EBASCO

ARCS II PROGRAM

Remedial Planning Activities at Selected Uncontrolled Hazardous Substance Disposal Sites Within EPA Region II (NY, NJ, PR, VI)



EPA Contract 68-W8-0110

EBASCO

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EBASCO SERVICES INCORPORATED

ARCS II PROGRAM

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DIVISION OF HAZARDOUS
WASTE REMEDIATION

FINAL
REMEDIAL INVESTIGATION REPORT
MATTIACE PETROCHEMICAL SITE
OPERABLE UNIT ONE
GLEN COVE, NEW YORK
VOLUME II OF II

APRIL, 1991

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REMEDIAL INVESTIGATION REPORT
MATTIACE PETROCHEMICAL SITE
GLEN COVE, NEW YORK

VOLUME II OF II

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APPENDIX A

CHEMICAL ANALYTICAL DATA

WIPE SAMPLE ANALYSES

MATTIACE PETROCHEMICAL SITE
WIPE SAMPLES
TOTAL METALS

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SAMPLE ID	MP-WP01-0001	MP-WP02-0001	MP-WP03-0001	MP-WP04-0001	MP-WP05-0001
UNITS	UG/SW	UG/SW	UG/SW	UG/SW	UG/SW
INORGANIC PARAMETERS:					
ALUMINUM	394.000	406.000	655.000	2,550.000	8,950.000
ANTIMONY	---	---	---	---	---
ARSENIC	1.500J	2.200J	3.900J	5.500J	8.000
BARIUM	381.000	18.700	25.800	12,400.000	14.100
BERYLLIUM	---	---	---	---	---
CADMIUM	40.900	19.300	14.300	---	---
CALCIUM	1,920.000	1,170.000	1,040.000	1,850.000	1,820.000
CHROMIUM	551.000	17.800	11.900	22.600	205.000
COBALT	34.100	---	---	10.000	26.400
COPPER	50.800	19.500	18.400	151.000	179.000
IRON	22,100.000	2,280.000	2,170.000	57,200.000	126,000.000
LEAD	3,730.000	689.000	643.000	41,300.000	568.000
MAGNESIUM	426.000	206.000	249.000	2,060.000	382.000
MANGANESE	152.000	16.800	16.900	354.000	672.000
MERCURY	19.000J	---	---	.300J	---
NICKEL	16.000J	---	---	50.300	210.000
POTASSIUM	203.000	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	4,890.000	3,740.000	3,840.000	4,610.000	4,920.000
THALLIUM	---	---	---	---	---
VANADIUM	---	85.500	110.000	---	---
ZINC	39.800	49,000.000	4,471.000	142.000	232.000
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-WP06-0001
UNITS	UG/SW

INORGANIC PARAMETERS:	
ALUMINUM	16.200
ANTIMONY	---
ARSENIC	---
BARIUM	---
BERYLLIUM	---
CADMIUM	---
CALCIUM	715.000
CHROMIUM	---
COBALT	---
COPPER	---
IRON	19.400
LEAD	2.200
MAGNESIUM	---
MANGANESE	---
MERCURY	---
NICKEL	---
POTASSIUM	---
SELENIUM	---
SILVER	---
SODIUM	7,690.000
THALLIUM	---
VANADIUM	---
ZINC	38.200
CYANIDE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
WIPE SAMPLES
PESTICIDE/PCB ANALYSES

DATE:01/02/91
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SAMPLE ID	MP-WP01-0002	MP-WP02-0002	MP-WP03-0002	MP-WP04-0002	MP-WP05-0002
UNITS	UG/SW	UG/SW	UG/SW	UG/SW	UG/SW
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	.250	.250	.250	.250	.250
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-WP06-0002
UNITS	UG/SW

PESTICIDE/PCB PARAMETERS:

ALPHA-BHC	---
BETA-BHC	---
DELTA-BHC	---
GAMMA-BHC	---
HEPTACHLOR	---
ALDRIN	---
HEPTACHLOR EPOXIDE	---
ENDOSULFAN I	---
DIELDRIN	---
4-4-DDE	---
ENDRIN	---
ENDOSULFAN II	---
4-4-DDD	---
ENDOSULFAN SULFATE	---
4-4-DDT	---
METHOXYCHLOR	---
ENDRIN KETONE	---
ALPHA CHLORDANE	---
GAMMA CHLORDANE	.250
TOXAPHENE	---
AROCLOR 1016	---
AROCLOR 1221	---
AROCLOR 1232	---
AROCLOR 1242	---
AROCLOR 1248	---
AROCLOR 1254	---
AROCLOR 1260	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

A-2

UNDERGROUND STORAGE TANK SLUDGE ANALYSES

MATTIACE PETROCHEMICAL SITE
SLUDGE SAMPLES
TCL VOLATILES

SAMPLE ID	MP-TK01-0001	MP-TK04-0001	MP-TK04-0002	MP-TP02-DS01	MP-TP02-DS01
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	20,000.000 R
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	6.000 J	---	---
ACETONE	---	842.000 J	816.000 J	9,000.000	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	727.000 J	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	42,750.000	82.000	23.000 J	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	0.000 NA	0.000 NA	0.000 NA	0.000 NA	0.000 NA
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	68,000.000	160,000.000
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	143.000 J	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	17,885.000	73.000	132.000	89,000.000	220,000.000
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	130.000 J	---	---	---	---
STYRENE	---	---	---	---	---
TOTAL XYLENES	1,088.000 J	---	22.000 J	---	---
TOTAL TICS	3	NR	NR	NR	NR
TIC CONCENTRATION	4,250.000 J	NR	NR	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SLUDGE SAMPLES
TOTAL METALS

SAMPLE ID	MP-TK01-0001	MP-TK04-0001	MP-TK04-0002	MP-TP02-DS01	MP-TT02-DS01
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
INORGANIC PARAMETERS:					
ALUMINUM	6,060.000 J	9,460.000 J	14,700.000 J	200.000 R	200.000 R
ANTIMONY	---	---	---	329.000 J	148.000 J
ARSENIC	---	---	94.600 J	11.900 J	3.400 J
BARIUM	40.500 J	---	246.000 J	261.000 J	1,340.000 J
BERYLLIUM	---	---	---	0.650 J	1.100 J
CADMIUM	---	---	277.000 J	3.400 J	4.600 J
CALCIUM	21,000.000 J	40,300.000 J	81,500.000 J	2,230.000 J	2,110.000 J
CHROMIUM	---	---	298.000 J	121.000 J	34.600 J
COBALT	---	---	---	73.300 J	4.600 J
COPPER	25.000 R	25.000 R	25.000 R	155.000 J	1,680.000 J
IRON	74,000.000 J	281,000.000 J	65,500.000 J	213,000.000 J	298.000 J
LEAD	58.800 J	532.000 J	---	9,450.000 J	417.000 J
MAGNESIUM	7,000.000 J	2,430.000 J	8,090.000 J	896.000 J	150.000 J
MANGANESE	757.000 J	1,370.000 J	2,890.000 J	156.000 J	2.900 J
MERCURY	0.200 R	0.200 R	0.200 R	80.300 JN	0.520 J
NICKEL	---	---	375.000 J	26.800 J	12.600 J
POTASSIUM	---	---	10,600.000 J	664.000 J	402.000 J
SELENIUM	---	---	---	1.300 J	2.300 J
SILVER	---	---	---	11.400 J	2.300 J
SODIUM	1,500.000 J	2,810.000 J	21,400.000 J	1,090.000 J	970.000 J
THALLIUM	---	41.500 J	189.000 J	1.300 J	2.300 J
VANADIUM	165.000 J	232.000 J	316.000 J	1.900 J	3.400 J
ZINC	1,640.000 J	5,490.000 J	10,100.000 J	436.000 J	253.000 J

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	CONCENTRATION < CRDL BUT > IDL
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
TANK SLUDGE SAMPLES
PESTICIDE/PCB ANALYSES

DATE:01/02/91
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SAMPLE ID	MP-TK01-0001	MP-TK04-0001	MP-TK04-0002
UNITS	MG/KG	MG/KG	MG/KG
PESTICIDE/PCB PARAMETERS:			
ALPHA-BHC	---	---	---
BETA-BHC	---	---	---
DELTA-BHC	---	---	---
GAMMA-BHC	---	---	---
HEPTACHLOR	---	---	---
ALDRIN	---	---	---
HEPTACHLOR EPOXIDE	---	---	---
ENDOSULFAN I	---	---	---
DIELDRIN	---	---	---
4-4-DDE	---	---	---
ENDRIN	---	---	---
ENDOSULFAN II	---	---	---
4-4-DDD	---	---	---
ENDOSULFAN SULFATE	---	---	---
4-4-DDT	---	---	---
METHOXYCHLOR	---	---	---
ENDRIN KETONE	---	---	---
ALPHA CHLORDANE	---	---	---
GAMMA CHLORDANE	---	---	---
TOXAPHENE	---	---	---
AROCLOR 1016	---	---	---
AROCLOR 1221	---	---	---
AROCLOR 1232	---	---	---
AROCLOR 1242	---	---	---
AROCLOR 1248	---	---	---
AROCLOR 1254	---	---	---
AROCLOR 1260	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

A-3

SOIL BORING ANALYSES

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
TCL VOLATILES

DATE:12/27/90
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Report format 1

SAMPLE ID	MP-SB01-0001	MP-SB02-0001	MP-SB03-0001	MP-SB04-0001	MP-SB05-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	21,000.000J	---	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	12,000.000J	---	26,000.000	---	4,400.000J
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	26,000.000J	20,000.000J	---	---	29,000.000J
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	160,000.000	140,000.000	12,000.000	920.000J	44,000.000
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	29,000.000J	44,000.000J	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	19,000.000J	140,000.000J	40,000.000J	11,000.000J	66,000.000J
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	630,000.000	440,000.000	270,000.000	78,000.000	100,000.000
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	460,000.000	67,000.000	73,000.000	3,800.000	69,000.000
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
TCL VOLATILES

SAMPLE ID	MP-SB01-0001	MP-SB02-0001	MP-SB03-0001	MP-SB04-0001	MP-SB05-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
TOTAL XYLENES	2,600,000.000J	310,000.000	400,000.000	52,000.000	580,000.000J
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	2	0	0	5	0
TIC CONCENTRATION	180,000.000JN	---	---	28,000.000	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
TCL VOLATILES

DATE:12/27/90
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SAMPLE ID	MP-SB06-0001	MP-SB07-0001	MP-SB08-0001	MP-SB09-0001	MP-SB10-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	19,000.000J	---	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---	17.000J
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	410.000J	---	---	---	11.000J
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	2,900.000	---	---	2.000J	300.000
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	15,000.000	---	1,500.000	2.000J	95.000
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	---	43,000.000	48,000.000	7.000	750.000
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	1,100.000	---	25,000.000	---	160.000
STYRENE	1,000.000	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
PN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
TCL VOLATILES

SAMPLE ID	MP-SB06-0001	MP-SB07-0001	MP-SB08-0001	MP-SB09-0001	MP-SB10-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
TOTAL XYLENES	7,900.000	3,300.000	110,000.000	4.000J	1,600.000
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	10	0	5	1	2
TIC CONCENTRATION	42,900.000JN	---	71,000.000	40.000	90.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-SB11-0001	MP-SB12-0001	MP-SB13-0001	MP-SB14-0001	MP-SB15-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	4,100.000J	---	---	---	---
ACETONE	---	---	---	22,000.000J	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	3,700.000J	---	---	---	---
TRANS-1,2-DICHLOROETHENE	120,000.000J	---	---	---	---
CHLOROFORM	2,500.000J	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	100,000.000	---	21,000.000J	27.000J
1,1,1-TRICHLOROETHANE	120,000.000J	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	99,000.000J	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	1,300.000J	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	22,000.000JN	---	---	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	170,000.000J	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	770,000.000J	160,000.000	5.000J	350.000J	---
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	150,000.000J	21,000.000	---	---	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
TCL VOLATILES

SAMPLE ID	MP-SB11-0001	MP-SB12-0001	MP-SB13-0001	MP-SB14-0001	MP-SB15-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
TOTAL XYLENES	720,000.000J	170,000.000	6.000J	---	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	5	0	3	0	1
TIC CONCENTRATION	56,000.000JN	---	29.000	---	7.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
TCL VOLATILES

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SAMPLE ID	MP-SB16-0001	MP-SB17-0001	MP-SB18-0001	MP-SB19-0001	MP-SB20-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	---	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	5.000J	---	72,000.000	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	5.000J	---	---	---
2-BUTANONE	---	17.000J	15,000.000J	110,000.000	---
1,1,1-TRICHLOROETHANE	---	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	---	---	370,000.000	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	3.000J	14.000J	---	75,000.000	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	---	4.000J	---	96,000.000	21.000
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	---	15.000	500.000J	910,000.000	---
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	1.000J	---	43,000.000	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
TCL VOLATILES

SAMPLE ID	MP-SB16-0001	MP-SB17-0001	MP-SB18-0001	MP-SB19-0001	MP-SB20-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
TOTAL XYLENES	---	12.000	---	350,000.000	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	0	0	0	1	0
TIC CONCENTRATION	--- JN	---	---	300,000.000	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB01-0001	MP-SB02-0001	MP-SB03-0001	MP-SB04-0001	MP-SB04-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	4,800.000 J	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	16,000.000 J	---	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	17,000.000 J	28,000.000 J	9,600.000 J	5,300.000 J	790.000 J
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB01-0001	MP-SB02-0001	MP-SB03-0001	MP-SB04-0001	MP-SB04-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	4,100.000 J	8,100.000 J	230,000.000	700.000 J	3,700.000 J
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	790,000.000 J	49,000.000 J	1,400,000.000 J	270,000.000 J	65,000.000 J
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	17	15	3	11	18
TIC CONCENTRATION	1,380,000.000 JN	700,000.000 JN	180,000.000 JN	310,000.000 JN	114,000.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB05-0001	MP-SB06-0001	MP-SB07-0001	MP-SB08-0001	MP-SB09-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	12,000.000 J	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	750,000.000	460.000 J	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	140.000 J	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	7,300.000 J	870.000 J	---	4,600.000 J	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	5,200.000 J	500.000 J	---	7,500.000 J	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB05-0001	MP-SB06-0001	MP-SB07-0001	MP-SB08-0001	MP-SB09-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	510.000 J	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	2,400,000.000	12,000.000	---	---	23,000.000 J
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	64,000.000 J	5,700.000	48,000.000 B	72,000.000 B	1,700,000.000 B
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	NR	20	NR	19	NR
TIC CONCENTRATION	NR	200,600.000 J	---	39,300,000.000 JN	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB10-0001	MP-SB11-0001	MP-SB12-0001	MP-SB13-0001	MP-SB14-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	2,700.000
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	2,700.000 J	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	22,000.000	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	370.000 J
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	5,500.000 J
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	950.000 J	---	---	---
NAPHTHALENE	560.000 J	---	10,000.000 J	110.000 J	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	---	19,000.000	3,800.000 J	49.000 J	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB10-0001	MP-SB11-0001	MP-SB12-0001	MP-SB13-0001	MP-SB14-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
DIETHYLPHTHALATE	---	800.000 J	4,800.000 J	40.000 J	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	1,200.000 J	---	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	2,800.000 J	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	31,000.000	12,000.000 J	68.000 J	---
FLUORANTHRENE	---	550.000 J	---	---	---
PYRENE	---	830.000 J	---	---	---
BUTYL BENZYL PHTHALATE	---	4,400.000 J	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	64,000.000 J	11,000.000	---	1,800.000	140.000 J
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	36,000.000	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	NR	20	19	19	11
TIC CONCENTRATION	---	2,975,000.000 J	135,000,000.000 JN	13,900.000 J	33,600.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB15-0001	MP-SB16-0001	MP-SB17-0001	MP-SB18-0001	MP-SB19-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	54.000 J	20,000.000
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	---	---	---	4,000.000 J
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---	1,200.000 J
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB15-0001	MP-SB16-0001	MP-SB17-0001	MP-SB18-0001	MP-SB19-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	---	6,300.000 J
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	550.000 J
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---	950.000 J	---	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	1	1	16	3	19
TIC CONCENTRATION	100.000 JN	200.000 JN	4,800.000 JN	400.000 JN	3,280,000.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB20-0001	MP-SBLK-0001
UNITS	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00
BASE/NEUTRAL PARAMETERS:		
PHENOL	---	---
BIS[2-CHLOROETHYL] ETHER	---	---
2-CHLOROPHENOL	---	---
1,3-DICHLOROBENZENE	---	---
1,4-DICHLOROBENZENE	---	---
BENZYL ALCOHOL	---	---
1,2-DICHLOROBENZENE	---	---
2-METHYLPHENOL	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---
4-METHYLPHENOL	---	---
N-NITROSO-DIPROPYLAMINE	---	---
HEXACHLOROETHANE	---	---
NITROBENZENE	---	---
ISOPHORONE	---	---
2-NITROPHENOL	---	---
2,4-DIMETHYLPHENOL	---	---
BENZOIC ACID	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---
2,4-DICHLOROPHENOL	---	---
2,2,4-TRICHLOROBENZENE	---	---
NAPHTHALENE	---	---
4-CHLOROANILINE	---	---
HEXACHLOROBUTADIENE	---	---
4-CHLORO-3-METHLYPHENOL	---	---
2-METHYLNAPHTHALENE	---	---
HEXACHLOROCYCLOPENTADIENE	---	---
2,4,6-TRICHLOROPHENOL	---	---
2,4,5-TRICHLOROPHENOL	---	---
2-CHLORONAPHTHALENE	---	---
2-NITROANILINE	---	---
DIMETHYL PHTHALATE	---	---
ACENAPHTHYLENE	---	---
3-NITROANILINE	---	---
ACENAPHTHENE	---	---
2,4-DINITROPHENOL	---	---
4-NITROPHENOL	---	---
DIBENZOFURAN	---	---
2,4-DINITROTOLUENE	---	---
2,6-DINITROTOLUENE	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 0 - 2 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB20-0001	MP-SBLK-0001
UNITS	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00
DIETHYLPHTHALATE	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---
FLUORENE	---	---
4-NITROANILINE	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---
N-NITROSODIPHENYLAMINE	---	---
4-BROMOPHENYL PHENYL ETHER	---	---
HEXACHLOROBENZENE	---	---
PENTACHLOROPHENOL	---	---
PHENANTHRENE	---	---
ANTHRACENE	---	---
DI-n-BUTYLPHTHALATE	---	---
FLUORANTHRENE	---	---
PYRENE	---	---
BUTYL BENZYL PHTHALATE	---	---
3,3-DICHLOROBENZIDINE	---	---
BENZO[a]ANTHRACENE	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---
CHRYSENE	---	---
DI-n-OCTYL PHTHALATE	---	---
BENZO[b]FLUORANTHENE	---	---
BENZO[k]FLUORANTHENE	---	---
BENZO[a]PYRENE	---	---
INDENO[1,2,3-CD]PYRENE	---	---
DIBENZ[A,H]ANTHRACENE	---	---
BENZO[G,H,I]PERYLENE	---	---
TOTAL TICS	3	1
TIC CONCENTRATION	600.000 JN	230.000 J

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00- 02FT
TOTAL METALS

DATE:12/27/90
TIME:16:57:41
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Report format 1

SAMPLE ID	MP-SB01-0001	MP-SB02-0001	MP-SB03-0001	MP-SB04-0001	MP-SB05-0001
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
INORGANIC PARAMETERS:					
ALUMINUM	5,630.000	6,220.000	7,310.000	5,120.000	8,410.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	2.600	---	---
BARIUM	---	---	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	23,100.000	---	38,400.000	3,570.000	1,900.000
CHROMIUM	9.800J	---	15.400J	12.300J	28.000J
COBALT	---	---	---	9.800	---
COPPER	27.000	5.700	15.600	12.200	15.300J
IRON	11,800.000	7,980.000	13,300.000	10,800.000	14,200.000
LEAD	17.000	8.100	9.600	58.300	77.300J
MAGNESIUM	6,610.000	1,340.000	21,600.000	2,050.000	1,790.000
MANGANESE	165.000	87.000	179.000	128.000	175.000
MERCURY	---	---	---	---	---
NICKEL	---	---	---	---	9.100
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	27.700	14.000	25.800	19.800	19.900
ZINC	42.000J	18.300J	25.500J	46.000J	28.600J
CYANIDE	---	---	---	---	1.100

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00- 02FT
TOTAL METALS

SAMPLE ID	MP-SB06-0001	MP-SB07-0001	MP-SB08-0001	MP-SB09-0001	MP-SB10-0001
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
INORGANIC PARAMETERS:					
ALUMINUM	21,300.000	6,580.000	6,250.000	9,080.000	5,850.000
ANTIMONY	---	---	---	---	22.100J
ARSENIC	---	---	2.500	3.700	2.700
BARIUM	182.000J	---	---	60.600	---
BERYLLIUM	1.400	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	2,100.000	11,600.000J	15,700.000J	35,700.000J	78,900.000J
CHROMIUM	45.100J	4.000	18.300J	35.800J	10.800J
COBALT	18.200	---	---	---	---
COPPER	26.300	---	---	66.000J	25.700
IRON	32,700.000	16,700.000	13,700.000	18,400.000	11,200.000
LEAD	3.500	29.400	30.900	104.000	---
MAGNESIUM	7,270.000	4,630.000	1,720.000	4,480.000	41,900.000
MANGANESE	563.000	---	---	---	---
MERCURY	---	---	---	---	---
NICKEL	29.600	---	11.400	13.500	---
POTASSIUM	5,890.000	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	54.100	53.200J	18.700J	38.800J	23.200J
ZINC	79.800J	---	---	---	---
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00- 02FT
TOTAL METALS

SAMPLE ID	MP-SB11-0001	MP-SB12-0001	MP-SB13-0001	MP-SB14-0001	MP-SB15-0001
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
INORGANIC PARAMETERS:					
ALUMINUM	6,070.000	11,600.000	3,990.000	11,400.000	3,940.000
ANTIMONY	---	---	---	---	---
ARSENIC	15.600J	3.900	---	3.000	---
BARIUM	60.100	84.000	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	16.000	---	---	---
CALCIUM	18,500.000	2,290.000	4,320.000	1,160.000J	---
CHROMIUM	27.700J	41.400	29.500J	17.300	17.300
COBALT	13.700J	22.500	---	---	---
COPPER	22.000J	---	6.900	13.800	6.900
IRON	12,300.000	19,300.000	7,780.000	12,900.000	7,820.000
LEAD	112.000J	---	12.500J	8.800J	3.600J
MAGNESIUM	8,070.000	2,200.000	---	2,410.000J	---
MANGANESE	204.000	606.000J	407.000	69.700	85.300
MERCURY	1.400	2.900	---	---	---
NICKEL	13.600J	28.800	---	9.500	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	16.700	32.000	---	24.900	---
ZINC	42.500J	68.300J	13.600J	33.900J	30.200J
CYANIDE	---	---	---	---	---

XPLANATION OF CODES :

'no codes)	DETECTED AT CONCENTRATION INDICATED
	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
A	NOT ANALYZED FOR
.,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
I	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00- 02FT
TOTAL METALS

SAMPLE ID	MP-SB16-0001	MP-SB17-0001	MP-SB18-0001	MP-SB19-0001	MP-SB20-0001
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
INORGANIC PARAMETERS:					
ALUMINUM	4,090.000	5,390.000	2,430.000	3,490.000	3,310.000
ANTIMONY	---	---	---	---	---
ARSENIC	3.200	---	---	---	---
BARIUM	---	---	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	56,100.000	8,110.000	2,380.000J	---	1,880.000J
CHROMIUM	13.400	18.400	5.700	40.300	8.300
COBALT	---	---	---	---	---
COPPER	---	11.500	---	73.600	8.200
IRON	8,770.000	11,500.000	6,770.000	12,500.000	6,710.000
LEAD	100.000J	---	2.200J	170.000J	4.800J
MAGNESIUM	15,000.000	2,400.000	1,370.000J	---	1,720.000J
MANGANESE	146.000J	144.000J	77.600	54.700	51.400
MERCURY	---	---	---	.810	---
NICKEL	---	9.700	---	---	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	16.500	17.600	---	12.500	---
ZINC	35.700J	23.500J	16.500J	39.200J	41.200J
CYANIDE	---	---	---	2.100	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
PESTICIDE/PCB ANALYSES

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SAMPLE ID	MP-SB01-0001	MP-SB02-0001	MP-SB03-0001	MP-SB04-0001	MP-SB05-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	150.000J
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	210.000J
HEPTACHLOR EPOXIDE	---	---	---	---	240.000J
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	720.000J	---	---
4-4-DDT	---	---	---	---	30.000J
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	85.000J	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	420.000	460.000	870.000	430.000	860.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB06-0001	MP-SB07-0001	MP-SB08-0001	MP-SB09-0001	MP-SB10-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	49.000J
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	180.000J	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	2.400J	53.000J	930.000J	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	11.000J	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	1.100J	9.100J	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	2.500J	---	---	---
GAMMA CHLORDANE	85.000	4.300	91.000	1,700.000	420.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
PESTICIDE/PCB ANALYSES

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SAMPLE ID	MP-SB11-0001	MP-SB12-0001	MP-SB13-0001	MP-SB14-0001	MP-SB15-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	9,100.000J	---	2.600J	---	---
GAMMA CHLORDANE	430,000.000	87.000	420.000	93.000	88.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB16-0001	MP-SB17-0001	MP-SB19-0001	MP-SB20-0001
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00	0.00 - 2.00
PESTICIDE/PCB PARAMETERS:				
ALPHA-BHC	---	---	---	---
BETA-BHC	---	---	---	---
DELTA-BHC	---	---	---	---
GAMMA-BHC	---	---	120.000JN	---
HEPTACHLOR	---	---	---	---
ALDRIN	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---
ENDOSULFAN I	---	---	---	---
DIELDRIN	---	---	---	---
4-4-DDE	---	---	---	---
ENDRIN	---	---	---	---
ENDOSULFAN II	---	---	---	---
4-4-DDD	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---
4-4-DDT	---	---	---	---
METHOXYCHLOR	---	---	---	---
ENDRIN KETONE	---	---	---	---
ALPHA CHLORDANE	---	---	---	---
GAMMA CHLORDANE	90.000	85.000	1,700.000	88.000
TOXAPHENE	---	---	---	---
AROCLOR 1016	---	---	---	---
AROCLOR 1221	---	---	---	---
AROCLOR 1232	---	---	---	---
AROCLOR 1242	---	---	---	---
AROCLOR 1248	---	---	---	---
AROCLOR 1254	---	---	---	---
AROCLOR 1260	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 00 - 02 FT
PESTICIDE/PCB ANALYSES

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SAMPLE ID	MP-SBLK-0001
UNITS	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00

PESTICIDE/PCB PARAMETERS:	
ALPHA-BHC	---
BETA-BHC	---
DELTA-BHC	---
GAMMA-BHC	---
HEPTACHLOR	---
ALDRIN	---
HEPTACHLOR EPOXIDE	---
ENDOSULFAN I	---
DIELDRIN	---
4-4-DDE	---
ENDRIN	---
ENDOSULFAN II	---
4-4-DDD	---
ENDOSULFAN SULFATE	---
4-4-DDT	---
METHOXYCHLOR	---
ENDRIN KETONE	---
ALPHA CHLORDANE	---
GAMMA CHLORDANE	81.000
TOXAPHENE	---
AROCLOR 1016	---
AROCLOR 1221	---
AROCLOR 1232	---
AROCLOR 1242	---
AROCLOR 1248	---
AROCLOR 1254	---
AROCLOR 1260	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TCL VOLATILES

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SAMPLE ID	MP-SB01-0003	MP-SB02-0003	MP-SB03-0003	MP-SB04-0003	MP-SB05-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	---	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	2,100.000J	5,300.000J	1,800.000
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	29,000.000J	---	4,400.000J
1,1,1-TRICHLOROETHANE	1,400.000J	21,000.000J	2,300.000J	4,100.000J	5,900.000J
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	11,000.000	77,000.000	5,700.000	13,000.000	9,300.000
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	3,400.000J	24,000.000J	21,000.000J	6,800.000J	3,200.000J
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	4,900.000J	140,000.000J	16,000.000	40,000.000	18,000.000
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	55,000.000	410,000.000	78,000.000	220,000.000	38,000.000
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	28,000.000	59,000.000	9,500.000	11,000.000	15,000.000
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TCL VOLATILES

SAMPLE ID	MP-SB01-0003	MP-SB02-0003	MP-SB03-0003	MP-SB04-0003	MP-SB05-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
TOTAL XYLENES	190,000.000J	260,000.000	61,000.000J	92,000.000J	110,000.000J
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	4	0	2	5	2
TIC CONCENTRATION	24,000.000JN	---	6,000.000	59,000.000	5,000.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-SB06-0003	MP-SB07-0003	MP-SB08-0003	MP-SB09-0003	MP-SB10-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	150,000.000J	---	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	35,000.000J	1,300.000	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	---	9,000.000	26,000.000J
1,1,1-TRICHLOROETHANE	---	73,000.000J	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	58,000.000	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	210,000.000J	3,600.000	---	3,500.000
2-HEXANONE	---	89,000.000J	---	100,000.000J	---
TETRACHLOROETHENE	2,800.000J	100,000.000	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	1,800.000J	810,000.000	26,000.000	100,000.000	730.000
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	59,000.000	10,000.000	23,000.000	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TCL VOLATILES

SAMPLE ID	MP-SB06-0003	MP-SB07-0003	MP-SB08-0003	MP-SB09-0003	MP-SB10-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
TOTAL XYLENES	2,200.000J	280,000.000	46,000.000	79,000.000	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	0	7	9	7	0
TIC CONCENTRATION	--- JN	200,000.000	32,900.000	34,000.000	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TCL VOLATILES

SAMPLE ID	MP-SB11-0003	MP-SB12-0003	MP-SB12-0004	MP-SB13-0003	MP-SB14-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	---	---	---	18,000.000J
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	56.000	---	---	---	---
TRANS-1,2-DICHLOROETHENE	2,000.000J	6,200.000	7,000.000	---	---
CHLOROFORM	44.000	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	450.000J	13,000.000J	---	---	20,000.000J
1,1,1-TRICHLOROETHANE	1,200.000J	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	770.000J
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	2,200.000J	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	26.000	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	520.000J	1,700.000J	---	120.000J	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	3,300.000J	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	9,900.000J	---	---	7.000J	450.000J
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	12,000.000J	10,000.000	18,000.000	---	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TCL VOLATILES

DATE:12/27/90
TIME:11:23:40
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Report format 1

SAMPLE ID	MP-SB11-0003	MP-SB12-0003	MP-SB12-0004	MP-SB13-0003	MP-SB14-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
TOTAL XYLENES	49,000.000J	63,000.000	110,000.000	---	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	2	0	1	0	0
TIC CONCENTRATION	330.000JN	---	8,000.000	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TCL VOLATILES

SAMPLE ID	MP-SB15-0003	MP-SB16-0003	MP-SB17-0003	MP-SB18-0003	MP-SB19-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	17.000	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	4,500.000J	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	61.000	---	---	---	---
TRANS-1,2-DICHLOROETHENE	130.000	---	---	3,600.000	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	30.000	---	---	---	---
2-BUTANONE	8.000JN	23,000.000J	---	20,000.000	67,000.000JN
1,1,1-TRICHLOROETHANE	2.000J	---	---	500.000J	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	9.000	---	---	830.000	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	280.000	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	3.000J	---	---	690.000	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	1.000J	330.000J	---	13,000.000	---
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	1,000.000	---	710.000	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TCL VOLATILES

SAMPLE ID	MP-SB15-0003	MP-SB16-0003	MP-SB17-0003	MP-SB18-0003	MP-SB19-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
TOTAL XYLENES	---	8,200.000	---	8,700.000	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	0	0	0	0	0
TIC CONCENTRATION	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-SB20-0003
UNITS	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00

TCL VOLATILE PARAMETERS:

CHLOROMETHANE	---
BROMOMETHANE	---
VINYL CHLORIDE	---
CHLOROETHANE	---
METHYLENE CHLORIDE	---
ACETONE	---
CARBON DISULFIDE	---
1,1-DICHLOROETHENE	---
1,1-DICHLOROETHANE	---
TRANS-1,2-DICHLOROETHENE	---
CHLOROFORM	---
1,2-DICHLOROETHANE	---
2-BUTANONE	---
1,1,1-TRICHLOROETHANE	---
CARBON TETRACHLORIDE	---
VINYL ACETATE	---
BROMODICHLOROMETHANE	---
1,2-DICHLOROPROPANE	---
TRANS-1,3-DICHLOROPROPENE	---
TRICHLOROETHENE	---
DIBROMOCHLOROMETHANE	---
1,1,2-TRICHLOROETHANE	---
BENZENE	---
CIS-1,3-DICHLOROPROPENE	---
2-CHLOROETHYLVINYLETHER	---
BROMOFORM	---
4-METHYL-2-PENTANONE	---
2-HEXANONE	---
TETRACHLOROETHENE	1.000J
1,1,2,2-TETRACHLOROETHANE	---
TOLUENE	---
CHLOROBENZENE	---
ETHYLBENZENE	---
STYRENE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-SB20-0003
UNITS	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00

TOTAL XYLENES	---
ACRYLONITRILE	---
1,1,1,2-TETRACHLOROETHANE	---
ISOBUTANOL	---
TOTAL TICS	2
TIC CONCENTRATION	60.000JN

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB01-0003	MP-SB02-0003	MP-SB03-0003	MP-SB04-0003	MP-SB05-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	750.000 J
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	67,000.000 J	---	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	8,400.000 J	8,000.000 J	---	4,000.000 J	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB01-0003	MP-SB02-0003	MP-SB03-0003	MP-SB04-0003	MP-SB05-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	27,000.000	16,000.000 J	13,000.000 J	18,000.000
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	25,000.000 J	100,000.000 J	200,000.000 J	270,000.000 J	4,100.000 J
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	18	14	NR	7	1
TIC CONCENTRATION	1,499,000.000 JN	294,000.000 JN	NR	166,000.000 JN	10,000.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB06-0003	MP-SB07-0003	MP-SB08-0003	MP-SB09-0003	MP-SB10-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	1,200.000 J	---	2,400.000 J	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	2,000.000 J	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	1,500.000 J
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	7,300.000 J	5,200.000 J	---	62.000 J
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	---	2,300.000 J	810.000 J	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB06-0003	MP-SB07-0003	MP-SB08-0003	MP-SB09-0003	MP-SB10-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	12,000.000 J	14,000.000 J	---	---	---
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	11,000.000	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	44,000.000	270,000.000 B	---	140,000.000 B	420.000 J
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	4	19	18	5	4
TIC CONCENTRATION	58,600.000 J	20,800,000.000 JN	6,900,000.000 JN	2,900,000.000 JN	4,000.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB11-0003	MP-SB12-0003	MP-SB12-0004	MP-SB13-0003	MP-SB14-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	60.000 J
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	9,500.000 J	5,300.000 J	4,500.000 J	---	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	---	2,000.000 J	1,600.000 J	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB11-0003	MP-SB12-0003	MP-SB12-0004	MP-SB13-0003	MP-SB14-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
DIETHYLPHTHALATE	---	2,500.000 J	2,100.000 J	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	58,000.000	9,400.000 J	6,800.000 J	110.000 J	---
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	82,000.000	83,000.000 B	---	630.000	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	4,400.000 J	---	---	---	---
DIBENZ[A,H]ANTHRACENE	4,500.000 J	---	---	---	---
BENZO[G,H,I]PERYLENE	5,400.000 J	---	---	---	---
TOTAL TICS	NR	19	19	12	4
TIC CONCENTRATION	---	10,700,000.000 JN	8,200,000.000 JN	4,900.000 J	1,300.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB15-0003	MP-SB16-0003	MP-SB17-0003	MP-SB18-0003	MP-SB19-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	1,200.000
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	100.000 J	---	920.000	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	---	130.000 J	---	850.000	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB15-0003	MP-SB16-0003	MP-SB17-0003	MP-SB18-0003	MP-SB19-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	320.000 J	120.000 J
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---	---	---	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	NR	12	1	20	3
TIC CONCENTRATION	---	3,500.000 JN	100.000 JN	14,600.000 JN	500.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB20-0003
UNITS	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00
BASE/NEUTRAL PARAMETERS:	
PHENOL	---
BIS[2-CHLOROETHYL] ETHER	---
2-CHLOROPHENOL	---
1,3-DICHLOROBENZENE	---
1,4-DICHLOROBENZENE	---
BENZYL ALCOHOL	---
1,2-DICHLOROBENZENE	---
2-METHYLPHENOL	---
BIS[2-CHLOROISOPROPYL] ETHER	---
4-METHYLPHENOL	---
N-NITROSO-DIPROPYLAMINE	---
HEXACHLOROETHANE	---
NITROBENZENE	---
ISOPHORONE	---
2-NITROPHENOL	---
2,4-DIMETHYLPHENOL	---
BENZOIC ACID	---
BIS[2-CHLOROETHOXY] METHANE	---
2,4-DICHLOROPHENOL	---
2,2,4-TRICHLOROBENZENE	---
NAPHTHALENE	---
4-CHLOROANILINE	---
HEXACHLOROBUTADIENE	---
4-CHLORO-3-METHLYPHENOL	---
2-METHYLNAPHTHALENE	---
HEXACHLOROCYCLOPENTADIENE	---
2,4,6-TRICHLOROPHENOL	---
2,4,5-TRICHLOROPHENOL	---
2-CHLORONAPHTHALENE	---
2-NITROANILINE	---
DIMETHYL PHTHALATE	---
ACENAPHTHYLENE	---
3-NITROANILINE	---
ACENAPHTHENE	---
2,4-DINITROPHENOL	---
4-NITROPHENOL	---
DIBENZOFURAN	---
2,4-DINITROTOLUENE	---
2,6-DINITROTOLUENE	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 4 - 6 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB20-0003
UNITS	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00
DIETHYLPHTHALATE	---
4-CHLOROPHENYL PHENYL ETHER	---
FLUORENE	---
4-NITROANILINE	---
4,6-DINITRO-2-METHYLPHENOL	---
N-NITROSODIPHENYLAMINE	---
4-BROMOPHENYL PHENYL ETHER	---
HEXACHLOROBENZENE	---
PENTACHLOROPHENOL	---
PHENANTHRENE	---
ANTHRACENE	---
DI-n-BUTYLPHTHALATE	---
FLUORANTHRENE	---
PYRENE	---
BUTYL BENZYL PHTHALATE	---
3,3-DICHLOROBENZIDINE	---
BENZO[a]ANTHRACENE	---
BIS[2-ETHYLHEXYL]PHTHALATE	---
CHRYSENE	---
DI-n-OCTYL PHTHALATE	---
BENZO[b]FLUORANTHENE	---
BENZO[k]FLUORANTHENE	---
BENZO[a]PYRENE	---
INDENO[1,2,3-CD]PYRENE	---
DIBENZ[A,H]ANTHRACENE	---
BENZO[G,H,I]PERYLENE	---
TOTAL TICS	2
TIC CONCENTRATION	500.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TOTAL METALS

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SAMPLE ID	MP-SB01-0003	MP-SB02-0003	MP-SB03-0003	MP-SB04-0003	MP-SB05-0003
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
INORGANIC PARAMETERS:					
ALUMINUM	4,320.000	6,150.000	8,020.000	5,200.000	1,530.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	2.200	2.600	---
BARIUM	---	---	45.700J	---	---
BERYLLIUM	---	---	1.200	---	---
CADMIUM	---	---	---	---	---
CALCIUM	1,510.000	---	1,520.000	16,400.000	1,280.000
CHROMIUM	28.800J	---	19.900J	12.100J	---
COBALT	---	---	42.700	---	---
COPPER	48.600	5.800	32.200	14.100	---
IRON	8,060.000	9,530.000	11,500.000	9,580.000	5,860.000
LEAD	80.200	4.400	36.300	40.100	2.600J
MAGNESIUM	1,110.000	1,160.000	2,250.000	2,820.000	---
MANGANESE	85.000	162.000	201.000	122.000	42.100
MERCURY	---	---	---	---	---
NICKEL	---	---	33.600	---	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	13.700	14.900	17.000	15.700	---
ZINC	30.200J	18.600J	149.000J	33.200J	10.200
CYANIDE	2.300	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TOTAL METALS

SAMPLE ID	MP-SB06-0003	MP-SB07-0003	MP-SB08-0003	MP-SB09-0003	MP-SB10-0003
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
INORGANIC PARAMETERS:					
ALUMINUM	3,210.000	6,190.000	4,480.000	8,270.000	3,720.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	5.800	2.700	---
BARIUM	---	---	---	54.500	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	---	20,100.000J	6,160.000J	4,320.000J	---
CHROMIUM	7.400	11.500J	19.400J	29.500J	4.600J
COBALT	---	---	---	---	---
COPPER	---	---	---	---	---
IRON	10,300.000	13,500.000	11,000.000	18,000.000	3,230.000
LEAD	10.300	---	95.300	204.000	1.800
MAGNESIUM	---	10,200.000	1,740.000	4,100.000	---
MANGANESE	191.000	---	---	---	---
MERCURY	---	---	---	---	---
NICKEL	---	---	---	12.300	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	10.900	20.400J	15.300J	26.200J	---
ZINC	23.200J	---	---	---	---
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TOTAL METALS

SAMPLE ID	MP-SB11-0003	MP-SB12-0003	MP-SB12-0004	MP-SB13-0003	MP-SB14-0003
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
INORGANIC PARAMETERS:					
ALUMINUM	4,620.000	17,100.000	12,400.000	289,000.000	9,350.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	2.700	3.100	---	3.300
BARIUM	---	87.900	60.400	222.000	---
BERYLLIUM	---	---	---	1.500	---
CADMIUM	---	---	---	---	---
CALCIUM	2,870.000	---	---	---	---
CHROMIUM	20.100J	39.200	51.300	53.800J	18.800
COBALT	45.000J	20.900	25.600	17.400J	12.500
COPPER	9.500	---	---	31.100J	12.100
IRON	13,000.000	23,800.000	27,100.000	43,400.000	12,900.000
LEAD	10.900J	---	---	10.700J	7.400J
MAGNESIUM	1,540.000	2,600.000	1,560.000	7,730.000	2,770.000J
MANGANESE	889.000	259.000J	200.000J	485.000	224.000
MERCURY	.150	.150	---	---	---
NICKEL	8.500	27.100	22.900	42.500J	12.300
POTASSIUM	---	---	---	7,150.000J	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	13.300	38.600	28.600	65.900	25.400
ZINC	26.200J	56.800J	44.800J	120.000J	39.400J
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TOTAL METALS

SAMPLE ID	MP-SB15-0003	MP-SB16-0003	MP-SB17-0003	MP-SB18-0003	MP-SB19-0003
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
INORGANIC PARAMETERS:					
ALUMINUM	12,400.000	8,360.000	11,400.000	1,450.000	1,110.000
ANTIMONY	---	---	---	---	---
ARSENIC	3.900	2.600	---	2.300	---
BARIUM	---	---	53.900	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	1,300.000J	1,470.000	---	---	---
CHROMIUM	20.000	23.400	21.100	7.700	5.000
COBALT	---	---	11.600	---	---
COPPER	14.700	---	11.800	---	---
IRON	20,800.000	19,000.000	14,500.000	11,400.000	4,010.000
LEAD	8.900J	---	---	2.000J	10.700J
MAGNESIUM	1,970.000J	1,470.000	2,690.000	---	---
MANGANESE	184.000	131.000J	160.000J	26.200	23.200
MERCURY	---	---	---	---	---
NICKEL	10.500	10.700	15.800	---	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	29.500	27.900	24.700	---	---
ZINC	37.200J	61.300J	40.300J	16.600J	15.100J
CYANIDE	---	---	---	---	--

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
TOTAL METALS

SAMPLE ID	MP-SB20-0003
UNITS	MG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00

INORGANIC PARAMETERS:	
ALUMINUM	2,180.000
ANTIMONY	---
ARSENIC	---
BARIUM	---
BERYLLIUM	---
CADMIUM	---
CALCIUM	---
CHROMIUM	5.200
COBALT	---
COPPER	---
IRON	6,480.000
LEAD	1.000J
MAGNESIUM	---
MANGANESE	22.900
MERCURY	---
NICKEL	---
POTASSIUM	---
SELENIUM	---
SILVER	---
SODIUM	---
THALLIUM	---
VANADIUM	---
ZINC	10.600J
CYANIDE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB01-0003	MP-SB02-0003	MP-SB03-0003	MP-SB04-0003	MP-SB05-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	9.300J	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	19.000J	---	---	20.000J	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	30.000J	---	---
GAMMA CHLORDANE	7.100	91.000	30.000	8.300	82.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	460.000J
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB06-0003	MP-SB07-0003	MP-SB08-0003	MP-SB09-0003	MP-SB10-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	32.000J	160.000J	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	12.000J	---
ALDRIN	---	---	---	16.000J	---
HEPTACHLOR EPOXIDE	---	---	32.000J	150.000J	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	100.000J	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	1.300J	2.800J	5.800J	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	86.000	100.000	470.000	1,800.000	87.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB11-0003	MP-SB12-0003	MP-SB12-0004	MP-SB13-0003	MP-SB14-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	700.000J	---	---	---	---
GAMMA CHLORDANE	1,700.000	91.000	93.000	100.000	92.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	780.000J	660.000J	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 04 - 06 FT
PESTICIDE/PCB ANALYSES

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TIME: 13:09:43
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SAMPLE ID	MP-SB15-0003	MP-SB16-0003	MP-SB17-0003	MP-SB18-0003	MP-SB20-0003
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00	4.00 - 6.00
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	28.000J	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	97.000	92.000	88.000	87.000	85.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TCL VOLATILES

SAMPLE ID	MP-SB01-0005	MP-SB02-0005	MP-SB03-0005	MP-SB04-0005	MP-SB04-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	---	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	3,100.000J	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	45,000.000J	---	---
1,1,1-TRICHLOROETHANE	5,900.000J	100,000.000J	5,300.000J	---	410.000J
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	54,000.000	240,000.000	16,000.000	560.000	2,900.000
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	18,000.000J	---	1,800.000J
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	34,000.000J	400,000.000J	6,400.000	3,900.000J	6,900.000J
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	240,000.000	840,000.000	44,000.000	11,000.000	28,000.000
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	42,000.000	130,000.000	1,900.000J	1,100.000	2,000.000
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TCL VOLATILES

SAMPLE ID	MP-SB01-0005	MP-SB02-0005	MP-SB03-0005	MP-SB04-0005	MP-SB04-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
TOTAL XYLENES	290,000.000	610,000.000	11,000.000J	10,000.000	14,000.000
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	1	0	1	2	0
TIC CONCENTRATION	20,000.000JN	---	2,000.000	3,000.000	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TCL VOLATILES

SAMPLE ID	MP-SB05-0007	MP-SB06-0005	MP-SB07-0005	MP-SB08-0005	MP-SB09-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	6,000.000J	36,000.000J	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	460.000J	---	---	---	390.000J
TRANS-1,2-DICHLOROETHENE	19,000.000	---	31,000.000J	---	23,000.000J
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	23,000.000	---	1,800.000J
1,1,1-TRICHLOROETHANE	22,000.000	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	17,000.000	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	8,200.000	---
2-HEXANONE	---	---	29,000.000J	---	2,000.000J
TETRACHLOROETHENE	8,000.000	---	---	3,700.000	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	---	---	170,000.000	130,000.000	32,000.000
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	4,600.000	---	35,000.000	58,000.000	5,000.000
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TCL VOLATILES

SAMPLE ID	MP-SB05-0007	MP-SB06-0005	MP-SB07-0005	MP-SB08-0005	MP-SB09-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
TOTAL XYLENES	42,000.000	320.000J	180,000.000	260,000.000J	23,000.000
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	9	2	10	5	1
TIC CONCENTRATION	71,900.000JN	2,400.000	230,000.000	55,000.000	1,000.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TCL VOLATILES

SAMPLE ID	MP-SB10-0005	MP-SB11-0005	MP-SB12-0007	MP-SB13-0005	MP-SB14-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	7,000.000J	---	---	46,000.000J
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	4,300.000	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	21,000.000J	4,200.000J	---	51.000J	14,000.000J
1,1,1-TRICHLOROETHANE	---	5.000J	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	24.000J	1,500.000	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	1,100.000J	4,700.000J	---	37.000J	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	---	2,500.000J	4,600.000	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	730.000	1,100.000J	---	---	890.000J
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	4,500.000J	2,400.000	---	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TCL VOLATILES

SAMPLE ID	MP-SB10-0005	MP-SB11-0005	MP-SB12-0007	MP-SB13-0005	MP-SB14-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
TOTAL XYLENES	---	30,000.000J	9,400.000	---	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	0	7	1	2	0
TIC CONCENTRATION	--- JN	550.000	300,000.000	19.000	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TCL VOLATILES

SAMPLE ID	MP-SB15-0005	MP-SB16-0005	MP-SB17-0005	MP-SB18-0005	MP-SB19-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	96.000	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	---	5,600.000J	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	39.000	---	---	---	---
1,1-DICHLOROETHANE	380.000	---	---	---	---
TRANS-1,2-DICHLOROETHENE	290.000	2.000J	---	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	150.000	---	---	---	---
2-BUTANONE	---	26.000J	20,000.000J	15,000.000JN	21,000.000JN
1,1,1-TRICHLOROETHANE	190.000J	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	950.000JN	1,200.000J
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	200.000	1.000J	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	14.000J	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	---	---	350.000J	490.000J	630.000J
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	---	---	---	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TCL VOLATILES

SAMPLE ID	MP-SB15-0005	MP-SB16-0005	MP-SB17-0005	MP-SB18-0005	MP-SB19-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
TOTAL XYLENES	---	13.000	---	---	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	0	2	0	0	0
TIC CONCENTRATION	--- JN	10.000	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-SB20-0005
UNITS	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0

TCL VOLATILE PARAMETERS:

CHLOROMETHANE	---
BROMOMETHANE	---
VINYL CHLORIDE	---
CHLOROETHANE	---
METHYLENE CHLORIDE	---
ACETONE	---
CARBON DISULFIDE	---
1,1-DICHLOROETHENE	---
1,1-DICHLOROETHANE	---
TRANS-1,2-DICHLOROETHENE	---
CHLOROFORM	---
1,2-DICHLOROETHANE	---
BUTANONE	240.000J
,1,1-TRICHLOROETHANE	---
CARBON TETRACHLORIDE	---
VINYL ACETATE	---
BROMODICHLOROMETHANE	---
1,2-DICHLOROPROPANE	---
TRANS-1,3-DICHLOROPROPENE	---
TRICHLOROETHENE	---
DIBROMOCHLOROMETHANE	---
1,1,2-TRICHLOROETHANE	---
BENZENE	---
CIS-1,3-DICHLOROPROPENE	---
2-CHLOROETHYLVINYLETHER	---
BROMOFORM	---
4-METHYL-2-PENTANONE	250.000J
2-HEXANONE	---
TETRACHLOROETHENE	170.000
1,1,2,2-TETRACHLOROETHANE	---
TOLUENE	11.000JN
CHLOROBENZENE	---
ETHYLBENZENE	---
STYRENE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TCL VOLATILES

SAMPLE ID	MP-SB20-0005
UNITS	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0
TOTAL XYLENES	1,000.000
ACRYLONITRILE	---
1,1,1,2-TETRACHLOROETHANE	---
ISOBUTANOL	---
TOTAL TICS	2
TIC CONCENTRATION	3,600.000JN

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 10 - 12 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB01-0005	MP-SB02-0005	MP-SB03-0005	MP-SB04-0007	MP-SB05-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	2,200.000 R	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	2,200.000 R	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	70.000 J
2-METHYLPHENOL	---	---	2,200.000 R	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	2,200.000 R	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	40,000.000 J	---	---	---	590.000
2-NITROPHENOL	---	---	2,200.000 R	---	---
2,4-DIMETHYLPHENOL	---	---	2,200.000 R	---	---
BENZOIC ACID	---	---	2,200.000 R	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	2,200.000 R	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	5,200.000 J	31,000.000 J	370.000 J	520.000 J	1,100.000
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	2,200.000 R	---	---
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	2,200.000 R	---	---
2,4,5-TRICHLOROPHENOL	---	---	2,200.000 R	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	10,000.000 R	---	---
4-NITROPHENOL	---	---	2,200.000 R	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 10 - 12 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB01-0005	MP-SB02-0005	MP-SB03-0005	MP-SB04-0007	MP-SB05-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00
DIETHYLPHTHALATE	---	---	---	---	99.000 J
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	2,200.000 R	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	2,200.000 R	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	93,000.000	8,300.000	1,600.000 J	2,100.000
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	5,400.000 JB	450,000.000 J	17,000.000 J	32,000.000 J	220.000 J
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	18	16	3	14	5
TIC CONCENTRATION	980,000.000 JN	1,100,000.000 JN	33.000 JN	46,800.000 JN	4,360.000 J

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 10 - 12 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB06-0005	MP-SB07-0005	MP-SB08-0005	MP-SB09-0005	MP-SB10-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	2,900.000 J	---	---	---
2-METHYLPHENOL	---	---	---	30.000 J	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	1,000.000	---	---	---	610.000 J
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	500.000 J	13,000.000 J	3,600.000 J	53.000 J	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	140.000 J	2,300.000 J	6,500.000 J	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,[illegible]NITROTOLUENE	---	---	---	---	---
2,6 DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMAT[illegible]ALUE
B	COMPOUN[illegible]UND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 10 - 12 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB06-0005	MP-SB07-0005	MP-SB08-0005	MP-SB09-0005	MP-SB10-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	460.000 J	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	49.000 J	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	11,000.000	6,600.000 J	---	---	---
FLUORANTHRENE	---	---	---	87.000 J	---
PYRENE	---	---	---	95.000 J	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	44.000 J	---
BIS[2-ETHYLHEXYL]PHTHALATE	16,000.000	330,000.000 B	74,000.000 B	1,300.000 B	18,000.000 J
CHRYSENE	---	---	---	46.000 J	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	20	18	19	9	1
TIC CONCENTRATION	--- ?	24,700,000.000 JN	29,900,000.000 JN	1,800.000 JN	4,000.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 10 - 12 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB11-0005	MP-SB12-0007	MP-SB13-0005	MP-SB14-0005	MP-SB15-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS(2-CHLOROETHYL) ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	7.000 J	---
1,2-DICHLOROBENZENE	170.000 J	360.000 J	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS(2-CHLOROISOPROPYL) ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	120.000 J	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	460.000 J	---	---
BIS(2-CHLOROETHOXY) METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	4,100.000	1,400.000 J	---	---	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	590.000	660.000 J	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 10 - 12 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB11-0005	MP-SB12-0007	MP-SB13-0005	MP-SB14-0005	MP-SB15-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00
DIETHYLPHTHALATE	---	1,300.000 J	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	43.000 J	---	---	---	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	83.000 J	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	1,200.000	29,000.000	---	---	---
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	170.000 J	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	68.000 J	18,000.000 B	100.000 J	---	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	2,600.000	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	19	20	2	3	NR
TIC CONCENTRATION	85,500.000 J	750,000.000 JN	800.000 J	700.000 JN	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 10 - 12 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB16-0005	MP-SB17-0005	MP-SB19-0005	MP-SB20-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00
BASE/NEUTRAL PARAMETERS:				
PHENOL	---	---	260.000 J	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---
2-CHLOROPHENOL	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---
BENZYL ALCOHOL	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---
2-METHYLPHENOL	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---
4-METHYLPHENOL	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---
HEXACHLOROETHANE	---	---	---	---
NITROBENZENE	---	---	---	---
ISOPHORONE	---	---	1,900.000	---
2-NITROPHENOL	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---
BENZOIC ACID	---	---	3,000.000 J	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---
NAPHTHALENE	---	---	---	1,900.000 J
4-CHLOROANILINE	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---
2-METHYLNAPHTHALENE	---	---	82.000 J	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---
2-NITROANILINE	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---
ACENAPHTHYLENE	---	---	---	---
3-NITROANILINE	---	---	---	---
ACENAPHTHENE	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---
4-NITROPHENOL	---	---	---	---
DIBENZOFURAN	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 10 - 12 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB16-0005	MP-SB17-0005	MP-SB19-0005	MP-SB20-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00	10.00 - 12.00
DIETHYLPHTHALATE	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---
FLUORENE	---	---	---	---
4-NITROANILINE	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---
PHENANTHRENE	---	---	---	---
ANTHRACENE	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	5,300.000
FLUORANTHRENE	---	---	---	---
PYRENE	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---	---	---
CHRYSENE	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---
BENZO[a]PYRENE	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---
TOTAL TICS	2	NR	17	13
TIC CONCENTRATION	190.000 JN	---	5,900.000 JN	206,000.000 JN



EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TOTAL METALS

SAMPLE ID	MP-SB01-0005	MP-SB02-0005	MP-SB03-0005	MP-SB04-0005	MP-SB04-0007
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
INORGANIC PARAMETERS:					
ALUMINUM	4,700.000	9,600.000	3,160.000	4,070.000	4,430.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	---	---
BARIUM	---	40.900J	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	---	---	---	4,670.000J	1,790.000J
CHROMIUM	10.200J	12.800J	---	---	---
COBALT	---	13.400	---	---	---
COPPER	8.100	14.000	32.700J	6.200	6.200
IRON	9,260.000	15,000.000	13,300.000	5,270.000	5,120.000
LEAD	9.300	3.100	7.500J	4.600	3.500
MAGNESIUM	1,100.000	1,610.000	---	2,620.000	1,100.000
MANGANESE	86.400	203.000	7.200	49.900	40.800
MERCURY	---	---	---	---	---
NICKEL	---	11.700	---	---	---
POTASSIUM	---	1,440.000	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	15.000	22.700	37.100	9.900	---
ZINC	26.400J	40.300J	---	21.000J	16.400J
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TOTAL METALS

SAMPLE ID	MP-SB05-0007	MP-SB06-0005	MP-SB07-0005	MP-SB08-0005	MP-SB09-0005
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
INORGANIC PARAMETERS:					
ALUMINUM	5,960.000	17,800.000	7,770.000	5,530.000	18,500.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	3.000	4.400
BARIUM	---	138.000	---	---	61.500
BERYLLIUM	---	1.000	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	---	---	---	6,070.000J	---
CHROMIUM	12.900J	101.000J	19.400J	19.600J	25.500J
COBALT	---	14.100J	---	---	---
COPPER	8.100	27.900J	---	---	---
IRON	13,800.000	23,900.000	13,600.000	10,800.000	18,300.000
LEAD	5.000	6.100J	---	52.100	22.500
MAGNESIUM	1,420.000	2,030.000	1,700.000	1,660.000	2,680.000
MANGANESE	151.000	312.000	---	---	---
MERCURY	---	---	---	---	---
NICKEL	9.800	43.600J	25.100	10.400	13.800
POTASSIUM	1,380.000	1,200.000J	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	20.300	37.500	19.000J	14.000J	37.200J
ZINC	39.300J	55.600J	---	---	---
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TOTAL METALS

SAMPLE ID	MP-SB10-0005	MP-SB11-0005	MP-SB12-0007	MP-SB13-0005	MP-SB14-0005
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
INORGANIC PARAMETERS:					
ALUMINUM	5,280.000	5,110.000	10,600.000	3,630.000	7,840.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	---	---
BARIUM	---	---	75.500	---	---
BERYLLIUM	---	1.100	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	6,300.000J	2,200.000	---	---	---
CHROMIUM	12.700J	18.400J	27.500	11.400J	16.200
COBALT	---	16.600J	16.600	---	13.200
COPPER	---	11.300	---	6.100	12.800
IRON	6,910.000	12,400.000	14,300.000	8,250.000	12,800.000
LEAD	---	12.100J	---	---	4.100J
MAGNESIUM	2,720.000	---	2,510.000	---	2,390.000J
MANGANESE	---	536.000	167.000J	152.000	207.000
MERCURY	---	---	---	---	---
NICKEL	10.500	9.400	19.400	---	13.600
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	14.200J	16.900	24.300	10.700	20.200
ZINC	---	33.300J	46.600J	16.400J	38.200J
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TOTAL METALS

SAMPLE ID	MP-SB15-0005	MP-SB16-0005	MP-SB17-0005	MP-SB18-0005	MP-SB19-0005
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
INORGANIC PARAMETERS:					
ALUMINUM	2,340.000	4,990.000	694.000	2,940.000	4,720.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	---	---
BARIUM	---	---	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	---	---	---	---	---
CHROMIUM	13.900	17.500	6.500	6.500	10.400
COBALT	---	---	---	---	---
COPPER	40.400	---	---	5.600	13.000
IRON	9,410.000	23,000.000	5,270.000	9,360.000	21,600.000
LEAD	9.400J	---	---	3.200J	4.200J
MAGNESIUM	---	---	---	---	---
MANGANESE	12.100	32.500J	37.400J	42.700	246.000
MERCURY	---	---	---	---	---
NICKEL	---	---	---	---	11.100
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	22.100	30.400	---	---	27.600
ZINC	13.500J	25.100J	8.600J	15.600J	28.900J
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
TOTAL METALS

SAMPLE ID	MP-SB20-0005
UNITS	MG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0

INORGANIC PARAMETERS:	
ALUMINUM	1,510.000
ANTIMONY	---
ARSENIC	---
BARIUM	---
BERYLLIUM	---
CADMIUM	---
CALCIUM	---
CHROMIUM	3.900
COBALT	---
COPPER	---
IRON	5,100.000
LEAD	1.400J
MAGNESIUM	---
MANGANESE	.450
MERCURY	---
NICKEL	---
POTASSIUM	---
SELENIUM	---
SILVER	---
SODIUM	---
THALLIUM	---
VANADIUM	---
ZINC	9.900J
CYANIDE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
PESTICIDE/PCB ANALYSES

DATE: 12/28/..
TIME: 8:19:..3
PAGE: 1
Report forma

SAMPLE ID	MP-SB01-0005	MP-SB02-0005	MP-SB03-0005	MP-SB04-0005	MP-SB04-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	87.000	440.000	99.000	86.000	86.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	180.000J	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB05-0007	MP-SB06-0005	MP-SB07-0005	MP-SB08-0005	MP-SB09-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	33.000J	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	16.000J	---
ALDRIN	---	---	---	3.200J	---
HEPTACHLOR EPOXIDE	---	---	17.000J	23.000J	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	1.300J	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	97.000	87.000	99.000	87.000	96.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORI SAMPLES
DEPTH 10 - 12 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB10-0005	MP-SB11-0005	MP-SB12-0007	MP-SB13-0005	MP-SB14-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	21.000J	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	8.500J	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	260.000J	---	---	---
GAMMA CHLORDANE	84.000	1,700.000	91.000	82.000	94.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	240.000J

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 10 - 12 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB16-0005	MP-SB17-0005	MP-SB18-0005	MP-SB19-0005	MP-SB20-0005
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	10.000J	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	99.000	84.000	85.000	97.000	84.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 14 - 16 FT
TCL VOLATILES

SAMPLE ID	MP-SB07-0007	MP-SB10-0007	MP-SB10-0009	MP-SB15-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	14.0 - 16.0	14.0 - 16.0	14.0 - 16.0	14.0 - 16.0
TCL VOLATILE PARAMETERS:				
CHLOROMETHANE	---	---	---	---
BROMOMETHANE	---	---	---	---
VINYL CHLORIDE	---	---	---	---
CHLOROETHANE	---	---	---	3.000J
METHYLENE CHLORIDE	---	---	---	---
ACETONE	---	---	---	---
CARBON DISULFIDE	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	4.000J
1,1-DICHLOROETHANE	---	---	---	17.000
TRANS-1,2-DICHLOROETHENE	14,000.000J	---	---	110.000
CHLOROFORM	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	44.000
2-BUTANONE	15,000.000J	19,000.000J	---	---
1,1,1-TRICHLOROETHANE	---	---	---	4.000J
CARBON TETRACHLORIDE	---	---	---	---
VINYL ACETATE	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---
TRICHLOROETHENE	---	6,800.000	---	43.000
DIBROMOCHLOROMETHANE	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---
BENZENE	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---
BROMOFORM	---	---	---	---
4-METHYL-2-PENTANONE	---	12,000.000	6,600.000	---
2-HEXANONE	45,000.000J	---	---	---
TETRACHLOROETHENE	---	4,900.000	700.000J	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---
TOLUENE	250,000.000	29,000.000	1,700.000	---
CHLOROBENZENE	---	---	---	---
ETHYLBENZENE	50,000.000	8,700.000	---	---
STYRENE	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 14 - 16 FT
TCL VOLATILES

SAMPLE ID	MP-SB07-0007	MP-SB10-0007	MP-SB10-0009	MP-SB15-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	14.0 - 16.0	14.0 - 16.0	14.0 - 16.0	14.0 - 16.0
TOTAL XYLENES	290,000.000	63,000.000	---	---
ACRYLONITRILE	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---
ISOBUTANOL	---	---	---	---
TOTAL TICS	6	1	0	0
TIC CONCENTRATION	96,000.000JN	20,000.000	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 14 - 16 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB07-0007	MP-SB10-0007	MP-SB10-0009	MP-SB15-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	14.00 - 16.00	14.00 - 16.00	14.00 - 16.00	14.00 - 16.00
BASE/NEUTRAL PARAMETERS:				
PHENOL	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---
2-CHLOROPHENOL	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---
BENZYL ALCOHOL	---	---	---	---
1,2-DICHLOROBENZENE	5,000.000 J	---	---	---
2-METHYLPHENOL	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---
4-METHYLPHENOL	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---
HEXACHLOROETHANE	---	---	---	---
NITROBENZENE	---	---	---	---
ISOPHORONE	---	---	---	---
2-NITROPHENOL	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---
BENZOIC ACID	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---
NAPHTHALENE	26,000.000 J	2,500.000 J	1,700.000 J	---
4-CHLOROANILINE	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---
2-NITROANILINE	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---
ACENAPHTHYLENE	---	---	---	---
3-NITROANILINE	---	---	---	---
ACENAPHTHENE	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---
4-NITROPHENOL	---	---	---	---
DIBENZOFURAN	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 14 - 16 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB07-0007	MP-SB10-0007	MP-SB10-0009	MP-SB15-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	14.00 - 16.00	14.00 - 16.00	14.00 - 16.00	14.00 - 16.00
DIETHYLPHTHALATE	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---
FLUORENE	---	---	---	---
4-NITROANILINE	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---
PHENANTHRENE	---	---	---	---
ANTHRACENE	---	---	---	---
DI-n-BUTYLPHTHALATE	---	8,200.000 J	4,800.000 J	---
FLUORANTHRENE	---	---	---	---
PYRENE	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	1,100,000.000 B	71,000.000 J	38,000.000 J	---
CHRYSENE	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---
BENZO[a]PYRENE	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---
TOTAL TICS	18	6	6	NR
TIC CONCENTRATION	315,000,000.000 JN	65,000.000 JN	35,000.000 JN	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 14 - 16 FT
TOTAL METALS

DATE:12.2
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SAMPLE ID	MP-SB07-0007	MP-SB10-0007	MP-SB10-0009	MP-SB15-0007
UNITS	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	14.0 - 16.0	14.0 - 16.0	14.0 - 16.0	14.0 - 16.0
INORGANIC PARAMETERS:				
ALUMINUM	7,080.000	1,530.000	2,370.000	---
ANTIMONY	---	---	---	---
ARSENIC	---	---	---	---
BARIUM	---	---	---	---
BERYLLIUM	---	---	---	---
CADMIUM	---	---	---	---
CALCIUM	5,700.000J	6,680.000J	5,050.000J	---
CHROMIUM	16.900J	5.800J	21.500J	10.600
COBALT	---	---	---	---
COPPER	---	---	39.000J	20.900
IRON	11,700.000	17,000.000	20,400.000	2,360.000
LEAD	75.700	---	7.800	8.700J
MAGNESIUM	3,060.000	1,610.000	1,560.000	---
MANGANESE	---	---	---	16.700
MERCURY	---	---	---	---
NICKEL	19.800	---	---	---
POTASSIUM	---	---	---	---
SELENIUM	---	---	---	---
SILVER	---	---	---	---
SODIUM	---	---	---	---
THALLIUM	---	---	---	---
VANADIUM	17.900J	16.900J	34.900J	19.300
ZINC	---	---	---	15.800J
CYANIDE	---	---	---	---

EXPLANATION OF CODES :

(No codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
---	UNDETECTED
--	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 14 - 16 FT
PESTICIDE/PCB ANALYSES

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TIME:18:24:46
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SAMPLE ID	MP-SB07-0007	MP-SB10-0007	MP-SB10-0009	MP-SB15-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	14.0 - 16.0	14.0 - 16.0	14.0 - 16.0	14.0 - 16.0
PESTICIDE/PCB PARAMETERS:				
ALPHA-BHC	---	---	---	---
BETA-BHC	---	---	---	---
DELTA-BHC	---	---	---	---
GAMMA-BHC	---	---	---	---
HEPTACHLOR	---	2.300J	2.400J	---
ALDRIN	---	---	---	---
HEPTACHLOR EPOXIDE	23.000J	---	27.000J	---
ENDOSULFAN I	---	---	---	---
DIELDRIN	---	---	---	---
4-4-DDE	---	---	---	---
ENDRIN	---	---	---	---
ENDOSULFAN II	---	---	---	---
4-4-DDD	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---
4-4-DDT	---	1.400J	23.000J	---
METHOXYCHLOR	---	---	---	---
ENDRIN KETONE	---	---	---	---
ALPHA CHLORDANE	---	---	---	---
GAMMA CHLORDANE	11.000	93.000	93.000	100.000
TOXAPHENE	---	---	---	---
AROCLOR 1016	---	---	---	---
AROCLOR 1221	---	---	---	---
AROCLOR 1232	---	---	---	---
AROCLOR 1242	---	---	---	---
AROCLOR 1248	---	---	---	---
AROCLOR 1254	---	---	---	---
AROCLOR 1260	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 18 - 20 FT
TCL VOLATILES

DATE:12/27
TIME:11:44:45
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Report format

SAMPLE ID	MP-SB03-0007	MP-SB03-0008	MP-SB04-0009	MP-SB08-0007	MP-SB11-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	--
ACETONE	---	---	---	---	4,000.000J
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	3.000J	---
TRANS-1,2-DICHLOROETHENE	---	---	19,000.000J	18.000	830.000J
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	4,100.000J	4,200.000J	---	---	160.000
2-BUTANONE	---	---	---	30.000J	1,500.000J
1,1,1-TRICHLOROETHANE	---	600.000J	34,000.000J	---	530.000
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	74,000.000	46,000.000	330,000.000	---	470.000
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	43.000
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	2,300.000J	---	28,000.000J	---	3,500.000J
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	---	740.000J	410,000.000J	---	5,000.000J
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	6,800.000	3,900.000	1,100,000.000	79.000	160.000
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	---	68,000.000	18.000	4,200.000J
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 18 - 20 FT
TCL VOLATILES

SAMPLE ID	MP-SB03-0007	MP-SB03-0008	MP-SB04-0009	MP-SB08-0007	MP-SB11-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0
TOTAL XYLENES	---	---	400,000.000	98.000	19,000.000J
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	2	0	1	4	9
TIC CONCENTRATION	60,000.000JN	---	200,000.000	960.000	1,400.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-SB14-0007
UNITS	UG/KG
DEPTH INTERVAL (FT)	18.0 - 20.0

TCL VOLATILE PARAMETERS:

CHLOROMETHANE	---
BROMOMETHANE	---
VINYL CHLORIDE	---
CHLOROETHANE	---
METHYLENE CHLORIDE	---
ACETONE	21,000.000J
CARBON DISULFIDE	---
1,1-DICHLOROETHENE	---
1,1-DICHLOROETHANE	---
TRANS-1,2-DICHLOROETHENE	---
CHLOROFORM	---
1,2-DICHLOROETHANE	---
2-BUTANONE	17,000.000J
1,1,1-TRICHLOROETHANE	---
CARBON TETRACHLORIDE	---
VINYL ACETATE	710.000J
BROMODICHLOROMETHANE	---
1,2-DICHLOROPROPANE	---
TRANS-1,3-DICHLOROPROPENE	---
TRICHLOROETHENE	---
DIBROMOCHLOROMETHANE	---
1,1,2-TRICHLOROETHANE	---
BENZENE	---
CIS-1,3-DICHLOROPROPENE	---
2-CHLOROETHYLVINYLETHER	---
BROMOFORM	---
4-METHYL-2-PENTANONE	680.000J
2-HEXANONE	160.000JN
TETRACHLOROETHENE	---
1,1,2,2-TETRACHLOROETHANE	---
TOLUENE	210.000J
CHLOROBENZENE	---
ETHYLBENZENE	---
STYRENE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 18 - 20 FT
TCL VOLATILES

SAMPLE ID	MP-SB14-0007
UNITS	UG/KG
DEPTH INTERVAL (FT)	18.0 - 20.0

TOTAL XYLENES	---
ACRYLONITRILE	---
1,1,1,2-TETRACHLOROETHANE	---
ISOBUTANOL	---
TOTAL TICS	0
TIC CONCENTRATION	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 18 - 20 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB03-0007	MP-SB03-0008	MP-SB04-0009	MP-SB08-0007	MP-SB11-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	18.00 - 20.00	18.00 - 20.00	18.00 - 20.00	18.00 - 20.00	18.00 - 20.00
BASE/NEUTRAL PARAMETERS:					
PHENOL	4,300.000 R	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	4,300.000 R	---	---	---	---
2-CHLOROPHENOL	4,300.000 R	---	---	---	---
1,3-DICHLOROBENZENE	4,300.000 R	---	---	---	---
1,4-DICHLOROBENZENE	4,300.000 R	---	---	---	---
BENZYL ALCOHOL	4,300.000 R	---	---	---	---
1,2-DICHLOROBENZENE	4,300.000 R	---	---	---	4,400.000
2-METHYLPHENOL	4,300.000 R	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	4,300.000 R	---	---	---	---
4-METHYLPHENOL	4,300.000 R	---	---	---	---
N-NITROSO-DIPROPYLAMINE	4,300.000 R	---	---	---	---
HEXACHLOROETHANE	4,300.000 R	---	---	---	---
NITROBENZENE	4,300.000 R	---	---	---	---
ISOPHORONE	4,300.000 R	---	3,300.000 J	---	---
2-NITROPHENOL	4,300.000 R	---	---	---	---
2,4-DIMETHYLPHENOL	4,300.000 R	---	---	---	---
BENZOIC ACID	4,300.000 R	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	4,300.000 R	---	---	---	---
2,4-DICHLOROPHENOL	4,300.000 R	---	---	---	---
2,2,4-TRICHLOROBENZENE	4,300.000 R	---	---	---	850.000 J
NAPHTHALENE	4,300.000 R	---	11,000.000 J	32.000 J	34,000.000
4-CHLOROANILINE	4,300.000 R	---	---	---	---
HEXACHLOROBUTADIENE	4,300.000 R	---	---	---	---
4-CHLORO-3-METHLYPHENOL	4,300.000 R	---	---	---	---
2-METHYLNAPHTHALENE	4,300.000 R	---	1,800.000 J	---	6,800.000
HEXACHLOROCYCLOPENTADIENE	4,300.000 R	---	---	---	---
2,4,6-TRICHLOROPHENOL	4,300.000 R	---	---	---	---
2,4,5-TRICHLOROPHENOL	4,300.000 R	---	---	---	---
2-CHLORONAPHTHALENE	4,300.000 R	---	---	---	---
2-NITROANILINE	4,300.000 R	---	---	---	---
DIMETHYL PHTHALATE	4,300.000 R	---	---	---	---
ACENAPHTHYLENE	4,300.000 R	---	---	---	---
3-NITROANILINE	4,300.000 R	---	---	---	---
ACENAPHTHENE	4,300.000 R	---	---	---	---
2,4-DINITROPHENOL	4,300.000 R	---	---	---	---
4-NITROPHENOL	4,300.000 R	---	---	---	---
DIBENZOFURAN	4,300.000 R	---	---	---	---
2,4-DINITROTOLUENE	4,300.000 R	---	---	---	---
2,6-DINITROTOLUENE	4,300.000 R	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 18 - 20 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB03-0007	MP-SB03-0008	MP-SB04-0009	MP-SB08-0007	MP-SB11-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	18.00 - 20.00	18.00 - 20.00	18.00 - 20.00	18.00 - 20.00	18.00 - 20.00
DIETHYLPHTHALATE	4,300.000 R	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	4,300.000 R	---	---	---	---
FLUORENE	4,300.000 R	---	---	---	1,600.000 J
4-NITROANILINE	4,300.000 R	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	4,300.000 R	---	---	---	---
N-NITROSODIPHENYLAMINE	4,300.000 R	---	---	---	3,000.000 J
4-BROMOPHENYL PHENYL ETHER	4,300.000 R	---	---	---	---
HEXACHLOROBENZENE	4,300.000 R	---	---	---	---
PENTACHLOROPHENOL	4,300.000 R	---	---	---	---
PHENANTHRENE	4,300.000 R	---	---	---	890.000 J
ANTHRACENE	4,300.000 R	---	---	---	---
DI-n-BUTYLPHTHALATE	780.000 J	550.000 J	64,000.000	46.000 J	34,000.000
FLUORANTHRENE	4,300.000 R	---	---	---	---
PYRENE	4,300.000 R	---	---	---	---
BUTYL BENZYL PHTHALATE	4,300.000 R	---	---	---	500.000 J
3,3-DICHLOROBENZIDINE	4,300.000 R	---	---	---	---
BENZO[a]ANTHRACENE	4,300.000 R	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	9,100.000 J	5,400.000 J	530,000.000 J	---	740.000 J
CHRYSENE	4,300.000 R	---	---	---	---
DI-n-OCTYL PHTHALATE	4,300.000 R	---	---	---	31,000.000
BENZO[b]FLUORANTHENE	4,300.000 R	---	---	---	---
BENZO[k]FLUORANTHENE	4,300.000 R	---	---	---	---
BENZO[a]PYRENE	4,300.000 R	---	---	---	---
INDENO[1,2,3-CD]PYRENE	4,300.000 R	---	---	---	---
DIBENZ[A,H]ANTHRACENE	4,300.000 R	---	---	---	---
BENZO[G,H,I]PERYLENE	4,300.000 R	---	---	---	---
TOTAL TICS	NR	1	11	18	20
TIC CONCENTRATION	NR	300.000 JN	950,000.000 JN	6,200.000 JN	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 18 - 20 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB14-0007
UNITS	UG/KG
DEPTH INTERVAL (FT)	18.00 - 20.00
BASE/NEUTRAL PARAMETERS:	
PHENOL	450.000
BIS(2-CHLOROETHYL) ETHER	---
2-CHLOROPHENOL	---
1,3-DICHLOROBENZENE	---
1,4-DICHLOROBENZENE	---
BENZYL ALCOHOL	---
1,2-DICHLOROBENZENE	---
2-METHYLPHENOL	---
BIS(2-CHLOROISOPROPYL) ETHER	---
4-METHYLPHENOL	---
N-NITROSO-DIPROPYLAMINE	---
HEXACHLOROETHANE	---
NITROBENZENE	---
ISOPHORONE	---
2-NITROPHENOL	---
2,4-DIMETHYLPHENOL	---
BENZOIC ACID	---
BIS(2-CHLOROETHOXY) METHANE	---
2,4-DICHLOROPHENOL	---
2,2,4-TRICHLOROBENZENE	---
NAPHTHALENE	---
4-CHLOROANILINE	---
HEXACHLOROBUTADIENE	---
4-CHLORO-3-METHLYPHENOL	---
2-METHYLNAPHTHALENE	---
HEXACHLOROCYCLOPENTADIENE	---
2,4,6-TRICHLOROPHENOL	---
2,4,5-TRICHLOROPHENOL	---
2-CHLORONAPHTHALENE	---
2-NITROANILINE	---
DIMETHYL PHTHALATE	---
ACENAPHTHYLENE	---
3-NITROANILINE	---
ACENAPHTHENE	---
2,4-DINITROPHENOL	---
4-NITROPHENOL	---
DIBENZOFURAN	---
2,4-DINITROTOLUENE	---
2,6-DINITROTOLUENE	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTHS 18 - 20 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB14-0007
UNITS	UG/KG
DEPTH INTERVAL (FT)	18.00 - 20.00
DIETHYLPHTHALATE	---
4-CHLOROPHENYL PHENYL ETHER	---
FLUORENE	---
4-NITROANILINE	---
4,6-DINITRO-2-METHYLPHENOL	---
N-NITROSODIPHENYLAMINE	---
4-BROMOPHENYL PHENYL ETHER	---
HEXACHLOROBENZENE	---
PENTACHLOROPHENOL	---
PHENANTHRENE	---
ANTHRACENE	---
DI-n-BUTYLPHTHALATE	50.000 J
FLUORANTHRENE	---
PYRENE	---
BUTYL BENZYL PHTHALATE	---
3,3-DICHLOROBENZIDINE	---
BENZO[a]ANTHRACENE	---
BIS[2-ETHYLHEXYL]PHTHALATE	380.000 J
CHRYSENE	---
DI-n-OCTYL PHTHALATE	---
BENZO[b]FLUORANTHENE	---
BENZO[k]FLUORANTHENE	---
BENZO[a]PYRENE	---
INDENO[1,2,3-CD]PYRENE	---
DIBENZ[A,H]ANTHRACENE	---
BENZO[G,H,I]PERYLENE	---
TOTAL TICS	3
TIC CONCENTRATION	1,000.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 18 - 20 FT
TOTAL METALS

SAMPLE ID	MP-SB03-0007	MP-SB03-0008	MP-SB04-0009	MP-SB08-0007	MP-SB11-0007
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0
INORGANIC PARAMETERS:					
ALUMINUM	3,510.000	3,860.000	7,390.000	5,160.000	3,350.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	3.600J	---	---	---
BARIUM	---	---	---	---	---
BERYLLIUM	1.400	1.300	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	---	---	---	---	---
CHROMIUM	37.800J	20.300J	15.000J	3.600	14.700J
COBALT	44.200J	47.000J	---	---	---
COPPER	52.800J	40.700J	11.000	---	9.400
IRON	2,980.000	3,680.000	10,800.000	20,400.000	8,980.000
LEAD	20.900J	12.900J	8.200	9.800	9.800J
MAGNESIUM	---	---	1,430.000	1,490.000	---
MANGANESE	25.400	26.600	153.000	---	184.000
MERCURY	---	---	---	---	---
NICKEL	35.600J	39.000J	9.300	22.800	---
POTASSIUM	---	---	1,350.000	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	114.000J	54.400J	17.500	---	---
ZINC	224.000J	36.400J	30.300J	85.100	20.300J
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 18 - 20 FT
TOTAL METALS

SAMPLE ID	MP-SB14-0007
UNITS	MG/KG
DEPTH INTERVAL (FT)	18.0 - 20.0

INORGANIC PARAMETERS:	
ALUMINUM	7,820.000
ANTIMONY	---
ARSENIC	---
BARIUM	---
BERYLLIUM	---
CADMIUM	---
CALCIUM	---
CHROMIUM	25.900
COBALT	23.500
COPPER	12.700
IRON	9,620.000
LEAD	3.000J
MAGNESIUM	---
MANGANESE	652.000
MERCURY	---
NICKEL	20.900
POTASSIUM	---
SELENIUM	---
SILVER	---
SODIUM	---
THALLIUM	---
VANADIUM	14.700
ZINC	30.900J
CYANIDE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 18 - 20 FT
PESTICIDE/PCB ANALYSES

