE INTERNATIONAL AIRPORT

LATITUDE 40° 0.'N LONGITUDE 87° 53'W ELEVATION (GROUND) 684 FEET TIME ZONE CENTRAL 94846

JAN 1992 CHICAGO,IL

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WEATHER TYPES (1 FOG, 2 HEAVY FOG, 3 THUNDER, 4 ICE PELLETS, 5 HAIL, 6 GLAZE, 7 DUSTSTORM, 8 SMOKE, HAZE, 9 BLOWING SNOW)	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 (INCHES)	PRECIPITATION WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE (IN INCHES ELEV 674.1 FEET MSL)	RESULTANT WIND MI/H DIR	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST SPEED	PEAK GUST DIRECTION	FASTEST MINUTE SPEED	FASTEST MINUTE DIRECTION	SUNSHINE MINUTES	PERCENT OF TOTAL POSSIBLE	SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
01	36	31	34	11	31	31	0			T	T	29.650	14	6	8	7	14	SE	12	13	0	0
02	43	36	40	14	40	25	0			0.02	0.0	29.370	15	6	9	7.4	17	S	13	21	0	0
03	41	36	39	17	37	26	0	2			0.0	29.280	27	4	7	5.4	16	W	19	29	0	0
04	38	32	35	13	33	30	0			0.00	0.0	29.385	31	4	9	8.6	16	NE	13	26	0	0
05	36	34	35	13	32	30	0			0.00	0.0	29.360	13	5	8	8.1	19	S	12	21	0	0
06	37	32	35	13	33	30	0	1		T	0.0	29.310	27	6	9	6.9	15	W	13	24	0	0
07	37	32	35	13	31	30	0		5	0.00	0.0	29.440	12	5	7.8	25	SE	16	30	0	0	0
08	44	35	40*	18	38	25	0	1		0.23	0.0	29.190	16	11	12.7	23	SE	22	34	0	0	0
09	44	32	38	17	36	27	0	1		0.02	T	29.140	26	11	11.8	24	W	19	28	0	0	0
10	35	25	30	9	25	35	0	1		T	T	29.280	27	10	11.2	21	NW	15	30	407	32	0
11	45*	25	35	14	31	30	0			0.00	0.0	29.195	22	11	11.5	26	S	17	23	356	63	T
12	40	34	37	16	34	28	0	1		0.01	T	29.060	21	13	13.8	28	S	22	30	0	0	0
13	38	25	32	11	34	33	0	1	5	0.10	1.0	28.970	35	10	14.8	35	N	25	31	0	0	0
14	35	15	20	-1	13	45	0	1	5 9	0.03	0.6	29.080	32	13	14.9	39	NW	26	33	383	68	4
15	20	-10	5	-16	3	60	0	1	9	0.05	0.9	29.320	32	12	14.5	36	NW	28	33	370	65	8
16	27	-12*	8	-13	1	57	0			T	T	29.210	21	13	14.7	33	S	21	30	356	63	10
17	32	9	21	0	11	44	0			0.01	0.1	29.230	28	17	17.8	32	W	25	28	389	68	4
18	11	-1	5*	-16	-6	60	0			0.30	0.0	29.640	28	10	10.5	22	W	16	33	389	68	0
19	33	-5	14	-7	6	51	0			0.00	0.0	29.370	21	10	12.6	35	S	23	30	377	66	8
20	33	15	24	3	16	41	0			0.00	0.0	29.320	28	7	13.7	26	SW	20	34	487	85	5
21	40	25	33	12	29	32	0	1		0.00	0.0	29.255	07	0	8.7	24	SW	18	24	435	75	T
22	41	30	36	15	35	29	0	1		0.15	0.0	29.040	18	10	10.9	28	S	17	20	294	51	10
23	39	17	28	7	26	37	0		9	0.05	0.2	28.760	28	14	16.9	35	NW	25	28	0	0	10
24	23	14	19	-2	7	46	0		9	0.00	0.0	29.280	29	9	12.2	31	NW	21	32	455	78	0
25	29	21	25	4	22	40	0	1		0.20	0.6	29.350	06	4	11.8	23	SE	20	34	0	0	10
26	30	8	19	-2	17	46	0			0.00	0.0	29.570	19	7	9.2	21	S	15	18	350	60	T
27	33	26	30	9	26	35	0	1		0.00	0.0	29.510	29	6	11.6	21	N	15	29	190	32	4
28	33	27	30	8	25	35	0	1		0.00	0.0	29.650	25	5	8.1	17	SW	14	22	174	29	0
29	33	27	30	8	29	35	0	1		0.00	0.0	29.480	21	12	12.4	22	SW	16	22	424	71	8
30	37	30	34	12	33	31	0	1		0.00	0.0	29.220	29	6	8.4	17	SW	12	24	0	0	10
31	36	27	32	10	28	33	0	1		T	T	29.290	34	9	12.0	22	W	16	36	0	0	10
	SUM 1069	SUM 672				TOTAL 1137	TOTAL 0	NUMBER OF DAYS		TOTAL 0.87	TOTAL 5.6	FOR THE MONTH: 29.300	26	4.6	11.2	39	NW	28	33	TOTAL 5856	% FOR MONTH 24*	SUM 35
	AVG 34.5	AVG 21.7	AVG 28.1	DEP 5.3	AVG 24.3	DEP -215	DEP 0	PRECIPITATION ≥ .01 INCH 11		DEP -0.73						DATE: 14		DATE: 15		POSSIBLE 7257	MONTH 33	AVG 35

NUMBER OF DAYS				SEASON TO DATE TOTAL	TOTAL
MAXIMUM TEMP ≥ 90°	MAXIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 32°	MINIMUM TEMP ≤ 0°	3620	0
				DEP	DEP
0	8	26	4	-96	0

NUMBER OF DAYS	
SNOW, ICE PELLETS ≥ 1.0 INCH	2
THUNDERSTORMS	3
HEAVY FOG	1
CLEAR 2 PARTLY CLOUDY 5 CLOUDY 22	

GREATEST IN 24 HOURS AND DATES			
PRECIPITATION		SNOW, ICE PELLETS	
0.23	08	2.6	25

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE	
3	27+

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
T TRACE AMOUNT.
+ ALSO ON EARLIER DATE(S)
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

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Kenneth D. Hadeen
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

noaa
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NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

FEB 1992
CHICAGO, IL
NAT'L WEA SER OFC
10600 WEST HIGGINS RD

ISSN 0198-1854

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

CHARE INTERNATIONAL AIRPORT

LATITUDE 42° 00'N LONGITUDE 87° 53'W ELEVATION GROUND: 684 FEET TIME ZONE CENTRAL 94846

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WEATHER TYPES 1 FOG 2 HEAVY FOG 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE, HAZE 9 BLOWING SNOW	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 INCHES	PRECIPITATION WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE IN INCHES ELEV 674 FEET ABOVE M S L	WIND (M P H) RESULTANT DIR	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST SPEED	PEAK GUST DIRECTION	FASTEST 1-MIN SPEED	FASTEST 1-MIN DIRECTION	SUNSHINE MINUTES	PERCENT OF TOTAL POSSIBLE	SKY COVER TENTHS SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
	2	3	4	5	6	7A	7B	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	35	25	30	7	23	35	0		T	0.00	0.0	29.520	04	2.0	6.9	16	E	12	36	328	55	7	6
02	51	34	38	15	30	27	0		T	0.00	0.0	29.410	20	5.8	5.9	18	SW	13	21	555	92	4	3
03	59*	27	43*	20	38	22	0	1 8	T	0.00	0.0	29.300	23	4.4	5.8	20	NW	13	31	555	92	7	7
04	40	31	36	13	30	29	0	1	0	T	0.0	29.360	35	11.5	12.5	23	N	20	35	360	59	8	9
05	41	24	33	10	28	32	0		0	0.00	0.0	29.310	23	4.7	7.5	16	S	13	21	184	30	0	2
06	41	29	35	11	30	30	0		0	0.00	0.0	29.040	27	7.3	9.9	20	NW	16	32	212	35	8	7
07	34	19	27	3	21	38	0	2	0	0.03	0.3	29.070	32	13.4	13.5	25	NW	17	33	192	31	10	9
08	25	11	18	-6	8	47	0		T	T	T	29.325	32	14.3	14.2	30	NW	21	33	209	34	6	6
09	29	6*	18*	-6	6	47	0		T	0.00	0.0	29.600	20	2.7	7.7	23	S	14	17	580	94	1	3
10	36	24	30	5	25	35	0	1	0	T	T	29.450	20	13.4	14.1	28	S	18	20	10	2	10	10
11	34	18	26	1	20	39	0	1	0	0.00	0.0	29.670	02	12.2	14.4	23	N	18	01	300	48	9	9
12	30	17	24	-1	16	41	0		0	T	T	29.645	10	10.1	11.3	23	NE	17	21	530	84	9	10
13	34	27	31	6	28	34	0	1	T	0.01	0.3	29.270	25	5.5	7.0	14	W	13	25	263	42	10	10
14	34	31	33	7	32	32	0	1	0	0.21	T	29.270	12	5.2	9.0	22	E	16	07	0	0	10	10
15	37	33	35	9	35	30	0	23 6	0	0.40	0.0	28.920	36	8.5	11.8	24	N	18	08	0	0	10	10
16	36	32	34	8	33	31	0	1	0	T	T	29.360	25	5.2	7.5	17	NW	13	29	0	0	10	10
17	40	36	38	11	36	27	0	1	0	0.01	0.0	29.380	09	10.1	11.4	22	SE	17	07	103	16	10	9
18	46	35	41	14	39	24	0	2	0	0.30	0.0	29.040	12	5.3	8.9	17	E	16	08	0	0	10	10
19	41	34	38	11	35	27	0	1	0	0.05	T	29.195	30	8.1	9.7	20	NW	15	33	0	0	10	10
20	48	32	40	13	32	25	0	1	0	0.00	0.0	29.355	22	11.5	14.9	37	SW	24	20	311	48	10	8
21	37	25	31	3	26	34	0		0	0.00	0.0	29.560	05	6.2	9.6	18	E	15	07	450	69	10	3
22	50	34	42	14	34	23	0	1	0	T	0.0	29.400	04	7.2	8.3	16	NE	12	04	470	72	4	6
23	42	31	37	9	36	28	0	1	0	0.00	0.0	29.370	04	11.6	11.8	16	NE	16	04	150	23	10	9
24	40	33	37	8	34	28	0	1	0	0.36	0.7	29.360	06	4.9	7.6	20	NE	14	08	51	8	10	10
25	35	32	34	5	29	31	0	1 8	0	0.00	0.0	29.350	31	10.0	10.8	21	NW	15	36	19	3	10	10
26	39	28	34	5	27	31	0		0	0.00	0.0	29.110	26	11.1	11.7	26	W	20	28	495	74	7	6
27	47	31	39	9	33	26	0	8	0	0.00	0.0	29.090	27	9.5	10.6	23	NW	16	33	455	68	7	4
28	48	31	40	10	33	25	0	1 4	0	0.02	T	28.940	31	4.6	15.9	39	NE	26	02	101	15	10	10
29	38	22	30	0	20	35	0	1 6	0	T	T	29.370	27	3.3	10.3	21	NE	16	02	590	88	2	2
SUM	1147	782				TOTAL 913	TOTAL 0	NUMBER OF DAYS		TOTAL 1.39	TOTAL 1.3	FOR THE MONTH: 29.310	31	2.1	10.4	39	NE	26	02	TOTAL 7473	% FOR MONTH 229	SUM AVG 223	
AVG	39.6	AVG 27.0	AVG 33.3	DEP 7.3	AVG 28.1	DEP -214	DEP 0	PRECIPITATION ≥ .01 INCH	9	DEP 0.08						DATE: 28		DATE: 28		POSSIBLE 18489			

NUMBER OF DAYS				SEASON TO DATE	
MAXIMUM TEMP		MINIMUM TEMP		TOTAL	TOTAL
≥ 90°	≤ 32°	≤ 32°	≤ 0°	4533	0
				DEP.	DEP.
0	3	23	0	-310	0

SNOW, ICE PELLETS	
≥ 1.0 INCH	0
THUNDERSTORMS	1
HEAVY FOG	3
CLEAR 3 PARTLY CLOUDY 7 CLOUDY 19	

GREATEST IN 24 HOURS AND DATES		
PRECIPITATION	SNOW, ICE PELLETS	
0.59	14-15	0.7

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE:	
1	24

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE
T TRACE AMOUNT
- ALSO ON EARLIER DATE(S).
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA

DATA IN COLS 6 AND 12-15 ARE BASED ON 21 OR MORE OBSERVATIONS AT HOURLY INTERVALS. RESULTANT WIND IS THE VECTOR SUM OF WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS. COLS 16 & 17: PEAK GUST - HIGHEST INSTANTANEOUS WIND SPEED. ONE OF TWO WIND SPEEDS IS GIVEN UNDER COLS 18 & 19: FASTEST MILE - HIGHEST RECORDED SPEED FOR WHICH A MILE OF WIND PASSES STATION (DIRECTION IN COMPASS POINTS). FASTEST OBSERVED ONE MINUTE WIND - HIGHEST ONE MINUTE SPEED (DIRECTION IN TENS OF DEGREES). ERRORS WILL BE CORRECTED IN SUBSEQUENT PUBLICATIONS

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Kenneth D. Hadlen
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

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FEB 1992
CHICAGO, IL

MAR 1992
CHICAGO, IL
NAT'L WEA SER OFC
10600 WEST HIGGINS RD

ISSN 0198-1854

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

OHARE INTERNATIONAL AIRPORT

LATITUDE 42° 00'N LONGITUDE 87° 53'W ELEVATION (GROUND) 684 FEET TIME ZONE CENTRAL 94846

DATE 1	TEMPERATURE °F MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEPARTURE FROM NORMAL 5	AVERAGE DEW POINT 6	DEGREE DAYS BASE 65°F HEATING (SEASON BEGINS WITH JUL) 7A	COOLING (SEASON BEGINS WITH JAN) 7B	WEATHER TYPES (1 FOG, 2 HEAVY FOG, 3 THUNDERSTORM, 4 ICE PELLETS, 5 HAIL, 6 GLAZE, 7 DUSTSTORM, 8 SMOKE, HAZE, 9 BLOWING SNOW) 8	SNOW ICE PELLETS OR ICE ON GROUND AT 0600 (INCHES) 9	PRECIPITATION WATER (EQUIVALENT) (INCHES) 10	SNOW, ICE PELLETS (INCHES) 11	AVERAGE STATION PRESSURE IN INCHES ELEV 674 FEET ABOVE M.S.L. 12	WIND M.P.H. RESULTANT DIR 13	RESULTANT SPEED 14	AVERAGE SPEED 15	PEAK GUST SPEED 16	PEAK GUST DIRECTION 17	FASTEST 1-MIN SPEED 18	FASTEST 1-MIN DIRECTION 19	SUNSHINE MINUTES 20	PERCENT OF TOTAL POSSIBLE 21	SKY COVER TENTHS SUNRISE TO SUNSET 22	MIDNIGHT TO MIDNIGHT 23
01	71*	38	55	25	38	10	0		0	0.00	0.0	29.160	23	12.0	13.7	33	SW	20	24	620	92	1	1
02	58	32	45	14	38	20	0	2 9	0	0.00	0.0	29.330	03	7.7	8.3	17	NE	14	04	517	76	1	5
03	40	36	38	7	38	27	0	2	0	0.00	0.0	29.425	05	11.9	12.1	18	E	16	05	0	0	10	10
04	64	35	50	19	40	15	0	1 8	0	0.00	0.0	29.370	06	5.9	6.9	13	E	10	06	553	81	1	4
05	63	43	53	21	50	12	0	1 3 8	0	0.18	0.0	29.300	09	5.8	7.2	16	N	15	09	22	3	10	10
06	62	47	55*	23	53	10	0	23	0	0.17	0.0	29.140	09	5.9	7.4	18	NE	12	09	10	2	10	10
07	51	44	48	16	48	17	0	23	0	0.04	0.0	29.095	35	4.3	6.7	14	NW	10	32	0	0	10	10
08	63	43	53	20	49	12	0	1	0	T	0.0	29.250	24	4.6	8.0	18	W	15	28	280	40	6	1
09	63	23	43	10	44	22	0	1 3456	0	0.33	0.3	29.000	18	1.1	16.4	31	N	26	02	0	0	10	3
10	24	15	20	-14	15	45	0	1 3 6	1	0.12	1.0	29.100	35	20.0	20.1	36	N	28	35	17	2	10	10
11	29	11*	20*	-14	12	45	0		1	0.00	0.0	29.230	33	7.5	9.0	20	NW	16	33	615	87	6	2
12	29	15	22	-12	13	43	0		T	T	T	29.270	35	10.5	11.0	22	NW	16	36	638	90	2	2
13	34	18	26	-9	17	39	0	1	T	0.01	0.2	29.280	28	6.9	7.3	18	W	10	28	610	86	5	5
14	35	24	30	-5	22	35	0	1	T	0.01	0.2	29.270	34	5.4	6.8	15	NW	13	33	451	63	10	8
15	36	22	29	-6	19	36	0		T	0.00	0.0	29.480	34	5.3	7.5	20	NW	17	01	651	91	2	2
16	47	19	33	-3	29	32	0	3 5	T	0.17	T	29.320	20	13.8	14.0	32	S	22	20	566	79	4	5
17	44	32	38	2	29	27	0		0	T	0.0	29.280	03	8.6	12.2	30	NE	21	05	632	88	2	5
18	36	29	33	-4	22	32	0		0	0.00	0.0	29.260	06	16.1	16.3	32	NE	23	06	223	31	10	9
19	41	28	35	-2	21	30	0		0	0.00	0.0	29.270	04	8.6	11.7	26	NE	20	04	550	76	7	7
20	40	29	35	-2	23	30	0	1	0	T	T	29.310	32	3.1	9.6	25	NE	17	32	280	38	8	6
21	36	24	30	-8	25	35	0	1 9	0	0.92	8.5	29.290	10	10.0	10.8	28	NE	18	12	158	22	10	3
22	34	20	27	-11	21	38	0	1 9	9	0.04	0.3	29.170	36	10.1	13.9	28	N	21	02	455	62	6	5
23	45	17	31	-8	19	34	0		7	0.00	0.0	29.305	25	3.8	6.7	12	W	9	29	634	86	3	1
24	58	25	42	3	32	23	0		4	0.00	0.0	29.350	20	9.2	10.4	25	SW	17	21	632	85	3	1
25	52	33	43	3	35	22	0		T	T	0.0	29.200	22	9.6	10.8	23	SW	16	23	200	27	8	7
26	51	32	42	2	30	23	0	1 3	T	0.06	0.9	29.130	28	9.3	14.2	35	NW	24	32	390	52	8	3
27	41	27	34	-7	24	31	0		1	T	T	29.470	35	10.2	12.6	36	NW	23	33	590	79	2	3
28	47	25	36	-5	27	29	0	1 4 8	0	0.17	0.2	29.550	11	4.3	6.8	16	E	13	10	525	70	8	3
29	43	36	40	-1	36	25	0	1	0	0.31	0.0	29.360	09	9.2	10.1	21	E	15	10	0	0	10	10
30	49	32	41	-1	33	24	0		0	0.00	0.0	29.320	36	7.8	10.0	28	NW	15	31	286	38	8	6
31	51	31	41	-1	29	24	0		0	0.14	0.0	29.180	28	7.3	11.6	32	NW	20	33	250	33	9	1
	SUM 1437	SUM 885				TOTAL 847	TOTAL 0	NUMBER OF DAYS		TOTAL 2.67	TOTAL 11.6	29.270	36	2.6	10.7	FOR THE MONTH: 36	NW	28	35	TOTAL 11362	% FOR 200	SUM 196	SUM
	AVG 46.4	AVG 28.5	AVG 37.5	DEP 1.5	AVG 30.0	DEP -52	DEP 0	PRECIPITATION ≥ .01 INCH 14		DEP 0.08						DATE: 27+		DATE: 10		POSSIBLE 22218	MONTH 51	AVG 6.5	AVG 6.3

NUMBER OF DAYS				SEASON TO DATE TOTAL	TOTAL
MAXIMUM TEMP. ≥ 90°	MAXIMUM TEMP. ≤ 32°	MINIMUM TEMP. ≤ 32°	MINIMUM TEMP. ≤ 0°	DEP. 5380	DEP. 3
0	3	22	0	-327	0

NUMBER OF DAYS	
SNOW, ICE PELLETS ≥ 1.0 INCH	2
THUNDERSTORMS	7
HEAVY FOG	4
CLEAR 8	PARTLY CLOUDY 7
CLOUDY 16	

GREATEST IN 24 HOURS AND DATES	
PRECIPITATION	SNOW, ICE PELLETS
0.96 21-22	8.8 21-22

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE	
9	22

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
T TRACE AMOUNT
+ ALSO ON EARLIER DATE(S).
HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.
BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA.

DATA IN COLS 6 AND 12-15 ARE BASED ON 21 OR MORE OBSERVATIONS AT HOURLY INTERVALS. RESULTANT WIND IS THE VECTOR SUM OF WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS. COLS 16 & 17: PEAK GUST - HIGHEST INSTANTANEOUS WIND SPEED ONE OF TWO WIND SPEEDS IS GIVEN UNDER COLS 18 & 19: FASTEST MILE - HIGHEST RECORDED SPEED FOR WHICH A MILE OF WIND PASSES STATION (DIRECTION IN COMPASS POINTS). FASTEST OBSERVED ONE MINUTE WIND - HIGHEST ONE MINUTE SPEED (DIRECTION IN TENS OF DEGREES). ERRORS WILL BE CORRECTED IN SUBSEQUENT PUBLICATIONS.

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DIRECTOR
NATIONAL CLIMATIC DATA CENTER

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MAR 1992
CHICAGO, IL

APPENDIX M

APPENDIX M

QUALITY ASSURANCE REVIEW OF PHASE I SOIL, SEDIMENT AND SURFACE WATER RESULTS

APPENDIX M

PHASE I DATA VALIDATION

1.0 Validation Results

Ebasco Services, Incorporated, contractor to IEPA, was charged with the validation of all the chemical data from samples collected by IEPA at the Lenz Oil site. This report summarizes the findings of the data validation for Phase I analytical samples. A Case is defined as a finite, usually predetermined number of samples, collected over a given time period from a site (USEPA, 1990). A case can consist of more than one SDG. The data for the Lenz Oil site was sent from the laboratory in five Sample Delivery Groups (SDGs). A Sample Delivery Group (SDG) is a unit within a Case used to identify a group of samples for delivery, defined as one of the following, whichever comes first: (1) a Case; (2) 20 field samples within a Case; or (3) a specified period of time in which field samples are received at a laboratory, starting with receipt of the first sample in a Case or SDG (USEPA, 1990).

The five SDGs, each including organic (volatile, semi-volatile, and pesticide/PCB) and inorganic analyses, were validated according to the National Functional Guidelines and the EPA Region II Standard Operating Procedures (SOP) #HW-6 for organics and SOP #HW-2 for inorganics. A total of 75 samples were analyzed for organic parameters, and 74 samples for inorganic parameters. In addition, 20 soil samples were subjected to the Toxicity Characteristic Leaching Procedure (TCLP). The analyses were conducted according to the procedures outlined in the CLP Statement of Work (SOW) 2/88 for organics and SOW 7/88 for inorganics.

During the inorganic data validation, serious analytical deficiencies were noted in the ICP metals analyses. After the validation was completed, a meeting was held between the U.S. EPA, the Illinois EPA and its contractor Ebasco, and the contractor for the settling respondents. It was decided at this meeting that the ICP metal analyses for the soil and sediment samples would be redone, and the new data validated. The Illinois EPA performed the data validation on all of the soil and sediment samples and submitted the validated results to Ebasco. New surface water samples will be collected during the Phase II field activities and analyzed for all metals and cyanide. The results of the surface water sample analyses in this report should be considered as estimated.

The complete summary of all validated samples is presented in the back of this appendix, where the samples are divided into groups by sample matrix. All validation qualifications are given in the tables. Five qualifiers (B,R,J,L,H) were used in the final validation procedures. The qualifiers are defined as follows:

B - compound was found in associated lab blanks
R - rejected or unreliable data which should not be used
J - estimated data which should be used as an approximation only
L - data which may be biased low and should be used as an approximation
H - data which may be biased high and should be used as an approximation

2.0 Organic Data Validation

This section discusses data validation results for volatile, semi-volatile, and pesticide/PCB analyses.

2.1 Volatile Organic Compounds

All volatile organic compounds were successfully analyzed in all samples, with the exception of those compounds qualified as unreliable or rejected, "R". Some sample analytes were rejected because contamination was found in the associated sample blanks.

Ebasco's findings are based upon a general review of all available data. These include laboratory and field blank results, matrix spike and spike duplicate results, calibration standards, surrogate spike recoveries, holding times, instrument tunings, mass spectra comparisons, response factors, and review of the raw data.

Major Problems

The following analytes in the following Sample Delivery Groups (SDG) have been qualified "R" because of a failure to satisfy the required QC criteria.

Several analytes were detected in laboratory, field, and/or trip blanks. All samples with concentrations less than 10 times the blank concentration for common contaminants, or five times the blank concentration for uncommon contaminants have been marked rejected "R".

SDG #	Analytes
200203	Acetone, Methylene Chloride, and several tentatively identified compounds (TICs).

Response factors for several compounds were less than the required value of 0.05. Because of poor response, all samples showing non-detected values for the following compounds have been marked as rejected "R".

SDG #	Analytes
200203	2-Butanone

Minor Problems

The concentrations for the following sample analytes have been qualified as estimated and marked "J" due to QC failure and/or other criteria affecting sample quality.

The percent differences for several initial and/or continuing calibration standards were high. As a result, the following analytes have been qualified as estimated and marked "J".

SDG #	Analyte
200203	Acetone, Vinyl Acetate, 2-Butanone

The percent recoveries of the internal standards were outside the QC criteria for several samples. The concentration values for those samples have been marked as estimated, "J", unless they were qualified for a more stringent criteria.

SDG #	Analyte
200203	Samples SB09 5-7', SB09 5-7' RE, SB13 0-1.7', SB13 0-1.7' RE, SB12A 2.5-5', SB12A 2.5-5' RE

Some surrogate recoveries were outside contract specifications. As a result, all associated samples have been qualified estimated and marked "J", unless they were qualified for a more stringent criteria.

SDG #	Analyte
200203	SB12A 2.5-5', SB12A 2.5-5' RE, SB07 5-9' (Medium Level Analysis)

The percent solids for several samples was less than 50 percent. Correcting for percent solids in such instances may create inaccuracies with the data. All positive value sample analytes not qualified with a more stringent qualifier have been marked as estimated, "J".

SDG #	Analyte
200201	Samples SD02, SD03
200202	Sample SB02

2.2 Semi-Volatile Summary

The semi-volatile organic compounds were successfully analyzed in all samples with the exception of those compounds qualified as unreliable or rejected, "R". Some sample analytes were rejected because of contamination found in the associated sample blanks.

Major Problems

The following semi-volatile compounds have been qualified as rejected because of a failure to meet QC criteria.

Several analytes were detected in laboratory, field, and/or trip blanks. All samples with concentrations less than 10 times the blank concentration for common contaminants, or five times the blank concentration for uncommon contaminants have been marked rejected, "R".

SDG #	Analytes
200203	Several Unknown TICs
200201	bis(2-Ethylhexyl)phthalate, Hexanedioic acid ester, Several Unknown TICs
200202	Several Unknown TICs
200200	Several Unknown TICs

Response factors for several compounds were less than 0.05. Due to the poor response, all associated non-detects have been marked as rejected "R".

SDG #	Analytes
200203	2-Butanone in samples SB05 5-9', SB06 5-9' SB07 5-9', SB09 5-7', SB09 5-7' RE, SB12 A 2.5-5', SB12A 2.5-5' RE, SB13 0-1.7', SB13 0-1.7' RE

Minor Problems

The values for the following semi-volatile compounds have been marked as estimated, "J", because of QC failure and/or other criteria affecting sample quality.

The percent differences for several initial and/or continuing calibration standards were high. As a result, the following analytes in the associated SDGs have been qualified with "J", as estimated.

SDG #	Analyte
200201	Benzyl Alcohol
200202	4-Chloroaniline, 2-Nitroaniline, 2,4-Dinitrophenol, 4-Nitroaniline
200200	Benzyl Alcohol

The percent recoveries of the internal standards for several samples were outside the QC criteria. The concentrations of all associated semi-volatile compounds for these samples have been marked as estimated, "J", unless they were qualified for a more stringent criteria.

SDG #	Analyte
200201	All analytes associated with IS5 and IS6 for sample SS04BFD.
	All analytes associated with IS5 and IS6 for samples SS05B, SS05BRE, SS06A.
	All analytes associated with IS4, IS5, and IS6 for samples SS06ARE, SS06B, SS06BRE, SS06BFD, SS06BFDRE.
200200	All analytes associated with IS6 for samples SW05, SW06, SW05RE, SW06RE.

Some surrogate recoveries were outside the contract specifications. As a result all associated samples have been qualified estimated, and marked "J", unless they were qualified for a more stringent criteria.

SDG #	Analyte
200203	SB12A 2.5-5.0′
	SB12A 2.5-5.0′ RE
	SB07 5-9′ (medium level)

The percent solids for several samples were less than 50 percent. Correcting for percent solids in such instances may create inaccuracies with the data. All detected values for all semi-volatile compounds not qualified with a more stringent qualifier have been marked as estimated, "J".

SDG #	Analyte
200201	Samples SD02, SD03
200202	Sample SB02

2.3 Pesticides/PCBs Data Validation

Ebasco reviewed two SDG cases (#200203 and #200204) of pesticides/PCB data, and discovered that in analyzing these samples, the laboratory (ARDL) seriously deviated from the extraction protocol outlined in the Statement of Work (SOW 2/88). The raw data in these two cases were manually corrected and then validated by Ebasco. The laboratory did submit revised analytical data to IEPA. The other three SDG cases (200200, 200201, and 200202) contained no significant problems.

3.0 Inorganic Data Validation

The data received for the reanalysis of soil and sediment samples for Target Analyte List compounds excluding mercury, thallium, and cyanide, were divided into four delivery group numbers (SDG 200241, 200242, 200243, and 200244). The data received for the reanalysis of soil and sediment samples for TCLP metals, excluding mercury, was delivered in one group, SDG 200245. The findings presented here are based upon a review of all available reanalysis data, including laboratory calibrations, calibration verifications, blanks, interference check samples, matrix spike analyses, laboratory duplicate analyses, laboratory control samples analyses, method of standard addition analyses, ICP serial dilutions, and instrument raw data output.

3.1 Major Problems

In several instances during analytical runs performed in a simultaneous ICP, the ICP Interference Check Sample Solution A raw data for analytes not present in Solution A, as well as the investigative samples, exhibited large negative numbers (i.e. 1 to 10 times the -CRDL) for some analytes. Because of the simultaneous ICP's apparent inability to correct for matrix affects during the analyses of some analytes, the sample results from data less than -CRDL are unusable and have been qualified "R", as rejected. Most results for the SDGs and the analytes listed below are affected.

SDG #	Analyte
200241	Sb, Be, Cd, Ag
200242	Sb, Be, Cd, Ag
200243	Sb, Be, Ag
200244	Sb, Be, Ag

Low matrix spike recoveries of 0% were reported. All samples associated with spike recoveries of 0% are unusable and have been qualified "R", as rejected.

SDG #	Analyte
200242	Be, Ag
200243	Sb, Be, Ag
200244	Sb, Be, Ag

In several instances during ICP analytical runs, the analysis of the solid matrix Laboratory Control Samples (LCS) was out of control limits. The laboratory reanalyzed the LCS on a later analytical run, while reporting the results for the investigative samples obtained from the original ICP run. The following analytes are estimated and qualified "J", based on the out of control ICP-LCS results (recalculated by the reviewers) obtained during the runs from which investigative sample results were reported. All results for the SDGs and analytes listed below are affected.

SDG #	Analyte
200241	Cu
200242	Al, Mn, Ni
200243	Al
200244	Pb

3.2 Minor Problems

In a few instances, blank values exceeded the Instrument Detection Limit (IDL). Sample results greater than the IDL but less than 5 times the amount detected in the associated blank are non-detects and are qualified "U", unless already qualified for a more stringent criteria.

SDG #	Analyte
200241	As, Co, V
200242	Se
200243	As, Ni
200244	As

Both low matrix spike recoveries and high matrix spike recoveries were reported. Non-detect samples associated with spike recoveries less than 30% are unusable and qualified "R", as rejected. All other associated samples, with the exception of those non-detects associated with high spike recoveries, are estimated and qualified "J", unless already qualified for a more stringent criteria. All results for the SDGs and analytes listed below are affected.

SDG #	Analyte
200241	As, Cd, Pb, Zn
200242	Sb, As, Cd, Cu, Ni, Se, Zn
200243	As, Ba, Cd, Cr, Co, Cu, Pd Ni, Se, V, Zn
200244	Cd, Se

During Graphite Furnace Atomic Absorption (GFAA) analyses, low analytical spike recoveries were detected. Correlation coefficients for the linear regression during the Method of Standard Additions (MSA) less than 0.995, and inappropriate spike levels during MSA were also detected. All affected GFAA analyses are estimated and qualified "J", unless already qualified for a more stringent criteria.

SDG #	Analyte
200241	As, Se
200242	As, Pb, Se
200243	As, Se
200244	As, Se
200245	As, Se

In several instances, the sample concentration was 50 times greater than the IDL and the difference in concentrations of certain elements between the sample and the serial dilution were higher than 10%. All associated samples for the affected elements are qualified "J", estimated, unless already qualified for more stringent criteria.

SDG #	Analyte
200241	Ca, Fe, Pb, Mn, Zn
200242	Ba, Cr, Pb
200243	Ca, Cr, Fe, Pb
200244	Cr, Cu, Fe

TABLE II-1
SUMMARY OF VOLATILE ORGANIC DATA (UG/L) FROM
SURFACE WATER SAMPLES

COMPOUNDS	SW01	SW01TB	SW02	SW02FB	SW02TB	SW03	SW03TB	SW03FD(1)	SW03FDTB
METHYLENE CHLORIDE	6 U	45 B	3 U	4 JB	8 B	9 U	9 B	9 U	21 B
ACETONE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
CARBON DISULFIDE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-DICHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHLOROFORM	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-BUTANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TRICHLOROETHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TRANS-1,3-DICHLOROPROPENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TETRACHLOROETHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
TOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ETHYLBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
M-XYLENE	5 U	9	5 U	5 U	5 U	5 U	5 U	5 U	5 U
O&P-XYLENE	5 U	6	5 U	5 U	5 U	5 U	5 U	5 U	5 U
UNKNOWN	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	61 (1)

TABLE II-1 (CONTINUED)
SUMMARY OF VOLATILE ORGANIC DATA (UG/L) FROM
SURFACE WATER SAMPLES

COMPOUNDS	SW04	SW04TB	SW05	SW05TB	SW06	SW06TB
METHYLENE CHLORIDE	5 U	5 B	5 U	53 B	56 U	64 B
ACETONE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
CARBON DISULFIDE	5 U	5 U	5 U	5 U	5 U	5 U
1,1-DICHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U
CHLOROFORM	5 U	5 U	5 U	5 U	5 U	5 U
2-BUTANONE	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U
TRICHLOROETHENE	5 U	5 U	5 U	5 U	5 U	5 U
BENZENE	5 U	5 U	5 U	5 U	5 U	5 U
TRANS-1,3-DICHLOROPROPENE	5 U	5 U	5 U	5 U	5 U	5 U
TETRACHLOROETHENE	5 U	5 U	5 U	5 U	5 U	5 U
TOLUENE	5 U	5 U	5 U	5 U	5 U	5 U
ETHYLBENZENE	5 U	5 U	5 U	5 U	5 U	5 U
M-XYLENE	5 U	5 U	5 U	5 U	5 U	5 U
O&P-XYLENE	5 U	5 U	5 U	5 U	5 U	5 U
UNKNOWN	NONE	NONE	NONE	20 (1)	NONE	14 (1)

TABLE II-2
SUMMARY OF VOLATILE ORGANIC DATA (UG/KG) FROM
SEDIMENT SAMPLES

COMPOUNDS	SD01	SD01TB	SD02	SD03	SD04	SD05	SD05FD	SD06	SD06FB
METHYLENE CHLORIDE	24 U	51 B	15 UJ	17 UJ	17 U	34 UJ	16 U	13 U	26 B
ACETONE	15 UJ	10 U	160 J	180 J	20 UJ	16 UJ	18 UJ	14 UJ	10 UJ
CARBON DISULFIDE	8 U	5 U	10 UJ	11 UJ	10 U	8 UJ	9 U	7 U	5 U
1,1-DICHLOROETHANE	8 U	5 U	10 UJ	11 UJ	10 U	8 UJ	9 U	7 U	5 U
CHLOROFORM	8 U	5 U	10 UJ	11 UJ	10 U	8 UJ	9 U	7 U	5 U
2-BUTANONE	15 U	10 U	21 UJ	23 UJ	20 U	16 UJ	18 U	14 U	10 U
1,1,1-TRICHLOROETHANE	8 U	5 U	10 UJ	11 UJ	10 U	8 UJ	9 U	7 U	5 U
TRICHLOROETHENE	8 U	5 U	10 UJ	11 UJ	10 U	8 UJ	9 U	7 U	5 U
BENZENE	8 U	5 U	10 UJ	11 UJ	10 U	8 UJ	9 U	7 U	5 U
TRANS-1,3-DICHLOROPROPENE	8 U	5 U	10 UJ	11 UJ	10 U	8 UJ	9 U	7 U	5 U
TETRACHLOROETHENE	8 U	5 U	10 UJ	11 UJ	10 UJ	8 UJ	9 U	7 U	5 U
TOLUENE	8 U	5 U	10 UJ	11 UJ	10 UJ	8 UJ	9 U	7 U	5 U
ETHYLBENZENE	8 U	5 U	10 UJ	11 UJ	10 UJ	8 UJ	9 U	7 U	5 U
M-XYLENE	8 U	5 U	10 UJ	11 UJ	10 UJ	8 UJ	9 U	7 U	5 U
O&P-XYLENE	8 U	5 U	10 UJ	11 UJ	10 UJ	8 UJ	9 U	7 U	5 U
UNKNOWN	NONE	NONE	NONE	NONE	NONE	11 (1)	NONE	NONE	19 (1)

TABLE II-3
SUMMARY OF VOLATILE ORGANIC DATA (UG/KG) FROM
SURFACE SOIL SAMPLES

COMPOUNDS	SS01A	SS01B	SS02A	SS02B	SS03A	SS03B	SS04A
METHYLENE CHLORIDE	17 U	16 U	51 UJ	17 U	10 U	38 U	20 U
ACETONE	16 UJ	15 UJ	17 UJ	18 U	20 U	16 UJ	15 UJ
CARBON DISULFIDE	8 U	8 UJ	9 UJ	9 U	10 U	8 U	8 U
1,1-DICHLOROETHANE	8 U	8 UJ	9 UJ	9 U	10 U	8 U	8 U
CHLOROFORM	8 U	8 UJ	9 UJ	9 U	10 U	8 U	8 U
2-BUTANONE	16 U	15 UJ	17 UJ	18 U	20 U	16 U	15 U
1,1,1-TRICHLOROETHANE	8 U	8 UJ	9 UJ	9 UJ	10 U	8 UJ	8 U
TRICHLOROETHENE	8 U	8 UJ	9 UJ	9 UJ	10 U	8 UJ	8 U
BENZENE	8 U	8 UJ	9 UJ	9 UJ	10 U	8 UJ	8 U
TRANS-1,3-DICHLOROPROPENE	8 U	8 UJ	9 UJ	9 UJ	10 U	8 UJ	8 U
TETRACHLOROETHENE	8 UJ	8 UJ	9 UJ	9 UJ	10 U	8 UJ	8 U
TOLUENE	8 UJ	8 UJ	9 UJ	9 UJ	10 U	8 UJ	8 U
ETHYLBENZENE	8 UJ	8 UJ	9 UJ	9 UJ	10 U	8 UJ	8 U
M-XYLENE	8 UJ	8 UJ	9 UJ	9 UJ	10 U	8 UJ	8 U
O&P-XYLENE	8 UJ	8 UJ	9 UJ	9 UJ	10 U	8 UJ	8 U
UNKNOWN	8 (1)	NONE	17 (1)	36 (2)	15 (1)	30 (3)	NONE
UNKNOWN (DICHLORODIFLUOROMETHANE)	NONE	NONE	NONE	NONE	NONE	NONE	NONE

TABLE II-3 (CONTINUED)
SUMMARY OF VOLATILE ORGANIC DATA (UG/KG) FROM
SURFACE SOIL SAMPLES

COMPOUNDS	SS04B	SS04BFD	SS05A	SS05B	SS06A	SS06B	SS06BFB	SS06BFD
METHYLENE CHLORIDE	39 UJ	53 UJ	60 UJ	33 U	31 U	12 U	30 B	22 U
ACETONE	14 UJ	13 UJ	13 UJ	150	15 UJ	31 J	10 U	15 UJ
CARBON DISULFIDE	7 UJ	7 UJ	6 UJ	7 U	8 U	8 U	5 U	7 U
1,1-DICHLOROETHANE	7 UJ	7 UJ	6 UJ	7 U	8 U	8 U	5 U	7 U
CHLOROFORM	7 UJ	7 UJ	6 UJ	7 U	8 U	8 U	15	7 U
2-BUTANONE	14 UJ	13 UJ	13 UJ	14 R	15 U	17 U	10 U	15 U
1,1,1-TRICHLOROETHANE	7 UJ	7 UJ	6 UJ	7 U	8 U	8 U	5 U	7 U
TRICHLOROETHENE	12 J	20 J	6 UJ	7 U	8 U	8 U	5 U	7 U
BENZENE	7 UJ	7 UJ	6 UJ	7 U	8 U	8 U	5 U	7 U
TRANS-1,3-DICHLOROPROPENE	7 UJ	7 UJ	6 UJ	7 U	8 U	8 U	5 U	7 U
TETRACHLOROETHENE	29 J	41 J	6 UJ	7 U	8 U	8 U	5 U	7 U
TOLUENE	7 UJ	7 UJ	6 UJ	11	8 U	8 U	5 U	7 U
ETHYLBENZENE	7 UJ	7 UJ	6 UJ	12	8 U	8 U	5 U	7 U
M-XYLENE	7 UJ	7 UJ	6 UJ	38	8 U	8 U	5 U	7 U
O&P-XYLENE	7 UJ	7 UJ	6 UJ	32	8 U	8 U	5 U	7 U
UNKNOWN	108 J(2)	5 J	14 J(1)	32 (4)	NONE	NONE	NONE	NONE
UNKNOWN (DICHLORODIFLUOROMETHANE)	NONE	NONE	NONE	260.	NONE	NONE	NONE	NONE

TABLE II-4
SUMMARY OF VOLATILE ORGANIC DATA (UG/KG) FROM
SHALLOW (LESS THAN 5 FEET) SOIL BORING SAMPLES

COMPOUNDS	SB01 0-5'	SB02 0-5'	SB03 0-5'	SB12A 2.5-5'	SB13 0-1.7'	SB14 0-4.5'	SB15R 2.5-4.5'	SB15RD 2.5-4.5'
METHYLENE CHLORIDE	33 UJ	30 U	7 UJ	20 UJ	10 UJ	16 U	6 U	6 U
ACETONE	270	150	13 UJ	180 J	11 UJ	11 U	12 U	12 U
CARBON DISULFIDE	7 UJ	6 U	7 UJ	6 UJ	5 UJ	6 U	6 U	6 U
1,1-DICHLOROETHANE	7 UJ	6 U	7 UJ	2 J	5 UJ	6 U	6 U	6 U
CHLOROFORM	7 UJ	6 U	7 UJ	6 UJ	5 UJ	6 U	6 U	6 U
2-BUTANONE	14 R	13 R	13 R	13 R	11 R	11 U	12 U	12 U
1,1,1-TRICHLOROETHANE	7 UJ	6 U	7 UJ	6 J	3 J	6 U	6 U	6 U
TRICHLOROETHENE	220 J	6 U	7 UJ	5 J	5 UJ	6 U	6 U	6 U
BENZENE	7 UJ	6 U	7 UJ	15 J	5 UJ	6 U	11.	10.
TRANS-1,3-DICHLOROPROPENE	7 J	6 U	7 J	6 UJ	5 UJ	6 U	6 UJ	6 UJ
TETRACHLOROETHENE	110 J	6 U	7 UJ	11 J	7 J	6 U	6 U	6 U
TOLUENE	7 UJ	6 U	7 UJ	26 J	5 UJ	6 U	6 U	6 U
ETHYLBENZENE	7 UJ	6 U	7 UJ	21 J	5 UJ	6 U	16.	15.
M-XYLENE	7 UJ	6 U	7 UJ	100 J	5 UJ	6 U	6 U	6 U
O&P-XYLENE	7 UJ	6 U	7 UJ	68 J	5 UJ	6 U	6 U	6 U
UNKNOWN	70 (11)	NONE	21 (1)	68 J(3)	13 (2)	NONE	18 J (3)	18 J (3)
UNKNOWN (DICHLORODIFLUOROMETHANE)	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
UNKNOWN ALKANE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
2-PROPANOL, 2-METHYL	NONE	NONE	NONE	NONE	NONE	NONE	230 J	250 J
CYCLOHEXANE, ETHYLMETHYL-	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
TRICHLOROTRIFLUOROMETHANE								
1,2-DICHLOROETHENE (TOTAL)								
ALPHA-PINENE								

TABLE II-4 (CONTINUED)
SUMMARY OF VOLATILE ORGANIC DATA (UG/KG) FROM
SHALLOW (LESS THAN 5 FEET) SOIL BORING SAMPLES

COMPOUNDS	SB16R 0-4.5'	SB17 0-3.8'	SB18 0-5.0'	SB19 0-2.6'	SB20 0-5.0'	SB21 2.5-4.5'	SB22 0-5.0'	SB23R 2.8-4.5'
METHYLENE CHLORIDE	6 U	12 U	100. BJ	6 U	6 U	45 UJ	14 U	6 U
ACETONE	12 U	12 UJ	11 UJ	12 U	13 U	12 UJ	14 U	450 DJ
CARBON DISULFIDE	6 U	6 U	6 UJ	6 U	6 U	6 UJ	7 U	6 U
1,1-DICHLOROETHANE	6 U	6 U	4 J	6 U	6 U	32. J	7 U	5 J
CHLOROFORM	6 U	6 U	6 UJ	6 U	6 U	6 UJ	7 U	6 U
2-BUTANONE	12 U	12 R	11 UJ	12 U	13 U	12 UJ	14 R	12 R
1,1,1-TRICHLOROETHANE	6 U	6 U	10 UJ	7.	6 U	6 UJ	7 U	6 U
TRICHLOROETHENE	6 U	6 U	11 J	3 J	6 U	70 J	4 J	6 U
BENZENE	6 U	6 U	6 R	6 U	11.	6 UJ	7 U	8.
TRANS-1,3-DICHLOROPROPENE	6 UJ	6 U	6 R	6 UJ	6 UJ	6 UJ	7 J	6 UJ
TETRACHLOROETHENE	3 J	2 J	15 J	6.	6 U	280 DJ	14	6 U
TOLUENE	6 U	4 J	31 J	6 U	6 J	74 J	7 U	81.
ETHYLBENZENE	6 U	11.	6 R	6 U	8.	20 J	7 U	41.
M-XYLENE	6 U	19.	6 R	6 U	6 U	39 J	7 U	250 D
O&P-XYLENE	6 U	60.	6 R	6 U	6 U	35 J	7 U	140
UNKNOWN	6 J (1)	7 J (1)	26 (5)	53 J (6)	56 (5)	27 (2)	19 (2)	48 (9)
UNKNOWN (DICHLORODIFLUOROMETHANE)	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
UNKNOWN ALKANE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
2-PROPANOL, 2-METHYL	NONE	NONE	NONE	NONE	670 J	NONE	NONE	NONE
CYCLOHEXANE, ETHYLMETHYL-	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
TRICHLOROTRIFLUOROMETHANE	NONE	NONE	12	NONE	NONE	NONE	NONE	NONE
1,2-DICHLOROETHENE (TOTAL)	NONE	NONE	8 J	NONE	NONE	NONE	NONE	NONE
ALPHA-PINENE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

TABLE II-5
SUMMARY OF VOLATILE ORGANIC DATA (UG/KG) FROM
DEEP (GREATER THAN 5 FEET) SOIL BORING SAMPLES

COMPOUNDS	SB01 5-9'	SB01 9.5-12.5'	SB02 5-7.5'	SB02 7.5-8.7'	SB05 5.0-9.0'	SB06 5.0-9.0'	SB07 5.0-9.0'	SB09 5.0-7.0'
METHYLENE CHLORIDE	12 U	9 U	6 U	19 U	17 U	36 U	220	10 UJ
ACETONE	140 J	69	12 U	1600 EJ	64	180	920	13 UJ
CARBON DISULFIDE	6 UJ	6 U	6 U	110 J	6 U	36 U	34 U	7 UJ
1,1-DICHLOROETHANE	6 UJ	6 U	6 U	14 UJ	6 U	36 U	150	7 UJ
CHLOROFORM	6 UJ	6 U	6 U	14 UJ	6 U	36 U	34 U	7 UJ
2-BUTANONE	13 R	12 R	12 R	360 J	13 R	71 R	240 J	13 R
1,1,1-TRICHLOROETHANE	6 UJ	6 U	6 U	14 UJ	3 J	36 U	34 U	5 J
TRICHLOROETHENE	6 UJ	6 U	6 U	14 UJ	6 U	36 U	380	7 UJ
BENZENE	6 UJ	6 U	6 U	14 UJ	6 U	25 J	39	7 UJ
TRANS-1,3-DICHLOROPROPENE	6 J	6 U	6 J	14 J	6 U	36 U	34 U	7 UJ
TETRACHLOROETHENE	6 UJ	6 U	6 U	14 UJ	7	36 U	510	8 J
TOLUENE	6 UJ	6 U	6 U	14 UJ	10	36 U	1800 E	7 UJ
ETHYLBENZENE	6 UJ	6 U	6 U	14 UJ	8	31 J	1000	7 UJ
M-XYLENE	6 UJ	6 U	6 U	14 UJ	24	36 U	5200 E	7 UJ
O&P-XYLENE	6 UJ	6 U	6 U	14 UJ	17	36 U	2300 E	7 UJ
UNKNOWN	16 (2)	29 (3)	9 (1)	248 (6)	43 (3)	61 (1)	744 (8)	1357 (4)
UNKNOWN (DICHLORODIFLUOROMETHANE)	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
UNKNOWN ALKANE	NONE	NONE	NONE	NONE	NONE	130 (1)	NONE	NONE
2-PROPANOL, 2-METHYL		NONE						
CYCLOHEXANE, ETHYLMETHYL-		NONE						
TRICHLOROTRIFLUOROMETHANE								
1,2-DICHLOROETHENE (TOTAL)								
ALPHA-PINENE								

TABLE II-5 (CONTINUED)
SUMMARY OF VOLATILE ORGANIC DATA (UG/KG) FROM
DEEP (GREATER THAN 5 FEET) SOIL BORING SAMPLES

COMPOUNDS	SB15R 4.5-9.5'	SB18 7.5-9.5'	SB18 9.5-12.5'	SB20 4.5-9.5'	SB20 4.5-9.5'D	SB20 9.5-12.5'	SB21 9.5-14.5'	SB22 7.5-9.5'
METHYLENE CHLORIDE	29 U	19 U	22 U	7 U	10 U	19 U	960.	8 UJ
ACETONE	58 U	18 U	19 U	14 U	15 U	18 U	1500 UJ	140 J
CARBON DISULFIDE	29 U	9 U	9 U	7 U	8 U	9 U	750 U	6 UJ
1,1-DICHLOROETHANE	130.	9 U	9 U	7 U	8 U	9 U	750 U	6 UJ
CHLOROFORM	29 U	9 U	9 U	7 U	8 U	9 U	750 U	6 UJ
2-BUTANONE	58 U	270 J	240 J	14 U	15 U	18 R	1500 R	13 R
1,1,1-TRICHLOROETHANE	160.	3 J	9 U	7 U	8 U	9 U	750 U	6 UJ
TRICHLOROETHENE	780.	9 U	9 U	7 U	8 U	9 U	910.	6 UJ
BENZENE	29 U	14	10	15.	11.	23.	750 U	14 J
TRANS-1,3-DICHLOROPROPENE	29 U	9 U	9 U	7 UJ	8 UJ	9 U	750 U	6 J
TETRACHLOROETHENE	2800 D	9 U	9 U	7 U	8 U	9 U	610 J	6 UJ
TOLUENE	29 U	13.	9 U	7 U	8 U	9 U	4000.	6 UJ
ETHYLBENZENE	980.	28.	9 U	7 U	8 U	9 U	640 J	6 UJ
M-XYLENE	29 U	120.	9 U	7 U	8 U	9 U	1200.	6 UJ
O&P-XYLENE	2300 D	130.	9 U	7 U	8 U	9 U	1400.	6 UJ
UNKNOWN	2760 (9)	304 (8)	302 J (5)	178 (9)	144 (9)	631 J (8)	NONE	205 (9)
UNKNOWN (DICHLORODIFLUOROMETHANE)	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
UNKNOWN ALKANE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
2-PROPANOL, 2-METHYL	NONE	1800 J	1000. J	1800 J	1100.	1420 J	NONE	NONE
CYCLOHEXANE, ETHYLMETHYL-	260.	NONE	NONE	NONE	NONE	NONE	NONE	NONE
TRICHLOROTRIFLUOROMETHANE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
1,2-DICHLOROETHENE (TOTAL)	NONE	NONE	NONE	NONE	NONE	NONE	1100	NONE
ALPHA-PINENE	NONE	90 J	NONE	NONE	NONE	NONE	NONE	NONE

TABLE II-6
SUMMARY OF SEMI-VOLATILE ORGANIC DATA (UG/L) FROM
SURFACE WATER SAMPLES

COMPOUNDS	SW01	SW02	SW03	SW03FD(1)	SW04	SW05	SW06
PHENOL	10 U	10 U	10 U	10 U	10 U	10 U	10 U
NAPHALENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-METHYLNAPHTHALENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ACENAPHTHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
DIBENZOFURAN	10 U	10 U	10 U	10 U	10 U	10 U	10 U
FLUORENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
PHENANTHRENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ANTHRACENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
FLUORANTHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
PYRENE	10 U	2 J	10 U	10 U	10 U	10 U	10 U
BUTYLBENZYLPHTHALATE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BENZO (A) ANTHRACENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHRYSENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BIS (2-ETHYLHEXYL) PHTHALATE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BENZO (B) FLUORANTHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BENZO (K) FLUORANTHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BENZO (A) PYRENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
INDENO (1,2,3-CD) PYRENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BENZO (G,H,I) PERYLENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
UNKNOWN	10 (3)	79 (4)	87 (2)	11 (2)	47 (4)	49.7 (3)	25 (6)
UNKNOWN ALKANE	N/A	741 (12)	N/A	N/A	N/A	N/A	N/A
NAPHTHALENE, DIMETHYL	N/A	77 (3)	N/A	N/A	N/A	N/A	N/A
DODECANE	N/A	40 (1)	N/A	N/A	N/A	N/A	N/A

TABLE II-7
SUMMARY OF SEMI-VOLATILE ORGANIC DATA (UG/KG) FROM
SEDIMENT SAMPLES

COMPOUNDS	SD01	SD02	SD03	SD04	SD05	SD05FD	SD06
NAPHTHALENE	500 U	690 UJ	750 UJ	650 U	540 U	600 U	1600
2 METHYLNAPHTHALENE	500 U	690 UJ	750 UJ	650 U	540 U	600 U	460 J
ACENAPHTHYLENE	500 U	690 UJ	750 UJ	650 U	540 U	600 U	480 U
ACENAPHTHENE	500 U	690 UJ	750 UJ	650 U	540 U	600 U	1600
DIBENZOFURAN	500 U	690 UJ	750 UJ	650 U	540 U	600 U	1500
FLUORENE	500 U	690 UJ	750 UJ	650 U	540 U	600 U	2200
PHENANTHRENE	400 J	800 J	640 J	1000	670	240 J	12000
ANTHRACENE	61 J	81 J	750 UJ	120 J	100 J	600 U	2600
FLUORANTHENE	1000	1800 J	1800 J	2800	1400	570 J	8600
PYRENE	980	1900 J	1600 J	2600	1400	620	7100
BUTYLBENZYLPHTHALATE	500 U	690 UJ	750 UJ	650 U	410 J	600 U	480 U
BENZO (A) ANTHRACENE	450 J	820 J	760 J	1100	640	600 U	3800
CHRYSENE	640	1300 J	1300 J	1900	970	460 J	3200
BIS (2-ETHYLHEXYL) PHTHALATE	180 J	290 J	380 J	730	790	510 J	210 J
BENZO (B) FLUORANTHENE	740	1600 J	1200 J	2600	540 U	510 J	2800
BENZO (K) FLUORANTHENE	840	1500 J	1600 J	1800	540 U	440 J	2100
BENZO (A) PYRENE	610	1100 J	1000 J	1500	770	360 J	2700
INDENO (1,2,3-CD) PYRENE	540	1100 J	970 J	1300	690	490 J	1700
BENZO (G,H,I) PERYLENE	520	1100 J	1100 J	1400	730	460 J	1500
UNKNOWN	3580 (5)	4270 J(8)	7910 J(9)	6370 (6)	2910 (5)	2180 (4)	69710 (18)
UNKNOWN ALKANE	N/A	6540 J(9)	2700 J(1)	N/A	N/A	N/A	N/A
UNKNOWN PAH	630 (1)	1500 J(1)	N/A	N/A	1700 (2)	N/A	2640 (3)
UNKNOWN PHTHALATE	240 (1)	N/A	N/A	N/A	220 (1)	N/A	N/A

TABLE II-8
SUMMARY OF SEMI-VOLATILE ORGANIC DATA (UG/KG) FROM
SURFACE SOIL SAMPLES

COMPOUNDS	SS01A	SS01B	SS02A	SS02B	SS03A	SS03B	SS04A
NAPHTHALENE	540 U	500 U	570 U	580 U	660 U	530 U	500 U
2 METHYLNAPHTHALENE	540 U	500 U	570 U	580 U	660 U	530 U	500 U
ACENAPHTHYLENE	540 U	500 U	570 U	580 U	660 U	530 U	500 U
ACENAPHTHENE	540 U	500 U	570 U	580 U	660 U	530 U	500 U
DIBENZOFURAN	540 U	500 U	570 U	580 U	660 U	530 U	500 U
FLUORENE	540 U	500 U	570 U	580 U	660 U	530 U	500 U
PHENANTHRENE	340 J	340 J	470 J	640	250 J	340 J	340 J
ANTHRACENE	540 U	49 J	60 J	170 J	490 J	530 U	500 U
FLUORANTHENE	920	800	1100	1400	600 J	900	500 U
PYRENE	980	900	1400	1700	800	850	420 J
BUTYLBENZYLPHTHALATE	540 U	500 U	570 U	580 U	660 U	530 U	500 U
BENZO (A) ANTHRACENE	410 J	370 J	520 J	790	660 U	410 J	500 U
CHRYSENE	710	580	870	960	500 J	740	440 J
BIS (2-ETHYLHEXYL) PHTHALATE	540 U	500 U	110 J	700 U	510 U	430 U	310 U
BENZO (B) FLUORANTHENE	810	610	1100	1000	590 J	900	450 J
BENZO (K) FLUORANTHENE	770	440 J	630	1200	720	480 J	280 J
BENZO (A) PYRENE	680	510	800	1100	550 J	540	260 J
INDENO (1,2,3-CD) PYRENE	730	530	1000	800	780	520 J	230 J
BENZO (G,H,I) PERYLENE	730	520	950	830	1100	510 J	210 J
UNKNOWN	2720 (4)	7180 (3)	3020 (3)	890 (1)	1300 (1)	38590 (11)	28350 (4)
UNKNOWN ALKANE	N/A	1940 (2)	N/A	1690 (5)	N/A	N/A	480 (2)
UNKNOWN PAH	680 (1)	N/A	N/A	N/A	N/A	N/A	N/A
UNKNOWN PHTHALATE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NAPHTHALENE, ETHYL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NAPHTHALENE, DIMETHYL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HEXANEDIOIC ACID, ESTER	N/A	900 (1)	5900 (1)	N/A	N/A	N/A	N/A
1,1'-BIPHENYL, TETRACHLORO	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ETHANONE, 1-PHENYL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PHENOL, DIMETHYLETHYL	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TABLE II-8 (CONTINUED)
SUMMARY OF SEMI-VOLATILE ORGANIC DATA (UG/KG) FROM
SURFACE SOIL SAMPLES