DATE:12/29
TIME:18:28:53
PAGE: 1
Report forma

SAMPLE ID	MP-SB03-0007	MP-SB03-0008	MP-SB04-0009	MP-SB08-0007	MP-SB11-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0	18.0 - 20.0
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	270.000J
GAMMA CHLORDANE	100.000	100.000	460.000	98.000	1,700.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 18 - 20 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB14-0007
UNITS	UG/KG
DEPTH INTERVAL (FT)	18.0 - 20.0

PESTICIDE/PCB PARAMETERS:	
ALPHA-BHC	---
BETA-BHC	---
DELTA-BHC	---
GAMMA-BHC	---
HEPTACHLOR	---
ALDRIN	---
HEPTACHLOR EPOXIDE	---
ENDOSULFAN I	---
DIELDRIN	---
4-4-DDE	---
ENDRIN	---
ENDOSULFAN II	---
4-4-DDD	---
ENDOSULFAN SULFATE	---
4-4-DDT	---
METHOXYCHLOR	---
ENDRIN KETONE	---
ALPHA CHLORDANE	---
GAMMA CHLORDANE	89.000
TOXAPHENE	---
AROCLOR 1016	---
AROCLOR 1221	---
AROCLOR 1232	---
AROCLOR 1242	---
AROCLOR 1248	---
AROCLOR 1254	---
AROCLOR 1260	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24
TCL VOLATILES

DATE: 3'/02.9'
TIME: 16:45:
PAGE: 1
Report format 1

SAMPLE ID	MP-SB01-0007	MP-SB02-0007	MP-SB05-0009	MP-SB12-0009	MP-SB13-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	20.0 - 22.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	---	11,000.000J	---	5,100.000J
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	500.000J	---	---	11,000.000	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	6.000J
2-BUTANONE	1,700.000J	5,300.000J	14,000.000	63,000.000J	300.000J
1,1,1-TRICHLOROETHANE	140.000J	---	---	3,700.000JN	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	5,300.000	---	---	12,000.000	---
DIBROMOCHLOROMETHANE	-	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	2,200.000J	7,500.000J	---	11,000.000J	240.000J
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	460.000	260.000J	---	28,000.000	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	2,700.000	220.000J	---	---	7.000J
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	380.000J	150.000J	---	26,000.000	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
-	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24
TCL VOLATILES

SAMPLE ID	MP-SB01-0007	MP-SB02-0007	MP-SB05-0009	MP-SB12-0009	MP-SB13-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	20.0 - 22.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0
TOTAL XYLENES	1,700.000J	960.000J	---	49,000.000	15.000
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	1	0	0	3	6
TIC CONCENTRATION	700.000JN	---	---	140,000.000	466.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24
TCL VOLATILES

SAMPLE ID	MP-SB17-0007	MP-SB18-0007
UNITS	UG/KG	UG/KG
DEPTH INTERVAL (FT)	20.0 - 21.0	22.0 - 24.0
TCL VOLATILE PARAMETERS:		
CHLOROMETHANE	---	---
BROMOMETHANE	---	---
VINYL CHLORIDE	---	---
CHLOROETHANE	---	---
METHYLENE CHLORIDE	---	---
ACETONE	5,400.000J	---
CARBON DISULFIDE	---	---
1,1-DICHLOROETHENE	---	---
1,1-DICHLOROETHANE	---	---
TRANS-1,2-DICHLOROETHENE	---	---
CHLOROFORM	---	---
1,2-DICHLOROETHANE	---	---
BUTANONE	17,000.000J	17,000.000J
1-TRICHLOROETHANE	---	---
ON TETRACHLORIDE	---	---
.NYL ACETATE	590.000JN	---
BROMODICHLOROMETHANE	---	---
1,2-DICHLOROPROPANE	---	---
TRANS-1,3-DICHLOROPROPENE	---	---
TRICHLOROETHENE	---	---
DIBROMOCHLOROMETHANE	---	---
1,1,2-TRICHLOROETHANE	---	---
BENZENE	---	---
CIS-1,3-DICHLOROPROPENE	---	---
2-CHLOROETHYLVINYLETHER	---	---
BROMOFORM	---	---
4-METHYL-2-PENTANONE	---	---
2-HEXANONE	---	---
TETRACHLOROETHENE	710.000J	---
1,1,2,2-TETRACHLOROETHANE	---	---
TOLUENE	2,000.000	410.000J
CHLOROBENZENE	---	---
ETHYLBENZENE	1,300.000	---
STYRENE	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24
TCL VOLATILES

SAMPLE ID	MP-SB17-0007	MP-SB18-0007
UNITS	UG/KG	UG/KG
DEPTH INTERVAL (FT)	20.0 - 21.0	22.0 - 24.0
TOTAL XYLENES	8,600.000	---
ACRYLONITRILE	---	---
1,1,1,2-TETRACHLOROETHANE	---	---
ISOBUTANOL	---	---
TOTAL TICS	0	0
TIC CONCENTRATION	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24 FT
BASE NEUTRAL ANALYSES

DATE:01/22
TIME:[illegible]
PAGE: 1
Report Forma

SAMPLE ID	MP-SB01-0007	MP-SB02-0007	MP-SB05-0009	MP-SB12-0009	MP-SB13-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL	20.0 - 22.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	9,500.000J	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	73,000.000	---	130.000J
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	9,800.000J	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	1,400.000J	---	---	870.000
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---
DIET[illegible]LPHTHALATE	---	---	---	---	---
4-[illegible]ROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NI[illegible]INE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB01-0007	MP-SB02-0007	MP-SB05-0009	MP-SB12-0009	MP-SB13-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL	20.0 - 22.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	6,600.000	220,000.000	29,000.000J	3,600.000
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	110.000J	28,000.000J	320,000.000	---	90.000J
2-METHYLNAPHTHALENE	---	---	---	---	320.000J
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	28,000.000J	3,500.000
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL 4 & 3-METHYLPHENOL	---	---	---	---	---
PYRIDINE	---	---	---	---	---
2,3,4,6-TETRACHLOROPHENOL	---	---	---	---	---
TOTAL TICS	3	17	10	19	19
TIC CONCENTRATION	5,400.000JN	53,800.000	159,700.000	95,000,000.000	60,000.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB17-0007	MP-SB18-0007
UNITS	UG/KG	UG/KG
DEPTH INTERVAL	20.0 - 21.0	22.0 - 24.0
BASE/NEUTRAL PARAMETERS:		
PHENOL	---	---
BIS[2-CHLOROETHYL] ETHER	---	---
2-CHLOROPHENOL	---	---
1,3-DICHLOROBENZENE	---	---
1,4-DICHLOROBENZENE	---	---
BENZYL ALCOHOL	---	---
1,2-DIC .OROBENZENE	---	---
2-METHYLPHENOL	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---
4-METHYLPHENOL	---	---
N-NITROSO-DIPROPYLAMINE	---	---
HEXACHLOROETHANE	---	---
NITROBENZENE	---	---
ISOPHORONE	---	830.000
2-NITROPHENOL	---	---
2,4-DIMETHYLPHENOL	---	---
BENZOIC ACID	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---
2,4-DICHLOROPHENOL	---	---
2,2,4-TRICHLOROBENZENE	---	---
NAPHTHALENE	---	---
4-CHLOROANILINE	---	---
HEXACHLOROBUTADIENE	---	---
4-CHLORO-3-METHLYPHENOL	---	---
ACENAPHTHENE	---	---
2,4-DINITROPHENOL	---	---
4-NITROPHENOL	---	---
DIBENZOFURAN	---	---
2,4-DINITROTOLUENE	---	---
2,6-DINITROTOLUENE	---	---
DIETHYLPHTHALATE	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---
FLUORENE	---	---
4-NITROANILINE	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB17-0007	MP-SB18-0007
UNITS	UG/KG	UG/KG
DEPTH INTERVAL	20.0 - 21.0	22.0 - 24.0
4,6-DINITRO-2-METHYLPHENOL	---	---
N-NITROSODIPHENYLAMINE	---	---
4-BROMOPHENYL PHENYL ETHER	---	---
HEXACHLOROBENZENE	---	---
PENTACHLOROPHENOL	---	---
PHENANTHRENE	---	---
ANTHRACENE	---	---
DI-n-BUTYLPHTHALATE	4,000.000J	---
FLUORANTHRENE	---	---
PYRENE	---	---
BUTYL BENZYL PHTHALATE	---	---
3,3-DICHLOROBENZIDINE	---	---
BENZO[a]ANTHRACENE	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	41,000.000J	---
2-METHYLNAPHTHALENE	---	---
HEXACHLOROCYCLOPENTADIENE	---	---
2,4,6-TRICHLOROPHENOL	---	---
2,4,5-TRICHLOROPHENOL	---	---
2-CHLORONAPHTHALENE	---	---
2-NITROANILINE	---	---
DIMETHYL PHTHALATE	---	---
ACENAPHTHYLENE	---	---
3-NITROANILINE	---	---
CHRYSENE	---	---
DI-n-OCTYL PHTHALATE	---	---
BENZO[b]FLUORANTHENE	---	---
BENZO[k]FLUORANTHENE	---	---
BENZO[a]PYRENE	---	---
INDENO[1,2,3-CD]PYRENE	---	---
DIBENZ[A,H]ANTHRACENE	---	---
BENZO[G,H,I]PERYLENE	---	---
TOTAL 4 & 3-METHYLPHENOL	---	---
PYRIDINE	---	---
2,3,4,6-TETRACHLOROPHENOL	---	---
TOTAL TICS	2	5
TIC CONCENTRATION	20,000.000JN	530.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24 FT
TOTAL METALS

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TIME: 17:37:00
PAGE: *
Report forma

SAMPLE ID	MP-SB01-0007	MP-SB02-0007	MP-SB05-0009	MP-SB12-0009	MP-SB13-0007
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	20.0 - 22.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0
INORGANIC PARAMETERS:					
ALUMINUM	32,300.000	4,030.000	7,240.000	6,430.000	994.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	---	---
BARIUM	271.000J	---	---	51.100	---
BERYLLIUM	1.800	---	---	---	---
CADMIUM	---	---	---	3.000	---
CALCIUM	2,700.000	---	---	---	---
CHROMIUM	59.400J	---	9.900J	20.900	3.300J
COBALT	23.800	---	---	---	---
COPPER	47.200	6.800	8.300	---	---
IRON	46,000.000	9,930.000	12,000.000	13,500.000	1,380.000
LEAD	14.600	3.300	4.200	---	---
MAGNESIUM	14,100.000	---	---	---	---
MANGANESE	748.000	207.000	302.000	294.000J	41.000
MERCURY	---	---	---	---	---
NICKEL	43.100	8.300	---	13.700	---
POTASSIUM	9,240.000	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	89.800	12.900	16.800	18.300	---
ZINC	115.000J	19.000J	18.700J	35.100J	---
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24 FT
TOTAL METALS

SAMPLE ID	MP-SB17-0007	MP-SB18-0007
UNITS	MG/KG	MG/KG
DEPTH INTERVAL (FT)	20.0 - 21.0	22.0 - 24.0
INORGANIC PARAMETERS:		
ALUMINUM	10,800.000	7,930.000
ANTIMONY	---	---
ARSENIC	---	---
BARIUM	69.400	---
BERYLLIUM	---	---
CADMIUM	---	---
CALCIUM	---	---
CHROMIUM	20.200	15.800
COBALT	11.000	---
COPPER	---	17.500
IRON	14,400.000	17,900.000
LEAD	---	3.200J
MAGNESIUM	---	---
MANGANESE	127.000J	147.000
MERCURY	---	---
NICKEL	---	16.000
POTASSIUM	---	---
SELENIUM	---	---
SILVER	---	---
SODIUM	---	---
THALLIUM	---	---
VANADIUM	17.900	22.300
ZINC	32.900J	29.600J
CYANIDE	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24
TOTAL METAL

SAMPLE ID	MP-SB01-0007	MP-SB02-0007	MP-SB05-0009	MP-SB12-0009	MP-SB13-0007
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	20.0 - 22.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0	22.0 - 24.0
INORGANIC PARAMETERS:					
ALUMINUM	32,300.000	4,030.000	7,240.000	6,430.000	994.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	---	---
BARIUM	271.000J	---	---	51.100	---
BERYLLIUM	1.800	---	---	---	---
CADMIUM	---	---	---	3.000	---
CALCIUM	2,700.000	---	---	---	---
CHROMIUM	59.400J	---	9.900J	20.900	3.300J
COBALT	23.800	---	---	---	---
COPPER	47.200	6.800	8.300	---	---
IRON	46,000.000	9,930.000	12,000.000	13,500.000	1,380.000
LEAD	14.600	3.300	4.200	---	---
MAGNESIUM	14,100.000	---	---	---	---
MANGANESE	748.000	207.000	302.000	294.000J	41.000
MERCURY	---	---	---	---	---
NICKEL	43.100	8.300	---	13.700	---
POTASSIUM	9,240.000	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	89.800	12.900	16.800	18.300	---
ZINC	115.000J	19.000J	18.700J	35.100J	---
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 24
TOTAL METAL

SAMPLE ID	MP-SB17-0007	MP-SB18-0007
UNITS	MG/KG	MG/KG
DEPTH INTERVAL (FT)	20.0 - 21.0	22.0 - 24.0
INORGANIC PARAMETERS:		
ALUMINUM	10,800.000	7,930.000
ANTIMONY	---	---
ARSENIC	---	---
BARIUM	69.400	---
BERYLLIUM	---	---
CADMIUM	---	---
CALCIUM	---	---
CHROMIUM	20.200	15.800
COBALT	11.000	---
COPPER	---	17.500
IRON	14,400.000	17,900.000
LEAD	---	3.200J
MAGNESIUM	---	---
MANGANESE	127.000J	147.000
MERCURY	---	---
NICKEL	---	16.000
POTASSIUM	---	---
SELENIUM	---	---
SILVER	---	---
SODIUM	---	---
THALLIUM	---	---
VANADIUM	17.900	22.300
ZINC	32.900J	29.600J
CYANIDE	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 26 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB01-0007	MP-SB02-0007	MP-SB05-0009	MP-SB06-0007	MP-SB12-0009
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	20.0 - 22.0	22.0 - 24.0	22.0 - 24.0	24.0 - 26.0	22.0 - 24.0
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	10.000J
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	77.000J
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	10.000J
HEPTACHLOR EPOXIDE	---	---	---	---	51.000J
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	15.000J
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	20.000J
GAMMA CHLORDANE	120.000	86.000	870.000	890.000	14.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 24 - 28
TCL VOLATILES

DATE: [illegible]
TIME: [illegible]
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SAMPLE ID	MP-SB06-0007	MP-SB19-0007	MP-SB20-0007
UNITS	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	24.0 - 26.0	24.0 - 25.0	24.0 - 26.0
TCL VOLATILE PARAMETERS:			
CHLOROMETHANE	---	---	---
BROMOMETHANE	---	---	---
VINYL CHLORIDE	---	---	---
CHLOROETHANE	---	---	---
METHYLENE CHLORIDE	---	---	---
ACETONE	19,000.000J	---	---
CARBON DISULFIDE	---	---	---
1,1-DICHLOROETHENE	---	---	---
1,1-DICHLOROETHANE	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---
CHLOROFORM	---	---	---
1,2-DICHLOROETHANE	---	---	---
2-BUTANONE	---	16,000.000	---
1,1,1-TRICHLOROETHANE	---	---	240.000JN
CARBON TETRACHLORIDE	---	---	---
VINYL ACETATE	---	---	---
BROMODICHLOROMETHANE	---	---	---
1,2-DICHLOROPROPANE	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---
TRICHLOROETHENE	750.000	---	2,600.000
DIBROMOCHLOROMETHANE	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---
BENZENE	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---
BROMOFORM	---	---	---
4-METHYL-2-PENTANONE	---	---	---
2-HEXANONE	---	---	---
TETRACHLOROETHENE	2,400.000	---	34,000.000
1,1,2,2-TETRACHLOROETHANE	---	---	---
TOLUENE	---	---	29,000.000
CHLOROBENZENE	---	---	---
ETHYLBENZENE	1,200.000	---	13,000.000
STYRENE	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 24 - 28
TCL VOLATILES

SAMPLE ID	MP-SB06-0007	MP-SB19-0007	MP-SB20-0007
UNITS	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	24.0 - 26.0	24.0 - 25.0	24.0 - 26.0
TOTAL XYLENES	8,700.000	---	84,000.000J
ACRYLONITRILE	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---
ISOBUTANOL	---	---	---
TOTAL TICS	10	0	1
TIC CONCENTRATION	44,500.000JN	---	9,000.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 24 - 28 FT
BASE NEUTRAL ANALYSES

DATE:01/22/9*
TIME:16:29:4*
PAGE: 1
Report format *

SAMPLE ID	MP-SB06-0007	MP-SB19-0007	MP-SB20-0007
UNITS	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL	24.0 - 26.0	24.0 - 25.0	24.0 - 26.0
BASE/NEUTRAL PARAMETERS:			
PHENOL	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---
2-CHLOROPHENOL	---	---	---
1,3-DICHLOROBENZENE	---	---	---
1,4-DICHLOROBENZENE	---	---	---
BENZYL ALCOHOL	---	---	---
1,2-DICHLOROBENZENE	---	---	1,600.000J
2-METHYLPHENOL	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---
4-METHYLPHENOL	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---
HEXACHLOROETHANE	---	---	---
NITROBENZENE	---	---	---
ISOPHORONE	---	210.000J	---
2-NITROPHENOL	---	---	---
2,4-DIMETHYLPHENOL	---	---	---
BENZOIC ACID	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---
2,4-DICHLOROPHENOL	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---
NAPHTHALENE	16,000.000J	---	12,000.000
4-CHLOROANILINE	---	---	---
HEXACHLOROBUTADIENE	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---
ACENAPHTHENE	---	---	---
2,4-DINITROPHENOL	---	---	---
4-NITROPHENOL	---	---	---
DIBENZOFURAN	---	---	---
2,4-DINITROTOLUENE	---	---	---
2,6-DINITROTOLUENE	---	---	---
DIETHYLPHTHALATE	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---
FLUORENE	---	---	92.000J
4-NITROANILINE	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 24 - 28 FT
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-SB06-0007	MP-SB19-0007	MP-SB20-0007
UNITS	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL	24.0 - 26.0	24.0 - 25.0	24.0 - 26.0
4,6-DINITRO-2-METHYLPHENOL	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---
HEXACHLOROBENZENE	---	---	---
PENTACHLOROPHENOL	---	---	---
PHENANTHRENE	---	---	---
ANTHRACENE	---	---	---
DI-n-BUTYLPHTHALATE	59,000.000J	36.000J	4,900.000J
FLUORANTHRENE	---	---	---
PYRENE	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---
BENZO[a]ANTHRACENE	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	230,000.000J	---	---
2-METHYLNAPHTHALENE	---	---	3,300.000J
HEXACHLOROCYCLOPENTADIENE	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---
2-CHLORONAPHTHALENE	---	---	---
2-NITROANILINE	---	---	---
DIMETHYL PHTHALATE	---	---	---
ACENAPHTHYLENE	---	---	---
3-NITROANILINE	---	---	---
CHRYSENE	---	---	---
DI-n-OCTYL PHTHALATE	---	---	3,200.000J
BENZO[b]FLUORANTHENE	---	---	---
BENZO[k]FLUORANTHENE	---	---	---
BENZO[a]PYRENE	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---
TOTAL 4 & 3-METHYLPHENOL	---	---	---
PYRIDINE	---	---	---
2,3,4,6-TETRACHLOROPHENOL	---	---	---
TOTAL TICS	19	2	19
TIC CONCENTRATION	596,500.000JN	200.000	8,200,000.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 24 - 28 FT
TOTAL METALS

SAMPLE ID	MP-SB06-0007	MP-SB19-0007	MP-SB20-0007
UNITS	MG/KG	MG/KG	MG/KG
DEPTH INTERVAL (FT)	24.0 - 26.0	24.0 - 25.0	24.0 - 25.0
INORGANIC PARAMETERS:			
ALUMINUM	1,870.000	4,120.000	1,320.000
ANTIMONY	---	---	---
ARSENIC	---	---	---
BARIUM	---	---	---
BERYLLIUM	---	---	---
CADMIUM	---	---	7.000
CALCIUM	---	---	---
CHROMIUM	6.800J	8.300	8.100
COBALT	---	---	---
COPPER	10.200	10.100	15.200
IRON	8,850.000	9,140.000	5,300.000
LEAD	2.400J	3.000J	55.100J
MAGNESIUM	---	---	---
MANGANESE	31.900	219.000	54.200
MERCURY	---	---	---
NICKEL	---	---	---
POTASSIUM	---	---	---
SELENIUM	---	---	---
SILVER	---	---	---
SODIUM	---	---	---
THALLIUM	---	---	---
VANADIUM	17.600	11.500	---
ZINC	---	16.000J	62.100J
CYANIDE	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SOIL BORING SAMPLES
DEPTH 20 - 26 FT
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-SB13-0007	MP-SB17-0007	MP-SB18-0007	MP-SB19-0007	MP-SB20-0007
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
DEPTH INTERVAL (FT)	22.0 - 24.0	20.0 - 21.0	22.0 - 24.0	24.0 - 25.0	24.0 - 26.0
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	85.000J
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	7.700J	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	120.000J
4-4-DDT	---	---	---	---	53.000J
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	28.000J
GAMMA CHLORDANE	170.000	86.000	86.000	86.000	31.000
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
ON SITE MONITOR WELL BORING SAMPLES
Volatile Organic PARAMETERS

DATE: 12/04/90
TIME: 14:16:26
PAGE: 1

SAMPLE ID	MP-MW30-0001	MP-MW30-0003	MP-MW30-0006	MP-MW30-0007	MP-MW30-0009
DEPTH	0.0	4.0	6.0	10.0	18.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	---	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	4.000J	2.000J	---	490.000J
TRANS-1,2-DICHLOROETHENE	---	150.000	110.000	---	24,000.000
CHLOROFORM	---	27.000	23.000	---	1,800.000
1,2-DICHLOROETHANE	---	2.000J	---	---	---
2-BUTANONE	20,000.000J	80.000J	42.000J	---	---
1,1,1-TRICHLOROETHANE	---	10.000J	2.000J	---	2,000.000J
CARBON TETRACHLORIDE	---	---	---	---	3,800.000
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	87.000	38.000	18,000.000	7,400.000
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	660.000J	---	---	---	4,000.000
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	780.000	230.000	220.000	170,000.000	4,100.000
1,1,2,2-TETRACHLOROETHANE	---	3.000J	3.000J	6,300.000	---
TOLUENE	670.000J	41.000	32.000J	43,000.000	11,000.000
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	---	2.000J	10,000.000	7,500.000
STYRENE	---	---	---	---	---

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
ON SITE MONITOR WELL BORING SAMPLES
Volatile Organics PARAMETERS

DATE: 12/04/9C
TIME: 14:1' 5
PAGE: 2

SAMPLE ID	MP-MW3D-0001	MP-MW3D-0003	MP-MW3D-0004	MP-MW3D-0007	MP-MW3D-0009
DEPTH	0.0	6.0	6.0	10.0	18.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
TOTAL XYLENES	1,200.000	140.000	210.000	150,000.000	34,000.000
ACRYLONITRILE	.000	.000	.000	.000	.000
1,1,1,2-TETRACHLOROETHANE	.000	.000	.000	.000	.000
ISOBUTANOL	.000	.000	.000	.000	.000
TOTAL TICS	4	1	0	0	999,999
TIC CONCENTRATION	190.000	100,000.000	.000	.000	999,999.999

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

A

MATTIACE PETROCHEMICAL SITE
ON SITE MONITOR WELL BORING SAMPLES
BASE/NEUTRAL PARAMETERS

DATE: 12/04/90
TIME: 14:23:51
PAGE: 2

SAMPLE ID	MP-MW30-0001	MP-MW30-0003	MP-MW30-0004	MP-MW30-0007	MP-MW30-0009
DEPTH	0.0	4.0	4.0	10.0	18.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	2,800.000J	---
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO(a)ANTHRACENE	---	---	---	---	---
BIS(2-ETHYLHEXYL)PHTHALATE	18,000.000J	3,500.000J	2,000.000J	2,100.000J	550.000J
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,6,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	36.000J	---	---	---
BENZO(b)FLUORANTHENE	---	---	---	---	---
BENZO(k)FLUORANTHENE	---	---	---	---	---
BENZO(a)PYRENE	---	---	---	---	---
INDENO(1,2,3-CD)PYRENE	---	---	---	---	---
DIBENZ(A,H)ANTHRACENE	---	---	---	---	---
BENZO(G,H,I)PERYLENE	---	---	---	---	---
TOTAL 4 & 3-METHYLPHENOL	.000	.000	.000	.000	.000
PYRIDINE	.000	.000	.000	.000	.000
2,3,4,6-TETRACHLOROPHENOL	.000	.000	.000	.000	.000
TOTAL TICS	1	2	1	2	3
TIC CONCENTRATION	2,000.000	3,200.000	9,000.000	6,000.000	8,800.000

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
ON SITE MONITOR WELL BORING SAMPLES
BASE/NEUTRAL PARAMETERS

DATE:12/04/90
TIME:14:23
PAGE: 1

SAMPLE ID	MP-MW30-0001	MP-MW30-0003	MP-MW30-0006	MP-MW30-0007	MP-MW30-0009
DEPTH	0.0	4.0	4.0	10.0	18.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	130.000J	---	---
BIS(2-CHLOROETHYL) ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS(2-CHLOROISOPROPYL) ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS(2-CHLOROETHOXY) METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	40.000J	29.000J	1,900.000J	600.000J
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
ON SITE MONITOR WELL BORING SAMPLES
Inorganic PARAMETERS

DATE:12/06/90
TIME:13:42:14
PAGE: 1

SAMPLE ID	MP-MW30-0001	MP-MW30-0003	MP-MW30-0004	MP-MW30-0007	MP-MW30-0009
DEPTH	0.0	4.0	4.0	10.0	18.0
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Inorganic PARAMETERS:					
ALUMINUM	2,980.000	5,530.000	7,180.000	7,660.000	16,800.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	3.600	---	---
BARIUM	---	---	---	---	146.000
BERYLLIUM	---	---	---	---	1.500
CADMIUM	---	---	---	---	---
CALCIUM	---	---	---	---	---
CHROMIUM	4.900J	12.200	16.700	16.300	31.200
COBALT	---	---	---	---	15.600
COPPER	---	33.700J	---	---	35.600
IRON	5,740.000	12,600.000	14,700.000	15,300.000	24,700.000
LEAD	10.100	---	---	---	---
MAGNESIUM	---	2,050.000	2,630.000	2,260.000	5,590.000
MANGANESE	---	94.100	116.000	87.100	341.000
MERCURY	---	---	---	---	---
NICKEL	---	9.400	---	---	29.400
POTASSIUM	---	---	1,470.000	1,400.000	3,620.000
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	---	15.500	18.400	20.000	42.800
ZINC	---	---	---	---	---
CYANIDE	---	---	---	---	---

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
ON SITE MONITOR WELL BORING SAMPLES
Pesticide/PCB PARAMETERS

DATE: 12/04/90
TIME: 13:39
PAGE: 1

SAMPLE ID	MP-MW3D-0001	MP-MW3D-0003	MP-MW3D-0004	MP-MW3D-0007	MP-MW3D-0009
DEPTH	0.0	4.0	6.0	10.0	18.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Pesticide/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	---	---	---	---	---
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	150.000J	---	---	---

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

HAND BORING ANALYSES

MATTIACE PETROCHEMICAL SITE
ON SITE HAND BORING SAMPLES
Volatile Organic PARAMETERS

DATE: 12/04/90
TIME: 14:17:48
PAGE: 1

SAMPLE ID	MP-HB01-0001	MP-HB01-0002	MP-HB01-0003	MP-HB02-0001	MP-HB03-0001
DEPTH	0.0	0.0	1.5	0.0	0.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Volatile Organic PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	---	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---	---
CHLOROFORM	---	13.000	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	---	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	---	---	---	1.000J
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	---	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	---	---	---	---	---
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	---	---	---	---
STYRENE	---	---	---	---	---

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
ON SITE HAND BORING SAMPLES
Volatile Organic PARAMETERS

DATE: 12/04/90
TIME: 14:17
PAGE: 2

SAMPLE ID	MP-HB01-0001	MP-HB01-0002	MP-HB01-0003	MP-HB02-0001	MP-HB03-0001
DEPTH	0.0	0.0	1.5	0.0	0.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
TOTAL XYLENES	---	---	---	---	---
ACRYLONITRILE	.000	.000	.000	.000	.000
1,1,1,2-TETRACHLOROETHANE	.000	.000	.000	.000	.000
ISOBUTANOL	.000	.000	.000	.000	.000
TOTAL TICS	1	2	0	0	999,999
TIC CONCENTRATION	5.000	12.000	.000	.000	999,999.999

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

A

MATTIACE PETROCHEMICAL SITE
ON SITE HAND BORING SAMPLES
BASE/NEUTRAL PARAMETERS

DATE:12/04/90
TIME:14:21:59
PAGE: 1

SAMPLE ID	MP-HB01-0001	MP-HB01-0002	MP-HB01-0003	MP-HB02-0001	MP-HB03-0001
DEPTH	0.0	0.0	1.5	0.0	0.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS(2-CHLOROETHYL) ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS(2-CHLOROISOPROPYL) ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS(2-CHLOROETHOXY) METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	---	---	---	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
ON SITE HAND BORING SAMPLES
BASE/NEUTRAL PARAMETERS

SAMPLE ID	MP-HB01-0001	MP-HB01-0002	MP-HB01-0003	MP-HB02-0001	MP-HB03-0001
DEPTH	0.0	0.0	1.5	0.0	0.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	100.000J	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	---	110.000J
FLUORANTHRENE	66.000J	230.000J	---	300.000J	---
PYRENE	83.000J	230.000J	---	420.000	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO(a)ANTHRACENE	---	210.000J	---	580.000	---
BIS(2-ETHYLHEXYL)PHTHALATE	---	1,100.000J	---	3,200.000J	4,200.000J
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	130.000J	---
3-NITROANILINE	---	---	---	---	---
CHRYSENE	---	140.000J	---	410.000	---
DI-n-OCTYL PHTHALATE	300.000J	630.000	---	500.000	---
BENZO(b)FLUORANTHENE	---	---	---	---	---
BENZO(k)FLUORANTHENE	---	190.000J	---	640.000	---
BENZO(a)PYRENE	---	---	---	450.000	---
INDENO(1,2,3-CD)PYRENE	---	---	---	450.000	---
DIBENZ(A,H)ANTHRACENE	---	---	---	---	---
BENZO(G,H,I)PERYLENE	---	---	---	---	---
TOTAL 4 & 3-METHYLPHENOL	.000	.000	.000	.000	.000
PYRIDINE	.000	.000	.000	.000	.000
2,3,4,6-TETRACHLOROPHENOL	.000	.000	.000	.000	.000
TOTAL TICS	6	8	2	16	5
TIC CONCENTRATION	2,100.000	7,100.000	2,100.000	14,700.000	2,100.000

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
ON SITE HAND BORING SAMPLES
Inorganic PARAMETERS

DATE:12/04/90
TIME:13:40:54
PAGE: 1

SAMPLE ID	MP-HB01-0001	MP-HB01-0002	MP-HB01-0003	MP-HB02-0001	MP-HB03-0001
DEPTH	0.0	0.0	1.5	0.0	0.0
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Inorganic PARAMETERS:					
ALUMINUM	8,620.000	5,670.000	5,630.000	4,660.000	3,570.000
ANTIMONY	---	---	---	---	---
ARSENIC	3.400	6.800	---	3.100	3.100
BARIUM	---	---	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	3,000.000	1,760.000	---	14,600.000	2,280.000
CHROMIUM	49.200	30.300	16.500	30.200	23.700
COBALT	---	---	---	---	---
COPPER	---	---	---	---	---
IRON	13,900.000	27,600.000	9,290.000	11,100.000	6,330.000
LEAD	45.600J	---	---	82.700J	51.600J
MAGNESIUM	2,050.000	---	---	3,860.000	---
MANGANESE	189.000J	112.000J	198.000J	254.000J	87.400J
MERCURY	---	---	---	---	---
NICKEL	14.000	---	---	12.500	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	22.000J	112.000J	16.600	17.300	18.100
ZINC	65.500J	29.600J	21.500J	74.700J	60.400J
CYANIDE	---	---	---	---	---

EXPLAIN OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
ON SITE HAND BORING SAMPLES
Pesticide/PCB PARAMETERS

DATE:12/0[illegible]
TIME:13:6[illegible]
PAGE: 1

SAMPLE ID	MP-HB01-0001	MP-HB01-0002	MP-HB01-0003	MP-HB02-0001	MP-HB03-0001
DEPTH	0.0	0.0	1.5	0.0	0.0
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Pesticide/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	66.000J	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	260.000J
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	1.700J	12.000J	---	---	10.000J
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	2.400J	11.000J	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	27.000J	48.000J	---	---	140.000J
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	7.400J	---	---	---	---
GAMMA CHLORDANE	---	---	---	---	---
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLAIN OF CODES :

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

A-5

GROUNDWATER ANALYSES

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
DEEP ONSITE AND OFFSITE, NORTH OF GROUNDWATER DIVIDE
LDL VOLATILES

SAMPLE ID	MP-MW3D-GW01	MP-MW5D-GW01	MP-MW7D-GW01	MP-MW8D-GW01	MP-MW8D-GW02
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
**VOLATILE PARAMETERS:					
DICHLORODIFLUOROMETHANE	---	---	620,000.000 J	---	---
CHLOROMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	370.000	---	---	---
BROMOMETHANE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
TRICHLOROFLUOROMETHANE	---	---	---	---	---
1,1-DICHLOROETHENE	3,800.000	1,000.000	---	380.000 J	480.000 J
METHYLENE CHLORIDE	25,000.000 B	600,000.000 J	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---	30.000 J
1,1-DICHLOROETHANE	2,600.000	940.000	---	1,600.000 J	2,100.000 J
CIS-1,2-DICHLOROETHENE	20,000.000	28,000.000 J	---	53,000.000 J	64,000.000 J
2,2-DICHLOROPROPANE	---	---	---	---	---
CHLOROFORM	---	490.000 B	---	210.000 BJ	280.000 BJ
BROMOCHLOROMETHANE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	40,000.000	5,300.000 J	---	16,000.000 J	18,000.000 J
1,2-DICHLOROETHANE	2,000.000	11,000.000 J	---	---	620.000 J
1,1-DICHLOROPROPENE	---	---	---	---	---
CARBON TETRACHLORIDE	---	310.000	---	---	---
BENZENE	320.000	7,000.000 J	---	470.000 J	620.000 J
1,2-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	110,000.000 J	55,000.000 J	---	5,000.000 J	5,200.000 J
DIBROMOMETHANE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
TOLUENE	---	130,000.000 J	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
1,3-DICHLOROPROPANE	---	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
TETRACHLOROETHENE	22,000.000	900.000	---	3,500.000 J	4,000.000 J
1,2-DIBROMOETHANE	---	---	---	---	---
CHLOROBENZENE	---	8.000 J	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ETHYLBENZENE	3,400.000	1,100.000	---	1,400.000 J	1,800.000 J
M & P XYLENES	13,000.000	3,400.000 J	---	4,800.000 J	5,600.000 J
BROMOFORM	---	---	---	---	---
O-XYLENE	---	1,400.000	---	2,200.000 J	2,700.000 J
STYRENE	---	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
1,2,3-TRICHLOROPROPANE	---	---	---	---	---
ISOPROPYLBENZENE	---	56.000	---	82.000 J	100.000 J
BROMOBENZENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
DEEP ONSITE AND OFFSITE, NORTH OF GROUNDWATER DIVIDE
LDL VOLATILES

SAMPLE ID	MP-MW3D-GW01	MP-MW5D-GW01	MP-MW7D-GW01	MP-MW8D-GW01	MP-MW8D-GW02
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
2-CHLOROTOLUENE	---	70.000	---	92.000 J	1,000.000 J
N-PROPYLBENZENE	---	70.000	---	92.000 J	---
4-CHLOROTOLUENE	---	---	---	---	150.000 J
1,3,5-TRIMETHYLBENZENE	240.000 J	240.000	---	330.000 J	430.000 J
TERT-BUTYLBENZENE	---	---	---	---	---
1,2,4-TRIMETHYLBENZENE	1,000.000	880.000	---	---	1,700.000 J
SEC-BUTYLBENZENE	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
P-ISOPROPYLTOLUENE	---	13.000	---	---	860.000 J
1,4-DICHLOROBENZENE	120.000 J	---	---	41.000 J	51.000 J
1,2-DICHLOROBENZENE	920.000	---	---	---	440.000 J
N-BUTYLBENZENE	---	---	---	---	---
1,2-DIBROMO-3-CHLOROPROPANE	250.000 R	12.000 R	25,000.000 R	25.000 R	25.000 R
1,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	310.000	340.000	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
1,2,3-TRICHLOROBENZENE	---	---	---	---	---
VINYL ACETATE	250.000 R	12.000 R	25,000.000 R	25.000 R	25.000 R
CARBON DISULFIDE	---	---	---	---	---
ACETONE	250.000 R	12.000 R	25,000.000 R	25.000 R	25.000 R
2-BUTANONE	250.000 R	57,000.000 J	---	---	---
4-METHYL-2-PENTANONE	22,000.000 J	---	---	---	---
2-HEXANONE	250.000 R	2,300.000 J	25,000.000 R	190.000 J	25.000 R
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TETRAHYDROFURAN	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
2-CHLOROETHYLVINYLETHER	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
TOTAL XYLENES	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
BROMOCHLOROFLUOROMETHANE	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
1,2-DIBROMOMETHANE	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
TOTAL TICS	8	6	3	7	7
TIC CONCENTRATION	3,550.000 JN	542.000 JN	87,000.000 JN	785.000 JN	596.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
DEEP ONSITE AND OFFSITE, NORTH OF GROUNDWATER DIVIDE
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-MW3D-GW01	MP-MW5D-GW01	MP-MW7D-GW01	MP-MW8D-GW01	MP-MW8D-GW02
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	18,000.000	---	100.000	600.000 J
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	41.000 J	---	---	---	---
1,4-DICHLOROBENZENE	190.000	---	---	50.000 J	---
BENZYL ALCOHOL	---	1,500.000	---	---	880.000 J
1,2-DICHLOROBENZENE	1,400.000	---	---	440.000	5,300.000
2-METHYLPHENOL	---	610.000 J	---	100.000	2,100.000
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	2,200.000	---	140.000	3,700.000
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	1,500.000	1,700.000	---	2,800.000	30,000.000
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	380.000 J	16,000.000 J	---	---	1,700.000 J
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	690.000	---	---	380.000	4,200.000
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
DEEP ONSITE AND OFFSITE, NORTH OF GROUNDWATER DIVIDE
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-MW3D-GW01	MP-MW5D-GW01	MP-MW7D-GW01	MP-MW8D-GW01	MP-MW8D-GW02
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	66.000 R	1,000.000 R	10.000 R	100.000 R	1,000.000 R
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	150.000	---	---	58.000 J	650.000 J
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	130.000 R	2,000.000 R	20.000 R	200.000 R	2,000.000 R
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---	24.000	84.000 J	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL TICS	19	20	5	20	18
TIC CONCENTRATION	26,000.000 JN	229,000.000 JN	160.000 JN	58,800.000 JN	150,700.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
DEEP ONSITE AND OFFSITE, NORTH OF GROUNDWATER DIVIDE
TOTAL METALS

SAMPLE ID	MP-MW3D-GW01	MP-MW5D-GW01	MP-MW7D-GW01	MP-MW8D-GW01	MP-MW8D-GW02
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
INORGANIC PARAMETERS:					
ALUMINUM	449.000	758.000	2,040.000	10,200.000	8,450.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	11.900 J	---	5.800 BJ	8.800 BJ
BARIUM	114.000 B	89.400 B	31.400 B	162.000 B	155.000 B
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	86,100.000	24,800.000	9,760.000	92,400.000	92,400.000
CHROMIUM	143.000	24.200	96.400	277.000	214.000
COBALT	116.000 J	88.000 J	64.000 B	50.200 J	48.400 BJ
COPPER	10.900 B	19.500 B	14.700 B	25.100	24.500 B
IRON	1,560.000	983.000	4,310.000	192,000.000	186,000.000
LEAD	12.700	5.300	11.700	11.000	8.200
MAGNESIUM	11,000.000	10,800.000	2,650.000 B	20,500.000	20,400.000
MANGANESE	18,800.000	2,370.000	285.000	8,410.000	8,530.000
MERCURY	---	---	---	---	---
NICKEL	97.200	148.000	51.500	178.000	139.000
POTASSIUM	3,040.000 B	2,230.000 B	2,900.000 B	5,030.000	4,390.000 B
SELENIUM	3.000 R	3.000 R	3.000 R	3.000 R	3.000 R
SILVER	98.100	---	---	---	---
SODIUM	15,000.000	627,000.000	8,970.000	36,100.000	36,400.000
THALLIUM	---	---	---	---	---
VANADIUM	---	21.300 B	---	41.800 BJ	34.500 B
ZINC	60.200 R	53.600 R	53.500	96.800 J	88.900 J

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	CONCENTRATION < CRDL BUT > IDL
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
DEEP ONSITE AND OFFSITE, NORTH OF GROUNDWATER DIVIDE
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-MW3D-GW01	MP-MW5D-GW01	MP-MW7D-GW01	MP-MW8D-GW01	MP-MW8D-GW02
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
**PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	8.200 JN	---	0.050 R	---	9.300 JN
DELTA-BHC	---	1.400 JN	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	0.730 JN	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	---	---	---	---	---
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ONSITE, NORTH OF GROUNDWATER DIVIDE
LDL VOLATILES

SAMPLE ID	MP-MW03-GW01	MP-MW6S-GW01
UNITS	UG/L	UG/L
2-CHLOROTOLUENE	---	---
N-PROPYLBENZENE	---	---
4-CHLOROTOLUENE	---	---
1,3,5-TRIMETHYLBENZENE	---	---
TERT-BUTYLBENZENE	---	---
1,2,4-TRIMETHYLBENZENE	---	32,000.000 J
SEC-BUTYLBENZENE	---	---
1,3-DICHLOROBENZENE	---	---
P-ISOPROPYLTOLUENE	---	---
1,4-DICHLOROBENZENE	---	---
1,2-DICHLOROBENZENE	---	---
N-BUTYLBENZENE	---	---
1,2-DIBROMO-3-CHLOROPROPANE	5,000.000 R	25,000.000 R
1,2,4-TRICHLOROBENZENE	---	---
NAPHTHALENE	---	---
HEXACHLOROBUTADIENE	---	---
1,2,3-TRICHLOROBENZENE	---	---
VINYL ACETATE	5,000.000 R	---
CARBON DISULFIDE	---	---
ACETONE	---	25,000.000 R
2-BUTANONE	5,000.000 R	25,000.000 R
4-METHYL-2-PENTANONE	---	21,000.000 J
2-HEXANONE	5,000.000 R	25,000.000 R
CIS-1,3-DICHLOROPROPENE	---	---
TRANS-1,3-DICHLOROPROPENE	---	25,000.000 R
TETRAHYDROFURAN	1.000 NR	1.000 NR
2-CHLOROETHYLVINYLETHER	1.000 NR	1.000 NR
TOTAL XYLENES	1.000 NR	1.000 NR
BROMOCHLOROFLUOROMETHANE	1.000 NR	1.000 NR
1,2-DIBROMOMETHANE	1.000 NR	1.000 NR
TOTAL TICS	NR	4
TIC CONCENTRATION	---	90,000.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ONSITE, NORTH OF GROUNDWATER DIVIDE
LDL VOLATILES

SAMPLE ID	MP-MW03-GW01	MP-MW6S-GW01
UNITS	UG/L	UG/L
**VOLATILE PARAMETERS:		
DICHLORODIFLUOROMETHANE	---	---
CHLOROMETHANE	---	---
VINYL CHLORIDE	---	---
BROMOMETHANE	---	---
CHLOROETHANE	---	---
TRICHLOROFLUOROMETHANE	---	---
1,1-DICHLOROETHENE	---	---
METHYLENE CHLORIDE	12,000.000	750,000.000 J
TRANS-1,2-DICHLOROETHENE	---	---
1,1-DICHLOROETHANE	---	---
CIS-1,2-DICHLOROETHENE	3,000.000 J	14,000.000 J
2,2-DICHLOROPROPANE	---	---
CHLOROFORM	---	81,000.000 J
BROMOCHLOROMETHANE	---	---
1,1,1-TRICHLOROETHANE	---	91,000.000 J
1,2-DICHLOROETHANE	---	---
1,1-DICHLOROPROPENE	---	---
CARBON TETRACHLORIDE	1,500.000 J	---
BENZENE	---	---
1,2-DICHLOROPROPENE	---	---
TRICHLOROETHENE	2,200.000 J	230,000.000 J
DIBROMOMETHANE	---	---
BROMODICHLOROMETHANE	---	---
TOLUENE	1,400.000 J	---
1,1,2-TRICHLOROETHANE	---	---
1,3-DICHLOROPROPANE	---	---
DIBROMOCHLOROMETHANE	---	---
TETRACHLOROETHENE	---	100,000.000 J
1,2-DIBROMOETHANE	---	---
CHLOROBENZENE	---	---
1,1,1,2-TETRACHLOROETHANE	---	---
ETHYLBENZENE	6,100.000	16,000.000 J
M & P XYLENES	23,000.000	65,000.000 J
BROMOFORM	---	---
O-XYLENE	---	---
STYRENE	---	---
1,1,2,2-TETRACHLOROETHANE	---	---
1,2,3-TRICHLOROPROPANE	---	---
ISOPROPYLBENZENE	---	---
BROMOBENZENE	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ONSITE, NORTH OF GROUNDWATER DIVIDE
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-MW03-GW01	MP-MW03-GW02	MP-MW6S-GW01
UNITS	UG/L	UG/L	UG/L
4-CHLOROPHENYL PHENYL ETHER	---	---	---
FLUORENE	200.000 R	410.000 R	2,000.000 R
4-NITROANILINE	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---
HEXACHLOROBENZENE	---	---	---
PENTACHLOROPHENOL	---	---	---
PHENANTHRENE	---	---	---
ANTHRACENE	---	---	---
DI-n-BUTYLPHTHALATE	300.000	590.000	6,900.000
FLUORANTHRENE	---	---	---
PYRENE	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---
3,3-DICHLOROBENZIDINE	410.000 R	820.000 R	4,100.000 R
BENZO[a]ANTHRACENE	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	4,000.000	9,700.000	19,000.000
CHRYSENE	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---
BENZO[b]FLUORANTHENE	---	---	---
BENZO[k]FLUORANTHENE	---	---	---
BENZO[a]PYRENE	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---
TOTAL TIC	20	20	15
TIC CONCENTRATION	105,800.000 JN	26,100.000 JN	207,000.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
	COMPOUND FOUND IN BLANK
- or ---	UNDETECTED
NA	NOT ANALYZED FOR
	REJECTED VALUE
	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ONSITE, NORTH OF GROUNDWATER DIVIDE
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-MW03-GW01	MP-MW03-GW02	MP-MW6S-GW01
UNITS	UG/L	UG/L	UG/L
BASE/NEUTRAL PARAMETERS:			
PHENOL	1,200.000	1,300.000	---
BIS[2-CHLOROETHYL] ETHER	---	---	---
2-CHLOROPHENOL	---	---	---
1,3-DICHLOROBENZENE	---	---	---
1,4-DICHLOROBENZENE	---	160.000 J	---
BENZYL ALCOHOL	---	---	---
1,2-DICHLOROBENZENE	910.000	---	1,700.000 J
2-METHYLPHENOL	270.000	550.000	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---
4-METHYLPHENOL	390.000	760.000	---
N-NITROSO-DIPROPYLAMINE	---	---	---
HEXACHLOROETHANE	---	---	---
NITROBENZENE	---	---	---
ISOPHORONE	---	---	57,000.000
2-NITROPHENOL	---	---	---
2,4-DIMETHYLPHENOL	---	---	---
BENZOIC ACID	---	---	3,800.000 J
BIS[2-CHLOROETHOXY] METHANE	---	---	---
2,4-DICHLOROPHENOL	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---
NAPHTHALENE	3,600.000	7,900.000	3,500.000
4-CHLOROANILINE	---	---	---
HEXACHLOROBUTADIENE	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---
2-METHYLNAPHTHALENE	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---
2-CHLORONAPHTHALENE	---	---	---
2-NITROANILINE	---	---	---
DIMETHYL PHTHALATE	---	---	---
ACENAPHTHYLENE	---	---	---
3-NITROANILINE	---	---	---
ACENAPHTHENE	---	---	---
2,4-DINITROPHENOL	---	---	---
4-NITROPHENOL	---	---	---
DIBENZOFURAN	---	---	---
2,4-DINITROTOLUENE	---	---	---
2,6-DINITROTOLUENE	---	---	---
DIETHYLPHTHALATE	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ONSITE, NORTH OF GROUNDWATER DIVIDE
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-MW03-GW01	MP-MW03-GW02	MP-MW6S-GW01
UNITS	UG/L	UG/L	UG/L
**PESTICIDE/PCB PARAMETERS:			
ALPHA-BHC	---	0.790 J	1.800
BETA-BHC	22.000 JN	19.000 JN	17.000
DELTA-BHC	---	4.400 JN	2.300
GAMMA-BHC	3.300 J	5.200 J	---
HEPTACHLOR	5.500 J	8.800 J	1.700
ALDRIN	---	0.560 J	7.200
HEPTACHLOR EPOXIDE	2.800 J	5.300 J	---
ENDOSULFAN I	---	---	---
DIELDRIN	---	---	---
4-4-DDE	---	---	2.100
ENDRIN	---	---	---
ENDOSULFAN II	---	---	---
4-4-DDD	---	---	---
ENDOSULFAN SULFATE	---	---	---
4-4-DDT	---	---	---
METHOXYCHLOR	---	---	---
ENDRIN KETONE	---	---	---
ALPHA CHLORDANE	---	---	31.000
GAMMA CHLORDANE	---	---	---
TOXAPHENE	---	---	---
AROCLOR 1016	---	---	---
AROCLOR 1221	---	---	---
AROCLOR 1232	---	---	---
AROCLOR 1242	---	---	---
AROCLOR 1248	---	---	---
AROCLOR 1254	---	---	---
AROCLOR 1260	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ONSITE, NORTH OF GROUNDWATER DIVIDE
TOTAL METALS

SAMPLE ID	MP-MW03-GW01	MP-MW03-GW02	MP-MW6S-GW01
UNITS	UG/L	UG/L	UG/L
INORGANIC PARAMETERS:			
ALUMINUM	18,000.000 J	42,000.000 J	15,400.000
ANTIMONY	---	---	---
ARSENIC	7.700 BJ	8.200 BJ	7.100 BJ
BARIUM	344.000 J	555.000 J	287.000
BERYLLIUM	---	2.800 B	1.300 B
CADMIUM	108.000	97.600	5.300 J
CALCIUM	57,500.000	64,000.000	200,000.000
CHROMIUM	39.600 J	113.000 J	21.100
COBALT	93.300 J	149.000 J	1,120.000 J
COPPER	45.800 J	91.900 J	31.800 J
IRON	25,000.000 J	68,500.000 J	33,400.000
LEAD	18.300 J	39.800 J	12.100
MAGNESIUM	24,200.000	29,000.000	26,600.000
MANGANESE	13,100.000	15,800.000	34,100.000
MERCURY	---	---	0.210 J
NICKEL	62.900	100.000	102.000
POTASSIUM	23,100.000	25,500.000	6,870.000
SELENIUM	15.000 R	15.000 R	15.000 R
SILVER	---	---	---
SODIUM	114,000.000	127,000.000	39,800.000
THALLIUM	---	---	---
VANADIUM	32.400 BJ	96.600 J	39.100 B
ZINC	108.000 R	197.000 J	160.000 J

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	CONCENTRATION < CRDL BUT > IDL
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW OFFSITE, NORTH OF GROUNDWATER DIVIDE
LDL VOLATILES

SAMPLE ID	MP-MW10-GW01	MP-MW5S-GW01	MP-MW7S-GW01	MP-MW8S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L
2-CHLOROTOLUENE	---	87.000 J	2.000 J	---
N-PROPYLBENZENE	---	87.000 J	---	---
4-CHLOROTOLUENE	---	---	---	---
1,3,5-TRIMETHYLBENZENE	---	300.000 J	13.000 J	---
TERT-BUTYLBENZENE	---	---	---	---
1,2,4-TRIMETHYLBENZENE	---	960.000 J	---	---
SEC-BUTYLBENZENE	---	---	---	---
1,3-DICHLOROBENZENE	---	56.000 J	---	---
P-ISOPROPYLTOLUENE	---	---	2.000 J	---
1,4-DICHLOROBENZENE	---	200.000 J	---	---
1,2-DICHLOROBENZENE	---	2,000.000 J	---	---
N-BUTYLBENZENE	---	---	2.000 J	---
1,2-DIBROMO-3-CHLOROPROPANE	5,000.000 R	12.000 R	---	10.000 R
1,2,4-TRICHLOROBENZENE	---	5.000 J	---	---
NAPHTHALENE	---	340.000 J	6.000 J	---
HEXACHLOROBUTADIENE	---	---	---	---
1,2,3-TRICHLOROBENZENE	---	---	---	---
VINYL ACETATE	5,000.000 R	12.000 R	1.000 R	10.000 R
CARBON DISULFIDE	---	---	---	---
ACETONE	5,000.000 R	12.000 R	1.000 R	10.000 R
2-BUTANONE	---	120,000.000 J	---	10.000 R
4-METHYL-2-PENTANONE	---	---	---	---
2-HEXANONE	5,000.000 R	1,600.000 J	1.000 R	10.000 R
CIS-1,3-DICHLOROPROPENE	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---
TETRAHYDROFURAN	1.000 NR	1.000 NR	1.000 NR	1.000 NR
2-CHLOROETHYLVINYLETHER	1.000 NR	1.000 NR	1.000 NR	1.000 NR
TOTAL XYLENES	1.000 NR	1.000 NR	1.000 NR	1.000 NR
BROMOCHLOROFLUOROMETHANE	1.000 NR	1.000 NR	1.000 NR	1.000 NR
1,2-DIBROMOMETHANE	1.000 NR	1.000 NR	1.000 NR	1.000 NR
TOTAL TICS	3	4	10	4
TIC CONCENTRATION	---	175.000 JN	32.000 JN	44.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW OFFSITE, NORTH OF GROUNDWATER DIVIDE
LDL VOLATILES

SAMPLE ID	MP-MW10-GW01	MP-MW5S-GW01	MP-MW7S-GW01	MP-MW8S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L
**VOLATILE PARAMETERS:				
DICHLORODIFLUOROMETHANE	86,000.000 J	---	---	---
CHLOROMETHANE	---	---	---	---
VINYL CHLORIDE	---	73.000 J	---	---
BROMOMETHANE	---	---	---	---
CHLOROETHANE	---	21.000 J	---	---
TRICHLOROFLUOROMETHANE	---	---	---	---
1,1-DICHLOROETHENE	---	1,400.000 J	---	38.000
METHYLENE CHLORIDE	---	170,000.000 J	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---
1,1-DICHLOROETHANE	---	1,300.000 J	2.000 J	33.000
CIS-1,2-DICHLOROETHENE	---	22,000.000 J	---	920.000
2,2-DICHLOROPROPANE	---	---	---	---
CHLOROFORM	13,000.000 B	2,300.000 B	---	27.000
BROMOCHLOROMETHANE	---	---	---	---
1,1,1-TRICHLOROETHANE	---	10,000.000 J	15.000 J	800.000
1,2-DICHLOROETHANE	---	4,000.000 J	---	---
1,1-DICHLOROPROPENE	---	---	---	---
CARBON TETRACHLORIDE	---	2,200.000 J	---	---
BENZENE	---	2,200.000 J	---	---
1,2-DICHLOROPROPENE	---	---	---	---
TRICHLOROETHENE	---	81,000.000 J	140.000 J	940.000
DIBROMOMETHANE	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---
TOLUENE	---	63,000.000 J	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---
1,3-DICHLOROPROPANE	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---
TETRACHLOROETHENE	---	---	57.000 J	230.000
1,2-DIBROMOETHANE	---	---	---	---
CHLOROBENZENE	---	7.000 J	---	---
1,1,1,2-TETRACHLOROETHANE	---	87.000 J	---	---
ETHYLBENZENE	---	3,000.000 J	32.000 J	---
M & P XYLENES	---	12,000.000 J	110.000 J	---
BROMOFORM	---	---	---	---
O-XYLENE	---	---	36.000 J	---
STYRENE	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---
1,2,3-TRICHLOROPROPANE	---	---	---	---
ISOPROPYLBENZENE	---	85.000 J	2.000 J	---
BROMOBENZENE	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
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U or ---	UNDETECTED
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R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW OFFSITE, NORTH OF GROUNDWATER DIVIDE
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-MW10-GW01	MP-MW5S-GW01	MP-MW7S-GW01	MP-MW8S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---
FLUORENE	1,000.000 R	510.000 R	1,000.000 R	200.000 R
4-NITROANILINE	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---
PHENANTHRENE	---	---	---	---
ANTHRACENE	---	---	---	---
DI-n-BUTYLPHTHALATE	390.000 J	---	6,000.000	430.000
FLUORANTHRENE	---	---	---	---
PYRENE	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---
3,3-DICHLOROBENZIDINE	2,000.000 R	1,000.000 R	2,000.000 R	410.000 R
BENZO[a]ANTHRACENE	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	3,000.000	---	27,000.000	2,600.000
CHRYSENE	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---
BENZO[a]PYRENE	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---
TOTAL TICS	20	17	20	18
TIC CONCENTRATION	88,700.000 JN	73,000.000 JN	193,000.000 JN	30,200.000 JN

EXPLANATION OF CODES:

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MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW OFFSITE, NORTH OF GROUNDWATER DIVIDE
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-MW10-GW01	MP-MW5S-GW01	MP-MW7S-GW01	MP-MW8S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L
BASE/NEUTRAL PARAMETERS:				
PHENOL	940.000 J	280.000 J	7,700.000	480.000
BIS[2-CHLOROETHYL] ETHER	---	---	---	---
2-CHLOROPHENOL	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---
BENZYL ALCOHOL	---	---	---	---
1,2-DICHLOROBENZENE	460.000 J	1,800.000	1,400.000	210.000
2-METHYLPHENOL	640.000 J	---	1,000.000 J	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---
4-METHYLPHENOL	410.000 J	---	1,300.000	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---
HEXACHLOROETHANE	---	---	---	---
NITROBENZENE	---	---	---	---
ISOPHORONE	31,000.000	6,900.000	6,900.000	2,500.000
2-NITROPHENOL	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---
BENZOIC ACID	---	2,900.000 J	---	6,100.000 J
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---
NAPHTHALENE	1,800.000	---	4,800.000	750.000
4-CHLOROANILINE	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---
2-METHYLNAPHTHALENE	---	---	650.000 J	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---
2-NITROANILINE	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---
ACENAPHTHYLENE	---	---	---	---
3-NITROANILINE	---	---	---	---
ACENAPHTHENE	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---
4-NITROPHENOL	---	---	---	---
DIBENZOFURAN	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
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B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
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MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW OFFSITE, NORTH OF GROUNDWATER DIVIDE
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-MW10-GW01	MP-MW5S-GW01	MP-MW7S-GW01	MP-MW8S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L
**PESTICIDE/PCB PARAMETERS:				
ALPHA-BHC	---	---	1.100	---
BETA-BHC	---	---	8.200	---
DELTA-BHC	1.300	---	0.950 JN	---
GAMMA-BHC	2.500 JN	---	63.000 JN	---
HEPTACHLOR	1.800 JN	0.700 JN	5.600 JN	---
ALDRIN	---	---	6.900 JN	0.050 R
HEPTACHLOR EPOXIDE	---	---	2.800 JN	---
ENDOSULFAN I	---	---	---	---
DIELDRIN	---	---	---	---
4-4-DDE	---	---	---	---
ENDRIN	---	---	---	---
ENDOSULFAN II	---	---	---	---
4-4-DDD	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---
4-4-DDT	---	---	---	---
METHOXYCHLOR	---	---	---	---
ENDRIN KETONE	---	---	---	---
ALPHA CHLORDANE	---	---	---	---
GAMMA CHLORDANE	---	---	---	---
TOXAPHENE	---	---	---	---
AROCLOR 1016	---	---	---	---
AROCLOR 1221	---	---	---	---
AROCLOR 1232	---	---	---	---
AROCLOR 1242	---	---	---	---
AROCLOR 1248	---	---	---	---
AROCLOR 1254	---	---	---	---
AROCLOR 1260	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW OFFSITE, NORTH OF GROUNDWATER DIVIDE
TOTAL METALS

SAMPLE ID	MP-MW10-GW01	MP-MW5S-GW01	MP-MW7S-GW01	MP-MW8S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L
INORGANIC PARAMETERS:				
ALUMINUM	33,500.000	221,000.000	37,000.000	28,400.000
ANTIMONY	---	---	---	---
ARSENIC	3.700 BJ	---	7.100 BJ	5.600 BJ
BARIUM	496.000	1,320.000	346.000	170.000 B
BERYLLIUM	1.600 B	12.900	2.700 B	1.500 B
CADMIUM	104.000	---	---	---
CALCIUM	106,000.000	72,700.000	86,900.000	22,300.000
CHROMIUM	92.900	562.000	96.000	60.400
COBALT	46.700 BJ	836.000 J	385.000 J	75.900 J
COPPER	210.000 J	259.000 J	64.200 J	63.300 J
IRON	72,500.000	253,000.000	80,500.000	60,600.000
LEAD	31.100	111.000	29.400	14.100
MAGNESIUM	44,300.000	37,800.000	39,200.000	9,580.000
MANGANESE	32,500.000	64,200.000	9,680.000	7,780.000
MERCURY	1.800 J	---	0.210 J	0.260 J
NICKEL	75.100	402.000	191.000	46.700
POTASSIUM	14,600.000	11,800.000	19,400.000	4,320.000 B
SELENIUM	15.000 R	15.000 R	15.000 R	15.000 R
SILVER	---	---	---	---
SODIUM	143,000.000	139,000.000	554,000.000	13,200.000
THALLIUM	---	---	---	---
VANADIUM	108.000 J	394.000 J	88.300 J	79.800 J
ZINC	166.000 J	517.000 J	197.000 J	123.000 J

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	CONCENTRATION < CRDL BUT > IDL
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ON AND OFFSITE, SOUTH OF GROUNDWATER DIVIDE
LDL VOLATILES

SAMPLE ID	MP-MW07-GW01	MP-MW09-GW01	MP-MW1S-GW01	MP-MW2S-GW01	MP-MW4S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
2-CHLOROTOLUENE	42.000 J	60.000 J	---	0.600 J	---
N-PROPYLBENZENE	42.000 J	60.000 J	---	---	---
4-CHLOROTOLUENE	---	140.000 J	---	---	---
1,3,5-TRIMETHYLBENZENE	---	160.000 J	---	0.600 J	---
TERT-BUTYLBENZENE	---	---	---	---	---
1,2,4-TRIMETHYLBENZENE	160.000 J	160.000 J	---	15.000	---
SEC-BUTYLBENZENE	---	---	---	0.900 J	---
1,3-DICHLOROBENZENE	---	---	---	---	---
P-ISOPROPYLTOLUENE	5.000 J	14.000 J	---	---	---
1,4-DICHLOROBENZENE	---	---	---	1.300	---
1,2-DICHLOROBENZENE	---	---	0.400 J	8.000	---
N-BUTYLBENZENE	---	---	---	---	---
1,2-DIBROMO-3-CHLOROPROPANE	1.000 R	1.000 R	1.000 R	1.000 R	3.000 R
1,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	92.000 J	290.000 J	0.100 J	0.800 J	---
HEXACHLOROBUTADIENE	---	---	---	---	---
1,2,3-TRICHLOROBENZENE	---	---	---	---	---
VINYL ACETATE	1.000 R	1.000 R	1.000 R	1.000 R	3.000 R
CARBON DISULFIDE	---	---	---	---	---
ACETONE	1.000 R	1.000 R	1.000 R	1.000 R	3.000 R
2-BUTANONE	6,200.000 J	3,200.000 J	1.000 R	1.000 R	3.000 R
4-METHYL-2-PENTANONE	1.000 R	1.000 R	---	---	---
2-HEXANONE	1.000 R	1.000 R	1.000 R	1.000 R	3.000 R
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TETRAHYDROFURAN	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
2-CHLOROETHYLVINYLETHER	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
TOTAL XYLENES	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
BROMOCHLOROFLUOROMETHANE	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
1,2-DIBROMOMETHANE	1.000 NR	1.000 NR	1.000 NR	1.000 NR	1.000 NR
TOTAL TICS	3	6	5	9	NR
TIC CONCENTRATION	88.000 JN	190.000 JN	7.500 JN	16.600 JN	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ON AND OFFSITE, SOUTH OF GROUNDWATER DIVIDE
LDL VOLATILES

SAMPLE ID	MP-MW07-GW01	MP-MW09-GW01	MP-MW1S-GW01	MP-MW2S-GW01	MP-MW4S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
**VOLATILE PARAMETERS:					
DICHLORODIFLUOROMETHANE	---	---	---	---	---
CHLOROMETHANE	---	---	---	---	---
VINYL CHLORIDE	2,600.000 J	1,900.000 J	2.000	---	14.000
BROMOMETHANE	---	---	---	---	---
CHLOROETHANE	620.000 J	6,400.000 J	5.000	---	---
TRICHLOROFLUOROMETHANE	---	---	---	---	---
1,1-DICHLOROETHENE	170.000 J	54.000 J	7.000	---	2.000 J
METHYLENE CHLORIDE	---	390.000 J	---	---	---
TRANS-1,2-DICHLOROETHENE	---	36.000 J	0.800 J	---	0.700 J
1,1-DICHLOROETHANE	---	---	25.000	3.000	13.000
CIS-1,2-DICHLOROETHENE	16,000.000 J	4,100.000 J	35.000	---	100.000 J
2,2-DICHLOROPROPANE	---	---	---	---	---
CHLOROFORM	---	---	---	---	---
BROMOCHLOROMETHANE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	3,400.000 J	950.000 J	2.000	---	2.000 J
1,2-DICHLOROETHANE	74.000 J	210.000 J	---	---	5.000
1,1-DICHLOROPROPENE	---	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
BENZENE	70.000 J	260.000 J	0.300 J	---	0.600 J
1,2-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	35.000 J	16.000 J	45.000	4.000	19.000
DIBROMOMETHANE	---	---	---	---	---
BROMODICHLOROMETHANE	1.000 R	---	---	---	---
TOLUENE	---	42,000.000 J	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
1,3-DICHLOROPROPANE	---	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
TETRACHLOROETHENE	25.000 J	6.000 J	32.000	2.000	3.000
1,2-DIBROMOETHANE	---	---	---	---	---
CHLOROBENZENE	---	---	0.500 J	9.000	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ETHYLBENZENE	370.000 J	2,200.000 J	---	2.000	---
M & P XYLENES	1,100.000 J	190.000 J	---	6.000	---
BROMOFORM	---	---	---	---	---
O-XYLENE	410.000 J	2,400.000 J	---	2.000	---
STYRENE	---	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
1,2,3-TRICHLOROPROPANE	---	---	---	---	---
ISOPROPYLBENZENE	26.000 J	69.000 J	---	3.000	---
BROMOBENZENE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ON AND OFFSITE, SOUTH OF GROUNDWATER DIVIDE
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-MW07-GW01	MP-MW09-GW01	MP-MW1S-GW01	MP-MW2S-GW01	MP-MW4S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	10.000 R	100.000 R	150.000 R	10.000 R	---
4-NITROANILINE	---	---	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	50.000 R	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	50.000 R	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	360.000	---	12.000
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	20.000 R	200.000 R	310.000 R	20.000 R	20.000 R
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---	1,200.000	---	100.000
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	10.000 R	---	---	---	---
BENZO[b]FLUORANTHENE	10.000 R	---	---	---	---
BENZO[k]FLUORANTHENE	10.000 R	---	---	---	---
BENZO[a]PYRENE	10.000 R	---	---	---	---
INDENO[1,2,3-CD]PYRENE	10.000 R	---	---	---	---
DIBENZ[A,H]ANTHRACENE	10.000 R	---	---	---	---
BENZO[G,H,I]PERYLENE	10.000 R	---	---	---	---
TOTAL TICS	17	15	3	5	8
TIC CONCENTRATION	4,190.000 JN	8,600.000 JN	500.000 JN	180.000 JN	590.000 JN

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ON AND OFFSITE, SOUTH OF GROUNDWATER DIVIDE
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-MW07-GW01	MP-MW09-GW01	MP-MW1S-GW01	MP-MW2S-GW01	MP-MW4S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
BASE/NEUTRAL PARAMETERS:					
PHENOL	39.000	240.000	---	10.000 R	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	10.000 R	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	5.000 J	---	62.000 J	---	---
2-METHYLPHENOL	73.000	180.000	---	10.000 R	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	290.000	1,200.000	---	10.000 R	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	---
2-NITROPHENOL	---	---	---	10.000 R	---
2,4-DIMETHYLPHENOL	7.000 J	95.000 J	---	10.000 R	---
BENZOIC ACID	220.000 J	870.000 J	---	50.000 R	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	10.000 R	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	50.000	170.000	140.000 J	---	57.000
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	10.000 R	---
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	10.000 R	---
2,4,5-TRICHLOROPHENOL	---	---	---	50.000 R	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	50.000 R	---
4-NITROPHENOL	---	---	---	50.000 R	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ON AND OFFSITE, SOUTH OF GROUNDWATER DIVIDE
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-MW07-GW01	MP-MW09-GW01	MP-MW1S-GW01	MP-MW2S-GW01	MP-MW4S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
**PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	0.870 JN	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	4.600 JN	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	---	---	---	---	---
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
GROUNDWATER SAMPLES, OVERBURDEN WELLS
SHALLOW ON AND OFFSITE, SOUTH OF GROUNDWATER DIVIDE
TOTAL METALS

SAMPLE ID	MP-MW07-GW01	MP-MW09-GW01	MP-MW1S-GW01	MP-MW2S-GW01	MP-MW4S-GW01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
INORGANIC PARAMETERS:					
ALUMINUM	643.000	8,370.000	15,000.000	17,600.000	1,240.000
ANTIMONY	---	---	---	---	---
ARSENIC	8.800 BJ	10.300 J	4.200 BJ	5.100 BJ	4.500 BJ
BARIUM	73.000 B	351.000	184.000 B	368.000	137.000 B
BERYLLIUM	---	---	1.200 B	1.200 B	---
CADMIUM	---	21.900	---	---	---
CALCIUM	91,000.000	154,000.000	49,100.000	68,200.000	54,900.000
CHROMIUM	---	27.200	335.000	122.000	32.300
COBALT	---	95.100 J	38.900 BJ	57.500 J	7.300 B
COPPER	48.200 J	76.500 J	58.800 J	46.000 J	41.200 J
IRON	54,700.000	145,000.000	39,500.000	76,400.000	33,500.000
LEAD	7.100	18.800	19.900	15.400	8.800
MAGNESIUM	27,300.000	51,400.000	14,800.000	12,700.000	23,900.000
MANGANESE	5,720.000	2,720.000	1,830.000	12,200.000	1,920.000
MERCURY	---	---	---	---	---
NICKEL	8.600 B	29.700 B	116.000	117.000	29.700 B
POTASSIUM	3,630.000 B	9,160.000	3,790.000 B	6,590.000	2,740.000 B
SELENIUM	3.200 R	3.000 R	15.000 R	15.000 R	3.000 R
SILVER	17.300	---	18.400	---	---
SODIUM	44,800.000	77,800.000	138,000.000	22,400.000	13,100.000
THALLIUM	---	---	---	---	---
VANADIUM	5.500 B	33.300 B	50.700 J	50.300 J	---
ZINC	51.700 R	62.400 R	157.000 J	136.000 J	35.400 R

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	CONCENTRATION < CRDL BUT > IDL
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
FLOATING PRODUCT
TCL VOLATILES

DATE:12/27/90
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SAMPLE ID	MP-MW6S-FLPD	MP-MW6S-FLRP
UNITS	UG/KG	UG/KG
	---	---
TOTAL XYLENES	32,000.000	61,000.000
ACRYLONITRILE	---	---
1,1,1,2-TETRACHLOROETHANE	---	---
ISOBUTANOL	---	---
TOTAL TICS	10	10
TIC CONCENTRATION	75,900.000JN	129,100.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FLOATING PRODUCT
TCL VOLATILES

DATE:12/27/
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Report format 1

SAMPLE ID	MP-MW6S-FLPD	MP-MW6S-FLRP
UNITS	UG/KG	UG/KG
	---	---
TCL VOLATILE PARAMETERS:		
CHLOROMETHANE	---	---
BROMOMETHANE	---	---
VINYL CHLORIDE	---	---
CHLOROETHANE	---	---
METHYLENE CHLORIDE	---	---
ACETONE	---	---
CARBON DISULFIDE	---	---
1,1-DICHLOROETHENE	---	---
1,1-DICHLOROETHANE	---	---
TRANS-1,2-DICHLOROETHENE	---	---
CHLOROFORM	---	---
1,2-DICHLOROETHANE	---	---
2-BUTANONE	---	---
1,1,1-TRICHLOROETHANE	20,000.000	37,000.000
CARBON TETRACHLORIDE	---	---
VINYL ACETATE	---	---
BROMODICHLOROMETHANE	---	---
1,2-DICHLOROPROPANE	---	---
TRANS-1,3-DICHLOROPROPENE	---	---
TRICHLOROETHENE	67,000.000	120,000.000
DIBROMOCHLOROMETHANE	---	---
1,1,2-TRICHLOROETHANE	---	---
BENZENE	---	---
CIS-1,3-DICHLOROPROPENE	---	---
2-CHLOROETHYLVINYLETHER	---	---
BROMOFORM	---	---
4-METHYL-2-PENTANONE	---	---
2-HEXANONE	---	---
TETRACHLOROETHENE	52,000.000	98,000.000
1,1,2,2-TETRACHLOROETHANE	---	---
TOLUENE	64,000.000	120,000.000
CHLOROBENZENE	---	---
ETHYLBENZENE	6,800.000	13,000.000
STYRENE	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FLOATING PRODUCT
PESTICIDE/PCB ANALYSES

DATE:01/02/9
TIME:08:25:30
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SAMPLE ID	MP-MW6S-FLPD	MP-MW6S-FLRP
UNITS	MG/KG	MG/KG
	---	---
PESTICIDE/PCB PARAMETERS:		
ALPHA-BHC	---	---
BETA-BHC	---	---
DELTA-BHC	---	---
GAMMA-BHC	---	---
HEPTACHLOR	---	---
ALDRIN	---	---
HEPTACHLOR EPOXIDE	---	---
ENDOSULFAN I	---	---
DIELDRIN	---	---
4-4-DDE	---	---
ENDRIN	---	---
ENDOSULFAN II	---	---
4-4-DDD	---	---
ENDOSULFAN SULFATE	---	---
4-4-DDT	---	---
METHOXYCHLOR	---	---
ENDRIN KETONE	---	---
ALPHA CHLORDANE	---	---
GAMMA CHLORDANE	80.000	80.000
TOXAPHENE	---	---
AROCLOR 1016	---	---
AROCLOR 1221	---	---
AROCLOR 1232	---	---
AROCLOR 1242	---	---
AROCLOR 1248	---	---
AROCLOR 1254	---	---
AROCLOR 1260	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

A-6

SURFACE WATER ANALYSES

SAMPLE ID	MP-GC01-SW01	MP-GC02-SW01	MP-GC03-SW01	MP-GC03-SW02
UNITS	UG/L	UG/L	UG/L	UG/L
TOTAL XYLENES	---	---	---	---
ACRYLONITRILE	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---
ISOBUTANOL	---	---	---	---
TOTAL TICS	1	1	0	0
TIC CONCENTRATION	2.000J	1.000	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SURFACE WATER SAMPLES
TCL VOLATILES

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SAMPLE ID	MP-GC01-SW01	MP-GC02-SW01	MP-GC03-SW01	MP-GC03-SW02
UNITS	UG/L	UG/L	UG/L	UG/L
TCL VOLATILE PARAMETERS:				
CHLOROMETHANE	---	---	---	---
BROMOMETHANE	---	---	---	---
VINYL CHLORIDE	---	---	---	---
CHLOROETHANE	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---
ACETONE	---	---	---	---
CARBON DISULFIDE	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---
TRANS-1,2-DICHLOROETHENE	2.000	.800J	.400J	.300J
CHLOROFORM	---	.700J	.600J	.600J
1,2-DICHLOROETHANE	---	---	---	---
2-BUTANONE	---	---	---	---
1,1,1-TRICHLOROETHANE	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---
VINYL ACETATE	---	---	---	---
BROMODICHLOROMETHANE	.200J	1.000J	1.000J	1.000J
1,2-DICHLOROPROPANE	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---
TRICHLOROETHENE	---	.600J	.300J	.300J
DIBROMOCHLOROMETHANE	---	.600J	.600J	1.000J
1,1,2-TRICHLOROETHANE	---	---	---	---
BENZENE	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---
BROMOFORM	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	---
2-HEXANONE	---	---	---	---
TETRACHLOROETHENE	5.000	3.000J	1.000J	1.000J
1,1,2,2-TETRACHLOROETHANE	---	---	---	---
TOLUENE	---	---	---	---
CHLOROBENZENE	---	---	---	---
ETHYLBENZENE	---	---	---	---
STYRENE	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-GC01-SW01	MP-GC02-SW01	MP-GC03-SW01	MP-GC03-SW02
UNITS	UG/L	UG/L	UG/L	UG/L
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---
PHENANTHRENE	---	---	---	---
ANTHRACENE	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	---
FLUORANTHRENE	---	---	---	---
PYRENE	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---
2-NITROANILINE	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---
ACENAPHTHYLENE	---	---	---	---
3-NITROANILINE	---	---	---	---
CHRYSENE	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---
BENZO[a]PYRENE	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---
TOTAL 4 & 3-METHYLPHENOL	---	---	---	---
PYRIDINE	---	---	---	---
2,3,4,6-TETRACHLOROPHENOL	---	---	---	---
TOTAL TICS	0	2	0	1
TIC CONCENTRATION	--- J	8.600	---	7.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SURFACE WATER SAMPLES
BASE NEUTRAL ANALYSES

DATE:12/26/
TIME:16:22:
PAGE: 1
Report format

SAMPLE ID	MP-GC01-SW01	MP-GC02-SW01	MP-GC03-SW01	MP-GC03-SW02
UNITS	UG/L	UG/L	UG/L	UG/L
BASE/NEUTRAL PARAMETERS:				
PHENOL	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---
2-CHLOROPHENOL	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---
BENZYL ALCOHOL	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---
2-METHYLPHENOL	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---
4-METHYLPHENOL	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---
HEXACHLOROETHANE	---	---	---	---
NITROBENZENE	---	---	---	---
ISOPHORONE	---	---	---	---
2-NITROPHENOL	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---
BENZOIC ACID	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---
NAPHTHALENE	---	---	---	---
4-CHLOROANILINE	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---
ACENAPHTHENE	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---
4-NITROPHENOL	---	---	---	---
DIBENZOFURAN	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---
FLUORENE	---	---	---	---
4-NITROANILINE	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SURFACE WATER SAMPLES
TOTAL (TTM) AND DISSOLVED (TDM) METALS

SAMPLE ID	MP-GC03-SW01	MP-GC03-SW02
UNITS	UG/L	UG/L
ANALYSIS	TDM	TTM
INORGANIC PARAMETERS:		
ALUMINUM	138.000	200.000
ANTIMONY	---	---
ARSENIC	---	---
BARIUM	---	---
BERYLLIUM	---	---
CADMIUM	---	---
CALCIUM	189,000.000	180,000.000
CHROMIUM	---	---
COBALT	---	---
COPPER	---	---
IRON	---	---
LEAD	---	---
MAGNESIUM	64,300.000	622,000.000
MANGANESE	64.200J	88.100J
MERCURY	---	---
NICKEL	---	---
POTASSIUM	215,000.000	207,000.000
SELENIUM	---	---
SILVER	---	10.200J
SODIUM	5,400,000.000	517,000.000
THALLIUM	---	---
VANADIUM	---	---
ZINC	---	---
CYANIDE	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SURFACE WATER SAMPLES
TOTAL (TTM) AND DISSOLVED (TDM) METALS

DATE:12/28/
TIME:12:43:
PAGE: 1
Report format 1

SAMPLE ID	MP-GC01-SW01	MP-GC01-SW01	MP-GC02-SW01	MP-GC02-SW01	MP-GC03-SW01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
ANALYSIS	TDM	TTM	TDM	TTM	TTM
INORGANIC PARAMETERS:					
ALUMINUM	---	279.000	---	---	205.000
ANTIMONY	---	---	69.400J	---	---
ARSENIC	---	---	---	---	---
BARIUM	---	---	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	159,000.000	171,000.000	156,000.000	161,000.000	177,000.000
CHROMIUM	19.400J	---	---	---	---
COBALT	---	---	---	---	---
COPPER	---	---	---	---	---
IRON	---	---	---	---	---
LEAD	---	---	---	---	---
MAGNESIUM	571,000.000	588,000.000	600,000.000	552,000.000	661,000.000
MANGANESE	110.000J	110.000J	99.500J	97.900J	74.800J
MERCURY	---	.230	---	---	---
NICKEL	---	---	---	---	---
POTASSIUM	193,000.000	204,000.000	193,000.000	191,000.000	210,000.000
SELENIUM	---	---	---	---	---
SILVER	---	---	---	9.500	---
SODIUM	48,200.000	5,330,000.000	46,600.000	4,700,000.000	5,530,000.000
THALLIUM	---	---	11.500J	---	---
VANADIUM	---	---	---	---	---
ZINC	---	---	---	---	---
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SURFACE WATER SAMPLES
PESTICIDE/PCB ANALYSES

DATE:01/02/91
TIME:08:58:15
PAGE: 1
Report format 1

SAMPLE ID	MP-GC01-SW01	MP-GC02-SW01	MP-GC03-SW01	MP-GC03-SW02
UNITS	UG/L	UG/L	UG/L	UG/L
PESTICIDE/PCB PARAMETERS:				
ALPHA-BHC	---	---	---	---
BETA-BHC	---	---	---	---
DELTA-BHC	---	---	---	---
GAMMA-BHC	---	---	---	---
HEPTACHLOR	---	---	---	---
ALDRIN	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---
ENDOSULFAN I	---	---	---	---
DIELDRIN	---	---	---	---
4-4-DDE	---	---	---	---
ENDRIN	---	---	---	---
ENDOSULFAN II	---	---	---	---
4-4-DDD	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---
4-4-DDT	---	---	---	---
METHOXYCHLOR	---	---	---	---
ENDRIN KETONE	---	---	---	---
ALPHA CHLORDANE	---	---	---	---
GAMMA CHLORDANE	.500	.500	.500	.500
TOXAPHENE	---	---	---	---
AROCLOR 1016	---	---	---	---
AROCLOR 1221	---	---	---	---
AROCLOR 1232	---	---	---	---
AROCLOR 1242	---	---	---	---
AROCLOR 1248	---	---	---	---
AROCLOR 1254	---	---	---	---
AROCLOR 1260	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