COMPOUNDS	SS04B	SS04BFD	SS05A	SS05B	SS06A	SS06B	SS06BFD
NAPHTHALENE	460 U	440 U	99 J	90 J	500 U	550 U	490 U
2 METHYLNAPHTHALENE	460 U	440 U	170 J	190 J	500 U	550 U	490 U
ACENAPHTHYLENE	460 U	440 U	430 U	480 U	500 U	550 U	490 U
ACENAPHTHENE	460 U	440 U	430 U	99 J	500 U	100 J	81 J
DIBENZOFURAN	460 U	440 U	100 J	71 J	500 U	73 J	59 J
FLUORENE	460 U	440 U	430 U	96 J	500 U	130 J	95 J
PHENANTHRENE	130 J	91 J	950	610	800	1800 J	1400 J
ANTHRACENE	460 U	440 U	430 U	150 J	230 J	420 J	300 J
FLUORANTHENE	180 J	120 J	710	640 J	1100	2000 J	1500 J
PYRENE	200 J	140 J	810	710 J	1400 J	3000 J	2000 J
BUTYLBENZYLPHTHALATE	460 U	440 U	430 U	480 UJ	500 UJ	550 UJ	490 UJ
BENZO (A) ANTHRACENE	460 U	440 U	400 J	320 J	710 J	1300 J	1100 J
CHRYSENE	120 J	97 J	830	410 J	970 J	1800 J	1500 J
BIS (2-ETHYLHEXYL) PHTHALATE	370 U	310 U	240 U	380 UJ	420 UJ	620 UJ	1300 UJ
BENZO (B) FLUORANTHENE	460 U	440 U	900	480 J	990 J	1800 J	1400 J
BENZO (K) FLUORANTHENE	460 U	440 U	430 U	280 J	800 J	1200 J	1300 J
BENZO (A) PYRENE	460 U	440 U	400 J	530 J	830 J	1600 J	1300 J
INDENO (1,2,3-CD) PYRENE	460 U	440 U	360 J	450 J	790 J	1500 J	1400 J
BENZO (G,H,I) PERYLENE	460 U	440 U	420 J	520 J	790 J	1500 J	1600 J
UNKNOWN	20300 (4)	38580 (17)	34690 (4)	45060 (21)	46660 (12)	49630 (14)	42440 (12)
UNKNOWN ALKANE	N/A	210 (1)	5560 (10)	2290 (6)	480 (2)	430 (1)	380 (1)
UNKNOWN PAH	N/A	N/A	520 (2)	N/A	N/A	N/A	N/A
UNKNOWN PHTHALATE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NAPHTHALENE, ETHYL	N/A	N/A	260 (1)	N/A	N/A	N/A	N/A
NAPHTHALENE, DIMETHYL	N/A	N/A	620 (2)	450 (2)	N/A	N/A	N/A
HEXANEDIOIC ACID, ESTER	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1'-BIPHENYL, TETRACHLORO	270 (1)	210 (1)	N/A	N/A	N/A	N/A	N/A
ETHANONE, 1-PHENYL	N/A	N/A	N/A	N/A	220 (1)	N/A	N/A
PHENOL, DIMETHYLETHYL	N/A	N/A	N/A	N/A	160 (1)	N/A	N/A

TABLE II-9
SUMMARY OF SEMI-VOLATILE ORGANIC DATA (UG/KG) FROM
SHALLOW (LESS THAN 5 FEET) SOIL BORING SAMPLES

COMPOUNDS	SB01 0-5'	SB02 0-5'	SB03 0-5'	SB12A 2.5-5'	SB13 0-1.7'	SB22 0-5.0'
PHENOL	450 U	420 U	430 U	430 U	3600 U	450 U
NAPHTHALENE	82 J	420 U	430 U	430 U	3600 U	450 U
2-METHYLNAPHTHALENE	67 J	420 U	77 J	430 U	3600 U	450 U
ACENAPHTHENE	140 J	420 U	430 U	430 U	3600 U	450 U
DIBENZOFURAN	120 J	420 U	430 U	430 U	3600 U	450 U
FLUORENE	300 J	420 U	430 U	430 U	3600 U	450 U
PHENANTHRENE	2000	140 J	81 J	89 J	2900 J	170 J
ANTHRACENE	660	420 U	430 U	430 U	740 J	450 U
FLUORANTHENE	3100	150 J	110 J	90 J	4100	250 J
PYRENE	2500	150 J	160 J	69 J	3300 J	230 J
BUTYLBENZYLPHTHALATE	450 U	420 U	330 J	430 U	3600 U	450 U
BENZO (A) ANTHRACENE	1600	420 U	430 U	430 U	1800 J	89 J
CHRYSENE	1500	90 J	84 J	430 U	2500 J	120 J
BIS (2-ETHYLHEXYL) PHTHALATE	450 U	160 J	88 J	88 J	3600 U	91 J
BENZO (B) FLUORANTHENE	1500	420 U	430 U	430 U	1900 J	450 U
BENZO (K) FLUORANTHENE	1400	420 U	430 U	430 U	1800 J	450 U
BENZO (A) PYRENE	1500	420 U	430 U	430 U	2300 J	450 U
INDENO (1,2,3-CD) PYRENE	610	420 U	430 U	430 U	2100 J	450 U
BENZO (G,H,I) PERYLENE	650	420 U	430 U	430 U	3600 U	450 U
UNKNOWN	5820 (12)	53310 (8)	1460 (3)	480 (2)	2430 (5)	2850 (6)
UNKNOWN ALKANE	170 (1)	990 (3)	N/A	990 (5)	N/A	4640 (9)
UNKNOWN PAH	640 (3)	N/A	N/A	N/A	530 (1)	N/A
UNKNOWN PHTHALATE	N/A	250 (1)	N/A	N/A	N/A	N/A
BENZENE, DIMETHYL	N/A	N/A	N/A	N/A	N/A	N/A
BENZENE, -ETHYL, -METHYL	N/A	N/A	N/A	N/A	N/A	N/A
HEPTADECANE,2,6,10,15-TETRAMETHYL	N/A	N/A	N/A	N/A	N/A	N/A
HEXADECANE	N/A	N/A	N/A	N/A	N/A	720 (1)
NAPHTHALENE, ETHYL	N/A	N/A	N/A	N/A	N/A	N/A
NAPHTHALENE, DIMETHYL	N/A	N/A	N/A	N/A	N/A	N/A
NAPHTHALENE, TRIMETHYL	N/A	N/A	N/A	N/A	N/A	N/A
NONANE,2,6-DIMETHYL	N/A	N/A	N/A	N/A	N/A	N/A
PENTADECANE,2,6,10,14-TETRAMETHYL	N/A	N/A	N/A	N/A	N/A	N/A
UNDECANE	N/A	N/A	N/A	N/A	N/A	N/A
DODECANE	N/A	N/A	N/A	N/A	N/A	N/A

TABLE II-9 (CONTINUED)
SUMMARY OF SEMI-VOLATILE ORGANIC DATA (UG/KG) FROM
SHALLOW (LESS THAN 5 FEET) SOIL BORING SAMPLES

COMPOUNDS	SB14 0-4.5'	SB15R 2.5-4.5'	SB15RD 2.5-4.5'	SB16R 0-4.5'	SB17 0-3.8'
NAPHTHALENE	1900 U	410 U	410 U	400 U	60 J
2 METHYLNAPHTHALENE	1900 U	410 U	410 U	400 U	150 J
ACENAPHTHYLENE	1900 U	410 U	410 U	400 U	410 U
ACENAPHTHENE	1900 U	410 U	410 U	400 U	270 J
DIBENZOFURAN	1900 U	410 U	410 U	400 U	170 J
FLUORENE	1900 U	410 U	410 U	400 U	370 J
PHENANTHRENE	2300	70 J	77 J	78 J	2400
ANTHRACENE	1200 J	410 U	410 U	400 U	560
FLUORANTHENE	7400	96 J	110 J	130 J	2500
PYRENE	6800	100 J	120 J	97 J	2300
BUTYLBENZYLPHTHALATE	1900 U	410 U	410 U	400 U	410 U
BENZO (A) ANTHRACENE	5000	410 U	410 U	400 U	1000
CHRYSENE	5700	75 J	96 J	72 J	1100
BIS (2-ETHYLHEXYL) PHTHALATE	1900 U	410 U	410 U	400 U	200 J
BENZO (B) FLUORANTHENE	5500	410 U	410 U	400 U	1100
BENZO (K) FLUORANTHENE	3900	410 U	410 U	400 U	610
BENZO (A) PYRENE	4500	73 J	98 J	400 U	810
INDENO (1,2,3-CD) PYRENE	3200	410 U	410 U	400 U	560
BENZO (G,H,I) PERYLENE	2600	410 U	410 U	400 U	520
UNKNOWN	6930 JN (9)	1130 JN (4)	1550 JN (7)	470 JN (1)	1705 JN (9)
UNKNOWN ALKANE	N/A	1030 JN (6)	1210 JN (7)	N/A	480 JN (3)
UNKNOWN PAH	3480 JN (6)	N/A	N/A	N/A	310 JN (2)
NAPHTHALENE, ETHYL	N/A	N/A	N/A	N/A	N/A
NAPHTHALENE, DIMETHYL	N/A	N/A	N/A	N/A	231 JN (2)
HEXANEDIOIC ACID, ESTER	N/A	N/A	162 JN (2)	N/A	N/A
DIBENZOTHIOPHENE	380 JN (1)	N/A	N/A	N/A	N/A
DODECANE	N/A	97 JN (1)	N/A	N/A	N/A
UNDECANE	N/A	N/A	N/A	N/A	N/A
BENZENE,1,1'-OXYBIS	N/A	N/A	N/A	N/A	N/A
BENZENE, ETHYL-METHYL	N/A	N/A	N/A	N/A	N/A

TABLE II-9 (CONTINUED)
SUMMARY OF SEMI-VOLATILE ORGANIC DATA (MG/KG) FROM
SHALLOW (LESS THAN 5 FEET) SOIL BORING SAMPLES

COMPOUNDS	SB18 0-5.0'	SB19 0-2.6'	SB20 0-5.0'	SB21 2.5-4.5'	SB23R 2.8-4.5'
NAPHTHALENE	48 J	410 U	430 U	240 J	58 J
2-METHYLNAPHTHALENE	130 J	72 J	430 U	640	61 J
ACENAPHTHYLENE	380 U	410 U	430 U	400 U	390 U
ACENAPHTHENE	110 J	410 U	430 U	140 J	390 U
DIBENZOFURAN	380 U	410 U	430 U	70 J	390 U
FLUORENE	100 J	410 U	430 U	400 U	390 U
PHENANTHRENE	570	220 J	220 J	660	390 U
ANTHRACENE	110 J	410 U	65 J	78 J	390 U
FLUORANTHENE	670	320 J	430	510	390 U
PYRENE	570	320 J	460	570	390 U
BUTYLBENZYLPHTHALATE	380 U	410 U	430 U	400 U	390 U
BENZO (A) ANTHRACENE	210 J	410 U	250 J	220 J	390 U
CHRYSENE	280 J	230 J	310 J	320 J	390 U
BIS (2-ETHYLHEXYL) PHTHALATE	280 J	550 U	430 U	1800 B	390 U
BENZO (B) FLUORANTHENE	200 J	410 U	270 J	400 U	390 U
BENZO (K) FLUORANTHENE	160 J	410 U	230 J	400 U	390 U
BENZO (A) PYRENE	380 U	410 U	430 U	400 U	390 U
INDENO (1,2,3-CD) PYRENE	380 U	410 U	220 J	200 J	390 U
BENZO (G,H,I) PERYLENE	380 U	410 U	210 J	220 J	390 U
UNKNOWN	1170 JN (3)	3130 JN (6)	940 JN (3)	9700 JN (5)	720 JN (3)
UNKNOWN ALKANE	4380 JN (9)	9070 JN (8)	N/A	35300 JN (9)	N/A
UNKNOWN PAH	160 JN (1)	N/A	N/A	N/A	N/A
NAPHTHALENE, DIMETHYL	N/A	490 JN (1)	N/A	N/A	N/A
HEXANEDIOIC ACID, ESTER	420 JN (2)	N/A	N/A	N/A	N/A
DIBENZOTHIOPHENE	N/A	N/A	N/A	N/A	N/A
DODECANE	N/A	N/A	N/A	N/A	N/A
UNDECANE	460 JN (1)	560 JN (1)	N/A	N/A	150 JN (1)
BENZENE,1,1'-OXYBIS	310 JN (1)	N/A	N/A	N/A	N/A
BENZENE, ETHYL-METHYL	N/A	N/A	N/A	1400 JN (1)	270 JN (1)

TABLE II-10 (CONTINUED)
SUMMARY OF SEMI-VOLATILE ORGANIC DATA (UG/KG) FROM
DEEP (GREATER THAN 5 FEET) SOIL BORING SAMPLES

COMPOUNDS	SB15R 4.5-9.5'	SB18 7.5-9.5'	SB18 9.5-12.5'	SB20 4.5-9.5'	SB20 4.5-9.5'D	SB20 9.5-12.5'	SB21 9.5-14.5'
NAPHTHALENE	4500	600 U	610 U	470 U	500 U	590 U	5200
2 METHYLNAPHTHALENE	45000 J	600 U	610 U	470 U	500 U	590 U	26000
ACENAPHTHYLENE	380 UJ	600 U	610 U	470 U	500 U	590 U	4000 U
ACENAPHTHENE	380 UJ	600 U	610 U	470 U	500 U	590 U	2100 J
DIBENZOFURAN	1100 J	600 U	610 U	470 U	500 U	590 U	4000 U
FLUORENE	2500 J	600 U	610 U	470 U	500 U	590 U	2400 J
PHENANTHRENE	3900	600 U	610 U	470 U	500 U	590 U	7700 U
ANTHRACENE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
FLUORANTHENE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
PYRENE	210 J	600 U	610 U	470 U	500 U	590 U	830 J
BUTYLBENZYLPHTHALATE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
BENZO (A) ANTHRACENE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
CHRYSENE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
BIS (2-ETHYLHEXYL) PHTHALATE	580	600 U	610 U	470 U	500 U	590 U	4000 U
BENZO (B) FLUORANTHENE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
BENZO (K) FLUORANTHENE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
BENZO (A) PYRENE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
INDENO (1,2,3-CD) PYRENE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
BENZO (G,H,I) PERYLENE	380 U	600 U	610 U	470 U	500 U	590 U	4000 U
UNKNOWN	35000 JN(10)	6060 JN (7)	2740 JN (4)	11996 JN(14)	7680 JN (5)	23300 JN(12)	26000 JN (2)
UNKNOWN ALKANE	16100 JN (5)	6320 JN (9)	7270 JN (11)	N/A	6640 JN (10)	1000 JN (2)	300000 JN(13
UNKNOWN PAH	N/A	N/A	N/A	N/A	N/A	N/A	78000 JN (3)
HEXANEDIOIC ACID, ES"ER	3500 JN (1)	N/A	N/A	N/A	N/A	N/A	N/A
UNKNOWN AROMATIC	17700 JN (3)	N/A	N/A	N/A	N/A	N/A	N/A
PHENOL, 4-NONYL	N/A	N/A	N/A	830 JN (1)	N/A	N/A	N/A
SULFER, MOL	N/A	N/A	N/A	N/A	N/A	1400 JN (1)	N/A
NAPHTHALENE, TRIMETHYL	N/A	N/A	N/A	N/A	N/A	N/A	16000 JN (1)
NAPHTHALENE, 1,4,6-TRIMETHYL-	N/A	N/A	N/A	N/A	N/A	N/A	22000 JN (1)

TABLE II-10
SUMMARY OF SEMI-VOLATILE ORGANIC DATA (UG/KG) FROM
DEEP (GREATER THAN 5 FEET) SOIL BORING SAMPLES

COMPOUNDS	SB01 5-9'	SB01 9.5-12.5'	SB02 5-7.5'	SB02 7.5-8.7'	SB05 5.0-9.0'	SB06 5.0-9.0'	SB07 5.0-9.0'	SB09 5.0-7.0'
PHENOL	420 U	390 U	410 U	920 U	420 U	470 U	1100	440 U
NAPHTHALENE	420 U	390 U	410 U	920 U	99 J	180 J	500	53 J
2-METHYLNAPHTHALENE	420 U	390 U	410 U	920 U	420 J	550	800	97 J
ACENAPHTHENE	420 U	390 U	410 U	920 U	420 U	470 U	180 J	110 J
DIBENZOFURAN	420 U	390 U	410 U	920 U	420 U	92 J	65 J	89 J
FLUORENE	420 U	390 U	410 U	920 U	420 U	310 J	450 U	120 J
PHENANTHRENE	360 J	390 U	410 U	920 U	130 J	760	740	880
ANTHRACENE	79 J	390 U	410 U	920 U	420 U	470 J	83 J	190 J
FLUORANTHENE	410 J	390 U	410 U	920 U	53 J	210 J	480	1000
PYRENE	360 J	390 U	410 U	920 U	59 J	310 J	340 J	710
BUTYLBENZYLPHTHALATE	420 U	390 U	410 U	920 U	420 U	470 U	450 U	440 U
BENZO (A) ANTHRACENE	180 J	390 U	410 U	920 U	420 U	470 U	170 J	340 J
CHRYSENE	220 J	390 U	410 U	920 U	420 U	470 U	230 J	480
BIS (2-ETHYLHEXYL) PHTHALATE	420 U	390 U	410 U	920 U	420 U	1800	440 J	110 J
BENZO (B) FLUORANTHENE	420 U	390 U	410 U	920 U	420 U	470 U	180 J	310 J
BENZO (K) FLUORANTHENE	420 U	390 U	410 U	920 U	420 U	470 U	110 J	230 J
BENZO (A) PYRENE	180 J	390 U	410 U	920 U	420 U	470 U	150 J	320 J
INDENO (1,2,3-CD) PYRENE	81 J	390 U	410 U	920 U	420 U	470 U	450 U	440 U
BENZO (G,H,I) PERYLENE	82 J	390 U	410 U	920 U	420 U	470 U	450 U	170 J
UNKNOWN	3520 (8)	2290 (3)	1770 (5)	7640 (8)	820 (2)	10310 (7)	2000 (2)	1360 (2)
UNKNOWN ALKANE	190 (1)	N/A	2440 (3)	6840 (7)	5750 (8)	5480 (4)	21500 (8)	5030 (10)
UNKNOWN PAH	N/A	N/A	N/A	N/A	610 (2)	N/A	N/A	190 (1)
UNKNOWN PHTHALATE	410 (1)	210 (1)	N/A	N/A	N/A	N/A	N/A	N/A
BENZENE, DIMETHYL	N/A	N/A	N/A	350 (1)	N/A	N/A	1700 (1)	N/A
BENZENE, -ETHYL, -METHYL	N/A	N/A	N/A	N/A	N/A	N/A	990 (1)	N/A
HEPTADECANE,2,6,10,15-TETRAMETHYL	N/A	N/A	280 (1)	N/A	N/A	N/A	N/A	N/A
HEXADECANE	N/A	N/A	N/A	N/A	N/A	N/A	3000 (1)	N/A
NAPHTHALENE, ETHYL	N/A	N/A	N/A	N/A	N/A	1600 (1)	N/A	N/A
NAPHTHALENE, DIMETHYL	N/A	N/A	N/A	N/A	1730 (2)	3800 (3)	2500 (2)	620 (3)
NAPHTHALENE, TRIMETHYL	N/A	N/A	N/A	N/A	240 (1)	980 (1)	N/A	N/A
NONANE,2,6-DIMETHYL	N/A	N/A	N/A	N/A	N/A	N/A	990 (1)	N/A
PENTADECANE,2,6,10,14-TETRAMETHYL	N/A	N/A	N/A	N/A	N/A	4200 (1)	1900 (1)	N/A
UNDECANE	N/A	N/A	N/A	N/A	520 (1)	N/A	2800 (1)	250 (1)
DODECANE	N/A	N/A	N/A	N/A	750 (1)	N/A	N/A	N/A

TABLE II-11
SUMMARY OF INORGANIC DATA (UG/L) FROM
SURFACE WATER SAMPLES

ANALYTES	CRDL	SW01	SW02	SW03	SW03FD	SW04	SW05	SW06
ALUMINUM	200.0	200 U	200 U	200 U	200 U	200 U	200 U	200 U
ANTIMONY	60	60.0 R	60.0 R	60.0 R	60.0 R	60.0 R	60.0 R	60.0 R
ARSENIC	10	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
BARIUM	200	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
BERYLLIUM	5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5	130 R	10.0 R	5.0 R	183 R	5.0 R	74.0 R	32.0 R
CALCIUM	5000	89700	89800	90200	81000	83000	83500	83300
CHROMIUM	10	44.0 J	24.0 L	30.0 L	131 J	16.0 L	50.0 J	219 J
COBALT	50	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
COPPER	25	412 R	57.0 R	49.0 R	154 R	161 R	150 R	61.0 R
IRON	100	236	652	417 J	2160 J	595	467	1800
LEAD	5	2.0 U	2.0 U	2.2 H	2.1 H	2.0 U	2.0 U	2.1 H
MAGNESIUM	5000	46300	45600	45400	45400	46000	46200	45900
MANGANESE	15	15.0 R	15.0 R	15.0 R	15.0 R	15.0 R	15.0 R	15.0 R
MERCURY	0.2	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	44.0
POTASSIUM	5000	2740	2620	2700	2780	4210	2790	2800
SELENIUM	5	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL
SILVER	10	10.0 R	10.0 R	10.0 R	353 R	10.0 R	115 R	10.0 R
SODIUM	5000	46600	50600	51800	51400	53800	51400	52200
THALLIUM	10	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
VANADIUM	50	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
ZINC	20	2930 R	601 J	500 J	885 J	20.0 UJ	679 J	510 J
CYANIDE	10	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

TABLE II-12
SUMMARY OF INORGANIC DATA (MG/KG) FROM
SEDIMENT SAMPLES

ANALYTES	CRDL	SD01	SD02	SD03	SD04	SD05	SD05FD	SD06
ALUMINUM	200.0	9900	12000 J	14900 J	18300	8930	6780	4680
ANTIMONY	60	9.1 R	12.4 R	13.6 R	11.4 R	9.5 R	11.1 R	8.4 R
ARSENIC	10	24.2 H	20.3 H	26.7 H	22.4 H	25.0 H	31.9 H	15.9 H
BARIUM	200	87.3 L	67.8 L	85.0 L	111 L	58.7 L	53.9 L	145 L
BERYLLIUM	5	7.5 L	6.7 L	7.1 L	10.0 L	6.2 L	4.8 L	6.6 L
CADMIUM	5	0.76 R	1.0 R	1.1 R	0.95 R	0.80 R	0.93 R	0.70 R
CALCIUM	5000	44500 J	31100 J	42700 J	66200 J	40500 J	44500 J	138000 J
CHROMIUM	10	16.8 L	19.1 L	22.9 L	28.5 L	15.9 L	10.1 L	19.8 L
COBALT	50	10.9 L	10.4 UL	11.3 UL	12.1 L	8.0 UL	9.3 UL	7.5 L
COPPER	25	74.6 R	49.4 R	72.7 R	121 R	94.9 R	53.4 R	39.9 R
IRON	100	22800 J	20900 J	22800 J	29300 J	16900 J	12800 J	18900 J
LEAD	5	124 R	102 R	135 R	248 R	189 R	176 R	321 R
MAGNESIUM	5000	24100 J	18600 J	18200 J	25800 J	20000 J	23100 J	67500 J
MANGANESE	15	799 J	488 J	490 J	555 J	296 J	215 J	915 J
MERCURY	0.2	0.20	0.26 J	0.18 U	0.25	0.16	0.23	0.08 U
NICKEL	40	22.5 R	20.3 R	26.8 R	32.3 L	14.3 R	9.8 R	8.5 R
POTASSIUM	5000	2030	2410 J	2870 J	3400	2090	1740	772
SELENIUM	5	0.46 U	0.62 U	3.3 U	0.58 U	2.4 U	2.6 U	4.4 U
SILVER	10	1.5 R	2.1 R	2.3 R	1.9 R	1.6 R	1.9 R	1.4 R
SODIUM	5000	290	263 J	377 J	440	300	408	614
THALLIUM	10	0.77 U	1.0 U	1.1 U	1.1 H	0.80 U	0.88 U	0.73 U
VANADIUM	50	21 L	20.8 L	24.5 L	25.8 L	13.1 L	9.3 UL	7.0 UL
ZINC	20	177 R	169 R	195 R	284 R	163 R	131 R	104 R
CYANIDE	10	0.21 UL	0.31 UL	0.34 UL	0.29 UL	0.23 UL	0.13 UL	0.46 L

TABLE II-13 (CONTINUED)
SUMMARY OF INORGANIC DATA (MG/KG) FROM
SURFACE SOIL SAMPLES

ANALYTES	CRDL	SS04B	SS04BFD	SS05A	SS05B	SS06A	SS06B	SS06BFD
ALUMINUM	200.0	19900	14600	8810	5980	8640	12500	10900
ANTIMONY	60	8.5 R	7.9 R	7.6 R	8.6 R	9.1 R	9.8 R	8.9 R
ARSENIC	10	23.5 H	30.5 H	109 H	17.6 H	14.4 H	16.1 H	18.2 H
BARIUM	200	205 L	144 L	45.5 L	28.4 L	60.7 L	66.0 L	61.3 L
BERYLLIUM	5	8.5 L	3.7 L	5.1 L	2.0 L	3.2 L	3.9 L	3.7 L
CADMIUM	5	1.0 R	0.92 R	0.64 R	0.72 R	0.76 R	0.82 R	0.74 R
CALCIUM	5000	22700 J	13900 J	64500 J	183000 J	66000 J	76700 J	60400 J
CHROMIUM	10	48.6 L	32.9 L	12.3 L	7.0 L	15.4 L	27.1 L	22.0 L
COBALT	50	10.0 L	9.4 L	9.2 L	8.4 L	9.2 L	8.2 UL	7.4 UL
COPPER	25	508 R	298 R	102 R	62.9 R	65.2 R	73.0 R	72.3 R
IRON	100	49700 J	20800 J	24800 J	13100 J	19100 J	21700 J	19200 L
LEAD	5	494 R	312 R	277 R	340 R	304 R	520 R	453 R
MAGNESIUM	5000	12700 J	7510 J	27700 J	100000 J	37600 J	44100 J	35200 J
MANGANESE	15	643 J	455 J	697 J	272 J	517 J	362 J	362 J
MERCURY	0.2	0.11 U	0.10 U	0.42	0.11 U	0.11	0.21	0.19
NICKEL	40	54.4 L	38.4 L	18.2 R	10.5 R	18.7 R	21.5 R	14.4 R
POTASSIUM	5000	2710	2550	1110	1220	1390	2200	1860
SELENIUM	5	0.42 U	2.0 U	1.9 U	2.1 U	2.2 U	2.4 U	0.45 U
SILVER	10	1.4 R	1.3 R	1.3 R	1.4 R	1.5 R	1.6 R	1.5 R
SODIUM	5000	641	825	310	357	305	361	303
THALLIUM	10	0.70 U	0.67 U	0.64 U	0.71 U	0.75 U	0.81 U	0.75 U
VANADIUM	50	29.7 L	20.4 L	17.7 L	7.2 UL	13.0 L	17.8 L	15.5 L
ZINC	20	534 R	431 R	179 R	61.3 R	134 R	215 R	196 R
CYANIDE	10	0.69 UL	0.73 L	0.30 L	0.10 UL	0.085 UL	0.22 L	0.12 UL

TABLE II-13
SUMMARY OF INORGANIC DATA (MG/KG) FROM
SURFACE SOIL SAMPLES

ANALYTES	CRDL	SS01A	SS01B	SS02A	SS02B	SS03A	SS03B	SS04A
ALUMINUM	200.0	13700	11400	13400	11100	15200 J	14900	11100
ANTIMONY	60	9.9 R	8.7 R	10.6 R	10.7 R	11.9 R	9.7 R	8.9 R
ARSENIC	10	21.3 H	22.3 H	19.7 H	12.5 H	18.8 H	15.2 H	28.5 H
BARIUM	200	69.6 L	65.6 L	69.2 L	238 L	91.0 L	97.7 L	70.9 L
BERYLLIUM	5	8.0 L	7.3 L	7.9 L	6.1 L	9.6 L	4.3 L	4.2 L
CADMIUM	5	0.83 R	0.73 R	0.88 R	0.90 R	1.0 R	0.81 R	0.74 R
CALCIUM	5000	32600 J	36600 J	25500 J	87100 J	25500 J	25400 J	22800 J
CHROMIUM	10	17.5 L	15.2 L	17.2 L	22.8 L	22.0 L	21.3 L	19.6 L
COBALT	50	8.6 L	9.0 L	8.8 UL	9.0 UL	10.0 UL	9.1 L	8.0 L
COPPER	25	52.5 R	46.9 R	36.5 R	47.5 R	41.1 R	203 R	91.6 R
IRON	100	20500 J	18900 J	20400 J	16600 J	25000 J	23600 J	21500 J
LEAD	5	108 R	115 R	90.6 R	277 R	117 R	122 R	140 R
MAGNESIUM	5000	20100 J	21900 J	15800 J	49800 J	16400 J	15900 J	13700 J
MANGANESE	15	665 J	720 J	550 J	426 J	578 J	681 J	434 J
MERCURY	0.2	0.22 U	0.16	0.23	0.13 U	0.15 U	0.10 U	0.10 U
NICKEL	40	19.0 R	25.1 L	18.5 R	14.9 R	21.8 R	25.8 L	24.4 L
POTASSIUM	5000	2770	2350	2690	1940	3050 J	2710	1930
SELENIUM	5	2.4 U	2.2 U	2.6 U	2.6 U	0.61 U	2.5 U	0.46 U
SILVER	10	1.7 R	1.5 R	1.8 R	1.8 R	2.0 R	1.6 R	1.5 R
SODIUM	5000	191	225	167	850	352 J	321	281
THALLIUM	10	0.78 U	0.72 U	0.85 U	0.88 U	1.0 U	0.82 U	0.76 U
VANADIUM	50	21.8 L	18.5 L	22.0 L	14.0 L	24.3 L	23.2 L	20.9 L
ZINC	20	146 R	147 R	145 R	139 R	222 R	216 R	155 R
CYANIDE	10	0.10 UL	0.091 UL	0.11 UL	0.42 L	0.38 L	0.45 L	0.096 UL