A-7

SEDIMENT ANALYSES

MATTIACE PETROCHEMICAL SITE
SEDIMENT SAMPLES
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-GC01-SD01	MP-GC02-SD01	MP-GC03-SD01	MP-GC03-SD02
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
BASE/NEUTRAL PARAMETERS:				
PHENOL	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
BIS[2-CHLOROETHYL] ETHER	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2-CHLOROPHENOL	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
1,3-DICHLOROBENZENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
1,4-DICHLOROBENZENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
BENZYL ALCOHOL	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
1,2-DICHLOROBENZENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2-METHYLPHENOL	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
BIS[2-CHLOROISOPROPYL] ETHER	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
4-METHYLPHENOL	1,700.000 U	3,300.000	1,700.000 U	1,400.000 U
N-NITROSO-DIPROPYLAMINE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
HEXACHLOROETHANE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
NITROBENZENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
ISOPHORONE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2-NITROPHENOL	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2,4-DIMETHYLPHENOL	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
BENZOIC ACID	8,200.000 U	10,000.000 U	8,000.000 U	7,000.000 U
BIS[2-CHLOROETHOXY] METHANE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2,4-DICHLOROPHENOL	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2,2,4-TRICHLOROBENZENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
NAPHTHALENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
4-CHLOROANILINE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
HEXACHLOROBUTADIENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
4-CHLORO-3-METHLYPHENOL	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2-METHYLNAPHTHALENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
HEXACHLOROCYCLOPENTADIENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2,4,6-TRICHLOROPHENOL	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2,4,5-TRICHLOROPHENOL	8,200.000 U	10,000.000 U	8,000.000 U	7,000.000 U
2-CHLORONAPHTHALENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2-NITROANILINE	8,200.000 U	10,000.000 U	8,000.000 U	7,000.000 U
DIMETHYL PHTHALATE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
ACENAPHTHYLENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
[illegible]TROANILINE	8,200.000 U	10,000.000 U	8,000.000 U	7,000.000 U
[illegible]APHTHENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
[illegible]-DINITROPHENOL	8,200.000 U	10,000.000 U	8,000.000 U	7,000.000 U
4-NITROPHENOL	8,200.000 U	10,000.000 U	8,000.000 U	7,000.000 U
DIBENZOFURAN	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2,4-DINITROTOLUENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
2,6-DINITROTOLUENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
DIETHYLPHTHALATE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
4-CHLOROPHENYL PHENYL ETHER	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SEDIMENT SAMPLES
TCL VOLATILES

SAMPLE ID	MP-GC01-SD01	MP-GC02-SD01	MP-GC03-SD01	MP-GC03-SD02
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
TCL VOLATILE PARAMETERS:				
CHLOROMETHANE	130.000 U	160.000 U	130.000 U	110.000 U
BROMOMETHANE	130.000 U	160.000 U	130.000 U	110.000 U
VINYL CHLORIDE	130.000 U	160.000 U	130.000 U	110.000 U
CHLOROETHANE	130.000 U	160.000 U	130.000 U	110.000 U
METHYLENE CHLORIDE	49.000 BJ	63.000 BJ	54.000 BJ	52.000 BJ
ACETONE	1,400.000	2,100.000	540.000	290.000
CARBON DISULFIDE	260.000	640.000	100.000	70.000
1,1-DICHLOROETHENE	64.000 U	81.000 U	63.000 U	54.000 U
1,1-DICHLOROETHANE	64.000 U	81.000 U	63.000 U	54.000 U
TRANS-1,2-DICHLOROETHENE	13.000 J	81.000 U	63.000 U	54.000 U
CHLOROFORM	21.000 BJ	34.000 BJ	17.000 BJ	17.000 BJ
1,2-DICHLOROETHANE	64.000 U	81.000 U	63.000 U	54.000 U
2-BUTANONE	130.000 U	160.000 U	1,200.000	110.000 U
1,1,1-TRICHLOROETHANE	64.000 U	81.000 U	63.000 U	54.000 U
CARBON TETRACHLORIDE	64.000 U	81.000 U	63.000 U	54.000 U
VINYL ACETATE	130.000 U	160.000 U	130.000 U	110.000 U
BROMODICHLOROMETHANE	64.000 U	81.000 U	63.000 U	54.000 U
1,2-DICHLOROPROPANE	64.000 U	81.000 U	63.000 U	54.000 U
TRANS-1,3-DICHLOROPROPENE	64.000 U	81.000 U	63.000 U	54.000 U
TRICHLOROETHENE	41.000 J	81.000 U	63.000 U	54.000 U
DIBROMOCHLOROMETHANE	64.000 U	81.000 U	63.000 U	54.000 U
1,1,2-TRICHLOROETHANE	64.000 U	81.000 U	63.000 U	54.000 U
BENZENE	64.000 U	81.000 U	63.000 U	54.000 U
CIS-1,3-DICHLOROPROPENE	64.000 U	81.000 U	63.000 U	54.000 U
2-CHLOROETHYLVINYLETHER	0.000 NA	0.000 NA	0.000 NA	0.000 NA
BROMOFORM	64.000 U	81.000 U	63.000 U	54.000 U
4-METHYL-2-PENTANONE	130.000 U	160.000 U	130.000 U	110.000 U
2-HEXANONE	130.000 U	160.000 U	130.000 U	110.000 U
TETRACHLOROETHENE	64.000 U	81.000 U	63.000 U	54.000 U
1,1,2,2-TETRACHLOROETHANE	64.000 U	81.000 U	63.000 U	54.000 U
TOLUENE	64.000 U	25.000 J	6.000 J	54.000 U
CHLOROBENZENE	64.000 U	81.000 U	63.000 U	54.000 U
ETHYLBENZENE	64.000 U	81.000 U	63.000 U	54.000 U
STYRENE	64.000 U	81.000 U	63.000 U	54.000 U
TOTAL XYLENES	64.000 U	81.000 U	63.000 U	54.000 U
TOTAL TICS	NR	10	NR	NR
TIC CONCENTRATION	NR	2,725.000 J	NR	NR

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SEDIMENT SAMPLES
TOTAL METALS

SAMPLE ID	MP-GC01-SD01	MP-GC02-SD01	MP-GC03-SD01	MP-GC03-SD02
UNITS	MG/KG	MG/KG	MG/KG	MG/KG
INORGANIC PARAMETERS:				
ALUMINUM	10,700.000 J	16,300.000 J	16,200.000 J	13,600.000 J
ANTIMONY	30.500 R	---	---	---
ARSENIC	22.000 R	35.400 J	17.500 J	16.500 J
BARIUM	60.400 BJ	89.900 BJ	91.300 BJ	75.200 BJ
BERYLLIUM	---	---	---	---
CADMIUM	6.900 J	10.000 J	11.300 J	7.200 J
CALCIUM	11,800.000 J	10,100.000 J	6,550.000 J	38,500.000 J
CHROMIUM	42.500 J	88.100 J	97.300 J	79.200 J
COBALT	46.500 J	28.200 BJ	34.200 J	22.300 BJ
COPPER	377.000 J	571.000 J	663.000 J	510.000 J
IRON	20,600.000 J	3,010.000 J	28,900.000 J	23,000.000 J
LEAD	410.000 R	770.000 R	490.000 R	2.100 R
MAGNESIUM	8,200.000 J	12,300.000 J	9,930.000 J	7,780.000 J
MANGANESE	277.000 J	311.000 J	279.000 J	218.000 J
MERCURY	1.700 J	2.500 J	2.000 J	2.400 J
NICKEL	98.200 J	41.100 J	40.500 J	31.900 J
POTASSIUM	2,080.000 BJ	4,590.000 J	4,190.000 J	3,540.000 J
SELENIUM	---	---	---	2.600 BJ
SILVER	---	---	---	6.600 J
SODIUM	16,300.000 J	31,600.000 J	20,800.000 J	17,400.000 J
THALLIUM	---	---	---	---
VANADIUM	28.100 BJ	54.500 J	60.000 J	48.100 J
ZINC	361.000 J	533.000 J	442.000 J	349.000 J

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	CONCENTRATION < CRDL BUT > IDL
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SEDIMENT SAMPLES
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-GC01-SD01	MP-GC02-SD01	MP-GC03-SD01	MP-GC03-SD02
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
FLUORENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
4-NITROANILINE	8,200.000 U	10,000.000 U	8,000.000 U	7,000.000 U
4,6-DINITRO-2-METHYLPHENOL	8,200.000 U	10,000.000 U	8,000.000 U	7,000.000 U
N-NITROSODIPHENYLAMINE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
4-BROMOPHENYL PHENYL ETHER	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
HEXACHLOROBENZENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
PENTACHLOROPHENOL	8,200.000 U	10,000.000 U	8,000.000 U	7,000.000 U
PHENANTHRENE	4,200.000	1,400.000 J	550.000 J	1,400.000 U
ANTHRACENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
DI-n-BUTYLPHTHALATE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
FLUORANTHRENE	7,100.000	3,600.000	1,600.000 J	1,100.000 J
PYRENE	5,900.000	3,700.000	1,800.000 U	1,400.000 J
BUTYL BENZYL PHTHALATE	1,200.000 J	2,100.000 U	1,700.000 U	1,400.000 U
3,3-DICHLOROBENZIDINE	3,400.000 U	4,300.000 U	3,300.000 U	2,900.000 U
BENZO[a]ANTHRACENE	2,200.000	2,100.000 U	680.000 J	490.000 J
BIS[2-ETHYLHEXYL]PHTHALATE	13,000.000	21,000.000	12,000.000	10,000.000
CHRYSENE	3,700.000	2,200.000	940.000 J	880.000 J
DI-n-OCTYL PHTHALATE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
BENZO[b]FLUORANTHENE	1,700.000 U	2,600.000	1,400.000 J	1,100.000 J
BENZO[k]FLUORANTHENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
BENZO[a]PYRENE	2,300.000	1,700.000 J	900.000 J	680.000 J
INDENO[1,2,3-CD]PYRENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
DIBENZ[A,H]ANTHRACENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
BENZO[G,H,I]PERYLENE	1,700.000 U	2,100.000 U	1,700.000 U	1,400.000 U
TOTAL TICS	NR	NR	NR	NR
TIC CONCENTRATION	NR	NR	NR	NR

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

MATTIACE PETROCHEMICAL SITE
SEDIMENT SAMPLES
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-GC01-SD01	MP-GC02-SD01	MP-GC03-SD01	MP-GC03-SD02
UNITS	UG/KG	UG/KG	UG/KG	UG/KG
**PESTICIDE/PCB PARAMETERS:				
ALPHA-BHC	41.000 U	15.000 J	40.000 U	35.000 U
BETA-BHC	41.000 U	52.000 U	40.000 U	35.000 U
DELTA-BHC	600.000	980.000	280.000	190.000
GAMMA-BHC	41.000 U	52.000 U	40.000 U	35.000 U
HEPTACHLOR	41.000 U	52.000 U	40.000 U	35.000 U
ALDRIN	31.000 J	13.000 J	11.000 J	8.200 J
HEPTACHLOR EPOXIDE	41.000 U	52.000 U	40.000 U	35.000 U
ENDOSULFAN I	41.000 U	52.000 U	40.000 U	35.000 U
DIELDRIN	36.000 J	20.000 J	80.000 U	70.000 U
4-4-DDE	140.000	98.000 J	52.000 J	46.000 J
ENDRIN	82.000 U	18.000 J	80.000 U	70.000 U
ENDOSULFAN II	82.000 U	100.000 U	80.000 U	70.000 U
4-4-DDD	270.000	160.000	59.000 J	51.000 J
ENDOSULFAN SULFATE	480.000	100.000 U	80.000 U	70.000 U
4-4-DDT	230.000	78.000 J	80.000 U	70.000 U
METHOXYCHLOR	410.000 U	520.000 U	400.000 U	350.000 U
ENDRIN KETONE	82.000 U	100.000 U	80.000 U	70.000 U
ALPHA CHLORDANE	89.000 J	48.000 J	25.000 J	21.000 J
GAMMA CHLORDANE	140.000 J	71.000 J	36.000 J	31.000 J
TOXAPHENE	820.000 U	1,000.000 U	800.000 U	700.000 U
AROCLOR 1016	410.000 U	520.000 U	400.000 U	350.000 U
AROCLOR 1221	410.000 U	520.000 U	400.000 U	350.000 U
AROCLOR 1232	410.000 U	520.000 U	400.000 U	350.000 U
AROCLOR 1242	410.000 U	520.000 U	400.000 U	350.000 U
AROCLOR 1248	410.000 U	520.000 U	400.000 U	350.000 U
AROCLOR 1254	820.000 U	1,000.000 U	800.000 U	700.000 U
AROCLOR 1260	820.000 U	1,000.000 U	800.000 U	700.000 U

EXPLANATION OF CODES:

(no code)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED

A-8

QA/QC BLANK ANALYSES

MATTIACE PETROCHEMICAL SITE
TRIP BLANKS
TCL VOLATILES

DATE:12/27/90
TIME:14:35:04
PAGE: 2
Report format 1

SAMPLE ID	MP-TBAQ-0001	MP-TBAQ-0002	MP-TBAQ-0003	MP-TBAQ-0004	MP-TBAQ-0005
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL XYLENES	---	.300J	---	---	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	0	0	1	0	0
TIC CONCENTRATION	--- JN	---	4.000	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
TRIP BLANKS
TCL VOLATILES

DATE:12/27/
TIME:14:34:57
PAGE: 1
Report format

SAMPLE ID	MP-TBAQ-0001	MP-TBAQ-0002	MP-TBAQ-0003	MP-TBAQ-0004	MP-TBAQ-0005
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	7.000J	5.000J	17.000J	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	---	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	1.000J	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	1.000J	---	---	---	---
2-HEXANONE	---	---	10.000J	---	---
TETRACHLOROETHENE	---	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	3.000J	2.000J	---	---	---
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	---	---	---	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
TRIP BLANKS
TCL VOLATILES

DATE:12/27/90
TIME:14:35:23
PAGE: 4
Report format 1

SAMPLE ID	MP-TBAQ-0007	MP-TBAQ-0008	MP-TBAQ-0009	MP-TBAQ-0010	MP-TBAQ-0011
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL XYLENES	---	---	---	---	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	0	0	1	0	0
TIC CONCENTRATION	--- JN	---	6.000	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
TRIP BLANKS
TCL VOLATILES

SAMPLE ID	MP-TBAQ-0007	MP-TBAQ-0008	MP-TBAQ-0009	MP-TBAQ-0010	MP-TBAQ-0011
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	4.000J	---	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	5.000J	---	---
1,1,1-TRICHLOROETHANE	---	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	---	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	---	---	---	---	---
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	---	---	---	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
TRIP BLANKS
TCL VOLATILES

DATE:12/27/90
TIME:14:35:35
PAGE: 6
Report format 1

SAMPLE ID	MP-TBAQ-0012	MP-TBAQ-0013
UNITS	UG/L	UG/L
	---	---
TOTAL XYLENES	---	---
ACRYLONITRILE	---	---
1,1,1,2-TETRACHLOROETHANE	---	---
ISOBUTANOL	---	---
TOTAL TICS	0	0
TIC CONCENTRATION	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-TBAQ-0012	MP-TBAQ-0013
UNITS	UG/L	UG/L
	---	---
TCL VOLATILE PARAMETERS:		
CHLOROMETHANE	---	---
BROMOMETHANE	---	---
VINYL CHLORIDE	---	---
CHLOROETHANE	---	---
METHYLENE CHLORIDE	---	---
ACETONE	---	---
CARBON DISULFIDE	---	---
1,1-DICHLOROETHENE	---	---
1,1-DICHLOROETHANE	---	---
TRANS-1,2-DICHLOROETHENE	---	---
CHLOROFORM	---	---
1,2-DICHLOROETHANE	---	---
2-BUTANONE	---	---
1,1,1-TRICHLOROETHANE	---	---
CARBON TETRACHLORIDE	---	---
VINYL ACETATE	---	---
BROMODICHLOROMETHANE	---	---
1,2-DICHLOROPROPANE	---	---
TRANS-1,3-DICHLOROPROPENE	---	---
TRICHLOROETHENE	---	---
DIBROMOCHLOROMETHANE	---	---
1,1,2-TRICHLOROETHANE	---	---
BENZENE	---	---
CIS-1,3-DICHLOROPROPENE	---	---
2-CHLOROETHYLVINYLETHER	---	---
BROMOFORM	---	---
4-METHYL-2-PENTANONE	---	---
2-HEXANONE	---	---
TETRACHLOROETHENE	---	---
1,1,2,2-TETRACHLOROETHANE	---	---
TOLUENE	---	2.000J
CHLOROBENZENE	---	---
ETHYLBENZENE	---	---
STYRENE	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
TRIP BLANKS
CL VOLATILES

DATE:01/02/91
TIME:13:52:44
PAGE: 2
Report format 1

SAMPLE ID	MP-TBAQ-0014	MP-TBAQ-0015	MP-TBAQ-0016
UNITS	UG/L	UG/L	UG/L
CHLOROBENZENE	---	---	---
ETHYLBENZENE	---	3.000J	---
TOTAL XYLENES	---	---	---
STYRENE	---	---	---
DICHLORODIFLUOROMETHANE	---	---	---
TRICHLOROFLUOROMETHANE	4.000	---	1.000
BROMOCHLOROFLUOROMETHANE	---	---	---
BROMOCHLOROMETHANE	---	---	---
DIBROMOMETHANE	---	---	---
1,2-DIBROMOETHANE	---	---	---
1,3-DICHLOROPROPANE	---	---	---
1,2-DIBROMOMETHANE	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---
M & P XYLENES	---	12.000J	---
O-XYLENE	---	5.000J	---
ISOPROPYLBENZENE	---	---	---
BROMOBENZENE	---	---	---
1,2,3-TRICHLOROPROPANE	---	---	---
N-PROPYLBENZENE	---	---	---
2 & 4 CHLOROTOLUENE	---	---	---
2-CHLOROTOLUENE	---	---	---
4-CHLOROTOLUENE	---	---	---
1,3,5-TRIMETHYLBENZENE	---	2.000J	---
TERT-BUTYLBENZENE	---	---	---
1,2,4-TRIMETHYLBENZENE	---	7.000J	---
SEC-BUTYLBENZENE	---	---	---
P-ISOPROPYLTOLUENE	---	---	---
N-BUTYLBENZENE	---	---	---
1,2-DIBROMO-3-CHLOROPROPANE	---	---	---
1,2,3-TRICHLOROBENZENE	---	---	---
CIS-1,2-DICHLOROETHENE	---	4.000J	---
2,2-DICHLOROPROPANE	---	---	---
1,1-DICHLOROPROPENE	---	---	---
1,3-DICHLOROBENZENE	---	---	---
1,4-DICHLOROBENZENE	---	---	---
1,2-DICHLOROBENZENE	---	2.000J	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
TRIP BLANKS
LDL VOLATILES

DATE:01/02/
TIME:13:52:
PAGE: 1
Report format

SAMPLE ID	MP-TBAQ-0014	MP-TBAQ-0015	MP-TBAQ-0016
UNITS	UG/L	UG/L	UG/L
	---	---	---
**VOLATILE PARAMETERS:			
CHLOROMETHANE	---	---	---
BROMOMETHANE	---	---	---
VINYL CHLORIDE	---	---	---
CHLOROETHANE	---	---	---
METHYLENE CHLORIDE	---	---	---
ACETONE	---	---	---
TETRAHYDROFURAN	---	---	---
CARBON DISULFIDE	---	---	---
1,1-DICHLOROETHENE	---	---	---
1,1-DICHLOROETHANE	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---
CHLOROFORM	---	---	---
1,2-DICHLOROETHANE	---	2.000J	.800J
1,1,1-TRICHLOROETHANE	---	---	---
2-BUTANONE	---	930.000J	---
CARBON TETRACHLORIDE	---	---	---
VINYL ACETATE	---	---	---
BROMODICHLOROMETHANE	---	---	---
BROMOCHLOROMETHANE	---	---	---
2,2-DICHLOROPROPANE	---	---	---
1,2-DICHLOROPROPANE	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---
TRICHLOROETHENE	---	16.000J	---
DIBROMOCHLOROMETHANE	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---
BENZENE	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---
BROMOFORM	---	---	---
4-METHYL-2-PENTANONE	---	4,000.000J	---
2-HEXANONE	---	---	---
TETRACHLOROETHENE	---	2.000J	---
1,1,2,2-TETRACHLOROETHANE	---	---	---
TOLUENE	2.000	85.000J	2.000

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
TCL VOLATILES

DATE:12/27/90
TIME:14:51:05
PAGE: 1
Report format 1

SAMPLE ID	MP-FBAQ-0001	MP-FBAQ-0002	MP-FBAQ-0003	MP-FBAQ-0004	MP-FBAQ-0005
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	2.000J	10.000J	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	---	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	1.000J	---	10.000J	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	---	4.000J	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	--	---	---	---	---
BENZENE	-	---	---	---	---
CIS-1,3-DICHLOROPROPENE	--	---	---	---	---
2-CHLOROETHYLVINYLETHER	--	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	---	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	3.000J	3.000J	---	---	---
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	---	---	---	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
TRIP BLANKS
LDL VOLATILES

SAMPLE ID	MP-TBAQ-0014	MP-TBAQ-0015	MP-TBAQ-0016
UNITS	UG/L	UG/L	UG/L
1,2,4-TRICHLOROBENZENE	---	---	---
NAPHTHALENE	---	10.000J	---
HEXACHLOROBUTADIENE	---	---	---
TOTAL TICS	0	7	3
TIC CONCENTRATION	--- JN	20.800	2.600

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
TCL VOLATILES

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Report format 1

SAMPLE ID	MP-FBAQ-0006	MP-FBAQ-0007	MP-FBAQ-0008	MP-FBAQ-0009	MP-FBAQ-0011
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	---	---	---	---	---
ACETONE	---	4.000J	---	---	---
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	---	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	---	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	---	---	---	---	---
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	---	---	---	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
TCL VOLATILES

SAMPLE ID	MP-FBAQ-0001	MP-FBAQ-0002	MP-FBAQ-0003	MP-FBAQ-0004	MP-FBAQ-0005
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL XYLENES	---	.300J	---	---	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	0	3	1	0	0
TIC CONCENTRATION	--- JN	10.000	4.000	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-FBAQ-0012	MP-FBAQ-0013
UNITS	UG/L	UG/L
	---	---
TCL VOLATILE PARAMETERS:		
CHLOROMETHANE	---	---
BROMOMETHANE	---	---
VINYL CHLORIDE	---	---
CHLOROETHANE	---	---
METHYLENE CHLORIDE	---	---
ACETONE	21.000J	---
CARBON DISULFIDE	---	---
1,1-DICHLOROETHENE	---	---
1,1-DICHLOROETHANE	---	---
TRANS-1,2-DICHLOROETHENE	---	---
CHLOROFORM	---	---
1,2-DICHLOROETHANE	---	---
2-BUTANONE	---	---
1,1,1-TRICHLOROETHANE	---	---
CARBON TETRACHLORIDE	---	---
VINYL ACETATE	---	---
BROMODICHLOROMETHANE	---	---
1,2-DICHLOROPROPANE	---	---
TRANS-1,3-DICHLOROPROPENE	---	---
TRICHLOROETHENE	---	---
DIBROMOCHLOROMETHANE	---	---
1,1,2-TRICHLOROETHANE	---	---
BENZENE	---	---
CIS-1,3-DICHLOROPROPENE	---	---
2-CHLOROETHYLVINYLETHER	---	---
BROMOFORM	---	---
4-METHYL-2-PENTANONE	---	---
2-HEXANONE	---	---
TETRACHLOROETHENE	---	---
1,1,2,2-TETRACHLOROETHANE	---	---
TOLUENE	---	2.000J
CHLOROBENZENE	---	---
ETHYLBENZENE	---	---
STYRENE	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
TCL VOLATILES

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SAMPLE ID	MP-FBAQ-0006	MP-FBAQ-0007	MP-FBAQ-0008	MP-FBAQ-0009	MP-FBAQ-0011
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL XYLENES	---	---	---	---	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	1	0	0	0	0
TIC CONCENTRATION	7.000J	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
LDL VOLATILES

DATE:01/02/91
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Report format 1

SAMPLE ID	MP-FBAQ-0014	MP-FBAQ-0015	MP-FBAQ-0016
UNITS	UG/L	UG/L	UG/L
**VOLATILE PARAMETERS:			
CHLOROMETHANE	---	---	---
BROMOMETHANE	---	---	---
VINYL CHLORIDE	---	---	---
CHLOROETHANE	---	---	---
METHYLENE CHLORIDE	---	21.000J	---
ACETONE	---	---	---
TETRAHYDROFURAN	---	---	---
CARBON DISULFIDE	---	1.000J	---
1,1-DICHLOROETHENE	---	---	---
1,1-DICHLOROETHANE	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---
CHLOROFORM	---	---	---
1,2-DICHLOROETHANE	---	1.000J	---
1,1,1-TRICHLOROETHANE	.400J	.700J	---
2-BUTANONE	---	47.000J	---
CARBON TETRACHLORIDE	---	---	---
VINYL ACETATE	---	---	---
BROMODICHLOROMETHANE	---	---	---
BROMOCHLOROMETHANE	---	---	---
2,2-DICHLOROPROPANE	---	---	---
1,2-DICHLOROPROPANE	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---
TRICHLOROETHENE	---	6.000J	---
DIBROMOCHLOROMETHANE	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---
BENZENE	---	.900J	---
2-CHLOROETHYLVINYLETHER	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---
BROMOFORM	---	---	---
4-METHYL-2-PENTANONE	---	230.000J	---
2-HEXANONE	---	---	---
TETRACHLOROETHENE	---	1.000J	---
1,1,2,2-TETRACHLOROETHANE	---	---	---
TOLUENE	2.000	25.000J	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
J or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
TCL VOLATILES

SAMPLE ID	MP-FBAQ-0012	MP-FBAQ-0013
UNITS	UG/L	UG/L
	---	---
TOTAL XYLENES	---	---
ACRYLONITRILE	---	---
1,1,1,2-TETRACHLOROETHANE	---	---
ISOBUTANOL	---	---
TOTAL TICS	0	0
TIC CONCENTRATION	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
LDL VOLATILES

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SAMPLE ID	MP-FBAQ-0014		MP-FBAQ-0015	MP-FBAQ-0016
UNITS	UG/L		UG/L	UG/L
1,2,4-TRICHLOROBENZENE	---		1.000J	---
NAPHTHALENE	---		2.000J	---
HEXACHLOROBUTADIENE	---		---	---
TOTAL TICS	1		8	2
TIC CONCENTRATION	---	JN	10.700	1.900

EXPLANATION OF CODES :

no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
or ---	UNDETECTED
A	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
N	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-FBAQ-0014	MP-FBAQ-0015	MP-FBAQ-0016
UNITS	UG/L	UG/L	UG/L
CHLOROBENZENE	---	---	---
ETHYLBENZENE	---	1.000J	---
TOTAL XYLENES	---	---	---
STYRENE	---	---	---
DICHLORODIFLUOROMETHANE	---	---	---
TRICHLOROFLUOROMETHANE	3.000	3.000J	---
BROMOCHLOROFLUOROMETHANE	---	---	---
BROMOCHLOROMETHANE	---	---	---
DIBROMOMETHANE	---	---	---
1,2-DIBROMOETHANE	---	---	---
1,3-DICHLOROPROPANE	---	---	---
1,2-DIBROMOMETHANE	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---
M & P XYLENES	---	3.000J	---
O-XYLENE	---	1.000J	---
ISOPROPYLBENZENE	---	---	---
BROMOBENZENE	---	---	---
1,2,3-TRICHLOROPROPANE	---	---	---
N-PROPYLBENZENE	---	---	---
2 & 4 CHLOROTOLUENE	---	---	---
2-CHLOROTOLUENE	---	---	---
4-CHLOROTOLUENE	---	---	---
1,3,5-TRIMETHYLBENZENE	---	.500J	---
TERT-BUTYLBENZENE	---	---	---
1,2,4-TRIMETHYLBENZENE	---	1.000J	---
SEC-BUTYLBENZENE	---	---	---
P-ISOPROPYLTOLUENE	---	---	---
N-BUTYLBENZENE	---	---	---
1,2-DIBROMO-3-CHLOROPROPANE	---	---	---
1,2,3-TRICHLOROBENZENE	---	---	---
CIS-1,2-DICHLOROETHENE	---	2.000J	---
2,2-DICHLOROPROPANE	---	---	---
1,1-DICHLOROPROPENE	---	---	---
1,3-DICHLOROBENZENE	---	---	---
1,4-DICHLOROBENZENE	---	---	---
1,2-DICHLOROBENZENE	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
BASE NEUTRAL ANALYSES

DATE:12/27/90
TIME:09:02:03
PAGE: 2
Report format 1

SAMPLE ID	MP-FBAQ-0001	MP-FBAQ-0002	MP-FBAQ-0003	MP-FBAQ-0004	MP-FBAQ-0005
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	---	---
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	7.000J	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL 4 & 3-METHYLPHENOL	---	---	---	---	---
PYRIDINE	---	---	---	---	---
2,3,4,6-TETRACHLOROPHENOL	---	---	---	---	---
TOTAL TICS	1	0	0	0	0
TIC CONCENTRATION	35.000J	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
BASE NEUTRAL ANALYSES

DATE:12/27/9
TIME:09:01:5
PAGE: 1
Report format 1

SAMPLE ID	MP-FBAQ-0001	MP-FBAQ-0002	MP-FBAQ-0003	MP-FBAQ-0004	MP-FBAQ-0005
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	---	---	---	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
BASE NEUTRAL ANALYSES

DATE:12/27/90
TIME:09:02:36
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SAMPLE ID	MP-FBAQ-0006	MP-FBAQ-0007	MP-FBAQ-0008	MP-FBAQ-0009	MP-FBAQ-0010
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	---	---
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL 4 & 3-METHYLPHENOL	---	---	---	---	---
PYRIDINE	---	---	---	---	---
2,3,4,6-TETRACHLOROPHENOL	---	---	---	---	---
TOTAL TICS	0	0	1	0	0
TIC CONCENTRATION	--- JN	---	19.000	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-FBAQ-0006	MP-FBAQ-0007	MP-FBAQ-0008	MP-FBAQ-0009	MP-FBAQ-0010
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	---	---	---	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
BASE NEUTRAL ANALYSES

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Report format 1

SAMPLE ID	MP-FBAQ-0011	MP-FBAQ-0012	MP-FBAQ-0013	MP-FBAQ-0014	MP-FBAQ-0015
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	---	---
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL 4 & 3-METHYLPHENOL	---	---	---	---	---
PYRIDINE	---	---	---	---	---
2,3,4,6-TETRACHLOROPHENOL	---	---	---	---	---
TOTAL TICS	0	0	0	0	0
TIC CONCENTRATION	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
BASE NEUTRAL ANALYSES

SAMPLE ID	MP-FBAQ-0011	MP-FBAQ-0012	MP-FBAQ-0013	MP-FBAQ-0014	MP-FBAQ-0015
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	---	---	---	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-FBAQ-0016
UNITS	UG/L

4,6-DINITRO-2-METHYLPHENOL	---
N-NITROSODIPHENYLAMINE	---
4-BROMOPHENYL PHENYL ETHER	---
HEXACHLOROBENZENE	---
PENTACHLOROPHENOL	---
PHENANTHRENE	---
ANTHRACENE	---
DI-n-BUTYLPHTHALATE	---
FLUORANTHRENE	---
PYRENE	---
BUTYL BENZYL PHTHALATE	---
3,3-DICHLOROBENZIDINE	---
BENZO[a]ANTHRACENE	---
BIS[2-ETHYLHEXYL]PHTHALATE	---
2-METHYLNAPHTHALENE	---
HEXACHLOROCYCLOPENTADIENE	---
2,4,6-TRICHLOROPHENOL	---
2,4,5-TRICHLOROPHENOL	---
2-CHLORONAPHTHALENE	---
2-NITROANILINE	---
DIMETHYL PHTHALATE	---
ACENAPHTHYLENE	---
3-NITROANILINE	---
CHRYSENE	---
DI-n-OCTYL PHTHALATE	---
BENZO[b]FLUORANTHENE	---
BENZO[k]FLUORANTHENE	---
BENZO[a]PYRENE	---
INDENO[1,2,3-CD]PYRENE	---
DIBENZ[A,H]ANTHRACENE	---
BENZO[G,H,I]PERYLENE	---
TOTAL 4 & 3-METHYLPHENOL	---
PYRIDINE	---
2,3,4,6-TETRACHLOROPHENOL	---
TOTAL TICS	1
TIC CONCENTRATION	8.000JN

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-FBAQ-0016
UNITS	UG/L

BASE/NEUTRAL PARAMETERS:	
PHENOL	---
BIS[2-CHLOROETHYL] ETHER	---
2-CHLOROPHENOL	---
1,3-DICHLOROBENZENE	---
1,4-DICHLOROBENZENE	---
BENZYL ALCOHOL	---
1,2-DICHLOROBENZENE	---
2-METHYLPHENOL	---
BIS[2-CHLOROISOPROPYL] ETHER	---
4-METHYLPHENOL	---
N-NITROSO-DIPROPYLAMINE	---
HEXACHLOROETHANE	---
NITROBENZENE	---
ISOPHORONE	---
2-NITROPHENOL	---
2,4-DIMETHYLPHENOL	---
BENZOIC ACID	---
BIS[2-CHLOROETHOXY] METHANE	---
2,4-DICHLOROPHENOL	---
2,2,4-TRICHLOROBENZENE	---
NAPHTHALENE	---
4-CHLOROANILINE	---
HEXACHLOROBUTADIENE	---
4-CHLORO-3-METHLYPHENOL	---
ACENAPHTHENE	---
2,4-DINITROPHENOL	---
4-NITROPHENOL	---
DIBENZOFURAN	---
2,4-DINITROTOLUENE	---
2,6-DINITROTOLUENE	---
DIETHYLPHTHALATE	---
4-CHLOROPHENYL PHENYL ETHER	---
FLUORENE	---
4-NITROANILINE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
TOTAL METALS

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SAMPLE ID	MP-FBAQ-0003	MP-FBAQ-0004	MP-FBAQ-0005	MP-FBAQ-0006	MP-FBAQ-0007
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
INORGANIC PARAMETERS:					
ALUMINUM	---	---	---	---	---
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	---	---
BARIUM	---	---	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	---	---	---	---	62.300J
CHROMIUM	---	11.000J	---	---	---
COBALT	---	---	---	---	---
COPPER	---	---	---	---	61.000J
IRON	168.000J	---	162.000J	---	---
LEAD	---	---	---	3.300J	2.600J
MAGNESIUM	---	---	---	---	---
MANGANESE	---	---	---	---	---
MERCURY	---	---	---	---	---
NICKEL	---	---	---	---	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	209.000J
THALLIUM	---	---	---	---	---
VANADIUM	---	---	---	---	---
ZINC	---	---	---	---	78.300J
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
N	NOT ANALYZED FOR
R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
T	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
TOTAL METALS

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SAMPLE ID	MP-FB01-AQ01	MP-FB02-AQ02	MP-FB03-AQ03	MP-FBAQ-0001	MP-FBAQ-0002
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
INORGANIC PARAMETERS:					
ALUMINUM	---	---	---	218.000	205.000
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	---	---
BARIUM	---	---	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	---	---	---	---	---
CHROMIUM	---	---	---	---	---
COBALT	---	---	---	---	---
COPPER	---	---	---	---	---
IRON	---	---	---	---	---
LEAD	---	---	---	---	---
MAGNESIUM	---	---	---	---	---
MANGANESE	---	---	---	---	---
MERCURY	---	---	---	---	.230
NICKEL	---	---	---	---	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	---	---	---	---	---
ZINC	---	---	---	---	---
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-FBAQ-0013	MP-FBAQ-0014	MP-FBAQ-0015	MP-FBAQ-0016
UNITS	UG/L	UG/L	UG/L	UG/L
INORGANIC PARAMETERS:				
ALUMINUM	---	---	---	---
ANTIMONY	---	---	---	---
ARSENIC	---	---	---	---
BARIUM	---	---	---	---
BERYLLIUM	---	---	---	---
CADMIUM	---	---	---	---
CALCIUM	---	---	---	---
CHROMIUM	---	---	---	---
COBALT	---	---	---	---
COPPER	---	---	---	---
IRON	---	---	127.000	121.000
LEAD	---	---	---	---
MAGNESIUM	---	---	---	---
MANGANESE	---	---	21.600	---
MERCURY	---	---	---	---
NICKEL	---	---	---	---
POTASSIUM	---	---	---	---
SELENIUM	---	---	---	---
SILVER	---	---	---	---
SODIUM	---	---	---	---
THALLIUM	---	---	---	---
VANADIUM	---	---	---	---
ZINC	---	21.100	---	22.100
CYANIDE	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
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U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
TOTAL METALS

SAMPLE ID	MP-FBAQ-0008	MP-FBAQ-0009	MP-FBAQ-0010	MP-FBAQ-0011	MP-FBAQ-0012
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
INORGANIC PARAMETERS:					
ALUMINUM	---	---	---	---	---
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	---	---
BARIUM	---	---	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	---	---	---	---	---
CHROMIUM	---	---	---	---	---
COBALT	---	---	---	---	---
COPPER	---	---	---	---	---
IRON	---	---	---	---	---
LEAD	---	---	---	---	---
MAGNESIUM	---	---	---	---	---
MANGANESE	---	---	---	---	---
MERCURY	---	---	---	---	---
NICKEL	---	---	---	---	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	---	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	---	---	---	---	---
ZINC	68.500J	---	---	---	---
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
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U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
PESTICIDE/PCB ANALYSES

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SAMPLE ID	MP-FBAQ-0007	MP-FBAQ-0008	MP-FBAQ-0009	MP-FBAQ-0010	MP-FBAQ-0011
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	.520	.500	.530	.570	.580
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
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JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
PESTICIDE/PCB ANALYSES

SAMPLE ID	MP-FBAQ-0001	MP-FBAQ-0002	MP-FBAQ-0003	MP-FBAQ-0004	MP-FBAQ-0006
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	.500	.510	1.000	.490	.500
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
WATER BLANKS
TCL VOLATILES

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TIME:14:45:45
PAGE: 1
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SAMPLE ID	MP-PWBK-0001	MP-WBAQ-0001	MP-WBAQ-0002	MP-WBAQ-0003	MP-WBAQ-0004
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TCL VOLATILE PARAMETERS:					
CHLOROMETHANE	---	---	---	---	---
BROMOMETHANE	---	---	---	---	---
VINYL CHLORIDE	---	---	---	---	---
CHLOROETHANE	---	---	---	---	---
METHYLENE CHLORIDE	4.000J	---	---	---	---
ACETONE	---	---	---	---	4.400J
CARBON DISULFIDE	---	---	---	---	---
1,1-DICHLOROETHENE	---	---	---	---	---
1,1-DICHLOROETHANE	---	---	---	---	---
TRANS-1,2-DICHLOROETHENE	---	---	---	---	---
CHLOROFORM	---	---	---	---	---
1,2-DICHLOROETHANE	---	---	---	---	---
2-BUTANONE	---	---	---	---	---
1,1,1-TRICHLOROETHANE	---	---	---	---	---
CARBON TETRACHLORIDE	---	---	---	---	---
VINYL ACETATE	---	---	---	---	---
BROMODICHLOROMETHANE	---	---	---	---	---
1,2-DICHLOROPROPANE	---	---	---	---	---
TRANS-1,3-DICHLOROPROPENE	---	---	---	---	---
TRICHLOROETHENE	---	---	---	---	---
DIBROMOCHLOROMETHANE	---	---	---	---	---
1,1,2-TRICHLOROETHANE	---	---	---	---	---
BENZENE	---	---	---	---	---
CIS-1,3-DICHLOROPROPENE	---	---	---	---	---
2-CHLOROETHYLVINYLETHER	---	---	---	---	---
BROMOFORM	---	---	---	---	---
4-METHYL-2-PENTANONE	---	---	---	---	---
2-HEXANONE	---	---	---	---	---
TETRACHLOROETHENE	---	---	---	---	---
1,1,2,2-TETRACHLOROETHANE	---	---	---	---	---
TOLUENE	---	---	---	---	.900J
CHLOROBENZENE	---	---	---	---	---
ETHYLBENZENE	---	---	---	---	---
STYRENE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
FIELD BLANKS
PESTICIDE/PCB ANALYSES

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SAMPLE ID	MP-FBAQ-0012	MP-FBAQ-0013	MP-FBAQ-0014	MP-FBAQ-0015	MP-FBAQ-0016
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	.650	.550	.500	.500	.500
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-WBAQ-0004
UNITS	UG/L

TCL VOLATILE PARAMETERS:	
CHLOROMETHANE	---
BROMOMETHANE	---
VINYL CHLORIDE	---
CHLOROETHANE	---
METHYLENE CHLORIDE	---
ACETONE	---
CARBON DISULFIDE	---
1,1-DICHLOROETHENE	---
1,1-DICHLOROETHANE	---
TRANS-1,2-DICHLOROETHENE	---
CHLOROFORM	---
1,2-DICHLOROETHANE	---
2-BUTANONE	---
1,1,1-TRICHLOROETHANE	---
CARBON TETRACHLORIDE	---
VINYL ACETATE	---
BROMODICHLOROMETHANE	---
1,2-DICHLOROPROPANE	---
TRANS-1,3-DICHLOROPROPENE	---
TRICHLOROETHENE	---
DIBROMOCHLOROMETHANE	---
1,1,2-TRICHLOROETHANE	---
BENZENE	---
CIS-1,3-DICHLOROPROPENE	---
2-CHLOROETHYLVINYLETHER	---
BROMOFORM	---
4-METHYL-2-PENTANONE	---
2-HEXANONE	---
TETRACHLOROETHENE	---
1,1,2,2-TETRACHLOROETHANE	---
TOLUENE	---
CHLOROBENZENE	---
ETHYLBENZENE	---
STYRENE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
WATER BLANKS
TCL VOLATILES

SAMPLE ID	MP-PWBK-0001	MP-WBAQ-0001	MP-WBAQ-0002	MP-WBAQ-0003	MP-WBAQ-0004
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL XYLENES	---	---	---	---	---
ACRYLONITRILE	---	---	---	---	---
1,1,1,2-TETRACHLOROETHANE	---	---	---	---	---
ISOBUTANOL	---	---	---	---	---
TOTAL TICS	0	0	0	0	0
TIC CONCENTRATION	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
WATER BLANKS
LDL VOLATILES

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SAMPLE ID	MP-WBAQ-0005
UNITS	UG/L

**VOLATILE PARAMETERS:	
CHLOROMETHANE	---
BROMOMETHANE	---
VINYL CHLORIDE	---
CHLOROETHANE	---
METHYLENE CHLORIDE	---
ACETONE	---
TETRAHYDROFURAN	---
CARBON DISULFIDE	---
1,1-DICHLOROETHENE	---
1,1-DICHLOROETHANE	.100J
TRANS-1,2-DICHLOROETHENE	---
CHLOROFORM	---
1,2-DICHLOROETHANE	---
',1,1-TRICHLOROETHANE	---
2-BUTANONE	---
CARBON TETRACHLORIDE	---
VINYL ACETATE	---
BROMODICHLOROMETHANE	---
BROMOCHLOROMETHANE	---
2,2-DICHLOROPROPANE	---
1,2-DICHLOROPROPANE	---
CIS-1,3-DICHLOROPROPENE	---
TRICHLOROETHENE	.200J
DIBROMOCHLOROMETHANE	---
1,1,2-TRICHLOROETHANE	---
BENZENE	---
2-CHLOROETHYLVINYLETHER	---
TRANS-1,3-DICHLOROPROPENE	---
BROMOFORM	---
4-METHYL-2-PENTANONE	---
2-HEXANONE	---
TETRACHLOROETHENE	---
1,1,2,2-TETRACHLOROETHANE	---
TOLUENE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-WBAQ-0004
UNITS	UG/L

TOTAL XYLENES	---
ACRYLONITRILE	---
1,1,1,2-TETRACHLOROETHANE	---
ISOBUTANOL	---
TOTAL TICS	0
TIC CONCENTRATION	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-WBAQ-0005
UNITS	UG/L

1,2,4-TRICHLOROBENZENE	---
NAPHTHALENE	---
HEXACHLOROBUTADIENE	---
TOTAL TICS	0
TIC CONCENTRATION	.600JN

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-WBAQ-0005
UNITS	UG/L

CHLOROBENZENE	---
ETHYLBENZENE	---
TOTAL XYLENES	---
STYRENE	---
DICHLORODIFLUOROMETHANE	---
TRICHLOROFLUOROMETHANE	---
BROMOCHLOROFLUOROMETHANE	---
BROMOCHLOROMETHANE	---
DIBROMOMETHANE	---
1,2-DIBROMOETHANE	---
1,3-DICHLOROPROPANE	---
1,2-DIBROMOMETHANE	---
1,1,1,2-TETRACHLOROETHANE	---
M & P XYLENES	---
O-XYLENE	---
ISOPROPYLBENZENE	---
BROMOBENZENE	---
1,2,3-TRICHLOROPROPANE	---
N-PROPYLBENZENE	---
2 & 4 CHLOROTOLUENE	---
2-CHLOROTOLUENE	---
4-CHLOROTOLUENE	---
1,3,5-TRIMETHYLBENZENE	---
TERT-BUTYLBENZENE	---
1,2,4-TRIMETHYLBENZENE	---
SEC-BUTYLBENZENE	---
P-ISOPROPYLTOLUENE	---
N-BUTYLBENZENE	---
1,2-DIBROMO-3-CHLOROPROPANE	---
1,2,3-TRICHLOROBENZENE	---
CIS-1,2-DICHLOROETHENE	1.000
2,2-DICHLOROPROPANE	---
1,1-DICHLOROPROPENE	---
1,3-DICHLOROBENZENE	---
1,4-DICHLOROBENZENE	---
1,2-DICHLOROBENZENE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
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NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
WATER BLANKS
BASE NEUTRAL ANALYSES

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TIME:08:49:13
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SAMPLE ID	MP-PWBK-0001	MP-WBAQ-0001	MP-WBAQ-0002	MP-WBAQ-0003	MP-WBAQ-0004
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
4,6-DINITRO-2-METHYLPHENOL	---	---	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	---	---
HEXACHLOROBENZENE	---	---	---	---	---
PENTACHLOROPHENOL	---	---	---	---	---
PHENANTHRENE	---	---	---	---	---
ANTHRACENE	---	---	---	---	---
DI-n-BUTYLPHTHALATE	---	---	---	---	---
FLUORANTHRENE	---	---	---	---	---
PYRENE	---	---	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	---	---
3,3-DICHLOROBENZIDINE	---	---	---	---	---
BENZO[a]ANTHRACENE	---	---	---	---	---
BIS[2-ETHYLHEXYL]PHTHALATE	---	---	---	---	---
2-METHYLNAPHTHALENE	---	---	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	---	---
2-CHLORONAPHTHALENE	---	---	---	---	---
2-NITROANILINE	---	---	---	---	---
DIMETHYL PHTHALATE	---	---	---	---	---
ACENAPHTHYLENE	---	---	---	---	---
3-NITROANILINE	---	---	---	---	---
CHRYSENE	---	---	---	---	---
DI-n-OCTYL PHTHALATE	---	---	---	---	---
BENZO[b]FLUORANTHENE	---	---	---	---	---
BENZO[k]FLUORANTHENE	---	---	---	---	---
BENZO[a]PYRENE	---	---	---	---	---
INDENO[1,2,3-CD]PYRENE	---	---	---	---	---
DIBENZ[A,H]ANTHRACENE	---	---	---	---	---
BENZO[G,H,I]PERYLENE	---	---	---	---	---
TOTAL 4 & 3-METHYLPHENOL	---	---	---	---	---
PYRIDINE	---	---	---	---	---
2,3,4,6-TETRACHLOROPHENOL	---	---	---	---	---
TOTAL TICS	0	0	0	0	0
TIC CONCENTRATION	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
WATER BLANKS
BASE NEUTRAL ANALYSES

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TIME:08:49:
PAGE: 1
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SAMPLE ID	MP-PWBK-0001	MP-WBAQ-0001	MP-WBAQ-0002	MP-WBAQ-0003	MP-WBAQ-0004
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
BASE/NEUTRAL PARAMETERS:					
PHENOL	---	---	---	---	---
BIS[2-CHLOROETHYL] ETHER	---	---	---	---	---
2-CHLOROPHENOL	---	---	---	---	---
1,3-DICHLOROBENZENE	---	---	---	---	---
1,4-DICHLOROBENZENE	---	---	---	---	---
BENZYL ALCOHOL	---	---	---	---	---
1,2-DICHLOROBENZENE	---	---	---	---	---
2-METHYLPHENOL	---	---	---	---	---
BIS[2-CHLOROISOPROPYL] ETHER	---	---	---	---	---
4-METHYLPHENOL	---	---	---	---	---
N-NITROSO-DIPROPYLAMINE	---	---	---	---	---
HEXACHLOROETHANE	---	---	---	---	---
NITROBENZENE	---	---	---	---	---
ISOPHORONE	---	---	---	---	---
2-NITROPHENOL	---	---	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	---	---
BENZOIC ACID	---	---	---	---	---
BIS[2-CHLOROETHOXY] METHANE	---	---	---	---	---
2,4-DICHLOROPHENOL	---	---	---	---	---
2,2,4-TRICHLOROBENZENE	---	---	---	---	---
NAPHTHALENE	---	---	---	---	---
4-CHLOROANILINE	---	---	---	---	---
HEXACHLOROBUTADIENE	---	---	---	---	---
4-CHLORO-3-METHLYPHENOL	---	---	---	---	---
ACENAPHTHENE	---	---	---	---	---
2,4-DINITROPHENOL	---	---	---	---	---
4-NITROPHENOL	---	---	---	---	---
DIBENZOFURAN	---	---	---	---	---
2,4-DINITROTOLUENE	---	---	---	---	---
2,6-DINITROTOLUENE	---	---	---	---	---
DIETHYLPHTHALATE	---	---	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	---	---
FLUORENE	---	---	---	---	---
4-NITROANILINE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
WATER BLANKS
BASE NEUTRAL ANALYSES

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SAMPLE ID	MP-WBAQ-0005
UNITS	UG/L

4,6-DINITRO-2-METHYLPHENOL	---
4-NITROSODIPHENYLAMINE	---
4-BROMOPHENYL PHENYL ETHER	---
HEXACHLOROBENZENE	---
PENTACHLOROPHENOL	---
PHENANTHRENE	---
ANTHRACENE	---
DI-n-BUTYLPHTHALATE	---
FLUORANTHRENE	---
PYRENE	---
BUTYL BENZYL PHTHALATE	---
3,3-DICHLOROBENZIDINE	---
BENZO[a]ANTHRACENE	---
BIS[2-ETHYLHEXYL]PHTHALATE	32.000
2-METHYLNAPHTHALENE	---
HEXACHLOROCYCLOPENTADIENE	---
2,4,6-TRICHLOROPHENOL	---
2,4,5-TRICHLOROPHENOL	---
2-CHLORONAPHTHALENE	---
2-NITROANILINE	---
DIMETHYL PHTHALATE	---
ACENAPHTHYLENE	---
3-NITROANILINE	---
CHRYSENE	---
DI-n-OCTYL PHTHALATE	---
BENZO[b]FLUORANTHENE	---
BENZO[k]FLUORANTHENE	---
BENZO[a]PYRENE	---
INDENO[1,2,3-CD]PYRENE	---
DIBENZ[A,H]ANTHRACENE	---
BENZO[G,H,I]PERYLENE	---
TOTAL 4 & 3-METHYLPHENOL	---
PYRIDINE	---
2,3,4,6-TETRACHLOROPHENOL	---
TOTAL TICS	0
TIC CONCENTRATION	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
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NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
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JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-WBAQ-0005
UNITS	UG/L

BASE/NEUTRAL PARAMETERS:

PHENOL	---
BIS[2-CHLOROETHYL] ETHER	---
2-CHLOROPHENOL	---
1,3-DICHLOROBENZENE	---
1,4-DICHLOROBENZENE	---
BENZYL ALCOHOL	---
1,2-DICHLOROBENZENE	---
2-METHYLPHENOL	---
BIS[2-CHLOROISOPROPYL] ETHER	---
4-METHYLPHENOL	---
N-NITROSO-DIPROPYLAMINE	---
HEXACHLOROETHANE	---
NITROBENZENE	---
ISOPHORONE	---
2-NITROPHENOL	---
2,4-DIMETHYLPHENOL	---
BENZOIC ACID	---
BIS[2-CHLOROETHOXY] METHANE	---
2,4-DICHLOROPHENOL	---
2,2,4-TRICHLOROBENZENE	---
NAPHTHALENE	---
4-CHLOROANILINE	---
HEXACHLOROBUTADIENE	---
4-CHLORO-3-METHLYPHENOL	---
ACENAPHTHENE	---
2,4-DINITROPHENOL	---
4-NITROPHENOL	---
DIBENZOFURAN	---
2,4-DINITROTOLUENE	---
2,6-DINITROTOLUENE	---
DIETHYLPHTHALATE	---
4-CHLOROPHENYL PHENYL ETHER	---
FLUORENE	---
4-NITROANILINE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
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MATTIACE PETROCHEMICAL SITE
WATER BLANKS
PESTICIDE/PCB ANALYSES

DATE:01/02/91
TIME:09:24:13
PAGE: 1
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SAMPLE ID	MP-PWBK-0001	MP-WBAQ-0001	MP-WBAQ-0002	MP-WBAQ-0003	MP-WBAQ-0004
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
PESTICIDE/PCB PARAMETERS:					
ALPHA-BHC	---	---	---	---	---
BETA-BHC	---	---	---	---	---
DELTA-BHC	---	---	---	---	---
GAMMA-BHC	---	---	---	---	---
HEPTACHLOR	---	---	---	---	---
ALDRIN	---	---	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	---	---
ENDOSULFAN I	---	---	---	---	---
DIELDRIN	---	---	---	---	---
4-4-DDE	---	---	---	---	---
ENDRIN	---	---	---	---	---
ENDOSULFAN II	---	---	---	---	---
4-4-DDD	---	---	---	---	---
ENDOSULFAN SULFATE	---	---	---	---	---
4-4-DDT	---	---	---	---	---
METHOXYCHLOR	---	---	---	---	---
ENDRIN KETONE	---	---	---	---	---
ALPHA CHLORDANE	---	---	---	---	---
GAMMA CHLORDANE	.500	.500	.500	1.000	.650
TOXAPHENE	---	---	---	---	---
AROCLOR 1016	---	---	---	---	---
AROCLOR 1221	---	---	---	---	---
AROCLOR 1232	---	---	---	---	---
AROCLOR 1242	---	---	---	---	---
AROCLOR 1248	---	---	---	---	---
AROCLOR 1254	---	---	---	---	---
AROCLOR 1260	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
J or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
WATER BLANKS
TOTAL METALS

DATE:12/27/9
TIME:19:28:5
PAGE: 1
Report format 1

SAMPLE ID	MP-PWBK-0001	MP-WBAQ-0001	MP-WBAQ-0002	MP-WBAQ-0003	MP-WBAQ-AQ04
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
INORGANIC PARAMETERS:					
ALUMINUM	---	---	---	---	---
ANTIMONY	---	---	---	---	---
ARSENIC	---	---	---	---	---
BARIUM	---	---	---	---	---
BERYLLIUM	---	---	---	---	---
CADMIUM	---	---	---	---	---
CALCIUM	13,900.000	---	---	---	---
CHROMIUM	---	---	---	---	---
COBALT	---	---	---	---	---
COPPER	---	---	---	---	---
IRON	---	---	---	---	---
LEAD	---	---	---	---	---
MAGNESIUM	5,190.000	---	---	---	---
MANGANESE	---	---	---	---	---
MERCURY	---	---	---	---	---
NICKEL	---	---	---	---	---
POTASSIUM	---	---	---	---	---
SELENIUM	---	---	---	---	---
SILVER	---	---	---	---	---
SODIUM	21,400.000	---	---	---	---
THALLIUM	---	---	---	---	---
VANADIUM	---	---	---	---	---
ZINC	25.900	---	---	86.400J	---
CYANIDE	---	---	---	---	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-SBLK-0001
UNITS	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00

TOTAL XYLENES	---
ACRYLONITRILE	---
1,1,1,2-TETRACHLOROETHANE	---
ISOBUTANOL	---
TOTAL TICS	0
TIC CONCENTRATION	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SAND BLANKS
TCL VOLATILES

SAMPLE ID	MP-SBLK-0001
UNITS	UG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00

TCL VOLATILE PARAMETERS:

CHLOROMETHANE	---
BROMOMETHANE	---
VINYL CHLORIDE	---
CHLOROETHANE	---
METHYLENE CHLORIDE	---
ACETONE	8.000J
CARBON DISULFIDE	---
1,1-DICHLOROETHENE	---
1,1-DICHLOROETHANE	---
TRANS-1,2-DICHLOROETHENE	---
CHLOROFORM	---
1,2-DICHLOROETHANE	---
2-BUTANONE	---
1,1,1-TRICHLOROETHANE	---
CARBON TETRACHLORIDE	---
VINYL ACETATE	---
BROMODICHLOROMETHANE	---
1,2-DICHLOROPROPANE	---
TRANS-1,3-DICHLOROPROPENE	---
TRICHLOROETHENE	---
DIBROMOCHLOROMETHANE	---
1,1,2-TRICHLOROETHANE	---
BENZENE	---
CIS-1,3-DICHLOROPROPENE	---
2-CHLOROETHYLVINYLETHER	---
BROMOFORM	---
4-METHYL-2-PENTANONE	---
2-HEXANONE	---
TETRACHLOROETHENE	---
1,1,2,2-TETRACHLOROETHANE	---
TOLUENE	---
CHLOROBENZENE	---
ETHYLBENZENE	---
STYRENE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

SAMPLE ID	MP-SBLK-0001
UNITS	UG/KG
DEPTH INTERVAL	0.00 - 2.00

4,6-DINITRO-2-METHYLPHENOL	---
N-NITROSODIPHENYLAMINE	---
4-BROMOPHENYL PHENYL ETHER	---
HEXACHLOROBENZENE	---
PENTACHLOROPHENOL	---
PHENANTHRENE	---
ANTHRACENE	---
DI-n-BUTYLPHTHALATE	---
FLUORANTHRENE	---
PYRENE	---
BUTYL BENZYL PHTHALATE	---
3,3-DICHLOROBENZIDINE	---
BENZO[a]ANTHRACENE	---
BIS[2-ETHYLHEXYL]PHTHALATE	---
2-METHYLNAPHTHALENE	---
HEXACHLOROCYCLOPENTADIENE	---
2,4,6-TRICHLOROPHENOL	---
2,4,5-TRICHLOROPHENOL	---
2-CHLORONAPHTHALENE	---
2-NITROANILINE	---
DIMETHYL PHTHALATE	---
ACENAPHTHYLENE	---
3-NITROANILINE	---
CHRYSENE	---
DI-n-OCTYL PHTHALATE	---
BENZO[b]FLUORANTHENE	---
BENZO[k]FLUORANTHENE	---
BENZO[a]PYRENE	---
INDENO[1,2,3-CD]PYRENE	---
DIBENZ[A,H]ANTHRACENE	---
BENZO[G,H,I]PERYLENE	---
TOTAL 4 & 3-METHYLPHENOL	---
PYRIDINE	---
2,3,4,6-TETRACHLOROPHENOL	---
TOTAL TICS	1
TIC CONCENTRATION	230.000J

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SAND BLANKS
BASE NEUTRAL ANALYSES

DATE:01/02/9
TIME:16:33:0
PAGE: 1
Report format

SAMPLE ID	MP-SBLK-0001
UNITS	UG/KG
DEPTH INTERVAL	0.00 - 2.00

BASE/NEUTRAL PARAMETERS:

PHENOL	---
BIS[2-CHLOROETHYL] ETHER	---
2-CHLOROPHENOL	---
1,3-DICHLOROBENZENE	---
1,4-DICHLOROBENZENE	---
BENZYL ALCOHOL	---
1,2-DICHLOROBENZENE	---
2-METHYLPHENOL	---
BIS[2-CHLOROISOPROPYL] ETHER	---
4-METHYLPHENOL	---
N-NITROSO-DIPROPYLAMINE	---
HEXACHLOROETHANE	---
NITROBENZENE	---
ISOPHORONE	---
2-NITROPHENOL	---
2,4-DIMETHYLPHENOL	---
BENZOIC ACID	---
BIS[2-CHLOROETHOXY] METHANE	---
2,4-DICHLOROPHENOL	---
2,2,4-TRICHLOROBENZENE	---
NAPHTHALENE	---
4-CHLOROANILINE	---
HEXACHLOROBUTADIENE	---
4-CHLORO-3-METHLYPHENOL	---
ACENAPHTHENE	---
2,4-DINITROPHENOL	---
4-NITROPHENOL	---
DIBENZOFURAN	---
2,4-DINITROTOLUENE	---
2,6-DINITROTOLUENE	---
DIETHYLPHTHALATE	---
4-CHLOROPHENYL PHENYL ETHER	---
FLUORENE	---
4-NITROANILINE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SAND BLANKS
PESTICIDE/PCB ANALYSES

DATE:01/02/91
TIME:17:13:27
PAGE: 1
Report format 1

SAMPLE ID	MP-SBLK-0001
JNITS	UG/KG

?ESTICIDE/PCB PARAMETERS:	
ALPHA-BHC	---
3ETA-BHC	---
)ELTA-BHC	---
GAMMA-BHC	---
HEPTACHLOR	---
ALDRIN	---
4EPTACHLOR EPOXIDE	---
ENDOSULFAN I	---
IELDRIN	---
-4-DDE	---
ENDRIN	---
ENDOSULFAN II	---
-4-DDD	---
ENDOSULFAN SULFATE	---
4-4-DDT	---
ETHOXYCHLOR	---
NDRIN KETONE	---
ALPHA CHLORDANE	---
AMMA CHLORDANE	81.000
OXAPHENE	---
AROCLOR 1016	---
AROCLOR 1221	---
ROCLOR 1232	---
AROCLOR 1242	---
AROCLOR 1248	---
ROCLOR 1254	---
ROCLOR 1260	---

KPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
'	ESTIMATED VALUE
	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
,R	REJECTED VALUE
.R	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

MATTIACE PETROCHEMICAL SITE
SAND BLANKS
TOTAL METAL

DATE:01/02/9
TIME:17:04:30
PAGE: 1
Report format

SAMPLE ID	MP-SBLK-0001
UNITS	MG/KG
DEPTH INTERVAL (FT)	0.00 - 2.00

INORGANIC PARAMETERS:	
ALUMINUM	127.000
ANTIMONY	---
ARSENIC	---
BARIUM	---
BERYLLIUM	---
CADMIUM	---
CALCIUM	---
CHROMIUM	---
COBALT	---
COPPER	---
IRON	234.000
LEAD	.920
MAGNESIUM	---
MANGANESE	---
MERCURY	---
NICKEL	---
POTASSIUM	---
SELENIUM	---
SILVER	---
SODIUM	---
THALLIUM	---
VANADIUM	---
ZINC	---
CYANIDE	---

EXPLANATION OF CODES :

(no codes)	DETECTED AT CONCENTRATION INDICATED
J	ESTIMATED VALUE
B	COMPOUND FOUND IN BLANK
U or ---	UNDETECTED
NA	NOT ANALYZED FOR
X,R	REJECTED VALUE
NR	VALIDATED RESULTS NOT RECEIVED OR RESULT NOT REPORTED
JN	PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE

APPENDIX B

GEOPHYSICAL INVESTIGATION

Geophysical Investigation
Mattiace Site
Glen Cove, New York

INTERNATIONAL
TECHNOLOGY
CORPORATION

December 27, 1989

Project No. 529065

Mr. Dana Boyadjian
Project Manager
IT Corporation
165 Hillcrest Dr.
Edison, NJ 08837

Letter Report
Geophysical Survey
Mattiace Site
Glen Cove, New York

Dear Mr. Boyadjian:

This letter report presents the results of the geophysical investigation conducted at the Mattiace site (Site) by IT Corporation (IT), Pittsburgh from October 3 through October 5, 1989. The objective of the survey was to evaluate the site for the presence of possible buried ferrometallic objects. A magnetic gradient survey and a ground penetrating radar (GPR) survey were utilized to accomplish the objective.

SITE DESCRIPTION

The site is located in an industrial section of Glen Cove, New York. It covers approximately 2.5 acres and is completely enclosed by a chain-link fence. Site access is through a single locking gate. A number of steel structures, tanks, and concrete pads are located on the site. Also, various wood and steel debris is scattered over parts of the site. A portion of an adjoining property, belonging to Limco, Inc., was also surveyed.

MAGNETIC GRADIENT SURVEY

A magnetic gradient survey was utilized as phase one of the geophysical investigation. The magnetic gradient is a measure of the distortion of the earth's magnetic field at a particular location caused by ferrometallic objects present within the immediate vicinity. By evaluating the magnetic gradient measurements rather than the total magnetic field measurements, shallow, near-surface sources are emphasized as opposed to deeper, regional responses.

The methodology for the GPR survey consisted of pulling the antenna across the ground from one grid point to another (Figure 1). The results of these "traverses" were recorded on an eight-inch chart recorder contained in the GPR control unit. Notes were made on the record for each traverse indicating such items as starting and ending points, the full-scale time display, and the presence of anomalies.

RESULTS OF THE MAGNETIC GRADIENT SURVEY

Data for both the Mattiace property and the Limco property were contoured using the Surfer Graphics System. Figures 2 and 3 show the respective contour maps.

Magnetic gradient values at many points on the Mattiace property were affected by the large number of steel structures. Cultural interference such as this can cause deceptively high readings that appear anomalous. Most of the apparent anomalies are due at least in part to such cultural interference. For this reason, no determination may be made solely from the magnetic gradient data as to the possible presence of buried ferrometallic material at most of the anomaly locations. One anomaly, however, appears free of obvious cultural interference and is centered at coordinate point (-20,40). It has a magnitude of approximately 875 gammas per meter, and the indication is that the anomaly is due to possible buried ferrometallic material.

Magnetic gradient values for the Limco property were much less affected by cultural interference. Line 0 is located alongside a chain-link fence. All of the magnetic gradient readings on Line 0 were affected. Also, Position 0 on all lines is located 10 feet from the Plant No. 2 building and is similarly affected. Otherwise, three anomalies, located at (60, 80), (100, 100) and (100, 120), were observed. Because of the lack of cultural interference and the magnitude of the anomalies, it is possible that they represent buried ferrometallic material.

RESULTS OF THE GROUND PENETRATING RADAR SURVEY

Thirty-nine GPR traverses were performed. Thirty-four of these were on the Mattiace property and the remainder on the Limco property. The results are summarized in Tables 1 and 2.

A number of anomalies were observed, all but one on the Mattiace property. Figures 4 and 5 show anomalies that are representative of those observed at the site. The following anomalies are especially noteworthy:

- Traverse No. 7, anomalies at 26' - 29' and 33' - 37' are quite large.

CONCLUSIONS

GPR traverses 7, 8, 10, and 12 support other evidence that suggests that several large objects are beneath the concrete pad. Traverses 14, 15, 18, 21, 24, 25, 26, and 28 appear to represent buried objects in the long, rectangular area marked Area 1 in Figure 6. The anomalies on Traverse 14 coincide with the magnetic gradient anomaly that appears centered at (-20, 40) while anomalies on Traverses 21, 24, 26, and 28 coincide with the apparent magnetic gradient anomalies which were affected by cultural sources. Under these circumstances, the magnetic gradient data and the GPR data can be considered corroborative of each other and, taken together, indicate the possibility of buried objects in the rectangular area.

While the magnetic gradient data and the GPR data on the Limco property do not corroborate each other directly, the proximity of the respective anomalies to each other suggest the possibility of buried objects in the rectangular area marked Area No. 2 in Figure 6. Magnetic gradient data also indicate the possibility of buried ferrometallic objects in the area marked as Area 3 in Figure 6.

RECOMMENDATIONS

After reviewing the magnetic gradient data and GPR data, it is recommended that test pits be located within Areas 1, 2, and 3. The data suggest the possibility of buried ferrometallic objects in these areas.

If you have any questions or comments concerning this report, please feel free to call me.

Very truly yours,

David W. Marcum

David W. Marcum
Geophysicist

DWM:eeh
Attachments

TABLES

TABLE 1

TRAVERSE NO.	TIME SCALE (ns)	STARTING POINT	ENDING POINT	ANOMALIES (loc. on traverse)	COMMENTS
1	30	(210,60)	(160,60)	8'@6ns,30'@12ns	
2	32	(210,70)	(160,70)	13'@6ns,24'@10ns,28'@ 10ns, 36'@6ns	
3	32	(210,80)	(160,80)	8'@12ns,12'@8ns,21'@8ns	
4	32	(215,100)	(165,100)	3'@16ns,22'@11ns,37'@ 3ns, 46'@14ns	
5	32	(210,120)	(170,120)	5'@8ns,32'@4ns,38'@8ns	
6	32	(205,160)	(180,160)	3'@16ns	Anomaly large, but weak.
7	32	(180,160)	(100,160)	26'-29'@13ns,33'-37'@ 11ns,46'@17ns,64'-68'@ 15ns	Anomalies at 26' - 29' and 33' - 37' quite large.
8	32	(180,155	(105,135)	4'@6ns,20'-35'@8-10ns, 52'@7ns,58'@7ns	Anomalies at 52'and 57'are large and strong.
9	32	(138,123)	(128,178)	2'@20ns,5'-13'@7ns, 39'@ 18ns	
10	32	(145,125)	(140,175)	4'-8'@16ns,9'-13'@13ns 20'-23'@9ns,25'-45'@ 9-13ns	Anomalies at 4'-8', 9'-13', and 20'-23' large and strong Anomaly at 25'-45' is disrupted soil stratification.
11,12	32	(168,174)	(108,165)	2'-6'@16ns,10'-14 @ 12ns 30'@13ns,33'-36'@12ns	Repeated, using higher gain. Anomaly at 10'-14' large and strong.

INTERNATIONAL TECHNOLOGY CORPORATION

TABLE 1
(Continued)

TRAVERSE NO.	TIME SCALE (ns)	STARTING POINT	ENDING POINT	ANOMALIES (loc. on traverse)	COMMENTS
13	32	(168,174)	(108,165)	See 11 and 12	Same as 11 and 12, but with 300Mhz antenna. Much worse resolution, discontinued use of 300 Mhz. antenna.
14	32	(10,0)	(-20,100)	47'-51'@19ns,57'-63'@ 14ns	Anomaly at 57'-63' large and strong.
15,16,17	32	(10,60)	(-25,60)	15'-23'@12ns	Anomaly large and strong.
18	32	(10,48)	(-25,48)	13'-17'@18ns,13'@8ns	Anomaly large and strong.
19	32	(35,20)	(20,20)	27'@8ns,36'@7ns,48'@6ns	
20	32	(40,40)	(-20,40)	28'-33'@9ns,48'-52'@13ns	Anomaly at 28'-33' large and fairly strong, second anomaly weaker. Both anomalies large and strong.
21	32	(20,80)	(-40,80)	15'-19'@16ns,22'-28'@ 13ns	
22	32	(-5,40)	(-5,120)	16'-23'@13ns, 28'-33'@ 11ns	Both anomalies large and strong.
23,24	32	(6,100)	(-40,100)	3'-6'@11ns,13'@7ns 17'@11ns	Anomaly at 3'-6' large and strong.
25	32	(3,120)	(-47,120)	6'-9'@10-13ns	Anomaly large and fairly strong.

INTERNATIONAL TECHNOLOGY CORPORATION

TABLE 1
(Continued)

TRAVERSE NO.	TIME SCALE (ns)	STARTING POINT	ENDING POINT	ANOMALIES (loc. on traverse)	COMMENTS
26	32	(7,140)	(-33,140)	7'-13'@13ns,15'@9ns, 29'@4ns	Anomaly at 7'-13' large and strong.
27	32	(-2,120)	(-2,160)	7'-21'@13ns	Anomaly large, but disorganized.
28	32	(3,160)	(-27,160)	3'-11'@15ns,17'@5ns	Anomaly at 3'-11' large, but disorganized.
29	32	(0,240)	(40,240	5'-15'	Anomaly extends through depth of record. Possible soil stratification disruption.
30	32	(70,256)	(165,280)	3'-6'@20ns,57'-63'@ 10ns,51'-53'@20ns	Anomaly at 3'-6' large and fairly strong.
31	32	(160,-10)	(55,-10)	22'@11ns,31'@14ns, 62'@10ns	
32	32	(70,-40)	(70,40)	35'-37'@14ns, 64'@10 ns, 65'-75'@5ns	Anomaly at 35'-37' rather large, but disorganized, possible soil stratification disruption.
33	32	(140,-20)	(140,80)	35'@4ns,55'-70'	Possible anomaly at 55'-70'
34	32	(80,80)	(80,130)	5'@4ns,13'@5ns	

INTERNATIONAL TECHNOLOGY CORPORATION

TABLE 2

LIMCO GPR TRAVERSES

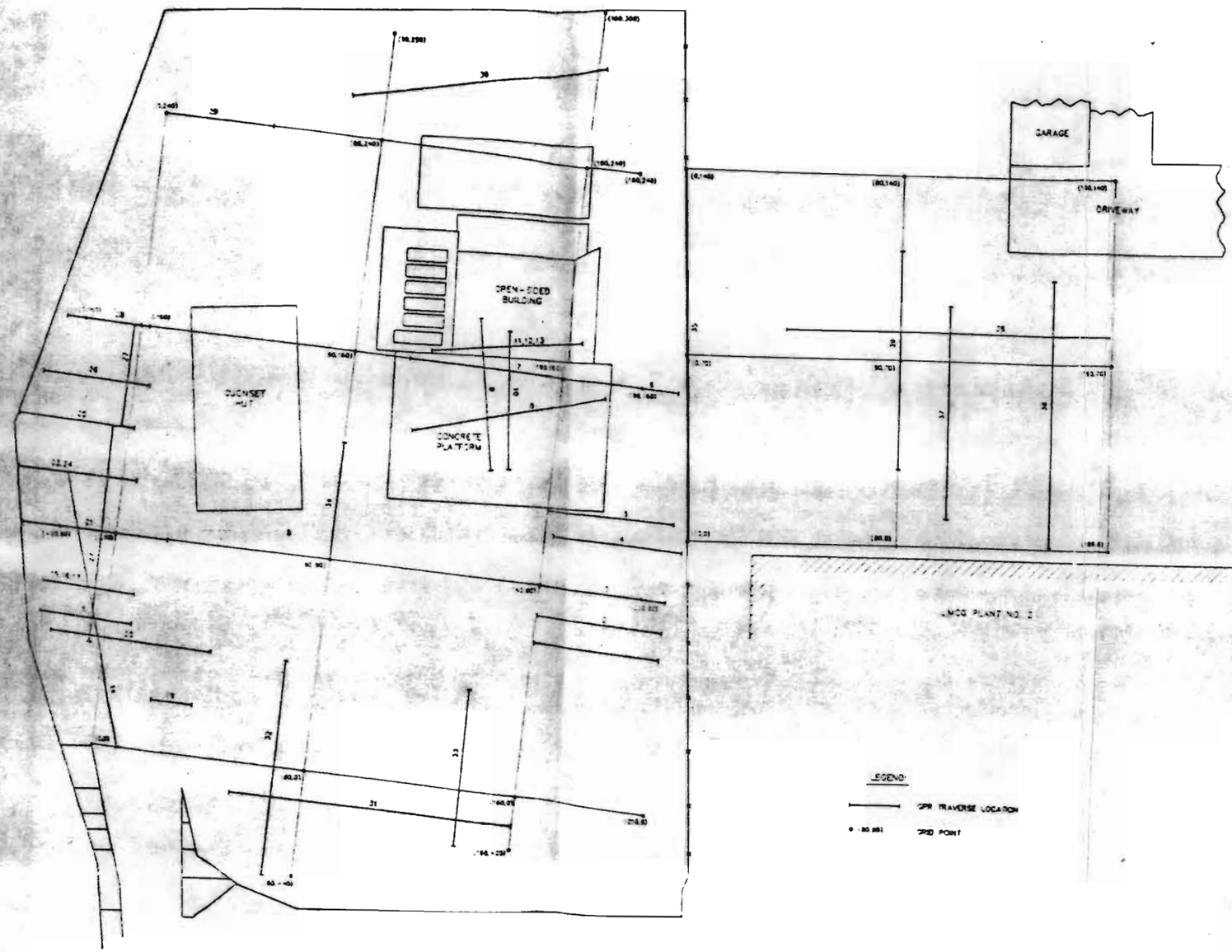
TRAVERSE NO.	TIME SCALE (ns)	STARTING POINT	ENDING POINT	ANOMALIES (loc. on traverse)	COMMENTS
35	32	(0,0)	(0,140)	None	
36	32	(140,0)	(140,100)	None	
37	32	(100,10)	(100,100)	None	
38	32	(40,80)	(160,80)	37'-40'@18ns	Anomaly fairly large and strong.
39	32	(80,40)	(80,120)	None	

INTERNATIONAL TECHNOLOGY CORPORATION

FIGURES

DRAWN BY	D.E.S.	CHECKED BY	DATE	DRAWING NUMBER
	12-13-89	APPROVED BY	DATE	529065-E2

MATTIACE PROPERTY — LMCO PROPERTY



LEGEND:

- SPR TRAVERSE LOCATION
- SRD POINT

SCALE

0 20 40 60 FEET

FIGURE 1

MATTIACE SITE MAP

PREPARED FOR

IT CORPORATION
EDISON, NEW JERSEY

INTERNATIONAL TECHNOLOGY CORPORATION

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DRAWN BY	B.A.KUMPF 18 DEC 89	CHECKED BY		DRAWING NUMBER	529065-B2
		APPROVED BY			

SCALE
0 30 60 FEET

CONTOUR INTERVAL = 100 GAMMAS/METER

FIGURE 2

MATTIACE PROPERTY MAGNETIC GRADIENT CONTOUR MAP

PREPARED FOR

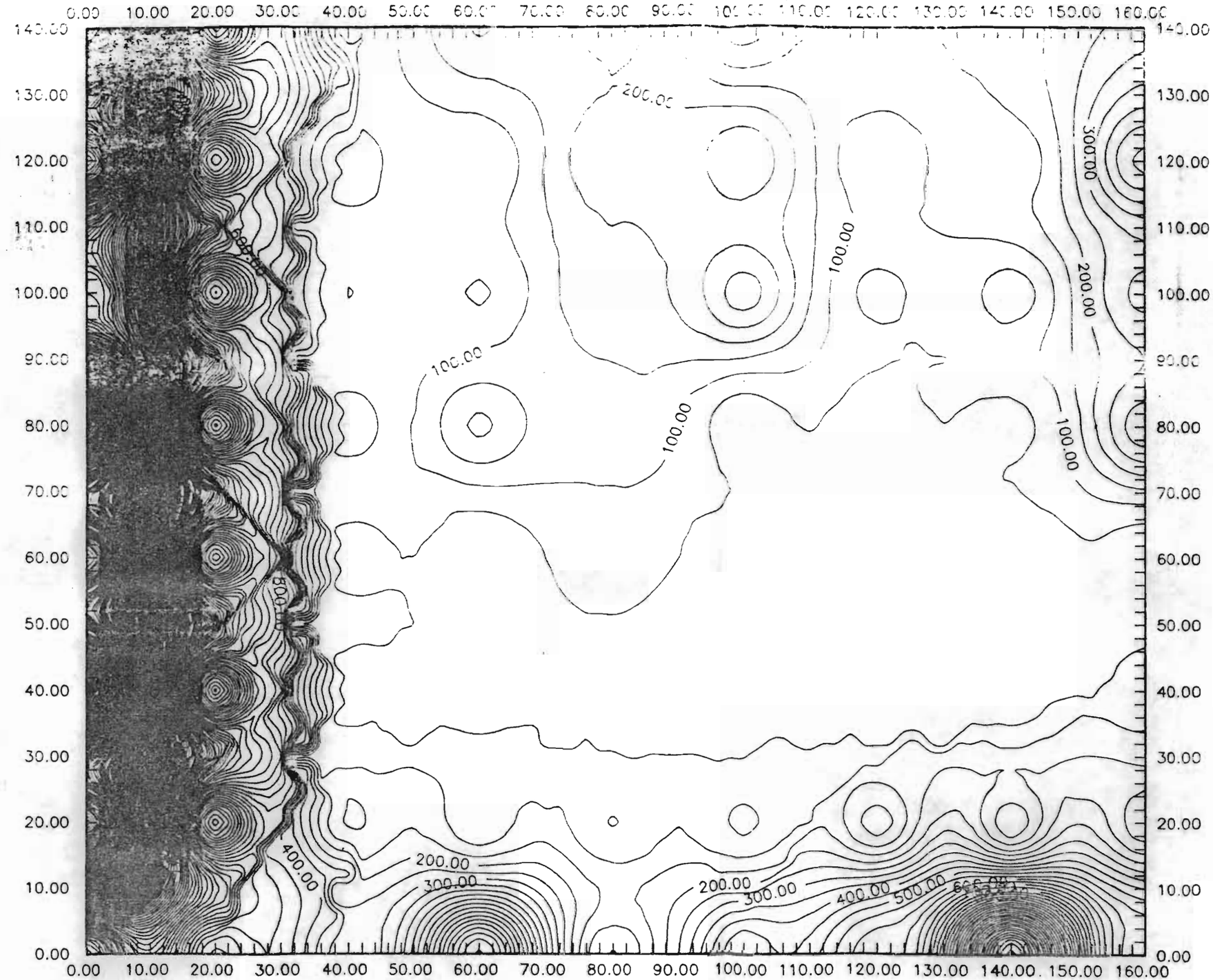
T CORPORATION
EDISON, NEW JERSEY

INTERNATIONAL TECHNOLOGY CORPORATION

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This Work Bears This Drawing!

DRAWN BY

	KME	CHECKED BY	DAM	10/27/89	DRAWING NUMBER
	12-4-89	APPROVED BY	JAG	12/27/89	520055-R1



N

SCALE
0 13 26 FEET

FIGURE 3

LIMCO MAGNETIC GRADIENT CONTOUR MAP

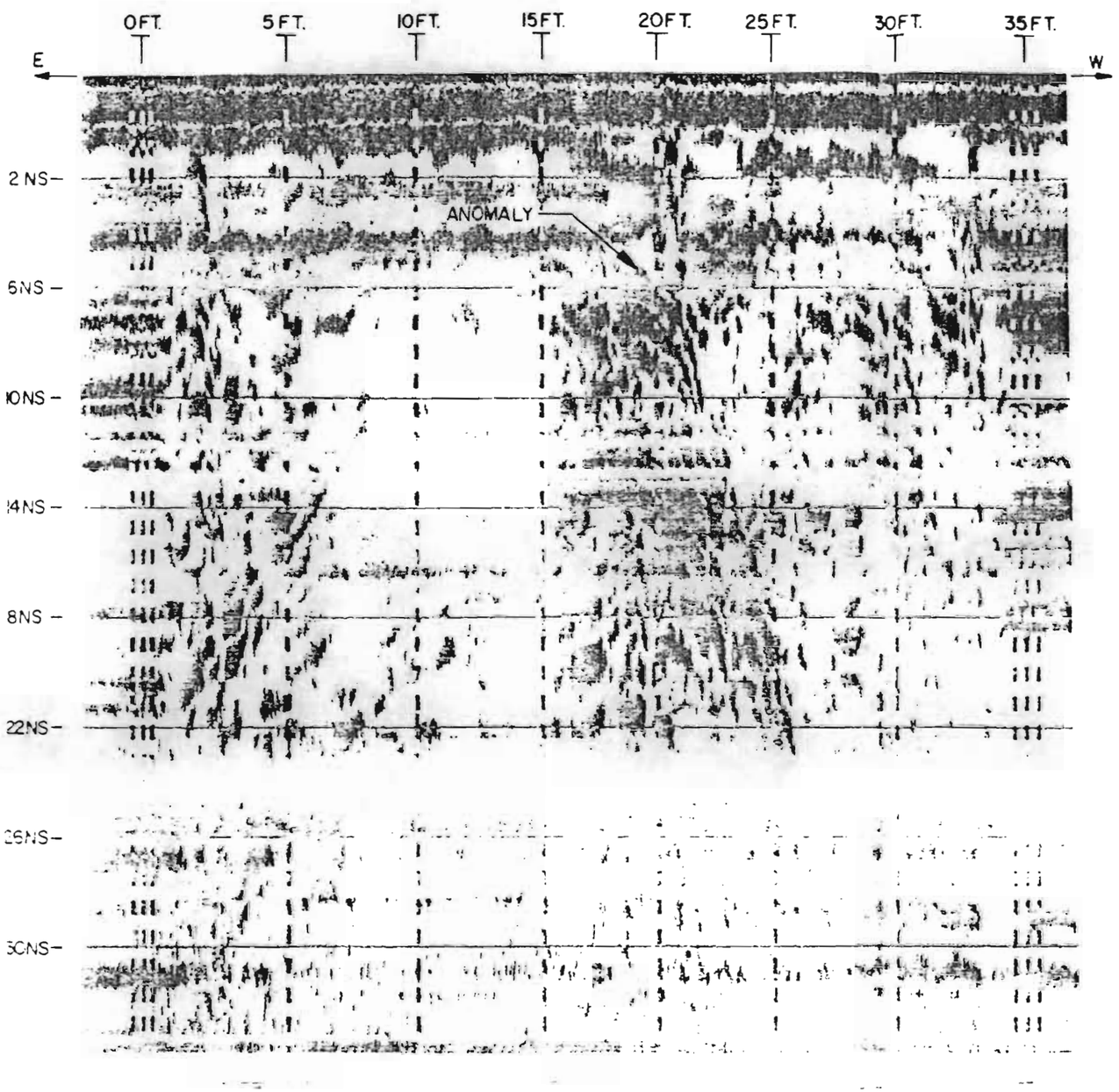
PREPARED FOR

IT CORPORATION
EDISON, NEW JERSEY

INTERNATIONAL TECHNOLOGY CORPORATION

132296

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"Do Not Scale This Drawing"



NOTE:
RECORD OBTAINED WITH 500 MHZ ANTENNA.

FIGURE 4

MATTIACE SITE
GROUND PENETRATING RADAR
TRAVERSE NO. 15

PREPARED FOR

IT CORPORATION
EDISON, NEW JERSEY

INTERNATIONAL TECHNOLOGY CORPORATION

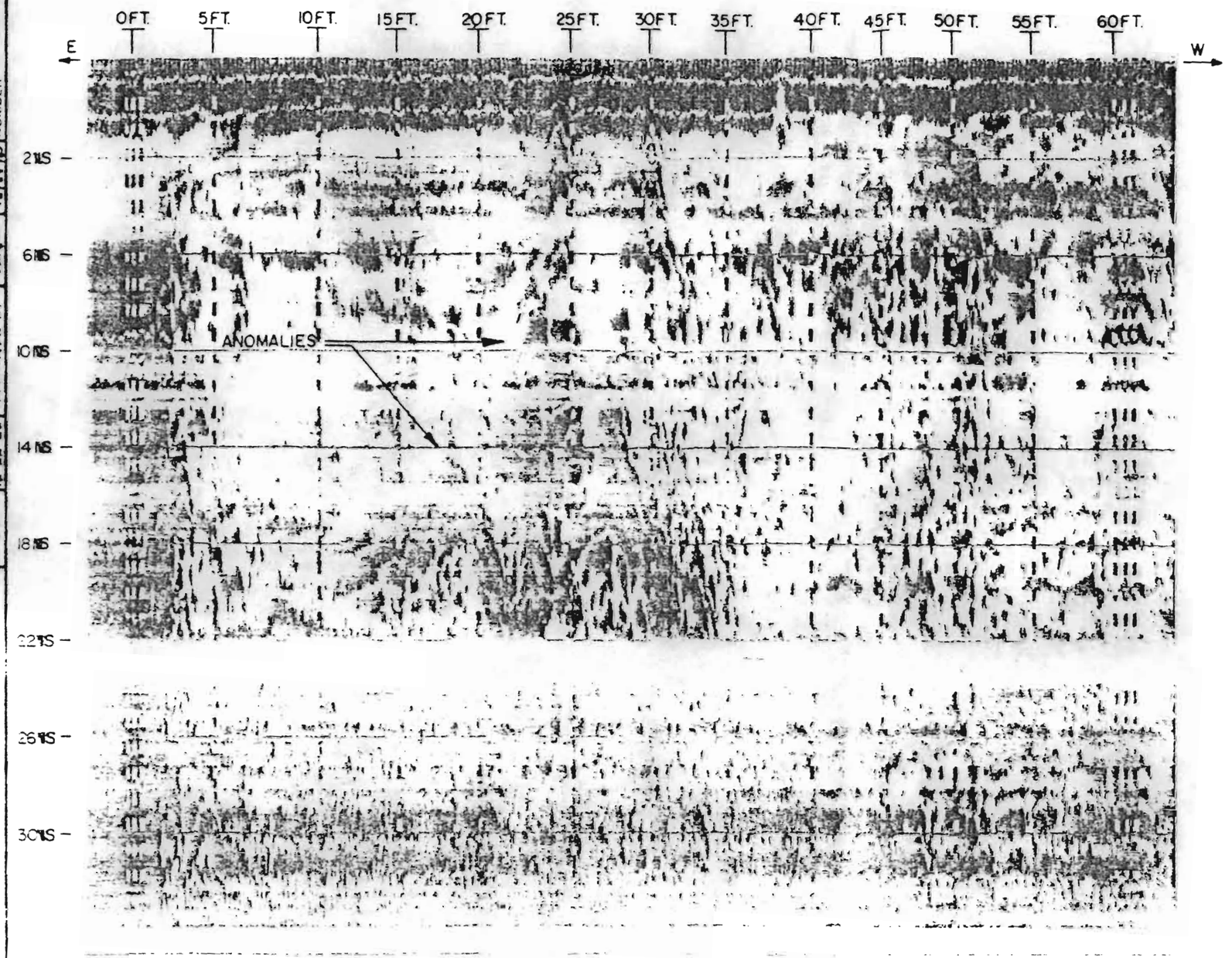
DRAWING NUMBER 529066-84

CHECKED BY

APPROVED BY

DES 12-22-89

DRAWN BY



NOTE:
RECORD OBTAINED WITH 500 MHZ ANTENNA.

FIGURE 5

MATTIACE SITE
GROUND PENETRATING RADAR
TRAVERSE NO. 21

PREPARED FOR

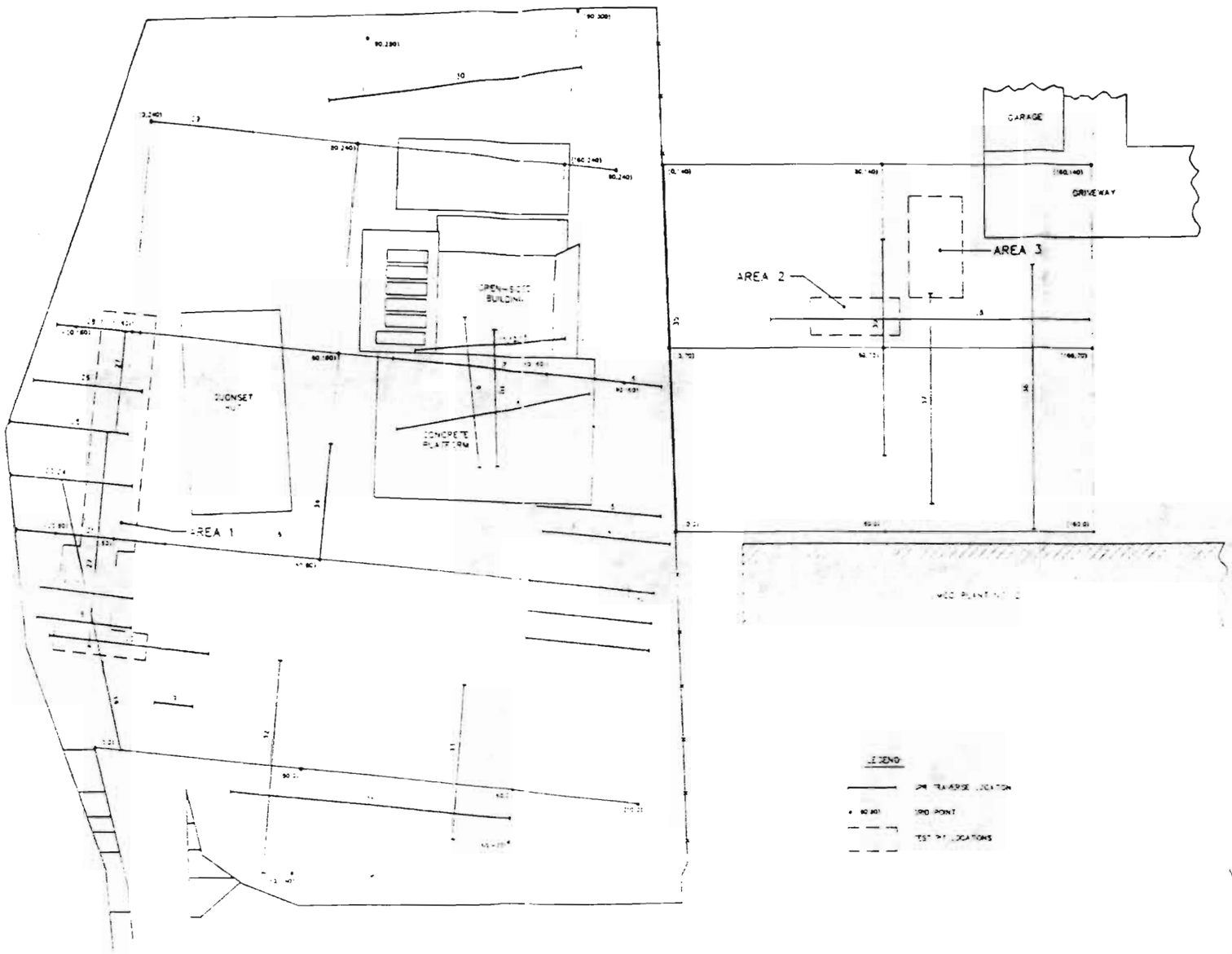
T CORPORATION
EDISON, NEW JERSEY

INTERNATIONAL TECHNOLOGY CORPORATION

84 T CORPORATION
MATTIACE WASHBORED

DRAWN BY	DES.	CHECKED BY		DRAWING NUMBER
	12-14-89	APPROVED BY	12/15/89	528065-E3

MATTIACE PROPERTY — LIMCO PROPERTY



LEGEND

SCALE

FIGURE 6

MATTIACE SITE MAP

PREPARED FOR

IT CORPORATION
EDISON, NEW JERSEY

INTERNATIONAL TECHNOLOGY CORPORATION

APPENDIX C

SOIL BORING LOGS

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-01

PROJECT: MATTIACE (ARCS) LOCATION: 006-2L2B
DATE STARTED: 11/13/89 DATE COMPLETED: 11/13/89 PROJECT NUMBER: ~~SB006~~
ELEVATION: 35.5' GW DEPTH: 22' FIELD GEOLOGIST: WHITTEMORE
DRILLER: EMPIRE SOILS INVESTIGATIONS SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HOLLOW STEM AUGER

SAMPLE ID	DEPTH (feet)	300# BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-01 0'-2' (RAS)	1	30 / 31 / 16	100%		SP	BROWN GRAVELLY SAND (DRY)	1050	11/13/62	OVA >1000 ppm
					~~SM~~	~~TAN-ORANGE FINE SAND~~ (DRY)			
	2	13		---	SM	OLIVE-GRAY SANDY SILT (DRY)			
SB-01 2'-4' (SAS)	3	11 / 9	100%		SP	TAN GRAVELLY MED SAND (DRY)	1110	11/13/62	OVA >1000 ppm
	4	7 / 7							
SB-01 4'-6' (RAS)	5	7 / 11	100%		SP	TAN-ORANGE MED SAND (DRY)	1120	11/13/62	OVA >1000 ppm
					ML	OLIVE SANDY SILT SOME CLAY (DRY)			
	6	9 / 10			SP	TAN-ORANGE MED SAND (DRY)			
SB-01 6'-8' (SAS)	7	10 / 6	100%		SP	TAN-ORANGE MED SAND (DRY)	1130	11/13/62	OVA >1000 ppm
	8	5 / 6							
	9	6 / 4	100%		SP	TAN-ORANGE MED SAND (DRY)	1140	11/13/62	OVA >1000 ppm
					ML	OLIVE SANDY SILT SOME CLAY			
	10	3 / 2			SP	TAN-ORANGE MED SAND (DRY)			
SB-01 10-12 (RAS)	11	5 / 4	100%		SP	TAN MED SAND (DRY)	1145	11/13/62	OVA > 1000 ppm
	12	3 / 4							

Notes: .....

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SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB - 01

PROJECT: MATTIACE (ARCS) LOCATION:
DATE STARTED: 11/13/89 DATE COMPLETED: 11/13/89 PROJECT NUMBER: 006-2128
ELEVATION: 35.5' GW DEPTH: 22' FIELD GEOLOGIST: WHITEMORE
DRILLER: EMPIRE SOILS INVESTIGATIONS SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HOLLOW STEM AUGER

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-01 FB-14 (SAS)		6			SP	TAN MED SAND (DRY)	11:50	11/13/62	
	13	7	100%		ML	TAN OLIVE SANDY SILT SOME CLAY (DRY)			OVA > 1000 ppm
		7				↓			
	14	7						RFF	
	15								
	16								
	17								
	18								
SB-01 FB-20		4			SP	TAN MED SAND (DAMP)	12:25	11/13/62	
	19	4			CL	OLIVE-GRAY CLAY (DAMP) LITTLE SILT			OVA > 1000
		5	100%						
	20	8							
SB-01 20-22		5			CL	OLIVE GRAY SILTY CLAY (DAMP)	12:30	11/13/62	
	21	7	100%						OVA = 70 ppm
		7				OLIVE GRAY SILTY CLAY (MOIST)			
	22	9		▽					
SB-01 22-24		8			CL	OLIVE-GRAY CLAY (MOIST)	12:35	11/13/62	
	23	7	100%		SP	TAN GRAVELY SAND (WET)			OVA = 3.6 ppm
		9			CL	OLIVE-GRAY CLAY (MOIST)			
	24	10							

Notes: AUGER TO 18' → HOLD SPOONS UNTIL WATER FOUND

SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-02

PROJECT: MATTIACE
DATE STARTED: 11/14/89
ELEVATION: 34.91
DRILLER: EMPIRE

DATE COMPLETED: 11/14/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0					CINDERS / GRAVEL			
SB-02 0'-2' (RAS)	1	32 16	100%		SM	TAN FINE SAND - SILT (DRY)	931	11/14/89	OVA >1000
	2	11 6							
SB-02 2'-4' SAS	3	9 10	100%		SP	TAN MED SAND (DRY)	934	11/14/89	OVA >1000
	4	10 12							
SB-02 4'-6' (RAS)	5	10 10	100%		SM	TAN SANDY SILT SOME GRAVEL (DRY)	9:40	11/14/89	OVA >1000
	6	10 10			SP	LT BROWN MED SAND (DRY)			
SB-02 6'-8' (SAS)	7	10 11	100%		SP	TAN-ORANGE MED SAND SOME GRAVEL (DRY)	9:45	11/14/89	OVA >1000
	8	12 11							
	9								
	10								
SB-02 10'-12' (RAS)	11	10 10	100%		SP	TAN MED-FINE SAND (DRY)	10:00	11/14/89	OVA >1000
	12	10 12							

Notes:

SHEET 1 OF 3

3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-02

PROJECT: MATTIACE
DATE STARTED: 11/14/89
ELEVATION: 34.91'
DRILLER: EMPIRE

DATE COMPLETED: 11/14/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-02 12-14' (SA5)	13	11 12 11 11	100%		SP GW SP	TAN MED SAND (DRY) TAN-ORANGE GRAVELLY SAND TAN MED SAND (DRY)	10:05	11/14/89	OVA > 1000ppm
	14					TAN MED SILTY SAND (DAMP)			
	15								
	16								
	17								
	18								
X	19	3 7 12 14	100%		CL SW SP	IT BROWN CLAY (DAMP) TAN-RED GRAVELLY SAND (DAMP) IT GRAY MED SAND (DAMP)	10:20	11/14/89	OVA ~ 600 OVA > 1000
X	21	12 13 14 13	100%		SP ML	TAN-RED-GRAY MED SAND (DAMP) RED-TAN GRAVELLY SAND TAN-BROWN GRAVELLY SILT SOME CLAY (DAMP)	10:30	11/14/89	OVA > 1000
SB-02 22-24'	23	13 13 12 13	100%		SW	TAN-BROWN GRAVELLY SAND SOME SILT (DAMP)	10:40	11/14/89	OVA > 1000
	24								

Notes: .....

SHEET 2 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-02

PROJECT: MATTIACE
DATE STARTED: 11/14/89 DATE COMPLETED: 11/14/89
ELEVATION: 34.9' GW DEPTH: 24'
DRILLER: EMPIRE

LOCATION:
PROJECT NUMBER: 006-2L28
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-02 24-26 (SAS)	25	11 13 15 20	100%		SW	RED-BROWN STRAT'D ~~GRAVELLY~~ SAND ~~(MED)~~	10:50	11/14/89	OVA 5,000
	26								
	27								
	28								
	29								
	30								
	7								
	8								
	9								
	10								
	11								
	12								

Notes: .....

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SHEET 3 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-03

PROJECT: MATTIACE
DATE STARTED: 11/14/89
ELEVATION: 31.8'
DRILLER: EMPIRE

DATE COMPLETED: 11/14/89
GW DEPTH: 30.5'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-03		36			GW	GRAY SANDY GRAVEL			
	1	27	75%		SP	GRAY-TAN SILTY SAND (DRY)	13:25	11/14/89	OVA >1000
0'-2'		12					"	"	
	2	10			ML	TAN-GRAY CLAYEY SILT (DRY)			
		9			SP	TAN MED SAND (DRY)			
SB03	3	6	50%			SOME GRAV.	13:30	11/14/89	OVA >1000
2'-4'		7			CL	GRAY SILTY CLAY (1" THICK)	"	"	
	4	5			SP	TAN MED SAND (DRY)			
		5			SP	TAN MED SAND (DRY)			
SB-03	5	4	10%		CL	GRAY SILTY CLAY	13:35	11/14/89	OVA >1000
4'-6'		3			SP	TAN MED SAND (DRY) (LOOSE)	"	"	
	6	4							
SB 03		4			SP	BROWN MED SAND (MOIST) GRAY			
	7	4	75%		CL	LT GRAY/ORANGE CLAY (DAMP)	13:40	11/14/89	OVA >1000
6'-8'		3					"	"	
	8	8			ML	GRAY/ORANGE CLAYEY SILT (DAMP)			
	9								
	10								
SB-03		4			CL	PURPLISH-GRAY CLAY (DAMP)	13:50	11/14/89	OVA >1000
	11	5							
		6			CL	LT ORANGE CLAY (DAMP)	"	"	OVA = 300
10'-12'	12	6							

Notes:

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-03

PROJECT: MATTIACE
DATE STARTED: 11/14/89
ELEVATION: 31.8'
DRILLER: EMPIRE
DATE COMPLETED: 11/14/89
GW DEPTH: 20.5'
LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT-SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-03		14			CL	LT GRAY CLAY			
12-14'	13	16	100%		CL	GRAY/ORANGE LAYERED CLAY	1355	11/14/89	OVA-340
1		21					1	1	
	14	19			CL	DK-MED GRAY CLAY			OVA-300
	15								
	16								
		12			CL	DK-MED GRAY CLAY	14:10	11/14/89	OVA-75 ppm
X	17	8	70%						
		13			PT	DK BROWN WOOD (LIGNITE)	1	1	OVA-48 ppm
	18	10							
		6			PT CL	DK BROWN WOOD DK GRAY CLAY (MOIST)	14:20	11/14/89	OVA-28 ppm
	19	4	60%						
		6							
	20	8							
		9		▽	CL	DK GRAY CLAY (MOIST)	14:25	11/14/89	
	21	9	100%						
		13			CL	DK GRAY CLAY (MOIST) W/ SEAMS OF GRAY SILTY CLAY			
	22	16							
	23								
	24								

Notes: .....

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SHEET 2 OF 2

LOG OF BORING SB-04

EBASCO SERVICES, INC. BORING NUMBER: SB-04

PROJECT: MATTIACE (ARCS) LOCATION:
DATE STARTED: 11/13/89 DATE COMPLETED: 11/14/89 PROJECT NUMBER: 006-2L2B
ELEVATION: 36.4' GW DEPTH: FIELD GEOLOGIST: WHITTEMORE
DRILLER: EMPIRE SOILS SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HOLLOW STEM AUGER

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0					AUGER THRU CONCRETE -		1'	
	1								
SB-04 1'-2.5' (RAS)	2	26 16 12	100%		SP	TAN MED SAND (DRY) - ORANGE SOME GRAVEL	16:05	11/13/62	OVA > 1000 ppm
SB-04 2.5-4' (GAS)	3	8 6 4	100%		SP / CL	TAN-MED SAND SOME GRAVEL (DRY) / GRAY-OLIVE SILTY CLAY (DAMP)	16:10	11/13/62	OVA > 1000 ppm
SB-04 4'-6' (RAS)	5	4 3 4 4	60%		SP / CL	- TAN-ORANGE MED SAND (DRY) SOME GRAVEL / LT GRAY SILTY CLAY (DAMP)	16:25	11/13/62	OVA > 1000 ppm
SB-04 6'-8' (GAS)	7	3 2 2 4	40%		SP / ML	GRAY GRAVELLY SAND (DRY) / LT BROWN CLAYEY SILT (DAMP)	16:30	11/13/62	OVA > 1000 ppm
~~SB-04~~	9	~~3 4 4 4~~							
	10								
SB-04 10-12 (RAS)	11	3 2 3 3	80%		SP	TAN - ORANGE MED SAND (DRY)	07:20	11/14/62	OVA > 1000 ppm
	12				CL	GRAY SILTY CLAY (DAMP)			

Notes:

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-04

PROJECT: MATTACE (ARCS) LOCATION: [redacted]
DATE STARTED: 11/13/89 DATE COMPLETED: 11/14/89 PROJECT NUMBER: 205-2128
ELEVATION: 36.41 GW DEPTH: 20.5' FIELD GEOLOGIST: WHITTEMORE
DRILLER: Empire SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HOLLOW STEM AUGER

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-04 12-14 (SAS)		3			CL	TAN-GRAY SILTY CLAY	09:25	11/14/89	OVA = 800 ppm
	13	3	80%		SW	TAN-BROWN GRAVELLY SAND (DAMP)			OVA > 1000 ppm
		3							
	14	3							
	15								
	16								
	17								
	18								
		7			SP	TAN-ORANGE MED SAND (DAMP)	7:45	11/14/89	
	19	7			ML	GRAY CLAYEY SILT (DAMP)			
		8			ML	TAN-GRAY SANDY SILT (MOIST)			
	20	8							
		9		II	ML	TAN SANDY SILT (MOIST)	7:50	11/14/89	
	21	8			CL	LT BROWN CLAY (MOIST)			
		10			SW	BROWN STRAT MED SAND (WET)			
	22	8			CL	LT BROWN CLAY (MOIST)			
	23								
	24								

Notes: .....

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SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-05

PROJECT: MATTIACE
DATE STARTED: 11/14/89
ELEVATION: 35.8'
DRILLER: EMPIRE

DATE COMPLETED: 11/15/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-05 0'-2'	1	17, 17	100%		GP	GRAY SANDY GRAVEL	16:05	11/14/89	OVA >1000
					SP	TAN MED SAND (DRY)	"	"	
	2	14, 10			CL SP	GRAY CLAY TAN MED SAND (DRY)	"	"	
SB-05 2'-4'	3	10, 9	100%		SP	TAN MED SAND (DRY)	16:10	11/14/89	OVA >1000
	4	10, 11			SP	ORANGE MED SAND (DRY)	"	"	
SB-05 4'-6'	5	11, 7	100%		SP	ORANGE MED SAND (DRY) SOME GRAVEL	16:15	11/14/89	OVA-800 ppm
	6	7, 8				TAN-ORANGE MED SAND (DRY)	"	"	
SB-05 6'-8'	7	9, 9	100%		SP	TAN-ORANGE MED SAND SOME GRAVEL (DRY)	16:20	11/14/89	OVA >1000 ppm
	8	11, 11			SP	TAN-ORANGE FINE-MED SAND (DRY)	"	"	
	9								
	10								
SB-05 10'-12'	11	9, 7	100%		SP	TAN MED SAND LITTLE GRAVEL (DAMP)	7:30	11/15/89	OVA >1000
	12	9, 10				"	"	"	"

Notes: .....

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SHEET 1 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-05

PROJECT: MATTIACE
DATE STARTED: 11/14/89
ELEVATION: 35.81
DRILLER: EMPIRE
DATE COMPLETED: 11/15/89
GW DEPTH: 24'
LOCATION:
PROJECT NUMBER: 006-22 2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0				SP	TAN MED SAND (MOIST)			RED DENIM CLOTH
SB-05		11			CL	OLIVE GRY CLAY (WET) LBROWN (WET)	7:35	11/15/89	OVA - 90 ppm
12-14	13	13							
		15							OILY SHEEN
	14	14			SP	GRAY-TAN COARSE SAND (WET)			
	15								
	16								
		12			ML	BROWN CLAYEY SILT (MOIST)	7:50	11/15/89	OVA > 1000 ppm
X	17	9	60%		SP	TAN-RED GRAVELLY SAND (DAMP)			
	18	7							
		7							
		3			ML	GRAY CLAYEY SILT SOME F. SAND (MOIST)	8:05	11/15/89	OVA > 1000
X	19	4	100%		CL	~~ORANGE SILTY CLAY (WET)~~ ORANGE CLAY LITTLE SILT (MOIST)			
	20	6							
		7			SP	ORANGE MED SAND (DAMP)			
		9			SP	ORANGE MED-COARSE SAND (MOIST)	8:15	11/15/89	OVA > 1000 ppm
SB-05	21	11	70%						
20-22		14							
	22	16							
SB-05		13			SP	ORANGE MED-COARSE SAND (WET)	8:30	11/15/89	OVA > 1000
22-24	23	14	80%			SOME GRAVEL			
		18							
	24	23							

Notes: WATER SEEMS PERCHED FROM ~12' TO ~16'

SHEET 2 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-05

PROJECT: MATTIACE
DATE STARTED: 11/14/89
ELEVATION: 35.8'
DRILLER: EMPIRE

DATE COMPLETED: 11/15/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB 24-6	23	19 19 21 29	90%		SP 1 SP 2	TAN COARSE SAND (WET) BROWN GRAVELLY COARSE SAND (WET)	840	11/15/89	OVA >1000 SHEEN
	26								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
	11								
	12								

Notes: .....

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SHEET 3 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-06

PROJECT: MATTIACE
DATE STARTED: 11/15/89
ELEVATION: 34.9'
DRILLER: EMARE

DATE COMPLETED: 11/15/89
GW DEPTH: ~ 26'

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0					8" CONCRETE			
SB-06		12							
0'-2'	1	10	100%		SP	TAN MED SAND (DRY)	10:15	11/15/89	OVA - 900 ppm
		6							
	2	6			CL	LT BROWN SILTY CLAY	1	1	1
SB-06		5			CL	LT BROWN SILTY CLAY	10:20	11/15/89	OVA - 1000 ppm
2'-4'	3	6	100%						
		7				LT BROWN CLAY (DRY)			
	4	6							
		10			CL	LT BROWN CLAY (DRY)			
SB-06	5	9			SP	LT BROWN MED SAND (DRY)	10:25	11/15/89	OVA > 1000 ppm
4'-6'		10	100%		CL	LT BROWN CLAY (DRY)			
	6	11			SP	TAN-ORANGE MED SAND (DRY) MUCK GRAVEL			OVA > 850 ppm
		13			SP	TAN-YELLOW MED SAND (DRY) LITTLE CLAY			
SB-06	7	14			ML	LT BROWN GRAVELLY SILT SOME CLAY	10:30	11/15/89	OVA - 700 ppm
6'-8'		12	100%						
	8	12			SM	ORANGE SILTY SAND (DRY)			
	9								
	10								
SB-06		10			CL	LT BROWN SILTY CLAY (DRY)			
10'-12'	11	8			ML	LT BROWN CLAYEY SILT SOME GRAVEL	10:40	11/15/89	OVA > 1000 ppm
		12			SW	LT BROWN-RED GRAVELLY SAND (DRY)			
	12	14							

Notes: .....

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LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-06

PROJECT: MAT FACE
DATE STARTED: 11/15/89
ELEVATION: 34.9'
DRILLER: EMPIRE

DATE COMPLETED: 11/15/89
GW DEPTH: -26'

LOCATION:
PROJECT NUMBER: 005-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
SB-06		12			SW	DK BROWN GRAVELLY SAND	10:45	11/15/89	
	13	10	80%		SP	LT BROWN CLAYEY SAND			OVA > 1000
12'-14'		8				(DRY)			
	14	10			SP	TAN-ORANGE MED SAND (DRY)			
	15								
	16								
	17								
	18								
		22			SM	WHITE-LT GRAY SILTY SAND	11:10	11/15/89	OVA > 1000
	19	21	40%						
		12							
	20	12							
		10			SM	WHITE-LITE GRAY SILTY SAND (DRY)	11:20	11/15/89	OVA > 1000
	21	9							
		8			SP	TAN FINE SAND (DRY) SOME CLAY			
	22	9			CL	LT GRAY CLAY (DRY)			OVA - 240 PPM
		8			SP	TAN FINE SAND (DRY)			OVA - 420 PPM
	23	8			CL	LT GRAY CLAY	B30		
		10							
	24	9							OVA - 7 PPM

Notes: .....

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SHEET 2 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-06

PROJECT: MATTIACE
DATE STARTED: 11/15/89
ELEVATION: 34.9'
DRILLER: EMPIRE

DATE COMPLETED: 11/15/89
GW DEPTH: ~26'

LOCATION:
PROJECT NUMBER: 06-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0	11			CL	LT GRAY CLAY			
SB-06	25	18	90%		SP	TAN MED SAND (MOIST)	13:35	11/15/89	OVA - 230 ppm
24-26		22			CL	LT GRAY-TAN CLAY	"	"	
	26	25							
SB-06		15		▽??	CL	LT GRAY-TAN CLAY	13:50	11/15/89	OVA - 800 ppm
26-28	29	20	60%						
		19			SP	TAN MED SAND (MOIST)			
	28	27			CL	DK GRAY CLAY			
	5								
	6								
	7								
	8								
	9								
	10								
	11								
	12								

Notes: .....

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SHEET 3 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-07

PROJECT: MATTIACE
DATE STARTED: 11/20/89
ELEVATION: 29.0'
DRILLER: EMPIRE

DATE COMPLETED: 11/20/89
GW DEPTH: 16' ??

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WILITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-07	1	24/12	50%		GW	BROWN GRAVEL-SAND (DAMP)	11:15	11/20/89	OVA-300ppm
0'-2'	2	11/7			SP	TAN MED SAND SOME GRAVEL (DRY)	"	"	
SB-07	3	4/2	70%		SP	TAN GRAVELLY SAND (DRY)	11:18	11/20/89	OVA>1000
2'-4'	4	2/2			CL	GRAY/RED CLAY (DAMP) LITTLE SILT	"	"	
SB-07	5	3/2	90%		CL	GRAY CLAY LITTLE SILT (DAMP)	11:20	11/20/89	OVA>1000 ppm
4'-6'	6	2/2			~~SP~~ CL	~~TAN GRAVELLY SAND~~ LITTLE CLAY (DAMP) GRAY CLAY LITTLE SILT	"	"	
SB-07	7	2/2	90%		CL	GRAY SANDY CLAY (MOIST)	11:25	11/20/89	OVA>1000
6'-8'	8	1/2			SP	TAN M. SAND (MOIST) BLACK M. SAND (WET) GRAY SANDY CLAY (WET)	"	"	
	9								
	10								
SB-07	11	WT/WT	90%		CL	GRAY SANDY CLAY (MOIST)	11:40	11/20/89	OVA=700ppm
10'-12'	12	1/1			SC	TAN CLAYEY SAND (MOIST) GRAY CLAY SOME SAND (DAMP)	"	"	OVA=[illegible]ppm

Notes:

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-07

PROJECT: MATTIACE
DATE STARTED: 11/20/89
ELEVATION: 29.0'
DRILLER: EMPIRE

DATE COMPLETED: 11/20/89
GW DEPTH: 16' ??

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet) 0	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
SB-07		1			CL	GRAY SILTY CLAY SOME SAND (MOIST)	11:45	11/20/89	OVA >1000
	13	2	100%						
12'-14'		2			ML	GRAY CLAYEY SILT (WET) MUCH SAND	"	"	
	14	2			CL	GRAY SILTY CLAY (MOIST)			
SB-07		WT			SP	TAN M. SAND SOME CLAY (MOIST)	11:55	11/20/89	OVA >1000
	15	WT							
14'-16'		WT	100%	?			"	"	
	16	WT			CL	GRAY SILTY CLAY (MOIST)			
		1			CL	GRAY SANDY CLAY (MOIST)			
SB-07	17	2	100%				12:00	11/21/89	OVA - 200PPM
		1		▽ ??	SP	GRAY-TAN F. SAND SOME CLAY (WET)			
16'-18'	18	1		=	CL	GRAY SILTY CLAY (WET)	"	"	OVA-900PPM
				▽ ?					
	19								
	20								
	21								
	22								
	23								
	24								

Notes: .....

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SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-08

PROJECT: MATTIACE
DATE STARTED: 11/20/89
ELEVATION: 30.0'
DRILLER: EMPIRE

DATE COMPLETED: 11/20/89
GW DEPTH: 20.5'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-08	1	27 20	90%		SP	TAN-GRAY M. SAND SOME GRAVEL (DAMP)	0905	11/20/89	OVA > 1000 PPM
0'-2'	2	11 8			ML	TAN-GRAY SANDY SILT SOME CLAY SOME GRAVEL	"	"	
SB-08	3	7 8	70%		ML	TAN SANDY SILT SOME CLAY GRAY SOME GRAV.	0910	11/20/89	OVA - 520 PPM
2'-4'	4	7 9				(DAMP)	"	"	
SB-08	5	11 42	70%		SP	DK GRAY M SAND (DAMP)	0915	11/20/89	OVA 900 PPM
4'-6'	6	30 9			ART	LT PINK TREATED WOOD	"	"	
SB-08	7	13 10	20%		SP	TAN-GRAY GRAVELLY C. SAND (DAMP)	0920	11/20/89	OVA - 700 PPM
6'-8'	8	8 8			ART	WEATH'D WOOD	"	"	
	9							"	
	10								
SB-08	11	10 15	30%		SP	TAN M SAND SOME GRAY	0935	11/20/89	OVA - 340 PPM
10'-12'	12	15 15				SOME WOOD (DRY)	"	"	

Notes:

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-08

PROJECT: MATTIACE
DATE STARTED: 11/20/89
ELEVATION: 20.0'
DRILLER: EMPIRE

DATE COMPLETED: 11/20/89
GW DEPTH: 20.5'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet) 0	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
SB-08		10			ML	GRAY SILT SOME CLAY LITTLE GRAVEL (DRY)	0940	11/20/89	OVA - 90ppm
12'-14'	13	14	80%		ML	GRAY-LAY. SILT LITTLE CLAY (DRY)	"	"	
	14	16							
		21			ML	ORANGE SILT LITTLE CLAY	"	"	
	15								
	16								
	17								
	18								
SB-08		9			ML	ORANGE & GRAY SILT LITTLE CLAY (DAMP)	10:05	11/20/89	OVA - 62ppm
18'-20'	19	7	40%				"	"	
		9							
	20	10							
SB-08		7		D/E	ML	WOOD (FALL-IN)	10:10	11/20/89	OVA - 80ppm
20'-22'	21	9	5%			ORANGE/GRAY SILT SOME CLAY (MOIST)	"	"	INSUFFICIENT RECOVERY
		7							
	22	7							
SB-08		7				NO RECOVERY	10:15	11/20/89	
22'-24'	23	8	0%				"	"	
		7							
	24	10							

Notes: NO SAMPLE BELOW WATER TABLE — NO RECOVERY.

SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-09

PROJECT: MATTIACE
DATE STARTED: 11/20/89
ELEVATION: 29.8'
DRILLER: EMPIRE

DATE COMPLETED: 11/29/89
GW DEPTH: 12'

LOCATION:
PROJECT NUMBER: 006-2428
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-09		17			SP	TAN GRAVELLY SAND (DRY)	0915	11/20/89	OVA 560
	1	14	30%						
0'-2'		9							
	2	7							
SB-09		5			SP/W	BROWN-OLIVE GRAVELLY FINE SAND SOME SILT	14:20	11/20/89	OVA 560 ppm
	3	4	70%						
2'-4'		3							>1000 ppm
	4	3							
SB-09		2			SW	OLIVE-BLUE M. SAND SOME GRAVEL LITTLE CLAY (MOIST)	1425	11/20/89	OVA >1000 ppm
	5	3	100%						
4'-6'		3				WOOD FRAGS			
	6	10							
SB-09		9			SW	OLIVE-BLUE M. SAND (WET) SOME GRAVEL LITTLE CLAY	1430	11/20/89	OVA = 960 ppm
	7	12	90%						
6'-8'		9			SP	BROWN GRAVELLY SAND (DRY)			OVA > 1000 ppm
	8	7				BROWN GRAVELLY SAND (DAMP)			
	9								
	10								
SB-09		5			ML	TAN SILT (DRY)	14:35	11/20/89	OVA = 40 U
	11	4	100%						
10'-12'		3				DK BROWN SILT (DAMP)			OVA > 1000
	12	3							

Notes:

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-09

PROJECT: MATTIACE
DATE STARTED: 11/20/89
ELEVATION: 29.8'
DRILLER: EMPIRE

DATE COMPLETED: 11/20/89
GW DEPTH: 12'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-09		5			ML	DK BROWN SILT SOME (MOIST) GRAVEL			
	1	7	100%		SW	BROWN SILT – FINE SAND SOME GRAVEL (WET)	14:40	11/20/89	OVA - 1490 ppm
12'-14'		11			↓		)	/	
	2	10				LT BROWN COARSE SAND (WET)			OVA - 980
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
	11								
	12								

Notes: .....

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SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-10

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 30.9'
DRILLER: EMPIRE

DATE COMPLETED: 11/21/89
GW DEPTH: 16'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-10		55			GP	GRAY SANDY GRAVEL (DRY)	0805	11/21/89	OVA >1000 ppm
	1	50	100%						
0'-2'		30							
	2	28			ML	TAN GRAVELLY SILT (DRY)	1	1	(VERY COLD)
SB-10		15			ML	TAN-BROWN GRAVELLY SILT (DRY)	0810	11/21/89	OVA >1000 ppm
	3	15	100%						
2'-4'		30			SP	ORANGE M-C SAND LITTLE GRAV (DRY)	1	1	
	4	17							
		11			SP	ORANGE M-C SAND (DRY)			
SB-10	5	12	100%				0815	11/21/89	OVA >1000
		15			SM	LT YELLOW-TAN FINE SAND (DRY)			
4'-6'	6	16				LITTLE SILT	1	1	OVA = 950 ppm
		12			SM	LT YELLOW-TAN F-SAND (DRY)			
SB-10	7	11	100%			SOME SILT	0820	11/21/89	OVA >1000 ppm
		10							
6'-8'	8	12					1	1	
	9								
	10								
		21			SM	WHITE-LT TAN SILTY SAND (DRY)			
SB-10	11	21	150%				0855	11/21/89	OVA = 160 ppm
		16							
10'-12'	12	17					1	1	

Notes: .....

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SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-10

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 30.91
DRILLER: EMPIRE

DATE COMPLETED: 11/21/89
GW DEPTH: 16'

LOCATION:
PROJECT NUMBER: 006-222B
FIELD GEOLOGIST: WHITEHORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-10		13			SM	WHITE LT GRAY SILTY SAND (DRY)	0900	11/21/89	OVA > 1000
	13	9	100%						
12'-14'		8			ML	LT GRAY SILT SOME CLAY (DRY)	1	1	OVA - 260 ppm
	14	11				SOME ORANGE SPOTS			
SB-10		10			SM	TAN M SAND (DRY) SOME SILT	0905	11/21/89	OVA > 1000 ppm
	15	12	100%						
14'-16'		14			CL	LT GRAY CLAY (DRY) SOME SILT	1	1	
	16	11		▽					
SB-10		8			CL	LT-MED GRAY CLAY (WET)	0910	11/20/89	OVA > 1000 ppm
	17	9	80%						
16'-18'		9			CL	LT GRAY CLAY (MOIST) SOME SILT ORANGE/PURPLE SPOTS	1	1	
	18	12							
	19								
	20								
	21								
	22								
	23								
	24								

Notes: .....

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SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-11

PROJECT: MATTIACE
DATE STARTED: 11/17/89
ELEVATION: 34.6'
DRILLER: EMPIRE

DATE COMPLETED: 11/17/89
GW DEPTH: 20'

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0					CONCRETE			
SB-11	1	10 11	14/24		SP	BROWN F SAND SOME CLAY (DAMP)	08:30	11/17/89	OVA >1000
0'-2'	2	8 9			SP	TAN F SAND LITTLE CLAY	1	1	
SB-11	3	7 10	50%		SM	TAN SILTY F SAND (DAMP)	0835	11/17/89	OVA-200PPM
2'-4'	4	9 10			SP	LT BROWN MED SAND SOME GRAVEL (DAMP)	1	1	
SB-11	5	10 5	15%		SP	BROWN MED SAND SOME GRAVEL (DAMP)	0840	11/17/89	OVA>1000
4'-6'	6	6 8					1	1	
SB-11	7	10 10	25%		ML	LT BROWN CLAYEY SILT (DAMP)	0845	11/17/89	OVA-400PPM
6'-8'	8	12 12			CL	LT BROWN SILTY CLAY (DAMP)	1	1	OVA-900PPM
	9								
	10								
SB-11	11	10 11	80%		SP	LT BROWN M SAND SOME GRAVEL (DAMP)	0900	11/17/89	
10'-12'	12	12 12			SP	LT BROWN M SAND LITTLE CLAY (DAMP)	1	1	

Notes: .....

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SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-11

PROJECT: MATTACE
DATE STARTED: 11/17/89
ELEVATION: 34.6'
DRILLER: EMPIRE
DATE COMPLETED: 11/17/89
GW DEPTH: ~~11/17/89~~ 20'
LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: MILLETTE MORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-11		10			SW	LT BROWN M SAND SOME (COARSE)			
		11	90%			SOME GRAVEL SOME CLAY	0905	11/17/89	OVA-560 ppm
	13				SW	TAN M-C SAND SOME GRAVEL			
12'-14'		8							
		8			SW	TAN C. SAND & SOME GRAVEL			OVA 280 ppm
	14								
	15								
	16								
	17								
	18								
SB-11		18			SP	RED-TAN MED SAND DAMP			
	19	11	40%				0925	11/17/89	OVA - 300 ppm
18-20		11			SP	WHITE-YELLOW MED SAND (MOIST)			
	20	7							
SB-11		6			SP	WHITE-YELLOW M. SAND (WET)			
	21	7	90%		CL	LT-GRAY CLAY (MOIST)	0935	11/17/89	OVA-300 ppm
20-22		7				SOME SILT			
	22	7				SOME DK RED-PURPLE ZONES IN CLAY	"	"	OVA-30 ppm
	23								
	24								

Notes:

SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-12

PROJECT: MATTTACE
DATE STARTED: 11/20/89
ELEVATION: 34.1'
DRILLER: EMPIRE

DATE COMPLETED: 11/30/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 605-2228
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-12		7			GP	GRAVEL			
	1	6	90%		CL	OLIVE-GREEN	1510	11/30/89	HNU -320
0-2		5				GRAVELLY CLAY (CL/MH)	1	1	
	2	5							
SB-12		4			ML	OLIVE-GREEN CLAYEY SILT SOME GRAVEL (CL/ML)	1515	11/30/89	HNU - 280
	3	4	100%						
2-4		4			1		1	1	
	4	4							
SB-12		7			ML	GREEN SILT SOME GRAVEL (CL/ML)	1520	11/30/89	HNU -300
	5	7			1				
4-6		9	100%		SM	GREEN-BROWN GRAVELLY F. SAND SOME SILT (CL/MH)	1	1	
	6	13			1				
SB-12		6			ML	BROWN-OLIVE SILT SOME GRAV (CL/MH)	1525	11/30/89	HNU -300
	7	5			1				
6-8		7	100%		SM	BROWN F. SAND (CL/MH)	1	11/30/89	HNU
	8	9			ML	BROWN SILT SOME GRAV.			
							1	1	
	9								
	10								
SB-12		7			ML	TAN GRAVELLY SILT (CL/MH)	1530	11/30/89	HNU 120
	11	10	90%						
10-12		11			ML	OLIVE SILT TR. SAND (CL/MH)	1	1	
	12	14							

Notes: .....

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SHEET 1 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-12

PROJECT: MATTIACE LOCATION:
DATE STARTED: 11/30/89 DATE COMPLETED: 11/30/89 PROJECT NUMBER: 000-2228
ELEVATION: 34.1' GW DEPTH: 24' FIELD GEOLOGIST: WHITEMORE
DRILLER: EMPIRE SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
SB-12		7			SP	OLIVE-BROWN GRAVELLY F. SAND (MOIST)	1545	11/30/89	H_{au} 320
	13	5	90%						
12-14		5			ML	TAN-ORANGE CLAY SOME SAND (MOIST)	1	1	
	14	6							
	15								
	16								
	17								
	18								
SB-12		11				NO	1600	11/30/89	H_{au} X
	19	13	NR						
18-20		10				RECOVERY	1	1	
	20	9							
SB-12		10			SM	TAN SILT SOME SAND (MOIST)	1605	11/30/89	H_{au} X
	21	7	2%						
20-22		9					1	1	[INSUFFICIENT RECOVERY
	22	8							
SB-12		7			CL	WHITE & TAN SILTY CLAY (MOIST)	1615	11/30/89	H_{au} -320
	23	5	5%						
22-24		5					1	1	
	24	5							

Notes: .....

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SHEET 2 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-12

PROJECT: MATTIACE
DATE STARTED: 11/30/89
ELEVATION: 1 34.1'
DRILLER: EMPIRE

DATE COMPLETED: 11/30/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 006-2L ZB
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	24			▽					
SB-12		5			CL	TAN-GRAY CLAY LITTLE SOI	1650	11/30/89	HNu-240
	25	6	20%			(WET)			
24-26		7			1		1	1	
	26	9							
	27								
	28								
	29								
	30								
	31								
	32								
	33								
	34								
	35								
	36								

Notes:

SHEET 3 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-13

PROJECT: MATTIACE
DATE STARTED: 11/17/89
ELEVATION: 34.4'
DRILLER: EMPIRE
DATE COMPLETED: 11/17/89
GW DEPTH:

LOCATION:
PROJECT NUMBER: 006-2L2R
FIELD GEOLOGIST: LWKITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
SB-13	0								
	1	10 11	60%		ML	DK BROWN GRAVELLY SILT (DAMP)	11:05	11/17/89	OVA 200 PPM
0'-2'	2	7 6			SP	TAN MED SAND SOME GRAV (MOIST)	1	~~11/17/89~~	
SB-13	3	6 5	90%		SP	TAN MED SAND (DAMP)	11:10	11/17/89	OVA 500 PPM
2'-4'	4	5 5			1	1	1	1	
SB-13	5	5 4	100%		SP SW	TAN-OLIVE M. SAND & SOME GRAV LT-GRAY M. SAND MIX MEDIUM (MOIST)	11:15	11/17/89	OVA 400 PPM
4'-6'	6	3 4			CL SP	OLIVE-LT BROWN CLAY SOME SILT DK ORANGE M. SAND (DAMP)	1	)	- OVA 80 PPM
SB-13	7	5 3	60%		SP	DK ORANGE M. SAND (DRY)	11:20	11/17/89	OVA >1000 PPM
6'-8'	8	3 3				1	1	(	
	9								
	10							F	
SB-13	11	5 5	90%		SP	DK ORANGE M-C SAND (DRY) LITTLE GRAV	11:35	11/17/89	OVA >1000
10'-12'	12	5 5			1		1	1	

Notes:

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-13

PROJECT: MATTIACE
DATE STARTED: 11/17/89
ELEVATION: 34.4'
DRILLER: EMPIRE

DATE COMPLETED: 11/17/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 005-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-13		7			SP	DK ORANGE M-SAND (DRY)	11:40	11/17/89	OVA >1000
12'44'	13	10	30%						
		11			SP	ORANGE-BROWN GRAVELLY SAND (DAMP)	"	"	
	14	11							
		~~23~~							
	15	~~13~~							
		~~11~~							
	16	~~15~~							
	17								
	18								
		23							
SB-13		13			SP	DK ORANGE M-C SAND (DAMP)	~~12:50~~	11/17/89	OVA >1000
~~18'-20'~~	19	14	70%			"	"	"	
		15							
	20								
		12							
X		7			~~SP~~	LT GRAY GRAVELLY COARSE SAND LITTLE CLAY (DAMP)	12:00	11/17/89	
	24	6	60%						
		7					"	"	
	28	10							
		9			ML	LT GRAY CLAYEY SILT (MOIST)	12:05	11/17/89	OVA - 300 ppm
	28	8	50%						
		8							
	29	9			SM	LT GRAY-WHITE SILTY-F. SAND (MOIST)	"	"	

Notes: .....

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SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-13

PROJECT: MATTAGE
DATE STARTED: 11/17/89
ELEVATION: 34.4'
DRILLER: EMPIRE

DATE COMPLETED: 11/17/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 006-2123
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-13		8			SM	WHITE-LITE GRAY SILTY F. SAND	12:10	11/17/89	OVA >> 1000 ppm
	25	5							
24-26		8				SOME CLAY (WET)	1	1	
	26	7							
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
	11								
	12								

Notes: .....

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SHEET 3 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-14

PROJECT: MATTAGE
DATE STARTED: 11/29/89
ELEVATION: 32.91
DRILLER: EMPIRE
DATE COMPLETED: 11/29/89
GW DEPTH: 20'
LOCATION:
PROJECT NUMBER: 006-2228
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-14	1	15 10	80%		ML	OLIVE-GRAY SILT (DRY) SOME CLAY	0935	11/29/89	HNu - 20
0-2	2	8 9			ML	TAN-GRAY SILT SOME CLAY (DRY) & SOME ORANGE	1	1	
SB-14	3	16 19	100%		ML	TAN-GRAY SILT LITTLE CLAY	0940	11/29/89	HNu - 38
2-4	4	15 14				SOME ORANGE SPOTS	(	1	
SB-14	5	23 18	100%		ML SP	TAN-GRAY SILT LITTLE CLAY (DRY) ORANGE GRAVELLY C. SAND (DRY)	0945	11/29/89	HNu - 45
4-6	6	16 16			ML CL	TAN-GRAY SILT SOME CLAY GRAY SILTY CLAY (DRY)	1	1	
SB-14	7	11 11	100%		ML SP	TAN-GRAY CLAYEY SILT (DRY) ORANGE GRAVELLY C. SAND (DRY)	0950	11/29/89	HNu 128
6-8	8	16 17				TAN-GRAY CLAYEY SILT (DRY)	1	1	ROCK AT 8'
	9								
	10								
SB-14	11	5 4	100%		SM	TAN SILTY FINE SAND (MOIST)	1010	11/29/89	HNu - 130
10-12	12	5 6			SM	GRAY-TAN SILTY F. SAND (MOIST) SOME CLAY.	1	1	

Notes: .....

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SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-14

PROJECT: MATTIACE
DATE STARTED: 11/29/89
ELEVATION: 32.9'
DRILLER: EMPIRE

DATE COMPLETED: 11/29/89
GW DEPTH: 20'

LOCATION:
PROJECT NUMBER: 006-2228
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
SB-14		5			SM	TAN-LAYED SILTY F SAND (MOIST)	1015	11/29/89	Hnu-85
	13	7							
12-14		8			SP	BROWN-OLIVE F-M SAND LITTLE GRAV. (MOIST)	1	1	Hnu-125
	14	11							
									PERCHED WATER AT 14-15 FEET (TOP OF WATER)
	15								
	16								
	17								
	18								
SB-14		6			SM	DK ORANGE (DAMP) M SAND LITTLE GRAV	1030	11/29/89	
	19	6	4/7						Hnu 35
18-20		7							
	20	6		WT	SP	BROWN C. SAND (WET) SOME GRAV	1	1	Hnu 25
SB-14		6			SP	BROWN C. SAND (WET)			
	21	6	5/6		SP	TAN GRAVELLY C. SAND (WET)	1035	11/29/89	Hnu 15
20-22		6			GC	WHITE CLAYEY GRAVEL (WET)	1	1	20
	22	6			SM	WHITE SILTY F SAND (WET)			
	23								
	24								

Notes: .....

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SHEET 2 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-15

PROJECT: MATTIACE
DATE STARTED: 11/27/89
ELEVATION: 22.8'
DRILLER: EMPIRE

DATE COMPLETED: 11/28/89
GW DEPTH: 16'

LOCATION:
PROJECT NUMBER: 006-2L2R
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-15	1	5, 5	100%		SP	TAN M. SAND SOME GRAV. (MOIST)	0945	11/28/89	Hnu 0.0
0-2	2	6, 6			SP	TAN-BROWN M. SAND SOME CLAY (WET)	"	"	"
SB-15	3	7, 9, 8	100%		SP	BROWN-OLIVE F-M. SAND - SOME GRAVEL (DAMP)	0950	11/28/89	Hnu - 0.5
2-4	4	9			CL	TAN CLAY SOME SILT (DRY) SOME GRAV	"	"	"
SB-15	5	7, 5	100%		CL	TAN SILTY CLAY (DAMP)	0955	11/28/89	Hnu - 0.4
4-6	6	4, 3	100%			↓	"	"	"
SB-15	7	7, 7	100%		ML	TAN SANDY SILT (WET)	1500	11/28/89	Hnu - 1.0
6-8	8	6, 7			CL	GRAY CLAY LITTLE SILT (DRY)	"	"	Hnu 0.1
SB-15	9	7, 5	70%		GP	TAN SILTY GRAVEL (WET) SOME CLAY	1505	11/28/89	Hnu - 0.1
8-10	10	10, 13			CL	GRAY CLAY LITTLE SILT (DAMP)	"	"	Hnu - 3.2
					CL	GRAY SILTY CLAY (DRY)			
SB-15	11	5, 6	50%		CL	GRAY CLAY LITTLE SILT (DAMP)	1510	11/28/89	Hnu - 0.2
10-12	12	12, 10					"	"	

Notes:

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-15

PROJECT: MATTIACE
DATE STARTED: 11/28/89
ELEVATION: 22.8'
DRILLER: EMPIRE

DATE COMPLETED: 11/28/89
GW DEPTH: 16'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
SB-15		5			CL	GRAY CLAY (LITTLE SILT OR ORANGE STRINGERS) (DAMP)	1515	11/28/89	H_{NU}-0.8
	13	6	60%						
		7					1	1	1
12-14	14	7							
		7			CL	GRAY/RED/BLACK/TAN (STRIPED) CLAY (DAMP)	1525	11/28/89	H_{NU}-0.0
SB-15	15	8	50%						
		7					1	1	1
14-16	16	7							
		4			CL	GRAY/RED STRIPED CLAY (WET)	1535	11/28/89	H_{NU}-0.0
SB-15	17	4	40%						
		6					1	1	
16-18	18	8							
	19								
	20								
	21								
	22								
	23								
	24								

Notes: .....

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SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-16

PROJECT: MATTIACE
DATE STARTED: 11/29/89
ELEVATION: 19.91
DRILLER: EMPIRE

DATE COMPLETED: 11/29/89
GW DEPTH: 12'

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITEHOUSE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-16	1	7 / 7	10%		GP	GRAY SANDY GRAVEL (WET)	1455	11/29/89	Hnu - 10.5 ~~0.0~~
0-2	2	4 / 3					"	"	
SB-16	3	4 / 7	100%		GP	OLIVE SANDY GRAVEL (WET)	1500	11/29/89	Hnu 4.0
2-4	4	8 / 9			ML	GRAY-TAN CLAYEY SILT SOME SAND (DAMP)	"	"	
SB-16	5	9 / 7	100%		SP	OLIVE-GRAY SAND (DAMP) SOME GRAY.	1505	11/29/89	Hnu - 17.0
4-6	6	4 / 4			SP	BROWN SAND LITTLE GRAY. SOME SILT (DRY)	"	"	WOOD CHIPS
SB-16	7	4 / 3	20%		ML	BROWN CLAYEY SILT (DAMP)	1510	11/29/89	Hnu - 1.0
6-8	8	3 / 3			CL	TAN SILTY CLAY (DAMP)	"	"	"
~~SB-16~~	9	6 / 6	90%		CL	GRAY/ORANGE CLAY (DAMP)	1520	11/29/89	Hnu - 4.0
~~8-10~~	10	8 / 9					"	"	
SB-16	11	7 / 11	100%		CL	GRAY/ORANGE CLAY (DAMP)	1525	11/29/89	Hnu - 0.0
10-12	12	16 / 14		▽			"	"	

Notes:

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-16

PROJECT: MATTRACE
DATE STARTED: 11/29/89
ELEVATION: 19.9'
DRILLER: EMPIRE

DATE COMPLETED: 11/29/89
GW DEPTH: 12'

LOCATION:
PROJECT NUMBER: 006-2 LZB
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
SB-16		8			CL	GRAY/ORANGE			
	13	9	70%			CLAY LITTLE SILT	1530	11/29/89	H_2O - 0.0
12-14		9			1	(MOIST)	1	1	
	14	9							
	15								
	16								
	17								
	18								
	19								
	20								
	21								
	22								
	23								
	24								

Notes: CLAY FROM 8' TO 14' +? - WATER MUST BE ~12' BUT NOT SURE

SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-17

PROJECT: MATTIACE
DATE STARTED: 11/29/89
ELEVATION: 31.91
DRILLER: EMPIRE

DATE COMPLETED: 11/29/89
GW DEPTH: 21'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-17	1	23 13	90%		SP	BROWN-GRAY GRAVELLY SAND	1155	11/29/89	HNU - 4.0
0-2	2	11 10				SOME SILT (DRY)			
SB-17	3	11 13	90%		SP	TAN GRAVELLY SAND SOME SILT (DRY)	1200	11/29/89	HNU 35
2-4	4	14 11			ML	TAN-GRAY GRAVELLY SILT	"	"	
SB-17	5	14 10	100%		SM	TAN F. SAND-SILT (DRY)	1205	11/29/89	HNU 95
4-6	6	9 9			ML	TAN-GRAY CLAYEY SILT LITTLE GRAVEL (DRY)	"	"	
SB-17	7	9 6	80%		~~SM~~	~~ORANGE~~ M SAND (DRY)	1210	11/29/89	HNU - 50
6-8	8	7 7			~~SM~~ CL	LT ORANGE F. SAND (DRY) ~~LT BROWN~~ SILTY CLAY (DRY)	"	"	HNU - 15
	9								
	10								
SB-17	11	7 6	90%		SM CL ~~SM~~	WHITE SILTY F. SAND (DRY) ORANGE SILTY CLAY (DRY) ~~WHITE SILTY F. SAND (DRY)~~	1230	11/29/89	HNU 80
10-12	12	4 7			CL	LT GRAY CLAY TRACE SILT (DRY)	"	"	HNU 52

Notes:

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-17

PROJECT: MATTIACE
DATE STARTED: 11/29/89
ELEVATION: 31.91
DRILLER: EMPIRE

DATE COMPLETED: 11/29/89
GW DEPTH: 4'

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITEHOUSE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12	7			SP	LT GRAY M. SAND LITTLE CLAY (DRY)			
SB-17	13	7	100%		SP	ORANGE M. SAND LITTLE CLAY (DRY)	1235	11/29/89	H_{nu}-92
12-14	14	7			SP	ORANGE M. SAND (DRY)	1	1	
	15								
	16								
	17								
	18								
SB-17	19	5	90%		SP	RED-BROWN M. SAND (DRY)	1325	11/29/89	H_{nu} 340
18-20	20	7			GP	BROWN SANDY GRAVEL (MOIST)	1	1	
SB-17	21	10	100%	▽	SP	BROWN COARSE SAND SCHEGERU (MOIST)	1330	11/29/89	H_{no}-300
20-22	22	7			SP	BROWN C. SAND (WET)	1	1	H_{no}-120
	23	4			CL	WHITE CLAY (MOIST)			
	24								

Notes:

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-18

PROJECT: MATTIACE
DATE STARTED: 11/28/89
ELEVATION: 34.41'
DRILLER: EMPIRE

DATE COMPLETED: 11/28/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: LWHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-18		19			SP	BROWN M. SAND SOME GRAV, (DRY)	1110	11/28/89	Hnu 50
	1	13							
0-2		11	100%		SP	ORANGE M. SAND SOME GRAV (DRY)	1	1	
	2	10							
SB-18		8			SP	ORANGE-TAN M. SAND SOME GRAV (DRY)	1115	11/28/89	Hnu 90
	3	5							
2-4		3	90%		CL	BROWN SILTY-CLAY (DAMP)	(	)	Hnu - 16
	4	5							
SB-18		7			SP	TAN GRAVELLY C. SAND (MOIST)			
	5	6			CL	BROWN CLAY (MOIST	1120	11/28/89	Hnu - 60
4-6		7	90%		ML	LT BROWN CLAYEY SILT SOME GRAV (MOIST)		)	Hnu - 35
	6	7			SP	ORANGE M-F SAND (DAMP)	\		Hnu - 50
		6			SP	TAN C. SAND SOME GRAV (MOIST)			Hnu 65
SB-18	7	2			SM	WHITE SILTY F SAND (DAMP)	1125	11/28/89	Hnu 50
		5	100%		CL	LT GRAY SILTY CLAY (MOIST)			Hnu 25
6-8		6			SP	TAN-YELLOW M SAND (SOME GRAVEL (DAMP)	1	1	Hnu 85
	8								
	9								
	10								
SB-18		7			SP	TAN M. SAND MUCH GRAVEL (DRY)	1145	11/28/89	Hnu 150
	11	7	100%						
10-12		6			SP	DK ORANGE M. SAND (DRY)	1	1	Hnu - 75
	12	6							

Notes:

SHEET 1 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-18

PROJECT: MATTAGE
DATE STARTED: 11/28/89 DATE COMPLETED: 11/28/89
ELEVATION: 34.4' GW DEPTH: 24'
DRILLER: TEMPLE

LOCATION:
PROJECT NUMBER: 006-2428
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
SB-18		6			SP	DK ORANGE M. SAND (DRY)	1150	11/28/89	Hnu-75
	13	5	100%						
12-14		5							
	14	5							
	15								
	16								
	17								
	18								
SB-18		13			SP	DK ORANGE M. SAND (COMP)			
	19	9	90%		SP	BROWN GRAVELLY C. SAND (COMP) W/ BRICK FRAGS	1200	11/28/89	Hnu-140
18-20		17							
	20	14							
SB-18		8			SP	BROWN GRAVELLY C. SAND (COMP)	1205	11/28/89	Hnu-75
	21	14	100%						
20-22		13							
	22	10							
SB-18		9			SP	BROWN-ORANGE C. SAND SOME GRAV. (MOIST)	1210	11/28/89	Hnu-85
	23	8	100%						
22-24		9							
	24	9							

Notes:

SHEET 2 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-18

PROJECT: MATTIACE
DATE STARTED: 11/28/89
ELEVATION: 34.41
DRILLER: EMPIRE

DATE COMPLETED: 11/28/89
GW DEPTH: 24'

LOCATION:
PROJECT NUMBER: 006-2L ZR
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	24			▽					
SB-18		9			SP	BROWN RED G. SAND SOME GRAV. (WET)	1220	11/28/89	HNU 110
	25	10							
		10							
24-26		9			GP	~~COB~~ BROWN SAND & GRAVEL (WET)	(	1	
	26								
	27								
	28								
	29								
	30								
	31								
	32								
	33								
	34								
	35								
	36								

Notes: .....

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SHEET 3 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-19

PROJECT: MATTACE
DATE STARTED: 11/28/89
ELEVATION: 35.2'
DRILLER: EMPIRE

DATE COMPLETED: 11/29/89
GW DEPTH: 25'

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-19	1	11 13	90%		SP	TAN-BROWN M ~~SAND~~ (DRY) COARSE SAND MUCH PURPLE SPOTS GRAV.	0835	11/28/89	H_{2O} = 210
0'-2'	2	11 10			SP	TAN-ORANGE M. SAND SOME GRAV. (DRY)	"	"	PURPLE IS PLASTIC OR RUBBER
SB-19	3	10 10	90%		SW SM	TAN-YELLOW M-F SAND (DRY) TAN-WHITE F SAND	0840	11/28/89	H_{2O} - 140
2'-4'	4	13 10			SP	TAN-WHITE GRAVELLY C. SAND (DRY)	"	"	"
SB-19	5	7 10	90%		SP	TAN-WHITE GRAVELLY C. SAND (DRY)	0845	11/28/89	H_{2O} - 110
4'-6'	6	8 7			SM	TAN-YELLOW F-SAND (DRY) TAN SILTY SAND (DRY)	"	"	
SB-19	7	8 6	100%		SP	ORANGE GRAVELLY COARSE SAND (DRY)	0850	11/28/89	H_{2O} - 160
6'-8'	8	3 7			CL	LT BROWN CLAY LITTLE SILT (DRY)	"	"	H_{2O} - 70
	9								
	10								
SB-19	11	7 9	80%		CL SM	LT BROWN CLAY LITTLE SAND (DRY) TAN F SAND SOME SILT (DRY)	0910	11/29/89	H_{2O} - 120 H_{2O} - 140
10'-12'	12	8 7			SP	DK ORANGE GRAVELLY C. SAND (DRY)	"	"	ASPHALT CHIPS

Notes: .....

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LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-19

PROJECT: MATTIACE
DATE STARTED: 11/28/89
ELEVATION: 35.2'
DRILLER: EMPIRE

DATE COMPLETED: 11/28/89
GW DEPTH: 25'

LOCATION:
PROJECT NUMBER: 008-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
SB-19		9			ML	TAN-BROWN GRAVELLY SILT SOME CLAY (DAMP)	0915	11/28/89	H_{NU}-48
	13	7							
		8	100%		SM	LT GRAY F. SAND SOME SILT LITTLE CLAY (DAMP)			BRICK FRAGS
12'-14'	14	5					1	1	H_{NU}-110
	15								
	16								
	17								
	18								
SB-19		7			SM	DK ORANGE F. SAND (DAMP)	0930	11/28/89	H_{NU}-110
	19	7	100%						
18-20		7				SLIGHT LAYERING ≈ HORIZONTAL	1	1	
	20	8							
SB-19		11			SM	DK ORANGE F. SAND (DAMP)	0935	11/28/89	H_{NU}-110
	21	9	100%						
20-22		8				LAYERING ≈ HORIZ	1	1	
	22	9							
SB-19		7			SP	DK ORANGE M SAND (DAMP)			
	23	8	100%			SOME DARK BROWN SEAMS	0940	11/28/89	H_{NU} 150
22-24		8							
	24	8					1	1	

Notes: .....

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SHEET 2 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-19

PROJECT: MATTIACE
DATE STARTED: 11/28/89
ELEVATION: 35.2'
DRILLER: EMPIRE

DATE COMPLETED: 11/28/89
GW DEPTH: 25'

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITEHOUSE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	24								
SB-19 24-25	25	6 7	100%	2	SP	DK ORANGE F-M SAND (MOIST)	0945	11/28/89	H₂O 125
25-26	26	7 12				DK ORANGE F-M SAND (WET)	(	)	H₂O 115
	27								
	28								
	29								
	30								
	31								
	32								
	33								
	34								
	35								
	36								

Notes:

SHEET 3 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-20

PROJECT: MATTIACE
DATE STARTED: 11/27/89
ELEVATION: 36.7'
DRILLER: EMPIRE

DATE COMPLETED: 11/27/89
GW DEPTH: 25

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-20	1	1 / 1	80%		SP	TAN M. SAND	1320	11/27/89	HNU - 2.1
0'-2'	2	2 / 3				SOME SILT LITTLE GRAVEL (DAMP)	"	"	
SB-20	3	5 / 7	70%		SP	TAN M. SAND SOME SILT (MOIST)	1325	11/27/89	HNU - 4.2
2'-4'	4	10 / 10			SP	TAN M. SAND SOME SILT (WET)	"	"	HNU - 8.8
SB-20	5	10 / 15	75%		SP	TAN-ORANGE M. SAND SOME GRAVEL (DAMP)	1330	11/27/89	HNU - 0.0
4'-6'	6	13 / 15			SP	TAN-ORANGE M. SAND (DAMP)	"	"	
SB-20	7	15 / 11	100%		SP	TAN-ORANGE M-F SAND (DAMP)	1335	11/27/89	HNU - 0.0
6'-8'	8	13 / 15					"	"	
	9								
	10								
SB-20	11	14 / 16	100%		SM	TAN FINE SAND SOME SILT (DRY)	1405	11/27/89	HNU 12.0
10'-12'	12	18 / 21			SP	TAN-ORANGE M. SAND SOME GRAVEL	"	"	

Notes:
CHANGE BACK TO HNU - OVA NOT CALIBRATED

SHEET 1 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-20

PROJECT: MATTIACE
DATE STARTED: 11/27/89
ELEVATION: 36.71
DRILLER: EMPIRE

DATE COMPLETED: 11/27/89
GW DEPTH: 25'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
SB-20 12'-14'	13 14	18 18 17 16	100%		SP	LT TAN GRAVELLY FINE SAND (DRY)	1410	11/27/89	HNU-140
	15								
	16								
SB-20 16'-18'	17 18	6 6 8 10	100%		SM	LT TAN F SAND SOME SILT (DRY)	1425	11/27/89	HNU-190
SB-20 18'-20'	19 20	6 7 8 12	100%		SP	LT TAN F SAND (DRY) SOME GRAVEL	1430	11/27/89	HNU-160
						SOME LAYERING (BANDING) AT ~5° TO HORIZ			
SB-20 21'-23'	21 22	8 7 7 9	100%		SP	LT TAN MED SAND LITTLE GRAV (DRY)	1435	11/27/89	HNU-100
					CL	LT BROWN SILTY-CLAY			
SB-20 23'-24'	23 24	6 8 9 11	90%		SP	TAN-DK ORANGE M-SAND SOME GRAV. (DAMP)	1445	11/27/89	HNU-55
					CL	TAN-BROWN CLAY-SOME SILT (DAMP)			

Notes: .....

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LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: SB-20

PROJECT: MATTIACE
DATE STARTED: 11/27/89
ELEVATION: 36.7'
DRILLER: EMPIRE

DATE COMPLETED: 11/27/89
GW DEPTH: 25'

LOCATION:
PROJECT NUMBER: 006-2LZB
FIELD GEOLOGIST: WHITEHOUSE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	24								
SB-20 24-25		10			SP	TAN M SAND (MOIST)			
SB-20 25-26	25	16	100%	▽	CL	& TAN-BROWN CLAY SOME SILT (MOIST)	1455	11/27/89	HNU-150
		17			SW	TAN-ORANGE GRAVELLY M-C SAND (WET)	1	1	
	26	12							
	27								
	28								
	29								
	30								
	31								
	32								
	33								
	34								
	35								
	36								

Notes:
SAMPLES TAKEN SAME SPOON (24-25 / 25-26)
BEC. ▽ AT 25'

SHEET 3 OF 3

APPENDIX D

MONITOR WELL BORING LOGS

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-01S

PROJECT: MATTIACE
DATE STARTED: 12/5/89
ELEVATION: 17.97'
DRILLER: EMPIRE

DATE COMPLETED: 12/6/89
GW DEPTH: 7

LOCATION:
PROJECT NUMBER: 06-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
MW-01S	1	13	70%		SM	TAN F. SAND SOME SILT SOME GRAVEL (DRY)	1520	12/5/89	H_{NU} - ND
0'-2'	2	15 15					/	/	
	3								
	4								
	5								ODOR OF PCE? (DRY CLEANING FLUID)
MW-01S	6	7 8			SP	BROWN F. SAND (DRY)	1530	12/5/89	H_{NU} - 32
5'-7'	7	17 7	60%		SP. SM	BROWN-GRY F-M SAND LITTLE GRAV TAN F. SAND SOME SILT LITTLE CLAY (DAMP)	/	/	
	8								
	9								
	10								
MW-01S	11	11 18	60%		CL	TAN SILT SOME GRAVEL (MOIST) GRAY SILTY CLAY	1550	12/5/89	H_{NU} - 8
10'-12'	12	17 20			ML	ORANGE-GRAY SILT (WET) SOME CLAY	/	/	

Notes: SET WELL AT 12'

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-01S

PROJECT: MATTIACE
DATE STARTED: 12/5/89
ELEVATION: 17.97'
DRILLER: EMPIRE

DATE COMPLETED: 12/6/89
GW DEPTH: 7'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
MW-01S	16	7 8	90%		CL	LT GRAY CLAY LITTLE SILT (WET)	1615	12/5/89	HNU 3.2
15-17	17	8 8					"	"	
	18								
	19								
	20								
MW-01S	21	5 6	80%		CL	LT GRAY CLAY	1635	12/5/89	HNU 5.0
B-22	22	6 9					"	"	"
	23								
	24								

Notes: .....

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SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-02S

PROJECT: MATTIACE
DATE STARTED: 12/5/89
ELEVATION: 13.17'
DRILLER: EMPIRE

DATE COMPLETED: 12/8/89
GW DEPTH: 5'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0					ASPHALT			
MW-2S	1	11			SP	DK ORANGE M. SAND (DRY)	0905	12/5/89	Hnu - ND
		13	90%		SM	GRAY SILTY F. SAND (DRY) LITTLE GRAV.			
0-2 (E-30)	2	14					1	1	
		13			ML	GRAY-ORANGE SILT (DRY)			
	3								
	4								
	5			▽					
MW-2S		5			SM	LT BROWN SILTY F. SAND (WET)			
	6	6	60%		SP	BROWN GRAVELLY C. SAND (WET)	0920	12/8/89	Hnu - ND
E-7		6					1	1	
	7	8			GP	BROWN SANDY GRAVEL (WET)			
	8								
	9								
	10								
MW-2S		8			SP	TAN C. SAND (WET)			Hnu - 1.2
	11	12	70%		SP	BLACK C. SAND (WET)	0940	12/8/89	Hnu - ND
10-12		22			SP	GRAY F. SAND SOME SILT (WET)			
	12	10			CL	GRAY-TAN CLAY LITTLE SILT (MOIST)	1	1	Hnu - ND

Notes: WELL SET AT 19'

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-25

PROJECT: MATTIACE
DATE STARTED: 12/5/89
ELEVATION: 13.17'
DRILLER: EMPIRE

DATE COMPLETED: 12/5/89
GW DEPTH: 5'

LOCATION:
PROJECT NUMBER: 006-222B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
~~MW-25~~		8			ML	TAN GRAVELLY SILT (MOIST)	1035	12/5/89	HNU 0.2
	16	9	40%		CL	GRAY-ORANGE SILTY CLAY (MOIST)			
15-17		7			SP	RED M. SAND (WET)	1	1	
	17	9			CL	GRAY-ORANGE SILTY CLAY			
	18								
	19	•							
MW-25		4							
19-21	20	7	60%		CL	TAN-GRAY CLAY (MOIST) SOME SILT	1030	12/5/89	HNU - NO
~~MW-25~~		10							
	21	12			SM	TAN GRAY SILTY F. SAND (WET) SOME CLAY	1	~~12/5/89~~	~~HNU~~
~~MW-25~~									
	22						1	1	
	23								
	24								

Notes: .....

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SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW3D

PROJECT: MATTACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: 19.5'

LOCATION:
PROJECT NUMBER: 006-222B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
MW-3D		20			GP	DK GRAY SANDY GRAVEL			
	1	21	100%		ML	BLACK & GREEN SILT w/ WOOD	1120	11/21/89	OVA - 50 ppm
0'-2'		15			SP	TAN M-C SAND (DRY)			
	2	14			ML	GRAY-GREEN CLAYEY SILT SOME GRAVEL (DRY)	1	1	
MW-3D		7				TAN-GREEN			
2'-4'	3	9	100%		SM	SILTY SAND SOME CLAY (MOIST)	1125	11/21/89	OVA - 1000 ppm
MW-3D		12							
2'-4'	4	10			ML	GREEN CLAYEY SILT SOME SAND SOME GRAVEL (DAMP)	1	1	OVA - 240 ppm
MW-3D		5			ML	TAN-GREEN CLAYEY SILT SOME GRAVEL SOME SAND (DAMP)			
	5	3	100%				1130	11/21/89	OVA - 200 ppm
4'-6'		2			SP	TAN M-C SAND (DAMP)			
	6	5			ML	TAN-GREEN CLAYEY SILT (DAMP) SOME GRAVEL	1	1	DUPE
MW-3D		5			ML	TAN-GREEN CLAYEY SILT SOME GRAVEL SOME SAND (MOIST)			
	7	4	90%				1135	11/21/89	OVA - 180 ppm
6'-8'		4					1	1	DUPE
	8	5							
	9								
	10								
MW-3D		4			ML	TAN-GREEN CLAYEY SILT (DAMP) SOME GRAVEL SOME SAND			
10'-12'	11	3	90%				11:55	11/21/89	OVA - 260 ppm
		3			ML	TAN-GREEN SILT (DAMP) SOME CLAY			
	12	3			SP	TAN M-C SAND	1	1	

Notes: pilot boring to 112' well set at 59'

SHEET 1 OF 10

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-3D

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: ~19.5

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
MW-3D		6			SW	TAN ~~MED~~ SAND (DAMP)	12:00	11/21/89	OVA >1000
	13	6	90%			COARSE			
12'-14'		6			SW	TAN FINE SAND (DAMP)			
	14	7				MED SAND	1	1	
	15								
	16								
	17								
	18								
MW-3D		3			CL	LT BROWN SILTY CLAY (MOIST)	12:15	11/21/89	OVA-60PPM
15-20	19	4	100%						
		6					1	1	
	20	11							
MW-3D		9			SW	TAN M-C SAND (WET) LITTLE GRAV	12:20	11/21/89	OVA >1000PPM
	21	8	100%		SM	TAN M SAND SOME SILT (LOOSE)			
20-22		5			ML	GRAY CLAYEY SILT (WET) LITTLE SAND	1	1	
	22	6			SM	LT GRAY SILTY F SAND (WET)			
	23								
	24								

Notes: .....

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LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-3D

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: 19.5'

LOCATION:
PROJECT NUMBER: 006-2628
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	24								
	25								
MW-3D		12			SP	DK ORANGE M. SAND TR. GRAVEL	18:20	11/21/89	OVA > 1000 ppm
	26	15	50%			(MOIST)			
25-27		13							
	27	15							
	28								
	29								
	30								
MW-3D		10			SW	DK ORANGE M-C SAND LITTLE GRAVEL	13:45	11/21/89	OVA - SEC ppm
	31	8	80%			(WET)			
30-32		13					1	1	
	32	21			1				
	33								
	34								
	35								
MW-3D		5			SW	DK ORANGE C. SAND SOME GRAVEL (WET)	14:00	11/21/89	
35-37	36	6	80%						OVA - 180 ppm

CONT

Notes: 140# HAMMER & 2" SPOONS

SHEET 3 OF 10

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-3D

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: 14.5'

LOCATION:
PROJECT NUMBER: 2X-2L2B
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	36								
MW-3D		9							
35-37 (WET)	37	18				LT ORANGE-BROWN C-SAND WITH GRAVEL (WET)	1	1	
	38								
	39								
	40								
MW-3D		10			SW	DK ORANGE C-M SAND SOME GRAVEL (WET)	14:20	11/21/89	OVA - 160 PPM
	41	10	40%						
40-42		9					1	1	
	42	10							
	43								
	44								
	45								
MW-3D		4			SW	DK ORANGE C-M SAND WITH GRAVEL (WET)	14:40	11/21/89	
43-47	46	6	40%						
		14					1	1	
	47	12							OVA - 60 PPM
	48								

Notes: .....

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SHEET 4 OF 10

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-3D

PROJECT: MATTACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: 19.5'

LOCATION:
PROJECT NUMBER: 006-2.2B
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	48								
	49								
	50								
MW-3D		25			SP	BROWN GRAVELLY C. SAND (WET)	1500	11/21/89	OVA - 35 ppm
	51	12	30%						
50-52		13			CL	WHITE CLAY SOME SAND SOME GRAVEL (MOIST)			OVA - 50 ppm
		25							
	52				SM	WHITE SILTY F. SAND (WET)			
		8 4							
	53								
	54								
	55								
MW-3D		52	30%		SW	LT BROWN GRAVELLY COARSE SAND (WET)	15.30	11/21/89	OVA - 50 ppm
	56	10/5"							
55-57		X							
		X							
	57								
	58				CL	WHITE SILTY CLAY	1145	12/1/89	
	59								
	60								

Notes:

TOP OF CLAY IS AT ABOUT 58 FEET

SHEET 5 OF 10

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-3D

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: 19.5'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	60								
MW-3D	61	9 11	17%		CL	LT GRAY-PINK CLAY TRACE SILT (WET)	1600	11/21/89	OVA - 1 ppm
60-62	62	25 33					1	1	
	63								
	64								
	65								
MW-3D	66	26 19	10%		CL	LT GRAY-PINK CLAY & SILT (WET)	1630	11/21/89	OVA 2.1 ppm
65-67	67	12 16			1	DK GRAY-RED CLAY	1	1	
	68								
	69								
	70								
MW-3D	71	24 11	50%		CL	GRAY CLAY LITTLE SILT (WET)	0740	11/22/89	OVA 2.2 ppm
70-72	72	14 22							

Notes: .....