TABLE II-14
SUMMARY OF VOLATILE ORGANIC DATA (UG/KG) FROM
SHALLOW (LESS THAN 5 FEET) SOIL BORING SAMPLES

ANALYTES	CRDL	SB01 0-5'	SB02 0-5'	SB03 0-5'	SB04 0-2.5'	SB04 2.5-5'	SB05 2.5-5'	SB06 2.5-5'	SB06 2.5-5'D	SB07 2.5-5'
ALUMINUM	200.0	12900	11200	9980	11500	15100	12200	26700	33500	16000
ANTIMONY	60	8.0 R	7.4 R	7.8 R	7.2 R	8.2 R	7.1 R	7.5 R	7.3 R	7.1 R
ARSENIC	10	17.8 H	24.5 H	31.0 H	19.9 H	28.9 H	22.9 H	29.0 R	33.6 R	24.8 H
BARIUM	200	168 L	446 L	131 L	236 H	333 H	284 H	1050 H	1760 H	463 H
BERYLLIUM	5	3.4 L	3.6 L	2.9 L	1.9 L	1.9 L	1.3 L	3.3	4.4	1.8 L
CADMIUM	5	0.67 R	0.62 R	0.65 R	6.1 L	2.0 R	1.6 R	1.7 R	2.0 R	1.0 R
CALCIUM	5000	14200	102000	122000	125000 H	161000 H	129000 H	75300 H	77700 H	105000 H
CHROMIUM	10	28.0 L	21.8 L	18.8 L	30.3	42.5	35.8	54.8	60.8	46.2
COBALT	50	8.2 L	8.8 L	7.8 L	6.8	8.8	6.5	9.6	11.3	6.4
COPPER	25	3780 J	46.1 J	62.3 J	125 H	140 H	95.6 H	416 H	231 H	178 H
IRON	100	26700	21000	18200	16700 H	23600 H	20000 H	36400 H	48900 H	26600 H
LEAD	5	696	325	353	604 R	760 R	554 R	666 R	601 R	735 R
MAGNESIUM	5000	57100	42500	62600	59200 J	72200 J	66200 J	35100 J	32400 J	48700 J
MANGANESE	15	560	913	306	295 H	365 H	336 H	478 H	488 H	387 H
MERCURY	0.2	0.18 L	0.10 UL	0.50 L	0.11	0.096 U	0.099	0.090	0.076 U	0.076 U
NICKEL	40	28.0 L	16.6 R	12.2 R	25.6	28.5	24.8	35.8	38.5	28.6
POTASSIUM	5000	1220	2220	1890	2450	2310	2400	2260	2680	2130
SELENIUM	5	4.1 R	3.7 R	3.8 R	0.36 U	4.1 U	3.7 U	0.37 U	3.6 U	3.5 U
SILVER	10	1.3 R	1.2 R	1.3 R	1.2 R	4.2 R	1.2 R	1.3 R	1.2 R	1.2 R
SODIUM	5000	927	2410	563	861	1220	990	2730 J	4630 J	1390
THALLIUM	10	0.68 U	0.62 U	0.63 U	0.60 U	0.68 U	0.61 U	0.62 U	0.61 U	0.58 U
VANADIUM	50	6.7 U	16.4	7.8	18.6	25.0	19.6	39.1	49.4	26.4
ZINC	20	614	192	155	209 R	383 R	194 R	426 R	403 R	309 R
CYANIDE	10	0.25 R	0.51 R	0.17 R	4.3	4.0	0.33 U	5.4	6.3	5.3

TABLE II-14 (CONTINUED)
SUMMARY OF INORGANIC DATA (MG/KG) FROM
SHALLOW (LESS THAN 5 FEET) SOIL BORING SAMPLES

ANALYTES	CRDL	SB08 0-2.5'	SB08 2.5-5'	SB09 2.5-5'	SB10 0-2.5'	SB10 2.5-5'	SB11 0-2.5'	SB11 2.5-5'	SB12 2.5-5'	SB12A 2.5-5'
ALUMINUM	200.0	12700	21600	15100	16100	14700	13500	15900	11200	14300
ANTIMONY	60	7.0 R	8.1 R	7.6 R	7.3 R	7.0 R	7.3 R	7.7 R	6.9 R	7.8 R
ARSENIC	10	20.1 H	33.7 H	17.7 H	21.7 H	19.5 H	20.7 H	23.3 H	18.5 H	20.9 H
BARIUM	200	351 H	429 H	80.3 H	292 H	722 H	364 H	419 H	223 H	510 H
BERYLLIUM	5	1.2 L	1.9 L	1.9 L	2.3 L	2.0 L	1.6 L	1.8 L	1.4 L	2.2 L
CADMIUM	5	0.59 R	1.3 R	0.63 R	4.3 L	0.82 R	0.61 R	0.65 R	0.58 R	0.65 R
CALCIUM	5000	136000 H	128000 H	54000 H	85200 H	80500 H	109000 H	138000 H	131000 H	146000 H
CHROMIUM	10	25.2	56.6	21.1	29.5	25.4	28.0	37.8	20.5	22.2
COBALT	50	5.9 U	7.6	9.5	6.2	5.9 U	6.1 U	6.5 U	5.8 U	6.5 U
COPPER	25	144 H	148 H	32.0 H	2030 H	130 H	93.0 H	112 H	80.5 H	45.4 H
IRON	100	18400 H	25100 H	26200 H	24600 H	20500 H	17800 H	17600 H	16900 H	21100 H
LEAD	5	593 R	902 R	175 R	427 R	356 R	477 R	633 R	405 R	396 R
MAGNESIUM	5000	68200 J	58900 J	20400 J	41700 H	33600 H	52400 H	60500 H	49600 H	67500 H
MANGANESE	15	322 H	458 H	590 H	377 H	270 H	318 H	296 H	441 H	293 H
MERCURY	0.2	0.088 U	0.11	0.076 U	0.083 U	0.090 U	0.076 U	0.10 U	0.094 U	0.093 U
NICKEL	40	35.2	27.4	21.2	22.9	22.9	20.2	21.4	16.0 L	15.0 L
POTASSIUM	5000	2320	3910	2030	1940	1690	2240	2580	1960	1530
SELENIUM	5	3.5 U	4.1 U	3.7 U	3.6 U	3.4 U	3.7 U	3.8 U	3.5 U	3.9 U
SILVER	10	1.2 R	1.4 R	1.3 R	1.2 R	1.2 R	1.2 R	1.3 R	1.2 R	1.3 R
SODIUM	5000	1170	1330	227	1050	2500	1060	1640	977	1880
THALLIUM	10	0.58 U	0.68 U	0.61 U	0.60 U	0.57 U	0.61 U	0.64 U	0.58 U	0.64 U
VANADIUM	50	20.4	32.3	28.4	26.4	23.9	21.8	24.4	17.4	22.7
ZINC	20	228 R	387 R	106 R	207 R	186 R	188 R	254 R	153 R	182 R
CYANIDE	10	4.8	7.7	0.36 U	2.0	6.0	3.7	6.5	6.8	1.5

TABLE II-14 (CONTINUED)
SUMMARY OF INORGANIC DATA (MG/KG) FROM
SHALLOW (LESS THAN 5 FEET) SOIL BORING SAMPLES

ANALYTES	CRDL	SB13 0-1.7'	SB14 0-4.5'	SB15R 2.5-4.5'	SB15RD 2.5-4.5'	SB16R 0-4.5'	SB17 0-3.8'	SB18 0-5.0'	SB19 0-2.6'
ALUMINUM	200.0	15900	7930	4380	9060	7020	9420	23200	4440
ANTIMONY	60	6.4 R	6.8 R	7.6 R	7.3 R	7.1 R	7.5 R	6.8 R	7.5 R
ARSENIC	10	18.9 H	9.0 U	8.1 R	8.5 R	9.6 R	13.1 R	22.9 R	7.5 R
BARIUM	200	500 H	275 L	31.2 L	51.7 L	38.0 L	537 L	1760 L	119 L
BERYLLIUM	5	2.4	3.1	2.3 J	4.4 J	3.8	3.5	4.9	2.4
CADMIUM	5	0.54 R	1.3 L	0.64 UL	0.61 UL	0.60 UL	0.69 L	0.57 UL	4.0 L
CALCIUM	5000	62700 H	114000 H	132000	42900	80700 H	27100 H	40200 H	140000 H
CHROMIUM	10	22.4	12.6	8.3	11.9	15.4	16.6	20.2	18.9
COBALT	50	6.5	5.7 U	6.4 U	9.9	6.0 U	6.3 U	6.5	6.3 U
COPPER	25	114 H	22.9 H	10.7 H	33.0 H	11.9 H	26.3 H	26.4 H	101 H
IRON	100	23900 H	13000 H	11300	19400	16000 H	13600 H	17300 H	11200 H
LEAD	5	322 R	287	200	123	156	88.5	70.9	552 J
MAGNESIUM	5000	29600 H	59000 J	49300 J	22000 J	46800 J	10700 J	14900 J	76500 J
MANGANESE	15	437 H	264 J	361 J	308 J	266 J	178 J	166 J	281 J
MERCURY	0.2	0.084 U	0.088 U	0.087 U	0.095 U	0.084 U	0.13	0.069 U	0.096 U
NICKEL	40	22.9	11.3	9.4	17.5	12.0	11.1	11.9	16.3
POTASSIUM	5000	1820	1530	900	1620	1060	960	1640	689
SELENIUM	5	3.3 U	3.4 UL	3.8 UL	3.7 UL	3.6 UL	3.7 UL	3.4 UL	3.8 UL
SILVER	10	1.1 R	1.1 R	1.3 R	1.2 R	1.2 R	1.3 R	1.1 R	1.3 R
SODIUM	5000	2570	1310	1150	1260	800	1920	7410	489
THALLIUM	10	0.55 U	0.56 U	0.61 U	0.62 U	0.60 U	0.62 U	0.58 U	0.63 U
VANADIUM	50	26.1	12.3	8.0	17.1	12.8	17.4	35.0	6.3 U
ZINC	20	169 R	87.8 L	37.5 L	77.7 L	57.7 L	97.7 L	63.5 L	1380 L
CYANIDE	10	1.3	0.33	0.35 U	0.34 U	0.36 U	1.3	1.3	0.37 U

TABLE II-14 (CONTINUED)
SUMMARY OF INORGANIC DATA (MG/KG) FROM
SHALLOW (LESS THAN 5 FEET) SOIL BORING SAMPLES

ANALYTES	CRDL	SB20 0-5.0'	SB21 2.5-4.5'	SB22 0-5.0'	SB23R 2.8-4.5'
ALUMINUM	200.0	6470	11600	16200	7920
ANTIMONY	60	7.6 R	7.2 R	8.0 R	7.1 R
ARSENIC	10	12.7 R	17.1 R	15.8 H	8.1 R
BARIUM	200	139 L	482 L	384 L	53.5 L
BERYLLIUM	5	3.1	4.9	3.9 L	4.7
CADMIUM	5	0.64 UL	1.1 L	0.67 R	0.59 UL
CALCIUM	5000	131000 H	87100 H	92200	64600 H
CHROMIUM	10	13.6	27.6	33.6 L	11.1
COBALT	50	6.4 U	6.5	8.5 L	6.7
COPPER	25	54.7 H	140 H	91.3 J	12.1 H
IRON	100	13900 H	21400 H	21900	20800 H
LEAD	5	343	533 J	528	126
MAGNESIUM	5000	59800 J	40100 J	42900	35800 J
MANGANESE	15	366 J	324 J	383	527 J
MERCURY	0.2	0.074 U	0.078 U	0.10 UL	0.085 U
NICKEL	40	14.6	25.6	18.9 R	11.5
POTASSIUM	5000	968	1860	2760	930
SELENIUM	5	3.8 UL	3.6 UL	1.3 R	0.36 UL
SILVER	10	1.3 R	1.2 R	1.3 R	1.2 R
SODIUM	5000	458	1720	1300	188
THALLIUM	10	0.70 U	0.59 U	0.64 U	0.60 U
VANADIUM	50	9.8	19.6	19.6	15.5
ZINC	20	178 L	281 L	251	55.2 L
CYANIDE	10	0.60	7.7	1.2 R	0.90

TABLE II-15
SUMMARY OF INORGANIC DATA FROM
DEEP(GREATER THAN 5 FEET) SOIL BORING SAMPLES

ANALYTES	CRDL	SB01 5-9'	SB01 9.5-12.5'	SB02 5-7.5'	SB02 7.5-8.7'	SB05 5.0-9.0'	SB06 5.0-9.0'	SB07 5.0-9.0'	SB09 5.0-7.0'
ALUMINUM	200.0	10800	890	7850	13100 J	12000	17600	11600	8290
ANTIMONY	60	7.6 R	7.1 R	7.6 R	16.3 R	7.4 R	8.4 R	8.3 R	7.9 R
ARSENIC	10	16.3 H	14.0 H	14.2 H	155 H	21.2 H	28.2 H	23.1 H	24.5 H
BARIUM	200	55.1 L	5.9 UL	37.2 L	42.9 L	244 H	336 H	251 H	54.6 H
BERYLLIUM	5	3.7 L	1.4 L	2.7 L	10.5 L	0.94 L	2.7 L	1.1 L	2.0 L
CADMIUM	5	0.64 R	0.59 R	0.63 R	1.4 R	2.1 R	0.70 R	0.69 R	1.7 R
CALCIUM	5000	29800	171000	96900	19200 J	139000 H	23100 H	167000 H	13100 H
CHROMIUM	10	11.5 L	1.2 UL	8.5 L	15.0 L	20.9	23.7	28.2	11.0
COBALT	50	6.4 L	6.2 L	6.3 UL	13.6 UL	6.2 U	9.2	6.9 U	6.6 U
COPPER	25	19.1 J	3.0 UL	6.4 L	35.4 J	47.1 H	66.4 H	126 H	15.7 H
IRON	100	21400	11900	17500	59400 J	16600 H	33400 H	17200 H	19400 H
LEAD	5	78.7	285	163	73.9 J	553 R	211 R	613 R	51.4 R
MAGNESIUM	5000	16400	99100	54800	7110 J	78300 J	11600 J	77500 J	7580 H
MANGANESE	15	352	268	220	307 J	321 H	406 H	343 H	301 H
MERCURY	0.2	0.14 L	0.08 L	0.08 UL	0.25 L	0.072 U	0.095 U	0.088 U	0.11 U
NICKEL	40	18.2 R	4.7 R	6.4 R	26.0 R	12.7 L	31.3	17.8 L	14.1 L
POTASSIUM	5000	1920	385	1540	2650 J	2490	2330	2280	1380
SELENIUM	5	0.38 R	3.4 R	3.6 R	0.79 R	10.4 R	4.2 U	4.0 U	0.39 U
SILVER	10	1.3 R	1.2 R	1.3 R	2.7 R	1.2 R	1.4 R	1.4 R	1.3 R
SODIUM	5000	311	257	3520	16800 J	1020	1080	995	183
THALLIUM	10	0.70	0.56 U	0.60 U	1.3 U	0.64 U	0.71 U	0.67 U	0.65 U
VANADIUM	50	15.6	5.9 U	7.2	28.2 J	17.6	30.7	17.5	17.4
ZINC	20	87.3	7.8 L	34.4	50.9 J	165 R	177 R	220 R	93.0 R
CYANIDE	10	0.070 R	0.044 R	0.081 R	0.18 R	0.22 U	1.7	12	0.38 U

TABLE II-15 (CONTINUED)
SUMMARY OF INORGANIC DATA FROM
DEEP (GREATER THAN 5 FEET) SOIL BORING SAMPLES

ANALYTES	CRDL	SB15R 4.5-9.5'	SB18 7.5-9.5'	SB18 9.5-12.5'	SB20 4.5-9.5'	SB20 4.5-9.5'D	SB20 9.5-12.5'
ALUMINUM	200.0	3420	20000	5030	11800	10600	3580
ANTIMONY	60	7.1 R	10.5 R	11.3 R	8.4 R	9.2 R	10.4 R
ARSENIC	10	8.4 R	25.7 R	22.8 R	15.1 R	16.5 R	67.3 R
BARIUM	200	13.5 L	260 L	83.0 L	79.1 L	82.9 L	51.4 L
BERYLLIUM	5	2.7	7.0	5.4	5.3	6.7	4.2
CADMIUM	5	0.60 UL	1.1 L	0.95 UL	0.70 UL	3.0 L	0.87 UL
CALCIUM	5000	123000 H	8890 H	161000 H	28300 H	24800 H	193000 H
CHROMIUM	10	7.0	24.0	6.3 H	14.7	21.3	3.9 H
COBALT	50	6.0 U	10.1	9.5 U	8.9	11.6	8.7 U
COPPER	25	9.5 H	37.0 H	16.5 H	28.1 H	32.1 H	13.6 H
IRON	100	12400 H	27100 H	24600 H	21900 H	21700 H	19400 H
LEAD	5	192	71.9	227	68.4	64.5	223
MAGNESIUM	5000	59200 J	5790	42600 J	14500 J	12000 J	13800 J
MANGANESE	15	313 J	267 J	446 J	361 J	329 J	192 J
MERCURY	0.2	0.075 U	0.13 U	0.13 U	0.11 U	0.093 U	0.13 U
NICKEL	40	10.3	29.5	14.9	26.4	31.8	15.9
POTASSIUM	5000	822	2550	736	1680	1690	454
SELENIUM	5	3.6 UL	5.2 UL	5.7 UL	0.42 UL	0.45 UL	5.2 UL
SILVER	10	1.2 R	1.8 R	1.9 R	1.4 R	1.5 R	1.7 R
SODIUM	5000	905	8740	6040	392	466	471
THALLIUM	10	0.58 U	0.87 U	0.93 U	0.70 U	0.75 U	0.87 U
VANADIUM	50	6.5	29.6	9.5 U	18.6	21.3	8.7 U
ZINC	20	24.5 L	169 L	51.6 L	115 L	121 L	43.9 L
CYANIDE	10	0.33 U	0.54 U	0.51 U	0.38 U	0.43 U	0.51 U

APPENDIX N

APPENDIX N

QUALITY ASSURANCE REVIEW OF PHASE II SOIL AND SURFACE WATER RESULTS

DATA VALIDATION SUMMARY

Lenz Oil Round 2 - Organics

DRAFT
MAY 0 1992
ERM-NORTH CENTRAL, INC.

The Illinois EPA Division of Laboratories Quality Assurance Section has reviewed the sample analysis data packages for the Lenz Oil Round 2 organic parameters. The analyses were performed by Applied Research and Development Laboratories, Inc. of Mt. Vernon, Illinois. The samples were analyzed by USEPA CLP Protocols OLM01.7. The review was performed as described in "National Functional Guidelines for Organic Data Review" (Draft), December, 1990, Revised June, 1991. We find that the data are acceptable for use as qualified below.

Summary Of Data Validation Findings:

The following represents a summary of the data validation findings.

The samples for this case are divided into three Sample Delivery Groups as follows:

SDG No.	LOSB14BS		LOSB12AS 0-5		LOSB04AD	
LAB No.	200252		200254		200255	
	SB201AS1-3	200252-1	LOSB208AD	200254-1	LOSB04AS0-5	200255-1
	SB201BS3-5	200252-2	LOSB211AS	200254-2	LOSB04BS5-8	200255-2
	SB202AS1-3	200252-3	LOSB211BS	200254-3	LOSB04AD	200255-3
	SB202AS3-5	200252-4	LOSB212AS	200254-4	LOSB08AS0-5	200255-4
	SB205AS1-3	200252-5	LOSB203BS	200254-5	LOSB08BS5-8	200255-5
	SB205BS3-5	200252-6	LOSB203BR	200254-6	LOSB10AS0-5	200255-6
	SB206AS1-3	200252-7	TRIP BLK1	200254-7	LOSB10BS5-8	200255-7
	SB209AS	200252-8	TRIP BLK2	200254-8	LOSB11AS0-5	200255-8
	SB209BS3-5	200252-9	LOSB12AS0-5	200254-9	LOSB11BS5-8	200255-9
	TB/STFIELD	200252-10	LOSB12BS5-9	200254-10	LOSB11AD	200255-10
	TB/LAB	200252-11	LOSB14AS	200254-11	LOSB213AS(BG)	200255-11
	TB	200252-12	LOSB19AS5-9	200254-12	LOSB214AS(BG)	200255-12
	LOSB14BS	200252-13	LOSB10BS9-B	200254-13	LOSB215AS(BG)	200255-13
	LOSB203AS	200252-14	LOSB19AD	200254-14	LOSB04BR	200255-14
	LOSB204AS	200252-15	LOSB22AS0-5	200254-15	LOSB08AR	200255-15
	LOSB204BS	200252-16	LOSB22BS5-9	200254-16	TRIP BLK1	200255-16
	LOSB207AS	200252-17	SB22BD	200254-17	TRIP BLK2	200255-17
	LOSB207BS	200252-18	LOSB22CS9-B	200254-18		
	LOSB208AS	200252-19	SB12BR	200254-19		
	LOSB208BS	200252-20	LOSB19BR	200254-20		
			TRIP BLK3	200254-21		
			TRIP BLK4	200254-22		

DRAFT

The data packages were compliant with the USEPA Scope of Work (SOW) except as noted below:

- Holding Times - VOA samples LOSB203BRRE and LOSB22AS0-5RE were analyzed 27 and 25 days after VTSR respectively. Both samples were reanalyses due to surrogate spike recovery and/or internal standard area criteria failures. Since, LOSB203BR failed surrogate recovery criteria on both analyses, it is recommended that the initial analysis (which was analyzed within holding time) be used. Sample LOSB22AS0-5 passed surrogate recovery criteria on the reanalysis, so only the reanalysis data was submitted: all detection limits and all positive "hits" are qualified as estimated (J) due to the technical holding times being grossly exceeded. Semivolatile samples LOSB203BR, LOSB14BS, LOSB204AS, LOSB204BS, LOSB207AS were extracted 7 days from VTSR (8 days from collection); this had no effect on data usability.

- Only 500 ml. of sample was extracted for the semivolatile analysis of samples LOSB203BR, SB12BR, and LOSB19BR, resulting in CRQLs being elevated by a factor of two for these samples. The laboratory was contacted and it was determined that the effected samples failed surrogate spike recovery criteria on the initial analysis and on the reanalysis of the original extract. The samples were re-extracted as required by the SOW. However, there was less the 1000 ml. sample remaining for the re-extraction, so the laboratory was forced to use 500 ml. sample volume for the re-extractions. This does not effect the usability of the data.

- In the VOA analysis of sample LOSB215AS(BG), one of the internal standard areas was outside of the internal standard area response criteria of +100% to -50%. The sample was not reanalyzed as required. The sample was qualified as required by the data review guidelines.

Data Usability Issues

The analysis of many of the VOA samples suffered from sever matrix interference as indicated by failure of the surrogate spike recovery and/or the internal standard area response criteria both on the initial analyses and reanalyses. All samples which failed the surrogate spike recovery and/or the internal standard area response criteria were qualified as required by the data review guidelines. When samples failed the surrogate spike recovery and/or the internal standard area response criteria both on the initial analyses and reanalyses, the laboratory reported both analyses as required. In cases where multiple analyses were reported for a samples, the data reviewers have determined which analysis should be used. The results of the data reviewers determinations are as follows:

Use	Do Not Use	Use	Do Not Use
SB205BS3-5RE	SB205BS3-5	LOSB14AS	LOSB14ASRE
LOSB14BSRE	LOSB14BS	LOSB19AD	LOSB19ADRE
LOSB207ASRE	LOSB207AS	LOSB08AS0-5RE	LOSB08AS0-5
SB201AS1-3	SB201AS1-3RE	LOSB08BS5-8RE	LOSB08BS5-8
SB205AS1-3	SB205AS1-3RE	LOSB10AS0-5RE	LOSB10AS0-5
LOSB203ASRE	LOSB203AS	LOSB10BS5-8RE	LOSB10BS5-8
LOSB204ASRE	LOSB204AS	LOSB11AS0-5RE	LOSB11AS0-5
LOSB203BR	LOSB203BRRE	LOSB11BS5-8RE	LOSB11BS5-8
LOSB11AD	LOSB11ADRE	LOSB214AS(BG)	LOSB214AS(BG)RE

DRAFT

The analysis of one of the SV samples suffered from sever matrix interference as indicated by failure of the surrogate spike recovery and/or the internal standard area response criteria both on the initial analyses and reanalyses (LOSB14ASand LOSB14ASRE). Both samples (the initial analysis and the reanalysis) which failed the surrogate spike recovery and/or the internal standard area response criteria were qualified as required by the data review guidelines. The data reviewers have determined which analysis should be used. The results of the data reviewers determinations are as follows: Use LOSB14AS, do not use LOSB14ASRE.

Examination of the GC/MS instrument initial and continuing calibration documentation associated with the VOA and SV analyses revealed several compounds which did not meet the criteria stated in the data review guidelines (all calibrations were compliant with the SOW) for average RRF, RSD (initial calibration), RRF or %D (continuing calibration). All samples associated with the observed outliers were qualified as described in the data review guidelines.

The blank samples associated with the VOA analyses were consistently contaminated with the "common laboratory contaminants": Methylene Chloride, Acetone, and occasionally 2-Butanone. The guidelines given in the data review guidelines were used to qualify the sample data. Note that the field blanks were qualified based on the associated method blanks prior to being applied to the sample data. The VOA blanks were also consistently contaminated with the tentatively identified compounds (TICs): 1,1,2-Trifluoro-2,2,1-trichloroethane and Dichlorodifluoromethane. When these TICs were identified in samples associated with contaminated blanks, the samples results were qualified as "R" unusable. There were however, instances where 1,1,2-Trifluoro-2,2,1-trichloroethane and/or Dichlorodifluoromethane were reported in samples which could not be directly associated with a contaminated blank; these results were not qualified by the reviewers. It is recommended that all results for 1,1,2-Trifluoro-2,2,1-trichloroethane and Dichlorodifluoromethane be considered as suspect due to the consistent nature of the laboratory contamination.

Many of the SV method blanks showed contamination by common laboratory contaminants (phthalate esters). All samples associated with such contaminated blanks have been qualified as described in the data review guidelines. Additionally, the SV blanks were contaminated with several unknown TICs; where these unknown TICs could be correlated with TICs reported for samples (by retention time and mass spectra), the sample results were qualified as "R".

In the Pesticides/PCB analysis, samples LOSB19AS5-9, LOSB19AD, and SB22BD suffered from matrix interference which affected the quantitation of Arochlor 1254. In each of these three samples, one of the five peaks used to quantitate Arochlor 1254 coeluted with an unknown interferent causing the peak to be slightly outside the retention time window and causing positive interference. The laboratory included the peak suffering from interference in the quantitation for the three samples, resulting in a positive bias in the reported result for Arochlor 1254. The reviewer recalculated the Arochlor 1254 result for the three affected samples using only four peaks which showed no interference. The result of the data reviewers calculation has been substituted for the original result in the sample results forms (Forms 1F).

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB201		SB201	SB202	SB202	SB203		SB203	SB204	
Sample Interval	0-3'		3-5'	0-3'	3-5'	0-3'		3-5'	0-3'	
IEPA Sample No.	LOSB201AS		LOSB201BS	LOSB202AS	LOSB202BS	LOSB203AS		LOSB203BS	LOSB204AS	
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Date sample collected	2/10/92	2/10/92	2/10/92	2/10/92	2/10/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Chloromethane	12 U	12 U	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Bromoethane	12 U	12 U	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Vinyl Chloride	12 U	12 U	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Chloroethane	12 U	12 U	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Methylene Chloride	12 U	24 U	11 U	11 U	11 U	23 UJ	22 UJ	6 J	12 UJ	41 U
Acetone	13 J	26 U	33 U	19 U	26 U	11 UJ	11 UJ	12 UJ	12 UJ	12 U
Carbon Disulfide	12 U	12 U	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
1,1-Dichloroethene	12 U	12 U	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
1,1-Dichloroethane	12 U	12 U	11 U	11 U	11 U	11 UJ	11 UJ	12 U	3 J	4 J
1,2-Dichloroethene (total)	12 U	12 U	11 U	7 J	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Chloroform	12 U	12 U	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
1,2-Dichloroethane	12 U	12 U	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
2-Butanone	12 R	12 R	11 U	11 U	11 U	11 R	11 R	12 U	12 R	12 R
1,1,1-Trichloroethane	37	36 J	11 U	11 U	11 U	100 J	52 J	52	71 J	81
Carbon Tetrachloride	12 U	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Bromodichloromethane	12 U	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
1,2-Dichloropropane	12 U	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
cis-1,3-Dichloropropene	12 U	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Trichloroethene	7 J	7 J	7 J	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Dibromochloromethane	12 U	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
1,1,2-Trichloroethane	12 U	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Benzene	12 U	12 UJ	4 J	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
trans-1,3-Dichloropropene	12 U	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
Bromoform	12 U	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 U	12 UJ	12 U
4-Methyl-2-Pentanone	12 U	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 UJ	12 UJ	12 U
2-Hexanone	12 UJ	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 UJ	12 UJ	12 U
Tetrachloroethene	11 J	12 J	16	11 U	11 U	11 UJ	11 UJ	12 UJ	8 J	6 J
1,1,2,2-Tetrachloroethane	12 UJ	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 UJ	12 UJ	12 U
Toluene	3 J	3 J	12	11 U	11 U	8 J	5 J	12 UJ	8 J	6 J
Chlorobenzene	12 UJ	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 UJ	12 UJ	12 U
Ethyl Benzene	12 UJ	12 UJ	62	11 U	11 U	11 UJ	11 UJ	12 UJ	12 UJ	12 U
Styrene	12 UJ	12 UJ	11 U	11 U	11 U	11 UJ	11 UJ	12 UJ	12 UJ	12 U
Xylenes (total)	12 UJ	12 UJ	180	11 U	4 J	11 UJ	11 UJ	12 UJ	12 UJ	12 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB201		SB201	SB202	SB202	SB203		SB203	SB204	
Sample Interval	0-3'		3-5'	0-3'	3-5'	0-3'		3-5'	0-3'	
IEPA Sample No.	LOSB201AS		LOSB201BS	LOSB202AS	LOSB202BS	LOSB203AS		LOSB203BS	LOSB204AS	
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Date sample collected	2/10/92	2/10/92	2/10/92	2/10/92	2/10/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs										
Unknown	6 J	11 J	73 J	28 J		13 J	15 J	60 J	8 J	21 J
Ethane, 1,1,2-Trichloro-1,2,	31 R	25 R	20 R	17 R	22 R	130 R	33 R		52 R	38 R
Unknown aromatic			86 J							
Unknown alkane		6 J								
Hexane, 2-methyl-										
.alpha.-Pinene										
Pentane, 2,3-Dimethyl										
Methane, Dichlorodifluoro-										
Unknown cyclohexane										
Unknown cycloalkane										
Methane, Trichlorofluoro-						15 NJ	10 NJ			7 NJ
Unknown alkene										
Unknown cyclopentane										
Ethane, 1,1,2-Trichlorotrifl										
Furan, Tetrahydro										
Cyclohexane, 1,1,3-Trimethyl			11 NJ							
Benzene, -ethyl-methyl-				120 J						

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB204	SB205		SB205		SB206	SB207		SB207	SB208
Sample Interval	3-5'	0-3'		3-5'		0-3'	0-3'		3-5'	0-3'
IEPA Sample No.	LOSB204BS	SB205AS		SB205BS		SB206AS	LOSB207AS		LOSB207BS	LOSB208AS
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Date sample collected	2/11/92	2/10/92	2/10/92	2/10/92	2/10/92	2/10/92	2/11/92	2/11/92	2/11/92	2/11/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Chloromethane	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
Bromoethane	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
Vinyl Chloride	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
Chloroethane	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
Methylene Chloride	5 J	11 U	24 U	12 U	17 U	12 U	11 UJ	16	4 J	3 J
Acetone	260 J	11 U	11 U	12 U	88 J	150 J	11 UJ	11 U	70 J	11 J
Carbon Disulfide	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
1,1-Dichloroethene	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
1,1-Dichloroethane	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
1,2-Dichloroethene (total)	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
Chloroform	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
1,2-Dichloroethane	14 U	11 U	11 U	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
2-Butanone	14 R	11 R	11 R	12 U	12 R	12 U	11 R	11 R	12 R	11 R
1,1,1-Trichloroethane	7 J	18	25 J	4 J	43	12 U	3 J	9 J	6 J	4 J
Carbon Tetrachloride	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
Bromodichloromethane	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
1,2-Dichloropropane	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
cis-1,3-Dichloropropene	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
Trichloroethene	14 U	11 U	11 UJ	12 U	12 U	11 J	11 UJ	11 U	12 U	11 U
Dibromochloromethane	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
1,1,2-Trichloroethane	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
Benzene	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
trans-1,3-Dichloropropene	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
Bromoform	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
4-Methyl-2-Pentanone	14 U	11 U	11 UJ	12 U	12 U	12 U	11 UJ	11 U	12 U	11 U
2-Hexanone	14 U	11 UJ	11 UJ	12 U	12 UJ	12 U	11 UJ	11 UJ	12 U	11 U
Tetrachloroethene	14 U	11 UJ	11 UJ	12 U	12 UJ	12 U	11 UJ	11 UJ	12 U	11 U
1,1,2,2-Tetrachloroethane	14 U	11 UJ	11 UJ	12 U	12 UJ	12 U	11 UJ	11 UJ	12 U	11 U
Toluene	4 J	11 UJ	11 UJ	6 J	5 J	12 U	11 UJ	11 UJ	3 J	2 J
Chlorobenzene	14 U	11 UJ	11 UJ	12 U	12 UJ	12 U	11 UJ	11 UJ	12 U	11 U
Ethyl Benzene	7 J	11 UJ	11 UJ	12 U	12 UJ	42	11 UJ	11 UJ	12 U	11 U
Styrene	14 U	11 UJ	11 UJ	12 U	12 UJ	12 U	11 UJ	11 UJ	12 U	11 U
Xylenes (total)	22	11 UJ	11 UJ	12 U	12 UJ	28	11 UJ	11 UJ	12 U	11 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB204	SB205		SB205		SB206	SB207		SB207	SB208
Sample Interval	3-5'	0-3'		3-5'		0-3'	0-3'		3-5'	0-3'
IEPA Sample No.	LOSB204BS	SB205AS		SB205BS		SB206AS	LOSB207AS		LOSB207BS	LOSB208AS
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Date sample collected	2/11/92	2/10/92	2/10/92	2/10/92	2/10/92	2/10/92	2/11/92	2/11/92	2/11/92	2/11/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs										
Unknown	21 J		7 J	53 J	35 J	30 J				
Ethane, 1,1,2-Trichloro-1,2,	43 R	37 R	21 R	26 R	44 R		45 R	20 R	21 R	32 R
Unknown aromatic	38 J									
Unknown alkane				58 J						
Hexane, 2-methyl-										
.alpha.-Pinene										
Pentane, 2,3-Dimethyl										
Methane, Dichlorodifluoro-										
Unknown cyclohexane										
Unknown cycloalkane										
Methane, Trichlorofluoro-										
Unknown alkene										
Unknown cyclopentane										
Ethane, 1,1,2-Trichlorotrifl										
Furan, Tetrahydro				32 NJ	32 NJ					
Cyclohexane, 1,1,3-Trimethyl										
Benzene, -ethyl-methyl-										

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB208	SB208	SB209	SB209	SB211		SB211	SB212	SB212
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'		3-5'	0-3'	3-5'
IEPA Sample No.	LOSB208AD	LOSB208BS	SB209AS	SB209BS	LOSB211AS		LOSB211BS	LOSB212AS	LOSB212BS
Dilution Factor	1	1	1	1	1	1	1	1	1
Date sample collected	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Chloromethane	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Bromoethane	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Vinyl Chloride	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Chloroethane	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Methylene Chloride	9 J	11 U	11 U	4 J	14	56 U	11 U	12 U	N/R
Acetone	11 UJ	34 J	11 U	11 U	320 EJ	220 JD	46 J	12 UJ	N/R
Carbon Disulfide	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
1,1-Dichloroethene	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
1,1-Dichloroethane	11 U	11 U	11 U	11 U	14	6 JD	11 U	12 U	N/R
1,2-Dichloroethene (total)	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Chloroform	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
1,2-Dichloroethane	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
2-Butanone	11 U	11 R	11 U	11 R	11 U	56 R	11 U	12 U	N/R
1,1,1-Trichloroethane	11 U	15	11 U	6 J	14	12 JD	11 U	12 U	N/R
Carbon Tetrachloride	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Bromodichloromethane	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
1,2-Dichloropropane	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
cis-1,3-Dichloropropene	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Trichloroethene	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Dibromochloromethane	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
1,1,2-Trichloroethane	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Benzene	11 U	11 U	11 U	11 U	130	52 JD	11 U	12 U	N/R
trans-1,3-Dichloropropene	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Bromoform	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
4-Methyl-2-Pentanone	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
2-Hexanone	11 UJ	11 U	11 U	11 U	11 UJ	56 U	11 UJ	12 UJ	N/R
Tetrachloroethene	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
1,1,2,2-Tetrachloroethane	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Toluene	11 U	2 J	11 U	11 U	30	17 JD	11 U	12 U	N/R
Chlorobenzene	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Ethyl Benzene	11 U	11 U	11 U	11 U	130	70 D	11 U	12 U	N/R
Styrene	11 U	11 U	11 U	11 U	11 U	56 U	11 U	12 U	N/R
Xylenes (total)	11 U	11 U	11 U	11 U	280	170 D	11 U	12 U	N/R

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB208	SB208	SB209	SB209	SB211		SB211	SB212	SB212
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'		3-5'	0-3'	3-5'
IEPA Sample No.	LOSB208AD	LOSB208BS	SB209AS	SB209BS	LOSB211AS		LOSB211BS	LOSB212AS	LOSB212BS
Dilution Factor	1	1	1	1	1	1	1	1	1
Date sample collected	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92	2/11/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs									
Unknown	6 J			26 J	80 J		39 J	5 J	
Ethane, 1,1,2-Trichloro-1,2,		31 R	12 R	39 R					
Unknown aromatic				44 J					
Unknown alkane									
Hexane, 2-methyl-									
.alpha.-Pinene									
Pentane, 2,3-Dimethyl									
Methane, Dichlorodifluoro-									
Unknown cyclohexane									
Unknown cycloalkane									
Methane, Trichlorofluoro-									
Unknown alkene									
Unknown cyclopentane									
Ethane, 1,1,2-Trichlorotrifl									
Furan, Tetrahydro									
Cyclohexane, 1,1,3-Trimethyl									
Benzene, -ethyl-methyl-									

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB04	SB04	SB04	SB08		SB08		SB10		SB10	
Sample Interval	0-5'	0-5'	5-8'	0-5'		5-7.5'		0-5'		5-7.5'	
IEPA Sample No.	LOSB04AS	LOSB04AD	LOSB04BS	LOSB08AS		LOSB08BS		LOSB10AS		LOSB10BS	
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1
Date sample collected	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Chloromethane	13 U	12 U	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Bromoethane	13 U	12 U	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Vinyl Chloride	13 U	12 U	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Chloroethane	13 U	12 U	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Methylene Chloride	13 U	21 U	23 U	27 U	16 UJ	24 UJ	15 U	35 UJ	26 UJ	33 UJ	12 UJ
Acetone	71 U	87 U	95 U	45 U	55 UJ	66 UJ	79 U	35 UJ	22 UJ	43 UJ	51 UJ
Carbon Disulfide	13 U	12 U	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
1,1-Dichloroethene	13 U	12 U	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
1,1-Dichloroethane	13 U	3 J	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
1,2-Dichloroethene (total)	13 U	12 U	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Chloroform	13 U	12 U	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
1,2-Dichloroethane	13 U	12 U	14 U	13 U	13 UJ	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
2-Butanone	13 R	12 R	14 R	13 U	13 U	12 U	12 U	12 U	12 U	13 U	13 U
1,1,1-Trichloroethane	6 J	3 J	4 J	6 J	5 J	9 J	9 J	20 J	29 J	10 J	8 J
Carbon Tetrachloride	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Bromodichloromethane	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
1,2-Dichloropropane	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
cis-1,3-Dichloropropene	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Trichloroethene	13 U	4 J	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	5 J	7 J
Dibromochloromethane	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
1,1,2-Trichloroethane	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Benzene	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
trans-1,3-Dichloropropene	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Bromoform	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
4-Methyl-2-Pentanone	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
2-Hexanone	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Tetrachloroethene	4 J	6 J	14 U	11 J	6 J	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
1,1,2,2-Tetrachloroethane	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Toluene	25	50	13 J	23 J	17	7 J	10 J	13 J	18 J	14 J	13 J
Chlorobenzene	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Ethyl Benzene	20	38	8 J	19 J	12 J	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Styrene	13 U	12 U	14 U	13 U	13 U	12 UJ	12 UJ	12 UJ	12 UJ	13 UJ	13 UJ
Xylenes (total)	110	190	32	78 J	56	12 UJ	12 UJ	12 UJ	12 UJ	31 J	37 J

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB04	SB04	SB04	SB08		SB08		SB10		SB10	
Sample Interval	0-5'	0-5'	5-8'	0-5'		5-7.5'		0-5'		5-7.5'	
IEPA Sample No.	LOSB04AS	LOSB04AD	LOSB04BS	LOSB08AS		LOSB08BS		LOSB10AS		LOSB10BS	
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1
Date sample collected	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs											
Unknown	61 J	180 J	12 J	58 J		17 J		93 J	18 J	77 J	98 J
Ethane, 1,1,2-Trichloro-1,2,	12 R	12 R			9 R		20 R		22 R		13 R
Unknown aromatic				150 J	41 J						
Unknown alkane		100 J									
Hexane, 2-methyl-											
.alpha.-Pinene											
Pentane, 2,3-Dimethyl											
Methane, Dichlorodifluoro-											
Unknown cyclohexane		46 J									
Unknown cycloalkane	23 J	100 J									
Methane, Trichlorofluoro-									8 NJ		
Unknown alkene											11 J
Unknown cyclopentane											
Ethane, 1,1,2-Trichlorotrifl											
Furan, Tetrahydro											
Cyclohexane, 1,1,3-Trimethyl											
Benzene, -ethyl-methyl-											

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB11		SB11		SB11		SB12	SB12	SB14		SB14	
Sample Interval	0-5'		0-5'		5-7.5'		0-5'	5-8.1'	5-10'		10-12.1'	
IEPA Sample No.	LOSB11AS		LOSB11AD		LOSB11BS		LOSB12AS	LOSB12BS	LOSB14AS		LOSB14BS	
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1	1
Date sample collected	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/13/92	2/13/92	2/11/92	2/11/92	2/11/92	2/11/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Chloromethane	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 UJ	12 UJ	12 UJ	12 U
Bromoethane	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 UJ	12 UJ	12 U
Vinyl Chloride	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 UJ	12 UJ	12 UJ	12 U
Chloroethane	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 UJ	1300 U	12 U	12 UJ	12 UJ	12 U
Methylene Chloride	27 UJ	15 UJ	42 U	31 UJ	33 U	20 UJ	1600 UJ	1300 U	12 U	4 J	12 UJ	12
Acetone	22 UJ	13 UJ	110 U	97 UJ	71 U	58 UJ	1600 UJ	1300 UJ	12 UJ	36 J	12 UJ	31 J
Carbon Disulfide	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 UJ	1300 UJ	12 U	12 UJ	12 UJ	12 U
1,1-Dichloroethene	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 UJ	12 UJ	12 U
1,1-Dichloroethane	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 UJ	12 UJ	12 U
1,2-Dichloroethene (total)	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 UJ	12 UJ	12 U
Chloroform	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	6 J	12 UJ	12 U
1,2-Dichloroethane	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 UJ	12 UJ	12 U
2-Butanone	13 U	13 U	13 R	13 U	13 U	13 U	1600 UJ	1300 UJ	12 UJ	12 R	12 R	12
1,1,1-Trichloroethane	8 J	8 J	8 J	7 J	13 U	13 UJ	1600 U	1300 U	12 U	7 J	12 UJ	12 U
Carbon Tetrachloride	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 UJ	12 U	12 UJ	12 U
Bromodichloromethane	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 U	12 UJ	12 U
1,2-Dichloropropane	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 U	12 UJ	12 U
cis-1,3-Dichloropropene	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 U	12 UJ	12 U
Trichloroethene	6 J	6 J	6 J	6 J	13 U	13 UJ	1600 U	1300 U	12 U	12 U	12 UJ	12 U
Dibromochloromethane	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 U	12 UJ	12 U
1,1,2-Trichloroethane	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 U	12 UJ	12 U
Benzene	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 U	9 J	9 J
trans-1,3-Dichloropropene	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 U	12 UJ	12 U
Bromoform	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 U	12 UJ	12 U
4-Methyl-2-Pentanone	13 U	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 UJ	1300 UJ	12 UJ	12 UJ	12 UJ	12 U
2-Hexanone	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 UJ	1300 UJ	12 UJ	12 UJ	12 UJ	12 UJ
Tetrachloroethene	9 J	9 J	23 J	18 J	13 U	13 UJ	1600 U	1300 U	12 U	12 UJ	12 UJ	12 UJ
1,1,2,2-Tetrachloroethane	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 UJ	12 UJ	12 UJ
Toluene	16 J	16 J	44 J	39 J	19 J	17 J	1600 U	10000	12 U	12 UJ	12 UJ	12 UJ
Chlorobenzene	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 UJ	12 UJ	12 UJ
Ethyl Benzene	13 UJ	13 UJ	29 J	22 J	8 J	9 J	820 J	11000	12 U	12 UJ	12 UJ	12 UJ
Styrene	13 UJ	13 UJ	13 U	13 UJ	13 U	13 UJ	1600 U	1300 U	12 U	12 UJ	12 UJ	12 UJ
Xylenes (total)	13 UJ	13 UJ	120 J	120	19 J	17 J	4100	42000	12 U	12 UJ	12 UJ	12 UJ

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB11		SB11		SB11		SB12	SB12	SB14		SB14	
Sample Interval	0-5'		0-5'		5-7.5'		0-5'	5-8.1'	5-10'		10-12.1'	
IEPA Sample No.	LOSB11AS		LOSB11AD		LOSB11BS		LOSB12AS	LOSB12BS	LOSB14AS		LOSB14BS	
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1	1
Date sample collected	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/13/92	2/13/92	2/11/92	2/11/92	2/11/92	2/11/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs												
Unknown	18 J	8 J	67 J	48 J	365 J	74 J		24780 J	36000 J	68 J	23 J	48 J
Ethane, 1,1,2-Trichloro-1,2,		10 R		12 R		24 R				14 NJ		64 R
Unknown aromatic									12000 J			
Unknown alkane												
Hexane, 2-methyl-												
.alpha.-Pinene												
Pentane, 2,3-Dimethyl												
Methane, Dichlorodifluoro-												
Unknown cyclohexane			22 J									
Unknown cycloalkane			32 J		11 J							
Methane, Trichlorofluoro-												
Unknown alkene												
Unknown cyclopentane					23 J							
Ethane, 1,1,2-Trichlorotrifl												
Furan, Tetrahydro												
Cyclohexane, 1,1,3-Trimethyl												
Benzene, -ethyl-methyl-												

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB19	SB19		SB19	SB22	SB22	SB22	SB22
Sample Interval	5-10'	5-10'		10-11.5'	0-5'	5-10'	5-10'	10-15'
IEPA Sample No.	LOSB19ASRE	LOSB19AD		LOSB19BSRE	LOSB22ASRE	LOSB22BS	LOSB22BDRE	LOSB22CS
Dilution Factor	5	5	5	1	1	1	1	1
Date sample collected	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Chloromethane	74 U	69 UJ	69 U	11 U	12 UJ	13 UJ	13 U	13 UJ
Bromoethane	74 U	69 U	69 U	11 U	12 U	13 U	13 U	13 U
Vinyl Chloride	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
Chloroethane	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
Methylene Chloride	74 U	69 U	69 U	11 U	33 U	24 U	15 U	14 U
Acetone	280 UJ	200 UJ	610 UJ	52 UJ	96 J	47 UJ	72 UJ	47 UJ
Carbon Disulfide	74 UJ	69 U	69 UJ	11 UJ	12 UJ	13 U	13 UJ	13 U
1,1-Dichloroethene	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
1,1-Dichloroethane	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
1,2-Dichloroethene (total)	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
Chloroform	74 U	69 U	69 U	11 U	12 UJ	3 J	13 U	13 U
1,2-Dichloroethane	74 U	69 UJ	69 U	11 U	12 UJ	13 UJ	13 U	13 UJ
2-Butanone	74 R	69 R	69 R	11 R	12 UJ	13 R	13 R	13 R
1,1,1-Trichloroethane	74 U	120	110 J	2 J	12 UJ	5 J	13 U	5 J
Carbon Tetrachloride	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
Bromodichloromethane	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
1,2-Dichloropropane	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
cis-1,3-Dichloropropene	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
Trichloroethene	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
Dibromochloromethane	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
1,1,2-Trichloroethane	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
Benzene	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	4 J
trans-1,3-Dichloropropene	74 U	69 U	69 U	11 U	12 UJ	13 U	13 U	13 U
Bromoform	74 UJ	69 UJ	69 UJ	11 UJ	12 UJ	13 UJ	13 UJ	13 UJ
4-Methyl-2-Pentanone	74 UJ	69 UJ	69 UJ	11 UJ	12 UJ	13 UJ	13 UJ	13 UJ
2-Hexanone	74 UJ	69 UJ	69 UJ	11 UJ	12 UJ	13 UJ	13 UJ	13 UJ
Tetrachloroethene	74 U	18 J	69 UJ	11 U	12 UJ	13 U	13 U	13 U
1,1,2,2-Tetrachloroethane	74 UJ	69 UJ	69 UJ	11 UJ	12 UJ	13 U	13 UJ	13 U
Toluene	74 U	69 UJ	69 UJ	11 U	18 J	6 J	13 U	13 U
Chlorobenzene	74 U	69 UJ	69 UJ	11 U	12 UJ	13 U	13 U	13 U
Ethyl Benzene	74 U	100 J	75 J	11 U	14 J	13 U	13 U	13 U
Styrene	74 U	69 UJ	69 U	11 U	12 UJ	13 U	13 U	13 U
Xylenes (total)	330	920 J	830 J	11 U	100 J	10 J	13 U	13 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB19	SB19		SB19	SB22	SB22	SB22	SB22
Sample Interval	5-10'	5-10'		10-11.5'	0-5'	5-10'	5-10'	10-15'
IEPA Sample No.	LOSB19ASRE	LOSB19AD		LOSB19BSRE	LOSB22ASRE	LOSB22BS	LOSB22BDRE	LOSB22CS
Dilution Factor	5	5	5	1	1	1	1	1
Date sample collected	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs								
Unknown	5100 J	1757 J	1289 J		11 J	30 J	93 J	
Ethane, 1,1,2-Trichloro-1,2,								
Unknown aromatic								
Unknown alkane	1100 J	1290 J	1210 J					296 J
Hexane, 2-methyl-	54 NJ							
.alpha.-Pinene	2500 NJ							
Pentane, 2,3-Dimethyl		180 NJ						
Methane, Dichlorodifluoro-								
Unknown cyclohexane								
Unknown cycloalkane								
Methane, Trichlorofluoro-								
Unknown alkene								
Unknown cyclopentane								
Ethane, 1,1,2-Trichlorotrifl								
Furan, Tetrahydro								
Cyclohexane, 1,1,3-Trimethyl								
Benzene, -ethyl-methyl-								

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB203		SB04	SB08	SB12	SB19	TRIP BLANK
Sample Interval	N/A		N/A	N/A	N/A	N/A	N/A
IEPA Sample No.	LOSB203BR		LOSB04BR	LOSB08AR	LOSB12BR	LOSB19BR	TB/LAB
Dilution Factor	1	1	1	1	1	1	1
Date sample collected	2/11/92	2/11/92	2/14/92	2/14/92	2/13/92	2/13/92	2/10/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Chloromethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Bromoethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Chloroform	3 J	3 J	5 J	5 J	3 J	2 J	10 U
1,2-Dichloroethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 UJ	10 UJ	10 U	10 U	10 UJ	10 UJ	10 U
1,1,1-Trichloroethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Toluene	10 UJ	10 UJ	3 J	10 U	10 U	10 U	10 U
Chlorobenzene	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U
Ethyl Benzene	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U
Styrene	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U
Xylenes (total)	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB203		SB04	SB08	SB12	SB19	TRIP BLANK
Sample Interval	N/A		N/A	N/A	N/A	N/A	N/A
IEPA Sample No.	LOSB203BR		LOSB04BR	LOSB08AR	LOSB12BR	LOSB19BR	TB/LAB
Dilution Factor	1	1	1	1	1	1	1
Date sample collected	2/11/92	2/11/92	2/14/92	2/14/92	2/13/92	2/13/92	2/10/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs							
Unknown		20 J			6 J	12 J	110
Ethane, 1,1,2-Trichloro-1,2,	26 NJ				11 J	32 NJ	
Unknown aromatic							
Unknown alkane							
Hexane, 2-methyl-							
.alpha.-Pinene							
Pentane, 2,3-Dimethyl							
Methane, Dichlorodifluoro-							
Unknown cyclohexane							
Unknown cycloalkane							
Methane, Trichlorofluoro-							
Unknown alkene							
Unknown cyclopentane							
Ethane, 1,1,2-Trichlorotrifl							
Furan, Tetrahydro							
Cyclohexane, 1,1,3-Trimethyl							
Benzene, -ethyl-methyl-							

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK
Sample Interval	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IEPA Sample No.	TB	TB/S'FIELD	TRIP BLK1	TRIP BLK2	TRIP BLK3	TRIP BLK4	TRIP BLK1	TRIPBLK2
Dilution Factor	1	1	1	1	1	1	1	1
Date sample collected	2/10/92	2/10/92	2/11/92	2/11/92	2/13/92	2/13/92	2/14/92	2/14/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Chloromethane	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Bromoethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	10 U	8 J	10 U	10 U	6 J	8 J
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	3 J	10 U	10 U	2 J	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	11 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethyl Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK
Sample Interval	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IEPA Sample No.	TB	TB/S'FIELD	TRIP BLK1	TRIP BLK2	TRIP BLK3	TRIP BLK4	TRIP BLK1	TRIPBLK2
Dilution Factor	1	1	1	1	1	1	1	1
Date sample collected	2/10/92	2/10/92	2/11/92	2/11/92	2/13/92	2/13/92	2/14/92	2/14/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs								
Unknown				6 J	61 J			61
Ethane, 1,1,2-Trichloro-1,2,			9 NJ		8 NJ	12 NJ		
Unknown aromatic								
Unknown alkane								
Hexane, 2-methyl-								
.alpha.-Pinene								
Pentane, 2,3-Dimethyl								
Methane, Dichlorodifluoro-					11 NJ	7 NJ		
Unknown cyclohexane								
Unknown cycloalkane								
Methane, Trichlorofluoro-								
Unknown alkene								
Unknown cyclopentane								
Ethane, 1,1,2-Trichlorotrifl								
Furan, Tetrahydro								
Cyclohexane, 1,1,3-Trimethyl								
Benzene, -ethyl-methyl-								

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB213	SB214		SB215
Sample Interval	N/A	N/A		N/A
IEPA Sample No.	LOSB213AS(BG)	LOSB214AS(BG)		LOSB215AS(BG)
Dilution Factor	1	1	1	1
Date sample collected	2/14/92	2/14/92	2/14/92	2/15/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Chloromethane	12 U	12 U	12 U	11 U
Bromoethane	12 U	12 U	12 U	11 U
Vinyl Chloride	12 U	12 U	12 U	11 U
Chloroethane	12 U	12 U	12 U	11 U
Methylene Chloride	12 U	12 U	12 U	11 U
Acetone	23 U	12 U	12 U	11 U
Carbon Disulfide	12 U	12 U	12 U	11 U
1,1-Dichloroethene	12 U	12 U	12 U	11 U
1,1-Dichloroethane	12 U	12 U	12 U	11 U
1,2-Dichloroethene (total)	12 U	12 U	12 U	11 U
Chloroform	12 U	12 U	12 U	11 U
1,2-Dichloroethane	12 U	12 U	12 U	11 U
2-Butanone	12 U	12 U	12 U	11 U
1,1,1-Trichloroethane	5 J	12 U	12 U	11 U
Carbon Tetrachloride	12 U	12 U	12 U	11 U
Bromodichloromethane	12 U	12 U	12 U	11 U
1,2-Dichloropropane	12 U	12 U	12 U	11 U
cis-1,3-Dichloropropene	12 U	12 U	12 U	11 U
Trichloroethene	12 U	12 U	12 U	11 U
Dibromochloromethane	12 U	12 U	12 U	11 U
1,1,2-Trichloroethane	12 U	12 U	12 U	11 U
Benzene	12 U	12 U	12 U	11 U
trans-1,3-Dichloropropene	12 U	12 U	12 U	11 U
Bromoform	12 U	12 U	12 U	11 U
4-Methyl-2-Pentanone	12 U	12 U	12 U	11 U
2-Hexanone	12 U	12 UJ	12 UJ	11 UJ
Tetrachloroethene	12 U	12 UJ	12 UJ	11 UJ
1,1,2,2-Tetrachloroethane	12 U	12 UJ	12 UJ	11 UJ
Toluene	12 U	12 UJ	12 UJ	11 UJ
Chlorobenzene	12 U	12 UJ	12 UJ	11 UJ
Ethyl Benzene	12 U	12 UJ	12 UJ	11 UJ
Styrene	12 U	12 UJ	12 UJ	11 UJ
Xylenes (total)	12 U	12 UJ	12 UJ	11 UJ

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB213	SB214		SB215
Sample Interval	N/A	N/A		N/A
IEPA Sample No.	LOSB213AS(BG)	LOSB214AS(BG)		LOSB215AS(BG)
Dilution Factor	1	1	1	1
Date sample collected	2/14/92	2/14/92	2/14/92	2/15/92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs				
Unknown		12 J		
Ethane, 1,1,2-Trichloro-1,2,			17 R	
Unknown aromatic				
Unknown alkane				
Hexane, 2-methyl-				
.alpha.-Pinene				
Pentane, 2,3-Dimethyl				
Methane, Dichlorodifluoro-				
Unknown cyclohexane				
Unknown cycloalkane				
Methane, Trichlorofluoro-				
Unknown alkene				
Unknown cyclopentane				
Ethane, 1,1,2-Trichlorotrifl		12 R		
Furan, Tetrahydro				
Cyclohexane, 1,1,3-Trimethyl				
Benzene, -ethyl-methyl-				