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SHEET 6 OF 10

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-3D

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: 19.5

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	72								
	73								
	74								
	75								
MW-3D	76	10 14	100%		CL	GRAY CLAY SOME SILT (WET)	0805	11/22/89	OVA - 0.0
75-77	77	14 15				VERY STIFF			
	78								
	79								
	80								
MW-3D	81	11 15	100%		CL	DK-MED GRAY CLAY SOME SILT (WET)	0835	11/22/89	OVA - 0.0
80-82	82	17 18				VERY STIFF			
	83								
	84								

Notes: .....

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SHEET 7 OF 10

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW 3D

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: 19.5'

LOCATION:
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITEHORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	84								
	85								
MW-3D		10			CL	DK-GRAY TO BROWN CLAY (MOIST)	0905	11/22/89	OVA - 0.0
	86	16	10%			VERY STIFF			
		20							
85-87									
	87	20			ML	BRGRAY CLAYEY SILT (MOIST) (ZONE OF SILT IN CLAY)			
	88								
	89								
	90								
MW-3D		12			CL	GRAY CLAY LITTLE SILT (MOIST)	0925	11/22/89	OVA -
	91	14	90%						
90-92		19							
	92	19			ML	GRAY CLAYEY SILT (MOIST)	"	"	
	93								
	94								
	95								
MW-3D		14			ML	GRAY-BROWN CLAYEY SILT (MOIST)	0950	11/22/89	OVA - 0.0
95-97	96	13	90%	CONT					

Notes: .....

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LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-3D

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: 19.5'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	96								
MW-3D 95-97 CONT		19			CL	GRAY CLAY (MOIST) SOME SILT			
	97	18					1	1	1
	98								
	99								
	100								
MW-3D		14			CL	GRAY CLAY SILT	10:15	11/22/89	OVA-0.0
	101	19							
100-102		23							
	102	25					1	1	
	103								
	104								
	105								
MW-3D		15			CL	GRAY-BROWN CLAY SOME SILT (MOIST)	10:40	11/22/89	OVA-0.0
105-107	106	25							
		33			ML	GRAY CLAYEY SILT (MOIST)			
	107	31				BLACK LIGNITE	1	1	
	108								

Notes: .....

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SHEET 9 OF 10

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-3D

PROJECT: MATTIACE
DATE STARTED: 11/21/89
ELEVATION: 35.80'
DRILLER: EMPIRE

DATE COMPLETED: 11/22/89
GW DEPTH: 11.5'

LOCATION:
PROJECT NUMBER: 006128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	108								
	109								
	110								
MW-3D 110-112 (SHELBY TUBE)	111		22"/24 (91%)		CL	GRAY CLAY LITTLE SILT (WET)	11:15	11/22/89	SHELBY TUBE
	112								
	113								
	114								
	115								
	116								
	117								
	118								
	MW9								
	120								

Notes: TOTAL DEPTH 112' pilot hole
well set @ 59'

SHEET 10 OF 10

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-4S(A)

PROJECT: MATTIACE
DATE STARTED: 12/6/89
ELEVATION: 24.0'
DRILLER: EMPIRE

DATE COMPLETED: 12/6/89
GW DEPTH: —

LOCATION: BEHIND LINCO
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
MW-4S	1	4/3	60%		SP	TAN M. SAND & LITTLE SILT (SAND)	1310	12/6/89	H_{NU} - 0.3
0-2	2	4/4			SM	TAN SILTY SAND TR. CLAY (DAMP)	1	1	
					ML	TAN SILT SOME CLAY (DAMP)			
	3								
	4								
	5								
MW-4S	6	5/5	70%		CL	BROWN - GRAY CLAY (DAMP)	1325	12/6/89	H_{NU} - 0.2
5-7	7	7/9					1	1	
	8								
	9								
	10								
MW-4S	11	6/6	40%		CL	GRAY CLAY (DAMP) -SEAMS OF LIGNITE	1340	12/6/89	H_{NU} - ND
10-12	12	7/10					1	1	

Notes: No water encountered, boring abandoned & backfilled

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-4S(4) LOCATION: BEHIND LMCO

PROJECT: MATTIACE
DATE STARTED: 12/6/89
ELEVATION: 24.0
DRILLER: EMPIRE

DATE COMPLETED: 12/6/89
GW DEPTH: NOT HIT

PROJECT NUMBER: 006-212B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
MW-4S	16	5 6	80%		CL	WHITE & RUST CLAY (DRY)	1400	12/6/89	HNU - ND
15-17	17	9 10			CL	GRAY CLAY (DRY)	1	1	
	18								
	19								
	20								
MW-4S	21							12/6/89	HNU
20-22	22						1	1	
	23								
	24								

Notes: No groundwater encountered
move location to MW-4S(B)

SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-4S (B)

PROJECT: MATTIACE
DATE STARTED: 12/8/89
ELEVATION: 31.81
DRILLER: EMPIRE

DATE COMPLETED: 12/8/89
GW DEPTH: NOT ENCOUNTERED

LOCATION: LIMCO BACK LOT
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
MW-4S	1	2 / 2	50%		SP	BROWN M-F SAND SOME GRAVEL (DAMP)	1245	12/8/89	H_{HV} - 3.8
0-2	2	5 / 7					1	1	
	3								
	4								
	5								
MW-4S	6	8 / 8	60%		SP	LT BROWN GRAVELLY M. SAND (DAMP)	1300	12/8/89	H_{HV} - M.Z
5-7	7	8 / 7			SP	LT BROWN GRAVELLY M-C SAND (DAMP)	1	1	
	8								
	9								
	10								
MW-4S	11	12 / 13	50%		SP	WHITE F-M SAND (DAMP)			
					CL	LT GRAY SILTY CLAY (DAMP)	1315	12/8/89	H_{HV} - 6.8
					SP	WHITE F-M SAND (DAMP)			
10-12	12	14 / 15				DK GRAY F-M SAND LITTLE CLAY (DAMP) WHITE F-M SAND (DAMP)	1	1	

Notes: No groundwater encountered, backfill hole

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-45 (B)

PROJECT: MATTIACE
DATE STARTED: 12/5/89
ELEVATION: 31.8'
DRILLER: EMPIRE

DATE COMPLETED: 12/5/89
GW DEPTH: NOT ENCOUNTERED

LOCATION: LIMCO GARAGE LOT
PROJECT NUMBER: 00E.2228
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
MW-45	16	8 11	70%		SM	WHITE SILTY F. SAND (DAMP) LITTLE CLAY	1325	12/8/89	HNU-5.8
15-17	17	8 8			SM CL	TAN SILTY F. SAND (MOIST) LITTLE CLAY WHITE-RED CLAY (DRY)	1	1	
MW-45	18	11 15	50%		CL	WHITE CLAY (DRY) RED CLAY (DRY)	1330	12/8/89	HNU-3.2
17-19	19	15 19				ORANGE CLAY (DRY)	1	1	
	20								
	21								
	22								
	23								
	24								

Notes:
NO WATER
MOVE Boring Location to MW-45

SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-4S

PROJECT: MATTIACE
DATE STARTED: 12/21/89
ELEVATION: 21.941
DRILLER: EMPIRE

DATE COMPLETED: 12/21/89
GW DEPTH: 7'

LOCATION: OSMCO
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE/PATEL
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
MW-4S(C)	1	300 / 110	80%		X	ASPHALT	0925	12/21/89	H_{NU} – ND
0-2	2	15 / 19			ML	BROWN GRAVELLY SILT SOME SAND (DRY)	1	1	
MW-4S (C)	3	28 / 25	50%		SP	BROWN M. SAND LITTLE GRAVEL LITTLE CLAY (DRY)	0935	12/21/89	H_{NU} – ND
2-4	4	25 / 22			1		1	1	
MW-4S (C)	5	13 / 13	100%		ML 1	BROWN-BLACK SILT SOME CLAY LITTLE GRAVEL (DRY)	0940	12/21/89	H_{NU} – ND
4-6	6	11 / 10			SP 1	BROWN M. SAND (DAMP) BROWN M. SAND (DRY)	1	1	
MW 4S(C)	7	11 / 4	40%	▽	SP	BROWN M. SAND (WET)	0945	12/21/89	H_{NU} – ND
6-8	8	5 / 6			1		1	1	
MW-4S(C)	9	9 / 16	90%		SF	BROWN GRAVELLY M-C SAND (WET)	0950	12/21/89	H_{NU} – ND
8-10	10	10 / 20			SC	BROWN SAND SOME CLAY (MOIST)	1	1	
MW-4S(C)	11	27 / 24	10%		SP	BROWN M-C SAND (WET)	1005	12/21/89	H_{NU} – ND
10-12	12	19 / 20			1	SOME GRAVEL	1	1	

Notes: water @ ~ 7' set well @ 15'

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-4S

PROJECT: MATTIACE
DATE STARTED: 12/21/89
ELEVATION: 21.94'
DRILLER: EMPIRE

DATE COMPLETED: 12/21/89
GW DEPTH: 7'

LOCATION: LIMCO
PROJECT NUMBER: 006-2LZB
FIELD GEOLOGIST: WHITEMORE/PAGE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
MW-4S (2)	16	12 15	50%		SP	BROWN MC SAND	11.35	12/21/89	H_{MW}-ND
15-17	17	10 14				little Gravel and Silt	1	1	
	18								
	19								
	20								
	21								
	22								
	23								
	24								

Notes: .....

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SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-5S

PROJECT: MATTIACE
DATE STARTED: 11/30/89
ELEVATION: 17.69
DRILLER: EMPIRE

DATE COMPLETED: 11/30/89
GW DEPTH: 7'

LOCATION:
PROJECT NUMBER: 006-222B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0					ASPHALT - 6"			
MW-5S 0-2	1	6 / 7	100%		SP	TAN M. SAND (DRY)	0900	11/30/89	HNU - 160
	2	9 / 8							
	3								
	4								
	5								
MW-5S 5-7	6	4 / 4	50%		SP	TAN-ORANGE M-C SAND	0910	11/30/89	HNU - 60
	7	5 / 5				SOME BLACK LAYERS ~5% (DAMP)	"	"	"
	8			▽					
	9								
	10								
MW-5S 10-12	11	4 / 5	60%		SP	BROWN M-C SAND (WET)	0930	11/30/89	HNU - 85
	12	6 / 7					"	"	

Notes: water @ ~7' well set @ 19.5'

SHEET 1 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-5s

PROJECT: MATTIACE
DATE STARTED: 11/30/89
ELEVATION: 17.69'
DRILLER: EMPIRE

DATE COMPLETED: 11/30/89
GW DEPTH: 7'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
MW 5s	16	5 5	40%		SP	TAN COARSE SAND (WET)	0950	11/30/89	HNU-56.
15-17	17	5 5							
	18								
	19								
	20								
MW 5s	21	5 6			SP	TAN C. SAND (WET)	1020	11/30/89	HNU-125
20-22	22	6 7			GC	WITH CLAYEY GRAVEL (WET)			
	23								
	24								

Notes:

SHEET 2 OF 2

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-5D

PROJECT: MATTIACE
DATE STARTED: 12/6/89
ELEVATION: 17.82'
DRILLER: EMPIRE

DATE COMPLETED: 12/7/89
GW DEPTH: 6'

LOCATION: EDMOS LOT
PROJECT NUMBER: 206-2L2B
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
	11								BZ-11MU -0.1
	12								

Notes: SEE MW-5S FOR CLASSIFICATION OF SOILS for 0-12 feet log

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-5D

PROJECT: MATTIACE
DATE STARTED: 12/6/89
ELEVATION: 17.82'
DRILLER: EMPIRE

DATE COMPLETED: 12/7/89
GW DEPTH: 6'

LOCATION: EDMOB LOT
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
	16								
	17								
	18								
	19								
	20								
	21								
	22								
	23								
	24								

Notes: SEE MW-5S FOR CLASSIFICATION OF SOILS FOR 12 - 24 ft log

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-5D

PROJECT: MATTIACE
DATE STARTED: 12/4/89
ELEVATION: 17.82'
DRILLER: EMPIRE

DATE COMPLETED: 12/7/89
GW DEPTH: 6'

LOCATION:
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	24								
	25								
MW-5D	26	3 6	60%		ML	WHITE SILT SOME CLAY (WET)	0740	12/7/89	HNU 148
25-27	27	9 14			/	CLAY SEAMS W/ GRAVEL	/	/	
	28								
	29								
	30								
MW-5D	31	7 13	60%		CL	LT GRAY CLAY SOME RED GRAVEL	0805	12/7/89	HNU - 201
30-32	32	22 20			/		/	/	
	33								
	34								
	35								
MW-5D	36								

Notes: well set @ 30.25'

SHEET 3 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-6S

PROJECT: MATTIACE
DATE STARTED: 12/7/89
ELEVATION: 36.83'
DRILLER: EMPIRE

DATE COMPLETED: 12/7/89
GW DEPTH: ~22'

LOCATION: NW LAGOON SITE
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
MW-6S		28							
	1	22	60%		ML	TAN-OLIVE GRAVELLY SILT (ORG)	1435	12/7/89	HNU-420
0-2		14					1	1	
	2	13							
	3								HNU
									BZ-0.4
	4								HOLE-320
	5								
MW-6S		5			SP	TAN M. SAND (DAMP) LITTLE SILT	1450	12/7/89	HNU 400
	6	4	50%						
5-7		6					1	1	
	7	4							
	8								
	9								
	10								BZ-0.2
MW-6S		1			SP	TAN-IT ORANGE (DAMP) M-F SAND LITTLE SILT			
	11	2	70%				1505	12/7/89	HNU-420
10-12		1					1	1	
	12	5							

Notes: water @ ~22' well set @ 30'

SHEET 1 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-6S

PROJECT: MATTIACE
DATE STARTED: 12/7/89
ELEVATION: 36.83'
DRILLER: EMPIRE

DATE COMPLETED: 12/7/89
GW DEPTH: ~ 23'

LOCATION: NW L OF SITE
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
MW-6S	16	5 10	50%		SP	TAN-LT ORANGE GRAVELLY M. SAND (GRAD)	1520	12/7/89	HNU-360
15-17	17	10 11					1	1	
	18								
	19								
	20								
MW-6S	21	5 6	60%		SP	TAN-ORANGE M-C SAND (MOIST)	1535	12/7/89	HNU-330
20-22	22	7 11					1	1	
	23								
	24								

Notes:

SHEET 2 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-06S

PROJECT: MATTIACE
DATE STARTED: 12/8/89
ELEVATION: 36.83'
DRILLER: EMPIRE
DATE COMPLETED: 12/8/89
GW DEPTH: NZB'
LOCATION: NW C of SITE
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	24								
	25	6			SP	TAN GRAVELLY M-C SAND (WET)	1600	12/8/89	H_{NU} -3 2
MW6S	26	11	60%						
25-27	27	12 15			SM	TAN SILT SOME F. SAND (WET)	1	1	
	28								
	29								
	30								
MW6S	31	5 6	90%		CL	BROWN SILTY CLAY (DAMP)	1620	12/8/89	H_{NU} -240
30-32		6			1				
	32	6			CL	BROWN CLAY LITTLE SILT (DAMP)	1	1	
	33								
	34								
	35								
	36								

Notes:

SHEET 3 OF 3

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/18/89 DATE COMPLETED: 12/22/89
ELEVATION: 74.70 GW DEPTH: ~65'
DRILLER: EMPIRE

LOCATION: GPP - NW OF SITE
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
MW-7D	1	1/2	30%		ML	BROWN GRAVELLY SILT	1030	12/18/89	H_{AV} - ND
0-2	2	2/4				LITTLE SAND (DAMP)	1	1	
	3								
	4								
	5								
MW-7D	6	5/6	40%		SP	LT BROWN GRAVELLY M-F SAND (DRY)	1045	12/18/89	H_{AV} - ND
5-7	7	5/6					1	1	
	8								
	9								
	10								
MW-7D	11	4/5	40%		SP	BROWN GRAVELLY M. SAND (DRY)	1100	12/18/89	H_{AV} - ND
10-12	12	5/4			SP	WHITE GRAVELLY M-C SAND (DRY)	1	1	

Notes: Pilot boring to 138' MW-7D set @ 120' well MW-7S drilled adjacent to MW-7D and set @ 75.5'

SHEET 1 OF 12

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/18/89
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED: 12/22/89
GW DEPTH: ~65'

LOCATION: GPP - NW OF SITE
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
MW-7D	16	4 5	60%		SP	PINK-TAN GRAVELLY M. SAND LITTLE CLAY (DRY)	1115	12/18/89	HNU - ND
15-17	17	5 6			SM	WHITE F. SAND LITTLE CLAY (DRY)	1	1	
	18								
	19								
	20								
MW-7D	21	WT. WT.	100%		CL	LT GRAY-GREEN CLAY (DAMP)	1130	12/18/89	HNU - ND
20-22	22	2 1			SC	LT GRAY-TAN SANDY CLAY (MOIST)	1	1	
	23								
	24								

Notes: .....

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SHEET 2 OF 12

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/15/89
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED: 12/22/89
GW DEPTH: ~65'

LOCATION: GPP-NW OFFSITE
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	24								
	25								
MW-7D		7			SM	GRAY-TAN SILT (DRY) TR. F. SAND	1155	12/18/89	H_{nu} - ND
	26	12	10%						
25-27		12					1	1	
	27	11							
	28								
	29								
	30								
		4			ML	BROWN SILT (DRY) TR. CLAY			
MW-7D	31	5					1210	12/18/89	H_{nu} - N.D
		8	100%						
30-32		8					1	1	
	32								
	33								
	34								
	35								
MW-7D		8			SP	BROWN GRAVELLY C. SAND (DAMP)	1315	12/18/89	H_{nu} - ND
35-37	36	8	60%						

Notes: .....

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SHEET 3 OF 12

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/18/89
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED: 12/22/89
GW DEPTH: 26.5'

LOCATION: GPP - NW OF SITE
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	36								
MW-7D 35-37 (CONT)		7	60%		SP	BROWN M-F SAND (DRY) (DAMP)	1315	12/18/89	H_{NU} - ND
	37	10			SM	BROWN SILT LITTLE F. SAND	1	1	
	38								
	39								
	40								
MW-7D		3			CL	GRAY-GREEN CLAY TR. SILT (DRY)	1330	12/18/89	H_{NU} - ND
	41	4	95%						
40-42		5					1	1	SOME PERCHED WATER AT 40
	42	8							
~~MW-7D~~									
	43								
	44								
	45								
MW-7D		6			CL	GRAY GREEN CLAY TR. SILT (DRY)			
	46	10					1340	12/18/89	H_{NU} - 4.5
45-47		12	100%		SM	TAN-LT BROWN SILTY F. SAND (DRY)	1	1	H_{NU} - 260
	47	12							
	48								

Notes: .....

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SHEET 4 OF 12

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/18/89
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED: 12/22/89
GW DEPTH: ~65'

LOCATION: SPP-NW OFF SITE
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	48								
	49								
	50								
MW-7D	51	5 9	90%		SW	TAN-M-F SAND (DRY)	1355	12/18/89	HNU - 280
SS-52	52	9 10			SP	DK ORANGE M-F SAND (DRY)	1	1	
	53								
	54								
	55								
MW-7D	56	8 10	80%		ML	TAN-LT BROWN SILTY F. SAND (MOIST)	1425	12/19/89	HNU - 280
SS-57	57	14 12			SP SP SP	WHITE GRAVELLY M. SAND (DRY) BLACK M-F SAND (DRY) DK ORANGE M. SAND (DRY) SOME GRAVEL	1	1	
	58								
	59								
	60								

Notes: .....

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LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/13/89
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED: 12/22/89
GW DEPTH: 26.5

LOCATION: GPP - NW OF SITE
PROJECT NUMBER: 805-2LZB
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	60								
MW-7D	61	12 17	80%		SW	DK ORANGE C, SAND SOME GRAVEL (WET)	1445	12/13/89	Hnu 260
60-62	62	13 11			SP SM ML	DK ORANGE F. SAND (DAMP) DK ORANGE SILT WITH F. SAND (DAMP) DK ORANGE CLAYEY SILT (DRY)	1	1	
	63								
	64								
	65								
MW-7D	66	5 8	90%		ML	LT BROWN GRAVELLY SILT (DAMP)	1505	12/18/89	Hnu - 48
65-67	67	12 14			ML SP	GRAY GRAVELLY SILT (DAMP) LT TAN GRAVELLY F-M SAND (DAMP)	1	1	Hnu - 42
	68								
	69								
	70								
MW-7D	71	4 5	70%		ML	DK BROWN SILTY F. SAND (WET)	1525	12/18/89	Hnu - 13
70-72	72	8 10			ML	DK BROWN SILTY F SAND (WET)	1	1	

Notes: .....

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SHEET 6 OF 16

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/18/89
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED: 12/22/89
GW DEPTH: ~6.5'

LOCATION: GPP-NW OFF SITE
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	72								
	73								
	74								
	75								
MW-7D	76	5 6	90%		SP	BROWN F-M SAND (WET)	1550	12/18/89	H_{NU} 7.4
75-77	77	9 10					1	1	
	78								
	79								
	80								
MW-7D	81	8 8			SW	BROWN C-M SAND (WET)	1610	12/18/89	H_{NU} - 78
80-82	82	13 15	80%			BROWN F-M SAND (WET)	1	1	H_{NU} - 46
	83								
	84								

Notes:

SHEET 7 OF 12

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/18/89
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED: 12/22/89
GW DEPTH: ~6.5'

LOCATION: SPP - NW of SITE
PROJECT NUMBER: 006-2228
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	84								
	85								
MW-7D		6			SP	BROWN GRAVELLY C-M SAND (WET)	0820	12/14/89	HNU - 3.2
	86	8	70%						
85-87		8							
	87	8			SM	LT BROWN-GRAY SILTY SAND (WET) LITTLE GRAVEL	1	1	
	88								
	89								
	90								
MW-7D		3			SP	BROWN C. SAND SOME GRAVEL (WET)	0855	12/14/89	HNU - 4.4
	91	6	90%		1				
90-92		6					1	1	
	92	20				ROCK IN NOSE			
	93								
	94								
	95								
MW-7D		2	90%		SP	BROWN MC SAND LITTLE GRAV (WET)	0925	12/15/89	HNU - 2.4
95-97	96	3			1		1		

Notes: .....

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SHEET 8 OF 13

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

LOCATION: GAP - NW OF SITE
PROJECT: MATTIACE
DATE STARTED: 12/18/89 DATE COMPLETED: 12/22/89
ELEVATION: 74.70' GW DEPTH: ~65'
DRILLER: EMPIRE
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
MW-7D 95-97 (CONT)	95	5	90%		SP	BROWN M-C SAND LITTLE GRAVEL (WET)	0925	12/19/89	Hnu - 2.4
	97	12					1	1	
	98								
	99								
	100								
MW-7D		11			SW	LT BROWN C SAND (WET)			
	101	14	100%		GW	LT BROWN M. GRAVEL	1115	12/19/89	Hnu - 7.4
100-102		19			SP	BROWN GRAVELLY SAND			
	102	27			1	SOME SILT LITTLE CLAY (WET)	1	1	Hnu - 4.2
	103								
	104								
	105								
MW-7D		9			ML	BROWN GRAVELLY SILT			
	106	11	30%			SOME CLAY (WET)	1430	12/19/89	Hnu - 2.3
105-107		10							
	107	10					1	1	
	108								

Notes: .....

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SHEET 9 OF 12

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/18/89
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED: 12/22/89
GW DEPTH: 65'

LOCATION: GPP - NW OF SITE
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	108								
	109								
	110								
MW-7D	111	12	90%		SM	WHITE - LT TAN SILTY F. SAND TR. CLAY (WET)	1615	12/19/89	H_{eu} - ND
110-112	112	18 30 42					1	1	
	113								
	114								
	115								
MW-7D	116	3 5	70%		SM	WHITE - LT TAN SILTY F. SAND (WET)	0925	12/20/89	H_{eu} - ND
115-117	117	17 25					1	1	
	118								
	119								
	120								

Notes:

SHEET 10 OF 12

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/10/84
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED:
GW DEPTH:

LOCATION: GPP - NW OF SITE
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	120								
MW-7D	121	7 16	50%		CL	GRAY CLAY (DRY)	1025	12/21/84	HNU - ND
120-122	122	25 40					1	1	SPOON FULL OF C. GRAVEL - 2" OF CLAY IN NOSE
	123								
	124								
	125								
MW-7D	126	13 14	80%		CL	GRAY DENSE CLAY TR. SILT (DRY)	1920	12/22/84	HNU - ND
125-127	127	18 20				SOME BLACK LIGNITE SPOTS	1	1	
	128								
	129								
	130								
MW-7D	131	10 14	70%		CL	MULTI COLORED GRAY-RED-YELLOW CLAY (DRY)	1010	12/22/84	HNU - ND
130-132	132	26 22					1	1	

Notes:

SHEET 11 OF 13

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-7D

PROJECT: MATTIACE
DATE STARTED: 12/15/89
ELEVATION: 74.70'
DRILLER: EMPIRE

DATE COMPLETED: 12/22/89
GW DEPTH: ~65'

LOCATION: GPP-NW OF SITE
PROJECT NUMBER: 006-222B
FIELD GEOLOGIST: WHITEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	132								
	135								
	134								
	135								
MW-7D	136	//	~18"		CL	SHELBY TUBE	1130	12/22/89	
135-136½	137	//				OF CLAY	1	1	
MW-3D	136½-138	//	~10"		CL	SHELBY TUBE DUPLICATE	1210	12/22/89	
	138	//					1	1	
	139								
	140								
MW-7D	141								
140½-142	142						1	1	
	143								
	144								

Notes:

SHEET 12 OF 12

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-08D

PROJECT: MATTIACE
DATE STARTED: 12/13/89
ELEVATION: 56.10'
DRILLER: EMPIRE
DATE COMPLETED: 12/13/89
GW DEPTH: ~42'
LOCATION: N OF SITE
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	0								
MW-08D	1	1/2	10%		SM	BROWN SILTY F. SAND (DAMP)	0910	12/13/89	HNU - ND
0-2	2	4/7				SOME ROOTS	1	1	
	3								
	4								
	5								
MW-08D	6	8/8	10%		SM SM SM	BROWN SILTY F. SAND (DAMP) WHITE SILTY F. SAND (DAMP) BROWN-BLACK SILTY F SAND (DAMP)	0930	12/13/89	HNU - ND
5-7	7	12/11			SP	BLACK-ORANGE C-M. SAND (DRY)	1	1	
	8								
	9								
	10								
MW-08D	11	2/5	70%		SP	TAN-ORANGE M. SAND (DRY) LITTLE GRAVEL	0945	12/13/89	HNU - ND
10-12	12	7/4					1	1	

Notes: Well MW-8D set @ 61', boring for MW-8S drilled adjacent to MW-8D. well MW-8S set at 49 feet

SHEET 1 OF 6

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-08D

PROJECT: MATTIACE
DATE STARTED: 12/13/89
ELEVATION: 56.10'
DRILLER: EMPIRE

DATE COMPLETED: 12/13/89
GW DEPTH: ~42'

LOCATION: N. OF SITE
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	12								
	13								
	14								
	15								
MW-08D	16	4	15%		SP	TAN M. SAND (DRY)	1005	12/13/89	Hnu - ND
		6				TRACE GRAVEL			
15-17	17	6					1	1	
	18								
	19								
	20								
MW-08D	21	4	80%		SP	TAN-YELLOW M SAND LITTLE C. SAND (DRY)	1025	12/13/89	Hnu - ND
		4							
20-22		3					1	1	
	22	3			SP	TAN-WHITE M. SAND (DRY)			
	23								
	24								

Notes:

SHEET 2 OF 6

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-08D

PROJECT: MATTIACE
DATE STARTED: 12/13/89
ELEVATION: 56.10'
DRILLER: EMPIRE

DATE COMPLETED: 12/13/89
GW DEPTH: ~42'

LOCATION: N OF SITE
PROJECT NUMBER: 006-2LEB
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	24								
	25								
MW-08D		2			SP	TAN M. SAND (DAMP)			
	26	1	70%				1045	12/13/89	HNU - ND
25-27		1							
	27	1			SM	TAN-GRAY SANDY SILT LITTLE GRAVEL (MOIST)	1	1	
	28								
	29								
	30								
		WT			CL	GRAY-TAN CLAY TRACE SAND (MOIST)			
MW-08D	31	WT	100%		SM	GRAY SILTY F. SAND (WET) LITTLE CLAY	1110	12/13/89	HNU - ND
		1							
30-32	32	1			CL	GRAY-TAN CLAY SOME (DAMP) SAND	1	1	
	33								
	34								
	35								
MW-08D		2			CL	DK GREEN CLAY (DAMP)			
35-37	36	2	100%				1130	12/13/89	HNU - ND

Notes: .....

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LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-08D

PROJECT: MATTIACE
DATE STARTED: 12/13/89
ELEVATION: 56.10'
DRILLER: EMPIRE

DATE COMPLETED: 12/13/89
GW DEPTH: ~42'

LOCATION: N OF SITE
PROJECT NUMBER: 006-2228
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	36								
MW-08D 35-37 CONT		7	100%		ML	BROWN-OLIVE CLAYEY SILT (MOIST)	1130	12/13/89	HNU - 102
	37	8			SW	WHITE M-C SAND (DRY) TRACE GRAVEL	1	1	HNU - 45
	38								
	39								
	40								
MW-08D		5			SM	TAN-LT GRAY			
	41	6	70%			SILTY F. SAND (MOIST)	1200	12/13/89	HNU - 86
MW-42		7							
	42	7			SP	TAN-LT GRAY M SAND (WET)	1	1	HNU - 54
	43								
	44								
	45								
MW-08D		5			SP	TAN-OLIVE F-M SAND (WET)	1225	12/13/89	HNU - ND
	46	5	70%						
45-47		10					1	1	
	47	9							
	48								

Notes:

SHEET 4 OF 6

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-08D

PROJECT: MATTIACE
DATE STARTED: 12/13/89
ELEVATION: 56.10'
DRILLER: EMPIRE

DATE COMPLETED: 12/13/89
GW DEPTH: ~42'

LOCATION: N OF SITE
PROJECT NUMBER: 006-2L2B
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	48								
	49								
	50								
MW-08D	51	6 7	50%		SP	BROWN-OLIVE GRAVELLY M-C SAND (WET)	1320	12/13/89	H_{AV} - 75
50-52	52	10 11					1	1	
	53								
	54								
	55								
MW-08D	56	6 7	80%		SP	TAN C-M SAND (WET) TRACE GRAVEL	1350	12/13/89	H_{AV} - 128
56-57	57	9 10			SM	TAN FINE SAND (WET)	1	1	
	58								
	59								
	60								

Notes: .....

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SHEET 5 OF 6

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: MW-80

PROJECT: MATTHEE
DATE STARTED: 12/13/89
ELEVATION: 56.10'
DRILLER: EMPIRE

DATE COMPLETED: 12/13/89
GW DEPTH: ~42'

LOCATION: N. OF SITE
PROJECT NUMBER: 005-2228
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	60								
MW-80D		4			SP	TAN & SAND SOME GRAV (WET)	1425	12/13/89	62
	61	5	90%		CL	TAN SILTY CLAY (MOIST)			HNU -
		6							HNU - 36
60-62					CL	TAN CLAY (DRY)	1	1	
	62	8							HNU - ND
	63								
	64								
	65								
	66								
	67								
	68								
	69								
	70								
	71								
	72								

Notes: TOP OF CLAY AT 61'

SHEET 6 OF 6

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: PZ-1

PROJECT: MATTIACE
DATE STARTED: 12/21/89
ELEVATION: 33.95'
DRILLER: EMPIRE

DATE COMPLETED: 12/21/89
GW DEPTH: 24'

LOCATION: W. SIDE OF SITE
PROJECT NUMBER: 006-212B
FIELD GEOLOGIST: ~~WITHHELD~~ PATEL
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USGS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	20								
	21								
	22					SEE SB-18			
	23								
	24								
	25								
	26								
	27								
	28	3							
PZ-1	29	3 3 5 6 8	50%	SC		Wet. Yellowish Red SILTY CLAY, little medium Sand, trace, Gravel	13:20 (5.20)	12/21/89	Hnu 5 ppm
28-30							1	1	
	30								
	31								
	32								

Notes: SEE SB-18 FOR LOG TO 26' PZ-1 set @ 30'

SHEET 1 OF 1

LOG OF BORING

EBASCO SERVICES, INC. BORING NUMBER: PZ-2

PROJECT: MATTIACE
DATE STARTED: 12/20/89
ELEVATION: 30.89'
DRILLER: EMPIRE

DATE COMPLETED: 12/20/89
GW DEPTH:

LOCATION: E SIDE OF SITE
PROJECT NUMBER: 006-2128
FIELD GEOLOGIST: WHITTEMORE
SAMPLING METHOD: SPLIT SPOON
DRILLING METHOD: HSA

SAMPLE ID	DEPTH (feet)	BLOWS PER 6"	RECOVERY %	PROFILE	USCS CLASS	MATERIAL DESCRIPTION	COLLECTION TIME	COLLECTION DATE	COMMENTS
	20								
	21								
	22					SEE SB-03			
	23								
	24								
	25								
PZ-2 25-27	26	3 8 12	90%		CL	GRAY CLAY TR. SILT (DRY)	1300	12/20/89	H_{NU} - 280
	27	15							
	28								
	29								
	30								
	31								
	32								

Notes: SEE SB-03 FOR LOG TO 25' PZ-2 set @ 27.5'

SHEET 1 OF 1

WOODWARD–CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING MW-3 SHEET 1 OF 1

PROJECT AND LOCATION: Mobil Petrochemicals, Glen Cove LI		ELEVATION AND DATUM: 5.5' M.S.L.	PROJECT NO: 82C4548.A1
DRILLING AGENCY: Empire Soils	FOREMAN: Jeff Jaworski	DATE STARTED: 7/24/85 1230	DATE FINISHED: 7/25/85 1400
DRILLING EQUIPMENT: 550 CME		COMPLETION DEPTH: 53	ROCK DEPTH: NE
SIZE AND TYPE OF BIT: 6.25" ID	SIZE AND TYPE CORE BARREL:	NO SAMPLES: DIST 11	UNDIST: CORE:
CASING:		WATER LEVEL (FT): FIRST 28	COMPL 28 24 HR:
CASING HAMMER: WEIGHT: DROP:		BORING ANGLE AND DIRECTION: vert	
SAMPLER: SPLIT SPOON 3" ID		INSPECTOR: C.J Mutta	
SAMPLER HAMMER: WEIGHT 300 lbs DROP 3'			

CASING PENETR. RESIST. BL/FT	DESCRIPTION	PIEZ.	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV. FT	SAMPLES PENETR RESIST BL/6 IN.	SAMPLES time	OVA READINGS (PPM) SAMPLE	OVA READINGS (PPM) AMB. AIR	OVA READINGS (PPM) time	REMARKS
	Grey green FILL; composed of SAND, some Gravel (granule and pebble), trace Silt and Clay (dry)		1		0.7	15 15 9 10	1238	6	0.3	1248	lense of plastic material (have ?). 1mm in thickness, also some plastic bag fragments
	Yellow brown mtoc SAND, trace Gravel (granule) (dry)		5 6 7		1.7	5 6 8 8	1258	6	0.2	1305	
	Lt brown to tan f to c SAND, some Gravel (granule and pebble) (dry)		10 11 12		1.6	11 7 10 13	1313	70	0.2	1321	probe in boring: 6ppm ambient: 0.2
	as above with increase in gravel content		15 16 17		1.7	5 11 12 14	1330	70	0.4	1336	probe in boring: 30ppm ambient: 0.2

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LOG OF BORING MW-3 SHEET 2 OF 2

CASING PENETR RESIST BL/FT	DESCRIPTION	PIEZ	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV FT	SAMPLES PENETR RESIST BL/6IN	TIME	OVA READINGS (PPM) SAMPLE	OVA READINGS (PPM) AMB. AIR	OVA READINGS (PPM) time	REMARKS
	Brown f to c SAND, some Gravel (granule and pebble) and Silt and Clay (dry)		21		1.5	6 8 14	1347	150	0.3	1358	samples for analysis: MW3-20 0009, 0010 - Aquatec C - GTC
			22								
			23								
			24								
	Brown m to c SAND (moist) (solvent odor, moisture appears to be, in part, due to solvent) (moisture on inside walls of split spoon evaporated within 30 sec)		25			3					from boring: 15 ppm ambient peaked at 3 ppm for an instant then stabilized at < 1 ppm
			26		2	5 8 9	1520	150	0.2	1527	
			27								
			28								
			29								
	Brown f to m SAND, some Gravel (granule and pebble) trace Silt and Clay (wet)		30			2					
			31		1.8	2 2	1552	100	0.2	1602	
			32								
			33								
			34								
	Brown m to c SAND, some f Sand and Gravel (granule and pebble) trace Silt and Clay (wet) becoming Brown m SAND and f GRAVEL (wet)		35			4					
			36		1.8	11 15	1607	100	0.2	1621	
			37			13					
			38								
			39								
	Brown m to c SAND, some Gravel (granule and pebble) trace Silt and Clay (wet)		40			1					
			41		0.7	1 2	1624	70	0.2	1640	
			42			1					
			43								
			44								
	as above		45			4 7	1650	90	0.1	1700	

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LOG OF BORING MW-3 SHEET 3 OF 3

CASING PENETR RESIST BL/FT	DESCRIPTION	PIEZ	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV FT	SAMPLES PENETR RESIST BL/6IN.	SAMPLES time	OVA READINGS (PPM) SAMPLE	OVA READINGS (PPM) AMB AIR	OVA READINGS (PPM) time	REMARKS
	as above		47			11 14					boring: 5 ppm ambient peaked at 10 ppm for an instant then stabilized at 4 1 ppm
			48								
			49								
			50								
	as above					3		100	0.2		
			51			7 9	1730	25	0.2		
	Lt grey to white sandy CLAY (moist		52			11					
	Grey f to m SAND (wet) no sample was retained sample was retrieved to evaluate thickness of sandy CLAY		53								
			54								
			55								
			56								
			57								
			58								
			59								
			60								
			61								
			62								
			63								
			64								
			65								
			66								
			67								
			68								
			69								
			70								
			71								

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LOG OF BORING MW-7 SHEET 1 OF

PROJECT AND LOCATION: Mattiace Petrochemicals Glen Cove LI		ELEVATION AND DATUM: 28.38' M.S.L.	PROJECT NO: 72C-1542-21
DRILLING AGENCY: Empire Soils	FOREMAN: Jeff Jaworski	DATE STARTED: 7/29/87 0900	DATE FINISHED: 7/29/87 1100
DRILLING EQUIPMENT: 550 CME		COMPLETION DEPTH: 25.5 ft	ROCK DEPTH: NE
SIZE AND TYPE OF BIT: 6.25 ID	SIZE AND TYPE CORE BARREL:	NO SAMPLES: DIST 5	UNDIST / CORE
CASING		WATER LEVEL (FT): FIRST ~15	COMPL / 24 HR
CASING HAMMER / WEIGHT / DROP		BORING ANGLE AND DIRECTION: vertical	
SAMPLER: SPLIT SPOON 3" ID		INSPECTOR: C J Motta	
SAMPLER HAMMER / WEIGHT: 300 lbs / DROP: 3 ft			

CASING PENETR. RESIST. BL/FT	DESCRIPTION	PIEZ.	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV. FT	SAMPLES PENETR RESIST BL/6 IN.	time	OVA READINGS (PPM) SAMPLE	OVA READINGS (PPM) AMB. AIR	OVA READINGS (PPM) time	REMARKS
	Grey green FILL; composed of SAND, some Gravel (granule and pebble), trace Silt and Clay (moist)		1		1	6 13 10 5	0903	70	0.2	0915	bore hole 5 ppm ambient < 0.1 MW 7-01 0006 0005 } Aquatec D GTC
	Grey green silty SAND; lenses of fine SAND and SILT (moist)		5 6		1.7	5 7 4 5	0920	3	0.2	0928	
	Yellow brown sandy SILT; some Gravel (moist)		10 11		1.6	5 3 3 6	0936	3	0.2	0946	sample for analysis; MW7-11 0004 0003 Aquatec E - GTC
	Grey to brown mtoc SAND; some Gravel; trace Silt and Clay (wet)		15 16		1.7	5 10 16 18	0957	15	0.3	1006	

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LOG OF BORING MW-7 SHEET 2 OF 2

CASING PENETR RESIST BL/FT	DESCRIPTION	PIEZ	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV FT	SAMPLES PENETR RESIST BL/6IN	TIME	OVA READINGS (PPM) SAMPLE	OVA READINGS (PPM) AMB. AIR	OVA READINGS (PPM) time	REMARKS
	as above		21			4					borehole 0.5
	(grey SILT; trace Sand (wet)				1.9	5 7 9	1015	0.4	0.2	1026	ambient 0.1
	Black PEAT (wet)		22								
			23								
	Grey silty SAND (wet)		24								descriptions based on cuttings (return from boring
	Brown SILT and CLAY (wet)		25								
			26								
			27								
			28								
			29								
			30								
			31								
			32								
			33								
			34								
			35								
			36								
			37								
			38								
			39								
			40								
			41								
			42								
			43								
			44								
			45								

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LOG OF BORING MW 8

SHEET 1 OF 1

PROJECT AND LOCATION: Mattiace Petrochem., Glen Cove NY		ELEVATION AND DATUM: 28'.38 M.S.L	PROJECT NO: 82C4548-4A
DRILLING AGENCY: Empire Soils Investigations, Inc.	FOREMAN: Jeff Jaworski	DATE STARTED: 7/30/85	DATE FINISHED: 8/5/85
DRILLING EQUIPMENT: CME-550		COMPLETION DEPTH: 77'	ROCK DEPTH: N/A
SIZE AND TYPE OF BIT	SIZE AND TYPE CORE BARREL	NO SAMPLES: DIST –	UNDIST 18 CORE –
CASING 6¼" Hollow Stem Auger		WATER LEVEL (FT): FIRST –	COMP. – 24 HR –
CASING HAMMER: WEIGHT 300 lbs	DROP 36-40"	BORING ANGLE AND DIRECTION: Vertical	
SAMPLER 3" I.D. Split spoon		INSPECTOR: Philippe Dubreuilh	
SAMPLER HAMMER: WEIGHT 300 lbs	DROP 36-40"		

CASING PENETA RESIST. BL/FT	DESCRIPTION	PIEZ.	DEPTH, FT	SAMPLES: TYPE NUMBER	RECOV. FT	PENETA RESIST BL/6 IN.	time	HNU READINGS (PPM): SAMPLE	AMB. AIR	time	REMARKS
	Dark gray fill, mixture of sand gravel, angular bluestone pebbles		1	MW8-0.2	0.5	5 5 6 6	11:55	3	0	12:10	
			2								
			3								
			4								
	4": sand, gravel and pebbles (SW)		5								
	10": grey greenish sandy clay with gravels (SC)		6	MW8-5-7	1.5	3 3 3 4	12:01	0.5	0	12:17	
	4": coarse grey/brown sand and rare pebbles (SP)		7								
			8								
			9								
	16": grey/brown silty clay (CL)		10								
	3": brown medium sand with pebbles. (SW)		11	MW8-10.12	2	3 4 9 11	12:20	1	0	12:30	
	5": grey fine silty sand with pebbles (SM)		12								
			13								
			14								
	19": grey medium sand with pebbles, (water) (SW)		15								water level around 15'
	2": light grey plastic clay (CL)		16	MW8-15.17	2	6 7 7 10	12:35	5	0	12:45	
	3": orange/brown sorted medium sand (SP)		17								
			18								
			19								

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LOG OF BORING MW8

CASING PENETR RESIST BL/FT	DESCRIPTION	PIEZ	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV FT	SAMPLES PENETR RESIST BL/6IN	TIME	HNU READINGS (PPM) SAMPLE	HNU READINGS (PPM) AMB. AIR	HNU READINGS (PPM) time	REMARKS
	5": light grey medium sand (water) (SP) 10": light grey silty clay with brown spots (CL) 1": purple clay (CL) 2": light brown clay (CL) 4": dark grey silty clay (CL) 2": black lignite (Pt)		21	MW8.20.22	2	6 7 8 8	12:50	11	0	13:06	After drilling to 25', borehole was cased with 8" O.D. PVC casing, and annular space was grouted.
			22								
			23	MW8.22.24	2	7 7 7 8	13:15	5	0	13:30	
	10": tan medium sand with water (SP) 14": grey plastic clay with 2 1/2" layers of lignite. (CL)		24								
			25		1	5 5	13:45				no sample collected.
	2": medium grey sand (water) (might be bottom debris) (SP) 10": dark (4") and light (6") grey plastic pure clay (CL)		26	MW8.25.27	1.5	5 8 8 10	12:15				7/31/85 6" I.D. threaded steel casing driven to 30' with 300lbs hammer, at 12:50. Drilling resumed with a 5" bit and water, as a drilling fluid.
	2": medium grey sand (bottom debris?) 16": grey plastic pure clay, darker (SP) and brown zones at the bottom. (CL)		27								
	7/31/85 plastic grey clay with 2 - 1" thick layer of lignite, first at 6", second at 12" from top of the core. (CL)		28								
			29								
			30								
			31	MW8.30.32	2	4 7 9 11	13:09	6	1	13:35	Air very humid, ambient air HNU readings vary from 1 to 3 ppm.
			32								
			33								Steel casing driven to 35' at 13:50
			34								
			35								
	dark grey pure plastic clay with sparse black wood chips. (CL)		36	MW8.35.37	2	7 8 11 13	14:00	2	1	14:40	
			37								
			38								Drilled open hole down to 40'.
			39								
	16". dark grey plastic clay with black wood chips and 1/2" of grey fine silty sand with muscovite crystals (1/2 mm) at 2" below top core. (CL). 8": light grey clay (CL).		40								
			41	MW8.40.42	2	5 6 10 13	14:15	4	1	14:58	
			42								
			43								Open hole drilling to 45' 15:08
			44								
			45		1.5	5 10	15:20				

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LOG OF BORING MW 8

SHEET 3 OF –

CASING PENETR RESIST BL/FT	DESCRIPTION	PIEZ	DEPTH, FT	SAMPLES TYPE NUMBER	RECOV FT	PENETR RESIST BL/6IN.	time	HNU READINGS (PPM) SAMPLE	AMB AIR	time	REMARKS
	light grey plastic clay with black wood chips (CL)		47	MW8.45.47	1.5	13 18	15.20	–	–		15:20 rain started, HNU ambiant air readings oscillate from 0 to 12 ppm, no sample readings were taken.
			48								
			49								
	Grey plastic clay, upper 12" darker with a 1/4" of wood chips at 5" from top of the core. (CL)		50	MW8.50.52	2	8 17 20 22	15:45	–	–		
			51								
	8/01/85		52								6" I.D. threaded steel casing down to 40' at 11:35. Drilled open hole down to 55' at 11:55. It was much harder to drill.
			53								
			54								
	Hard grey clay with rusty/reddish zones in the middle of the core		55								
			56	MW8.55.57	1.6	6 10 14 21	12:05	0	0	12:18	
			57								
			58								Drilled open hole to 60', hard penetration, at 12:25
			59								
	3": grey plastic clay with a brown (CL) thin layer at contact with:		60								
	15": grey clayey silt with small muscovite crystals. (MH)		61	MW8.60.62	2	13 19 20 19	12:55	2	0	13:08	
	4": fine silty sand, dark grey, numerous mica crystals, moist. (SM)		62								
	2": grey clayey silt (MH)		63	MW8.62.64	1.3	22 23 28 30	13.50	0.8	0	14:20	
	4": plastic grey clay (CL)		64								
	5": grey silt with muscovite crystals, moist. (MH)		65								
	4": grey to tan chunks of consolidated silt. (SM)		66								
	3": grey silt (MH)		67								
	13": brown hard clay with grey and red zones to the top (CL)		68	MW8.67.69	1.4	9 23 30 36	14:25	0	0	14:40	
	4": grey silt with muscovite crystals and black wood debris		69								
			70								Drilled open hole to 72', easy penetration
			71								

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LOG OF BORING MW 8

SHEET 4 OF –

CASING PENETR RESIST BL/FT	DESCRIPTION	PIEZ	DEPTH, FT	SAMPLES: TYPE NUMBER	SAMPLES: RECOV FT	SAMPLES: PENETR RESIST BL/6IN.	SAMPLES: time	HNU READINGS (PPM): SAMPLE	HNU READINGS (PPM): AMB AIR	HNU READINGS (PPM): time	REMARKS
	2": grey plastic clay (CL) 17": grey fine silty sand with muscovite crystals (moist) (SM) 3": grey plastic clay with black wood debris (CL)		73 74 75 76 77	MW8 72.74	1.8	7 9 14 12	15:00	0	0	15:13	Drilled open hole to 77' at 16:00. Bottom of borehole at 77'.
	8": clay with alternating layers of different colors: orange, rust, grey 16": dark grey plastic clay with abundant black wood chips. (CL)		77 78 79	MW8 77.79	2	11 12 20 24	16:45	0	0	16:50	
			80								

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LOG OF BORING MW 9 SHEET 1 OF 2

PROJECT AND LOCATION: Mattiace Petrochem., Glen Cove NY		ELEVATION AND DATUM: 29.2' M.S.L	PROJECT NO: 82C4548-4A
DRILLING AGENCY: Empire Soils Investigations, Inc.	FOREMAN: Jeff Jaworski	DATE STARTED: 08/05/85	DATE FINISHED: 08/05/85
DRILLING EQUIPMENT: CME 550		COMPLETION DEPTH: 22'	ROCK DEPTH: N/A
SIZE AND TYPE OF BIT	SIZE AND TYPE CORE BARREL: —	NO SAMPLES: DIST —	UNDIST 7 CORE —
CASING 6 ¼" Hollow Stem Auger		WATER LEVEL (FT): FIRST 9.30	COMPL 9.30 24 HR
CASING HAMMER: WEIGHT: DROP:		BORING ANGLE AND DIRECTION: Vertical	
SAMPLER: 3" I.D. Split spoon		INSPECTOR: Philippe Dubreuilh	
SAMPLER HAMMER: WEIGHT: 300 lbs DROP: 36-40"			

CASING PENETR. RESIST. BL/FT	DESCRIPTION	PIEZ.	DEPTH, FT	SAMPLES: TYPE NUMBER	RECOV. FT	PENETR RESIST BL/6 IN.	time	HNU READINGS (PPM): SAMPLE	AMB. AIR	time	REMARKS
	About 1' of fill material, consisting of a mixture of sand, gravel and angular pebbles.		1								
	Brown medium and coarse clayey sand with some gravel and pebbles (SW)		2–4	MW9.2.4	1.6	8 10 7 4	12:40	8	0	12:50	
	4": dark brown medium sand with pebbles (SW) 1": grey/greenish clay (CL) 14": tan medium sand with pebbles (SW)		5–7	MW9.5.7	1.6	2 1 2 2	12:55	70	0	13:01	sample had an obvious odor
	2": brown medium sand (SP) 13": light cream/white medium sand, somewhat clayey. (SM) 4": brown medium sand (SP)		10–12	MW9.10.12	1.6	8 9 9 7	13:10	30	0	13:20	Oblique bedding on entire core (20-30°). Sand is moist.
	16": tan medium sand – (SP) 1": white clay, with oblique bedding (CL) 4": brown/rusty medium sand (SP) 3": dark brown gravel and pebble (GW)		12–14	MW9.12.14	2	7 7 8 5	13:25	25	0	13:35	water in upper 16"
	Light grey plastic clay with rusty and orange zones (CL)		17–19	MW9.17.19	1.7	0 0 4 10	13:50	5	0	13:57	First spoon of sample went down under weight of rod.

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LOG OF BORING MW 9

CASING PENETR RESIST BL/FT	DESCRIPTION	PIEZ	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV FT	SAMPLES PENETR RESIST BL/6IN	TIME	HNU READINGS (PPM) SAMPLE	HNU READINGS (PPM) AMB. AIR	HNU READINGS (PPM) time	REMARKS
			21								Bottom of Bore-hole at 22'
	grey plastic clay with brown zones (CL)		22	MW9.22.24	1.6	4 6 9 11	14:15	0.4	0	14.27	
	grey plastic clay with red/ rusty zones. (CL)		24	MW9.24-26	1.5	5 12 12 13	14:35	0	0	14:45	
			26								
			27								
			28								
			29								
			30								
			31								
			32								
			33								
			34								
			35								
			36								
			37								
			38								
			39								
			40								
			41								
			42								
			43								
			44								
			45								

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LOG OF BORING MW 10

CASING PENETA RESIST BL/FT	DESCRIPTION	PIEZ	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV FT	SAMPLES PENETR RESIST BL/6IN.	TIME	HNU READINGS (PPM) SAMPLE	HNU READINGS (PPM) AMB. AIR	HNU READINGS (PPM) time	REMARKS
	grey greenish mottled plastic silty clay with rusty granular spots (CH)		21–22	MW10-20-22	2	2 2 3 3	17:25	0	0	17:33	
			23–24								
	08/07/85 dark grey plastic silty clay (CH)		25–26	MW10-25-27	2	3 4 5 7	8:15	0	0	8:25	Early morning ambient air very humid, HNU indicates 4 ppm, recalibrated to 0.
			27–28								
			29–30								
	dark grey plastic silty clay with small muscovite crystals, very uniform color. (CH)		30–31	MW10-30-32	2	4 4 5 7	8:45	0.6	0	8:50	
			32–33								
			34–35								
	orange/rust medium sand with rare gravels (2-3 mm), light color at top of core, darker at the bottom. (SP)		35–36	MW10-35-37	1.8	15 14 15 17	9:05	10	0	9:15	sample had an odor.
			37–38								
			39–40								
	Light tan medium sand with rare gravel and muscovite crystals, top 4" are of a rusty color (SP)		40–41	MW10-40-42	1.8	8 8 11 15	9:30	40	0	9:40	
			42–43								
			44–45								
	orange medium sand with numerous gravel and pebbles. A few 1/4" thick rusty bands (SW)		45–46	MW10-45-47	1.5	11 13	10:00	50	0	10:10	

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LOG OF BORING MW 10

SHEET 1 OF 3

PROJECT AND LOCATION: Mattiace Petrochem., Glen Cove NY		ELEVATION AND DATUM: 63.5' M.S.L.	PROJECT NO: 85C4548--
DRILLING AGENCY: Empire Soils Investigations, Inc.	FOREMAN: Jeff Jaworski	DATE STARTED: 08/06/85	DATE FINISHED: 08/07/85
DRILLING EQUIPMENT: CME 55C		COMPLETION DEPTH: 65'	ROCK DEPTH: N/A
SIZE AND TYPE OF BIT: CASING 6 1/4" Hollow Stem Auger	SIZE AND TYPE CORE BARREL: -	NO SAMPLES: DIST -	UNDIST 14 CORE -
		WATER LEVEL (FT): FIRST	COMPL 24 HR
CASING HAMMER: WEIGHT	DROP	BORING ANGLE AND DIRECTION: Vertical	
SAMPLER: 3" I.D. Split spoon		INSPECTOR: Philippe Dubreuilh	
SAMPLER HAMMER: WEIGHT 300 lbs	DROP 36-40"		

CASING PENETR. RESIST. BL/FT	DESCRIPTION	PIEZ.	DEPTH, FT	SAMPLES: TYPE NUMBER	RECOV. FT	PENETR. RESIST BL/6 IN.	time	HNU READINGS (PPM): SAMPLE	AMB. AIR	time	REMARKS
	brown sand with gravel and pebble. (SW) some roots.		1	MW10-0-2	1.5	8 10 12	10:40	0	0	11:15	18" long split spoon
	2": white medium silty sand (SM) 2": light cream medium sand (SP) 1": white medium silty sand (SM) 10": medium sand with rare gravels, bedded in 1/4" thick bands ranging from light cream to orange/rust. (SP) 1": white medium silty sand (SM) 4": rusty medium sand (SP)		5 6 7	MW10-5-7	1.6	9 11 17 17	11:05	0	0	11:15	
	10" gray greenish clay with rusty spots (CL) 3" gravels and pebbles in a tan clayey silty matrix (GM) 5" brown rusty medium-coarse sand with abundant gravels and pebbles (SW)		10 11 12	MW10-10-12	2	9 15 14 18	11:30	0	0	11:35	
	16": light brown medium and coarse sand with gravels and pebbles (SW) 6": same as above, but in a tan clayey matrix, making the sand more coherent. (SM)		15 16 17	MW10-15-17	1.8	7 8 11 9	11:50	0	0	11:55	
			18 19								11:53: while drilling at about 18', universal joint at the head of augers, broke.

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LOG OF BORING MW 10

SHEET 3 OF 3

CASING PENETR RESIST BL/FT	DESCRIPTION	PIEZ	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV FT	SAMPLES PENETR RESIST BL/6IN.	SAMPLES time	HNU READINGS (PPM) SAMPLE	HNU READINGS (PPM) AMB AIR	HNU READINGS (PPM) time	REMARKS
			47								18"-long split-spoon
			48								
			49								
	coarse orange sand with rare gravels and pebbles, bottom half of the core coarser than top half (SP)		50	MW10-50.52	2	8 10 12 17	10:40	100	0	10:45	sand is saturated with volatile compounds
			51								
			52								
			53								
			54								
	5": light tan medium-coarse sand with rare gravels (SW) 13": coarse sand with abundant gravels and pebbles (5 cm max.), brown orange color. (SW) 4": brown plastic clay (CL)		55								
			56	MW10-55.57	1.8	3 3 7 8	11:40	70	0	11,50	sediment is wet, mixture of water and V.O.C.
			57								
			58								
			59								
	heterogeneous cream mixture of clay, sand, gravels, pebbles (max. 6 cm) (GC)		60								
			61	MW10-6062	1.1	7 9 10 8	12:15	40	0	12:28	wet sample. A large pebble inside the spoon might explain poor recovery
			62								
			63								
			64								Bottom of bore-hole at 65'.
	8": grey greenish medium-coarse sand with rare pebble and large muscovite crystals (1-2 mm) (SP) 14": brown reddish medium sand with abundant muscovite crystals (SP)		65								
			66	MW10-6567	1.8	1 4 5 6	14:25	1	0	14:43	wet sample
			67								
			68								
			69								
			70								
			71								

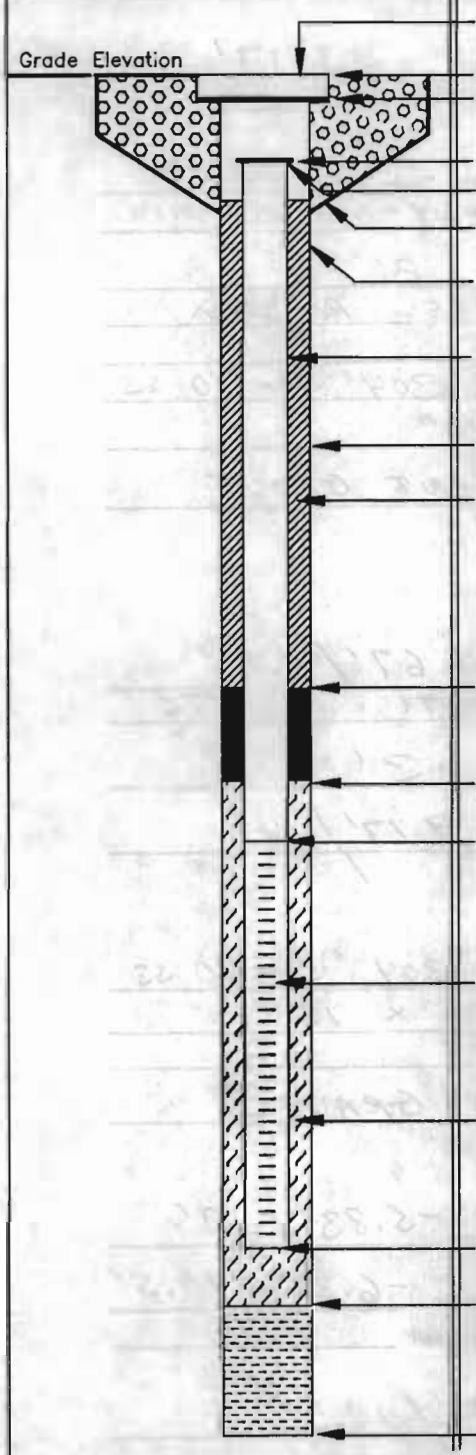
APPENDIX E

MONITOR WELL CONSTRUCTION DIAGRAMS

FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. MW-1S

Project: MATTIACE	Location: DRIVEWAY	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-1S	Drilling Method: H.S. AUGER	
Surface Elevation: 17.97' (NGVD)	Date: 12/6/89	Development Method: TRASH PUMP	
Field Geologist: WHITTEMORE			



Steel Cap with Lock
Elevation of Top of Surface: 17.97'
Elevation of Top of Roadbox with Cover Off: —
Locking Stainless Steel Cap
Elevation of Top of Riser Pipe with Cover Off: 17.51'
Type of Surface Seal: CEMENT-GRAVEL MIX
ID of Surface Casing: 8"
Type of Surface Casing: steel roadbox
Riser Pipe ID: 4"
Type of Riser Pipe: SERIES 304 SCH 40 SS
Borehole Diameter: 10"
Type of Backfill: CEMENT GROUT

Elevation/Depth Top of Seal: 14.97'/3'
Type of Seal: BENTONITE PELLETS
Depth Top of Sandpack: 5'
Elevation/Depth Top of Screen: 10.97'/7'

Type of Screen: SERIES 304 SCH 40 SS
Slot Size x Length: .010 x 5'
ID of Screen: 4"
Type of Sandpack: #2 GRAVEL

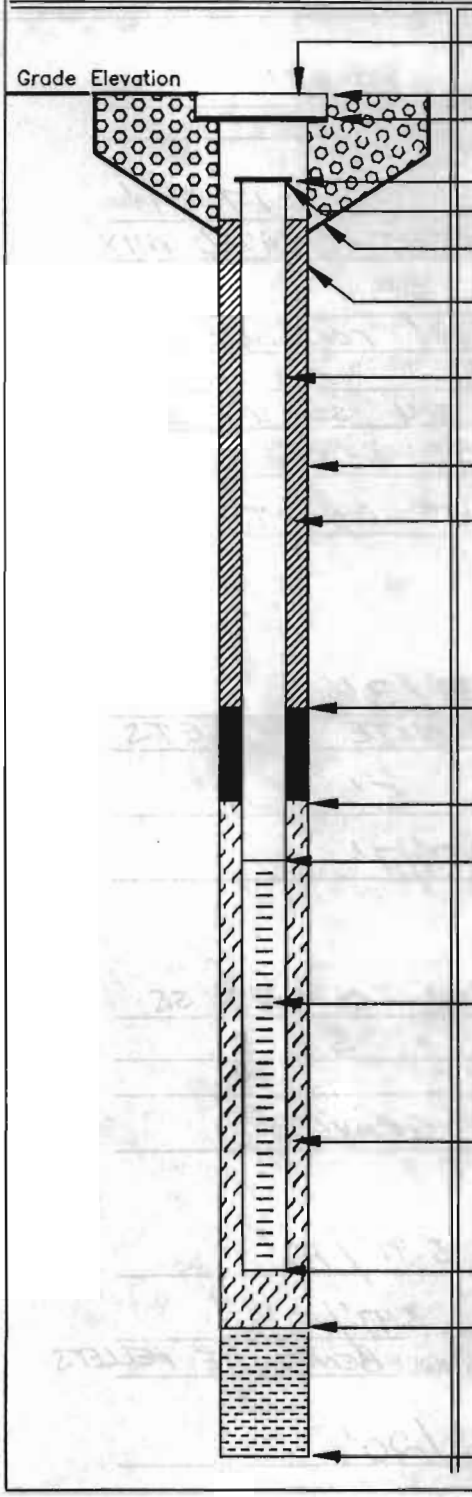
Elevation/Depth Bottom of Screen: 5.97'/12'
Elevation/Depth Bottom of Sandpack: 5.47'/12½'
Type of Backfill Below Observation Well: BENTONITE PELLETS

Elevation/Depth of Hole: -2.03'/20'

FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. MW-2S

Project: MATTIACE	Location: LIMCO	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-2S	Drilling Method: H.S. AUGER	
Surface Elevation: 13.17' (NGVD)	Date: 12/5/89	Development Method: SUBMERSIBLE PUMP	
Field Geologist: WHITTEMORE			



Steel Cap with Lock
Elevation of Top of Surface: 13.17'
Elevation of Top of Roadbox with Cover Off: —
Locking Stainless Steel Cap
Elevation of Top of Riser Pipe with Cover Off: 12.80'
Type of Surface Seal: CEMENT-GRAVEL MIX
ID of Surface Casing: 8"
Type of Surface Casing: STEEL ROADBOX
Riser Pipe ID: 4"
Type of Riser Pipe: SERIES 304 SCH 40 SS
Borehole Diameter: 10"
Type of Backfill: CEMENT GROUT

Elevation/Depth Top of Seal: 11.67'/1.5'
Type of Seal: BENTONITE PELLETS
Depth Top of Sandpack: 3'
Elevation/Depth Top of Screen: 9.17'/4'

Type of Screen: SERIES 304 SCH 40 SS
Slot Size x Length: .010 x 15'
ID of Screen: 4"
Type of Sandpack: #2 GRAVEL

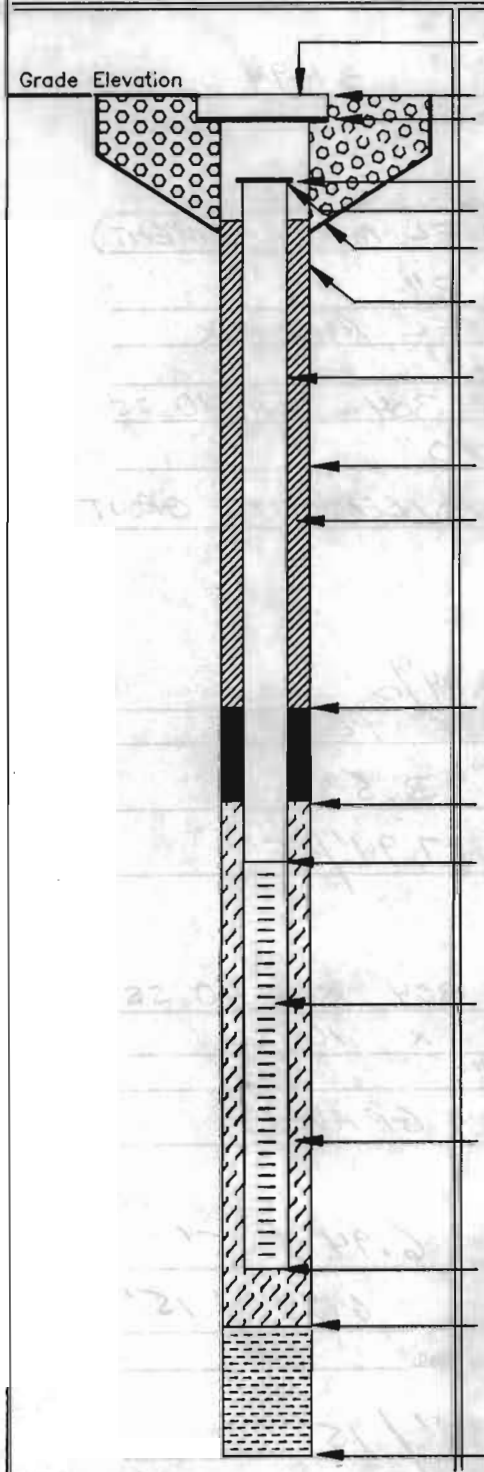
Elevation/Depth Bottom of Screen: -5.83'/19'
Elevation/Depth Bottom of Sandpack: -6.33'/19.5'
Type of Backfill Below Observation Well: NA

Elevation/Depth of Hole: -6.33'/19.5'

FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. MW-03D

Project: MATTIACE	Location: ON-SITE NWL	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-03D	Drilling Method: H.S. AUGER	
Surface Elevation: 35.80 (NGVD)	Date: 12/4/89	Development Method: SUBMERSIBLE PUMP	
Field Geologist: WHITTEMORE			



Steel Cap with Lock
Elevation of Top of Surface: 35.80
Elevation of Top of Roadbox with Cover Off: —
Locking Stainless Steel Cap
Elevation of Top of Riser Pipe with Cover Off: 35.49'
Type of Surface Seal: CEMENT
ID of Surface Casing: 8"
Type of Surface Casing: STEEL ROADBOX
Riser Pipe ID: 4"
Type of Riser Pipe: SERIES 304 SCH 40 SS
Borehole Diameter: 10"
Type of Backfill: CEMENT

Elevation/Depth Top of Seal: -1.2'/37'
Type of Seal: BENTONITE PELLETS
Depth Top of Sandpack: 39'
Elevation/Depth Top of Screen: -8.2'/44'

Type of Screen: SERIES 304 SCH 40 SS
Slot Size x Length: .010 x 15'
ID of Screen: 4"
Type of Sandpack: #2 GRAVEL

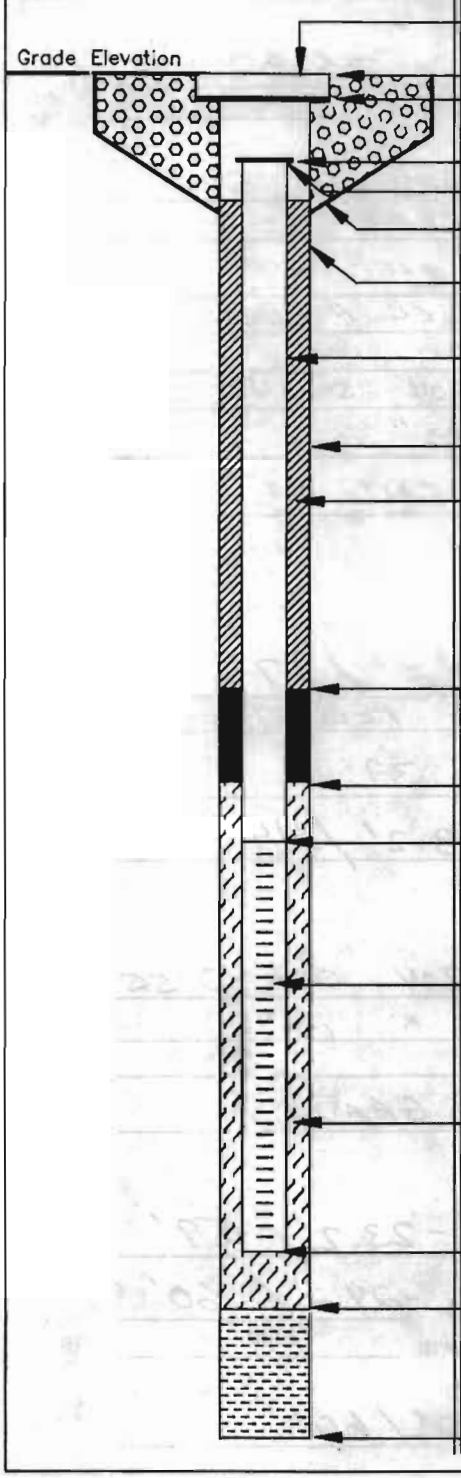
Elevation/Depth Bottom of Screen: -23.2'/59'
Elevation/Depth Bottom of Sandpack: -24.2'/60'
Type of Backfill Below Observation Well: NA

Elevation/Depth of Hole: -24.2'/60'

FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. MW-45

Project: MATTIACE	Location: LIMCO	Driller: EMPIRE	
Project No. 006-2-28	Boring: MW-45	Drilling Method: H.S. AUGER	
Surface Elevation: 21.94' (NGVD)	Date: 12/21/89	Development Method: TRASH PUMP	
Field Geologist: WHITTEMORE			



Steel Cap with Lock
Elevation of Top of Surface: 21.94
Elevation of Top of Roadbox with Cover Off: —
Locking Stainless Steel Cap
Elevation of Top of Riser Pipe with Cover Off: 21.34'
Type of Surface Seal: GRAVEL MIX (CEMENT)
ID of Surface Casing: 8"
Type of Surface Casing: STEEL ROADBOX
Riser Pipe ID: 4"
Type of Riser Pipe: SERIES 304 SCH 40 SS
Borehole Diameter: 10"
Type of Backfill: PORTLAND/BENTONITE GROUT
Elevation/Depth Top of Seal: 19.94'/2'
Type of Seal: BENTONITE PELLETS
Depth Top of Sandpack: 3.5'
Elevation/Depth Top of Screen: 17.94'/5'
Type of Screen: SERIES 304 SCH 40 SS
Slot Size x Length: .010 x 10'
ID of Screen: 4"
Type of Sandpack: #2 GRAVEL
Elevation/Depth Bottom of Screen: 6.94'/15'
Elevation/Depth Bottom of Sandpack: 6.94'/15'
Type of Backfill Below Observation Well: NA
Elevation/Depth of Hole: 6.94'/15'

FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. MW-55

Project: MATTIACE Location: ELMOS LOT

Project No. 006-2L2B Boring: MW-55

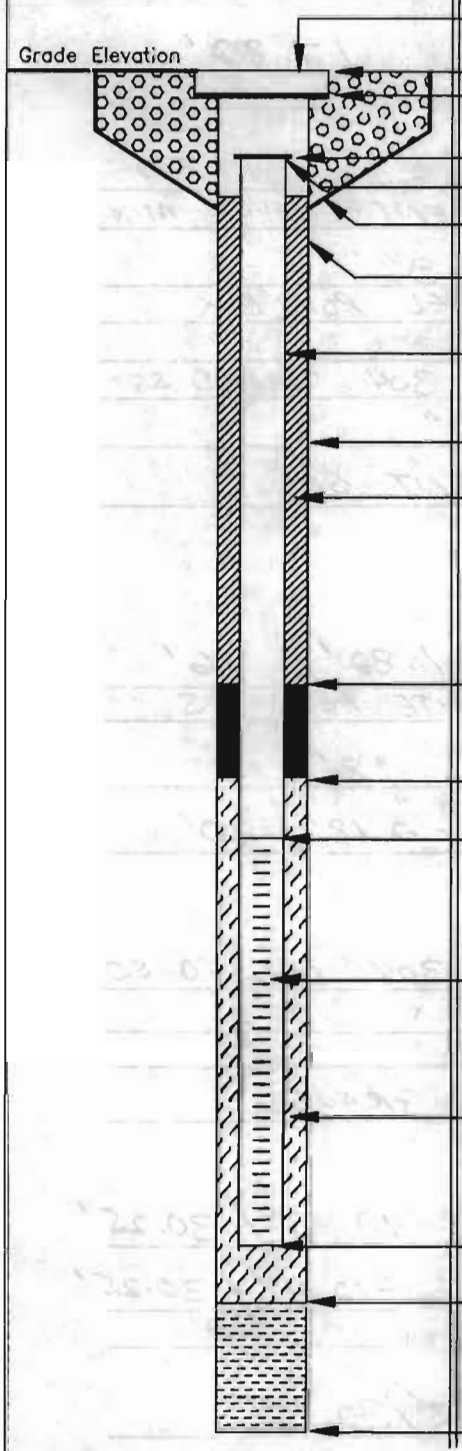
Surface Elevation: 17.69' (NGVD) Date: 11/30/89

Field Geologist: WHITTEMORE

Driller: EMPIRE

Drilling Method: H.S. AUGER

Development Method: SUBMERSIBLE PUMP



Steel Cap with Lock

Elevation of Top of Surface: 17.69'

Elevation of Top of Roadbox with Cover Off: ——

Locking Stainless Steel Cap

Elevation of Top of Riser Pipe with Cover Off: 17.27'

Type of Surface Seal: CEMENT

ID of Surface Casing: 8"

Type of Surface Casing: STEEL ROADBOX

Riser Pipe ID: 4"

Type of Riser Pipe: SERIES 304 SCH. 40 SS

Borehole Diameter: 10"

Type of Backfill: CEMENT

Elevation/Depth Top of Seal: 16.19'/1.5'

Type of Seal: BENTONITE PELLETS

Depth Top of Sandpack: 3'

Elevation/Depth Top of Screen: 13.19'/4.5'

Type of Screen: SERIES 304 SCH. 40 SS

Slot Size x Length: .010 x 15'

ID of Screen: 4"

Type of Sandpack: #2 GRAVEL

Elevation/Depth Bottom of Screen: -1.81'/19.5'

Elevation/Depth Bottom of Sandpack: -4.31'/22'

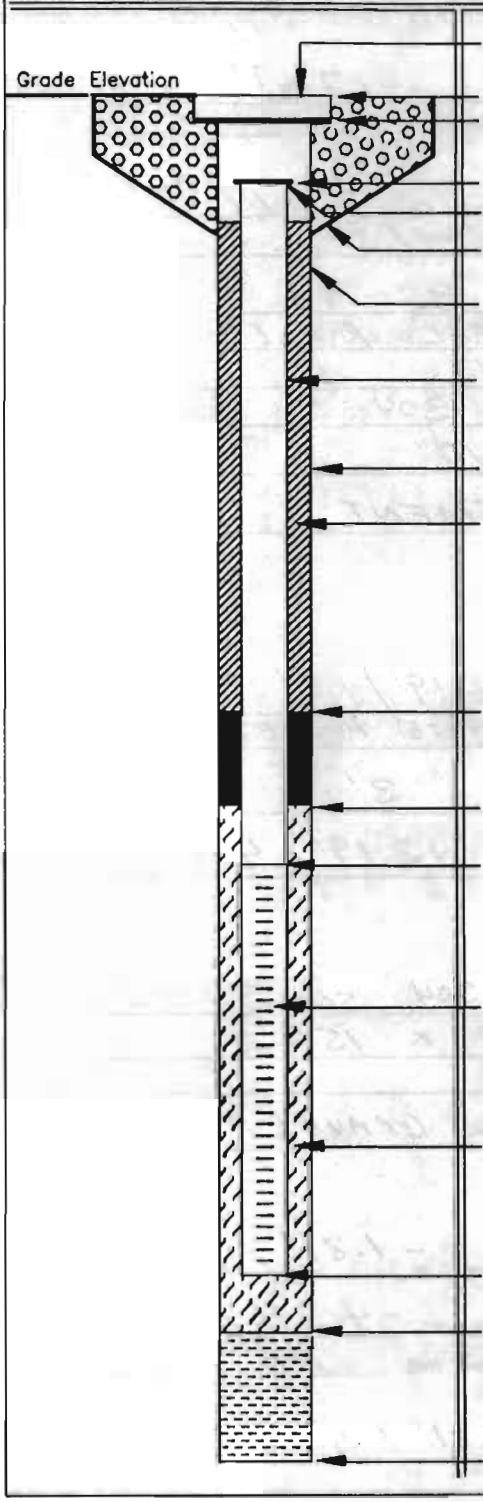
Type of Backfill Below Observation Well: NA

Elevation/Depth of Hole: -4.31'/22'

FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. MW-5D

Project: MATTIACE Location: EDMOS LOT	Driller: EMPIRE
Project No. 006-242B Boring: MW-5D	Drilling Method: H.S. AUGER
Surface Elevation: 17.82' (NGVD) Date: 12/7/89	Development Method: SUBMERSIBLE PUMP
Field Geologist: WHITTEMORE	



Steel Cap with Lock
Elevation of Top of Surface: 17.82'
Elevation of Top of Roadbox with Cover Off: —
Locking Stainless Steel Cap
Elevation of Top of Riser Pipe with Cover Off: 17.50'
Type of Surface Seal: CEMENT-GRAVEL MIX
ID of Surface Casing: 8"
Type of Surface Casing: STEEL ROADBOX
Riser Pipe ID: 4"
Type of Riser Pipe: SERIES 304 SCH 40 SS
Borehole Diameter: 10"
Type of Backfill: CEMENT GROUT
Elevation/Depth Top of Seal: 1.82' / 16'
Type of Seal: BENTONITE PELLETS
Depth Top of Sandpack: 18'
Elevation/Depth Top of Screen: -2.18' / 20'
Type of Screen: SERIES 304 SCH. 40 SS
Slot Size x Length: .010 x 10'
ID of Screen: 4"
Type of Sandpack: #2 GRAVEL
Elevation/Depth Bottom of Screen: -12.43' / 30.25'
Elevation/Depth Bottom of Sandpack: -12.43' / 30.25'
Type of Backfill Below Observation Well: NA
Elevation/Depth of Hole: -12.43' / 30.25'

FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. MW-6S

Project: MATTIACE Location: NW L OF SITE

Project No. 006-2L.P Boring: MW-6S

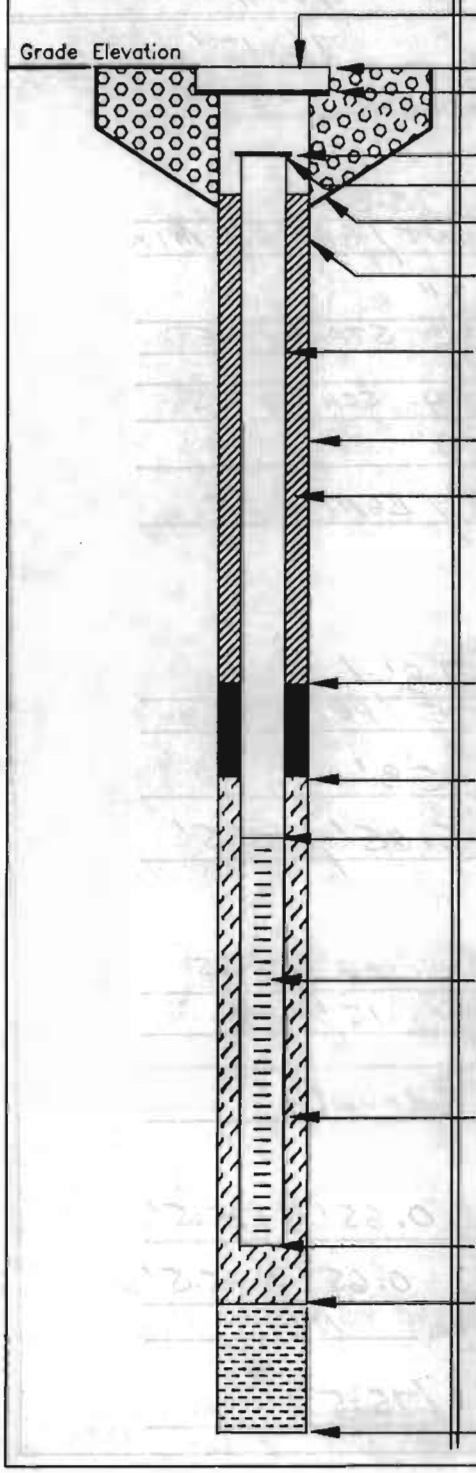
Surface Elevation: 36.83' (NGVD) Date: 12/8/89

Field Geologist: WHITTEMORE

Driller: EMPIRE

Drilling Method: H.S. AUGER

Development Method: SUBMERSIBLE PUMP



Steel Cap with Lock

Elevation of Top of Surface: 36.83'

Elevation of Top of Roadbox with Cover Off: ____

Locking Stainless Steel Cap

Elevation of Top of Riser Pipe with Cover Off: 36.46'

Type of Surface Seal: CEMENT-GRAVEL MIX

ID of Surface Casing: 8"

Type of Surface Casing: STEEL ROADBOX

Riser Pipe ID: 4"

Type of Riser Pipe: SERIES 304 SCH. 40 SS

Borehole Diameter: 10"

Type of Backfill: CEMENT GROUT

Elevation/Depth Top of Seal: 25.83' / 11'

Type of Seal: BENTONITE PELLETS

Depth Top of Sandpack: 23.83' / 13'

Elevation/Depth Top of Screen: 21.83' / 15'

Type of Screen: SERIES 304 SCH. 40 SS

Slot Size x Length: .010 x 15'

ID of Screen: 4"

Type of Sandpack: #2 GRAVEL

Elevation/Depth Bottom of Screen: 6.83' / 30'

Elevation/Depth Bottom of Sandpack: 6.83' / 30'

Type of Backfill Below Observation Well: NA

Elevation/Depth of Hole: 6.83' / 30'

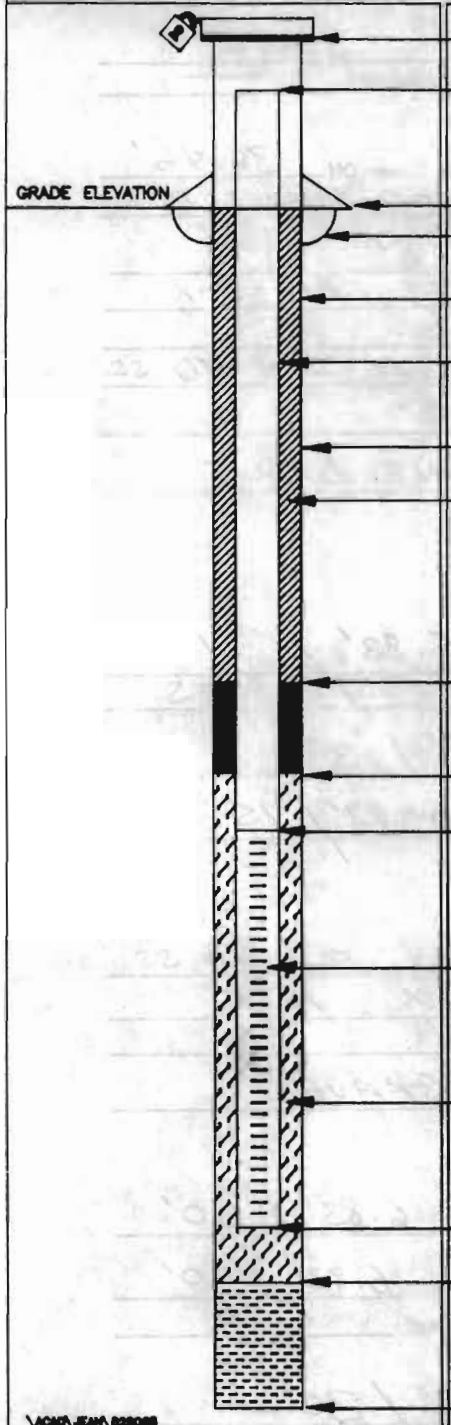
FIGURE _____

MATTIACE PETROCHEMICAL SITE

MONITORING WELL SHEET

Boring No. MW-7S

Project: MATTIACE Location: NW OF SITE	Driller: EMPIRE
Project No. 006-2L2B Boring: MW-7S	Drilling Method: H.S. AUGER
Surface Elevation: 73.8' (NGVD) Date: 1/4/90	Development Method: SUBMERSIBLE PUMP
Field Geologist: WHITTEMORE	



Elevation of Top of Surface Casing: 76.15'

Elevation of Top of Riser Pipe with Cover Off: 75.74'

Elevation of Ground Level: 73.8'

Type of Surface Seal: CEMENT / GRAVEL MIX

ID of Surface Casing: 6"

Type of Surface Casing: STEEL STANDPIPE

Riser Pipe ID: 4"

Type of Riser Pipe: SERIES 304 SCH 40 SS

Borehole Diameter: 10"

Type of Backfill: CEMENT / BENTONITE

Elevation/Depth Top of Seal: 17.8' / 56'

Type of Seal: BENTONITE PELLETS

Depth Top of Sandpack: 58'

Elevation/Depth Top of Screen: 15.65' / 60.5'

Type of Screen: SERIES 304 SCH 40 SS

Slot Size x Length: .010 x 15'

ID of Screen: 4"

Type of Sandpack: #2 GRAVEL

Elevation/Depth Bottom of Screen: 0.65' / 75.5'

Elevation/Depth Bottom of Sandpack: 0.65' / 75.5'

Type of Backfill Below Observation Well: NA

Elevation/Depth of Hole: 0.65' / 75.5'

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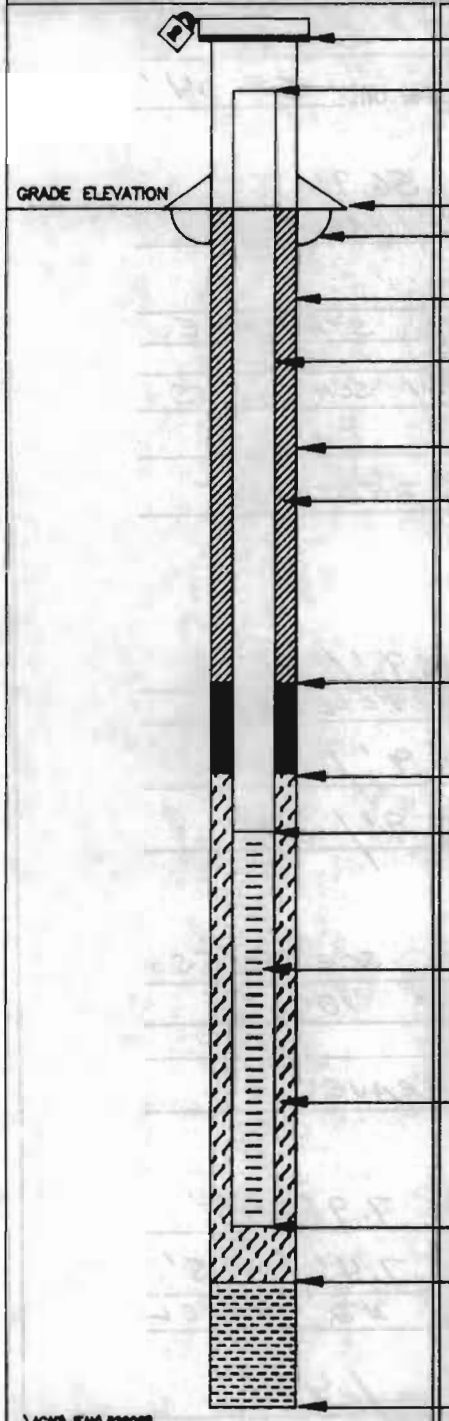
FIGURE _____

MATTIACE PETROCHEMICAL SITE

MONITORING WELL SHEET

Boring No. MW-7D

Project: MATTIACE	Location: NW of SITE	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-7D	Drilling Method: H.S. AUGER	
surface Elevation: 74.7' (NGVD)	Date: 1/10/90	Development Method: SUBMERSIBLE PUMP	
Field Geologist: WHITTEMORE			



Elevation of Top of Surface Casing: 77.79'

Elevation of Top of Riser Pipe with Cover Off: 77.55'

Elevation of Ground Level: 74.7'

Type of Surface Seal: CEMENT / GRAVEL MIX

ID of Surface Casing: 6"

Type of Surface Casing: STEEL STANDPIPE

Riser Pipe ID: 4"

Type of Riser Pipe: SERIES 304 SCH 40 SS

Borehole Diameter: 10"

Type of Backfill: CEMENT / BENTONITE

Elevation/Depth Top of Seal: -25.3' / 100'

Type of Seal: BENTONITE SLURRY

Depth Top of Sandpack: 107'

Elevation/Depth Top of Screen: -35.3' / 110'

Type of Screen: SERIES 304 SCH 40 SS

Slot Size x Length: .010 x 10'

ID of Screen: 4"

Type of Sandpack: #2 GRAVEL

Elevation/Depth Bottom of Screen: -45.3' / 120'

Elevation/Depth Bottom of Sandpack: -45.3' / 120'

Type of Backfill Below Observation Well: NA

Elevation/Depth of Hole: -45.3' / 120'

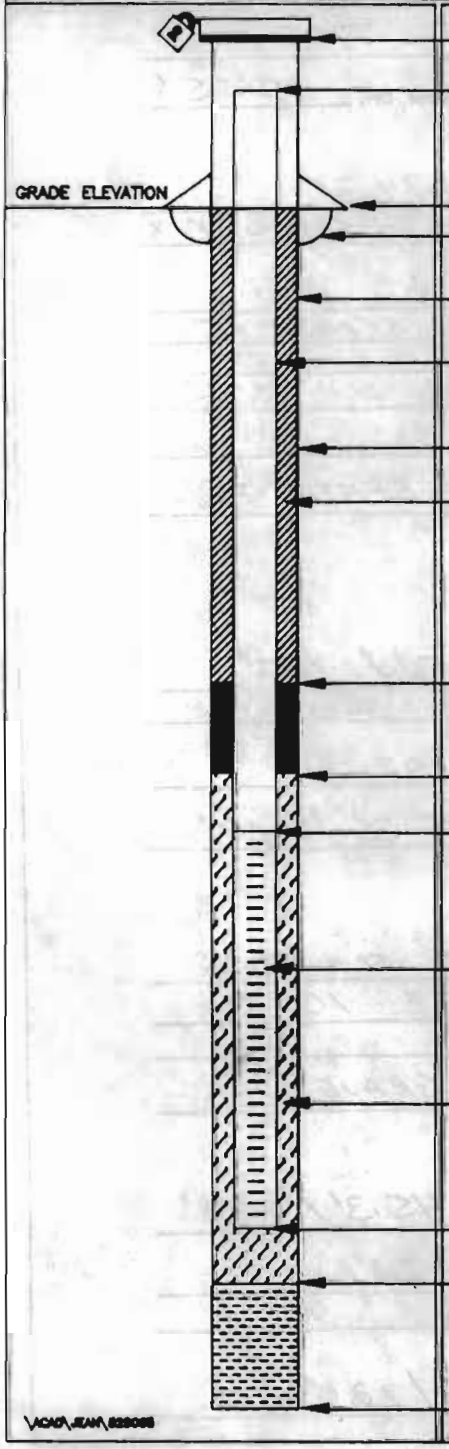
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FIGURE ____

MATTIACE PETROCHEMICAL SITE
MONITORING WELL SHEET

Boring No. MW-8S

Project: MATTIACE	Location: N OF SITE	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-8S	Drilling Method: H.S. AUGER	
Surface Elevation: 56.9' (NGVD)	Date: 12/14/89	Development Method: SUBMERSIBLE PUMP	
Field Geologist: WHITTEMORE			



Elevation of Top of Surface Casing: 58.71'
Elevation of Top of Riser Pipe with Cover Off: 58.04'
Elevation of Ground Level: 56.9'
Type of Surface Seal: CEMENT / GRAVEL MIX
ID of Surface Casing: 6"
Type of Surface Casing: STEEL STANDPIPE
Riser Pipe ID: 4"
Type of Riser Pipe: SERIES 304 SCH 40 SS
Borehole Diameter: 10"
Type of Backfill: CEMENT / BENTONITE
Elevation/Depth Top of Seal: 21.9' / 35'
Type of Seal: BENTONITE PELLETS
Depth Top of Sandpack: 19.9' / 37'
Elevation/Depth Top of Screen: 17.9' / 39'
Type of Screen: SERIES 304 SCH 40 SS
Slot Size x Length: .010 x 10'
ID of Screen: 4"
Type of Sandpack: #2 GRAVEL
Elevation/Depth Bottom of Screen: 7.9' / 49'
Elevation/Depth Bottom of Sandpack: 7.4' / 49.5'
Type of Backfill Below Observation Well: #2 GRAVEL
Elevation/Depth of Hole: 7.4' / 49.5'

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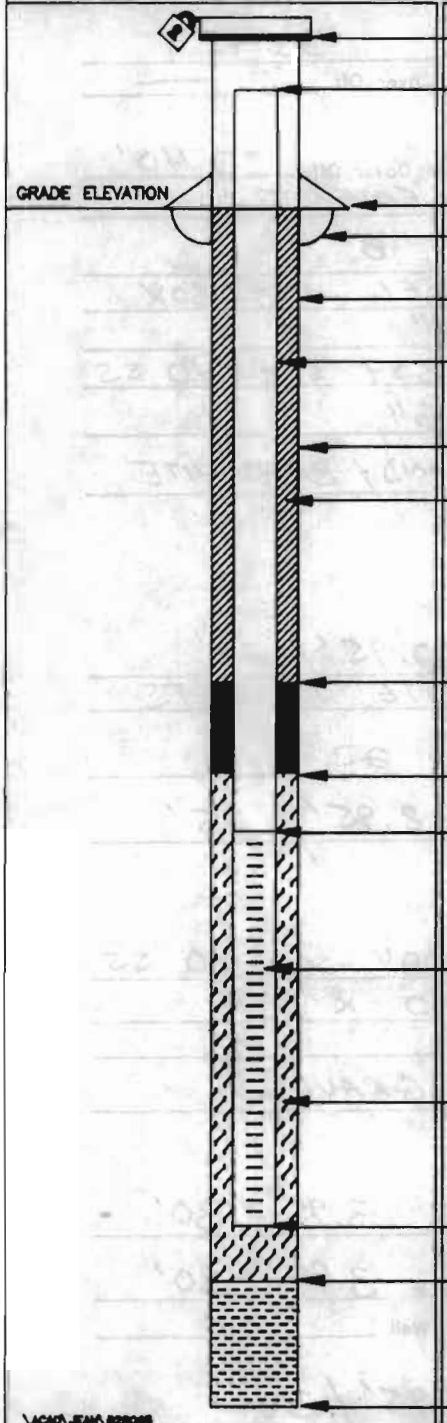
FIGURE _____

MATTIACE PETROCHEMICAL SITE

MONITORING WELL SHEET

Boring No. MW-8D

Project: MATTIACE	Location: N OF SITE	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-8D	Drilling Method: H.S. AUGER	
Surface Elevation: 56.1' (NGVD)	Date: 12/14/89	Development Method: SUBMERSIBLE PUMP	
Field Geologist: WHITTEMORE			



Elevation of Top of Surface Casing: 58.28'

Elevation of Top of Riser Pipe with Cover Off: 58.10'

Elevation of Ground Level: 56.1'

Type of Surface Seal: CEMENT / GRAVEL MIX

ID of Surface Casing: 6"

Type of Surface Casing: STEEL STANDPIPE

Riser Pipe ID: 4"

Type of Riser Pipe: SERIES 304 SCH 40 SS

Borehole Diameter: 10"

Type of Backfill: CEMENT / BENTONITE

Elevation/Depth Top of Seal: 9.1' / 47'

Type of Seal: BENTONITE PELLETS

Depth Top of Sandpack: 49'

Elevation/Depth Top of Screen: 5.1' / 51'

Type of Screen: SERIES 304 SCH 40 SS

Slot Size x Length: .010 x 10'

ID of Screen: 4"

Type of Sandpack: #2 GRAVEL

Elevation/Depth Bottom of Screen: -4.9' / 61'

Elevation/Depth Bottom of Sandpack: -4.9' / 61'

Type of Backfill Below Observation Well: NA

Elevation/Depth of Hole: -4.9' / 61'

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FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. PZ-1

Project: MATTIACE Location: W. EDGE of SITE

Project No. 006-212B Boring: SB-18

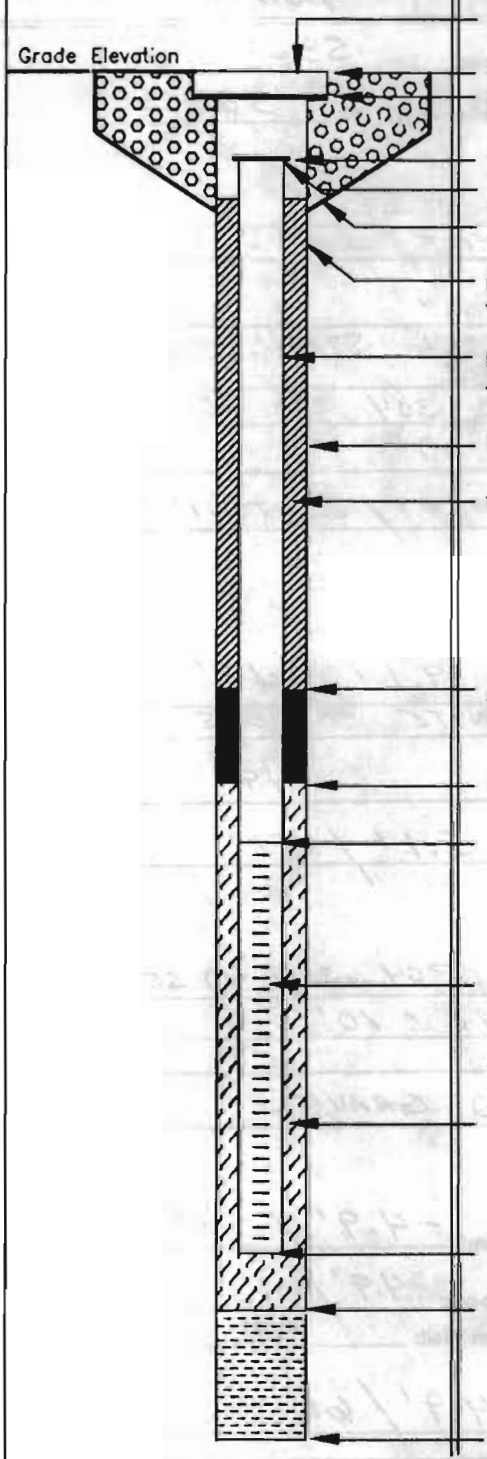
Surface Elevation: 33.95' (NGVD) Date: 12/21/89

Field Geologist: WHITTEMORE

Driller: EMPIRE

Drilling Method: H.S. AUGER

Development Method: TRASH PUMP



Steel Cap with Lock

Elevation of Top of Surface: 33.95'

Elevation of Top of Roadbox with Cover Off: —

Locking Stainless Steel Cap

Elevation of Top of Riser Pipe with Cover Off: 33.40'

Type of Surface Seal: CEMENT

ID of Surface Casing: 8"

Type of Surface Casing: STEEL ROADBOX

Riser Pipe ID: 2"

Type of Riser Pipe: SERIES 304 SCH. 40 SS

Borehole Diameter: 6"

Type of Backfill: PORTLAND / BENTONITE

Elevation/Depth Top of Seal: 12.95' / 21'

Type of Seal: BENTONITE PELLETS

Depth Top of Sandpack: 23'

Elevation/Depth Top of Screen: 8.95' / 25'

Type of Screen: SERIES 304 SCH. 40 SS

Slot Size x Length: .010 x 5'

ID of Screen: 2"

Type of Sandpack: #2 GRAVEL

Elevation/Depth Bottom of Screen: 3.95' / 30'

Elevation/Depth Bottom of Sandpack: 3.95' / 30'

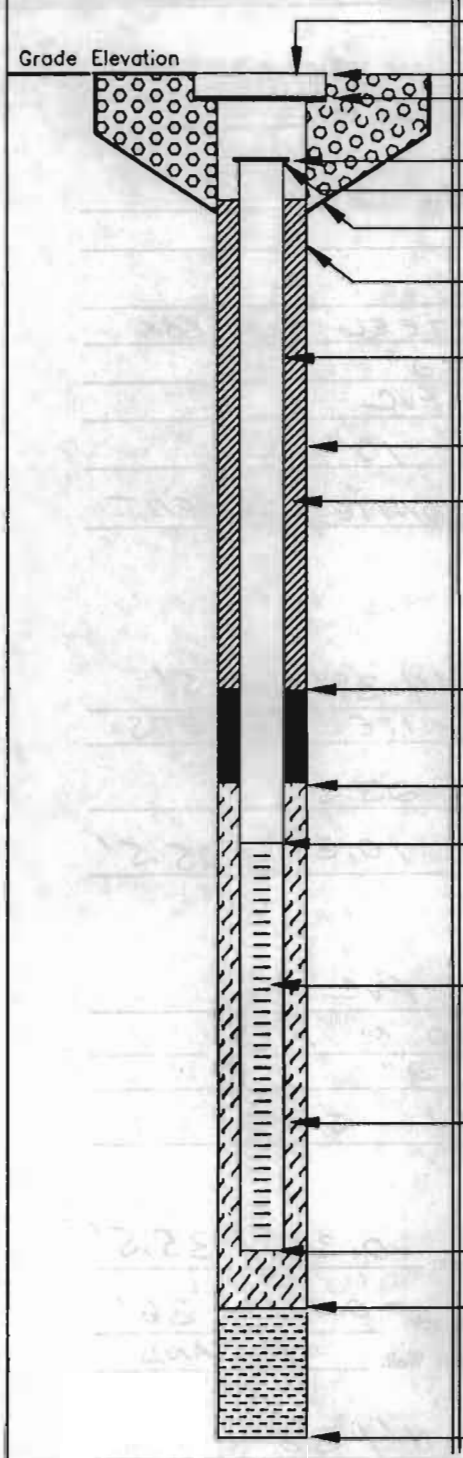
Type of Backfill Below Observation Well: NA

Elevation/Depth of Hole: 3.95' / 30'

FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. PZ-2

Project: MATTIACE	Location: E. EDGE OF SITE	Driller: EMPIRE	
Project No. 006-2L2B	Boring: SB-03	Drilling Method: H.S. AUGER	
Surface Elevation: 30.89' (NGVD)	Date: 12/20/89	Development Method: TRASH PUMP	
Field Geologist: WHITTEMORE			



Steel Cap with Lock
Elevation of Top of Surface: 30.89'
Elevation of Top of Roadbox with Cover Off: —
Locking Stainless Steel Cap
Elevation of Top of Riser Pipe with Cover Off: 29.91'
Type of Surface Seal: CEMENT
ID of Surface Casing: 8"
Type of Surface Casing: STEEL ROAD BOX
Riser Pipe ID: 2"
Type of Riser Pipe: SERIES 304 SCH. 40 SS
Borehole Diameter: 10"
Type of Backfill: PORTLAND / BENTONITE GROUT

Elevation/Depth Top of Seal: 13.89' / 17'
Type of Seal: BENTONITE PELLETS
Depth Top of Sandpack: 19'
Elevation/Depth Top of Screen: 8.39' / 22.5'

Type of Screen: SERIES 304 SCH. 40 SS
Slot Size x Length: .010 x 5'
ID of Screen: 2"
Type of Sandpack: #2 GRAVEL

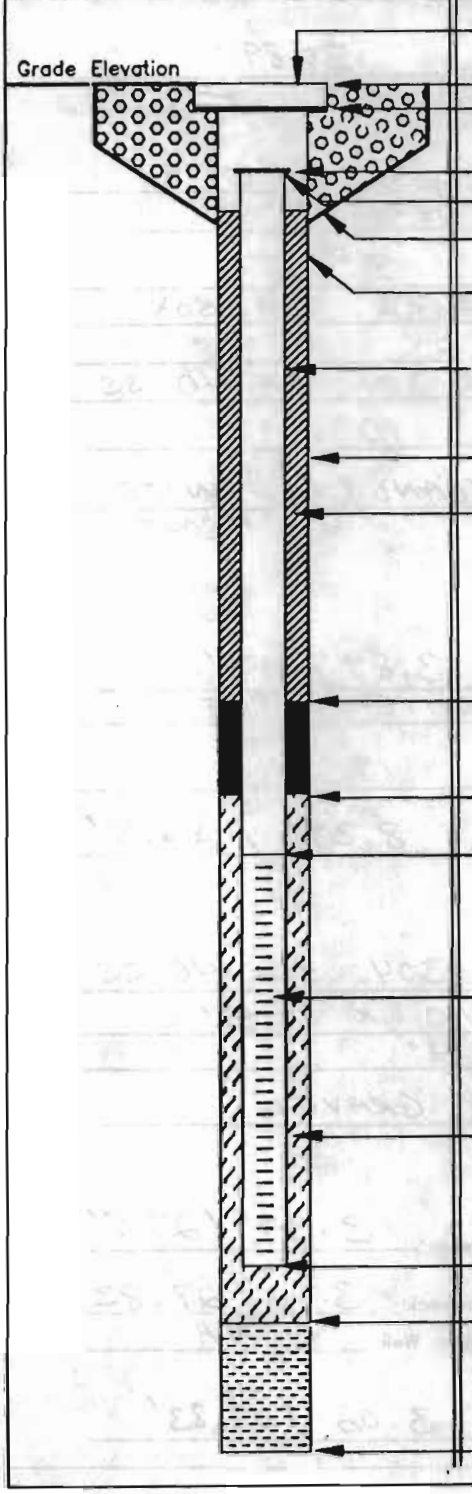
Elevation/Depth Bottom of Screen: 3.39' / 27.5'
Elevation/Depth Bottom of Sandpack: 3.06 / 27.83'
Type of Backfill Below Observation Well: NA

Elevation/Depth of Hole: 3.06 / 27.83'

FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. MW-3

Project: MATTIACE	Location: NW CORNER OF PROPERTY	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-3	Drilling Method: H.S. AUGER	
Surface Elevation: 35.89'	Date: 7/25/85	Development Method:	
Field Geologist: CJ MATTA (WOODWARD-CLYDE)			



Steel Cap with Lock
Elevation of Top of Surface: 35.89'
Elevation of Top of Roadbox with Cover Off. _____
Locking Stainless Steel Cap
Elevation of Top of Riser Pipe with Cover Off _____
Type of Surface Seal: _____
ID of Surface Casing: _____
Type of Surface Casing: STEEL ROADBOX
Riser Pipe ID: 2"
Type of Riser Pipe: PVC
Borehole Diameter: 10"
Type of Backfill: BENTONITE / CEMENT

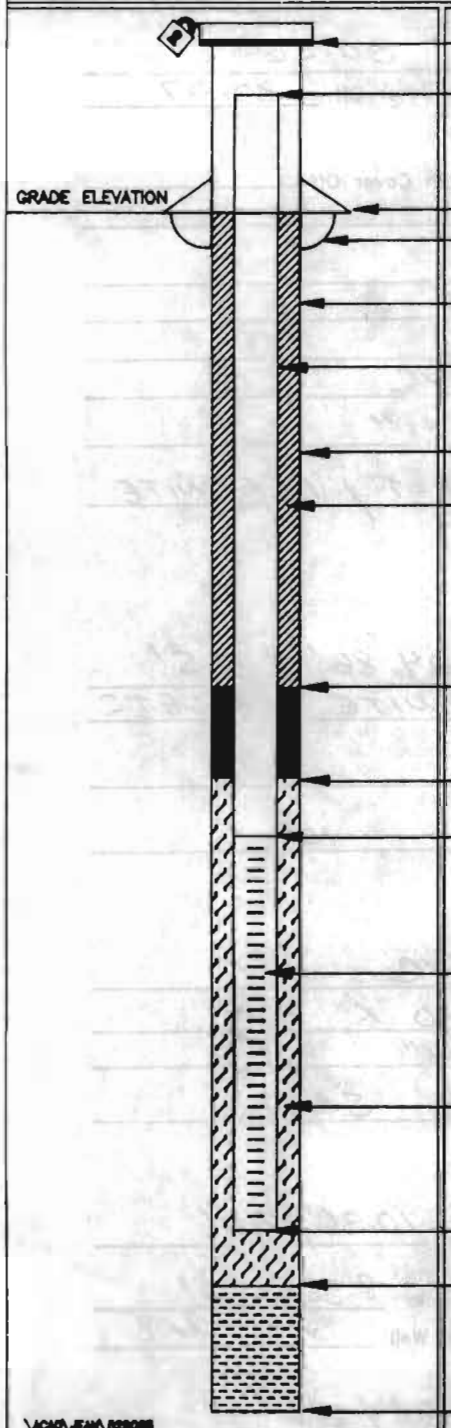
Elevation/Depth Top of Seal: 14.39' / 21.5'
Type of Seal: BENTONITE PELLETS
Depth Top of Sandpack: 23.5'
Elevation/Depth Top of Screen: 10.39' / 25.5'
Type of Screen: PVC
Slot Size x Length: .010 x 10'
ID of Screen: 2"
Type of Sandpack: #1 SAND
Elevation/Depth Bottom of Screen: 0.39' / 35.5'
Elevation/Depth Bottom of Sandpack: -0.11' / 36'
Type of Backfill Below Observation Well: #1 SAND
Elevation/Depth of Hole: -0.11' / 36'

FIGURE _____

MATTIACE PETROCHEMICAL SITE
MONITORING WELL SHEET

Boring No. MW-7

Project: MATTIACE	Location: SW CORNER OF PROPERTY	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-7	Drilling Method: H.S. AUGER	
Surface Elevation: 29.6'	Date: 7/29/85	Development Method:	
Field Geologist: C J MATTA (WOODWARD-CLYDE)			



Elevation of Top of Surface Casing: 30.94'

Elevation of Top of Riser Pipe with Cover Off: 30.54'

Elevation of Ground Level: 29.6'

Type of Surface Seal: _____

ID of Surface Casing: _____

Type of Surface Casing: STEEL STANDPIPE

Riser Pipe ID: 2"

Type of Riser Pipe: PVC

Borehole Diameter: 10"

Type of Backfill: BENTONITE / CEMENT

Elevation/Depth Top of Seal: 18.6' / 11.0'

Type of Seal: BENTONITE PELLETS

Depth Top of Sandpack: 13.0'

Elevation/Depth Top of Screen: 14.6' / 15'

Type of Screen: PVC

Slot Size x Length: .010 x 10'

ID of Screen: 2"

Type of Sandpack: #1 SAND

Elevation/Depth Bottom of Screen: 4.4' / 25.2'

Elevation/Depth Bottom of Sandpack: 4.1' / 25.5'

Type of Backfill Below Observation Well: #1 SAND

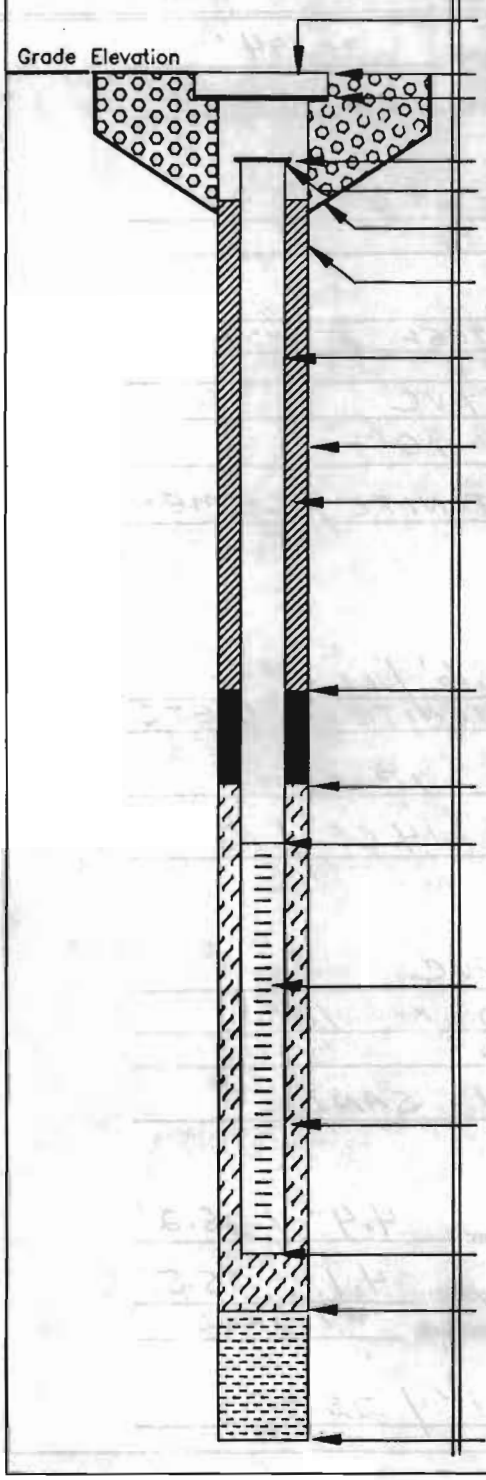
Elevation/Depth of Hole: 4.1' / 25.5'

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FIGURE _____
MATTIACE PETROCHEMICAL SITE
FLUSH MOUNT MONITOR WELL SHEET

Boring No. MW-9

Project: MATTIACE	Location: SE CORNER OF SITE	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-9	Drilling Method: H.S. AUGER	
Surface Elevation: 30.36'	Date: 8/5/85	Development Method:	
Field Geologist: P. DURREUILH (WOODWARD-CLYDE)			



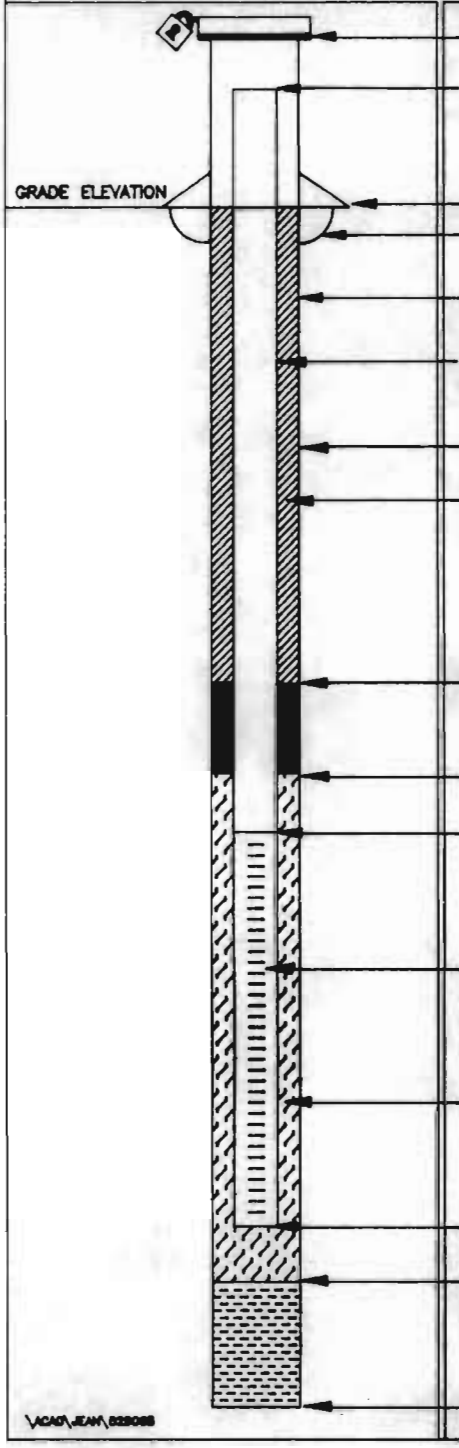
Steel Cap with Lock
Elevation of Top of Surface: 30.36'
Elevation of Top of Roadbox with Cover Off: 30.27'
Locking Stainless Steel Cap
Elevation of Top of Riser Pipe with Cover Off: _____
Type of Surface Seal: _____
ID of Surface Casing: _____
Type of Surface Casing: _____
Riser Pipe ID: 2"
Type of Riser Pipe: PVC
Borehole Diameter: 11"
Type of Backfill: CEMENT / BENTONITE
Elevation/Depth Top of Seal: 24.86' / 5.5'
Type of Seal: BENTONITE PELLETS
Depth Top of Sandpack: _____
Elevation/Depth Top of Screen: 10'
Type of Screen: PVC
Slot Size x Length: .010 x 10'
ID of Screen: 2"
Type of Sandpack: #1 SAND
Elevation/Depth Bottom of Screen: 10.36'/20'
Elevation/Depth Bottom of Sandpack: 8.36'/22'
Type of Backfill Below Observation Well: #1 SAND
Elevation/Depth of Hole: 8.36'/22'

FIGURE _____

MATTIACE PETROCHEMICAL SITE
MONITORING WELL SHEET

Boring No. MW-10

Project: MATTIACE	Location: NW OF SITE	Driller: EMPIRE	
Project No. 006-2L2B	Boring: MW-10	Drilling Method: H.S. AUGER	
Surface Elevation: 65.0'	Date: 8/5/85	Development Method:	
Field Geologist: P. DUBREUILH (WOODWARD-CLYDE)			



Elevation of Top of Surface Casing: 66.41'
Elevation of Top of Riser Pipe with Cover Off: 66.36'
Elevation of Ground Level: 65.0'
Type of Surface Seal: _____
ID of Surface Casing: _____
Type of Surface Casing: _____
Riser Pipe ID: 2"
Type of Riser Pipe: PVC
Borehole Diameter: 11"
Type of Backfill: CEMENT / BENTONITE
Elevation/Depth Top of Seal: 19' / 46'
Type of Seal: BENTONITE
Depth Top of Sandpack: 48'
Elevation/Depth Top of Screen: 15' / 50'
Type of Screen: PVC
Slot Size x Length: .010 x 15'
ID of Screen: 2"
Type of Sandpack: #1 SAND
Elevation/Depth Bottom of Screen: 0.0' / 65'
Elevation/Depth Bottom of Sandpack: 0.0' / 65'
Type of Backfill Below Observation Well: NA
Elevation/Depth of Hole: 0.0' / 65'

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APPENDIX F

GRAIN SIZE, BTU AND TOC ANALYSES

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
TOC ANALYSIS

SAMPLE ID	SAS NO.	TOC	CODE	UNIT
MP-SB04-0006	5056B-0021	210		MG/KG
MP-SB04-0008	5056B-0024	2400		MG/KG
MP-SB04-0010	5056B-0027	440		MG/KG
MP-SB02-0002	5056B-0030	190		MG/KG
MP-SB02-0004	5056B-0033	210		MG/KG
MP-SB02-0006	5056B-0036	980		MG/KG
MP-SB02-0008	5056B-0039	210		MG/KG
MP-SB03-0002	5056B-0042	470		MG/KG
MP-SB03-0004	5056B-0045	940		MG/KG
MP-SB03-0006	5056B-0048	350		MG/KG
MP-SB03-0009	5056B-0051	100	U	MG/KG
MP-SB03-0010	5056B-0054	100	U	MG/KG
MP-SB05-0002	5056B-0057	180		MG/KG
MP-SB05-0004	5056B-0060	100	U	MG/KG
MP-SB01-0002	5056B-0003	970		MG/KG
MP-SB01-0004	5056B-0006	100	R	MG/KG
MP-SB01-0006	5056B-0009	290		MG/KG
MP-SB01-0008	5056B-0012	310		MG/KG
MP-SB04-0002	5056B-0015	1725		MG/KG
MP-SB04-0004	5056B-0018	1400		MG/KG
MP-SB05-0008	5056B-0063	420		MG/KG
MP-SB05-0010	5056B-0066	1900		MG/KG
MP-SB06-0002	5056B-0069	100	U	MG/KG
MP-SB06-0004	5056B-0072	900		MG/KG
MP-SB06-0006	5056B-0075	1200		MG/KG
MP-SB06-0008	5056B-0078	100	U	MG/KG
MP-SB11-0002	5056B-0081	1100		MG/KG
MP-SB11-0004	5056B-0084	1600		MG/KG
MP-SB11-0006	5056B-0087	160		MG/KG
MP-SB11-0008	5056B-0090	360		MG/KG
MP-SB13-0002	5056B-0093	420		MG/KG
MP-SB13-0004	5056B-0096	100	U	MG/KG
MP-SB13-0006	5056B-0099	160		MG/KG
MP-SB13-0008	5056B-0102	990		MG/KG
MP-SB10-0002	5056B-0135	240		MG/KG
MP-SB10-0004	5056B-0138	100	U	MG/KG
MP-SB10-0006	5056B-0141	310		MG/KG
MP-SB10-0009	5056B-0144	100	J	MG/KG
MP-SB10-0010	5056B-0147	440	J	MG/KG
MP-MW3D-0002	5056B-0150	180		MG/KG
MP-MW3D-0005	5056B-0153	430		MG/KG
MP-MW3D-0006	5056B-0156	420		MG/KG
MP-MW3D-0008	5056B-0159	1000		MG/KG
MP-MW3D-0010	5056B-0162	1200		MG/KG
MP-SB08-0002	5056B-0105	310		MG/KG
MP-SB08-0004	5056B-0108	170		MG/KG
MP-SB08-0006	5056B-0111	290		MG/KG
MP-SB07-0002	5056B-0114	100	R	MG/KG
MP-SB07-0004	5056B-0117	2000		MG/KG
MP-SB07-0006	5056B-0120	3200		MG/KG
MP-SB07-0008	5056B-0123	3000		MG/KG
MP-SB09-0002	5056B-0126	2600		MG/KG

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
TOC ANALYSIS

SAMPLE ID	SAS NO.	TOC	CODE	UNIT
MP-SB09-0004	5056B-0129	3600		MG/KG
MP-SB09-0006	5056B-0132	1800		MG/KG
MP-SB10-0002	5056B-0135	240		MG/KG
MP-SB10-0004	5056B-0138	100	U	MG/KG
MP-SB10-0006	5056B-0141	310		MG/KG
MP-SB10-0009	5056B-0144	100	J	MG/KG
MP-SB10-0010	5056B-0147	440	J	MG/KG
MP-MW3D-0002	5056B-0150	180		MG/KG
MP-MW3D-0005	5056B-0153	430		MG/KG
MP-MW3D-0006	5056B-0156	420		MG/KG
MP-MW3D-0008	5056B-0159	1000		MG/KG
MP-MW3D-0010	5056B-0162	1200		MG/KG
MP-SB20-0002	5056B-0303	1700		MG/KG
MP-SB20-0004	5056B-0306	100	U	MG/KG
MP-SB20-0006	5056B-0309	350		MG/KG
MP-SB20-0008	5056B-0312	850		MG/KG
MP-SB14-0002	5056B-0197	290		MG/KG
MP-SB14-0004	5056B-0200	100	U	MG/KG
MP-SB14-0006	5056B-0203	150		MG/KG
MP-SB14-0008	5056B-0206	640		MG/KG
MP-SB17-0002	5056B-0209	100	U	MG/KG
MP-SB17-0004	5056B-0212	100	U	MG/KG
MP-SB17-0006	5056B-0215	100	U	MG/KG
MP-SB17-0008	5056B-0218	100	U	MG/KG
MP-SB16-0002	5056B-0221	740		MG/KG
MP-SB16-0004	5056B-0224	1900		MG/KG
MP-SB16-0006	5056B-0227	100	U	MG/KG
MP-SB12-0002	5056B-0248	5300	R	MG/KG
MP-SB12-0005	5056B-0251	9000	R	MG/KG
MP-SB12-0006	5056B-0254	5000	R	MG/KG
MP-SB12-0008	5056B-0257	1300		MG/KG
MP-SB12-0010	5056B-0260	860		MG/KG
MP-SB19-0002	5056B-0315	100	U	MG/KG
MP-SB19-0004	5056B-0164	190		MG/KG
MP-SB19-0006	5056B-0167	380		MG/KG
MP-SB19-0008	5056B-0170	100	U	MG/KG
MP-SB18-0002	5056B-0173	120		MG/KG
MP-SB18-0004	5056B-0176	360		MG/KG
MP-SB18-0006	5056B-0179	100	U	MG/KG
MP-SB18-0008	5056B-0182	100	U	MG/KG
MP-SB15-0002	5056B-0185	800		MG/KG
MP-SB15-0004	5056B-0188	120		MG/KG
MP-SB15-0006	5056B-0191	310		MG/KG
MP-SB15-0008	5056B-0194	420		MG/KG
MP-HB01-0001	5056B-0233	2100	J	MG/KG
MP-HB01-0002	5056B-0236	1600	J	MG/KG
MP-HB01-0003	5056B-0239	750		MG/KG
MP-HB02-0001	5056B-0242	5100	R	MG/KG
MP-HB03-0001	5056B-0245	6400	R	MG/KG

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
BTU ANALYSIS

SAMPLE ID	SAS NO.	BTU	CODE	UNIT
MP-SB04-0006	5056B-0019	50	U	BTU/LB
MP-SB04-0008	5056B-0022	50	U	BTU/LB
MP-SB04-0010	5056B-0025	50	U	BTU/LB
MP-SB02-0002	5056B-0028	50	U	BTU/LB
MP-SB02-0004	5056B-0031	50	U	BTU/LB
MP-SB02-0004	5056B-0031	50	U	BTU/LB
MP-SB02-0006	5056B-0034	50	U	BTU/LB
MP-SB02-0008	5056B-0037	50	U	BTU/LB
MP-SB03-0002	5056B-0040	50	U	BTU/LB
MP-SB03-0004	5056B-0043	77		BTU/LB
MP-SB03-0006	5056B-0046	234		BTU/LB
MP-SB03-0009	5056B-0049	493	J	BTU/LB
MP-SB03-0010	5056B-0052	239	J	BTU/LB
MP-SB05-0002	5056B-0055	175		BTU/LB
MP-SB05-0004	5056B-0058	165		BTU/LB
MP-SB01-0002	5056B-0001	50	U	BTU/LB
MP-SB01-0004	5056B-0004	50	U	BTU/LB
MP-SB01-0006	5056B-0007	156		BTU/LB
MP-SB01-0008	5056B-0010	322		BTU/LB
MP-SB04-0002	5056B-0013	346		BTU/LB
MP-SB04-0004	5056B-0016	50	U	BTU/LB
MP-SB05-0008	5056B-0061	119		BTU/LB
MP-SB05-0010	5056B-0064	50	U	BTU/LB
MP-SB06-0002	5056B-0067	50	U	BTU/LB
MP-SB06-0002	5056B-0067	50	U	BTU/LB
MP-SB06-0004	5056B-0070	349		BTU/LB
MP-SB06-0004	5056B-0070	353		BTU/LB
MP-SB06-0006	5056B-0073	97		BTU/LB
MP-SB06-0008	5056B-0076	215		BTU/LB
MP-SB11-0002	5056B-0079	50	U	BTU/LB
MP-SB11-0004	5056B-0082	155		BTU/LB
MP-SB11-0006	5056B-0085	155		BTU/LB
MP-SB11-0008	5056B-0088	194		BTU/LB
MP-SB13-0002	5056B-0091	50	U	BTU/LB
MP-SB13-0004	5056B-0094	50	U	BTU/LB
MP-SB13-0006	5056B-0097	182		BTU/LB
MP-SB13-0008	5056B-0100	112		BTU/LB
MP-SB08-0002	5056B-0103	83		BTU/LB
MP-SB08-0002	5056B-0103	81		BTU/LB
MP-SB08-0004	5056B-0106	1097		BTU/LB
MP-SB08-0006	5056B-0109	467		BTU/LB
MP-SB07-0002	5056B-0112	527		BTU/LB
MP-SB07-0004	5056B-0115	188		BTU/LB
MP-SB07-0006	5056B-0118	589		BTU/LB
MP-SB07-0008	5056B-0121	657		BTU/LB
MP-SB09-0002	5056B-0124	289		BTU/LB
MP-SB09-0004	5056B-0127	242		BTU/LB
MP-SB09-0006	5056B-0130	70		BTU/LB
MP-SB10-0002	5056B-0133	50	U	BTU/LB
MP-SB10-0004	5056B-0136	219		BTU/LB
MP-SB10-0004	5056B-0136	244		BTU/LB
MP-SB10-0006	5056B-0139	200		BTU/LB

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
BTU ANALYSIS

SAMPLE ID	SAS NO.	BTU	CODE	UNIT
MP-SB10-0009	5056B-0142	505		BTU/LB
MP-SB10-0010	5056B-0145	593		BTU/LB
MP-MW3D-0002	5056B-0148	54		BTU/LB
MP-MW3D-0005	5056B-0151	87	J	BTU/LB
MP-MW3D-0006	5056B-0154	65	J	BTU/LB
MP-MW3D-0008	5056B-0157	50	U	BTU/LB
MP-MW3D-0010	5056B-0160	424		BTU/LB
MP-SB20-0002	5056B-0301	197		BTU/LB
MP-SB20-0004	5056B-0304	50	U	BTU/LB
MP-SB20-0006	5056B-0307	50	U	BTU/LB
MP-SB20-0008	5056B-0310	50	U	BTU/LB
MP-SB14-0002	5056B-0195	536		BTU/LB
MP-SB14-0004	5056B-0198	401		BTU/LB
MP-SB14-0006	5056B-0201	197		BTU/LB
MP-SB14-0008	5056B-0204	379		BTU/LB
MP-SB17-0002	5056B-0207	311		BTU/LB
MP-SB17-0004	5056B-0210	269		BTU/LB
MP-SB17-0006	5056B-0213	392		BTU/LB
MP-SB17-0008	5056B-0216	478		BTU/LB
MP-SB17-0008	5056B-0216	513		BTU/LB
MP-SB16-0002	5056B-0219	61		BTU/LB
MP-SB16-0004	5056B-0222	1247		BTU/LB
MP-SB16-0006	5056B-0225	797		BTU/LB
MP-SB12-0002	5056B-0246	350		BTU/LB
MP-SB12-0005	5056B-0249	610	J	BTU/LB
MP-SB12-0006	5056B-0252	348	J	BTU/LB
MP-SB12-0008	5056B-0255	247		BTU/LB
MP-SB12-0008	5056B-0255	287		BTU/LB
MP-SB12-0010	5056B-0258	701		BTU/LB
MP-SB19-0002	5056B-0313	50	U	BTU/LB
MP-SB19-0004	5056B-0316	50	U	BTU/LB
MP-SB19-0006	5056B-0165	50	U	BTU/LB
MP-SB19-0008	5056B-0168	50	U	BTU/LB
MP-SB18-0002	5056B-0171	162		BTU/LB
MP-SB18-0004	5056B-0174	150		BTU/LB
MP-SB18-0006	5056B-0177	50	U	BTU/LB
MP-SB18-0008	5056B-0180	50		BTU/LB
MP-SB15-0002	5056B-0183	327		BTU/LB
MP-SB15-0004	5056B-0186	475		BTU/LB
MP-SB15-0004	5056B-0186	509		BTU/LB
MP-SB15-0006	5056B-0189	620		BTU/LB
MP-SB15-0008	5056B-0192	708		BTU/LB
MP-HB01-0001	5056B-0231	112	J	BTU/LB
MP-HB01-0001	5056B-0231	103	J	BTU/LB
MP-HB01-0002	5056B-0234	220	J	BTU/LB
MP-HB01-0003	5056B-0237	115		BTU/LB
MP-HB02-0001	5056B-0240	427		BTU/LB
MP-HB03-0001	5056B-0243	262		BTU/LB
MP-HB03-0001	5056B-0243	262		BTU/LB

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-HB01-0001	5056B-0232				
		1		0.0	
		3/4		100.0	
		1/2		96.0	
		3/8		96.0	
		#4		92.0	
		#8		85.0	
		#10		84.0	
		#16		80.0	
		#30		70.0	
		#40		62.0	
		#50		51.0	
		#80		40.0	
		#100		36.0	
		#200		28.4	
			0.034	25.8	J
			0.022	21.7	J
			0.013	18.3	J
			0.009	17.5	J
			0.007	15.0	J
			0.003	10.8	J
			0.001	9.2	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-HB01-0002	5056B-0235				
		3/4		100.0	
		1/2		96.0	
		3/8		93.0	
		#4		88.0	
		#8		81.0	
		#10		79.0	
		#16		76.0	
		#30		66.0	
		#40		53.0	
		#50		43.0	
		#80		32.0	
		#100		29.0	
		#200		20.5	
			0.035	21.9	J
			0.022	21.1	J
			0.013	18.0	J
			0.009	17.2	J.
			0.006	14.9	
			0.003	11.7	
			0.001	8.6	
		1		0.0	

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-HB01-0003	5056B-0238				
		1/2		100.0	
			0.001	7.5	
		#4		97.0	
			0.003	10.4	
		#30		90.0	
			0.007	13.2	
		#50		80.0	
			0.009	16.0	
		#10		95.0	
			0.013	17.0	
		3/4		0.0	
			0.022	21.7	
		#40		87.0	
			0.035	23.5	
		#16		93.0	
		#200		29.6	
		#8		95.0	
		#100		38.0	
		3/8		99.0	
		#80		44.0	
		1		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-HB02-0001	5056B-0241				
		3/8		92.0	
		#200		9.3	
			0.036	14.5	J
		3/4		0.0	
		1/2		100.0	
		#4		86.0	
		#8		78.0	
		#10		77.0	
		#16		73.0	
		#30		62.0	
		#40		51.0	
		#50		37.0	
		#80		22.0	
		#100		18.0	
			0.022	14.5	J
			0.013	12.2	J
			0.009	10.7	J
			0.007	9.9	J
			0.003	6.9	J
			0.001	4.6	J
		1		0.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-HB03-0001	5056B-0244				
		3/8		96.0	
		#4		87.0	
		1		0.0	
		#8		77.0	
		#10		75.0	
		#16		70.0	
		#30		59.0	
		#40		49.0	
		#50		37.0	
		#80		25.0	
		#100		22.0	
		#200		16.1	
			0.036	14.9	J
			0.023	13.4	J
			0.013	11.1	J
			0.009	10.4	J
			0.007	8.2	J
			0.003	5.9	J
			0.001	3.0	J
		1/2		100.0	
		3/4		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-MW3D-0002	5056B-0149				
			0.001	12.6	J
			0.003	15.3	J
			0.033	41.4	J
			0.006	23.4	J
		#50		62.0	
		1		0.0	
		#30		77.0	
		3/4		0.0	
		#100		50.0	
		1/2		100.0	
			0.012	32.4	J
		3/8		98.0	
		#40		71.0	
		#4		95.0	
		#80		51.0	
		#8		91.0	
		#200		45.1	
		#10		90.0	
			0.021	38.7	J
		#16		84.0	
			0.009	27.0	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-MW3D-0005	5056B-0152				
			0.009	22.2	J
			0.001	10.7	J
			0.034	33.8	J
			0.003	13.3	J
		#50		59.0	
		1		0.0	
		#30		75.0	
		3/4		0.0	
		#100		46.0	
		1/2		100.0	
			0.013	27.6	J
		3/8		99.0	
		#40		68.0	
		#4		94.0	
		#80		49.0	
		#8		90.0	
		#200		40.2	
		#10		89.0	
			0.021	32.0	J
		#16		83.0	
			0.006	18.7	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-MW3D-0006	5056B-0155				
		#16		86.0	
			0.006	17.0	J
			0.009	19.7	J
		1		0.0	
		3/4		100.0	
		#8		90.0	
		1/2		98.0	
		#4		94.0	
		3/8		98.0	
		#10		90.0	
			0.013	25.1	J
		#30		76.0	
		#100		43.0	
		#40		68.0	
			0.034	34.0	J
		#50		57.0	
		#200		36.4	
		#80		46.0	
			0.022	30.4	J
			0.001	8.9	J
			0.003	13.4	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-MW3D-0008	5056B-0158				
			0.037	7.0	J
		#100		13.0	
		#4		93.0	
		#30		61.0	
		#10		78.0	
			0.007	4.6	J
		#50		38.0	
		1		0.0	
		#8		80.0	
		3/4		0.0	
		#16		70.0	
		1/2		0.0	
		#40		52.0	
		3/8		100.0	
		#80		17.0	
			0.003	3.1	J
		#200		8.0	
			0.013	7.0	J
			0.023	7.0	J
			0.001	3.1	J
			0.009	5.4	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-MW3D-0010	5056B-0161				
			0.013	24.7	J
		#40		61.0	
		#50		51.0	
		1		0.0	
		#8		81.0	
		3/4		100.0	
		#16		77.0	
		1/2		95.0	
		#10		80.0	
		#4		87.0	
		#30		77.0	
			0.001	10.4	J
			0.034	27.9	J
		#80		40.0	
		#100		36.0	
		#200		25.2	
			0.022	26.3	J
			0.009	22.3	J
			0.003	15.1	J
			0.006	20.7	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB01-0002	5056B-0002				
		1		0.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB01-0002	5056B-0002				
		3/4		100.0	
			.007	7.2	J
		1/2		97.0	
		#200		5.1	
		3/8		94.0	
		#80		18.0	
		#4		86.0	
			.023	11.1	J
		#8		81.0	
		#50		39.0	
		#10		80.0	
		#100		14.0	
		#16		75.0	
			.036	13.5	J
		#30		67.0	
			.013	9.5	J
		#40		53.0	
			.003	5.6	J
			.001	4.8	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB01-0004	5056B-0005				
		1			
			0.013	7.4	
		3/4			
		#100		20.0	
		1/2			
			0.001	3.7	
		3/8		100.0	
			0.037	8.3	
		#4		97.0	
			0.007	5.5	
		#8		94.0	
		#80		25.0	
		#10		93.0	
		#200		8.9	
		#16		89.0	
			0.023	7.4	
		#30		79.0	
			0.009	7.4	
		#40		68.0	
			0.003	3.7	
		#50		53.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB01-0006	5056B-0008				
		1			
			0.013	23.4	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB01-0006	5056B-0008				
		3/4			
		#100		52.0	
		1/2		0.0	
		#50		83.0	
		3/8		100.0	
			0.035	27.3	
		#4		99.0	
			0.006	18.5	
		#8		98.0	
		#80		57.0	
		#10		98.0	
		#200		38.7	
		#16		97.0	
			0.022	24.4	
		#30		93.0	
			0.009	22.4	
		#40		87.0	
			0.001	11.7	
			0.003	15.6	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB01-0008	5056B-0011				
		1			
			0.010	95.6	
		3/4			
		#100		97.0	
		1/2			
			0.001	54.8	
		3/8		100.0	
			0.027	95.6	
		#4		99.0	
			0.005	89.6	
		#8		99.0	
		#80		97.0	
		#10		99.0	
		#200		95.8	
		#16		99.0	
			0.017	95.6	
		#30		99.0	
			0.007	95.6	
		#40		98.0	
			0.003	72.7	
		#50		98.0	
		3/4		100.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB02-0002	5056B-0029				
		1/2		0.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB02-0002	5056B-0029				
		3/8		100.0	
		#4		99.0	
		#8		97.0	
		#10		96.0	
		#16		94.0	
		#30		87.0	
		3/4		0.0	
		#40		77.0	
		1		0.0	
		#50		64.0	
		#80		41.0	
		#100		35.0	
		#200		25.6	
			0.036	17.2	
			0.023	14.3	
			0.013	11.4	
			0.009	8.6	
			0.007	7.6	
			0.003	5.7	
			0.001	4.8	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB02-0004	5056B-0032				
			0.037	5.5	
		#50		42.0	
		1		0.0	
			0.001	2.3	
		3/4		100.0	
		#100		14.0	
		1/2		93.0	
			0.013	5.5	
		3/8		93.0	
		#40		57.0	
		#4		86.0	
		#80		18.0	
		#8		80.0	
		#200		7.4	
		#10		79.0	
			0.023	5.5	
		#16		74.0	
			0.010	3.9	
		#30		67.0	
			0.003	3.1	
			0.007	3.9	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB02-0006	5056B-0035	1		0.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB02-0006	5056B-0035				
			0.013	7.6	
		3/4		100.0	
		#100		29.0	
		1/2		97.0	
		#50		66.0	
		3/8		97.0	
			0.037	8.4	
		#4		92.0	
			0.007	5.9	
		#8		87.0	
		#80		38.0	
		#10		85.0	
		#200		11.7	
		#16		83.0	
			0.023	8.4	
			0.001	3.4	
			0.009	5.9	
		#40		75.0	
			0.003	4.2	
		#30		80.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB02-0008	5056B-0038				
		1		0.0	
			0.013	9.3	
		3/4		0.0	
		#100		11.0	
		1/2		100.0	
		#50		25.0	
		3/8		99.0	
			0.037	9.3	
		#4		98.0	
			0.007	6.5	
		#8		95.0	
		#80		13.0	
		#10		94.0	
		#200		6.4	
		#16		88.0	
			0.023	9.3	
			0.001	3.7	
			0.009	7.5	
		#40		42.0	
			0.003	4.7	
		#30		66.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB03-0002	5056B-0041				
		1		0.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB03-0002	5056B-0041				
			0.013	18.6	J
		3/4		100.0	
		#100		25.0	
		1/2		98.0	
		#50		39.0	
		3/8		94.0	
			0.035	20.3	J
		#4		90.0	
			0.006	16.0	J
		#8		86.0	
		#80		27.0	
		#10		85.0	
		#200		18.6	
		#16		81.0	
			0.022	20.3	J
		#30		70.0	
			0.009	17.7	J
		#40		58.0	
			0.003	11.0	J
			0.001	7.6	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB03-0004	5056B-0044				
		1		0.0	
			0.012	45.1	
		3/4		0.0	
		#100		76.0	
		1/2		0.0	
		#50		83.0	
		3/8		100.0	
			0.031	54.7	
		#4		99.0	
			0.006	35.5	
		#8		97.0	
		#80		78.0	
		#10		96.0	
		#200		69.6	
		#16		94.0	
			0.001	8.6	
		#30		92.0	
			0.009	42.2	
		#40		89.0	
			0.003	25.0	
			0.020	49.9	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB03-0006	5056B-0047				
		1		0.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB03-0006	5056B-0047				
			0.011	57.7	
		3/4		0.0	
		#100		95.0	
		1/2		0.0	
		#50		96.0	
		3/8		0.0	
			0.029	75.6	
		#4		0.0	
			0.006	40.8	
		#8		0.0	
		#80		95.0	
		#10		100.0	
		#200		93.1	
		#16		99.0	
			0.019	69.6	
		#30		97.0	
			0.008	48.7	
		#40		96.0	
			0.003	26.8	
			0.001	8.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB03-0009	5056B-0050				
		1		0.0	
			0.011	71.6	
		3/4		0.0	
		#100		95.0	
		1/2		100.0	
		#50		96.0	
		3/8		98.0	
			0.028	81.3	
		#4		98.0	
			0.006	59.0	
		#8		97.0	
		#80		96.0	
		#10		97.0	
		#200		92.0	
		#16		97.0	
			0.018	76.5	
		#30		97.0	
			0.008	64.9	
			0.001	19.4	
			0.003	42.6	
		#40		96.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB03-0010	5056B-0053				
		1		0.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB03-0010	5056B-0053				
			0.012	43.8	
		3/4		0.0	
		#100		98.0	
		1/2		0.0	
		#50		100.0	
		3/8		0.0	
			0.037	59.7	
		#4		0.0	
			0.006	32.8	
		#8		0.0	
		#80		99.0	
			0.001	10.9	
		#200		82.8	
		#16		0.0	
			0.020	51.7	
		#30		0.0	
			0.009	37.8	
		#40		0.0	
			0.003	22.9	
		#10		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB04-0002	5056B-0014				
		#40		51.0	
			0.001	5.9	J
			0.009	12.7	J
			0.013	13.5	J
			0.023	14.4	J
			0.036	14.4	J
		#200		12.5	
		#100		17.0	
		#80		18.0	
		#50		27.0	
		1			
		#10		85.0	
		#8		86.0	
		#4		90.0	
		3/8		94.0	
		1/2		96.0	
			0.007	11.0	J
		#16		81.0	
		#30		61.0	
			0.003	7.6	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB04-0004	5056B-0017				
			0.007	15.1	J
			0.003	11.5	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB04-0004	5056B-0017				
			0.001	8.9	J
			0.013	19.5	J
			0.034	25.7	J
		1		0.0	
		3/4		100.0	
		1/2		98.0	
		3/8		98.0	
		#4		96.0	
		#8		91.0	
		#10		89.0	
		#16		85.0	
			0.022	22.1	J
			0.009	17.7	J
		#40		67.0	
		#50		56.0	
		#80		38.0	
		#100		35.0	
		#200		27.9	
		#30		77.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB04-0006	5056B-0020				
			0.010	4.8	
			0.013	4.8	
			0.001	1.6	
			0.023	6.4	
			0.037	6.4	
		#200		12.2	
		#100		19.0	
			0.007	4.0	
		#80		23.0	
		1		0.0	
		#50		40.0	
		#40		58.0	
		#30		68.0	
		#16		77.0	
		#10		81.0	
		#8		82.0	
		#4		89.0	
		3/8		96.0	
		1/2		96.0	
			0.003	3.2	
		3/4		100.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB04-0008	5056B-0023				
			0.007	6.1	
			0.003	3.8	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB04-0008	5056B-0023				
		#50		37.0	
			0.001	3.1	
		3/8		91.0	
			0.013	7.7	
		#8		78.0	
			0.023	8.4	
		3/4		100.0	
			0.036	9.2	
		#40		54.0	
		#200		13.9	
		#4		84.0	
		#100		20.0	
		1/2		94.0	
		#80		22.0	
		1		0.0	
		#16		73.0	
		#30		65.0	
		#10		77.0	
			0.009	7.7	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB04-0010	5056B-0026				
			0.006	61.0	
			0.003	50.3	
		3/8		99.0	
			0.001	37.8	
		#16		97.0	
			0.008	65.8	
		#40		95.0	
			00.011	67.8	
		#8		98.0	
			0.019	67.8	
		3/4		0.0	
			0.030	69.7	
		#30		96.0	
		#200		73.8	
		#10		97.0	
		#100		83.0	
		#4		99.0	
		#80		85.0	
		1/2		100.0	
		#50		93.0	
		1		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB05-0002	5056B-0056				
		1		0.0	
			0.014	3.1	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB05-0002	5056B-0056				
		3/4		0.0	
		#100		12.0	
		1/2		100.0	
		#50		32.0	
		3/8		92.0	
			0.037	3.1	J
		#4		86.0	
			0.007	2.3	J
		#8		79.0	
		#80		14.0	
		#10		78.0	
		#200		5.5	
		#16		73.0	
			0.023	3.1	J
		#30		61.0	
			0.001	1.5	J
		#40		50.0	
			0.003	1.5	J
			0.010	3.9	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB05-0004	5056B-0059				
		1		0.0	
		#30		38.0	
		3/4		100.0	
		#100		10.0	
		1/2		83.0	
		#50		19.0	
		3/8		79.0	
		#16		60.0	
		#4		72.0	
		#40		35.0	
		#8		66.0	
		#80		10.0	
		#10		65.0	
		#200		7.3	
			0.037	3.9	J
			0.007	1.9	J
			0.023	2.6	J
			0.010	3.2	J
			0.013	2.6	J
			0.003	1.3	J
			0.001	1.3	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB05-0008	5056B-0062				
			0.006	24.2	
			0.034	29.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB05-0008	5056B-0062				
		#30		95.0	
		#100		48.0	
		#50		79.0	
			0.001	16.4	
		1		0.0	
		#16		96.0	
		3/4		0.0	
		#40		91.0	
		1/2		0.0	
		#80		55.0	
		3/8		100.0	
		#200		34.8	
		#4		98.0	
			0.022	27.1	
		#8		97.0	
			0.009	27.1	
		#10		97.0	
			0.003	20.3	
			0.013	27.1	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB05-0010	5056B-0065				
		1		100.0	
			0.013	8.0	J
		3/4		97.0	
		#100		18.0	
		1/2		93.0	
		#50		29.0	
		3/8		90.0	
			0.036	11.6	
		#4		82.0	
			0.007	6.5	J
		#8		74.0	
		#80		20.0	
			0.001	3.6	J
		#200		14.1	
		#16		68.0	
			0.023	10.2	J
		#30		51.0	
			0.009	8.0	J
		#40		40.0	
			0.003	5.1	J
		#10		73.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB06-0002	5056B-0068				
		1		0.0	
			0.012	42.6	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB06-0002	5056B-0068				
		3/4		0.0	
		#100		99.0	
		1/2		0.0	
		#50		99.0	
		3/8		0.0	
			0.033	42.6	
		#4		0.0	
			0.006	42.6	
			0.001	41.6	
		#80		99.0	
		#10		0.0	
		#200		97.6	
		#16		0.0	
			0.021	42.6	
		#30		0.0	
			0.009	42.6	
		#40		100.0	
			0.003	42.6	
		#8		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB06-0004	5056B-0071				
		1		0.0	
		3/4		0.0	
			0.009	10.8	J
		1/2		100.0	
		#200		5.8	
		3/8		96.0	
		#80		19.0	
		#4		87.0	
			0.022	14.7	J
		#8		80.0	
		#50		34.0	
		#10		78.0	
		#100		15.0	
		#16		73.0	
			0.036	15.5	J
		#30		58.0	
			0.013	12.4	J
		#40		48.0	
			0.003	7.0	J
			0.001	4.6	J
		0.007		9.3	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB06-0006	5056B-0074				
		1		0.0	
			0.013	7.9	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB06-0006	5056B-0074				
		3/4		0.0	
			0.001	1.7	
		1/2		0.0	
		#50		21.0	
		3/8		100.0	
			0.037	8.7	
		#4		95.0	
			0.007	5.2	
		#8		89.0	
		#80		12.0	
		#10		88.0	
		#200		4.4	
		#16		81.0	
			0.023	9.6	
		#30		56.0	
			0.009	6.1	
		#40		35.0	
			0.003	3.5	
		#100		10.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB06-0008	5056B-0077				
		1		0.0	
			0.012	38.9	
		3/4		0.0	
		#100		61.0	
		1/2		0.0	
		#50		77.0	
		3/8		100.0	
			0.033	44.8	
		#4		99.0	
			0.006	29.2	
		#8		98.0	
		#80		63.0	
		#10		98.0	
		#200		55.3	
		#16		97.0	
			0.021	42.8	
		#30		92.0	
			0.009	34.1	
		#40		86.0	
			0.003	22.4	
			0.001	8.8	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB07-0002	5056B-0113				
		1		0.0	
		1/2		100.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB07-0002	5056B-0113				
		3/4		0.0	
		3/8		96.0	
		#10		82.0	
		#16		78.0	
		#30		69.0	
		#40		62.0	
		#50		51.0	
		#80		40.0	
		#100		37.0	
		#200		30.5	
			0.033	29.3	J
			0.021	27.7	J
			0.012	24.4	J
			0.009	22.0	J
			0.006	18.7	J
			0.003	15.5	J
			0.001	9.8	J
		#8		83.0	
		#4		89.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB07-0004	5056B-0116				
			0.001	13.1	J
		3/4		0.0	
		#10		94.0	
		1		0.0	
		#16		92.0	
		#30		87.0	
		#40		82.0	
		#50		75.0	
		#80		67.0	
		#100		65.0	
		#200		55.8	
			0.033	44.8	J
			0.021	39.2	J
			0.012	33.6	J
			0.009	30.8	J
			0.006	27.1	J
			0.003	19.6	J
		3/8		99.0	
		#8		95.0	
		#4		97.0	
		1/2		100.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB07-0006	5056B-0119				
		1		0.0	
		1/2		100.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB07-0006	5056B-0119				
		3/4		0.0	
		3/8		99.0	
		#4		96.0	
		#100		60.0	
		#8		92.0	
			0.012	31.6	
		#10		91.0	
			0.033	40.6	
		#16		89.0	
			0.006	23.5	
		#30		83.0	
		#200		50.8	
		#40		79.0	
			0.021	38.8	
		#50		70.0	
			0.009	27.1	
		#80		62.0	
			0.003	18.0	
			0.001	9.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB07-0008	5056B-0122				
			0.012	39.3	J
		#30		84.0	
			0.006	32.0	J
		#100		60.0	
		1/2		100.0	
		#50		70.0	
		3/8		99.0	
			0.032	48.4	J
		#4		96.0	
		#40		79.0	
		#8		93.0	
			0.001	16.4	J
		#10		92.0	
		#200		53.1	
		#16		90.0	
			0.021	42.9	J
		1		0.0	
			0.009	34.7	J
		3/4		0.0	
			0.003	26.5	J
		#80		62.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB08-0002	5056B-0104				
		#8		97.0	
			0.001	19.4	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB08-0002	5056B-0104				
		3/8		100.0	
			0.003	24.3	
		#30		91.0	
			0.006	32.0	
		#50		83.0	
			0.009	35.9	
		#10		97.0	
			0.012	40.7	
		3/4		0.0	
			0.020	50.4	
		#40		88.0	
			0.031	60.1	
		#16		95.0	
		#200		75.2	
		#4		99.0	
		#100		78.0	
		1/2		0.0	
		#80		79.0	
		1		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB08-0004	5056B-0107				
		#30		45.0	
			0.007	10.5	J
			0.003	8.5	J
		#10		66.0	
		#8		68.0	
			0.001	6.6	J
			0.009	11.8	J
			0.013	13.1	J
			0.022	15.7	J
		#80		9.0	
		#50		23.0	
		#100		6.0	
		#40		36.0	
		#16		57.0	
			0.035	17.0	J
		1/2		95.0	
		#4		78.0	
		3/8		91.0	
		3/4		95.0	
		#200		0.0	
		1		100.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB08-0006	5056B-0110				
			0.001	15.8	J
			0.019	66.0	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB08-0006	5056B-0110				
			0.011	57.1	J
			0.008	49.2	J
			0.006	41.4	J
			0.003	32.5	J
		#100		96.0	
		1		0.0	
		3/4		0.0	
			0.029	75.8	J
		#10		99.0	
		#200		88.2	
		#30		98.0	
		1/2		0.0	
		#4		0.0	
		#80		96.0	
		#16		99.0	
		#50		97.0	
		#8		100.0	
		#40		98.0	
		3/8		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB09-0002	5056B-0125				
		1		0.0	
			0.013	17.6	J
			0.001	5.8	J
		#100		28.0	
		1/2		100.0	
		#50		45.0	
		3/8		97.0	
			0.035	22.6	J
		#4		91.0	
			0.007	11.7	J
		#8		85.0	
		#80		32.0	
		#10		84.0	
		#200		19.1	
		#16		79.0	
			0.022	20.9	J
		#30		70.0	
			0.009	15.1	J
		#40		60.0	
			0.003	9.2	J
		3/4		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB09-0004	5056B-0128				
		1		100.0	
			0.013	18.9	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB09-0004	5056B-0128				
		3/4		91.0	
		#100		22.0	
			0.001	7.6	J
		#50		37.0	
		3/8		90.0	
			0.034	25.0	J
		#4		86.0	
			0.007	13.6	J
		#8		78.0	
		#80		26.0	
		#10		76.0	
		#200		14.5	
		#16		71.0	
			0.022	21.2	J
		#30		59.0	
			0.009	15.1	J
		#40		49.0	
			0.003	9.1	J
		1/2		91.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB09-0006	5056B-0131				
		1.5		0.0	
		1		0.0	
			0.013	15.3	J
		3/4		100.0	
		#100		34.0	
		1/2		95.0	
		#50		52.0	
		3/8		91.0	
			0.034	23.7	J
		#4		84.0	
			0.007	9.9	J
		#8		78.0	
		#80		41.0	
		#10		77.0	
		#200		24.4	
		#16		74.0	
			0.022	19.9	J
		#30		65.0	
			0.009	12.2	J
		#40		60.0	
			0.003	8.4	J
			0.001	4.6	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB10-0002	5056B-0134				
			0.001	4.9	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB10-0002	5056B-0134				
		1		91.0	
			0.013	11.6	J
		3/4		86.0	
		#100		19.0	
		1/2		84.0	
		#50		24.0	
		3/8		78.0	
			0.035	12.8	J
		#4		69.0	
			0.007	8.5	J
		#8		63.0	
		#80		20.0	
		#10		61.0	
		#200		14.9	
		#16		49.0	
			0.022	12.8	J
		#30		34.0	
			0.009	9.1	J
		#40		28.0	
			0.003	5.5	J
		1.5		100.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB10-0004	5056B-0137				
		1.5		0.0	
		1		0.0	
			0.013	10.0	J
		3/4		100.0	
		#100		13.0	
		1/2		96.0	
		#50		37.0	
		3/8		92.0	
			0.036	11.7	J
		#4		88.0	
			0.007	6.7	J
		#8		84.0	
		#80		15.0	
		#10		84.0	
		#200		10.3	
		#16		81.0	
			0.023	10.8	J
		#30		75.0	
			0.010	8.3	J
		#40		64.0	
			0.001	5.0	J
			0.003	5.0	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB10-0006	5056B-0140				
		1		0.0	
			0.012	50.6	
		3/4		0.0	
		#100		96.0	
		1/2		0.0	
		#50		97.0	
		3/8		0.0	
			0.031	63.3	
		#4		0.0	
			0.001	12.7	
		#8		100.0	
		#80		97.0	
		#10		98.0	
		#200		85.7	
		#16		98.0	
			0.020	57.4	
		#30		98.0	
			0.008	44.8	
		#40		98.0	
			0.003	32.1	
			0.006	38.9	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB10-0009	5056B-0143				
		1		0.0	
			0.010	75.5	J
		3/4		100.0	
		#100		89.0	
		1/2		92.0	
		#50		90.0	
		3/8		92.0	
			0.027	86.4	J
		#4		92.0	
			0.006	59.1	J
		#8		91.0	
		#80		89.0	
		#10		91.0	
		#200		88.1	
		#16		91.0	
			0.017	83.7	J
		#30		91.0	
			0.008	69.1	J
		#40		91.0	
			0.001	21.8	J
			0.003	41.8	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB10-0010	5056B-0146				
		1		0.0	
			0.010	83.3	
		3/4		0.0	
		#100		99.0	
		1/2		0.0	
		#50		99.0	
		3/8		0.0	
			0.027	97.4	
		#4		0.0	
		#40		100.0	
		#8		0.0	
		#80		99.0	
		#10		0.0	
		#200		98.3	
		#16		0.0	
			0.017	93.4	
		#30		0.0	
			0.008	74.3	
			0.001	31.1	
			0.003	49.2	
			0.006	66.3	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB11-0002	5056B-0080				
		1		0.0	
			0.013	10.2	
		3/4		0.0	
		#100		37.0	
		1/2		100.0	
		#50		53.0	
		3/8		99.0	
			0.036	17.1	
		#4		93.0	
			0.007	6.8	
		#8		87.0	
		#80		41.0	
		#10		86.0	
		#200		24.1	
		#16		80.0	
			0.023	13.7	
		#30		69.0	
			0.009	8.5	
			0.001	3.4	
			0.003	4.3	
		#40		62.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB11-0004	5056B-0083				
		1		0.0	
			0.012	29.4	J
		3/4		0.0	
		#100		45.0	
		1/2		100.0	
		#50		61.0	
		3/8		96.0	
			0.033	32.7	J
		#4		88.0	
			0.006	25.3	J
			0.001	14.7	J
		#80		49.0	
		#10		82.0	
		#200		33.9	
		#16		80.0	
			0.021	31.0	J
		#30		76.0	
			0.009	26.9	J
		#40		70.0	
			0.003	20.4	J
		#8		83.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB11-0006	5056B-0086				
		1.5		0.0	
		1		0.0	
			0.013	8.0	J
		3/4		100.0	
		#100		20.0	
		1/2		89.0	
		#50		27.0	
		3/8		86.0	
			0.001	1.5	J
		#4		80.0	
			0.007	5.1	J
		#8		74.0	
		#80		21.0	
		#10		73.0	
		#200		15.7	
		#16		66.0	
			0.023	9.4	J
		#30		45.0	
			0.009	6.5	J
		#40		35.0	
			0.003	4.4	J
			0.036	11.6	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB11-0008	5056B-0089				
		1.5		0.0	
		#16		97.0	
		1		0.0	
		#8		99.0	
		3/4		0.0	
		#4		99.0	
		1/2		0.0	
		#10		98.0	
		3/8		100.0	
		#30		97.0	
		#40		96.0	
			0.003	24.3	
		#50		76.0	
		#80		66.0	
		#100		64.0	
		#200		55.9	
			0.033	43.8	
			0.021	43.8	
			0.012	38.9	
			0.001	6.8	
			0.009	36.0	
			0.006	32.1	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB12-0002	5056B-0247				
			0.001	10.3	
			0.003	14.6	
		1		0.0	
			0.009	24.0	
		3/4		0.0	
			0.012	30.0	
			0.021	36.0	
			0.033	41.1	
		#200		57.5	
		#100		66.0	
		#80		68.0	
		#50		73.0	
		#40		76.0	
			0.006	18.9	
		#16		84.0	
		#10		86.0	
		#8		87.0	
		#4		93.0	
		3/8		100.0	
		1/2		0.0	
		#30		80.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB12-0005	5056B-0250				
			0.013	17.7	
			0.003	9.7	
			0.007	13.3	
			0.009	15.9	
		3/4		0.0	
		1/2		100.0	
			0.001	8.0	
		3/8		99.0	
			0.022	24.8	
		#4		94.0	
		#8		90.0	
		#10		89.0	
		#16		85.0	
		#30		77.0	
		#40		69.0	
		#50		63.0	
		#80		57.0	
		#100		54.0	
		#200		39.8	
			0.034	28.3	
		1		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB12-0006	5056B-0253				
		1		0.0	
		1/2		98.0	
			0.007	14.0	J
		3/8		97.0	
			0.033	32.2	J
		#4		90.0	
		#100		57.0	
		#8		84.0	
			0.013	20.6	J
		#10		83.0	
		#80		60.0	
		#16		80.0	
		#200		44.9	
		#30		75.0	
			0.022	27.2	J
		#40		69.0	
			0.009	17.3	J
		3/4		100.0	
			0.003	9.9	J
		#50		65.0	
			0.001	7.4	J