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB201	SB201	SB202	SB202	SB203	SB203	SB204	SB204
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'	3-5'	0-3'	3-5'
IEPA Sample No.	LOSB201AS	LOSB201BS	LOSB202AS	LOSB202BS	LOSB203AS	LOSB203BS	LOSB204AS	LOSB204BS
Dilution Factor	5	5	5	1	1	1	1	1
Date Collected	2-10-92	2-10-92	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-11-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Phenol	1900 U	1900 U	2700	360 U	370 U	400 U	410 U	460 U
bis(2-Chloroethyl)ether	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
2-Chlorophenol	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
1,3-Dichlorobenzene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
1,4-Dichlorobenzene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
1,2-Dichlorobenzene	1900 U	1900 U	890 J	360 U	370 U	400 U	410 U	460 U
2-Methylphenol	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
2,2'-oxybis(1-Chloropropane)	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
4-Methylphenol	1900 U	1900 U	3100	360 U	370 U	400 U	410 U	460 U
N-Nitroso-di-n-propylamine	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Hexachloroethane	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Nitrobenzene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Isophorene	1900 U	1900 U	3500	360 U	370 U	400 U	410 U	460 U
2-Nitrophenol	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
2,4-Dimethylphenol	1900 U	1900 U	570 J	360 U	370 U	400 U	410 U	460 U
bis(2-Chloroethoxy)methane	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
2,4-Dichlorophenol	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
1,2,4-Trichlorobenzene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Napthalene	1900 U	630 J	2100	360 U	370 U	400 U	410 U	460 U
4-Chloroaniline	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Hexachlorobutadiene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
4-Chloro-3-methylphenol	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
2-Methylnaphthalene	1900 U	600 J	2100	360 U	370 U	400 U	410 U	460 U
Hexachlorocyclopentadiene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
2,4,6-Trichlorophenol	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
2,4,5-Trichlorophenol	4700 U	4600 U	4400 U	880 U	900 U	960 U	1000 U	1100 U
2-Chloronaphthalene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
2-Nitroaniline	4700 U	4600 U	4400 U	880 U	900 U	960 U	1000 U	1100 U
Dimethylphthalate	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Acenaphthylene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
2,6-Dinitrotoluene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
3-Nitroaniline	4700 U	4600 U	4400 U	880 U	900 U	960 U	1000 U	1100 U
Acenaphthene	1900 U	1100 J	1800 U	61 J	370 U	56 J	410 U	460 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB201	SB201	SB202	SB202	SB203	SB203	SB204	SB204
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'	3-5'	0-3'	3-5'
IEPA Sample No.	LOSB201AS	LOSB201BS	LOSB202AS	LOSB202BS	LOSB203AS	LOSB203BS	LOSB204AS	LOSB204BS
Dilution Factor	5	5	5	1	1	1	1	1
Date Collected	2-10-92	2-10-92	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-11-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
2,4-Dinitrophenol	4700 U	4600 U	4400 U	880 U	900 U	960 U	1000 U	1100 U
4-Nitrophenol	4700 U	4600 U	4400 U	880 U	900 U	960 UJ	1000 U	1100 U
Dibenzofuran	1900 U	830 J	1800 U	360 U	370 U	44 J	410 U	460 U
2,4-Dinitrotoluene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Diethylphthalate	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
4-Chlorophenyl-phenylether	19000 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Fluorene	1900 U	1400 J	1800 U	360 U	370 U	81 J	410 U	460 U
4-Nitroaniline	4700 U	4600 U	4400 U	880 U	900 U	960 U	1000 U	1100 U
4,6-Dinitro-2-methylphenol	4700 U	4600 U	4400 U	880 U	900 U	960 U	1000 U	1100 U
N-Nitrosodiphenylamine (1)	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
4-Bromophenyl-phenylether	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Hexachlorobenzene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Pentachlorophenol	4700 U	4600 U	4400 U	880 U	900 U	960 U	1000 U	1100 U
Phenanthrene	2600	7300	1400 J	690	410	940	410 U	460 U
Anthracene	670 J	1700 J	370 J	360 U	110 J	160 J	410 U	460 U
Carbazole	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Di-n-butylphthalate	1900 U	1900 U	420 J	280 J	370 U	400 U	410 U	460 U
Fluoranthene	3800	7200	780 J	910	510	1800	410 U	460 U
Pyrene	4100	6400	1100 J	950	350 J	1500	410 U	460 U
Butybenzylphthalate	1900 U	1900 U	3200 J	1200	370 U	400 U	410 U	460 U
3,3'-Dichlorobenzidine	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Benzo(a)anthracene	1800 J	2700	1800 U	460	200 J	690	410 U	460 U
Chrysene	1800 J	2800	1100 J	350 J	220 J	580	410 U	460 U
bis(2-Ethylhexyl)phthalate	1200 U	2400	7400	900 U	370 U	400 U	410 U	460 U
Di-n-octylphthalate	1900 U	1900 U	1800 U	360 U	370 U	400 UJ	410 U	460 U
Benzo(b)fluoranthene	3300	4700	1800 U	920	120 J	1500	410 U	460 U
Benzo(k)fluoranthene	1900 U	1900 U	1800 U	360 U	180 J	400 U	410 U	460 U
Benzo(a)pyrene	1700 J	2300	1800 U	460	370 U	480	410 U	460 U
Indeno(1,2,3-cd)pyrene	1900 U	1900 U	1800 U	280 J	180 J	400 U	410 U	460 U
Dibenz(a,h)anthracene	1900 U	1900 U	1800 U	360 U	370 U	400 U	410 U	460 U
Benzo(g,h,i)perylene	1900 U	1900 U	1800 U	260 J	370 U	400 UJ	410 U	460 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB201	SB201	SB202	SB202	SB203	SB203	SB204	SB204
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'	3-5'	0-3'	3-5'
IEPA Sample No.	LOSB201AS	LOSB201BS	LOSB202AS	LOSB202BS	LOSB203AS	LOSB203BS	LOSB204AS	LOSB204BS
Dilution Factor	5	5	5	1	1	1	1	1
Date Collected	2-10-92	2-10-92	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-11-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs								
Unknown	20850 J	22800 J	42530 J	12286 J	6820 J	18340 J	15280 J	16420 J
Unknown alkene								
Phenol, Bis(1,1-Dimethylethy							300 R	
Unknown Phthalate						110 J	130 J	
1h-Indene, 1-Ethylidene								
Naphthalalene, Dimethyl-		1100 J						
Naphthalane, 1,4,6-Trimethyl								
Naphthalene, 1-Methyl-		2000 NJ	2200 NJ					
Naphthalane, 1-Ethyl-								
Naphthalene, Trimethyl-								
Unkown alkane	9850 J	30600 J		2416 J	3150 J	460 J	90 J	2270 J
Unknown PAH						110 J		
1-Propene, Trichloro-								
Unknown aromatic								
Pentadecane, 2,6,10,14-Tetra								
Decane								
Undecane								
Tridecane								
Heptadecane								
Nonanoic acid								
Hexadecanoic acid								690 R
Benzene, Tetramethyl-		1100 J						
Bicyclohexyl, 4-Phenyl			2000 NJ					
Bezene, 1,1' - oxybis-			7400 NJ					
Phenol, 4-(1-Methyl-1-Phenyl			1200 NJ					
1,1'-Biphenyl, Methyl-			1300 J					
1,1':2',1''-Terphenyl			4100 NJ					
Phosphoric acid			9000 NJ					
Pentene, Dimethyl-								
Unknown adipate								

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB205	SB205	SB206	SB207	SB207	SB208	SB208	SB208
Sample Interval	0-3'	3-5'	0-3'	0-3'	3-5'	0-3'	0-3'	3-5'
IEPA Sample No.	LOSB205AS	LOSB205BS	LOSB206AS	LOSB207AS	LOSB207BS	LOSB208AS	LOSB208AD	LOSB208BS
Dilution Factor	1	1	1	1	1	1	1	1
Date Collected	2-10-92	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-11-92	2-11-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Phenol	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
bis(2-Chloroethyl)ether	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2-Chlorophenol	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
1,3-Dichlorobenzene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
1,4-Dichlorobenzene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
1,2-Dichlorobenzene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2-Methylphenol	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2,2'-oxybis(1-Chloropropane)	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
4-Methylphenol	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
N-Nitroso-di-n-propylamine	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Hexachloroethane	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Nitrobenzene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Isophorene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2-Nitrophenol	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2,4-Dimethylphenol	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
bis(2-Chloroethoxy)methane	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2,4-Dichlorophenol	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
1,2,4-Trichlorobenzene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Napthalene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
4-Chloroaniline	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Hexachlorobutadiene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
4-Chloro-3-methylphenol	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2-Methylnaphthalene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Hexachlorocyclopentadiene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2,4,6-Trichlorophenol	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2,4,5-Trichlorophenol	920 U	1000 U	940 U	900 U	960 U	890 U	880 U	910 U
2-Chloronaphthalene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2-Nitroaniline	920 U	1000 U	940 U	900 U	960 U	890 U	880 U	910 U
Dimethylphthalate	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Acenaphthylene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2,6-Dinitrotoluene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
3-Nitroaniline	920 U	1000 U	940 U	900 U	960 U	890 U	880 U	910 U
Acenaphthene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB205	SB205	SB206	SB207	SB207	SB208	SB208	SB208
Sample Interval	0-3'	3-5'	0-3'	0-3'	3-5'	0-3'	0-3'	3-5'
IEPA Sample No.	LOSB205AS	LOSB205BS	LOSB206AS	LOSB207AS	LOSB207BS	LOSB208AS	LOSB208AD	LOSB208BS
Dilution Factor	1	1	1	1	1	1	1	1
Date Collected	2-10-92	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-11-92	2-11-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
2,4-Dinitrophenol	920 U	1000 U	940 U	900 U	960 U	890 U	880 U	910 U
4-Nitrophenol	920 U	1000 U	940 U	900 U	960 U	890 U	880 U	910 U
Dibenzofuran	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
2,4-Dinitrotoluene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Diethylphthalate	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
4-Chlorophenyl-phenylether	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Fluorene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
4-nitroaniline	920 U	1000 U	940 U	900 U	960 U	890 U	880 U	910 U
4,6-Dinitro-2-methylphenol	920 U	1000 U	940 U	900 U	960 U	370 U	360 U	380 U
N-Nitrosodiphenylamine (1)	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
4-Bromophenyl-phenylether	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Hexachlorobenzene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Pentachlorophenol	920 U	1000 U	940 U	900 U	960 U	890 U	880 UJ	910 U
Phenanthrene	380 U	750	390 U	370 U	400 U	370 U	360 U	380 U
Anthracene	380 U	160 J	390 U	370 U	400 U	370 U	360 U	380 U
Carbazole	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Di-n-butylphthalate	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Fluoranthene	180 J	880	390 U	170 J	400 U	370 U	360 U	380 U
Pyrene	140 J	700	390 U	160 J	400 U	62 J	360 U	380 U
Butybenzylphthalate	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
3,3'-Dichlorobenzidine	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Benzo(a)anthracene	380 U	420	390 U	370 U	400 U	370 U	360 U	380 U
Chrysene	380 U	400 J	390 U	370 U	400 U	370 U	360 U	380 U
bis(2-Ethylhexyl)phthalate	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Di-n-octylphthalate	380 U	410 U	390 U	370 U	400 U	370 U	360 UJ	380 U
Benzo(b)fluoranthene	380 U	540	390 U	370 U	400 U	370 U	360 U	380 U
Benzo(k)fluoranthene	380 U	200 J	390 U	370 U	400 U	370 U	360 U	380 U
Benzo(a)pyrene	380 U	350 J	390 U	370 U	400 U	370 U	360 U	380 U
Indeno(1,2,3-cd)pyrene	380 U	260 J	390 U	370 U	400 U	370 U	360 U	380 U
Dibenz(a,h)anthracene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U
Benzo(g,h,i)perylene	380 U	410 U	390 U	370 U	400 U	370 U	360 U	380 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB205	SB205	SB206	SB207	SB207	SB208	SB208	SB208
Sample Interval	0-3'	3-5'	0-3'	0-3'	3-5'	0-3'	0-3'	3-5'
IEPA Sample No.	LOSB205AS	LOSB205BS	LOSB206AS	LOSB207AS	LOSB207BS	LOSB208AS	LOSB208AD	LOSB208BS
Dilution Factor	1	1	1	1	1	1	1	1
Date Collected	2-10-92	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-11-92	2-11-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs								
Unknown	16632 J	24060 J	21560 J	18013 J	10320 J	17330 J	11230 J	15840 J
Unknown alkene							86 J	
Phenol, Bis(1,1-Dimethylethy			100 R		400 R		180 J	
Unknown Phthalate	190 J			110 J	300 J	140 J	100 J	210 J
1h-Indene, 1-Ethylidene								
Naphthalalene, Dimethyl-								
Naphthalane, 1,4,6-Trimethyl								
Naphthalene, 1-Methyl-								
Naphthalane, 1-Ethyl-								
Naphthalene, Trimethyl-								
Unkown alkane	841 J	5780 J	84 J	380 J		240 J		
Unknown PAH								
1-Propene, Trichloro-								
Unknown aromatic								
Pentadecane, 2,6,10,14-Tetra								
Decane								
Undecane								
Tridecane								
Heptadecane								
Nonanoic acid								
Hexadecanoic acid					530 R			
Benzene, Tetramethyl-								
Bicyclohexyl, 4-Phenyl								
Bezene, 1,1' - oxybis-								
Phenol, 4-(1-Methyl-1-Phenyl								
1,1'-Biphenyl, Methyl-								
1,1':2',1''-Terphenyl								
Phosphoric acid								
Pentene, Dimethyl-					92 J			
Unknown adipate								

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB209	SB209	SB211	SB211	SB212	SB04	SB04	SB04
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'	0-5'	0-5'	5-8'
IEPA Sample No.	LOSB209AS	LOSB209BS	LOSB211AS	LOSB211BS	LOSB212AS	LOSB04AS	LOSB04AD	LOSB204BS
Dilution Factor	1	1	1	1	1	1	1	1
Date Collected	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-14-92	2-14-92	2-14-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Phenol	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
bis(2-Chloroethyl)ether	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2-Chlorophenol	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
1,3-Dichlorobenzene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
1,4-Dichlorobenzene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
1,2-Dichlorobenzene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2-Methylphenol	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2,2'-oxybis(1-Chloropropane)	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
4-Methylphenol	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
N-Nitroso-di-n-propylamine	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Hexachloroethane	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Nitrobenzene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Isophorene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2-Nitrophenol	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2,4-Dimethylphenol	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
bis(2-Chloroethoxy)methane	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2,4-Dichlorophenol	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
1,2,4-Trichlorobenzene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Napthalene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
4-Chloroaniline	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Hexachlorobutadiene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
4-Chloro-3-methylphenol	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2-Methylnaphthalene	370 U	380 U	200 J	370 U	380 U	400 J	53 J	470 U
Hexachlorocyclopentadiene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2,4,6-Trichlorophenol	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2,4,5-Trichlorophenol	890 U	910 U	900 U	900 U	930 U	1100 U	980 U	1100 U
2-Chloronaphthalene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2-Nitroaniline	890 U	910 U	900 U	900 U	930 U	1100 U	980 U	1100 U
Dimethylphthalate	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Acenaphthylene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2,6-Dinitrotoluene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
3-Nitroaniline	890 U	910 U	900 U	900 U	930 U	1100 U	980 U	1100 U
Acenaphthene	370 U	380 U	150 J	370 U	380 U	440 U	400 U	470 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB209	SB209	SB211	SB211	SB212	SB04	SB04	SB04
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'	0-5'	0-5'	5-8'
IEPA Sample No.	LOSB209AS	LOSB209BS	LOSB211AS	LOSB211BS	LOSB212AS	LOSB04AS	LOSB04AD	LOSB204BS
Dilution Factor	1	1	1	1	1	1	1	1
Date Collected	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-14-92	2-14-92	2-14-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
2,4-Dinitrophenol	890 U	910 U	900 U	900 U	930 U	1100 U	980 U	1100 U
4-Nitrophenol	890 U	910 U	900 U	900 U	930 U	1100 U	980 U	1100 U
Dibenzofuran	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
2,4-Dinitrotoluene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Diethylphthalate	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
4-Chlorophenyl-phenylether	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Fluorene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
4-nitroaniline	890 U	910 U	900 U	900 U	930 U	1100 U	980 U	1100 U
4,6-Dinitro-2-methylphenol	890 U	910 U	900 U	900 U	930 U	1100 U	980 U	1100 U
N-Nitrosodiphenylamine (1)	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
4-Bromophenyl-phenylether	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Hexachlorobenzene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Pentachlorophenol	890 U	910 U	900 UJ	900 UJ	930 UJ	1100 U	980 U	1100 U
Phenanthrene	370 U	380 U	1700	370 U	380 U	450	160 J	200 J
Anthracene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Carbazole	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Di-n-butylphthalate	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Fluoranthene	370 U	380 U	370 U	370 U	380 U	380 J	160 J	380 J
Pyrene	370 U	380 U	370 UJ	370 U	380 U	380 J	160 J	360 J
Butybenzylphthalate	370 U	380 U	370 UJ	370 U	380 U	440 U	400 U	470 U
3,3'-Dichlorobenzidine	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Benzo(a)anthracene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	180 J
Chrysene	370 U	380 U	370 U	370 U	380 U	160 J	67 J	180 J
bis(2-Ethylhexyl)phthalate	370 U	380 U	370 UJ	370 U	380 U	800 U	520 U	480 U
Di-n-octylphthalate	370 U	380 U	370 UJ	370 UJ	380 UJ	440 U	400 U	470 U
Benzo(b)fluoranthene	370 U	380 U	370 U	370 U	380 U	360 J	400 U	320 J
Benzo(k)fluoranthene	370 U	380 U	370 UJ	370 U	380 U	440 U	400 U	160 J
Benzo(a)pyrene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Indeno(1,2,3-cd)pyrene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Dibenz(a,h)anthracene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
Benzo(g,h,i)perylene	370 U	380 U	370 U	370 U	380 U	440 U	400 U	470 U
			370 U					

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB209	SB209	SB211	SB211	SB212	SB04	SB04	SB04
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'	0-5'	0-5'	5-8'
IEPA Sample No.	LOSB209AS	LOSB209BS	LOSB211AS	LOSB211BS	LOSB212AS	LOSB04AS	LOSB04AD	LOSB204BS
Dilution Factor	1	1	1	1	1	1	1	1
Date Collected	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-14-92	2-14-92	2-14-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs								
Unknown	21584 J	21275 J	20560 J	11780 J	J	20120 J	24150 J	21470 J
Unknown alkene								
Phenol, Bis(1,1-Dimethylethy				220 J				
Unknown Phthalate	160 J	140 J		110 J	93 J			
1h-Indene, 1-Ethylidene			630 NJ					
Naphthalalene, Dimethyl-			1320 J			600 J		
Naphthalane, 1,4,6-Trimethyl			540 NJ					
Naphthalene, 1-Methyl-						720 NJ		
Naphthalane, 1-Ethyl-								
Naphthalene, Trimethyl-			1470 J					
Unkown alkane	74 J		230 J		1092 J	13380 J	8180 J	4800 J
Unknown PAH								
1-Propene, Trichloro-								
Unknown aromatic								
Pentadecane, 2,6,10,14-Tetra								
Decane								
Undecane								
Tridecane								
Heptadecane						2300 NJ		
Nonanoic acid								
Hexadecanoic acid	1000 R	550 R						
Benzene, Tetramethyl-								
Bicyclohexyl, 4-Phenyl								
Bezene, 1,1' - oxybis-								
Phenol, 4-(1-Methyl-1-Phenyl								
1,1'-Biphenyl, Methyl-								
1,1':2',1''-Terphenyl								
Phosphoric acid								
Pentene, Dimethyl-								
Unknown adipate								

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB08	SB08	SB10	SB11	SB11	SB11	SB12	SB12
Sample Interval	0-5'	5-7.5'	0-5'	0-5'	0-5'	5-7.5'	0-5'	5-8.1'
IEPA Sample No.	LOSB08AS	LOSB08BS	LOSB10AS	LOSB11AS	LOSB11AD	LOSB11BS	LOSB12AS	LOSB12BS
Dilution Factor	1	1	1	1	1	1	1	20
Date Collected	2-14-92	2-14-92	2-14-92	2-14-92	2-14-92	2-14-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Phenol	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
bis(2-Chloroethyl)ether	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2-Chlorophenol	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
1,3-Dichlorobenzene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
1,4-Dichlorobenzene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
1,2-Dichlorobenzene	410 U	410 U	400 U	420 U	420 U	430 U	140 J	1900 J
2-Methylphenol	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2,2'-oxybis(1-Chloropropane)	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
4-Methylphenol	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
N-Nitroso-di-n-propylamine	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Hexachloroethane	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Nitrobenzene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Isophorene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2-Nitrophenol	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2,4-Dimethylphenol	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
bis(2-Chloroethoxy)methane	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2,4-Dichlorophenol	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
1,2,4-Trichlorobenzene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Napthalene	410 U	410 U	400 U	420 U	420 U	180 J	430 U	10000
4-Chloroaniline	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Hexachlorobutadiene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
4-Chloro-3-methylphenol	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2-Methylnaphthalene	410 U	410 U	400 U	71 J	72 J	140 J	1200	34000
Hexachlorocyclopentadiene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2,4,6-Trichlorophenol	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2,4,5-Trichlorophenol	1000 U	990 U	960 U	1000 U	1000 U	1000 U	1000 U	18000 U
2-Chloronaphthalene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2-Nitroaniline	1000 U	990 U	960 U	1000 U	1000 U	1000 U	1000 U	18000 U
Dimethylphthalate	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Acenaphthylene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2,6-Dinitrotoluene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
3-Nitroaniline	1000 U	990 U	960 U	1000 U	1000 U	1000 U	1000 U	18000 U
Acenaphthene	410 U	410 U	400 U	420 U	420 U	69 J	64 J	7200 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB08	SB08	SB10	SB11	SB11	SB11	SB12	SB12
Sample Interval	0-5'	5-7.5'	0-5'	0-5'	0-5'	5-7.5'	0-5'	5-8.1'
IEPA Sample No.	LOSB08AS	LOSB08BS	LOSB10AS	LOSB11AS	LOSB11AD	LOSB11BS	LOSB12AS	LOSB12BS
Dilution Factor	1	1	1	1	1	1	1	20
Date Collected	2-14-92	2-14-92	2-14-92	2-14-92	2-14-92	2-14-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
2,4-Dinitrophenol	1000 U	990 U	960 U	1000 U	1000 U	1000 U	1000 U	18000 UJ
4-Nitrophenol	1000 U	990 U	960 U	1000 U	1000 U	1000 U	1000 U	18000 UJ
Dibenzofuran	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
2,4-Dinitrotoluene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Diethylphthalate	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
4-Chlorophenyl-phenylether	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Fluorene	410 U	410 U	400 U	420 U	420 U	430 U	140 J	7200 U
4-nitroaniline	1000 U	990 U	960 U	1000 U	1000 U	1000 U	1000 U	18000 U
4,6-Dinitro-2-methylphenol	1000 U	990 U	960 U	1000 U	1000 U	1000 U	1000 U	18000 U
N-Nitrosodiphenylamine (1)	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
4-Bromophenyl-phenylether	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Hexachlorobenzene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Pentachlorophenol	1000 U	990 U	960 U	1000 U	1000 U	1000 U	1000 UJ	18000 U
Phenanthrene	410 U	410 U	400 U	240 J	230 J	270 J	370 J	5400 J
Anthracene	410 U	410 U	400 U	46 J	420 U	54 J	45 J	7200 U
Carbazole	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Di-n-butylphthalate	410 U	410 U	400 U	420 U	420 U	430 U	43 J	7200 U
Fluoranthene	410 U	410 U	89 J	310 J	200 J	250 J	210 J	7200 U
Pyrene	410 U	410 U	89 J	280 J	220 J	260 J	200 J	7200 U
Butybenzylphthalate	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
3,3'-Dichlorobenzidine	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Benzo(a)anthracene	410 U	410 U	400 U	420 U	77 J	430 U	430 U	7200 U
Chrysene	410 U	410 U	400 U	100 J	81 J	130 J	98 J	7200 U
bis(2-Ethylhexyl)phthalate	410 U	410 U	400 U	450 U	530 U	430 U	430 U	7200 U
Di-n-octylphthalate	410 U	410 U	400 U	420 U	420 U	430 U	430 UJ	7200 UJ
Benzo(b)fluoranthene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Benzo(k)fluoranthene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Benzo(a)pyrene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Indeno(1,2,3-cd)pyrene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Dibenz(a,h)anthracene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 U
Benzo(g,h,i)perylene	410 U	410 U	400 U	420 U	420 U	430 U	430 U	7200 UJ

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB08	SB08	SB10	SB11	SB11	SB11	SB12	SB12
Sample Interval	0-5'	5-7.5'	0-5'	0-5'	0-5'	5-7.5'	0-5'	5-8.1'
IEPA Sample No.	LOSB08AS	LOSB08BS	LOSB10AS	LOSB11AS	LOSB11AD	LOSB11BS	LOSB12AS	LOSB12BS
Dilution Factor	1	1	1	1	1	1	1	20
Date Collected	2-14-92	2-14-92	2-14-92	2-14-92	2-14-92	2-14-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs								
Unknown	15840 J	16110 J	21070 J	12610 J	20620 J	13980 J	13390 J	32000 J
Unknown alkene								
Phenol, Bis(1,1-Dimethylethy		440 J			500 J			
Unknown Phthalate		320 J	230 J					
1h-Indene, 1-Ethylidene								4600 NJ
Naphthalalene, Dimethyl-							2110 J	28000 J
Naphthalane, 1,4,6-Trimethyl								
Naphthalene, 1-Methyl-							660 NJ	
Naphthalane, 1-Ethyl-							530 NJ	
Naphthalene, Trimethyl-							610 J	15000 J
Unkown alkane	1480 J	493 J	460 J	9380 J	9010 J	10460 J	7530 J	283000 J
Unknown PAH								
1-Propene, Trichloro-								
Unknown aromatic							520 J	21000 J
Pentadecane, 2,6,10,14-Tetra							1700 NJ	
Decane								33000 NJ
Undecane								34000 NJ
Tridecane								11000 NJ
Heptadecane								
Nonanoic acid								
Hexadecanoic acid		280 NJ				410 NJ		
Benzene, Tetramethyl-								
Bicyclohexyl, 4-Phenyl								
Bezene, 1,1' - oxybis-								
Phenol, 4-(1-Methyl-1-Phenyl								
1,1'-Biphenyl, Methyl-								
1,1':2',1''-Terphenyl								
Phosphoric acid								
Pentene, Dimethyl-								
Unknown adipate								

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB14		SB14	SB19	SB19	SB19	SB22	SB22	SB22
Sample Interval	5-10'		10-12.1'	0-5'	0-5'	5-10'	0-5'	5-10'	5-10'
IEPA Sample No.	LOSB14AS		LOSB14BS	LOSB19AS	LOSB19AD	LOSB19BS	LOSB22AS	LOSB22BS	LOSB22BD
Dilution Factor	10	10	1	1	1	1	1	1	1
Date Collected	2-11-92	2-11-92	2-11-92	2-13-92	2-13-92	2-13-92	2-13-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Phenol	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
bis(2-Chloroethyl)ether	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2-Chlorophenol	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
1,3-Dichlorobenzene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
1,4-Dichlorobenzene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
1,2-Dichlorobenzene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2-Methylphenol	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2,2'-oxybis(1-Chloropropane)	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
4-Methylphenol	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
N-Nitroso-di-n-propylamine	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Hexachloroethane	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Nitrobenzene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Isophorene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2-Nitrophenol	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2,4-Dimethylphenol	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
bis(2-Chloroethoxy)methane	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2,4-Dichlorophenol	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
1,2,4-Trichlorobenzene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Napthalene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
4-Chloroaniline	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Hexachlorobutadiene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
4-Chloro-3-methylphenol	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2-Methylnaphthalene	400 J	420 J	390 U	290 J	250 J	370 U	73 J	430 U	70 J
Hexachlorocyclopentadiene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2,4,6-Trichlorophenol	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2,4,5-Trichlorophenol	9400 U	9400 U	950 U	1200 U	1100 U	900 U	960 U	1000 U	1000 U
2-Chloronaphthalene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2-Nitroaniline	9400 U	9400 U	950 U	1200 U	1100 U	900 U	960 U	1000 U	1000 U
Dimethylphthalate	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Acenaphthylene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2,6-Dinitrotoluene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
3-Nitroaniline	9400 U	9400 U	950 U	1200 U	1100 U	900 U	960 U	1000 U	1000 U
Acenaphthene	1200 J	1100 J	390 U	490 U	460 U	370 U	400 U	430 U	77 J

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB14		SB14	SB19	SB19	SB19	SB22	SB22	SB22
Sample Interval	5-10'		10-12.1'	0-5'	0-5'	5-10'	0-5'	5-10'	5-10'
IEPA Sample No.	LOSB14AS		LOSB14BS	LOSB19AS	LOSB19AD	LOSB19BS	LOSB22AS	LOSB22BS	LOSB22BD
Dilution Factor	10	10	1	1	1	1	1	1	1
Date Collected	2-11-92	2-11-92	2-11-92	2-13-92	2-13-92	2-13-92	2-13-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
2,4-Dinitrophenol	9400 U	9400 U	950 U	1200 U	1100 U	900 U	960 U	1000 U	1000 U
4-Nitrophenol	9400 UJ	9400 UJ	950 U	1200 U	1100 U	900 U	960 U	1000 U	1000 U
Dibenzofuran	850 J	820 J	390 U	490 U	460 U	370 U	400 U	430 U	430 U
2,4-Dinitrotoluene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Diethylphthalate	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
4-Chlorophenyl-phenylether	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Fluorene	1300 J	1400 J	390 U	490 U	460 U	370 U	400 U	430 U	81 J
4-nitroaniline	9400 U	9400 U	950 U	1200 U	1100 U	900 U	960 U	1000 U	1000 U
4,6-Dinitro-2-methylphenol	9400 U	9400 U	950 U	1200 U	1100 U	900 U	960 U	1000 U	1000 U
N-Nitrosodiphenylamine (1)	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
4-Bromophenyl-phenylether	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Hexachlorobenzene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Pentachlorophenol	9400 U	9400 U	950 U	1200 UJ	1100 UJ	900 UJ	960 UJ	1000 UJ	1000 UJ
Phenanthrene	9200	8900	390 U	460 J	190 J	370 U	190 J	120 J	450
Anthracene	2200 J	2200 J	390 U	490 U	460 U	370 U	31 J	430 U	94 J
Carbazole	430 J	430 J	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Di-n-butylphthalate	3900 U	3900 U	390 U	490 U	92 J	370 U	400 U	430 U	49 J
Fluoranthene	13000	12000	390 U	490 U	460 U	370 U	180 J	110 J	440
Pyrene	12000	12000	390 U	490 UJ	460 U	370 U	180 J	100 J	360 J
Butybenzylphthalate	3900 U	3900 U	390 U	490 UJ	460 U	370 U	400 UJ	430 U	430 UJ
3,3'-Dichlorobenzidine	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Benzo(a)anthracene	4900	4600	390 U	490 U	460 U	370 U	400 U	430 U	130 J
Chrysene	4200	4300	390 U	490 U	460 U	370 U	110 J	430 U	160 J
bis(2-Ethylhexyl)phthalate	3900 U	3900 U	390 U	710 UJ	460 U	370 U	400 U	430 U	430 UJ
Di-n-octylphthalate	3900 UJ	3900 UJ	390 U	490 UJ	460 UJ	370 UJ	400 UJ	430 UJ	430 UJ
Benzo(b)fluoranthene	6200 J	5500 J	390 U	490 U	460 U	370 U	400 U	430 U	340 J
Benzo(k)fluoranthene	2100 J	3900 J	390 U	490 UJ	460 U	370 U	400 U	430 U	430 UJ
Benzo(a)pyrene	4400 J	4400 J	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Indeno(1,2,3-cd)pyrene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Dibenz(a,h)anthracene	3900 U	3900 U	390 U	490 U	460 U	370 U	400 U	430 U	430 U
Benzo(g,h,i)perylene	3900 UJ	3900 UJ	390 U	490 U	460 U	370 U	400 U	430 U	430 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB14		SB14	SB19	SB19	SB19	SB22	SB22	SB22
Sample Interval	5-10'		10-12.1'	0-5'	0-5'	5-10'	0-5'	5-10'	5-10'
IEPA Sample No.	LOSB14AS		LOSB14BS	LOSB19AS	LOSB19AD	LOSB19BS	LOSB22AS	LOSB22BS	LOSB22BD
Dilution Factor	10	10	1	1	1	1	1	1	1
Date Collected	2-11-92	2-11-92	2-11-92	2-13-92	2-13-92	2-13-92	2-13-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs									
Unknown	46400 J	48500 J	11970 J	12020 J	16592 J	10140 J	16020 J	18200 J	17040 J
Unknown alkene									
Phenol, Bis(1,1-Dimethylethy						220 J			
Unknown Phthalate			99 J			110 J		150 J	
1h-Indene, 1-Ethylidene									420 NJ
Naphthalalene, Dimethyl-					1490 J				
Naphthalane, 1,4,6-Trimethyl									
Naphthalene, 1-Methyl-									
Naphthalane, 1-Ethyl-									
Naphthalene, Trimethyl-									
Unkown alkane		7000 J	170 J	460 J	8100 J	402 J	7050 J	1200 J	12680 J
Unknown PAH	1550 J	2600 J							
1-Propene, Trichloro-									
Unknown aromatic									
Pentadecane, 2,6,10,14-Tetra									
Decane									
Undecane									
Tridecane									
Heptadecane									
Nonanoic acid									
Hexadecanoic acid									
Benzene, Tetramethyl-									
Bicyclohexyl, 4-Phenyl									
Bezene, 1,1' - oxybis-									
Phenol, 4-(1-Methyl-1-Phenyl									
1,1'-Biphenyl, Methyl-									
1,1':2',1''-Terphenyl									
Phosphoric acid									
Pentene, Dimethyl-									
Unknown adipate									