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB12-0008	5056B-0256				
		3/4		0.0	
			0.009	38.1	J
		1/2		100.0	
		#200		48.2	
		3/8		97.0	
			0.003	28.6	J
		#4		94.0	
			0.021	41.5	J
		#8		89.0	
		#50		68.0	
		#10		87.0	
		#100		57.0	
		#16		85.0	
			0.032	43.3	J
		#30		81.0	
			0.012	39.8	J
		#40		75.0	
			0.006	33.7	J
		1		0.0	
			0.001	19.9	J
		#80		59.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB12-0010	5056B-0259				
		3/4		0.0	
			0.008	44.4	
		1/2		100.0	
		#200		60.5	
		3/8		99.0	
		1		0.0	
		#4		98.0	
			0.020	54.0	
		#8		97.0	
			0.003	28.0	
		#10		97.0	
		#100		71.0	
		#16		95.0	
			0.031	56.9	
		#30		92.0	
			0.012	48.2	
		#40		89.0	
			0.006	38.6	
		#50		83.0	
			0.001	13.5	
		#80		73.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB13-0002	5056B-0092				
		1.5		100.0	
		1		84.0	
		3/4		84.0	
		1/2		83.0	
		3/8		80.0	
		#8		63.0	
		#10		63.0	
		#16		60.0	
		#4		70.0	
		#40		44.0	
		#50		30.0	
		#100		11.0	
			0.001	2.5	J
			0.003	2.5	J
			0.010	3.1	J
		#80		14.0	
		#30		52.0	
			0.013	4.4	J
			0.007	2.5	J
		#200		6.6	
			0.023	4.4	J
			0.037	4.4	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB13-0004	5056B-0095				
			0.003	4.0	
			0.007	5.0	
			0.010	5.0	
			0.001	4.0	
			0.013	6.9	
		#100		16.0	
			0.023	7.9	
			0.037	7.9	
		#200		12.6	
		#8		0.0	
		#4		0.0	
		#10		0.0	
		#16		100.0	
		#30		97.0	
		3/4		0.0	
		1/2		0.0	
		3/8		0.0	
		#80		18.0	
		#50		33.0	
		#40		78.0	
		1		0.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB13-0006	5056B-0098				
		#4		83.0	
		#10		77.0	
			0.023	9.2	
		1		0.0	
			0.013	7.6	
			0.009	6.9	
		#40		36.0	
		#30		50.0	
			0.003	3.8	
		#16		71.0	
			0.001	3.1	
		#8		78.0	
		1/2		92.0	
		3/8		91.0	
		#50		24.0	
		3/4		100.0	
		#80		18.0	
		#200		12.3	
			0.007	5.3	
		#100		16.0	
			0.036	10.7	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB13-0008	5056B-0101				
			0.001	5.5	
			0.003	12.8	
		3/8		99.0	
			0.006	17.3	
		#16		88.0	
			0.009	19.2	
		#40		66.0	
			0.013	21.9	
		#8		93.0	
			0.022	23.7	
		3/4		0.0	
			0.035	25.5	
		#30		77.0	
		#200		23.5	
		#10		92.0	
		#100		32.0	
		#4		97.0	
		#80		35.0	
		1/2		100.0	
		#50		52.0	
		1		0.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB14-0002	5056B-0196				
			0.001	7.1	J
		1		0.0	
			0.003	9.5	J
		#30		70.0	
			0.007	12.7	J
		#50		55.0	
			0.009	15.1	J
		#10		80.0	
			0.013	19.0	J
		1/2		98.0	
			0.022	23.8	J
		#40		63.0	
			0.034	30.2	J
		#16		78.0	
		#200		35.0	
		#8		81.0	
		#100		44.0	
		3/8		94.0	
		#80		47.0	
		3/4		100.0	
		#4		89.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB14-0004	5056B-0199				
			0.001	5.6	J
		#100		44.0	
			0.003	7.1	J
			0.034	24.6	J
			0.007	9.5	J
		#30		70.0	
			0.009	11.9	J
		#200		31.4	
			0.013	15.1	J
		#80		48.0	
			0.022	19.0	J
		#40		63.0	
		#50		57.0	
		#10		80.0	
		#8		81.0	
		#4		87.0	
		3/8		94.0	
		1/2		95.0	
		3/4		100.0	
		1		0.0	
		#16		76.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB14-0006	5056B-0202				
		#30		76.0	
			0.010	5.1	
		#40		67.0	
			0.023	6.0	
		#16		83.0	
			0.003	3.4	
		#50		46.0	
		#80		17.0	
			0.013	5.1	
		#100		12.0	
			0.007	3.4	
		#10		86.0	
			0.001	3.4	
		#8		87.0	
		#4		92.0	
		3/8		98.0	
		1/2		100.0	
		3/4		0.0	
		1		0.0	
		#200		7.1	
			0.037	6.8	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB14-0008	5056B-0205				
		#8		65.0	
			0.003	4.4	J
			0.007	6.2	J
		1/2		95.0	
			0.009	6.2	J
		#10		63.0	
			0.013	6.9	J
		#30		35.0	
			0.023	6.9	J
		1		0.0	
			0.036	8.7	J
		#40		28.0	
		#200		12.4	
		#16		52.0	
		#100		16.0	
			0.001	3.1	J
		#80		17.0	
		3/8		85.0	
		#50		22.0	
		3/4		100.0	
		#4		77.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB15-0002	5056B-0184				
			0.034	26.0	J
		1		100.0	
		3/4		89.0	
		#8		78.0	
		1/2		86.0	
		#4		82.0	
		3/8		86.0	
		#10		77.0	
		#30		68.0	
		#16		75.0	
		#40		60.0	
		#50		47.0	
		#80		36.0	
		#100		33.0	
		#200		23.0	
		1.5		0.0	
			0.022	23.7	J
			0.013	19.9	J
			0.009	16.8	J
			0.006	15.3	J
			0.003	9.9	J
			0.001	8.4	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB15-0004	5056B-0187				
		#10		95.0	
		1/2		100.0	
		#8		96.0	
		1		0.0	
		#4		98.0	
		3/4		0.0	
			0.001	11.3	
		1.5		0.0	
		#30		91.0	
		#40		88.0	
		#50		84.0	
		#80		78.0	
		#100		75.0	
		#200		63.9	
			0.033	45.3	
			0.021	36.8	
			0.013	29.2	
			0.009	23.6	
			0.006	20.7	
			0.003	16.0	
		#16		94.0	
		3/8		99.0	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB15-0006	5056B-0190				
		1		0.0	
		3/4		0.0	
		#8		0.0	
		1/2		0.0	
		#4		0.0	
		3/8		0.0	
		#10		0.0	
		#16		0.0	
			0.001	13.9	
		#100		100.0	
			0.003	33.8	
		#30		0.0	
			0.006	49.7	
		#50		0.0	
			0.008	57.7	
		#200		97.7	
			0.011	66.6	
		#80		0.0	
			0.018	77.6	
		#40		0.0	
			0.028	85.5	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB15-0008	5056B-0193				
		1		0.0	
			0.011	62.0	
		3/4		0.0	
		#100		90.0	
		1/2		0.0	
		#50		93.0	
		3/8		0.0	
			0.029	73.7	
		#4		100.0	
			0.006	50.4	
		#8		98.0	
		#80		91.0	
		#10		98.0	
		#200		86.9	
		#16		97.0	
			0.019	69.8	
		#30		95.0	
			0.008	56.2	
		#40		94.0	
			0.003	36.8	
			0.001	16.5	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB16-0002	5056B-0220				
		3/4		100.0	
		1/2		95.0	
		3/8		91.0	
		1		0.0	
			0.001	8.2	J
			0.006	14.1	J
		#16		70.0	
			0.009	16.4	J
		#40		47.0	
			0.013	17.9	J
		#8		77.0	
			0.022	20.8	J
		#50		36.0	
			0.034	22.3	J
		#30		57.0	
		#200		14.2	
		#10		75.0	
		#100		22.0	
		#4		84.0	
		#80		25.0	
			0.003	11.2	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB16-0004	5056B-0223				
			0.009	27.3	J
		1			
			0.012	30.3	J
		#4		81.0	
			0.021	33.3	J
		#10		76.0	
			0.033	34.8	J
		1/2		90.0	
		#100		45.0	
		#16		74.0	
		#80		47.0	
		#8		76.0	
		#50		54.0	
		3/8		86.0	
		#40		61.0	
		3/4		100.0	
		#30		67.0	
			0.003	18.2	J
			0.001	12.9	J
			0.006	24.2	J
		#200		37.8	

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SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB16-0006	5056B-0226				
		#10		87.0	
		#16		87.0	
		1/2		91.0	
		#30		85.0	
			0.003	26.0	J
		#40		84.0	
			0.008	39.9	J
		#50		82.0	
		#4		90.0	
		#80		80.0	
		3/4		100.0	
		#100		80.0	
			0.006	34.7	J
		#200		75.8	
			0.001	20.0	J
			0.030	61.6	J
		3/8		91.0	
			0.020	53.8	J
		#8		87.0	
			0.012	45.1	J
		1		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB17-0002	5056B-0208				
		#4		79.0	
		#100		35.0	
		#8		71.0	
			0.009	15.3	J
		#10		70.0	
			0.034	26.4	J
		#16		64.0	
			0.003	10.4	J
		#30		56.0	
		#200		25.9	
		3/8		90.0	
			0.022	23.6	J
		#40		51.0	
		#50		45.0	
			0.006	13.2	J
		1/2		93.0	
			0.001	7.7	J
		3/4		100.0	
		1		0.0	
		#80		37.0	
			0.013	18.8	J

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB17-0004	5056B-0211				
		#4		89.0	
		#8		85.0	
		#200		1.1	
		#10		84.0	
			0.009	11.7	
		#16		82.0	
			0.023	12.5	
		#30		75.0	
			0.003	7.5	
		#40		60.0	
			0.036	12.5	
		#50		34.0	
			0.013	12.5	
		#80		8.0	
			0.007	9.2	
		#100		4.0	
			0.001	5.0	
		3/4		100.0	
		3/8		93.0	
		1		0.0	
		1/2		96.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB17-0006	5056B-0214				
		#100		22.0	
		#4		99.0	
			0.009	10.6	
		#8		98.0	
			0.023	13.5	
		1		0.0	
			0.003	7.7	
		#10		97.0	
		3/4		0.0	
		#200		15.0	
		#16		95.0	
		#30		88.0	
			0.013	13.5	
		#40		69.0	
			0.007	9.6	
		#50		40.0	
			0.001	7.7	
		#80		25.0	
		1/2		0.0	
		3/8		100.0	
			0.036	13.5	

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB17-0008	5056B-0217				
		#4		86.0	
		#8		82.0	
		3/8		89.0	
		#10		81.0	
			0.009	19.3	J
		#16		72.0	
			0.022	25.7	J
		#30		55.0	
			0.003	12.8	J
		#40		46.0	
		3/4		100.0	
		#50		39.0	
			0.013	21.7	J
		#80		34.0	
			0.006	16.9	J
		#100		32.0	
			0.001	4.0	J
		#200		24.2	
		1/2		92.0	
			0.034	28.1	J
		1		0.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB18-0002	5056B-0172				
			0.001	5.6	
			0.003	7.2	
		1		0.0	
			0.007	9.6	
		#16		75.0	
			0.009	11.2	
		#40		53.0	
			0.013	11.2	
		#8		83.0	
			0.023	11.2	
		1/2		100.0	
			0.036	11.2	
		#30		64.0	
		#200		12.5	
		#10		81.0	
		#100		16.0	
		#4		91.0	
		#80		19.0	
		3/4		0.0	
		#50		36.0	
		3/8		97.0	

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB18-0004	5056B-0175				
		#100		55.0	
		#4		99.0	
		3/8		100.0	
		1/2		0.0	
			0.001	16.6	
			0.003	22.4	
			0.006	30.2	
			0.009	34.1	
			0.012	38.0	
			0.021	40.9	
			0.033	42.8	
		#200		50.5	
		#50		72.0	
		#40		84.0	
		#30		92.0	
		#16		97.0	
		#10		98.0	
		1		0.0	
		3/4		0.0	
		#80		58.0	
		#8		98.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB18-0006	5056B-0178				
		1		0.0	
		#8		98.0	
		#10		98.0	
		#16		98.0	
		#30		95.0	
		#40		72.0	
			0.007	7.8	
		#50		27.0	
		#4		99.0	
		#80		16.0	
		#100		14.0	
		#200		11.1	
			0.036	11.7	
			0.023	10.7	
			0.013	10.7	
			0.009	8.8	
			0.003	5.8	
		1/2		0.0	
		3/4		0.0	
			0.001	5.8	
		3/8		100.0	

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB18-0008	5056B-0181				
		#10		74.0	
			0.013	4.4	J
			0.010	2.9	J
		#80		11.0	
		#16		68.0	
		#30		48.0	
		#8		74.0	
			0.001	2.2	J
			0.003	2.2	J
		#40		30.0	
			0.007	2.9	J
		1/2		80.0	
			0.023	4.4	J
		1		80.0	
			0.037	5.9	J
		#50		18.0	
		#200		6.9	
		1.5		100.0	
		#100		10.0	
		3/4		80.0	
		#4		77.0	
		3/8		78.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB19-0002	5056B-0314				
			0.001	3.4	J
			0.003	3.4	J
			0.007	6.0	J
			0.009	6.8	J
			0.013	7.7	J
			0.023	7.7	J
		#200		4.6	
		1		0.0	
		#80		26.0	
		#50		45.0	
		#40		58.0	
		#30		67.0	
			0.037	8.5	J
		#16		81.0	
		#100		19.0	
		#10		86.0	
		#8		87.0	
		#4		94.0	
		3/8		99.0	
		1/2		100.0	
		3/4		0.0	

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB19-0004	5056B-0163				
		#30		78.0	
		#16		84.0	
		3/4		0.0	
		#10		88.0	
		#200		52.8	
		#8		89.0	
		#80		56.0	
		#4		94.0	
		1/2		100.0	
		3/8		99.0	
		1		0.0	
		#40		71.0	
		#100		55.0	
		#50		64.0	
			0.031	54.5	J
			0.011	53.7	J
			0.008	52.8	J
			0.020	54.5	J
			0.006	51.0	J
			0.001	30.8	J
			0.003	43.1	J

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB19-0006	5056B-0166				
			0.022	15.7	J
			0.035	16.4	J
		3/8		90.0	
		#200		1.9	
		#8		73.0	
		#100		13.0	
		3/4		100.0	
		#80		19.0	
		#10		72.0	
		#50		35.0	
		#4		81.0	
		#40		46.0	
		1/2		95.0	
			0.001	5.7	J
		1		0.0	
			0.009	11.4	J
		#16		68.0	
			0.003	7.8	J
		#30		56.0	
			0.013	14.2	J
			0.007	10.7	J

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB19-0008	5056B-0169				
		1		0.0	
		3/4		0.0	
		#16		88.0	
		1/2		100.0	
		#80		16.0	
		3/8		99.0	
		#200		7.7	
			0.001	1.9	
		#40		42.0	
			0.003	1.9	
		#8		96.0	
			0.007	3.8	
		#100		11.0	
			0.010	4.8	
		#50		22.0	
			0.013	5.7	
		#30		56.0	
			0.023	5.7	
		#10		96.0	
			0.037	6.7	
		#4		98.0	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB20-0002	5056B-0302				
			0.022	23.3	
			0.003	11.6	
		#16		87.0	
			0.007	15.2	
			0.034	26.9	
			0.001	9.0	
		#200		29.7	
		#100		36.0	
		#80		40.0	
		#50		54.0	
		#40		68.0	
		#30		79.0	
		1		0.0	
		#4		94.0	
		3/8		99.0	
		1/2		99.0	
		3/4		100.0	
			0.009	17.9	
		#8		91.0	
		#10		90.0	
			0.013	21.5	

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB20-0004	5056B-0305				
			0.023	7.1	
		3/8		99.0	
			0.013	6.2	
		#16		85.0	
			0.037	7.1	
		#40		66.0	
			0.007	4.4	
		#8		90.0	
			0.003	2.6	
		3/4		0.0	
			0.001	3.5	
		#30		80.0	
		#200		8.4	
		#10		89.0	
		#100		15.0	
		#4		96.0	
		#80		18.0	
		1/2		100.0	
		#50		37.0	
		1		0.0	
			0.010	5.3	

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB20-0006	5056B-0308				
			0.023	8.3	
			0.003	4.1	
			0.013	8.3	
			0.007	5.8	
			0.009	6.6	
			0.001	3.3	
		1		0.0	
		3/4		0.0	
		1/2		100.0	
		3/8		98.0	
		#4		92.0	
		#8		85.0	
		#10		84.0	
		#16		79.0	
		#30		70.0	
		#40		59.0	
		#50		41.0	
		#80		20.0	
		#100		15.0	
		#200		8.5	
			0.037	8.3	

MATTIACE PETROCHEMICAL SITE
SOIL, MONITOR WELL AND HAND AUGER BORINGS
GRAIN SIZE ANALYSIS

SAMPLE ID	SAS NO.	SIEVE SIZE	HYDRO (mm)	PCT. PASS	CODE
MP-SB20-0008	5056B-0311				
			0.022	17.4	J
			0.003	10.1	J
			0.013	14.5	J
			0.007	12.3	J
		1		0.0	
			0.001	7.2	J
		#200		4.8	
		#100		16.0	
		#80		21.0	
		#50		37.0	
		#40		48.0	
		#30		57.0	
		#16		67.0	
		#10		73.0	
		#8		75.0	
		#4		82.0	
		3/8		90.0	
		1/2		95.0	
		3/4		100.0	
			0.009	14.5	J
			0.035	18.8	J

APPENDIX G

SHELBY TUBE PERMEABILITY ANALYSES

TRIAXAL COMPRESSION TEST DATA

CLIENT	EPA Region II / SMO	JOB NO.	2051-14
BORING NO.	MW-7D	SAMPLED	12-22-89
DEPTH	136.5-137.4'	TEST STARTED	03-29-90 DCW
SAMPLE NO.	SAS-5282-B-0003 Dup.	TEST FINISHED	04-17-90
SOIL DESCR.	Mattiace Petrochemical	SETUP NO.	2P
TEST TYPE	TX/Pbp	SATURATED TEST	Yes
CONF. PRES. PSF	9170	AT FIELD MOIST.	No

SATURATION DATA

Cell Pres. (PSI)	Back Pres. (PSI)	Burette Reading (CC)		Pore Pressure (PSI)		Change	B
		Close	Open	Close	Open		
40.0	30.0	0.2	8.7				
50.0	40.0	10.1	11.8	30.7	35.9	5.2	0.52
60.0	50.0	13.0	14.5	40.7	48.4	7.7	0.77
70.0	60.0	14.9	16.4	50.7	59.3	8.6	0.86
80.0	70.0	16.6	18.0	60.7	69.5	8.8	0.88
90.0		18.2	18.3	70.9	80.0	9.1	0.91
90.0		18.4	18.5	70.6	80.0	9.4	0.94
90.0		18.6	18.7	70.8	80.4	9.6	0.96

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (CC)	Volume Defl. (cc)
0.00	0.00	18.90	0.00
0.25	0.50	25.70	-6.80
0.5	0.71	25.90	-7.00
1	1.00	26.30	-7.40
2	1.41	26.70	-7.80
4	2.00	27.30	-8.40
9	3.00	28.30	-9.40
16	4.00	29.40	-10.50
30	5.48	30.90	-12.00
60	7.75	33.20	-14.30
120	10.95	36.40	-17.50
240	15.49	40.40	-21.50
360	18.97	42.70	-23.80

Initial Height	(in)	3.960	Init. Vol.	(CC)	294.11
Height Change	(in)	0.166	Vol. Change	(CC)	49.20
Ht. After Cons.	(in)	3.794	Cell Exp.	(CC)	23.50
Initial Area	(sq in)	4.531	Net Change	(CC)	25.70
Area After Cons.	(sq in)	4.316	Cons. Vol.	(CC)	268.41

ADVANCED TERRA TESTING, INC.

PERMEABILITY TEST - BACK PRESSURE CONSTANT HEAD

CLIENT EPA Region II / SMO

JOB NO. 2051-14

BORING NO.	MW-7D	SAMPLED	12-22-89
DEPTH	136.5-137.4'	TEST STARTED	03-29-90 DCW
SAMPLE NO.	SAS-5282-B-0003 Dup.	TEST FINISHED	04-17-90
SOIL DESCR.	Mattiace Petrochemical	SETUP NO.	2P
TEST TYPE	TX/Pbp	SATURATED TEST	Yes
CONF. PRES. PSF	9170	AT FIELD MOIST.	No

MOISTURE/DENSITY DATA		BEFORE TEST	AFTER TEST
Wt. Soil + Moisture	(g)	568.2	548.4
Wt. Wet Soil & Pan	(g)	577.2	557.4
Wt. Dry Soil & Pan	(g)	438.0	438.0
Wt. Lost Moisture	(g)	139.2	119.4
Wt. of Pan Only	(g)	9.0	9.0
Wt. of Dry Soil	(g)	429.0	429.0
Moisture Content	%	32.4	27.8
Wet Density	PCF	120.6	127.6
Dry Density	PCF	91.1	99.8

Init. Diameter	(in)	2.402	(cm)	6.101
Init. Area	(sq in)	4.531	(sq cm)	29.237
Init. Height	(in)	3.960	(cm)	10.058
Vol. Bef. Consol.	(cu ft)	0.01038		
Vol. After Consol.	(cu ft)	0.00948		
Effective Porosity	%	44.47		
Constant Head	(PSI)	20.00	(cm)	1407.85

Time Min	Time Sec	Init. Burette CC	Final Burette CC	Head Corr. CC	Permeability k cm/sec
943.0	56580	37.5	36.2	29.2	5.8E-09
1312.0	78720	36.2	34.5	30.9	5.4E-09
807.0	48420	34.5	33.5	32.3	5.2E-09
687.0	41220	33.5	32.6	33.3	5.5E-09
1445.0	86700	32.6	30.7	34.8	5.5E-09
692.0	41520	30.7	29.8	36.3	5.5E-09
710.0	42600	29.8	28.9	37.3	5.3E-09
606.0	36360	28.9	28.2	38.2	5.2E-09
897.0	53820	28.2	27.0	39.2	5.4E-09
453.0	27180	27.0	26.4	40.2	5.6E-09
1010.0	60600	26.4	25.1	41.2	5.4E-09
441.0	26460	25.1	24.6	42.2	5.3E-09
1053.0	63180	24.6	23.2	43.2	5.4E-09
1348.0	80880	23.2	21.5	44.9	6.3E-09

TRIAXAL COMPRESSION TEST DATA

CLIENT	EPA Region II SMO	JOB NO.	2051-14
BORING NO.	MW-7D	SAMPLED	12-22-89
DEPTH	136.5-137.4'	TEST STARTED	03-26-90 DCW
SAMPLE NO.	SAS 5282-B-0003	TEST FINISHED	04-10-90
SOIL DESCR.	Mattiace Petrochemical	SETUP NO.	2
TEST TYPE	TX/Pbp	SATURATED TEST	Yes
CONF. PRES. PSF	9170	AT FIELD MOIST.	No

SATURATION DATA

Cell Pres. (PSI)	Back Pres. (PSI)	Burette Reading (CC)		Pore Pressure (PSI)		Change	B
		Close	Open	Close	Open		
50.0	40.0	0.3	12.0				
60.0	50.0	11.6		39.8	47.3	7.5	0.75
70.0	60.0	12.7	13.6	49.8	58.5	8.7	0.87
80.0		13.8	14.0	59.8	69.6	9.8	0.98

CONSOLIDATION DATA

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (CC)	Volume Defl. (CC)
0.00	0.00	0.40	0.00
0.25	0.50	4.90	-4.50
0.5	0.71	5.10	-4.70
1	1.00	5.40	-5.00
2	1.41	5.80	-5.40
4	2.00	6.25	-5.85
9	3.00	7.10	-6.70
16	4.00	7.90	-7.50
30	5.48	9.00	-8.60
60	7.75	10.70	-10.30
120	10.95	13.00	-12.60
240	15.49	16.10	-15.70
960	18.97	18.20	-17.80

Initial Height	(in)	3.950	Init. Vol.	(CC)	292.88
Height Change	(in)	0.143	Vol. Change	(CC)	42.70
Ht. After Cons.	(in)	3.807	Cell Exp.	(CC)	18.50
Initial Area	(sq in)	4.524	Net Change	(CC)	24.20
Area After Cons.	(sq in)	4.306	Cons. Vol.	(CC)	268.68

ADVANCED TERRA TESTING, INC.

PERMEABILITY TEST - BACK PRESSURE CONSTANT HEAD

CLIENT	EPA Region II SMO	JOB NO.	2051-14
BORING NO.	MW-7D	SAMPLED	12-22-89
DEPTH	136.5-137.4'	TEST STARTED	03-26-90 DCW
SAMPLE NO.	SAS 5282-B-0003	TEST FINISHED	04-10-90
SOIL DESCR.	Mattiace Petrochemical	SETUP NO.	2
TEST TYPE	TX/Pbp	SATURATED TEST	Yes
CONF. PRES. PSF	9170	AT FIELD MOIST.	No

MOISTURE/DENSITY DATA		BEFORE TEST	AFTER TEST
Wt. Soil + Moisture	(g)	575.8	563.4
Wt. Wet Soil & Pan	(g)	584.4	572.0
Wt. Dry Soil & Pan	(g)	451.4	451.4
Wt. Lost Moisture	(g)	132.9	120.6
Wt. of Pan Only	(g)	8.6	8.6
Wt. of Dry Soil	(g)	442.9	442.9
Moisture Content	%	30.0	27.2
Wet Density	PCF	122.8	130.9
Dry Density	PCF	94.4	102.9

Init. Diameter	(in)	2.400	(cm)	6.096
Init. Area	(sq in)	4.524	(sq cm)	29.188
Init. Height	(in)	3.950	(cm)	10.033
Vol. Bef. Consol.	(cu ft)	0.01034		
Vol. After Consol.	(cu ft)	0.00949		
Effective Porosity	%	44.87		
Constant Head	(PSI)	20.00	(cm)	1407.85

Time Min	Time Sec	Init. Burette CC	Final Burette CC	Head Corr. CC	Permeability k cm/sec
439.0	26340	24.2	22.9	2.0	1.2E-08
929.0	55740	22.9	21.3	4.1	7.1E-09
658.0	39480	21.3	20.2	5.9	6.9E-09
844.0	50640	20.2	19.0	7.5	5.9E-09
280.0	16800	19.0	18.6	8.7	5.9E-09
1033.0	61980	18.6	17.2	10.0	5.8E-09
741.0	44460	17.2	16.1	11.7	5.9E-09
728.0	43680	16.1	15.0	13.2	6.3E-09
566.0	33960	15.0	14.2	14.5	5.9E-09
820.0	49200	14.2	13.1	15.9	5.6E-09
1383.0	82980	13.1	11.2	18.0	5.7E-09
734.0	44040	24.2	23.2	1.8	5.6E-09
794.0	47640	23.2	22.1	3.3	5.7E-09
639.0	38340	22.1	21.2	4.7	5.7E-09
797.0	47820	21.2	20.1	6.1	5.7E-09

TRIAXAL COMPRESSION TEST DATA

CLIENT	EPA Region II / SMO	JOB NO.	2051-14
BORING NO.	MW-7D	SAMPLED	12-22-89
DEPTH	135.0-136.5'	TEST STARTED	03-31-90 DCW
SAMPLE NO.	SAS-5282-B-0002	TEST FINISHED	04-17-90
SOIL DESCR.	Mattiace Petrochemical	SETUP NO.	1P
TEST TYPE	TX/Pbp	SATURATED TEST	Yes
CONF. PRES. PSF	9170	AT FIELD MOIST.	No

SATURATION DATA

Cell Pres. (PSI)	Back Pres. (PSI)	Burette Reading (CC)		Pore Pressure (PSI)		Change	B
		Close	Open	Close	Open		
40.0	30.0	0.0	9.5				
50.0	40.0	11.2	13.0	30.4	36.6	6.2	0.62
60.0	50.0	13.7	15.1	40.6	47.6	7.0	0.70
70.0	60.0	15.4	16.7	50.7	58.8	8.1	0.81
80.0	70.0	17.0	18.3	60.9	69.5	8.6	0.86
90.0		18.5	18.6	71.1	80.2	9.1	0.91
90.0		18.9	18.9	70.8	80.1	9.3	0.94
90.0		19.1	19.3	70.8	80.0	9.2	0.96

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (CC)	Volume Defl. (cc)	
0.00	0.00	19.30	0.00	J
0.25	0.50	26.50	-7.20	
0.5	0.71	26.80	-7.50	
1	1.00	27.10	-7.80	
2	1.41	27.55	-8.25	
4	2.00	28.10	-8.80	
9	3.00	29.10	-9.80	
16	4.00	30.00	-10.70	
30	5.48	31.30	-12.00	
60	7.75	33.40	-14.10	
120	10.95	36.05	-16.75	
240	15.49			
369	19.21	40.20	-20.90	

Initial Height	(in)	3.028	Init. Vol.	(CC)	229.03
Height Change	(in)	0.149	Vol. Change	(CC)	44.70
Ht. After Cons.	(in)	2.879	Cell Exp.	(CC)	24.85
Initial Area	(sq in)	4.615	Net Change	(CC)	19.85
Area After Cons.	(sq in)	4.433	Cons. Vol.	(CC)	209.18

ADVANCED TERRA TESTING, INC.

PERMEABILITY TEST - BACK PRESSURE CONSTANT HEAD

CLIENT	EPA Region II / SMO	JOB NO.	2051-14
BORING NO.	MW-7D	SAMPLED	12-22-89
DEPTH	135.0-136.5'	TEST STARTED	03-31-90 DCW
SAMPLE NO.	SAS-5282-B-0002	TEST FINISHED	04-17-90
SOIL DESCR.	Mattiace Petrochemical	SETUP NO.	1P
TEST TYPE	TX/Pbp	SATURATED TEST	Yes
CONF. PRES. PSF	9170	AT FIELD MOIST.	No

MOISTURE/DENSITY DATA		BEFORE TEST	AFTER TEST
Wt. Soil + Moisture	(g)	452.2	437.6
Wt. Wet Soil & Pan	(g)	461.3	446.7
Wt. Dry Soil & Pan	(g)	358.7	358.7
Wt. Lost Moisture	(g)	102.6	88.0
Wt. of Pan Only	(g)	9.0	9.0
Wt. of Dry Soil	(g)	349.6	349.6
Moisture Content %		29.4	25.2
Wet Density PCF		123.3	130.6
Dry Density PCF		95.3	104.4

Init. Diameter	(in)	2.424	(cm)	6.157
Init. Area	(sq in)	4.615	(sq cm)	29.775
Init. Height	(in)	3.028	(cm)	7.691
Vol. Bef. Consol.	(cu ft)	0.00809		
Vol. After Consol.	(cu ft)	0.00739		
Effective Porosity %		42.08		
Constant Head	(PSI)	10.00	(cm)	703.93

Time Min	Time Sec	Init. Burette CC	Final Burette CC	Head Corr. CC	Permeability k cm/sec
540.0	32400	49.5	48.6	16.1	1.0E-08
943.0	56580	48.6	47.2	17.3	9.2E-09
1312.0	78720	47.2	45.4	19.1	8.5E-09
806.0	48360	45.4	44.3	20.6	8.5E-09
688.0	41280	44.3	43.3	21.8	9.1E-09
1445.0	86700	43.3	41.4	23.3	8.2E-09
692.0	41520	41.4	40.5	24.8	8.2E-09
710.0	42600	40.5	39.5	25.8	8.9E-09
606.0	36360	39.5	38.8	26.8	7.3E-09
897.0	53820	38.8	37.5	27.8	9.1E-09
453.0	27180	37.5	36.9	28.9	8.4E-09
1009.0	60540	36.9	35.6	29.9	8.1E-09
442.0	26520	35.6	35.0	30.9	7.9E-09
1052.0	63120	35.0	33.7	32.0	8.1E-09
1349.0	80940	33.7	32.0	33.6	8.0E-09

ADVANCED TERRA TESTING, INC.

TRIAXAL COMPRESSION TEST DATA

CLIENT EPA Region II / SMO

JOB NO. 2051-14

BORING NO.	MW-3D	SAMPLED	11-22-89
DEPTH	110-111.8'	TEST STARTED	03-23-90 DCW
SAMPLE NO.	SAS-5282-B-0001	TEST FINISHED	04-10-90
SOIL DESCR.	Mattiace Petrochemical	SETUP NO.	6P
TEST TYPE	TX/Pbp	SATURATED TEST	Yes
CONF. PRES. PSF	5428	AT FIELD MOIST.	No

SATURATION DATA

Cell Pres. (PSI)	Back Pres. (PSI)	Burette Reading (CC)		Pore Pressure (PSI)		Change	B
		Close	Open	Close	Open		
40.0	30.0	0.2	8.8				
50.0	40.0	4.7	6.1	30.4	32.2	1.8	0.18
60.0	50.0	1.2	3.1	40.2	43.8	3.6	0.36
70.0	60.0	3.0	4.4	51.0	56.1	5.1	0.51
80.0	70.0	4.9	5.8	60.8	67.1	6.3	0.63
90.0	80.0	5.1	5.9	70.6	77.9	7.3	0.73
100.0	90.0	6.1	7.0	80.7	89.0	8.3	0.83
110.0		7.1		90.7	99.4	8.7	0.87
110.0		7.4		90.9	100.4	9.5	0.95

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (CC)	Volume Defl. (cc)
0.00	0.00	7.50	0.00
0.25	0.50	9.60	-2.10
0.5	0.71	9.70	-2.20
1	1.00	9.85	-2.35
2	1.41	10.10	-2.60
4	2.00	10.30	-2.80
9	3.00	10.75	-3.25
16	4.00	11.10	-3.60
30	5.48	11.70	-4.20
60	7.75	12.60	-5.10
120	10.95	13.80	-6.30
240	15.49		
360	18.97	16.80	-9.30

Initial Height	(in)	3.960	Init. Vol.	(CC)	296.07
Height Change	(in)	0.055	Vol. Change	(CC)	20.90
Ht. After Cons.	(in)	3.905	Cell Exp.	(CC)	17.50
Initial Area	(sq in)	4.562	Net Change	(CC)	3.40
Area After Cons.	(sq in)	4.573	Cons. Vol.	(CC)	292.67

ADVANCED TERRA TESTING, INC.

PERMEABILITY TEST - BACK PRESSURE CONSTANT HEAD

CLIENT EPA Region II / SMO

JOB NO. 2051-14

BORING NO.	MW-3D	SAMPLED	11-22-89
DEPTH	110-111.8'	TEST STARTED	03-23-90 DCW
SAMPLE NO.	SAS-5282-B-0001	TEST FINISHED	04-10-90
SOIL DESCR.	Mattiace Petrochemical	SETUP NO.	6P
TEST TYPE	TX/Pbp	SATURATED TEST	Yes
CONF. PRES. PSF	5428	AT FIELD MOIST.	No

MOISTURE/DENSITY DATA		BEFORE TEST	AFTER TEST
Wt. Soil + Moisture	(g)	588.9	598.1
Wt. Wet Soil & Pan	(g)	596.9	606.1
Wt. Dry Soil & Pan	(g)	478.5	478.5
Wt. Lost Moisture	(g)	118.4	127.6
Wt. of Pan Only	(g)	8.0	8.0
Wt. of Dry Soil	(g)	470.5	470.5
Moisture Content %		25.2	27.1
Wet Density PCF		124.2	127.6
Dry Density PCF		99.2	100.4

Init. Diameter	(in)	2.410	(cm)	6.121
Init. Area	(sq in)	4.562	(sq cm)	29.432
Init. Height	(in)	3.960	(cm)	10.058
Vol. Bef. Consol.	(cu ft)	0.01045		
Vol. After Consol.	(cu ft)	0.01033		
Effective Porosity %		43.61		
Constant Head	(PSI)	20.00	(cm)	1407.85

Time Min	Time Sec	Init. Burette CC	Final Burette CC	Head Corr. CC	Permeability k cm/sec
563.0	33780	50.1	48.2	16.0	1.4E-08
843.0	50580	48.2	46.2	18.1	9.6E-09
281.0	16860	46.2	45.5	19.5	1.0E-08
1030.0	61800	45.5	43.1	21.2	9.4E-09
742.0	44520	43.1	41.3	23.5	9.8E-09
728.0	43680	41.3	39.6	25.4	9.5E-09
569.0	34140	39.6	38.3	27.0	9.3E-09
818.0	49080	38.3	36.4	28.7	9.4E-09
540.0	32400	36.4	35.2	30.4	9.0E-09
849.0	50940	35.2	33.2	32.1	9.6E-09
730.0	43800	33.2	31.5	34.1	9.5E-09
795.0	47700	31.5	29.7	36.0	9.3E-09
638.0	38280	29.7	28.2	37.7	9.6E-09
797.0	47820	28.2	26.4	39.5	9.3E-09
588.0	35280	26.4	25.1	41.2	9.1E-09
943.0	56580	25.1	23.0	43.0	9.1E-09
1314.0	78840	23.0	20.1	45.7	9.1E-09

APPENDIX H

AQUIFER SLUG TEST ANALYSES

Mattiace Petrochemical MW-1s
Slug Test - 3/28/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.417	97.61	Ho							
0.500	97.62	5	2.38	0.996	18.000	98.95	1055	1.05	0.439
0.583	97.63	10	2.37	0.992	20.000	99.04	1175	0.96	0.402
0.667	97.63	15	2.37	0.992	22.000	99.13	1295	0.87	0.364
0.750	97.65	20	2.35	0.983	24.000	99.20	1415	0.80	0.335
0.833	97.66	25	2.34	0.979	26.000	99.27	1535	0.73	0.305
0.917	97.67	30	2.33	0.975	28.000	99.34	1655	0.66	0.276
1.000	97.67	35	2.33	0.975	30.000	99.39	1775	0.61	0.255
1.083	97.68	40	2.32	0.971	32.000	99.45	1895	0.55	0.230
1.167	97.69	45	2.31	0.967	34.000	99.50	2015	0.50	0.209
1.250	97.70	50	2.30	0.962	36.000	99.54	2135	0.46	0.192
1.333	97.70	55	2.30	0.962	38.000	99.58	2255	0.42	0.176
1.417	97.71	60	2.29	0.958	40.000	99.62	2375	0.38	0.159
1.500	97.72	65	2.28	0.954	42.000	99.65	2495	0.35	0.146
1.583	97.73	70	2.27	0.950	44.000	99.68	2615	0.32	0.134
1.667	97.74	75	2.26	0.946	46.000	99.71	2735	0.29	0.121
1.750	97.75	80	2.25	0.941	48.000	99.74	2855	0.26	0.109
1.833	97.75	85	2.25	0.941	50.000	99.75	2975	0.25	0.105
1.917	97.77	90	2.23	0.933	52.000	99.79	3095	0.21	0.088
2.000	97.77	95	2.23	0.933	54.000	99.80	3215	0.20	0.084
2.500	97.82	125	2.18	0.912	56.000	99.82	3335	0.18	0.075
3.000	97.87	155	2.13	0.891	58.000	99.84	3455	0.16	0.067
3.500	97.92	185	2.08	0.870	60.000	99.85	3575	0.15	0.063
4.000	97.96	215	2.04	0.854	62.000	99.86	3695	0.14	0.059
4.500	98.01	245	1.99	0.833	64.000	99.88	3815	0.12	0.050
5.000	98.06	275	1.94	0.812	66.000	99.89	3935	0.11	0.046
5.500	98.11	305	1.89	0.791	68.000	99.89	4055	0.11	0.046
6.000	98.15	335	1.85	0.774	70.000	99.91	4175	0.09	0.038
6.500	98.18	365	1.82	0.762	72.000	99.92	4295	0.08	0.033
7.000	98.23	395	1.77	0.741	74.000	99.93	4415	0.07	0.029
7.500	98.27	425	1.73	0.724	76.000	99.93	4535	0.07	0.029
8.000	98.32	455	1.68	0.703	78.000	99.94	4655	0.06	0.025
8.500	98.36	485	1.64	0.686	80.000	99.94	4775	0.06	0.025
9.000	98.39	515	1.61	0.674	82.000	99.96	4895	0.04	0.017
9.500	98.43	545	1.57	0.657	84.000	99.96	5015	0.04	0.017
10.000	98.46	575	1.54	0.644	86.000	99.96	5135	0.04	0.017
12.000	98.61	695	1.39	0.582	88.000	99.97	5255	0.03	0.013
14.000	98.74	815	1.26	0.527	90.000	99.96	5375	0.04	0.017
16.000	98.85	935	1.15	0.481					

Mattiace Petrochemical MW-1s
Slug Test - 3/29/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.183	96.97	Ho							
0.200	96.98	1	3.02	0.997	5.000	97.58	289	2.42	0.799
0.217	96.98	2	3.02	0.997	5.500	97.64	319	2.36	0.779
0.233	96.98	3	3.02	0.997	6.000	97.70	349	2.30	0.759
0.250	96.99	4	3.01	0.993	6.500	97.75	379	2.25	0.743
0.267	96.99	5	3.01	0.993	7.000	97.80	409	2.20	0.726
0.283	96.99	6	3.01	0.993	7.500	97.85	439	2.15	0.710
0.300	96.99	7	3.01	0.993	8.000	97.90	469	2.10	0.693
0.317	96.99	8	3.01	0.993	8.500	97.95	499	2.05	0.677
0.333	96.99	9	3.01	0.993	9.000	98.00	529	2.00	0.660
0.417	97.00	14	3.00	0.990	9.500	98.05	559	1.95	0.644
0.500	97.01	19	2.99	0.987	10.000	98.10	589	1.90	0.627
0.583	97.02	24	2.98	0.983	12.000	98.28	709	1.72	0.568
0.667	97.03	29	2.97	0.980	14.000	98.43	829	1.57	0.518
0.750	97.04	34	2.96	0.977	16.000	98.58	949	1.42	0.469
0.833	97.05	39	2.95	0.974	18.000	98.71	1069	1.29	0.426
0.917	97.06	44	2.94	0.970	20.000	98.83	1189	1.17	0.386
1.000	97.07	49	2.93	0.967	22.000	98.93	1309	1.07	0.353
1.083	97.08	54	2.92	0.964	24.000	99.03	1429	0.97	0.320
1.167	97.09	59	2.91	0.960	26.000	99.12	1549	0.88	0.290
1.250	97.10	64	2.90	0.957	28.000	99.21	1669	0.79	0.261
1.333	97.11	69	2.89	0.954	30.000	99.28	1789	0.72	0.238
1.417	97.13	74	2.87	0.947	32.000	99.34	1909	0.66	0.218
1.500	97.13	79	2.87	0.947	34.000	99.41	2029	0.59	0.195
1.583	97.15	84	2.85	0.941	36.000	99.46	2149	0.54	0.178
1.667	97.16	89	2.84	0.937	38.000	99.52	2269	0.48	0.158
1.750	97.17	94	2.83	0.934	40.000	99.57	2389	0.43	0.142
1.833	97.18	99	2.82	0.931	42.000	99.61	2509	0.39	0.129
1.917	97.19	104	2.81	0.927	44.000	99.65	2629	0.35	0.116
2.000	97.20	109	2.80	0.924	46.000	99.69	2749	0.31	0.102
2.500	97.27	139	2.73	0.901	48.000	99.72	2869	0.28	0.092
3.000	97.33	169	2.67	0.881	50.000	99.75	2989	0.25	0.083
3.500	97.40	199	2.60	0.858	52.000	99.77	3109	0.23	0.076
4.000	97.46	229	2.54	0.838	54.000	99.80	3229	0.20	0.066
4.500	97.52	259	2.48	0.818					

Mattiace Petrochemical MW-2s
Slug Test - 3/28/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	87.25	H							
0.050	86.06	Ho							
0.067	86.24	1	1.01	0.849	1.250	87.16	72	0.09	0.076
0.083	86.39	2	0.86	0.723	1.333	87.16	77	0.09	0.076
0.100	86.52	3	0.73	0.613	1.417	87.16	82	0.09	0.076
0.117	86.61	4	0.64	0.538	1.500	87.17	87	0.08	0.067
0.133	86.69	5	0.56	0.471	1.583	87.18	92	0.07	0.059
0.150	86.74	6	0.51	0.429	1.667	87.19	97	0.06	0.050
0.167	86.78	7	0.47	0.395	1.750	87.19	102	0.06	0.050
0.183	86.82	8	0.43	0.361	1.833	87.20	107	0.05	0.042
0.200	86.85	9	0.40	0.336	1.917	87.21	112	0.04	0.034
0.217	86.87	10	0.38	0.319	2.000	87.21	117	0.04	0.034
0.233	86.88	11	0.37	0.311	2.500	87.23	147	0.02	0.017
0.250	86.91	12	0.34	0.286	3.000	87.23	177	0.02	0.017
0.267	86.93	13	0.32	0.269	3.500	87.23	207	0.02	0.017
0.283	86.94	14	0.31	0.261	4.000	87.24	237	0.01	0.008
0.300	86.95	15	0.30	0.252	4.500	87.25	267	0.00	0.000
0.317	86.97	16	0.28	0.235	5.000	87.25	297	0.00	0.000
0.333	86.97	17	0.28	0.235	5.500	87.25	327	0.00	0.000
0.417	87.02	22	0.23	0.193	6.000	87.25	357	0.00	0.000
0.500	87.04	27	0.21	0.176	6.500	87.25	387	0.00	0.000
0.583	87.06	32	0.19	0.160	7.000	87.25	417	0.00	0.000
0.667	87.08	37	0.17	0.143	7.500	87.25	447	0.00	0.000
0.750	87.10	42	0.15	0.126	8.000	87.25	477	0.00	0.000
0.833	87.11	47	0.14	0.118	8.500	87.25	507	0.00	0.000
0.917	87.13	52	0.12	0.101	9.000	87.25	537	0.00	0.000
1.000	87.13	57	0.12	0.101	9.500	87.25	567	0.00	0.000
1.083	87.14	62	0.11	0.092	10.000	87.25	597	0.00	0.000
1.167	87.15	67	0.10	0.084	12.000	87.25	717	0.00	0.000

Mattiace Petrochemical MW-2s
Slug Test - 3/28/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.067	98.03	Ho							
0.083	98.18	1	1.82	0.924	2.000	99.90	116	0.10	0.051
0.100	98.46	2	1.54	0.782	2.500	99.93	146	0.07	0.036
0.117	98.68	3	1.32	0.670	3.000	99.94	176	0.06	0.030
0.133	98.86	4	1.14	0.579	3.500	99.96	206	0.04	0.020
0.150	98.99	5	1.01	0.513	4.000	99.96	236	0.04	0.020
0.167	99.10	6	0.90	0.457	4.500	99.96	266	0.04	0.020
0.183	99.18	7	0.82	0.416	5.000	99.96	296	0.04	0.020
0.200	99.24	8	0.76	0.386	5.500	99.97	326	0.03	0.015
0.217	99.30	9	0.70	0.355	6.000	99.97	356	0.03	0.015
0.233	99.34	10	0.66	0.335	6.500	99.97	386	0.03	0.015
0.250	99.38	11	0.62	0.315	7.000	99.98	416	0.02	0.010
0.267	99.41	12	0.59	0.299	7.500	99.97	446	0.03	0.015
0.283	99.44	13	0.56	0.284	8.000	99.98	476	0.02	0.010
0.300	99.46	14	0.54	0.274	8.500	99.98	506	0.02	0.010
0.317	99.49	15	0.51	0.259	9.000	99.98	536	0.02	0.010
0.333	99.51	16	0.49	0.249	9.500	99.98	566	0.02	0.010
0.417	99.58	21	0.42	0.213	10.000	99.98	596	0.02	0.010
0.500	99.62	26	0.38	0.193	12.000	99.98	716	0.02	0.010
0.583	99.65	31	0.35	0.178	14.000	99.98	836	0.02	0.010
0.667	99.68	36	0.32	0.162	16.000	99.98	956	0.02	0.010
0.750	99.70	41	0.30	0.152	18.000	99.98	1076	0.02	0.010
0.833	99.73	46	0.27	0.137	20.000	99.98	1196	0.02	0.010
0.917	99.75	51	0.25	0.127	22.000	99.98	1316	0.02	0.010
1.000	99.77	56	0.23	0.117	24.000	99.98	1436	0.02	0.010
1.083	99.79	61	0.21	0.107	26.000	99.97	1556	0.03	0.015
1.167	99.80	66	0.20	0.102	28.000	99.98	1676	0.02	0.010
1.250	99.81	71	0.19	0.096	30.000	99.98	1796	0.02	0.010
1.333	99.83	76	0.17	0.086	32.000	99.97	1916	0.03	0.015
1.417	99.84	81	0.16	0.081	34.000	99.98	2036	0.02	0.010
1.500	99.86	86	0.14	0.071	36.000	99.97	2156	0.03	0.015
1.583	99.86	91	0.14	0.071	38.000	99.98	2276	0.02	0.010
1.667	99.88	96	0.12	0.061	40.000	99.98	2396	0.02	0.010
1.750	99.89	101	0.11	0.056	42.000	99.97	2516	0.03	0.015
1.833	99.89	106	0.11	0.056	44.000	99.98	2636	0.02	0.010
1.917	99.89	111	0.11	0.056	46.000	99.98	2756	0.02	0.010

Mattiace Petrochemical MW-3D
Slug Test - 3/28/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.217	98.35	Ho							
0.233	98.38	1	1.62	0.982	2.500	99.79	137	0.21	0.127
0.250	98.40	2	1.60	0.970	3.000	99.87	167	0.13	0.079
0.267	98.43	3	1.57	0.952	3.500	99.91	197	0.09	0.055
0.283	98.45	4	1.55	0.939	4.000	99.94	227	0.06	0.036
0.300	98.48	5	1.52	0.921	4.500	99.97	257	0.03	0.018
0.317	98.50	6	1.50	0.909	5.000	99.98	287	0.02	0.012
0.333	98.53	7	1.47	0.891	5.500	99.99	317	0.01	0.006
0.417	98.64	12	1.36	0.824	6.000	100.00	347	0.00	0.000
0.500	98.74	17	1.26	0.764	6.500	100.00	377	0.00	0.000
0.583	98.84	22	1.16	0.703	7.000	100.01	407	-0.01	-0.006
0.667	98.93	27	1.07	0.648	7.500	100.01	437	-0.01	-0.006
0.750	99.01	32	0.99	0.600	8.000	100.01	467	-0.01	-0.006
0.833	99.09	37	0.91	0.552	8.500	100.01	497	-0.01	-0.006
0.917	99.15	42	0.85	0.515	9.000	100.01	527	-0.01	-0.006
1.000	99.22	47	0.78	0.473	9.500	100.01	557	-0.01	-0.006
1.083	99.27	52	0.73	0.442	10.000	100.01	587	-0.01	-0.006
1.167	99.33	57	0.67	0.406	12.000	100.02	707	-0.02	-0.012
1.250	99.38	62	0.62	0.376	14.000	100.02	827	-0.02	-0.012
1.333	99.42	67	0.58	0.352	16.000	100.02	947	-0.02	-0.012
1.417	99.47	72	0.53	0.321	18.000	100.01	1067	-0.01	-0.006
1.500	99.51	77	0.49	0.297	20.000	100.01	1187	-0.01	-0.006
1.583	99.55	82	0.45	0.273	22.000	100.02	1307	-0.02	-0.012
1.667	99.58	87	0.42	0.255	24.000	100.01	1427	-0.01	-0.006
1.750	99.60	92	0.40	0.242	26.000	100.02	1547	-0.02	-0.012
1.833	99.64	97	0.36	0.218	28.000	100.02	1667	-0.02	-0.012
1.917	99.66	102	0.34	0.206	30.000	100.02	1787	-0.02	-0.012
2.000	99.69	107	0.31	0.188	32.000	100.01	1907	-0.01	-0.006

Mattiace Petrochemical MW-3D
Slug Test - 3/28/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.200	98.04	Ho							
0.217	98.12	1	1.88	0.959	1.667	99.40	88	0.60	0.306
0.233	98.12	2	1.88	0.959	1.750	99.43	93	0.57	0.291
0.250	98.16	3	1.84	0.939	1.833	99.47	98	0.53	0.270
0.267	98.17	4	1.83	0.934	1.917	99.50	103	0.50	0.255
0.283	98.19	5	1.81	0.923	2.000	99.53	108	0.47	0.240
0.300	98.21	6	1.79	0.913	2.500	99.68	138	0.32	0.163
0.317	98.23	7	1.77	0.903	3.000	99.77	168	0.23	0.117
0.333	98.26	8	1.74	0.888	3.500	99.84	198	0.16	0.082
0.417	98.37	13	1.63	0.832	4.000	99.89	228	0.11	0.056
0.500	98.48	18	1.52	0.776	4.500	99.92	258	0.08	0.041
0.583	98.58	23	1.42	0.724	5.000	99.94	288	0.06	0.031
0.667	98.67	28	1.33	0.679	5.500	99.96	318	0.04	0.020
0.750	98.76	33	1.24	0.633	6.000	99.97	348	0.03	0.015
0.833	98.84	38	1.16	0.592	6.500	99.98	378	0.02	0.010
0.917	98.91	43	1.09	0.556	7.000	99.98	408	0.02	0.010
1.000	98.98	48	1.02	0.520	7.500	99.98	438	0.02	0.010
1.083	99.05	53	0.95	0.485	8.000	99.98	468	0.02	0.010
1.167	99.11	58	0.89	0.454	8.500	99.98	498	0.02	0.010
1.250	99.17	63	0.83	0.423	9.000	99.98	528	0.02	0.010
1.333	99.22	68	0.78	0.398	9.500	99.99	558	0.01	0.005
1.417	99.27	73	0.73	0.372	10.000	99.98	588	0.02	0.010
1.500	99.31	78	0.69	0.352	12.000	99.99	708	0.01	0.005
1.583	99.36	83	0.64	0.327					

Mattiace Petrochemical MW-4s
Slug Test - 3/28/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	93.00	H							
0.083	91.04	Ho							
0.100	91.06	1	1.94	0.990	4.000	92.19	235	0.81	0.413
0.117	91.09	2	1.91	0.974	4.500	92.24	265	0.76	0.388
0.133	91.11	3	1.89	0.964	5.000	92.28	295	0.72	0.367
0.150	91.13	4	1.87	0.954	5.500	92.32	325	0.68	0.347
0.167	91.15	5	1.85	0.944	6.000	92.35	355	0.65	0.332
0.183	91.16	6	1.84	0.939	6.500	92.39	385	0.61	0.311
0.200	91.18	7	1.82	0.929	7.000	92.42	415	0.58	0.296
0.217	91.19	8	1.81	0.923	7.500	92.44	445	0.56	0.286
0.233	91.20	9	1.80	0.918	8.000	92.47	475	0.53	0.270
0.250	91.22	10	1.78	0.908	8.500	92.49	505	0.51	0.260
0.267	91.23	11	1.77	0.903	9.000	92.51	535	0.49	0.250
0.283	91.25	12	1.75	0.893	9.500	92.53	565	0.47	0.240
0.300	91.26	13	1.74	0.888	10.000	92.54	595	0.46	0.235
0.317	91.28	14	1.72	0.878	12.000	92.61	715	0.39	0.199
0.333	91.28	15	1.72	0.878	14.000	92.66	835	0.34	0.173
0.417	91.34	20	1.66	0.847	16.000	92.70	955	0.30	0.153
0.500	91.39	25	1.61	0.821	18.000	92.73	1075	0.27	0.138
0.583	91.44	30	1.56	0.796	20.000	92.77	1195	0.23	0.117
0.667	91.48	35	1.52	0.776	22.000	92.79	1315	0.21	0.107
0.750	91.52	40	1.48	0.755	24.000	92.80	1435	0.20	0.102
0.833	91.56	45	1.44	0.735	26.000	92.83	1555	0.17	0.087
0.917	91.59	50	1.41	0.719	28.000	92.84	1675	0.16	0.082
1.000	91.62	55	1.38	0.704	30.000	92.85	1795	0.15	0.077
1.083	91.65	60	1.35	0.689	32.000	92.86	1915	0.14	0.071
1.167	91.67	65	1.33	0.679	34.000	92.87	2035	0.13	0.066
1.250	91.70	70	1.30	0.663	36.000	92.88	2155	0.12	0.061
1.333	91.73	75	1.27	0.648	38.000	92.89	2275	0.11	0.056
1.417	91.75	80	1.25	0.638	40.000	92.89	2395	0.11	0.056
1.500	91.78	85	1.22	0.622	42.000	92.90	2515	0.10	0.051
1.583	91.79	90	1.21	0.617	44.000	92.90	2635	0.10	0.051
1.667	91.81	95	1.19	0.607	46.000	92.90	2755	0.10	0.051
1.750	91.83	100	1.17	0.597	48.000	92.92	2875	0.08	0.041
1.833	91.85	105	1.15	0.587	50.000	92.92	2995	0.08	0.041
1.917	91.87	110	1.13	0.577	52.000	92.92	3115	0.08	0.041
2.000	91.89	115	1.11	0.566	54.000	92.92	3235	0.08	0.041
2.500	91.98	145	1.02	0.520	56.000	92.93	3355	0.07	0.036
3.000	92.07	175	0.93	0.474	58.000	92.93	3475	0.07	0.036
3.500	92.13	205	0.87	0.444	60.000	92.92	3595	0.08	0.041

Mattiace Petrochemical MW-4s
Slug Test - 3/29/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.083	97.36	Ho							
0.100	97.40	1	2.60	0.985	4.500	98.93	265	1.07	0.405
0.117	97.43	2	2.57	0.973	5.000	98.99	295	1.01	0.383
0.133	97.46	3	2.54	0.962	5.500	99.04	325	0.96	0.364
0.150	97.49	4	2.51	0.951	6.000	99.09	355	0.91	0.345
0.167	97.51	5	2.49	0.943	6.500	99.13	385	0.87	0.330
0.183	97.53	6	2.47	0.936	7.000	99.17	415	0.83	0.314
0.200	97.56	7	2.44	0.924	7.500	99.21	445	0.79	0.299
0.217	97.58	8	2.42	0.917	8.000	99.24	475	0.76	0.288
0.233	97.59	9	2.41	0.913	8.500	99.28	505	0.72	0.273
0.250	97.61	10	2.39	0.905	9.000	99.30	535	0.70	0.265
0.267	97.63	11	2.37	0.898	9.500	99.33	565	0.67	0.254
0.283	97.65	12	2.35	0.890	10.000	99.36	595	0.64	0.242
0.300	97.67	13	2.33	0.883	12.000	99.45	715	0.55	0.208
0.317	97.68	14	2.32	0.879	14.000	99.52	835	0.48	0.182
0.333	97.70	15	2.30	0.871	16.000	99.57	955	0.43	0.163
0.417	97.78	20	2.22	0.841	18.000	99.62	1075	0.38	0.144
0.500	97.84	25	2.16	0.818	20.000	99.65	1195	0.35	0.133
0.583	97.90	30	2.10	0.795	22.000	99.69	1315	0.31	0.117
0.667	97.95	35	2.05	0.777	24.000	99.71	1435	0.29	0.110
0.750	98.00	40	2.00	0.758	26.000	99.74	1555	0.26	0.098
0.833	98.05	45	1.95	0.739	28.000	99.76	1675	0.24	0.091
0.917	98.09	50	1.91	0.723	30.000	99.78	1795	0.22	0.083
1.000	98.13	55	1.87	0.708	32.000	99.80	1915	0.20	0.076
1.083	98.18	60	1.82	0.689	34.000	99.81	2035	0.19	0.072
1.167	98.21	65	1.79	0.678	36.000	99.82	2155	0.18	0.068
1.250	98.24	70	1.76	0.667	38.000	99.84	2275	0.16	0.061
1.333	98.28	75	1.72	0.652	40.000	99.85	2395	0.15	0.057
1.417	98.30	80	1.70	0.644	42.000	99.86	2515	0.14	0.053
1.500	98.33	85	1.67	0.633	44.000	99.87	2635	0.13	0.049
1.583	98.36	90	1.64	0.621	46.000	99.88	2755	0.12	0.045
1.667	98.38	95	1.62	0.614	48.000	99.88	2875	0.12	0.045
1.750	98.41	100	1.59	0.602	50.000	99.89	2995	0.11	0.042
1.833	98.43	105	1.57	0.595	52.000	99.89	3115	0.11	0.042
1.917	98.45	110	1.55	0.587	54.000	99.89	3235	0.11	0.042
2.000	98.48	115	1.52	0.576	56.000	99.90	3355	0.10	0.038
2.500	98.60	145	1.40	0.530	58.000	99.91	3475	0.09	0.034
3.000	98.70	175	1.30	0.492	60.000	99.91	3595	0.09	0.034
3.500	98.79	205	1.21	0.458	62.000	99.92	3715	0.08	0.030
4.000	98.86	235	1.14	0.432					

Mattiace Petrochemical MW-5s
Slug Test - 3/28/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
1.000	99.60	Ho							
1.083	99.61	5	0.39	0.975	6.500	99.91	330	0.09	0.225
1.167	99.62	10	0.38	0.950	7.000	99.93	360	0.07	0.175
1.250	99.62	15	0.38	0.950	7.500	99.94	390	0.06	0.150
1.333	99.64	20	0.36	0.900	8.000	99.95	420	0.05	0.125
1.417	99.65	25	0.35	0.875	8.500	99.96	450	0.04	0.100
1.500	99.66	30	0.34	0.850	9.000	99.97	480	0.03	0.075
1.583	99.67	35	0.33	0.825	9.500	99.96	510	0.04	0.100
1.667	99.67	40	0.33	0.825	10.000	99.97	540	0.03	0.075
1.750	99.69	45	0.31	0.775	12.000	100.00	660	0.00	0.000
1.833	99.69	50	0.31	0.775	14.000	100.01	780	-0.01	-0.025
1.917	99.70	55	0.30	0.750	16.000	100.00	900	0.00	0.000
2.000	99.71	60	0.29	0.725	18.000	100.01	1020	-0.01	-0.025
2.500	99.74	90	0.26	0.650	20.000	100.01	1140	-0.01	-0.025
3.000	99.78	120	0.22	0.550	22.000	100.01	1260	-0.01	-0.025
3.500	99.81	150	0.19	0.475	24.000	100.01	1380	-0.01	-0.025
4.000	99.83	180	0.17	0.425	26.000	100.02	1500	-0.02	-0.050
4.500	99.86	210	0.14	0.350	28.000	100.02	1620	-0.02	-0.050
5.000	99.88	240	0.12	0.300	30.000	100.01	1740	-0.01	-0.025
5.500	99.89	270	0.11	0.275	32.000	100.01	1860	-0.01	-0.025
6.000	99.91	300	0.09	0.225	34.000	100.02	1980	-0.02	-0.050

Mattiace Petrochemical MW-5s
Slug Test - 3/28/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.833	99.29	Ho							
0.917	99.30	5	0.70	0.986	6.000	99.75	310	0.25	0.352
1.000	99.30	10	0.70	0.986	6.500	99.77	340	0.23	0.324
1.083	99.31	15	0.69	0.972	7.000	99.79	370	0.21	0.296
1.167	99.32	20	0.68	0.958	7.500	99.81	400	0.19	0.268
1.250	99.33	25	0.67	0.944	8.000	99.83	430	0.17	0.239
1.333	99.35	30	0.65	0.915	8.500	99.85	460	0.15	0.211
1.417	99.35	35	0.65	0.915	9.000	99.87	490	0.13	0.183
1.500	99.37	40	0.63	0.887	9.500	99.88	520	0.12	0.169
1.583	99.38	45	0.62	0.873	10.000	99.89	550	0.11	0.155
1.667	99.39	50	0.61	0.859	12.000	99.93	670	0.07	0.099
1.750	99.40	55	0.60	0.845	14.000	99.95	790	0.05	0.070
1.833	99.41	60	0.59	0.831	16.000	99.97	910	0.03	0.042
1.917	99.42	65	0.58	0.817	18.000	99.98	1030	0.02	0.028
2.000	99.43	70	0.57	0.803	20.000	99.98	1150	0.02	0.028
2.500	99.48	100	0.52	0.732	22.000	99.98	1270	0.02	0.028
3.000	99.53	130	0.47	0.662	24.000	99.99	1390	0.01	0.014
3.500	99.57	160	0.43	0.606	26.000	99.98	1510	0.02	0.028
4.000	99.62	190	0.38	0.535	28.000	99.99	1630	0.01	0.014
4.500	99.66	220	0.34	0.479	30.000	100.00	1750	0.00	0.000
5.000	99.69	250	0.31	0.437	32.000	100.00	1870	0.00	0.000
5.500	99.72	280	0.28	0.394					

Mattiace Petrochemical MW-5d
Slug Test - 3/28/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.150	97.82	Ho							
0.167	97.88	1	2.12	0.972	1.667	99.85	91	0.15	0.069
0.183	97.95	2	2.05	0.940	1.750	99.86	96	0.14	0.064
0.200	98.02	3	1.98	0.908	1.833	99.88	101	0.12	0.055
0.217	98.09	4	1.91	0.876	1.917	99.89	106	0.11	0.050
0.233	98.15	5	1.85	0.849	2.000	99.91	111	0.09	0.041
0.250	98.21	6	1.79	0.821	2.500	99.96	141	0.04	0.018
0.267	98.27	7	1.73	0.794	3.000	99.98	171	0.02	0.009
0.283	98.32	8	1.68	0.771	3.500	99.99	201	0.01	0.005
0.300	98.38	9	1.62	0.743	4.000	100.00	231	0.00	0.000
0.317	98.43	10	1.57	0.720	4.500	100.00	261	0.00	0.000
0.333	98.48	11	1.52	0.697	5.000	100.00	291	0.00	0.000
0.417	98.69	16	1.31	0.601	5.500	100.00	321	0.00	0.000
0.500	98.88	21	1.12	0.514	6.000	100.00	351	0.00	0.000
0.583	99.04	26	0.96	0.440	6.500	100.00	381	0.00	0.000
0.667	99.17	31	0.83	0.381	7.000	99.99	411	0.01	0.005
0.750	99.30	36	0.70	0.321	7.500	100.00	441	0.00	0.000
0.833	99.39	41	0.61	0.280	8.000	100.00	471	0.00	0.000
0.917	99.47	46	0.53	0.243	8.500	100.00	501	0.00	0.000
1.000	99.54	51	0.46	0.211	9.000	100.00	531	0.00	0.000
1.083	99.60	56	0.40	0.183	9.500	99.99	561	0.01	0.005
1.167	99.66	61	0.34	0.156	10.000	99.99	591	0.01	0.005
1.250	99.71	66	0.29	0.133	12.000	100.00	711	0.00	0.000
1.333	99.74	71	0.26	0.119	14.000	100.00	831	0.00	0.000
1.417	99.78	76	0.22	0.101	16.000	100.00	951	0.00	0.000
1.500	99.81	81	0.19	0.087	18.000	100.00	1071	0.00	0.000
1.583	99.83	86	0.17	0.078	20.000	100.00	1191	0.00	0.000

Mattiace Petrochemical MW-5d
Slug Test - 3/28/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.150	97.86	Ho							
0.167	97.90	1	2.10	0.981	4.500	100.00	261	0.00	0.000
0.183	97.96	2	2.04	0.953	5.000	100.00	291	0.00	0.000
0.200	98.02	3	1.98	0.925	5.500	100.00	321	0.00	0.000
0.217	98.09	4	1.91	0.893	6.000	100.00	351	0.00	0.000
0.233	98.15	5	1.85	0.864	6.500	100.00	381	0.00	0.000
0.250	98.21	6	1.79	0.836	7.000	100.00	411	0.00	0.000
0.267	98.26	7	1.74	0.813	7.500	100.00	441	0.00	0.000
0.283	98.31	8	1.69	0.790	8.000	100.00	471	0.00	0.000
0.300	98.36	9	1.64	0.766	8.500	100.00	501	0.00	0.000
0.317	98.41	10	1.59	0.743	9.000	100.00	531	0.00	0.000
0.333	98.46	11	1.54	0.720	9.500	100.00	561	0.00	0.000
0.417	98.68	16	1.32	0.617	10.000	100.00	591	0.00	0.000
0.500	98.87	21	1.13	0.528	12.000	100.00	711	0.00	0.000
0.583	99.02	26	0.98	0.458	14.000	100.00	831	0.00	0.000
0.667	99.16	31	0.84	0.393	16.000	100.00	951	0.00	0.000
0.750	99.27	36	0.73	0.341	18.000	100.00	1071	0.00	0.000
0.833	99.37	41	0.63	0.294	20.000	100.00	1191	0.00	0.000
0.917	99.45	46	0.55	0.257	22.000	100.00	1311	0.00	0.000
1.000	99.53	51	0.47	0.220	24.000	100.00	1431	0.00	0.000
1.083	99.59	56	0.41	0.192	26.000	100.00	1551	0.00	0.000
1.167	99.64	61	0.36	0.168	28.000	100.01	1671	-0.01	-0.005
1.250	99.69	66	0.31	0.145	30.000	100.01	1791	-0.01	-0.005
1.333	99.72	71	0.28	0.131	32.000	100.00	1911	0.00	0.000
1.417	99.76	76	0.24	0.112	34.000	100.01	2031	-0.01	-0.005
1.500	99.79	81	0.21	0.098	36.000	100.01	2151	-0.01	-0.005
1.583	99.81	86	0.19	0.089	38.000	100.00	2271	0.00	0.000
1.667	99.83	91	0.17	0.079	40.000	100.00	2391	0.00	0.000
1.750	99.86	96	0.14	0.065	42.000	100.00	2511	0.00	0.000
1.833	99.87	101	0.13	0.061	44.000	100.01	2631	-0.01	-0.005
1.917	99.89	106	0.11	0.051	46.000	100.01	2751	-0.01	-0.005
2.000	99.89	111	0.11	0.051	48.000	100.01	2871	-0.01	-0.005
2.500	99.95	141	0.05	0.023	50.000	100.00	2991	0.00	0.000
3.000	99.98	171	0.02	0.009	52.000	100.01	3111	-0.01	-0.005
3.500	99.98	201	0.02	0.009	54.000	100.00	3231	0.00	0.000
4.000	99.99	231	0.01	0.005	56.000	100.00	3351	0.00	0.000

Mattiace Petrochemical MW-6s
Slug Test - 3/29/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.067	98.15	Ho							
0.083	98.31	1	1.69	0.914	1.500	99.63	86	0.37	0.200
0.100	98.63	2	1.37	0.741	1.583	99.64	91	0.36	0.195
0.117	98.78	3	1.22	0.659	1.667	99.66	96	0.34	0.184
0.133	98.85	4	1.15	0.622	1.750	99.68	101	0.32	0.173
0.150	98.92	5	1.08	0.584	1.833	99.69	106	0.31	0.168
0.167	98.94	6	1.06	0.573	1.917	99.71	111	0.29	0.157
0.183	98.99	7	1.01	0.546	2.000	99.72	116	0.28	0.151
0.200	99.01	8	0.99	0.535	2.500	99.79	146	0.21	0.114
0.217	99.02	9	0.98	0.530	3.000	99.83	176	0.17	0.092
0.233	99.03	10	0.97	0.524	3.500	99.86	206	0.14	0.076
0.250	99.04	11	0.96	0.519	4.000	99.88	236	0.12	0.065
0.267	99.06	12	0.94	0.508	4.500	99.89	266	0.11	0.059
0.283	99.07	13	0.93	0.503	5.000	99.91	296	0.09	0.049
0.300	99.08	14	0.92	0.497	5.500	99.91	326	0.09	0.049
0.317	99.09	15	0.91	0.492	6.000	99.93	356	0.07	0.038
0.333	99.11	16	0.89	0.481	6.500	99.93	386	0.07	0.038
0.417	99.18	21	0.82	0.443	7.000	99.94	416	0.06	0.032
0.500	99.25	26	0.75	0.405	7.500	99.95	446	0.05	0.027
0.583	99.30	31	0.70	0.378	8.000	99.95	476	0.05	0.027
0.667	99.35	36	0.65	0.351	8.500	99.95	506	0.05	0.027
0.750	99.39	41	0.61	0.330	9.000	99.95	536	0.05	0.027
0.833	99.42	46	0.58	0.314	9.500	99.95	566	0.05	0.027
0.917	99.45	51	0.55	0.297	10.000	99.95	596	0.05	0.027
1.000	99.49	56	0.51	0.276	12.000	99.96	716	0.04	0.022
1.083	99.52	61	0.48	0.259	14.000	99.97	836	0.03	0.016
1.167	99.54	66	0.46	0.249	16.000	99.97	956	0.03	0.016
1.250	99.57	71	0.43	0.232	18.000	99.97	1076	0.03	0.016
1.333	99.59	76	0.41	0.222	20.000	99.96	1196	0.04	0.022
1.417	99.61	81	0.39	0.211					

Mattiace Petrochemical MW-6s
Slug Test - 3/29/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.083	98.48	Ho							
0.100	98.63	1	1.37	0.901	1.333	99.43	75	0.57	0.375
0.117	98.72	2	1.28	0.842	1.417	99.45	80	0.55	0.362
0.133	98.79	3	1.21	0.796	1.500	99.47	85	0.53	0.349
0.150	98.83	4	1.17	0.770	1.583	99.49	90	0.51	0.336
0.167	98.82	5	1.18	0.776	1.667	99.51	95	0.49	0.322
0.183	98.63	6	1.37	0.901	1.750	99.53	100	0.47	0.309
0.200	98.71	7	1.29	0.849	1.833	99.55	105	0.45	0.296
0.217	98.75	8	1.25	0.822	1.917	99.56	110	0.44	0.289
0.233	98.78	9	1.22	0.803	2.000	99.58	115	0.42	0.276
0.250	98.81	10	1.19	0.783	2.500	99.65	145	0.35	0.230
0.267	98.84	11	1.16	0.763	3.000	99.71	175	0.29	0.191
0.283	98.85	12	1.15	0.757	3.500	99.76	205	0.24	0.158
0.300	98.87	13	1.13	0.743	4.000	99.79	235	0.21	0.138
0.317	98.88	14	1.12	0.737	4.500	99.82	265	0.18	0.118
0.333	98.89	15	1.11	0.730	5.000	99.84	295	0.16	0.105
0.417	98.95	20	1.05	0.691	5.500	99.86	325	0.14	0.092
0.500	99.01	25	0.99	0.651	6.000	99.88	355	0.12	0.079
0.583	99.06	30	0.94	0.618	6.500	99.89	385	0.11	0.072
0.667	99.13	35	0.87	0.572	7.000	99.89	415	0.11	0.072
0.750	99.18	40	0.82	0.539	7.500	99.91	445	0.09	0.059
0.833	99.24	45	0.76	0.500	8.000	99.91	475	0.09	0.059
0.917	99.28	50	0.72	0.474	8.500	99.91	505	0.09	0.059
1.000	99.31	55	0.69	0.454	9.000	99.92	535	0.08	0.053
1.083	99.35	60	0.65	0.428	9.500	99.93	565	0.07	0.046
1.167	99.38	65	0.62	0.408	10.000	99.93	595	0.07	0.046
1.250	99.40	70	0.60	0.395					

Mattiace Petrochemical MW-7s
Slug Test - 3/29/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.333	96.65	Ho							
0.417	96.66	5	3.34	0.997	3.000	98.17	160	1.83	0.546
0.500	96.71	10	3.29	0.982	3.500	98.37	190	1.63	0.487
0.583	96.76	15	3.24	0.967	4.000	98.54	220	1.46	0.436
0.667	96.82	20	3.18	0.949	4.500	98.67	250	1.33	0.397
0.750	96.87	25	3.13	0.934	5.000	98.80	280	1.20	0.358
0.833	96.93	30	3.07	0.916	5.500	98.91	310	1.09	0.325
0.917	96.99	35	3.01	0.899	6.000	99.01	340	0.99	0.296
1.000	97.04	40	2.96	0.884	6.500	99.09	370	0.91	0.272
1.083	97.10	45	2.90	0.866	7.000	99.15	400	0.85	0.254
1.167	97.16	50	2.84	0.848	7.500	99.21	430	0.79	0.236
1.250	97.22	55	2.78	0.830	8.000	99.26	460	0.74	0.221
1.333	97.28	60	2.72	0.812	8.500	99.29	490	0.71	0.212
1.417	97.34	65	2.66	0.794	9.000	99.33	520	0.67	0.200
1.500	97.39	70	2.61	0.779	9.500	99.36	550	0.64	0.191
1.583	97.45	75	2.55	0.761	10.000	99.38	580	0.62	0.185
1.667	97.50	80	2.50	0.746	12.000	99.45	700	0.55	0.164
1.750	97.55	85	2.45	0.731	14.000	99.46	820	0.54	0.161
1.833	97.60	90	2.40	0.716	16.000	99.46	940	0.54	0.161
1.917	97.64	95	2.36	0.704	18.000	99.43	1060	0.57	0.170
2.000	97.69	100	2.31	0.690	20.000	99.38	1180	0.62	0.185
2.500	97.95	130	2.05	0.612					

Mattiace Petrochemical MW-7s
Slug Test - 3/29/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.417	95.58	Ho							
0.500	95.60	5	4.40	0.995	4.500	98.21	245	1.79	0.405
0.583	95.66	10	4.34	0.982	5.000	98.39	275	1.61	0.364
0.667	95.72	15	4.28	0.968	5.500	98.55	305	1.45	0.328
0.750	95.79	20	4.21	0.952	6.000	98.69	335	1.31	0.296
0.833	95.86	25	4.14	0.937	6.500	98.81	365	1.19	0.269
0.917	95.94	30	4.06	0.919	7.000	98.91	395	1.09	0.247
1.000	96.01	35	3.99	0.903	7.500	99.02	425	0.98	0.222
1.083	96.08	40	3.92	0.887	8.000	99.10	455	0.90	0.204
1.167	96.15	45	3.85	0.871	8.500	99.16	485	0.84	0.190
1.250	96.22	50	3.78	0.855	9.000	99.23	515	0.77	0.174
1.333	96.29	55	3.71	0.839	9.500	99.28	545	0.72	0.163
1.417	96.36	60	3.64	0.824	10.000	99.33	575	0.67	0.152
1.500	96.43	65	3.57	0.808	12.000	99.46	695	0.54	0.122
1.583	96.50	70	3.50	0.792	14.000	99.53	815	0.47	0.106
1.667	96.56	75	3.44	0.778	16.000	99.57	935	0.43	0.097
1.750	96.63	80	3.37	0.762	18.000	99.58	1055	0.42	0.095
1.833	96.70	85	3.30	0.747	20.000	99.58	1175	0.42	0.095
1.917	96.75	90	3.25	0.735	22.000	99.58	1295	0.42	0.095
2.000	96.82	95	3.18	0.719	24.000	99.57	1415	0.43	0.097
2.500	97.18	125	2.82	0.638	26.000	99.56	1535	0.44	0.100
3.000	97.50	155	2.50	0.566	28.000	99.55	1655	0.45	0.102
3.500	97.76	185	2.24	0.507	30.000	99.55	1775	0.45	0.102
4.000	98.00	215	2.00	0.452	32.000	99.53	1895	0.47	0.106

Mattiace Petrochemical MW-7d
Slug Test - 3/29/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.233	94.12	Ho							
0.250	94.27	1	5.73	0.974	1.667	99.50	86	0.50	0.085
0.267	94.24	2	5.76	0.980	1.750	99.56	91	0.44	0.075
0.283	94.43	3	5.57	0.947	1.833	99.61	96	0.39	0.066
0.300	94.56	4	5.44	0.925	1.917	99.65	101	0.35	0.060
0.317	94.72	5	5.28	0.898	2.000	99.69	106	0.31	0.053
0.333	94.82	6	5.18	0.881	2.500	99.84	136	0.16	0.027
0.417	95.54	11	4.46	0.759	3.000	99.89	166	0.11	0.019
0.500	96.15	16	3.85	0.655	3.500	99.92	196	0.08	0.014
0.583	96.70	21	3.30	0.561	4.000	99.94	226	0.06	0.010
0.667	97.18	26	2.82	0.480	4.500	99.94	256	0.06	0.010
0.750	97.58	31	2.42	0.412	5.000	99.94	286	0.06	0.010
0.833	97.92	36	2.08	0.354	5.500	99.94	316	0.06	0.010
0.917	98.21	41	1.79	0.304	6.000	99.95	346	0.05	0.009
1.000	98.46	46	1.54	0.262	6.500	99.94	376	0.06	0.010
1.083	98.67	51	1.33	0.226	7.000	99.95	406	0.05	0.009
1.167	98.85	56	1.15	0.196	7.500	99.95	436	0.05	0.009
1.250	99.00	61	1.00	0.170	8.000	99.95	466	0.05	0.009
1.333	99.14	66	0.86	0.146	8.500	99.95	496	0.05	0.009
1.417	99.25	71	0.75	0.128	9.000	99.95	526	0.05	0.009
1.500	99.34	76	0.66	0.112	9.500	99.95	556	0.05	0.009
1.583	99.43	81	0.57	0.097	10.000	99.95	586	0.05	0.009

Mattiace Petrochemical MW-7d
Slug Test - 3/29/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.250	94.27	Ho							
0.267	94.52	1	5.48	0.956	1.750	99.55	90	0.45	0.079
0.283	94.43	2	5.57	0.972	1.833	99.60	95	0.40	0.070
0.300	94.53	3	5.47	0.955	1.917	99.65	100	0.35	0.061
0.317	94.63	4	5.37	0.937	2.000	99.69	105	0.31	0.054
0.333	94.79	5	5.21	0.909	2.500	99.84	135	0.16	0.028
0.417	95.48	10	4.52	0.789	3.000	99.90	165	0.10	0.017
0.500	96.08	15	3.92	0.684	3.500	99.93	195	0.07	0.012
0.583	96.62	20	3.38	0.590	4.000	99.94	225	0.06	0.010
0.667	97.09	25	2.91	0.508	4.500	99.95	255	0.05	0.009
0.750	97.50	30	2.50	0.436	5.000	99.96	285	0.04	0.007
0.833	97.85	35	2.15	0.375	5.500	99.96	315	0.04	0.007
0.917	98.15	40	1.85	0.323	6.000	99.96	345	0.04	0.007
1.000	98.41	45	1.59	0.277	6.500	99.96	375	0.04	0.007
1.083	98.63	50	1.37	0.239	7.000	99.96	405	0.04	0.007
1.167	98.81	55	1.19	0.208	7.500	99.96	435	0.04	0.007
1.250	98.97	60	1.03	0.180	8.000	99.96	465	0.04	0.007
1.333	99.11	65	0.89	0.155	8.500	99.96	495	0.04	0.007
1.417	99.22	70	0.78	0.136	9.000	99.96	525	0.04	0.007
1.500	99.33	75	0.67	0.117	9.500	99.97	555	0.03	0.005
1.583	99.41	80	0.59	0.103	10.000	99.97	585	0.03	0.005
1.667	99.48	85	0.52	0.091	12.000	99.97	705	0.03	0.005

Mattiace Petrochemical MW-8s
Slug Test - 3/29/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.200	98.07	Ho							
0.217	98.09	1	1.91	0.990	2.000	99.69	108	0.31	0.161
0.233	98.12	2	1.88	0.974	2.500	99.77	138	0.23	0.119
0.250	98.16	3	1.84	0.953	3.000	99.84	168	0.16	0.083
0.267	98.21	4	1.79	0.927	3.500	99.87	198	0.13	0.067
0.283	98.26	5	1.74	0.902	4.000	99.89	228	0.11	0.057
0.300	98.30	6	1.70	0.881	4.500	99.91	258	0.09	0.047
0.317	98.35	7	1.65	0.855	5.000	99.92	288	0.08	0.041
0.333	98.39	8	1.61	0.834	5.500	99.93	318	0.07	0.036
0.417	98.56	13	1.44	0.746	6.000	99.93	348	0.07	0.036
0.500	98.70	18	1.30	0.674	6.500	99.94	378	0.06	0.031
0.583	98.83	23	1.17	0.606	7.000	99.94	408	0.06	0.031
0.667	98.93	28	1.07	0.554	7.500	99.94	438	0.06	0.031
0.750	99.02	33	0.98	0.508	8.000	99.94	468	0.06	0.031
0.833	99.10	38	0.90	0.466	8.500	99.94	498	0.06	0.031
0.917	99.17	43	0.83	0.430	9.000	99.94	528	0.06	0.031
1.000	99.24	48	0.76	0.394	9.500	99.94	558	0.06	0.031
1.083	99.30	53	0.70	0.363	10.000	99.94	588	0.06	0.031
1.167	99.35	58	0.65	0.337	12.000	99.94	708	0.06	0.031
1.250	99.40	63	0.60	0.311	14.000	99.94	828	0.06	0.031
1.333	99.45	68	0.55	0.285	16.000	99.94	948	0.06	0.031
1.417	99.48	73	0.52	0.269	18.000	99.94	1068	0.06	0.031
1.500	99.52	78	0.48	0.249	20.000	99.94	1188	0.06	0.031
1.583	99.55	83	0.45	0.233	22.000	99.94	1308	0.06	0.031
1.667	99.58	88	0.42	0.218	24.000	99.94	1428	0.06	0.031
1.750	99.62	93	0.38	0.197	26.000	99.94	1548	0.06	0.031
1.833	99.64	98	0.36	0.187	28.000	99.94	1668	0.06	0.031
1.917	99.66	103	0.34	0.176	30.000	99.94	1788	0.06	0.031