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB22	SB04	SB08	SB203	SB12	SB19
Sample Interval	10-15'	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
IEPA Sample No.	LOSB22CS	LOSB04BR	LOSB08AR	LOSB203BR	LOSB12BR	LOSB19BR
Dilution Factor	1	1	1	1	1	1
Date Collected	2-13-92	2-14-92	2-14-92	1-11-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
Phenol	440 U	10 U	10 U	20 UJ	20 U	20 U
bis(2-Chloroethyl)ether	440 U	10 U	10 U	20 UJ	20 U	20 U
2-Chlorophenol	440 U	10 U	10 U	20 UJ	20 U	20 U
1,3-Dichlorobenzene	440 U	10 U	10 U	20 UJ	20 U	20 U
1,4-Dichlorobenzene	440 U	10 U	10 U	20 UJ	20 U	20 U
1,2-Dichlorobenzene	440 U	10 U	10 U	20 UJ	20 U	20 U
2-Methylphenol	440 U	10 U	10 U	20 UJ	20 U	20 U
2,2'-oxybis(1-Chloropropane)	440 U	10 U	10 U	20 UJ	20 U	20 U
4-Methylphenol	440 U	10 U	10 U	20 UJ	20 U	20 U
N-Nitroso-di-n-propylamine	440 U	10 U	10 U	20 UJ	20 U	20 U
Hexachloroethane	440 U	10 U	10 U	20 UJ	20 U	20 U
Nitrobenzene	440 U	10 U	10 U	20 UJ	20 U	20 U
Isophorene	440 U	10 U	10 U	20 UJ	20 U	20 U
2-Nitrophenol	440 U	10 U	10 U	20 UJ	20 U	20 U
2,4-Dimethylphenol	440 U	10 U	10 U	20 UJ	20 U	20 U
bis(2-Chloroethoxy)methane	440 U	10 U	10 U	20 UJ	20 U	20 U
2,4-Dichlorophenol	440 U	10 U	10 U	20 UJ	20 U	20 U
1,2,4-Trichlorobenzene	440 U	10 U	10 U	20 UJ	20 U	20 U
Napthalene	67 J	10 U	10 U	20 UJ	20 U	20 U
4-Chloroaniline	440 U	10 U	10 U	20 UJ	20 U	20 U
Hexachlorobutadiene	440 U	10 U	10 U	20 UJ	20 U	20 U
4-Chloro-3-methylphenol	440 U	10 U	10 U	20 UJ	20 U	20 U
2-Methylnaphthalene	440 U	10 U	10 U	20 UJ	20 U	20 U
Hexachlorocyclopentadiene	440 U	10 U	10 U	20 UJ	20 U	20 U
2,4,6-Trichlorophenol	440 U	10 U	10 U	20 UJ	20 U	20 U
2,4,5-Trichlorophenol	1100 U	25 U	25 U	50 UJ	50 U	50 U
2-Chloronaphthalene	440 U	10 U	10 U	20 UJ	20 U	20 U
2-Nitroaniline	1100 U	25 U	25 U	50 UJ	50 U	50 U
Dimethylphthalate	440 U	10 U	10 U	20 UJ	20 U	20 U
Acenaphthylene	440 U	10 U	10 U	20 UJ	20 U	20 U
2,6-Dinitrotoluene	440 U	10 U	10 U	20 UJ	20 U	20 U
3-Nitroaniline	1100 U	25 U	25 U	50 UJ	50 U	50 U
Acenaphthene	440 U	10 U	10 U	20 UJ	20 U	20 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB22	SB04	SB08	SB203	SB12	SB19
Sample Interval	10-15'	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
IEPA Sample No.	LOSB22CS	LOSB04BR	LOSB08AR	LOSB203BR	LOSB12BR	LOSB19BR
Dilution Factor	1	1	1	1	1	1
Date Collected	2-13-92	2-14-92	2-14-92	1-11-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
2,4-Dinitrophenol	1100 U	25 U	25 U	50 UJ	50 U	50 U
4-Nitrophenol	1100 U	25 U	25 U	50 UJ	50 U	50 U
Dibenzofuran	440 U	10 U	10 U	20 UJ	20 U	20 U
2,4-Dinitrotoluene	440 U	10 U	10 U	20 UJ	20 U	20 U
Diethylphthalate	440 U	10 U	10 U	20 UJ	20 U	20 U
4-Chlorophenyl-phenylether	440 U	10 U	10 U	20 UJ	20 U	20 U
Fluorene	440 U	10 U	10 U	20 UJ	20 U	20 U
4-nitroaniline	1100 U	25 U	25 U	50 UJ	50 U	50 U
4,6-Dinitro-2-methylphenol	1100 U	25 U	25 U	50 UJ	50 U	50 U
N-Nitrosodiphenylamine (1)	440 U	10 U	10 U	20 UJ	20 U	20 U
4-Bromophenyl-phenylether	440 U	10 U	10 U	20 UJ	20 U	20 U
Hexachlorobenzene	440 U	10 U	10 U	20 UJ	20 U	20 U
Pentachlorophenol	1100 UJ	25 U	25 U	50 UJ	50 U	50 U
Phenanthrene	440 U	10 U	10 U	20 UJ	20 U	20 U
Anthracene	440 U	10 U	10 U	20 UJ	20 U	20 U
Carbazole	440 U	10 U	10 U	20 UJ	20 U	20 U
Di-n-butylphthalate	440 U	10 U	10 U	20 UJ	20 U	20 U
Fluoranthene	53 J	10 U	10 U	20 UJ	20 U	20 U
Pyrene	45 J	10 U	10 U	20 UJ	20 U	20 U
Butybenzylphthalate	440 U	10 U	10 U	20 UJ	20 U	20 U
3,3'-Dichlorobenzidine	440 U	10 U	10 U	20 UJ	20 U	20 U
Benzo(a)anthracene	440 U	10 U	10 U	20 UJ	20 U	20 U
Chrysene	440 U	10 U	10 U	20 UJ	20 U	20 U
bis(2-Ethylhexyl)phthalate	440 U	10 U	10 U	20 U	20 U	20 U
Di-n-octylphthalate	440 UJ	10 U	10 U	20 UJ	20 U	20 U
Benzo(b)fluoranthene	440 U	10 U	10 U	20 UJ	20 U	20 U
Benzo(k)fluoranthene	440 U	10 U	10 U	20 UJ	20 U	20 U
Benzo(a)pyrene	440 U	10 U	10 U	20 UJ	20 U	20 U
Indeno(1,2,3-cd)pyrene	440 U	10 U	10 U	20 UJ	20 U	20 U
Dibenz(a,h)anthracene	440 U	10 U	10 U	20 UJ	20 U	20 U
Benzo(g,h,i)perylene	440 U	10 U	10 U	20 UJ	20 U	20 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB22	SB04	SB08	SB203	SB12	SB19
Sample Interval	10-15'	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
IEPA Sample No.	LOSB22CS	LOSB04BR	LOSB08AR	LOSB203BR	LOSB12BR	LOSB19BR
Dilution Factor	1	1	1	1	1	1
Date Collected	2-13-92	2-14-92	2-14-92	1-11-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs						
Unknown	19530 J	15 J	47 J	742 J	920 J	986 J
Unknown alkene	130 J					
Phenol, Bis(1,1-Dimethylethy						
Unknown Phthalate	220 J					
1h-Indene, 1-Ethylidene						
Naphthalalene, Dimethyl-						
Naphthalane, 1,4,6-Trimethyl						
Naphthalene, 1-Methyl-						
Naphthalane, 1-Ethyl-						
Naphthalene, Trimethyl-						
Unkown alkane	547 J					
Unknown PAH						
1-Propene, Trichloro-				16 J		
Unknown aromatic						
Pentadecane, 2,6,10,14-Tetra						
Decane						
Undecane						
Tridecane						
Heptadecane						
Nonanoic acid						39 NJ
Hexadecanoic acid			500 R			
Benzene, Tetramethyl-						
Bicyclohexyl, 4-Phenyl						
Bezene, 1,1' - oxybis-						
Phenol, 4-(1-Methyl-1-Phenyl						
1,1'-Biphenyl, Methyl-						
1,1':2',1''-Terphenyl						
Phosphoric acid						
Pentene, Dimethyl-						
Unknown adipate						

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB213		SB214		SB215	
Sample Interval						
IEPA Sample No.	LOSB213AS(BG)		LOSB214AS(BG)		LOSB215AS(BG)	
Dilution Factor	1		1		1	
Date Collected	2-14-92		2-14-92		2-14-92	
Units	(ug/Kg)		(ug/Kg)		(ug/Kg)	
Phenol	400	U	380	U	380	U
bis(2-Chloroethyl)ether	400	U	380	U	380	U
2-Chlorophenol	400	U	380	U	380	U
1,3-Dichlorobenzene	400	U	380	U	380	U
1,4-Dichlorobenzene	400	U	380	U	380	U
2,4-Dichlorobenzene	400	U	380	U	380	U
2-Methylphenol	400	U	380	U	380	U
2,2'-oxybis(1-Chloropropane)	400	U	380	U	380	U
4-Methylphenol	400	U	380	U	380	U
N-Nitroso-di-n-propylamine	400	U	380	U	380	U
Hexachloroethane	400	U	380	U	380	U
Nitrobenzene	400	U	380	U	380	U
Isophorene	400	U	380	U	380	U
2-Nitrophenol	400	U	380	U	380	U
2,4-Dimethylphenol	400	U	380	U	380	U
bis(2-Chloroethoxy)methane	400	U	380	U	380	U
2,4-Dichlorophenol	400	U	380	U	380	U
1,2,4-Trichlorobenzene	400	U	380	U	380	U
Napthalene	400	U	380	U	380	U
4-Chloroaniline	400	U	380	U	380	U
Hexachlorobutadiene	400	U	380	U	380	U
4-Chloro-3-methylphenol	400	U	380	U	380	U
2-Methylnaphthalene	400	U	380	U	380	U
Hexachlorocyclopentadiene	400	U	380	U	380	U
2,4,6-Trichlorophenol	400	U	380	U	380	U
2,4,5-Trichlorophenol	980	U	930	U	920	U
2-Chloronaphthalene	400	U	380	U	380	U
2-Nitroaniline	980	U	930	U	920	U
Dimethylphthalate	400	U	380	U	380	U
Acenaphthylene	400	U	380	U	380	U
2,6-Dinitrotoluene	400	U	380	U	380	U
3-Nitroaniline	980	U	930	U	920	U
Acenaphthene	400	U	380	U	380	U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB213	SB214	SB215
Sample Interval			
IEPA Sample No.	LOSB213AS(BG)	LOSB214AS(BG)	LOSB215AS(BG)
Dilution Factor	1	1	1
Date Collected	2-14-92	2-14-92	2-14-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)
2,4-Dinitrophenol	980 U	930 U	920 U
4-Nitrophenol	980 U	930 U	920 U
Dibenzofuran	400 U	380 U	380 U
2,4-Dinitrotoluene	400 U	380 U	380 U
Diethylphthalate	400 U	380 U	380 U
4-Chlorophenyl-phenylether	400 U	380 U	380 U
Fluorene	400 U	380 U	380 U
4-nitroaniline	980 U	930 U	920 U
4,6-Dinitro-2-methylphenol	980 U	930 U	920 U
N-Nitrosodiphenylamine (1)	400 U	380 U	380 U
4-Bromophenyl-phenylether	400 U	380 U	380 U
Hexachlorobenzene	400 U	380 U	380 U
Pentachlorophenol	980 U	930 U	920 U
Phenanthrene	400 U	380 U	380 U
Anthracene	400 U	380 U	380 U
Carbazole	400 U	380 U	380 U
Di-n-butylphthalate	400 U	380 U	380 U
Fluoranthene	400 U	380 U	380 U
Pyrene	400 U	380 U	380 U
Butybenzylphthalate	400 U	380 U	380 U
3,3'-Dichlorobenzidine	400 U	380 U	380 U
Benzo(a)anthracene	400 U	380 U	380 U
Chrysene	400 U	380 U	380 U
bis(2-Ethylhexyl)phthalate	400 U	380 U	380 U
Di-n-octylphthalate	400 U	380 U	380 U
Benzo(b)fluoranthene	400 U	380 U	380 U
Benzo(k)fluoranthene	400 U	380 U	380 U
Benzo(a)pyrene	400 U	380 U	380 U
Indeno(1,2,3-cd)pyrene	400 U	380 U	380 U
Dibenz(a,h)anthracene	400 U	380 U	380 U
Benzo(g,h,i)perylene	400 U	380 U	380 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

Soil Boring No.	SB213	SB214	SB215
Sample Interval			
IEPA Sample No.	LOSB213AS(BG)	LOSB214AS(BG)	LOSB215AS(BG)
Dilution Factor	1	1	1
Date Collected	2-14-92	2-14-92	2-14-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)
TICs			
Unknown	18550 J	17028 J	17317 J
Unknown alkene			
Phenol, Bis(1,1-Dimethylethy	270 J	530 J	380 J
Unknown Phthalate	150 J	150 J	
1h-Indene, 1-Ethylidene			
Naphthalalene, Dimethyl-			
Naphthalane, 1,4,6-Trimethyl			
Naphthalene, 1-Methyl-			
Naphthalane, 1-Ethyl-			
Naphthalene, Trimethyl-			
Unkown alkane	940 J		92 J
Unknown PAH			
1-Propene, Trichloro-			
Unknown aromatic			
Pentadecane, 2,6,10,14-Tetra			
Decane			
Undecane			
Tridecane			
Heptadecane			
Nonanoic acid			
Hexadecanoic			
Benzene, Tetramethyl-			
Bicyclohexyl, 4-Phenyl			
Bezene, 1,1' - oxybis-			
Phenol, 4-(1-Methyl-1-Phenyl			
1,1'-Biphenyl, Methyl-			
1,1':2',1''-Terphenyl			
Phosphoric acid			
Pentene, Dimethyl-			
Unknown adipate	180 J		

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
PESTICIDE/PCB ORGANIC COMPOUNDS

Soil Boring No.	SB201	SB201	SB202	SB202	SB203	SB203	SB204	SB204
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'	3-5'	0-3'	3-5'
IEPA Sample No.	LOSB201AS	LOSB201BS	LOSB202AS	LOSB202BS	LOSB203AS	LOSB203BS	LOSB204AS	LOSB204BS
Dilution Factor	10.0	10.0	10.0	10.0	1.0	10.0	1.0	1.0
Date Collected	2-10-92	2-10-92	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-11-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
alpha-BHC	20 U	20 U	19 U	19 U	1.9 U	20 U	2.1 U	2.4 U
beta-BHC	20 U	20 U	19 U	19 U	1.9 U	20 U	2.1 U	2.4 U
delta-BHC	20 U	20 U	19 U	19 U	1.9 U	20 U	2.1 U	2.4 U
gamma-BHC (Lindane)	20 U	20 U	19 U	19 U	1.9 U	20 U	2.1 U	2.4 U
Heptachlor	20 U	20 U	19 U	19 U	1.9 U	20 U	2.1 U	2.4 U
Aldrin	20 U	20 U	19 U	19 U	1.9 P	20 U	2.1 U	1.8 J
Heptachlor epoxide	20 U	20 U	19 U	19 U	1.9 U	20 U	2.1 U	2.4 U
Endosulfan I	20 U	20 U	19 U	19 U	1.9 U	20 U	2.1 U	2.4 U
Dieldrin	39 U	38 U	37 U	36 U	3.7 U	40 U	2.1 U	4.6 U
4,4'-DDE	39 U	38 U	37 U	36 U	7.2 P	26 JP	4.1 U	4.6 U
Endrin	39 U	38 U	37 U	36 U	3.7 U	40 U	4.1 U	4.6 U
Endosulfan II	39 U	38 U	37 U	36 U	3.7 U	40 U	4.1 U	4.6 U
4,4'-DDD	39 U	38 U	37 U	36 U	9.1 P	70 P	4.1 U	4.6 U
Endosulfan sulfate	39 U	38 U	37 U	36 U	3.7 U	40 U	4.1 U	4.6 U
4,4'-DDT	39 U	38 U	37 U	36 U	3.5 JP	25 JP	4.1 U	4.6 U
Methoxychlor	200 U	200 U	190 U	190 U	19 U	130 J	21 U	24 U
Endrin ketone	39 U	38 U	37 U	36 U	3.7 U	40 U	4.1 U	4.6 U
Endrin aldehyde	39 U	38 U	37 U	36 U	3.7 U	40 U	4.1 U	4.6 U
alpha-Chlordane	20 U	20 U	19 U	19 U	1.9 U	20 U	2.1 U	2.4 U
gamma-Chlordane	20 U	20 U	19 U	19 U	1.9 U	20 U	2.1 U	2.4 U
Toxaphene	2000 U	2000 U	1900 U	1900 U	190 U	2000 U	210 U	240 U
Aroclor-1016	390 U	380 U	370 U	360 U	37 U	400 U	41 U	46 U
Aroclor-1221	790 U	770 U	740 U	740 U	75 U	810 U	83 U	93 U
Aroclor-1232	390 U	380 U	370 U	360 U	37 U	400 U	41 U	46 U
Aroclor-1242	240 JP	660	1000	360 U	37 U	400 U	41 U	46 U
Aroclor-1248	390 U	380 U	370 U	360 U	37 U	400 U	41 U	46 U
Aroclor-1254	320 JP	940 P	370 U	970	37 U	400 U	41 U	46 U
Aroclor-1260	390 U	380 U	370 U	360 U	37 U	400 U	41 U	46 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
PESTICIDE/PCB ORGANIC COMPOUNDS

Soil Boring No.	SB205	SB205	SB206	SB207	SB207	SB208	SB208	SB208
Sample Interval	0-3'	3-5'	0-3'	0-3'	3-5'	0-3'	0-3'	3-5'
IEPA Sample No.	LOSB205AS	LOSB205BS	LOSB206AS	LOSB207AS	LOSB207BS	LOSB208AS	LOSB208AD	LOSB208BS
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Date Collected	2-10-92	2-11-92	2-10-92	2-11-92	2-11-92	2-11-92	2-11-92	2-11-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
alpha-BHC	9.8 U	2.1 U	2.0 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
beta-BHC	9.8 U	2.1 U	2.0 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
delta-BHC	9.8 U	2.1 U	2.0 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
gamma-BHC (Lindane)	9.8 U	2.1 U	2.0 U	1.9 U	2.0 U	0.75 J	1.9 U	1.9 U
Heptachlor	9.8 U	2.1 U	2.0 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Aldrin	9.8 U	2.1 U	2.0 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Heptachlor epoxide	9.8 U	2.1 U	2.0 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Endosulfan I	9.8 U	2.1 U	2.0 U	5.2 P	2.0 U	3.2 P	1.9 U	1.9 U
Dieldrin	19 U	4.1 U	3.9 U	3.7 U	4.0 U	3.7 U	3.6 U	3.8 U
4,4'-DDE	53	4.1 U	1.1 JP	0.72 JP	4.0 U	3.7 U	3.6 U	3.8 U
Endrin	19 U	4.1 U	3.9 U	3.7 U	4.0 U	3.7 U	3.6 U	3.8 U
Endosulfan II	19 U	4.1 U	3.9 U	3.7 U	4.0 U	3.7 U	3.6 U	3.8 U
4,4'-DDD	19	4.1 U	1.7 JP	3.1 JP	4.0 U	3.7 U	3.6 U	3.8 U
Endosulfan sulfate	19 U	4.1 U	3.9 U	3.7 U	4.0 U	3.7 U	3.6 U	3.8 U
4,4'-DDT	30	4.1 U	5.1 P	1.2 JP	4.0 U	3.7 U	3.6 U	3.8 U
Methoxychlor	98 U	21 U	20 U	19 U	20 U	19 U	19 U	19 U
Endrin ketone	19 U	4.1 U	3.9 U	3.7 U	4.0 U	3.7 U	3.6 U	3.8 U
Endrin aldehyde	19 U	4.1 U	3.9 U	3.7 U	4.0 U	3.7 U	3.6 U	3.8 U
alpha-Chlordane	9.8 U	2.1 U	2.0 U	3.7 P	2.0 U	3.0 P	3.1 P	1.9 U
gamma-Chlordane	9.8 U	2.1 U	2.0 U	3.6 P	2.0 U	1.9 P	1.9 U	1.9 U
Toxaphene	980 U	210 U	200 U	190 U	200 U	190 U	190 U	190 U
Aroclor-1016	190 U	41 U	39 U	37 U	40 U	37 U	36 U	38 U
Aroclor-1221	390 U	84 U	79 U	75 U	81 U	74 U	74 U	76 U
Aroclor-1232	190 U	41 U	39 U	37 U	40 U	37 U	36 U	38 U
Aroclor-1242	190 U	160 P	39 U	37 U	40 U	37 U	36 U	38 U
Aroclor-1248	190 U	41 U	39 U	37 U	40 U	37 U	36 U	38 U
Aroclor-1254	190 U	80 P	39 U	37 U	40 U	37 U	36 U	38 U
Aroclor-1260	190 U	41 U	39 U	37 U	40 U	37 U	36 U	38 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
PESTICIDE/PCB ORGANIC COMPOUNDS

Soil Boring No.	SB209	SB209	SB211	SB211	SB212	SB04	SB04	SB04
Sample Interval	0-3'	3-5'	0-3'	3-5'	0-3'	0-5'	0-5'	5-8'
IEPA Sample No.	LOSB209AS	LOSB209BS	LOSB211AS	LOSB211BS	LOSB212AS	LOSB04AS	LOSB04AD	LOSB204BS
Dilution Factor	1.0	1.0	10.0	1.0	1.0	1.0	1.0	1.0
Date Collected	2-10-92	2-10-92	2-11-92	2-11-92	2-11-92	2-14-92	2-14-92	2-14-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
alpha-BHC	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
beta-BHC	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
delta-BHC	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
gamma-BHC (Lindane)	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
Heptachlor	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
Aldrin	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
Heptachlor epoxide	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
Endosulfan I	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
Dieldrin	3.7 U	3.8 U	5.7 J	3.7 U	3.8 U	4.4 U	4.0 U	4.7 U
4,4'-DDE	0.92 JP	3.8 U	37 U	3.7 U	3.8 U	4.4 U	4.0 U	4.7 U
Endrin	3.7 U	3.8 U	37 U	3.7 U	3.8 U	4.4 U	4.0 U	4.7 U
Endosulfan II	3.7 U	3.8 U	37 U	3.7 U	3.8 U	4.4 U	4.0 U	4.7 U
4,4'-DDD	8.3	3.8 U	37 U	3.7 U	3.8 U	4.4 U	4.0 U	4.7 U
Endosulfan sulfate	3.7 U	3.8 U	37 U	3.7 U	3.8 U	4.4 U	4.0 U	4.7 U
4,4'-DDT	4.7 P	3.8 U	37 U	3.7 U	3.8 U	4.4 U	4.0 U	4.7 U
Methoxychlor	19 U	19 U	190 U	19 U	20 U	23 U	21 U	24 U
Endrin ketone	3.7 U	3.8 U	37 U	3.7 U	3.8 U	4.4 U	4.0 U	4.7 U
Endrin aldehyde	3.7 U	3.8 U	37 U	3.7 U	3.8 U	4.4 U	4.0 U	4.7 U
alpha-Chlordane	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
gamma-Chlordane	1.9 U	1.9 U	19 U	1.9 U	2.0 U	2.3 U	2.1 U	2.4 U
Toxaphene	190 U	190 U	1900 U	190 U	200 U	230 U	210 U	240 U
Aroclor-1016	37 U	38 U	370 U	37 U	38 U	44 U	40 U	47 U
Aroclor-1221	74 U	76 U	750 U	75 U	78 U	89 U	82 U	96 U
Aroclor-1232	37 U	38 U	370 U	37 U	38 U	44 U	40 U	47 U
Aroclor-1242	37 U	38 U	370 U	37 U	38 U	420	390	200
Aroclor-1248	37 U	38 U	370 U	37 U	38 U	44 U	40 U	47 U
Aroclor-1254	37 U	38 U	370 U	37 U	38 U	44 U	40 U	47 U
Aroclor-1260	37 U	38 U	370 U	37 U	38 U	150 P	110 P	94

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
PESTICIDE/PCB ORGANIC COMPOUNDS

Soil Boring No.	SB08	SB08	SB10	SB11	SB11	SB11	SB12	SB12
Sample Interval	0-5'	5-7.5'	0-5'	0-5'	0-5'	5-7.5'	0-5'	5-8.1'
IEPA Sample No.	LOSB08AS	LOSB08BS	LOSB10AS	LOSB11AS	LOSB11AD	LOSB11BS	LOSB12AS	LOSB12BS
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	10.0
Date Collected	2-14-92	2-14-92	2-14-92	2-14-92	2-14-92	2-14-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
alpha-BHC	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
beta-BHC	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
delta-BHC	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
gamma-BHC (Lindane)	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
Heptachlor	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
Aldrin	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
Heptachlor epoxide	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
Endosulfan I	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
Dieldrin	4.1 U	4.1 U	4.0 U	4.2 U	4.2 U	4.3 U	4.3 U	36 U
4,4'-DDE	4.1 U	4.1 U	4.0 U	4.2 U	4.2 U	4.3 U	4.3 U	36 U
Endrin	4.1 U	4.1 U	4.0 U	4.2 U	4.2 U	4.3 U	4.3 U	36 U
Endosulfan II	4.1 U	4.1 U	4.0 U	4.2 U	4.2 U	4.3 U	4.3 U	36 U
4,4'-DDD	4.1 U	4.1 U	4.0 U	4.2 U	4.2 U	4.3 U	4.3 U	36 U
Endosulfan sulfate	4.1 U	4.1 U	4.0 U	4.2 U	4.2 U	4.3 U	4.3 U	36 U
4,4'-DDT	4.1 U	4.1 U	4.0 U	4.2 U	4.2 U	4.3 U	4.3 U	36 U
Methoxychlor	21 U	21 U	20 U	22 U	22 U	22 U	22 U	190 U
Endrin ketone	4.1 U	4.1 U	4.0 U	4.2 U	4.2 U	4.3 U	4.3 U	36 U
Endrin aldehyde	4.1 U	4.1 U	4.0 U	4.2 U	4.2 U	4.3 U	4.3 U	36 U
alpha-Chlordane	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
gamma-Chlordane	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.2 U	2.2 U	19 U
Toxaphene	210 U	210 U	200 U	220 U	220 U	220 U	220 U	1900 U
Aroclor-1016	41 U	41 U	40 U	42 U	42 U	43 U	43 U	360 U
Aroclor-1221	84 U	83 U	81 U	86 U	86 U	88 U	87 U	740 U
Aroclor-1232	41 U	41 U	40 U	42 U	42 U	43 U	43 U	360 U
Aroclor-1242	120 P	41 U	110	330	120	140 P	370	1600
Aroclor-1248	41 U	41 U	40 U	42 U	42 U	43 U	43 U	360 U
Aroclor-1254	41 U	41 U	40 U	42 U	42 U	43 U	43 U	360 U
Aroclor-1260	34 JP	41 U	31 J	83	44	42 JP	62 P	240 JP

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
PESTICIDE/PCB ORGANIC COMPOUNDS

Soil Boring No.	SB14	SB14	SB19	SB19	SB19	SB22	SB22	SB22
Sample Interval	5-10'	10-12.1'	0-5'	0-5'	5-10'	0-5'	5-10'	5-10'
IEPA Sample No.	LOSB14AS	LOSB14BS	LOSB19AS	LOSB19AD	LOSB19BS	LOSB22AS	LOSB22BS	LOSB22BD
Dilution Factor	5.0	1.0	20.0	20.0	1.0	1.0	1.0	5.0
Date Collected	2-11-92	2-11-92	2-13-92	2-13-92	2-13-92	2-13-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
alpha-BHC	100 U	2.0 U	50 U	47 U	1.9 U	2.0 U	2.2 U	11 U
beta-BHC	100 U	2.0 U	50 U	47 U	1.9 U	2.0 U	2.2 U	11 U
delta-BHC	100 U	2.0 U	50 U	47 U	1.9 U	2.0 U	2.2 U	11 U
gamma-BHC (Lindane)	100 U	2.0 U	50 U	47 U	1.9 U	2.0 U	2.2 U	11 U
Heptachlor	100 U	2.0 U	50 U	47 U	1.9 U	2.0 U	2.2 U	11 U
Aldrin	100 U	2.0 U	50 U	47 U	1.9 U	2.0 U	2.2 U	11 U
Heptachlor epoxide	100 U	2.0 U	50 U	47 U	1.9 U	2.0 U	2.2 U	11 U
Endosulfan I	100 U	2.0 U	50 U	47 U	1.9 U	2.0 U	2.2 U	11 U
Dieldrin	190 U	3.9 U	97 U	92 U	3.7 U	4.0 U	4.3 U	21 U
4,4'-DDE	190 U	3.9 U	97 U	92 U	3.7 U	4.0 U	4.3 U	21 U
Endrin	190 U	3.9 U	97 U	92 U	3.7 U	4.0 U	4.3 U	21 U
Endosulfan II	190 U	3.9 U	97 U	92 U	3.7 U	4.0 U	4.3 U	21 U
4,4'-DDD	190 U	3.9 U	97 U	92 U	3.7 U	4.0 U	4.3 U	21 U
Endosulfan sulfate	190 U	3.9 U	97 U	92 U	3.7 U	4.0 U	4.3 U	21 U
4,4'-DDT	190 U	3.9 U	97 U	92 U	3.7 U	4.0 U	4.3 U	21 U
Methoxychlor	1000 U	20 U	500 U	470 U	19 U	20 U	22 U	110 U
Endrin ketone	190 U	3.9 U	97 U	92 U	3.7 U	4.0 U	4.3 U	21 U
Endrin aldehyde	190 U	3.9 U	97 U	92 U	3.7 U	4.0 U	4.3 U	21 U
alpha-Chlordane	100 U	2.0 U	50 U	47 U	1.9 U	2.0 U	2.2 U	11 U
gamma-Chlordane	100 U	2.0 U	50 U	47 U	2.4	2.0 U	2.2 U	11 U
Toxaphene	10000 U	200 U	5000 U	4700 U	190 U	200 U	220 U	1100 U
Aroclor-1016	1900 U	39 U	970 U	920 U	37 U	40 U	43 U	210 U
Aroclor-1221	4000 U	80 U	2000 U	1900 U	75 U	81 U	88 U	440 U
Aroclor-1232	1900 U	39 U	970 U	920 U	37 U	40 U	43 U	210 U
Aroclor-1242	890 JP	39 U	5100	6700	37 U	330	120	910
Aroclor-1248	1900 U	39 U	970 U	920 U	37 U	40 U	43 U	210 U
Aroclor-1254	1900 U	39 U	1400	1700 P	37 U	90 P	40 J	180 P
Aroclor-1260	3700 P	39 U	970 U	920 U	37 U	40 U	43 U	210 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
PESTICIDE/PCB ORGANIC COMPOUNDS

Soil Boring No.	SB22	SB04	SB08	SB203	SB12	SB19
Sample Interval	10-15'	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
IEPA Sample No.	LOSB22CS	LOSB04BR	LOSB08AR	LOSB203BR	LOSB12BR	LOSB19BR
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0
Date Collected	2-13-92	2-14-92	2-14-92	2-11-92	2-13-92	2-13-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
alpha-BHC	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	4.4 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	4.4 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin	4.4 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan II	4.4 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	4.4 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	4.4 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	4.4 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Methoxychlor	23 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Endrin ketone	4.4 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin aldehyde	4.4 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
alpha-Chlordane	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	2.3 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene	230 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Aroclor-1016	44 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1221	89 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aroclor-1232	44 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1242	65	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1248	44 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1254	44 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1260	44 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
PESTICIDE/PCB ORGANIC COMPOUNDS

Surface Water Sample No.	SB213	SB214	SB215
Sample Interval			
IEPA Sample No	LOSB213AS (BG)	LOSB214AS (BG)	LOSB215AS (BG)
Dilution Factor	1.0	1.0	1.0
Date Collected	2-14-92	2-14-92	2-14-92
Units	(ug/Kg)	(ug/Kg)	(ug/Kg)
alpha-BHC	2.1 U	2.0 U	2.0 U
beta-BHC	2.1 U	2.0 U	2.0 U
delta-BHC	2.1 U	2.0 U	2.0 U
gamma-BHC (Lindane)	2.1 U	2.0 U	2.0 U
Heptachlor	2.1 U	2.0 U	2.0 U
Aldrin	2.1 U	2.0 U	2.0 U
Heptachlor epoxide	2.1 U	2.0 U	2.0 U
Endosulfan I	2.1 U	2.0 U	2.0 U
Dieldrin	4.0 U	3.8 U	3.8 U
4,4'-DDE	4.0 U	3.8 U	3.8 U
Endrin	4.0 U	3.8 U	3.8 U
Endosulfan II	4.0 U	3.8 U	3.8 U
4,4'-DDD	4.0 U	3.8 U	3.8 U
Endosulfan sulfate	4.0 U	3.8 U	3.8 U
4,4'-DDT	4.0 U	3.8 U	3.8 U
Methoxychlor	21 U	20 U	20 U
Endrin ketone	4.0 U	3.8 U	3.8 U
Endrin aldehyde	4.0 U	3.8 U	3.8 U
alpha-Chlordane	2.1 U	2.0 U	2.0 U
gamma-Chlordane	2.1 U	2.0 U	2.0 U
Toxaphene	210 U	200 U	200 U
Aroclor-1016	40 U	38 U	38 U
Aroclor-1221	82 U	78 U	77 U
Aroclor-1232	40 U	38 U	38 U
Aroclor-1242	40 U	38 U	38 U
Aroclor-1248	40 U	38 U	38 U
Aroclor-1254	40 U	38 U	38 U
Aroclor-1260	40 U	38 U	38 U

DRAFT

Inorganic Data Validation

The analysis of 43 soil samples for Target Analyte List and 6 surface water samples for Target Analyte List ICP parameters only, was performed by Thermo Analytical/Skinner and Sherman Laboratories Inc. of Waltham, Massachusetts. The samples were divided into four separate data packages (SDG numbers 207901, B203AS, B04AD, and W01AS). The samples were prepared, analyzed and reported in accordance with the USEPA CLP Statement of Work 7/88. The findings presented are based upon a review of all analysis data, including laboratory calibrations, calibration verifications, blanks, interference check sample analyses, matrix spike analyses, laboratory duplicate analyses, laboratory control sample analyses, method of standard additions analyses, ICP serial dilution analyses and instrument raw data output.

For SDG number 207901 the Cover Page indicates that the "Full Client Identifications are located at the bottom of Form I". The reviewers found no such Client Identifications (i.e. IEPA sample number) for the following laboratory sample IDs: 02079-09S, 02079-10S, and 02079-12S. The reviewers determined the IEPA sample number and added them to the bottom of the appropriate Form Is. This determination was made by examining the laboratory preparation logs, ICP raw Data, and GFAA raw data, each of which documented the IEPA sample number and the laboratory ID number.

Overall, the inorganic data quality was good; however a portion of the data was qualified.

Minor Problems:

For SDG number B04AD the Hg technical holding time of 28 days was exceeded for samples LOSB-19R, LOSB08AR, and LOSB12BR. For all three samples the laboratory reported less than the IDL. Therefore, the results are estimated "UJ". All three of the samples were field rinsates.

In a few instances blank values exceeded the Instrument Detection Limit (IDL). Sample results greater than the IDL but less than five times the amount detected in the associated blank are non-detects and qualified "U". A few results for the SDGs and analytes listed below are affected.

SDG #	Analytes
B04AD	Ba, Cd, K, & Na
B203AS	Be, Cd, Ca, Cr, Cu, Fe, Mn, & Zn
207901	Cd & Cu
W01AS	Cd & Cu

Both low matrix spike recoveries and high matrix spike recoveries were reported. All associated non-detect samples with the exception of those non-detects associated with high spike recoveries are estimated and qualified "UJ". All associated detects are estimated and qualified "J". All results for the SDGs and analytes listed below are affected.

SDG #	Analytes
B04AD	Sb, Se, & CN
B203AS	Sb
207901	Sb, As, Cr, Cu, Pb, Se, & Zn

DRAFT

During Graphite Furnace Atomic Absorption (GFAA) analyses, low analytical spike recoveries, correlation coefficients for linear regression during Method of Standard Addition (MSA) less than 0.995, and poor Relative Standard Deviations for duplicate injections were reported. All affected GFAA analyses are estimated and qualified "J". A few results for the SDGs and analytes listed below are affected.

SDG #	Analytes
B04AD	Pb, Se, & Tl
B203AS	Pb, Se, & Tl
207901	Se & Tl

In several instances the sample concentration was 50 times greater than the IDL and the difference in concentrations of certain elements between the sample and the serial dilution were higher than 10 %. All associated samples for the affected elements are estimated and qualified "J". All results for the SDGs and analytes listed below are affected.

SDG #	Analytes
B04AD	Ca, Fe,& Mn
B203AS	Fe & Mn
207901	Pb & Mn

For a few analytes the % difference for laboratory duplicate analysis for the soils matrix exceeded 35%. The results for the affected analytes in all associated samples are qualified as estimated (J). All results for the SDGs and analytes listed below are affected.

SDG #	Analytes
B04AD	Ba
207901	Ca & Cu

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
INORGANIC ANALYTES

Sample location IEPA Sample Number Date sample collected Units	SB201 LOSB201AS 2/10/92 (mg/Kg)		SB201 LOSB201BS 2/10/92 (mg/Kg)		SB202 LOSB202AS 2/10/92 (mg/Kg)		SB202 LOSB202BS 2/10/92 (mg/Kg)		SB203 LOSB203AS 2/11/92 (mg/Kg)		SB204 LOSB204AS 2/11/92 (mg/Kg)	
Aluminum	12,500.00		8,840.00		10,900.00		951.00		3,610.00		12,500.00	
Antimony	8.40	UJ	7.30	UJ	7.10	UJ	6.80	UJ	1.70	UJ	1.70	UJ
Arsenic	9.90	J	10.30	J	14.40	J	4.50	J	7.60		6.30	
Barium	198.00		201.00		101.00		155.00		25.60	B	857.00	
Beryllium	0.66	B	0.46	B	0.76	B	0.22	U	0.22	BJ	0.66	BJ
Cadmium	1.10	U	0.78	U	0.47	U	3.80		0.21	U	0.91	U
Calcium	37,200.00	J	89,900.00	J	31,600.00	J	19,800.00	J	98,400.00		61,000.00	
Chromium	26.60	J	24.00	J	18.70	J	98.10	J	8.00		30.10	
Cobalt	9.70	B	7.50	B	10.10	B	4.60	B	3.70	B	6.60	B
Copper	92.20	J	27.70	J	26.50	J	120.00	J	17.80		93.40	
Iron	22,100.00		19,800.00		21,200.00		13,000.00		9,850.00	J	16,900.00	J
Lead	240.00	J	72.60	J	54.20	J	473.00	J	21.20		270.00	
Magnesium	18,200.00		45,300.00		17,600.00		10,900.00		51,800.00		30,300.00	
Manganese	473.00	J	415.00	J	498.00	J	117.00	J	277.00	J	276.00	J
Mercury	0.24		0.11	U	0.12	U	0.38		0.10	U	0.17	
Nickel	28.10		29.80		24.00		34.70		10.90		23.10	
Potassium	2,060.00		1,390.00		1,620.00		121.00	B	839.00	B	1,220.00	
Selenium	1.10	UJ	0.89	UJ	0.92	UJ	0.89	UJ	0.80	U	0.87	U
Silver	1.40	U	2.40		1.10	U	1.10	U	0.41	U	0.43	U
Sodium	385.00	B	907.00	B	328.00	B	273.00	B	194.00	B	3,300.00	
Thallium	0.84	U	0.67	U	0.69	UJ	0.67	U	0.40	U	0.43	UJ
Vanadium	24.20		17.70		19.60		2.90	B	11.20		24.30	
Zinc	229.00	J	79.30	J	116.00	J	490.00	J	34.90		229.00	
Cyanide	6.90	U	5.80	U	6.10	U	5.10	U	5.40	U	5.20	U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
INORGANIC ANALYTES

Sample location IEPA Sample Number Date sample collected Units	SB204 LOSB204BS 2/11/92 (mg/Kg)		SB205 LOSB205AS 2/10/92 (mg/Kg)		SB205 LOSB205BS 2/10/92 (mg/Kg)		SB206 LOSB206AS 2/10/92 (mg/Kg)		SB207 LOSB207AS 2/11/92 (mg/Kg)		SB207 LOSB207BS 2/11/92 (mg/Kg)	
Aluminum	16,800.00		9,560.00		10,300.00		8,680.00		4,110.00		4,600.00	
Antimony	1.80	UJ	7.30	UJ	7.30	UJ	7.00	UJ	1.80	UJ	1.90	UJ
Arsenic	7.90		9.70	J	13.20	J	5.90	J	4.10		8.40	
Barium	433.00		181.00		70.10		170.00		66.60		33.60	B
Beryllium	0.96	BJ	0.40	B	0.69	B	0.36	B	0.23	BJ	0.24	UJ
Cadmium	0.36	U	1.90	U	0.44	U	1.90		0.37	U	0.24	U
Calcium	43,500.00		106,000.00	J	36,100.00	J	109,000.00	J	133,000.00		150,000.00	
Chromium	26.70		29.60	J	19.50	J	26.30	J	18.10		8.20	
Cobalt	8.00	B	5.80	B	14.60		5.20	B	3.60	B	6.00	B
Copper	106.00		96.10	J	47.70	J	60.20	J	28.00		14.20	U
Iron	27,100.00	J	13,000.00		25,400.00		11,900.00		8,750.00	J	11,200.00	J
Lead	258.00		414.00	J	119.00	J	397.00	J	91.80		9.20	
Magnesium	21,200.00		56,300.00		20,500.00		51,500.00		78,400.00		42,600.00	
Manganese	293.00	J	316.00	J	445.00	J	348.00	J	238.00	J	234.00	J
Mercury	0.12		0.24		0.11	U	0.13		0.19		0.12	U
Nickel	21.30		20.70		33.50		15.40		9.70		11.30	
Potassium	2,080.00		1,920.00		1,920.00		1,970.00		972.00	B	956.00	B
Selenium	0.93	UJ	0.93	UJ	0.94	UJ	0.88	UJ	0.86	U	0.95	UJ
Silver	0.46	U	3.50		1.20	U	3.40		0.44	U	0.48	U
Sodium	2,060.00		688.00	B	487.00	B	1,330.00		305.00	B	297.00	B
Thallium	0.47	U	0.70	U	0.95	B	0.66	U	0.43	U	0.47	U
Vanadium	27.80		19.40		20.60		18.50		10.90	B	9.80	B
Zinc	164.00		270.00	J	161.00	J	200.00	J	107.00		26.90	
Cyanide	5.90	U	5.50	U	5.70	U	5.50	U	5.60	U	6.00	U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
INORGANIC ANALYTES

Sample location IEPA Sample Number Date sample collected Units	SB208 LOSB208AS 2/11/92 (mg/Kg)	SB208 LOSB208AD 2/11/92 (mg/Kg)	SB208 LOSB208BS 2/11/92 (mg/Kg)	SB209 LOSB209AS 2/11/92 (mg/Kg)	SB209 LOSB209BS 2/11/92 (mg/Kg)	SB211 LOSB211AS 2/11/92 (mg/Kg)
Aluminum	3,920.00	5,240.00	3,150.00	4,940.00		2,660.00
Antimony	1.70 UJ	1.70 UJ	1.80 UJ	6.60 UJ	6.80 UJ	1.60 UJ
Arsenic	6.20	6.50	5.30	6.70 J	5.60 J	2.60
Barium	24.50 B	25.80 B	14.20 B	51.10	18.60 B	78.90
Beryllium	0.22 BJ	0.23 BJ	0.23 BJ	0.26 B	0.24 B	0.21 UJ
Cadmium	0.21 U	0.22 U	0.22 U	0.63 U	0.22 U	0.64 U
Calcium	115,000.00	106,000.00	126,000.00	114,000.00 J	128,000.00 J	135,000.00
Chromium	8.50 U	9.00	6.30	12.60 J	8.20 J	7.90
Cobalt	5.00 B	6.10 B	5.40 B	4.70 B	5.10 B	2.00 B
Copper	20.40	14.20	12.60 U	14.50 J	11.10 J	16.40
Iron	9,530.00 J	12,300.00 J	9,810.00 J	9,400.00	11,300.00	6,480.00 J
Lead	16.60	14.40	10.00	51.30 J	8.20 J	232.00 J
Magnesium	70,100.00	66,600.00	75,700.00	68,700.00	73,400.00	83,700.00
Manganese	283.00 J	316.00 J	296.00 J	270.00 J	384.00 J	233.00 J
Mercury	0.12	0.11	0.11 U	0.18	0.10 U	0.26
Nickel	10.00	12.60	10.70	9.80	10.10	6.20 B
Potassium	694.00 B	792.00 B	700.00 B	930.00 B	694.00 B	700.00 B
Selenium	4.20 U	0.82 UJ	0.87 UJ	0.87 UJ	0.83 UJ	0.79 U
Silver	0.42 U	0.43 U	0.44 U	4.80	5.00	0.41 U
Sodium	183.00 B	251.00 B	170.00 B	430.00 B	335.00 B	313.00 B
Thallium	0.42 UJ	0.41 U	0.43 U	0.65 U	0.62 U	0.40 U
Vanadium	9.20 B	11.50	8.40 B	11.30	11.00 B	8.30 B
Zinc	37.20	37.00	24.20	57.30 J	28.60 J	72.20
Cyanide	5.50 U	5.50 U	5.60 U	5.10 U	5.40 U	5.00 U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
INORGANIC ANALYTES

Sample location IEPA Sample Number Date sample collected Units	SB211 LOSB211BS 2/11/92 (mg/Kg)	SB212 LOSB212AS 2/11/92 (mg/Kg)	SB213 LOSB213AS ? (mg/Kg)	SB214 LOSB214AS ? (mg/Kg)	SB215 LOSB215AS ? (mg/Kg)	SB04 LOSB04AS 2/14/92 (mg/Kg)
Aluminum	1,770.00	4,420.00	6,980.00	10,400.00	9,260.00	17,500.00
Antimony	1.70 UJ	1.60 UJ	7.30 UJ	7.80 UJ	7.10 UJ	8.30 BJ
Arsenic	4.20	3.80	6.30	8.70	11.10	8.90
Barium	8.30 B	33.40 B	56.40 J	51.50 J	46.30 J	496.00 J
Beryllium	0.21 UJ	0.21 BJ	0.36 B	0.57 B	0.41 B	0.99 B
Cadmium	0.21 U	0.21 U	0.68 U	0.50 U	0.45 U	1.70 U
Calcium	136,000.00	122,000.00	6,160.00 J	42,200.00 J	58,700.00 J	98,400.00 J
Chromium	4.10	8.30	10.40	14.20	11.50	36.80
Cobalt	2.40 B	2.70 B	6.80 B	7.50 B	7.40 B	7.50 B
Copper	7.60 U	12.60 U	12.00	17.90	17.20	108.00
Iron	6,650.00 J	9,270.00 J	16,900.00 J	21,700.00 J	21,000.00 J	23,300.00 J
Lead	4.70 J	714.00	13.10	26.80	13.10	464.00
Magnesium	84,400.00	74,500.00	3,810.00	26,600.00	36,300.00	47,300.00
Manganese	231.00 J	248.00 J	677.00 J	602.00 J	619.00 J	337.00 J
Mercury	0.11	0.18	0.10 U	0.12 U	0.12 U	0.11 U
Nickel	5.10 B	6.30 B	10.90	16.70	16.90	24.40
Potassium	423.00 B	794.00 B	1,090.00 B	1,710.00	1,160.00	2,940.00
Selenium	0.83 UJ	0.84 UJ	0.93 UJ	0.96 UJ	0.96 UJ	0.97 UJ
Silver	0.42 U	0.41 U	1.20 U	1.30 U	1.10 U	1.20 U
Sodium	146.00 B	290.00 B	69.70 U	97.40 U	95.30 U	1,610.00
Thallium	0.41 UJ	0.42 UJ	0.46 U	0.48 U	0.48 U	0.49 U
Vanadium	5.70 B	9.30 B	17.40	25.00	21.10	29.80
Zinc	17.50	49.20	48.30	83.10	57.10	292.00
Cyanide	5.20 U	5.30 U	5.70 UJ	6.30 UJ	6.00 UJ	6.60 J

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
INORGANIC ANALYTES

Sample location IEPA Sample Number Date sample collected Units	SB04 LOSB04AD 2/14/92 (mg/Kg)	SB04 LOSB04AD(DUP) 2/14/92 (mg/Kg)	SB04 LOSB04BS 2/14/92 (mg/Kg)	SB08 LOSB08AS 2/14/92 (mg/Kg)	SB08 LOSB08BS 2/14/92 (mg/Kg)	SB10 LOSB10AS 2/14/92 (mg/Kg)
Aluminum	21,200.00	13,800.00	11,400.00	13,100.00	6,200.00	18,400.00
Antimony	7.40 UJ	8.00 BJ	7.00 UJ	8.10 UJ	7.00 UJ	7.30 UJ
Arsenic	6.30	9.30	8.00	7.20	4.70	9.10
Barium	882.00 J	298.00 J	254.00 J	163.00 J	79.00 J	506.00 J
Beryllium	1.20 B	0.90 B	0.75 B	0.53 B	0.35 B	0.83 B
Cadmium	1.60 U	1.30 U	1.50 U	0.83 U	0.46 U	1.80 U
Calcium	100,000.00 J	133,000.00 J	101,000.00 J	18,700.00 J	134,000.00 J	63,300.00 J
Chromium	36.20	31.80	31.00	20.10	11.40	40.10
Cobalt	8.60 B	7.20 B	6.30 B	7.10 B	2.80 B	9.10 B
Copper	111.00	101.00	95.20	67.80	15.60	189.00
Iron	23,100.00 J	17,900.00 J	14,500.00 J	18,700.00 J	11,000.00 J	27,600.00 J
Lead	337.00	518.00	483.00	202.00	150.00	381.00
Magnesium	47,000.00	63,700.00	41,200.00	9,180.00	80,500.00	28,000.00
Manganese	361.00 J	343.00 J	247.00 J	407.00 J	290.00 J	1,110.00 J
Mercury	0.12	0.11 U	0.10 U	0.16	0.10 U	0.79
Nickel	33.40	22.60	20.50	20.80	7.70 B	33.50
Potassium	3,080.00	2,770.00	2,000.00	1,820.00	2,210.00	2,870.00
Selenium	0.98 UJ	5.20 UJ	4.40 UJ	0.99 UJ	0.87 UJ	4.60 UJ
Silver	1.20 U	1.70 B	1.10 U	1.30 U	4.30	1.20 U
Sodium	2,800.00	1,200.00 B	770.00 B	415.00 B	634.00 B	1,540.00
Thallium	0.49 UJ	0.52 UJ	0.62 B	0.49 UJ	0.44 U	0.46 U
Vanadium	34.40	23.90	20.10	25.00	11.50	38.40
Zinc	283.00	267.00	281.00	132.00	75.50	376.00
Cyanide	6.10 UJ	8.30 J	8.20 J	6.30 UJ	5.90 UJ	6.00 UJ

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
INORGANIC ANALYTES

Sample location IEPA Sample Number Date sample collected Units	SB11 LOSB11AS 2/14/92 (mg/Kg)		SB11 LOSB11AD 2/14/92 (mg/Kg)		SB11 LOSB11BS 2/14/92 (mg/Kg)		SB12 LOSB12AS 2/13/92 (mg/Kg)		SB12 LOSB12BS 2/13/92 (mg/Kg)		SB14 LOSB14BS 2/11/92 (mg/Kg)	
Aluminum	16,400.00		12,900.00		16,300.00		12,400.00		3,240.00		3,800.00	
Antimony	7.40	UJ	7.90	UJ	7.70	UJ	7.80	UJ	6.90	UJ	1.80	UJ
Arsenic	8.60		9.80		10.00		7.20	J	4.60	J	6.50	
Barium	576.00	J	317.00	J	493.00	J	230.00		30.60	B	13.10	B
Beryllium	0.94	B	0.81	B	0.98	B	0.76	B	0.22	U	0.24	BJ
Cadmium	1.50	U	1.40	U	1.30	U	0.75	U	0.31	U	0.23	U
Calcium	111,000.00	J	150,000.00	J	109,000.00	J	45,900.00	J	137,000.00	J	95,400.00	
Chromium	33.20		29.50		34.30		19.60	J	6.30	J	8.80	
Cobalt	7.60	B	5.60	B	7.40	B	7.70	B	2.20	B	6.80	B
Copper	107.00		87.90		99.20		60.80	J	5.10	UJ	19.60	
Iron	27,200.00	J	16,500.00	J	19,800.00	J	18,300.00		8,210.00		19,500.00	J
Lead	460.00		437.00		498.00		157.00	J	15.60	J	10.50	
Magnesium	52,700.00		78,800.00		47,400.00		22,000.00		73,300.00		58,100.00	
Manganese	493.00	J	306.00	J	310.00	J	511.00	J	207.00	J	335.00	J
Mercury	0.10	U	0.12	U	0.13	U	0.12	U	0.11		0.11	U
Nickel	26.60		18.80		22.20		19.00		5.90	B	14.50	
Potassium	2,410.00		3,040.00		3,190.00		1,420.00		521.00	B	1,030.00	B
Selenium	0.92	UJ	1.00	UJ	0.95	UJ	0.98	UJ	0.88	UJ	0.88	UJ
Silver	1.20	U	2.90		1.20	U	1.30	B	5.20		0.46	U
Sodium	1,540.00		1,320.00		1,880.00		1,120.00	B	617.00	B	375.00	B
Thallium	0.46	UJ	0.52	UJ	0.48	U	0.74	U	0.66	U	0.44	U
Vanadium	28.90		22.60		27.20		24.90		8.30	B	10.70	B
Zinc	286.00		240.00		278.00		149.00	J	21.30	J	35.30	
Cyanide	5.80	UJ	6.50	UJ	6.90	J	6.40	U	5.50	U	5.90	U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
INORGANIC ANALYTES

Sample location IEPA Sample Number Date sample collected Units	SB19 LOSB19AS 2/13/92 (mg/Kg)		SB19 LOSB19AD 2/13/92 (mg/Kg)		SB19 LOSB19BS 2/13/92 (mg/Kg)		SB22 LOSB22AS 2/13/92 (mg/Kg)		SB22 LOSB22BD 2/13/92 (mg/Kg)		SB22 LOSB22BS 2/13/92 (mg/Kg)	
Aluminum	19,100.00		14,400.00		2,130.00		17,300.00		10,600.00		9,600.00	
Antimony	9.40	UJ	9.00	UJ	6.50	UJ	7.20	UJ	7.70	UJ	7.20	UJ
Arsenic	4.30	J	6.10	J	4.50	J	8.50	J	6.50	J	6.10	J
Barium	121.00		98.00		8.00	B	652.00		281.00		313.00	
Beryllium	0.89	B	0.88	B	0.21	U	1.00	B	0.51	B	0.48	B
Cadmium	0.59	U	1.40	U	0.21	U	1.70		0.94	U	1.00	U
Calcium	9,500.00	J	54,400.00		146,000.00	J	83,800.00		118,000.00	J	121,000.00	J
Chromium	22.30	J	19.00	J	5.60	J	40.50	J	19.90	J	18.20	J
Cobalt	6.20	B	5.60	B	3.00	B	9.20	B	5.00	B	4.00	B
Copper	14.00	J	19.20	J	8.00	J	268.00	J	49.70	J	42.10	J
Iron	20,900.00		19,600.00		8,990.00		22,300.00		13,800.00		13,000.00	
Lead	33.70	J	46.70	J	14.40	J	471.00	J	388.00	J	343.00	J
Magnesium	5,250.00		32,000.00		89,200.00		38,800.00		70,100.00		70,800.00	
Manganese	201.00	J	299.00	J	285.00	J	379.00	J	331.00	J	338.00	J
Mercury	0.14	U	0.13	U	0.11	U	0.11	U	0.11	U	0.12	U
Nickel	21.10		19.30		7.20	B	34.20		14.00		11.80	
Potassium	1,990.00		1,770.00		707.00	B	2,390.00		2,730.00		2,100.00	
Selenium	1.20	UJ	1.20	BJ	0.87	UJ	0.92	UJ	0.95	UJ	0.97	UJ
Silver	1.50	U	2.30	B	6.30		2.60		6.20		5.20	
Sodium	541.00	B	473.00	B	188.00	B	1,810.00		1,270.00		1,150.00	B
Thallium	0.87	U	0.87	U	0.65	U	0.69	U	0.71	U	0.73	U
Vanadium	19.80		20.70		6.20	B	30.10		18.30		17.50	
Zinc	110.00	J	93.60	J	16.50	J	328.00	J	187.00	J	152.00	J
Cyanide	7.40	U	7.60	U	5.40	U	6.00	U	6.00	U	6.20	U

LENZ OIL SERVICES, INC.
SOIL ANALYTICAL RESULTS
INORGANIC ANALYTES

Sample location IEPA Sample Number Date sample collected Units	SB22 LOSB22CS 2/13/92 (mg/Kg)	SB203 LOSB203BR 2/11/92 (mg/Kg)	SB04 LOSB04BR 2/14/92 (mg/Kg)	SB08 LOSB08AR 2/14/92 (mg/Kg)	SB12 LOSB12BR 2/13/92 (mg/Kg)	SB19 LOSB19R 2/13/92 (mg/Kg)
Aluminum	7,010.00	20.00 U	66.00 U	66.00 U	66.00 U	66.00 U
Antimony	7.60 UJ	8.00 UJ	31.00 U	31.00 U	31.00 U	6,631.00 U
Arsenic	6.10 J	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Barium	98.80	4.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Beryllium	0.33 B	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Cadmium	0.84 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Calcium	121,000.00 J	127.00 U	120.00 B	92.00 U	158.00 B	140.00 B
Chromium	15.90 J	4.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Cobalt	4.10 B	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U
Copper	27.30 J	3.00 U	3.00 U	3.00 U	3.00 U	8.50 B
Iron	11,000.00	27.00 U	35.00 U	35.00 U	35.00 U	35.00 U
Lead	231.00 J	4.00	1.90 B	2.70 BJ	2.60 B	2.40 B
Magnesium	73,000.00	49.00 U	69.00 U	69.00 U	69.00 U	69.00 U
Manganese	291.00 J	1.20 U	1.00 U	1.00 U	1.00 U	1.00 U
Mercury	0.11 U	0.20 U	0.20 U	0.20 UJ	0.20 U	0.20 UJ
Nickel	11.00	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
Potassium	1,950.00	130.00 U	86.00 U	76.00 U	76.00 U	83.40 U
Selenium	0.97 UJ	4.00 U	4.00 U	4.00 U	4.00 U	4.00 UJ
Silver	5.80	2.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Sodium	579.00 B	94.70 B	107.00 U	69.40 U	108.00 U	117.00 U
Thallium	0.73 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Vanadium	13.40	2.00 U	3.00 U	3.00 U	3.00 U	3.00 U
Zinc	102.00 J	15.60 U	11.00 U	11.00 U	11.00 U	11.00 U
Cyanide	6.10 U	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U

LENZ OIL SERVICES, INC.
SURFACE WATER ANALYTICAL RESULTS
INORGANIC ANALYTES

Sample location	SW01	SW02	SW03	SW04	SW05	SW06
IEPA Sample Number	LOSW01AS	LOSW02AS	LOSW03AS	LOSW04AS	LOSW05AS	LOSW06AS
Date sample collected	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92	2/13/92
Units	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Aluminum	2,890.00	24,700.00	8,610.00	176.00 B	8,850.00	36,100.00
Antimony	31.00 U	31.00 U	31.00 U	31.00 U	31.00 U	31.00 U
Arsenic						
Barium	92.20 B	241.00	125.00 B	63.20 B	130.00 B	991.00
Beryllium	1.00 U	1.60 B	1.00 U	1.00 U	1.00 U	2.90 B
Cadmium	1.00 U	2.50 U	1.20 U	1.00 U	1.00 U	20.00
Calcium	144,000.00	212,000.00	139,000.00	109,000.00	140,000.00	800,000.00
Chromium	4.10 B	41.00	14.80	2.00 U	12.20	73.60
Cobalt	4.60 B	19.40 B	7.60 B	3.00 U	8.40 B	41.10 B
Copper	18.10 B	79.00	30.90	6.40 U	48.40	208.00
Iron	5,380.00	38,300.00	12,900.00	356.00	14,700.00	61,000.00
Lead						
Magnesium	73,300.00	121,000.00	72,800.00	60,000.00	70,600.00	134,000.00
Manganese	352.00	2,160.00	700.00	123.00	407.00	9,290.00
Mercury						
Nickel	9.90 B	45.10	35.50 B	5.00 B	14.80 B	94.90
Potassium	3,620.00 B	11,200.00	5,570.00	2,860.00	5,680.00	16,100.00
Selenium						
Silver	5.00 U	6.40 B	5.00 U	5.00 U	5.00 U	5.00 U
Sodium	171,000.00	171,000.00	174,000.00	180,000.00	176,000.00	751,000.00
Thallium						
Vanadium	4.40 B	48.60 B	16.50 B	3.00 U	13.80 B	67.50
Zinc	93.40	432.00	170.00	21.20	163.00	2,460.00
Cyanide						