Mattiace Petrochemical MW-8s
Slug Test - 3/29/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.167	97.02	Ho							
0.183	97.06	1	2.94	0.987	2.500	99.73	140	0.27	0.091
0.200	97.11	2	2.89	0.970	3.000	99.81	170	0.19	0.064
0.217	97.19	3	2.81	0.943	3.500	99.86	200	0.14	0.047
0.233	97.26	4	2.74	0.919	4.000	99.89	230	0.11	0.037
0.250	97.34	5	2.66	0.893	4.500	99.91	260	0.09	0.030
0.267	97.41	6	2.59	0.869	5.000	99.93	290	0.07	0.023
0.283	97.47	7	2.53	0.849	5.500	99.94	320	0.06	0.020
0.300	97.53	8	2.47	0.829	6.000	99.95	350	0.05	0.017
0.317	97.59	9	2.41	0.809	6.500	99.96	380	0.04	0.013
0.333	97.64	10	2.36	0.792	7.000	99.96	410	0.04	0.013
0.417	97.88	15	2.12	0.711	7.500	99.96	440	0.04	0.013
0.500	98.08	20	1.92	0.644	8.000	99.96	470	0.04	0.013
0.583	98.26	25	1.74	0.584	8.500	99.97	500	0.03	0.010
0.667	98.42	30	1.58	0.530	9.000	99.97	530	0.03	0.010
0.750	98.57	35	1.43	0.480	9.500	99.97	560	0.03	0.010
0.833	98.69	40	1.31	0.440	10.000	99.97	590	0.03	0.010
0.917	98.81	45	1.19	0.399	12.000	99.98	710	0.02	0.007
1.000	98.91	50	1.09	0.366	14.000	99.98	830	0.02	0.007
1.083	99.01	55	0.99	0.332	16.000	99.98	950	0.02	0.007
1.167	99.09	60	0.91	0.305	18.000	99.98	1070	0.02	0.007
1.250	99.16	65	0.84	0.282	20.000	99.98	1190	0.02	0.007
1.333	99.23	70	0.77	0.258	22.000	99.98	1310	0.02	0.007
1.417	99.29	75	0.71	0.238	24.000	99.98	1430	0.02	0.007
1.500	99.34	80	0.66	0.221	26.000	99.98	1550	0.02	0.007
1.583	99.39	85	0.61	0.205	28.000	99.98	1670	0.02	0.007
1.667	99.45	90	0.55	0.185	30.000	99.98	1790	0.02	0.007
1.750	99.48	95	0.52	0.174	32.000	99.98	1910	0.02	0.007
1.833	99.52	100	0.48	0.161	34.000	99.98	2030	0.02	0.007
1.917	99.56	105	0.44	0.148	36.000	99.98	2150	0.02	0.007
2.000	99.59	110	0.41	0.138					

Mattiace Petrochemical MW-8d
Slug Test - 3/28/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.300	96.68	Ho							
0.317	97.03	1	2.97	0.895	6.500	99.96	372	0.04	0.012
0.333	97.07	2	2.93	0.883	7.000	99.96	402	0.04	0.012
0.417	97.78	7	2.22	0.669	7.500	99.96	432	0.04	0.012
0.500	98.41	12	1.59	0.479	8.000	99.96	462	0.04	0.012
0.583	98.83	17	1.17	0.352	8.500	99.96	492	0.04	0.012
0.667	99.14	22	0.86	0.259	9.000	99.96	522	0.04	0.012
0.750	99.35	27	0.65	0.196	9.500	99.96	552	0.04	0.012
0.833	99.50	32	0.50	0.151	10.000	99.96	582	0.04	0.012
0.917	99.62	37	0.38	0.114	12.000	99.96	702	0.04	0.012
1.000	99.69	42	0.31	0.093	14.000	99.97	822	0.03	0.009
1.083	99.73	47	0.27	0.081	16.000	99.97	942	0.03	0.009
1.167	99.77	52	0.23	0.069	18.000	99.97	1062	0.03	0.009
1.250	99.81	57	0.19	0.057	20.000	99.96	1182	0.04	0.012
1.333	99.84	62	0.16	0.048	22.000	99.97	1302	0.03	0.009
1.417	99.86	67	0.14	0.042	24.000	99.97	1422	0.03	0.009
1.500	99.88	72	0.12	0.036	26.000	99.97	1542	0.03	0.009
1.583	99.89	77	0.11	0.033	28.000	99.97	1662	0.03	0.009
1.667	99.89	82	0.11	0.033	30.000	99.96	1782	0.04	0.012
1.750	99.91	87	0.09	0.027	32.000	99.97	1902	0.03	0.009
1.833	99.91	92	0.09	0.027	34.000	99.97	2022	0.03	0.009
1.917	99.92	97	0.08	0.024	36.000	99.97	2142	0.03	0.009
2.000	99.93	102	0.07	0.021	38.000	99.97	2262	0.03	0.009
2.500	99.94	132	0.06	0.018	40.000	99.97	2382	0.03	0.009
3.000	99.95	162	0.05	0.015	42.000	99.97	2502	0.03	0.009
3.500	99.95	192	0.05	0.015	44.000	99.97	2622	0.03	0.009
4.000	99.95	222	0.05	0.015	46.000	99.97	2742	0.03	0.009
4.500	99.96	252	0.04	0.012	48.000	99.97	2862	0.03	0.009
5.000	99.96	282	0.04	0.012	50.000	99.97	2982	0.03	0.009
5.500	99.96	312	0.04	0.012	52.000	99.97	3102	0.03	0.009
6.000	99.96	342	0.04	0.012	54.000	99.97	3222	0.03	0.009

Mattiace Petrochemical MW-8d
Slug Test - 3/28/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.117	94.67	Ho							
0.133	95.10	1	4.90	0.919	1.583	99.89	88	0.11	0.021
0.150	94.93	2	5.07	0.951	1.667	99.91	93	0.09	0.017
0.167	95.09	3	4.91	0.921	1.750	99.91	98	0.09	0.017
0.183	95.19	4	4.81	0.902	1.833	99.92	103	0.08	0.015
0.200	95.46	5	4.54	0.852	1.917	99.93	108	0.07	0.013
0.217	95.69	6	4.31	0.809	2.000	99.94	113	0.06	0.011
0.233	95.93	7	4.07	0.764	2.500	99.96	143	0.04	0.008
0.250	96.15	8	3.85	0.722	3.000	99.96	173	0.04	0.008
0.267	96.37	9	3.63	0.681	3.500	99.97	203	0.03	0.006
0.283	96.58	10	3.42	0.642	4.000	99.98	233	0.02	0.004
0.300	96.76	11	3.24	0.608	4.500	99.98	263	0.02	0.004
0.317	96.93	12	3.07	0.576	5.000	99.98	293	0.02	0.004
0.333	97.09	13	2.91	0.546	5.500	99.98	323	0.02	0.004
0.417	97.78	18	2.22	0.417	6.000	99.98	353	0.02	0.004
0.500	98.31	23	1.69	0.317	6.500	99.98	383	0.02	0.004
0.583	98.69	28	1.31	0.246	7.000	99.98	413	0.02	0.004
0.667	98.98	33	1.02	0.191	7.500	99.98	443	0.02	0.004
0.750	99.21	38	0.79	0.148	8.000	99.98	473	0.02	0.004
0.833	99.38	43	0.62	0.116	8.500	99.98	503	0.02	0.004
0.917	99.50	48	0.50	0.094	9.000	99.98	533	0.02	0.004
1.000	99.60	53	0.40	0.075	9.500	99.98	563	0.02	0.004
1.083	99.68	58	0.32	0.060	10.000	99.98	593	0.02	0.004
1.167	99.74	63	0.26	0.049	12.000	99.99	713	0.01	0.002
1.250	99.78	68	0.22	0.041	14.000	99.99	833	0.01	0.002
1.333	99.82	73	0.18	0.034	16.000	99.99	953	0.01	0.002
1.417	99.85	78	0.15	0.028	18.000	99.98	1073	0.02	0.004
1.500	99.87	83	0.13	0.024					

Mattiace Petrochemical MW-3
Slug Test - 3/28/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.133	94.70	Ho							
0.150	94.80	1	5.20	0.981	1.583	99.89	87	0.11	0.021
0.167	94.95	2	5.05	0.953	1.667	99.89	92	0.11	0.021
0.183	95.17	3	4.83	0.911	1.750	99.90	97	0.10	0.019
0.200	95.34	4	4.66	0.879	1.833	99.91	102	0.09	0.017
0.217	95.83	5	4.17	0.787	1.917	99.91	107	0.09	0.017
0.233	96.18	6	3.82	0.721	2.000	99.91	112	0.09	0.017
0.250	96.52	7	3.48	0.657	2.500	99.93	142	0.07	0.013
0.267	96.83	8	3.17	0.598	3.000	99.94	172	0.06	0.011
0.283	97.10	9	2.90	0.547	3.500	99.95	202	0.05	0.009
0.300	97.35	10	2.65	0.500	4.000	99.95	232	0.05	0.009
0.317	97.58	11	2.42	0.457	4.500	99.95	262	0.05	0.009
0.333	97.78	12	2.22	0.419	5.000	99.96	292	0.04	0.008
0.417	98.56	17	1.44	0.272	5.500	99.96	322	0.04	0.008
0.500	98.98	22	1.02	0.192	6.000	99.96	352	0.04	0.008
0.583	99.25	27	0.75	0.142	6.500	99.96	382	0.04	0.008
0.667	99.43	32	0.57	0.108	7.000	99.96	412	0.04	0.008
0.750	99.56	37	0.44	0.083	7.500	99.96	442	0.04	0.008
0.833	99.66	42	0.34	0.064	8.000	99.96	472	0.04	0.008
0.917	99.72	47	0.28	0.053	8.500	99.96	502	0.04	0.008
1.000	99.77	52	0.23	0.043	9.000	99.96	532	0.04	0.008
1.083	99.81	57	0.19	0.036	9.500	99.96	562	0.04	0.008
1.167	99.83	62	0.17	0.032	10.000	99.96	592	0.04	0.008
1.250	99.85	67	0.15	0.028	12.000	99.96	712	0.04	0.008
1.333	99.86	72	0.14	0.026	14.000	99.97	832	0.03	0.006
1.417	99.88	77	0.12	0.023	16.000	99.97	952	0.03	0.006
1.500	99.88	82	0.12	0.023	18.000	99.98	1072	0.02	0.004

Mattiace Petrochemical MW-3
Slug Test - 3/28/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.167	93.51	Ho							
0.183	93.54	1	6.46	0.995	1.583	99.75	85	0.25	0.039
0.200	93.70	2	6.30	0.971	1.667	99.77	90	0.23	0.035
0.217	93.86	3	6.14	0.946	1.750	99.80	95	0.20	0.031
0.233	94.13	4	5.87	0.904	1.833	99.82	100	0.18	0.028
0.250	94.38	5	5.62	0.866	1.917	99.83	105	0.17	0.026
0.267	94.71	6	5.29	0.815	2.000	99.84	110	0.16	0.025
0.283	94.80	7	5.20	0.801	2.500	99.89	140	0.11	0.017
0.300	95.22	8	4.78	0.737	3.000	99.91	170	0.09	0.014
0.317	95.52	9	4.48	0.690	3.500	99.92	200	0.08	0.012
0.333	95.79	10	4.21	0.649	4.000	99.93	230	0.07	0.011
0.417	96.91	15	3.09	0.476	4.500	99.94	260	0.06	0.009
0.500	97.67	20	2.33	0.359	5.000	99.95	290	0.05	0.008
0.583	98.19	25	1.81	0.279	5.500	99.95	320	0.05	0.008
0.667	98.62	30	1.38	0.213	6.000	99.95	350	0.05	0.008
0.750	98.87	35	1.13	0.174	6.500	99.95	380	0.05	0.008
0.833	99.07	40	0.93	0.143	7.000	99.95	410	0.05	0.008
0.917	99.23	45	0.77	0.119	7.500	99.95	440	0.05	0.008
1.000	99.35	50	0.65	0.100	8.000	99.95	470	0.05	0.008
1.083	99.45	55	0.55	0.085	8.500	99.96	500	0.04	0.006
1.167	99.53	60	0.47	0.072	9.000	99.96	530	0.04	0.006
1.250	99.59	65	0.41	0.063	9.500	99.96	560	0.04	0.006
1.333	99.64	70	0.36	0.055	10.000	99.96	590	0.04	0.006
1.417	99.69	75	0.31	0.048	12.000	99.96	710	0.04	0.006
1.500	99.72	80	0.28	0.043					

Mattiace Petrochemical MW-7
Slug Test - 3/28/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.150	93.35	Ho							
0.167	93.42	1	6.58	0.989	1.917	95.41	106	4.59	0.690
0.183	93.38	2	6.62	0.995	2.000	95.50	111	4.50	0.677
0.200	93.51	3	6.49	0.976	2.500	96.01	141	3.99	0.600
0.217	93.51	4	6.49	0.976	3.000	96.48	171	3.52	0.529
0.233	93.55	5	6.45	0.970	3.500	96.90	201	3.10	0.466
0.250	93.59	6	6.41	0.964	4.000	97.28	231	2.72	0.409
0.267	93.61	7	6.39	0.961	4.500	97.63	261	2.37	0.356
0.283	93.64	8	6.36	0.956	5.000	97.92	291	2.08	0.313
0.300	93.67	9	6.33	0.952	5.500	98.19	321	1.81	0.272
0.317	93.69	10	6.31	0.949	6.000	98.43	351	1.57	0.236
0.333	93.72	11	6.28	0.944	6.500	98.62	381	1.38	0.208
0.417	93.88	16	6.12	0.920	7.000	98.77	411	1.23	0.185
0.500	93.98	21	6.02	0.905	7.500	98.90	441	1.10	0.165
0.583	94.08	26	5.92	0.890	8.000	99.01	471	0.99	0.149
0.667	94.18	31	5.82	0.875	8.500	99.11	501	0.89	0.134
0.750	94.28	36	5.72	0.860	9.000	99.20	531	0.80	0.120
0.833	94.37	41	5.63	0.847	9.500	99.28	561	0.72	0.108
0.917	94.46	46	5.54	0.833	10.000	99.34	591	0.66	0.099
1.000	94.55	51	5.45	0.820	12.000	99.55	711	0.45	0.068
1.083	94.63	56	5.37	0.808	14.000	99.69	831	0.31	0.047
1.167	94.71	61	5.29	0.795	16.000	99.77	951	0.23	0.035
1.250	94.79	66	5.21	0.783	18.000	99.84	1071	0.16	0.024
1.333	94.88	71	5.12	0.770	20.000	99.88	1191	0.12	0.018
1.417	94.95	76	5.05	0.759	22.000	99.91	1311	0.09	0.014
1.500	95.03	81	4.97	0.747	24.000	99.93	1431	0.07	0.011
1.583	95.10	86	4.90	0.737	26.000	99.94	1551	0.06	0.009
1.667	95.17	91	4.83	0.726	28.000	99.95	1671	0.05	0.008
1.750	95.25	96	4.75	0.714	30.000	99.97	1791	0.03	0.005
1.833	95.33	101	4.67	0.702					

Mattiace Petrochemical MW-7
Slug Test - 3/28/90 Test 8

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.183	90.29	Ho							
0.200	90.56	1	9.44	0.972	2.500	95.17	139	4.83	0.497
0.217	90.51	2	9.49	0.977	3.000	95.77	169	4.23	0.436
0.233	90.66	3	9.34	0.962	3.500	96.27	199	3.73	0.384
0.250	90.69	4	9.31	0.959	4.000	96.70	229	3.30	0.340
0.267	90.77	5	9.23	0.951	4.500	97.06	259	2.94	0.303
0.283	90.82	6	9.18	0.945	5.000	97.38	289	2.62	0.270
0.300	90.88	7	9.12	0.939	5.500	97.66	319	2.34	0.241
0.317	90.93	8	9.07	0.934	6.000	97.90	349	2.10	0.216
0.333	90.98	9	9.02	0.929	6.500	98.12	379	1.88	0.194
0.417	91.23	14	8.77	0.903	7.000	98.30	409	1.70	0.175
0.500	91.45	19	8.55	0.881	7.500	98.47	439	1.53	0.158
0.583	91.67	24	8.33	0.858	8.000	98.62	469	1.38	0.142
0.667	91.88	29	8.12	0.836	8.500	98.74	499	1.26	0.130
0.750	92.08	34	7.92	0.816	9.000	98.86	529	1.14	0.117
0.833	92.29	39	7.71	0.794	9.500	98.97	559	1.03	0.106
0.917	92.48	44	7.52	0.774	10.000	99.05	589	0.95	0.098
1.000	92.66	49	7.34	0.756	12.000	99.34	709	0.66	0.068
1.083	92.84	54	7.16	0.737	14.000	99.52	829	0.48	0.049
1.167	93.01	59	6.99	0.720	16.000	99.65	949	0.35	0.036
1.250	93.18	64	6.82	0.702	18.000	99.73	1069	0.27	0.028
1.333	93.35	69	6.65	0.685	20.000	99.79	1189	0.21	0.022
1.417	93.50	74	6.50	0.669	22.000	99.83	1309	0.17	0.018
1.500	93.66	79	6.34	0.653	24.000	99.86	1429	0.14	0.014
1.583	93.80	84	6.20	0.639	26.000	99.89	1549	0.11	0.011
1.667	93.95	89	6.05	0.623	28.000	99.91	1669	0.09	0.009
1.750	94.08	94	5.92	0.610	30.000	99.91	1789	0.09	0.009
1.833	94.22	99	5.78	0.595	32.000	99.93	1909	0.07	0.007
1.917	94.35	104	5.65	0.582	34.000	99.94	2029	0.06	0.006
2.000	94.47	109	5.53	0.570					

Mattiace Petrochemical MW-9
Slug Test - 3/29/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.150	97.18	Ho							
0.167	97.32	1	2.68	0.950	1.667	99.40	91	0.60	0.213
0.183	97.43	2	2.57	0.911	1.750	99.43	96	0.57	0.202
0.200	97.53	3	2.47	0.876	1.833	99.45	101	0.55	0.195
0.217	97.60	4	2.40	0.851	1.917	99.47	106	0.53	0.188
0.233	97.67	5	2.33	0.826	2.000	99.49	111	0.51	0.181
0.250	97.75	6	2.25	0.798	2.500	99.59	141	0.41	0.145
0.267	97.81	7	2.19	0.777	3.000	99.65	171	0.35	0.124
0.283	97.87	8	2.13	0.755	3.500	99.70	201	0.30	0.106
0.300	97.93	9	2.07	0.734	4.000	99.74	231	0.26	0.092
0.317	97.99	10	2.01	0.713	4.500	99.77	261	0.23	0.082
0.333	98.04	11	1.96	0.695	5.000	99.79	291	0.21	0.074
0.417	98.27	16	1.73	0.613	5.500	99.82	321	0.18	0.064
0.500	98.46	21	1.54	0.546	6.000	99.84	351	0.16	0.057
0.583	98.61	26	1.39	0.493	6.500	99.86	381	0.14	0.050
0.667	98.74	31	1.26	0.447	7.000	99.87	411	0.13	0.046
0.750	98.84	36	1.16	0.411	7.500	99.88	441	0.12	0.043
0.833	98.93	41	1.07	0.379	8.000	99.89	471	0.11	0.039
0.917	99.01	46	0.99	0.351	8.500	99.91	501	0.09	0.032
1.000	99.08	51	0.92	0.326	9.000	99.91	531	0.09	0.032
1.083	99.13	56	0.87	0.309	9.500	99.92	561	0.08	0.028
1.167	99.18	61	0.82	0.291	10.000	99.93	591	0.07	0.025
1.250	99.23	66	0.77	0.273	12.000	99.96	711	0.04	0.014
1.333	99.27	71	0.73	0.259	14.000	99.98	831	0.02	0.007
1.417	99.31	76	0.69	0.245	16.000	99.99	951	0.01	0.004
1.500	99.35	81	0.65	0.230	18.000	100.00	1071	0.00	0.000
1.583	99.37	86	0.63	0.223	20.000	100.00	1191	0.00	0.000

Mattiace Petrochemical MW-9
Slug Test - 3/29/90 Test B

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.267	95.69	Ho							
0.283	96.07	1	3.93	0.912	2.000	99.20	104	0.80	0.186
0.300	96.04	2	3.96	0.919	2.500	99.33	134	0.67	0.155
0.317	96.30	3	3.70	0.858	3.000	99.42	164	0.58	0.135
0.333	96.38	4	3.62	0.840	3.500	99.49	194	0.51	0.118
0.417	96.96	9	3.04	0.705	4.000	99.54	224	0.46	0.107
0.500	97.41	14	2.59	0.601	4.500	99.59	254	0.41	0.095
0.583	97.72	19	2.28	0.529	5.000	99.62	284	0.38	0.088
0.667	97.97	24	2.03	0.471	5.500	99.66	314	0.34	0.079
0.750	98.17	29	1.83	0.425	6.000	99.69	344	0.31	0.072
0.833	98.34	34	1.66	0.385	6.500	99.71	374	0.29	0.067
0.917	98.48	39	1.52	0.353	7.000	99.73	404	0.27	0.063
1.000	98.60	44	1.40	0.325	7.500	99.76	434	0.24	0.056
1.083	98.69	49	1.31	0.304	8.000	99.77	464	0.23	0.053
1.167	98.78	54	1.22	0.283	8.500	99.79	494	0.21	0.049
1.250	98.85	59	1.15	0.267	9.000	99.80	524	0.20	0.046
1.333	98.91	64	1.09	0.253	9.500	99.81	554	0.19	0.044
1.417	98.95	69	1.05	0.244	10.000	99.83	584	0.17	0.039
1.500	98.99	74	1.01	0.234	12.000	99.86	704	0.14	0.032
1.583	99.03	79	0.97	0.225	14.000	99.89	824	0.11	0.026
1.667	99.08	84	0.92	0.213	16.000	99.91	944	0.09	0.021
1.750	99.11	89	0.89	0.206	18.000	99.92	1064	0.08	0.019
1.833	99.14	94	0.86	0.200	20.000	99.93	1184	0.07	0.016
1.917	99.17	99	0.83	0.193					

Mattiace Petrochemical MW-10
Slug Test - 3/29/90 Test A

Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.233	96.96	Ho							
0.250	97.22	1	2.78	0.914	1.667	99.11	86	0.89	0.293
0.267	97.51	2	2.49	0.819	1.750	99.11	91	0.89	0.293
0.283	97.80	3	2.20	0.724	1.833	99.13	96	0.87	0.286
0.300	98.02	4	1.98	0.651	1.917	99.14	101	0.86	0.283
0.317	98.22	5	1.78	0.586	2.000	99.15	106	0.85	0.280
0.333	98.36	6	1.64	0.539	2.500	99.23	136	0.77	0.253
0.417	98.74	11	1.26	0.414	3.000	99.38	166	0.62	0.204
0.500	98.89	16	1.11	0.365	3.500	99.48	196	0.52	0.171
0.583	98.96	21	1.04	0.342	4.000	99.54	226	0.46	0.151
0.667	98.99	26	1.01	0.332	4.500	99.58	256	0.42	0.138
0.750	99.01	31	0.99	0.326	5.000	99.62	286	0.38	0.125
0.833	99.02	36	0.98	0.322	5.500	99.66	316	0.34	0.112
0.917	99.03	41	0.97	0.319	6.000	99.68	346	0.32	0.105
1.000	99.04	46	0.96	0.316	6.500	99.71	376	0.29	0.095
1.083	99.05	51	0.95	0.313	7.000	99.73	406	0.27	0.089
1.167	99.06	56	0.94	0.309	7.500	99.76	436	0.24	0.079
1.250	99.06	61	0.94	0.309	8.000	99.77	466	0.23	0.076
1.333	99.07	66	0.93	0.306	8.500	99.78	496	0.22	0.072
1.417	99.08	71	0.92	0.303	9.000	99.80	526	0.20	0.066
1.500	99.09	76	0.91	0.299	9.500	99.81	556	0.19	0.062
1.583	99.09	81	0.91	0.299	10.000	99.83	586	0.17	0.056

Mattiace Petrochemical MW-10
Slug Test - 3/29/90 Test B

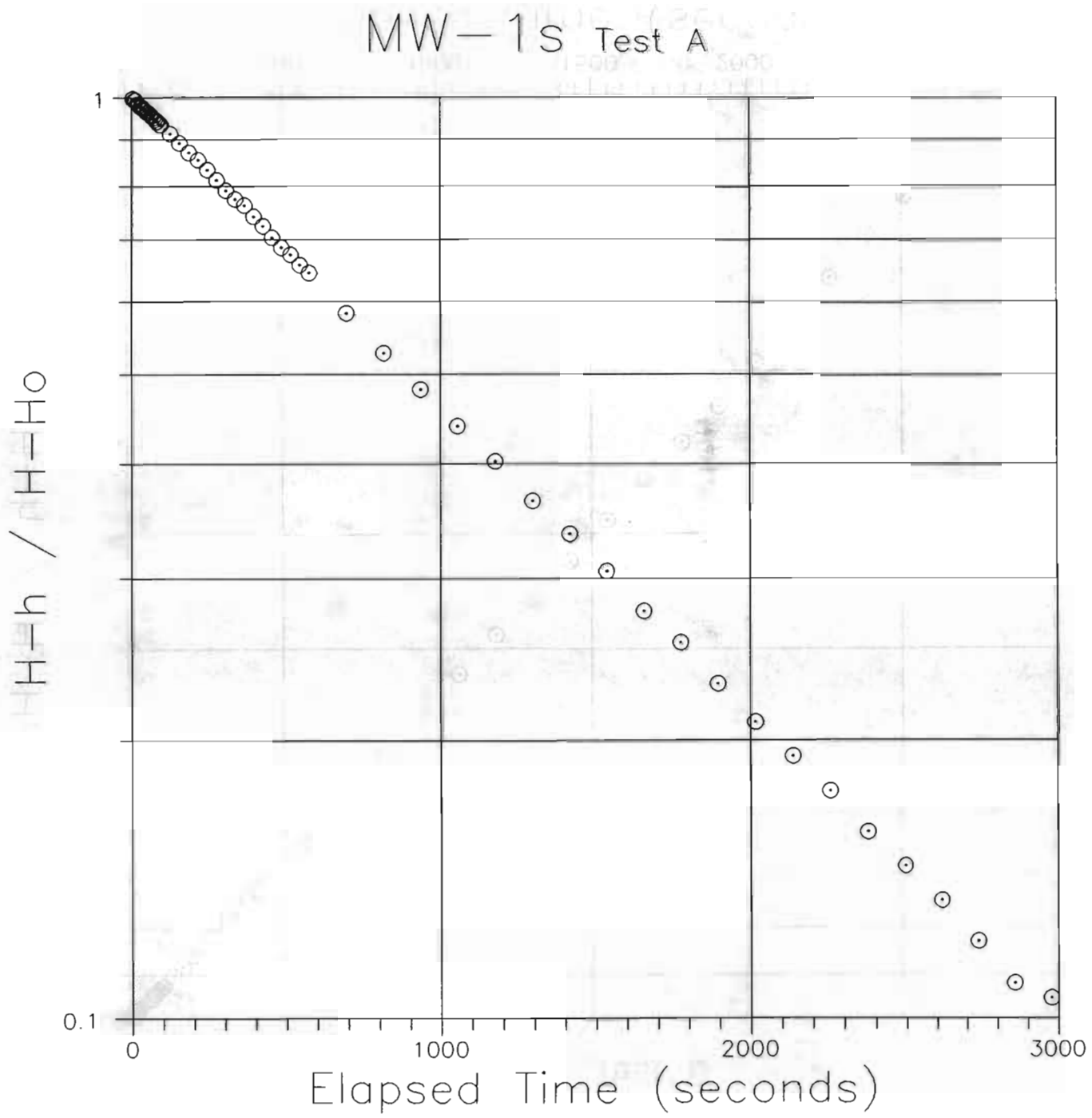
Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.300	95.58	Ho							
0.317	95.67	1	4.33	0.980	1.917	99.00	97	1.00	0.226
0.333	95.83	2	4.17	0.943	2.000	99.01	102	0.99	0.224
0.417	96.98	7	3.02	0.683	2.500	99.04	132	0.96	0.217
0.500	97.96	12	2.04	0.462	3.000	99.06	162	0.94	0.213
0.583	98.41	17	1.59	0.360	3.500	99.08	192	0.92	0.208
0.667	98.65	22	1.35	0.305	4.000	99.11	222	0.89	0.201
0.750	98.75	27	1.25	0.283	4.500	99.14	252	0.86	0.195
0.833	98.82	32	1.18	0.267	5.000	99.17	282	0.83	0.188
0.917	98.86	37	1.14	0.258	5.500	99.21	312	0.79	0.179
1.000	98.88	42	1.12	0.253	6.000	99.25	342	0.75	0.170
1.083	98.90	47	1.10	0.249	6.500	99.30	372	0.70	0.158
1.167	98.91	52	1.09	0.247	7.000	99.37	402	0.63	0.143
1.250	98.93	57	1.07	0.242	7.500	99.52	432	0.48	0.109
1.333	98.94	62	1.06	0.240	8.000	99.60	462	0.40	0.090
1.417	98.95	67	1.05	0.238	8.500	99.65	492	0.35	0.079
1.500	98.96	72	1.04	0.235	9.000	99.68	522	0.32	0.072
1.583	98.97	77	1.03	0.233	9.500	99.71	552	0.29	0.066
1.667	98.97	82	1.03	0.233	10.000	99.74	582	0.26	0.059
1.750	98.98	87	1.02	0.231	12.000	99.84	702	0.16	0.036
1.833	98.99	92	1.01	0.229	14.000	99.90	822	0.10	0.023

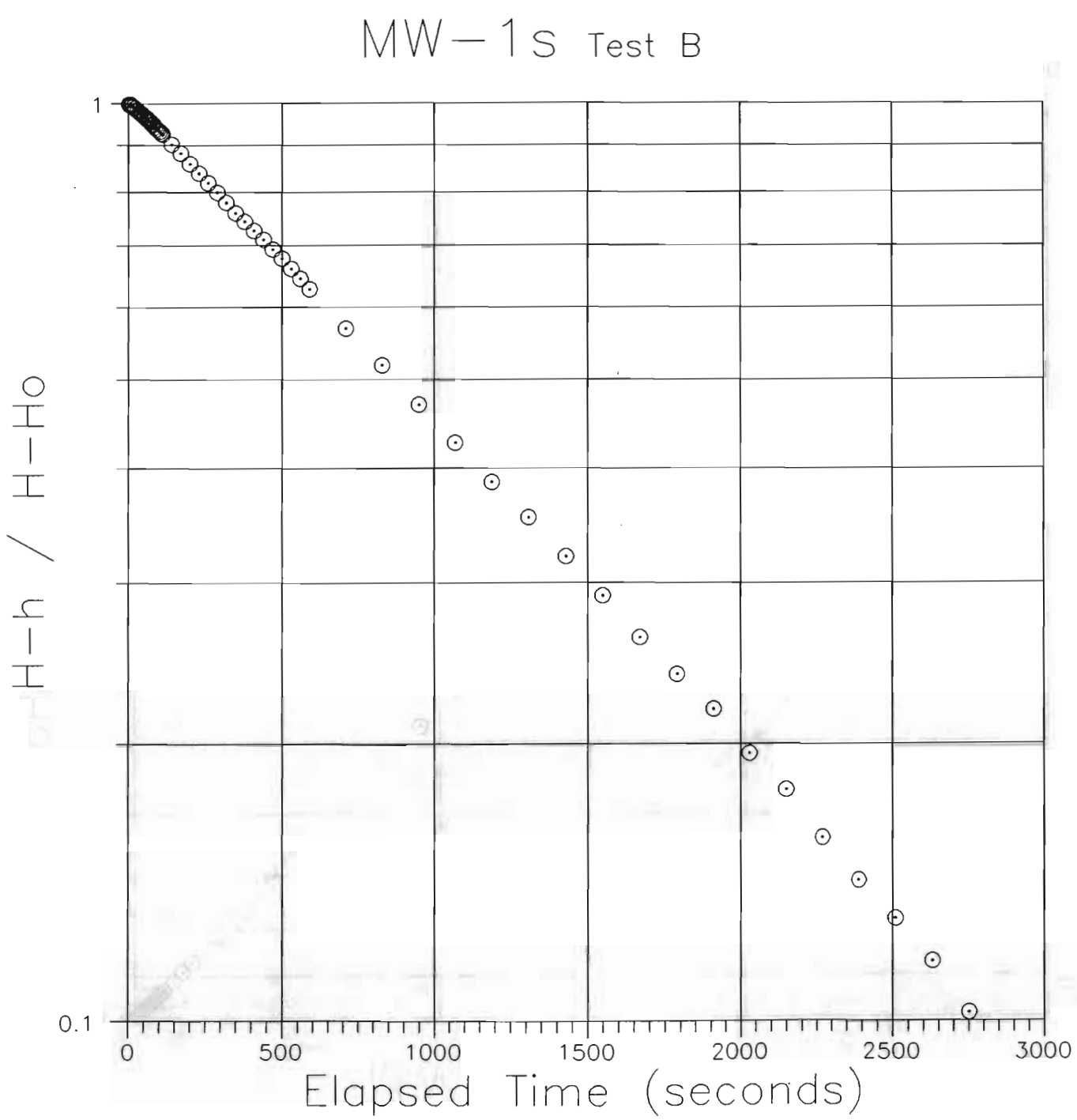
Mattiace Petrochemical PZ-1
Slug Test - 3/28/90

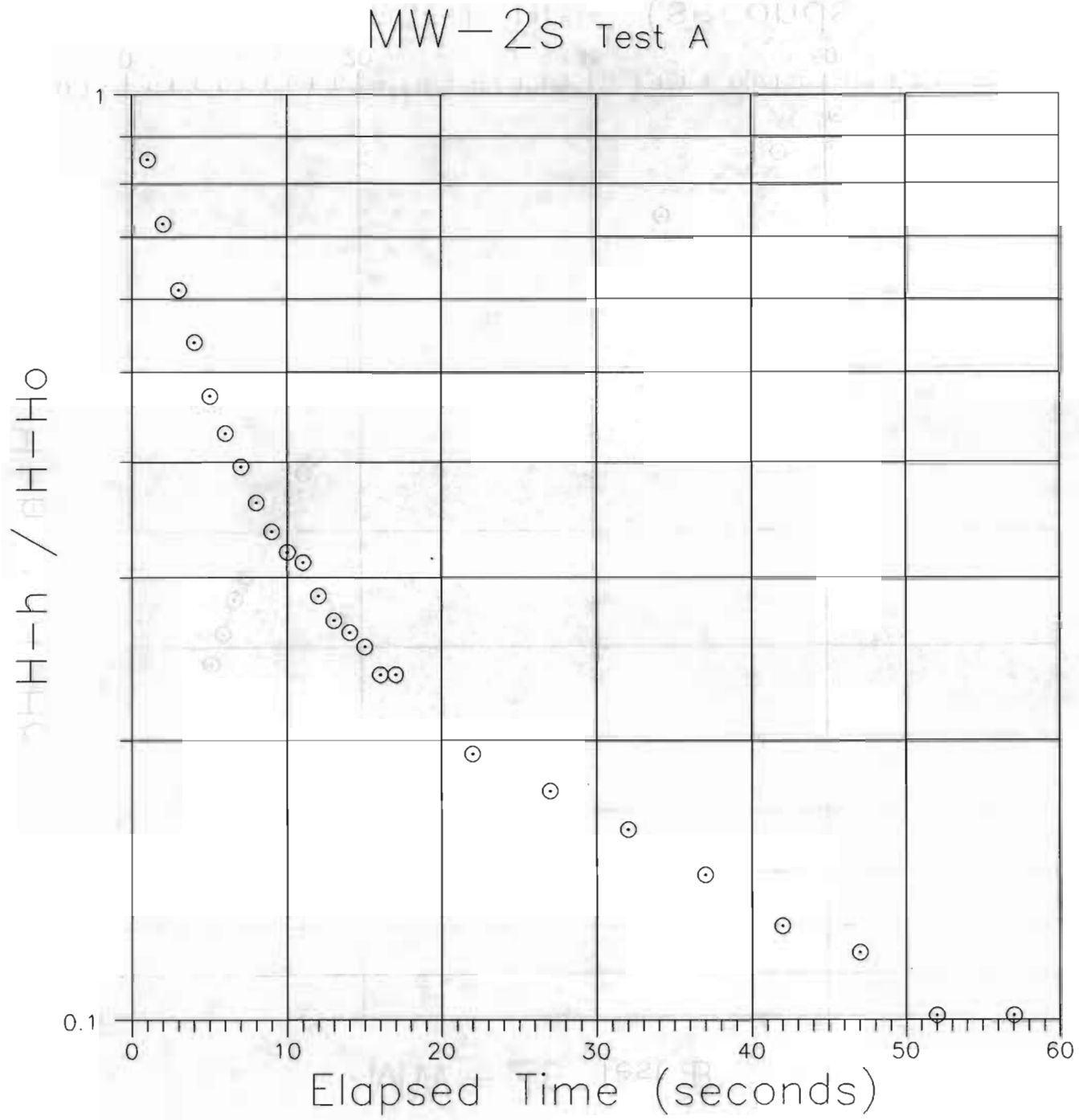
Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.133	95.70	Ho							
0.150	95.74	1	4.26	0.991	5.000	98.94	292	1.06	0.247
0.167	95.84	2	4.16	0.967	5.500	98.97	322	1.03	0.240
0.183	95.94	3	4.06	0.944	6.000	98.99	352	1.01	0.235
0.200	96.17	4	3.83	0.891	6.500	99.01	382	0.99	0.230
0.217	96.31	5	3.69	0.858	7.000	99.03	412	0.97	0.226
0.233	96.48	6	3.52	0.819	7.500	99.05	442	0.95	0.221
0.250	96.64	7	3.36	0.781	8.000	99.07	472	0.93	0.216
0.267	96.80	8	3.20	0.744	8.500	99.09	502	0.91	0.212
0.283	96.95	9	3.05	0.709	9.000	99.10	532	0.90	0.209
0.300	97.09	10	2.91	0.677	9.500	99.12	562	0.88	0.205
0.317	97.23	11	2.77	0.644	10.000	99.14	592	0.86	0.200
0.333	97.35	12	2.65	0.616	12.000	99.21	712	0.79	0.184
0.417	97.88	17	2.12	0.493	14.000	99.27	832	0.73	0.170
0.500	98.22	22	1.78	0.414	16.000	99.33	952	0.67	0.156
0.583	98.42	27	1.58	0.367	18.000	99.38	1072	0.62	0.144
0.667	98.54	32	1.46	0.340	20.000	99.43	1192	0.57	0.133
0.750	98.58	37	1.42	0.330	22.000	99.48	1312	0.52	0.121
0.833	98.61	42	1.39	0.323	24.000	99.54	1432	0.46	0.107
0.917	98.63	47	1.37	0.319	26.000	99.59	1552	0.41	0.095
1.000	98.64	52	1.36	0.316	28.000	99.64	1672	0.36	0.084
1.083	98.66	57	1.34	0.312	30.000	99.67	1792	0.33	0.077
1.167	98.67	62	1.33	0.309	32.000	99.72	1912	0.28	0.065
1.250	98.69	67	1.31	0.305	34.000	99.75	2032	0.25	0.058
1.333	98.70	72	1.30	0.302	36.000	99.78	2152	0.22	0.051
1.417	98.71	77	1.29	0.300	38.000	99.81	2272	0.19	0.044
1.500	98.73	82	1.27	0.295	40.000	99.83	2392	0.17	0.040
1.583	98.74	87	1.26	0.293	42.000	99.86	2512	0.14	0.033
1.667	98.74	92	1.26	0.293	44.000	99.88	2632	0.12	0.028
1.750	98.76	97	1.24	0.288	46.000	99.89	2752	0.11	0.026
1.833	98.76	102	1.24	0.288	48.000	99.91	2872	0.09	0.021
1.917	98.77	107	1.23	0.286	50.000	99.92	2992	0.08	0.019
2.000	98.78	112	1.22	0.284	52.000	99.93	3112	0.07	0.016
2.500	98.81	142	1.19	0.277	54.000	99.94	3232	0.06	0.014
3.000	98.84	172	1.16	0.270	56.000	99.94	3352	0.06	0.014
3.500	98.86	202	1.14	0.265	58.000	99.96	3472	0.04	0.009
4.000	98.89	232	1.11	0.258	60.000	99.96	3592	0.04	0.009

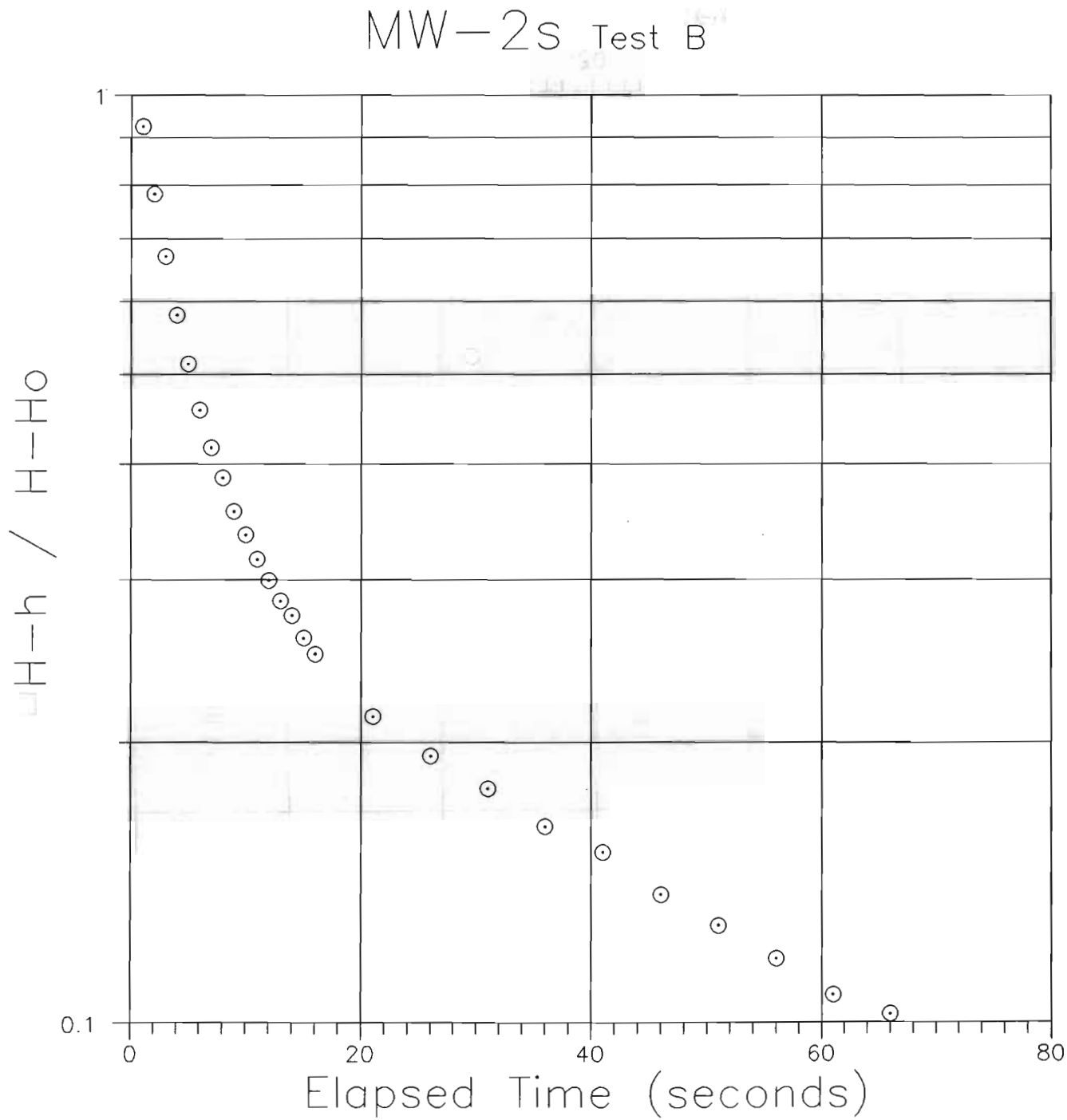
Mattiace Petrochemical PZ-2
Slug Test - 3/28/90

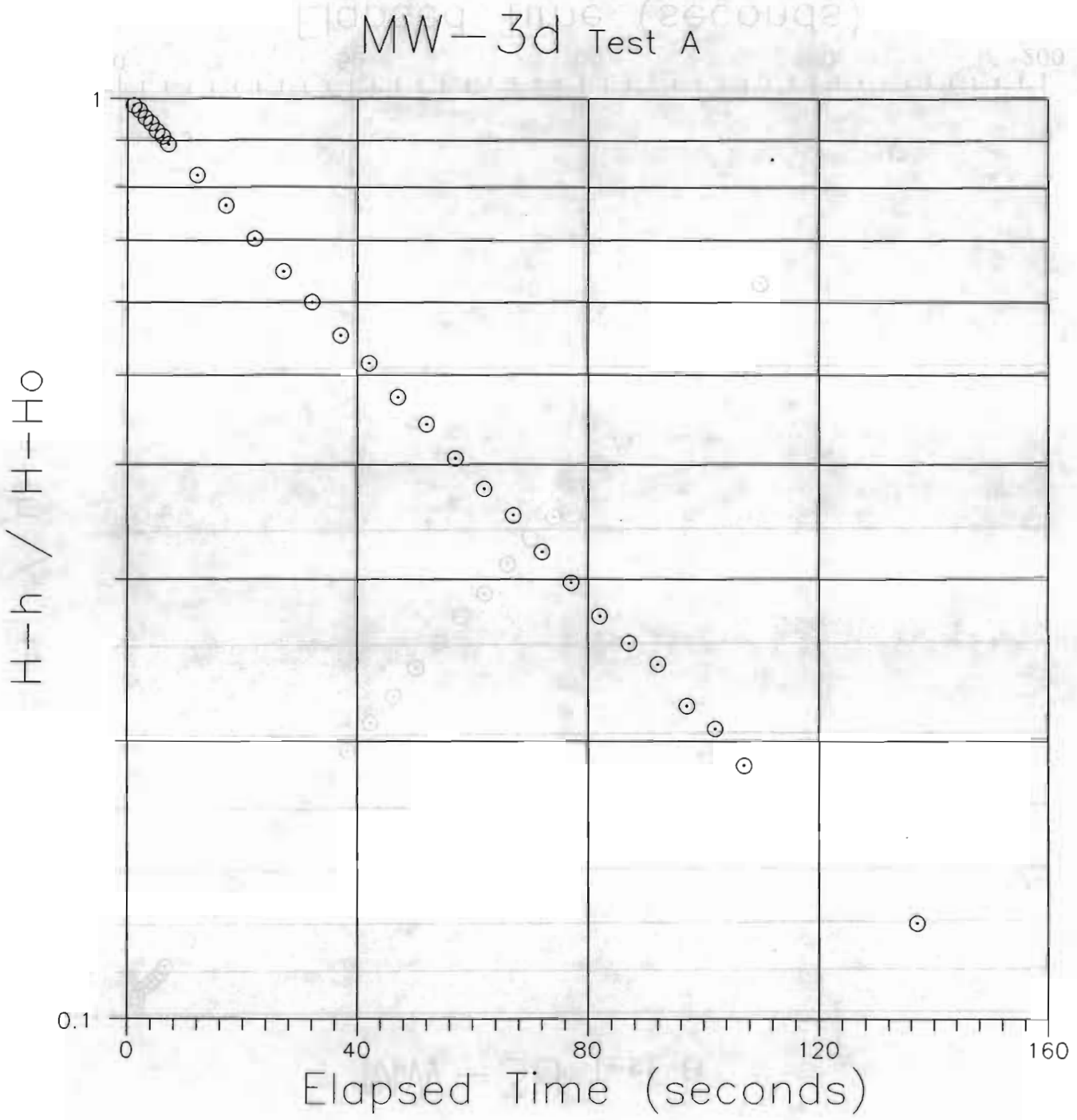
Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho	Elapsed Time (sec)	Head (feet)	Elapsed Time (min)	H-h (feet)	H-h/H-Ho
	100.00	H							
0.117	95.72	Ho							
0.133	95.78	1	4.22	0.986	10.000	96.06	593	3.94	0.921
0.150	95.81	2	4.19	0.979	12.000	96.09	713	3.91	0.914
0.167	95.81	3	4.19	0.979	14.000	96.11	833	3.89	0.909
0.183	95.81	4	4.19	0.979	16.000	96.13	953	3.87	0.904
0.200	95.81	5	4.19	0.979	18.000	96.15	1073	3.85	0.900
0.217	95.81	6	4.19	0.979	20.000	96.17	1193	3.83	0.895
0.233	95.81	7	4.19	0.979	22.000	96.19	1313	3.81	0.890
0.250	95.82	8	4.18	0.977	24.000	96.20	1433	3.80	0.888
0.267	95.82	9	4.18	0.977	26.000	96.22	1553	3.78	0.883
0.283	95.82	10	4.18	0.977	28.000	96.24	1673	3.76	0.879
0.300	95.82	11	4.18	0.977	30.000	96.25	1793	3.75	0.876
0.317	95.82	12	4.18	0.977	32.000	96.27	1913	3.73	0.871
0.333	95.82	13	4.18	0.977	34.000	96.29	2033	3.71	0.867
0.417	95.83	18	4.17	0.974	36.000	96.30	2153	3.70	0.864
0.500	95.84	23	4.16	0.972	38.000	96.31	2273	3.69	0.862
0.583	95.84	28	4.16	0.972	40.000	96.32	2393	3.68	0.860
0.667	95.85	33	4.15	0.970	42.000	96.34	2513	3.66	0.855
0.750	95.85	38	4.15	0.970	44.000	96.35	2633	3.65	0.853
0.833	95.86	43	4.14	0.967	46.000	96.36	2753	3.64	0.850
0.917	95.86	48	4.14	0.967	48.000	96.37	2873	3.63	0.848
1.000	95.86	53	4.14	0.967	50.000	96.38	2993	3.62	0.846
1.083	95.87	58	4.13	0.965	52.000	96.39	3113	3.61	0.843
1.167	95.87	63	4.13	0.965	54.000	96.41	3233	3.59	0.839
1.250	95.88	68	4.12	0.963	56.000	96.42	3353	3.58	0.836
1.333	95.88	73	4.12	0.963	58.000	96.43	3473	3.57	0.834
1.417	95.88	78	4.12	0.963	60.000	96.44	3593	3.56	0.832
1.500	95.88	83	4.12	0.963	62.000	96.46	3713	3.54	0.827
1.583	95.89	88	4.11	0.960	64.000	96.47	3833	3.53	0.825
1.667	95.89	93	4.11	0.960	66.000	96.48	3953	3.52	0.822
1.750	95.89	98	4.11	0.960	68.000	96.49	4073	3.51	0.820
1.833	95.89	103	4.11	0.960	70.000	96.50	4193	3.50	0.818
1.917	95.90	108	4.10	0.958	72.000	96.51	4313	3.49	0.815
2.000	95.90	113	4.10	0.958	74.000	96.52	4433	3.48	0.813
2.500	95.91	143	4.09	0.956	76.000	96.53	4553	3.47	0.811
3.000	95.93	173	4.07	0.951	78.000	96.54	4673	3.46	0.808
3.500	95.94	203	4.06	0.949	80.000	96.55	4793	3.45	0.806
4.000	95.95	233	4.05	0.946	82.000	96.56	4913	3.44	0.804
4.500	95.96	263	4.04	0.944	84.000	96.57	5033	3.43	0.801
5.000	95.98	293	4.02	0.939	86.000	96.58	5153	3.42	0.799
5.500	95.98	323	4.02	0.939	88.000	96.59	5273	3.41	0.797
6.000	96.00	353	4.00	0.935	90.000	96.60	5393	3.40	0.794
6.500	96.00	383	4.00	0.935	92.000	96.61	5513	3.39	0.792
7.000	96.01	413	3.99	0.932	94.000	96.62	5633	3.38	0.790
7.500	96.02	443	3.98	0.930	96.000	96.63	5753	3.37	0.787
8.000	96.03	473	3.97	0.928	98.000	96.64	5873	3.36	0.785
8.500	96.04	503	3.96	0.925	100.000	96.65	5993	3.35	0.783
9.000	96.05	533	3.95	0.923	110.000	96.70	6593	3.30	0.771
9.500	96.05	563	3.95	0.923	120.000	96.73	7193	3.27	0.764

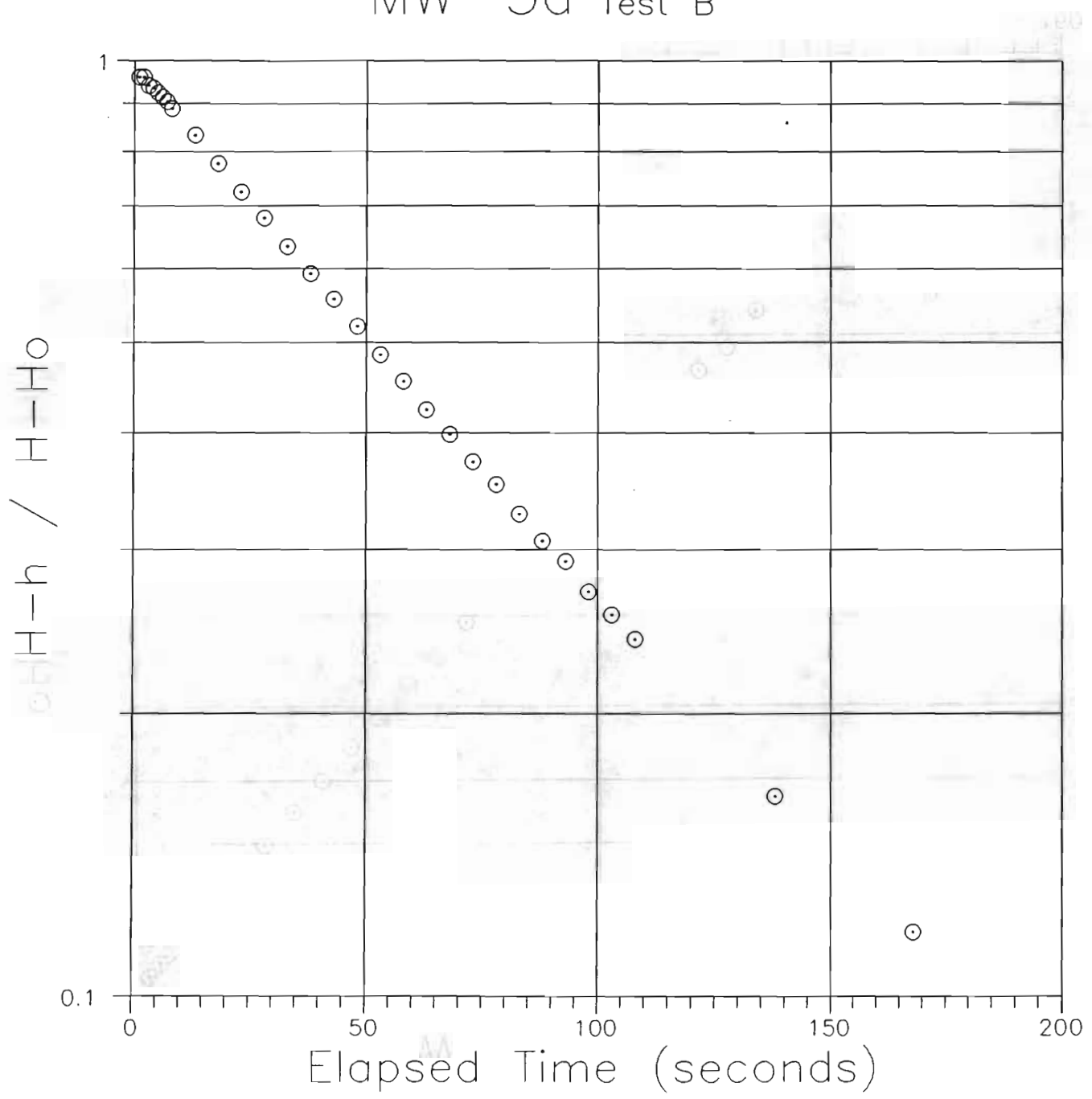

MW-1S Test A
1
0.1
H-h / H-HO
0
1000
2000
3000
Elapsed Time (seconds)

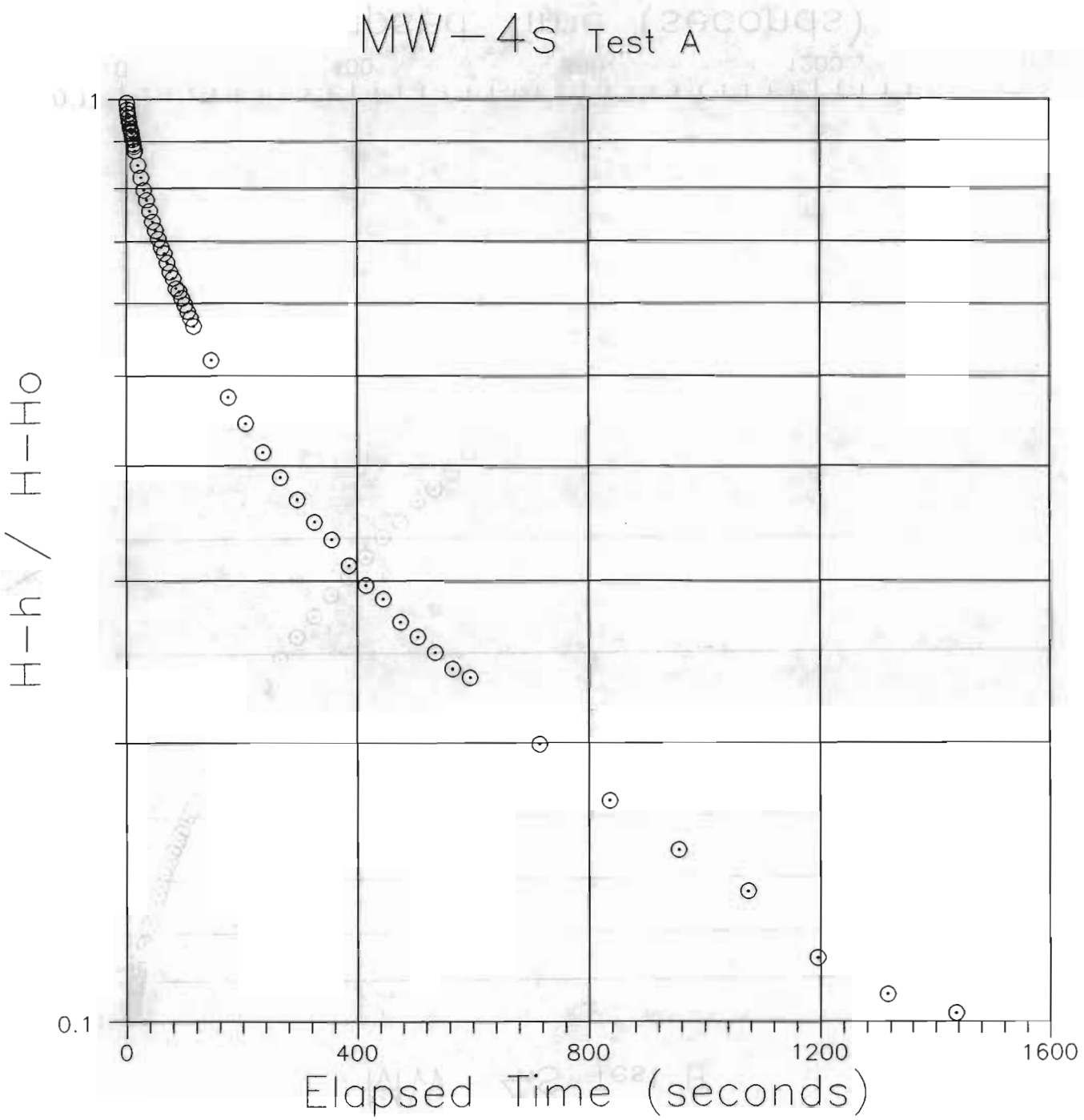

MW-1S Test B
1
0.1
H-h / H-Ho
0
500
1000
1500
2000
2500
3000
Elapsed Time (seconds)

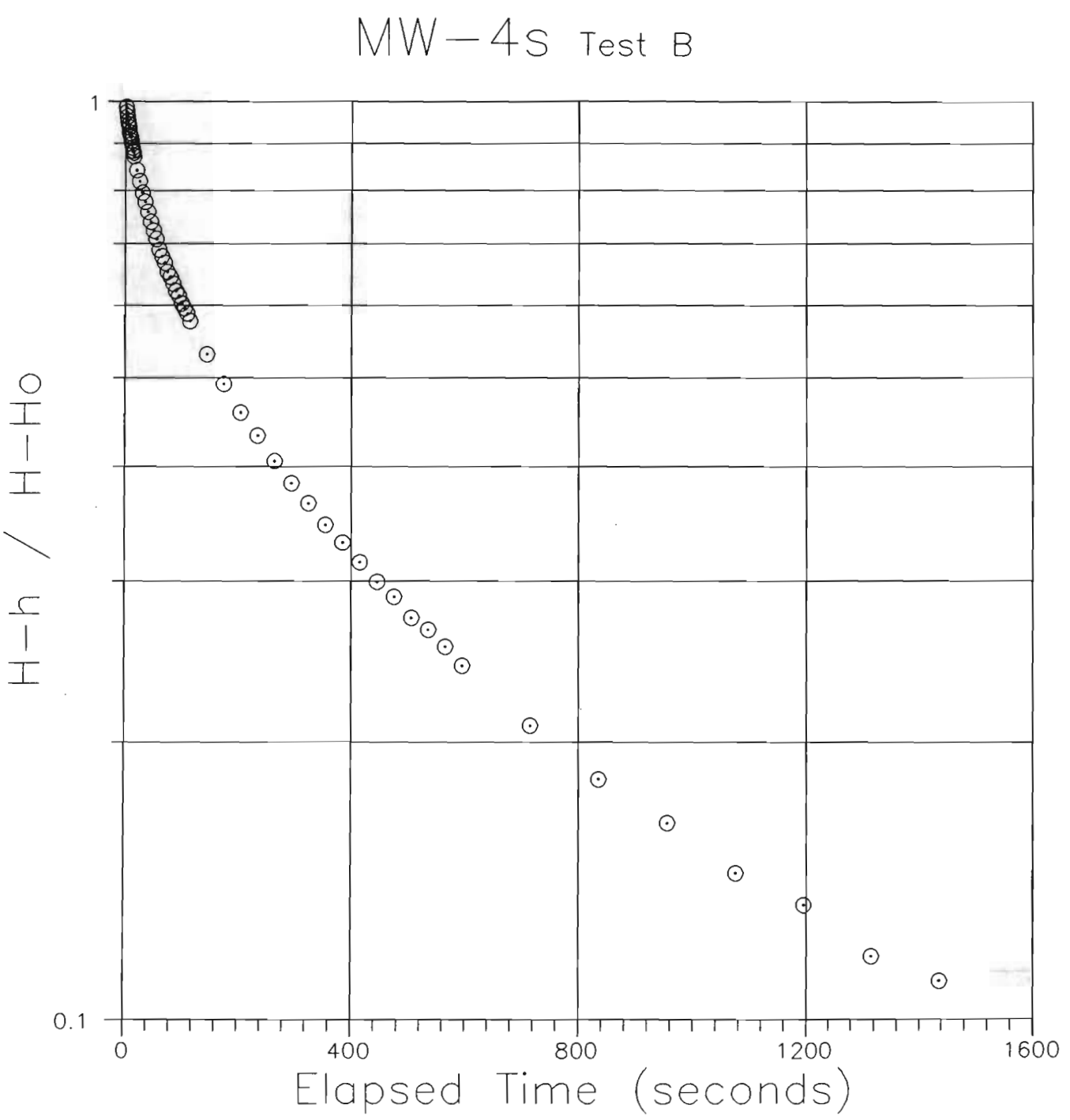

MW-2S Test A
1
0.1
H-h / H-Ho
0
10
20
30
40
50
60
Elapsed Time (seconds)

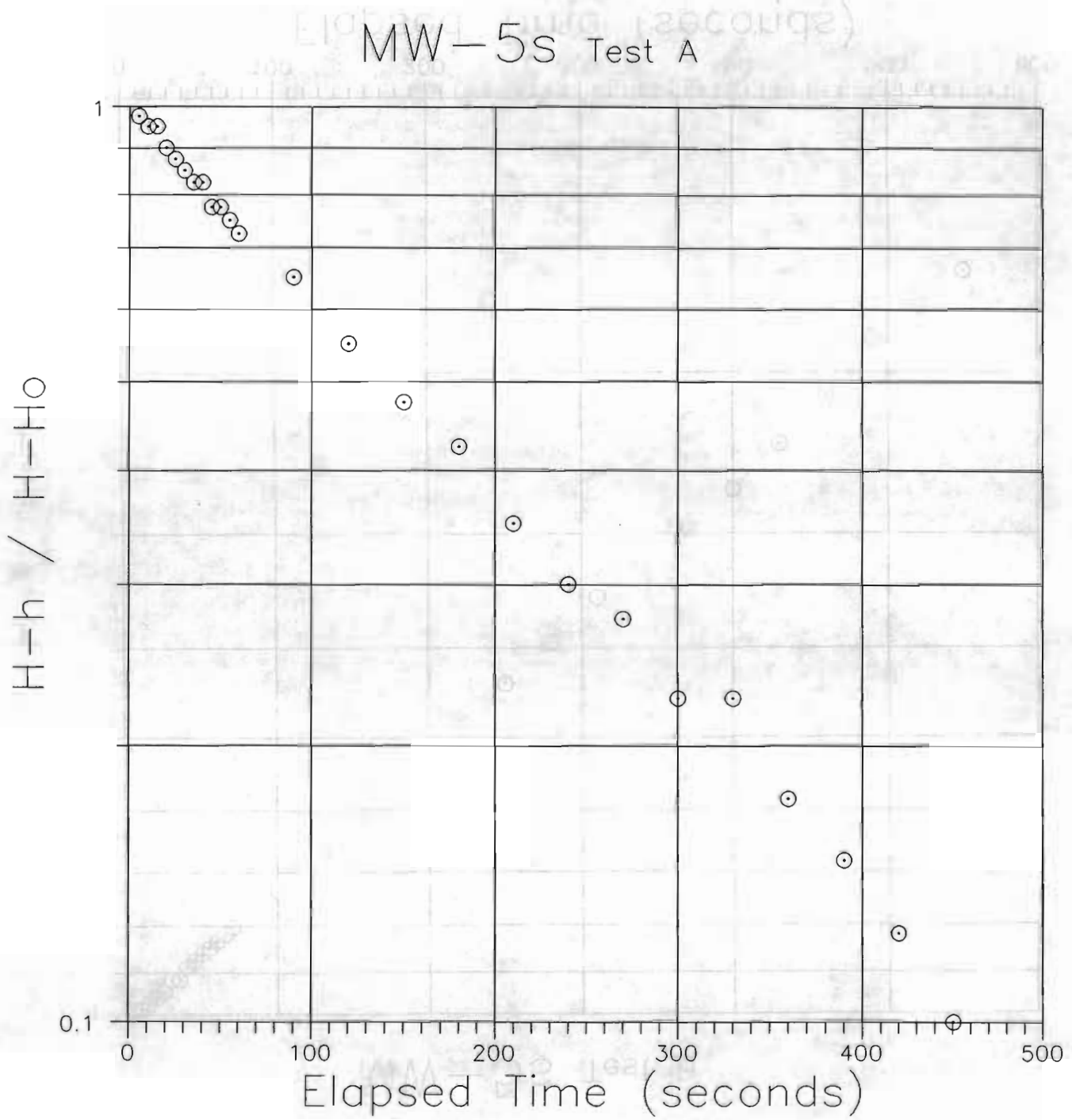

MW-2S Test B
1
0.1
H-h / H-Ho
0
20
40
60
80
Elapsed Time (seconds)

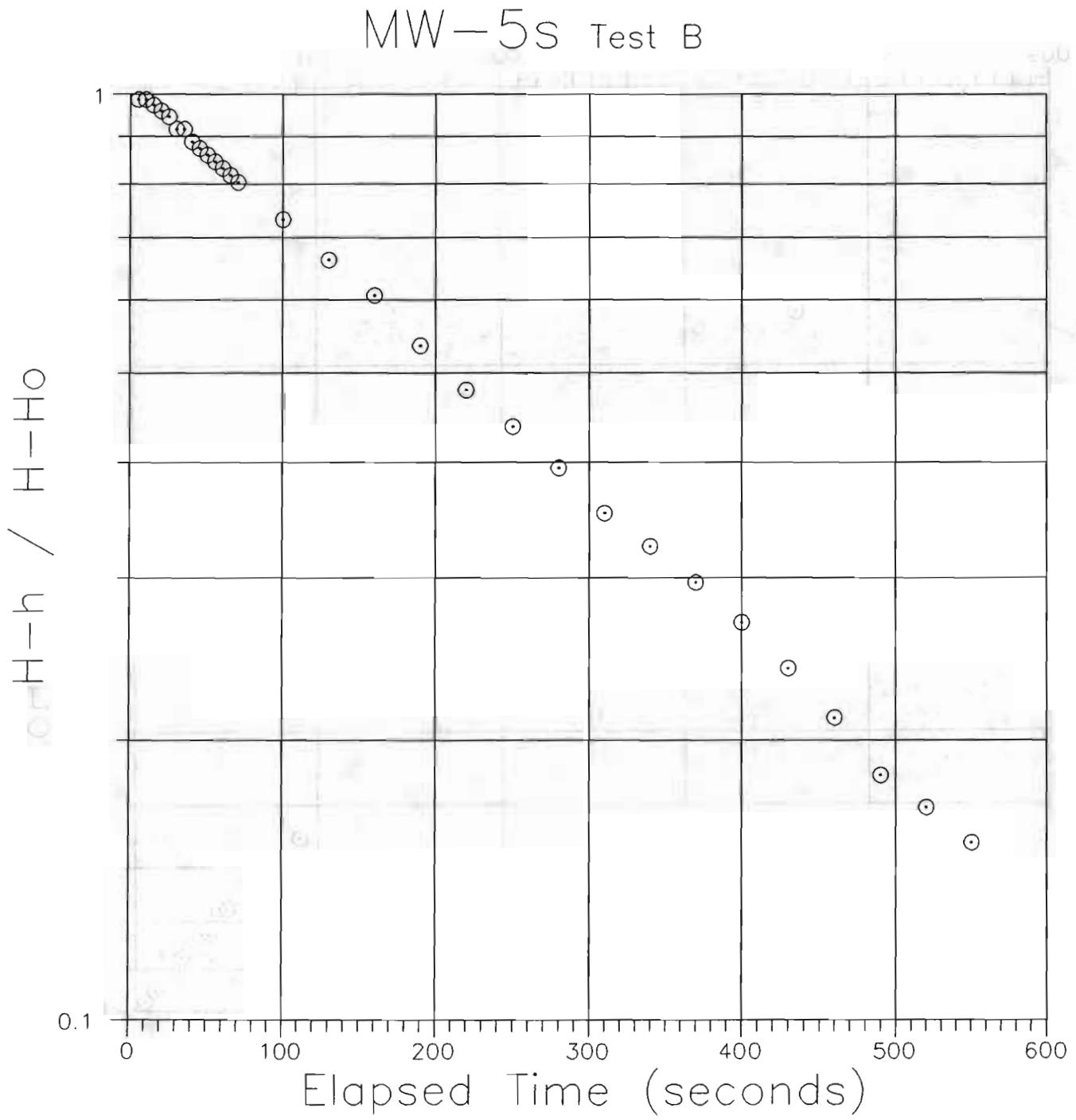

MW-3d Test A
1
0.1
H-h / H-Ho
0
40
80
120
160
Elapsed Time (seconds)

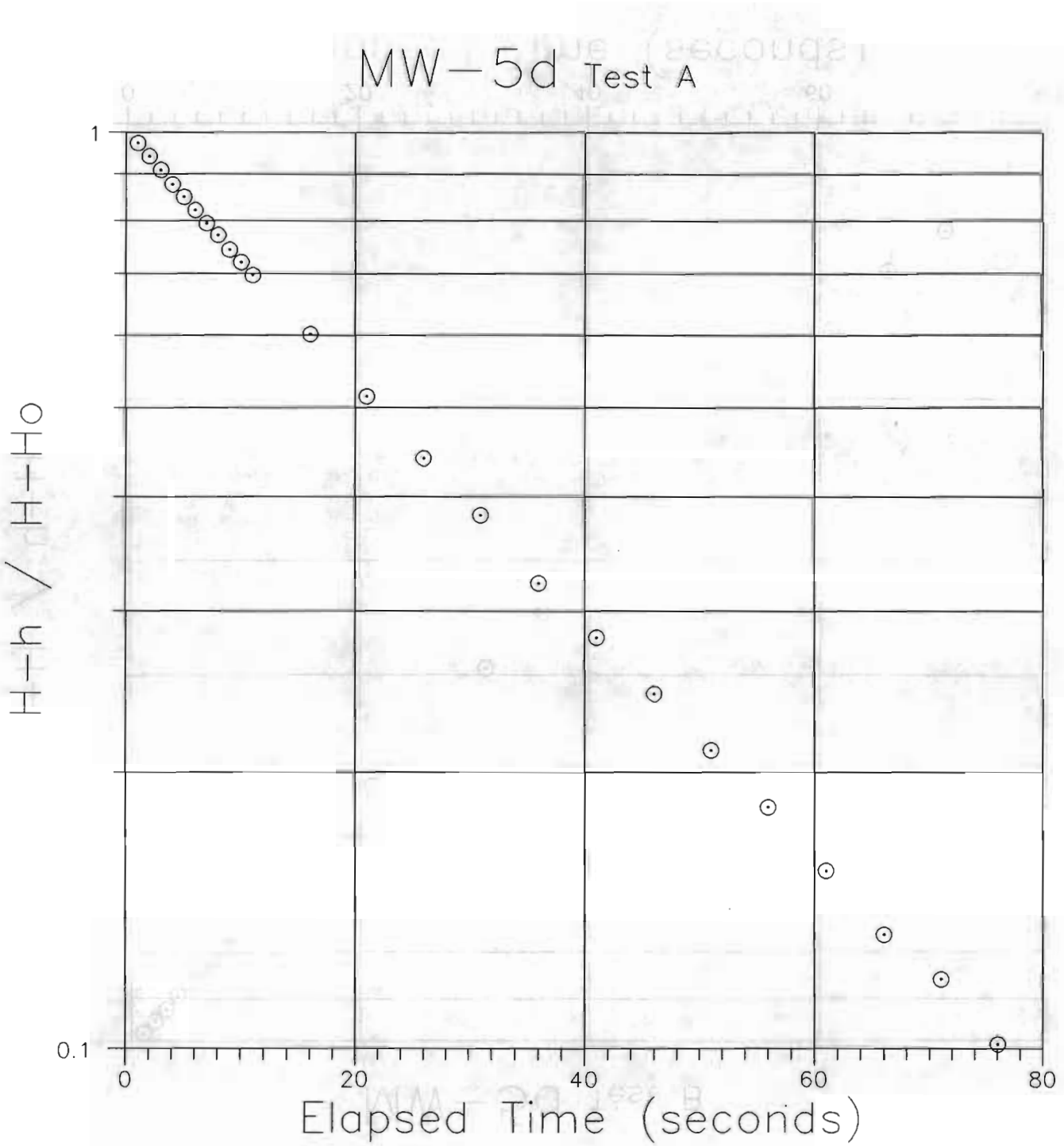

MW-3d Test B
1
0.1
H - H / H - H
0
0
50
100
150
200
Elapsed Time (seconds)


MW-4S Test A
1
0.1
H-h / H-Ho
0
400
800
1200
1600
Elapsed Time (seconds)

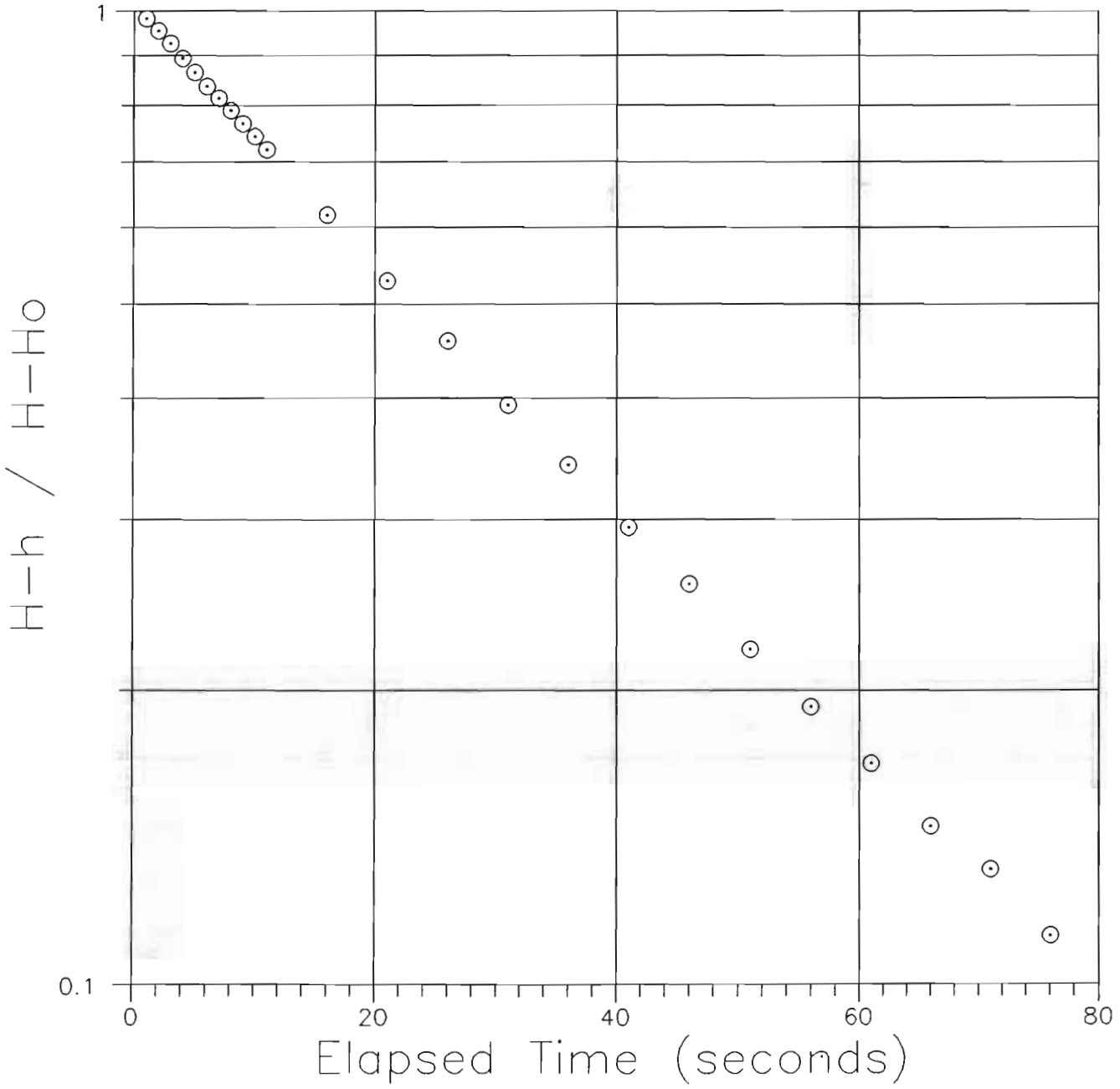

MW-4S Test B
1
0.1
H-h / H-Ho
0
400
800
1200
1600
Elapsed Time (seconds)

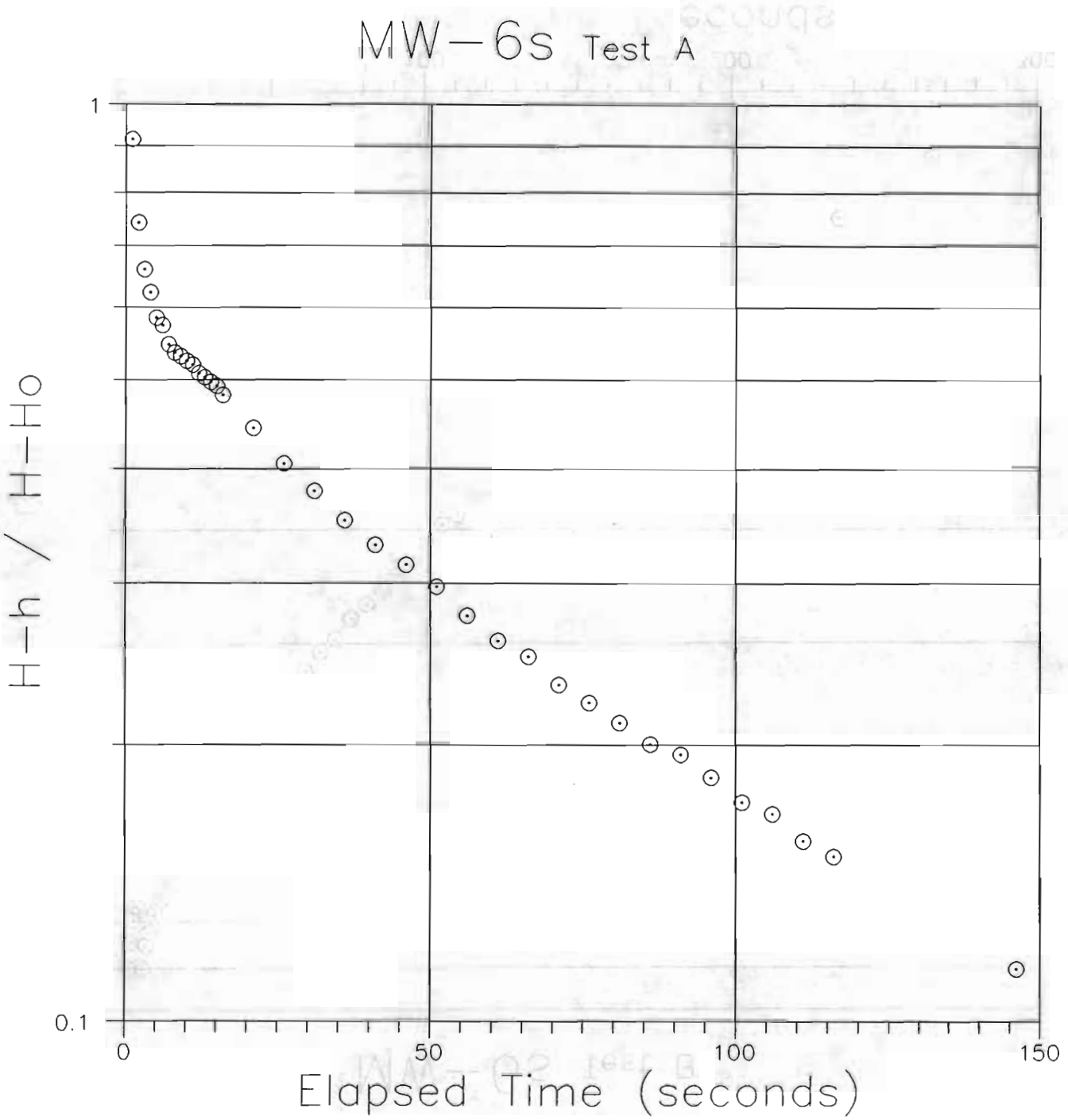

MW-5S Test A
1
0.1
H-h / H-Ho
0
100
200
300
400
500
Elapsed Time (seconds)

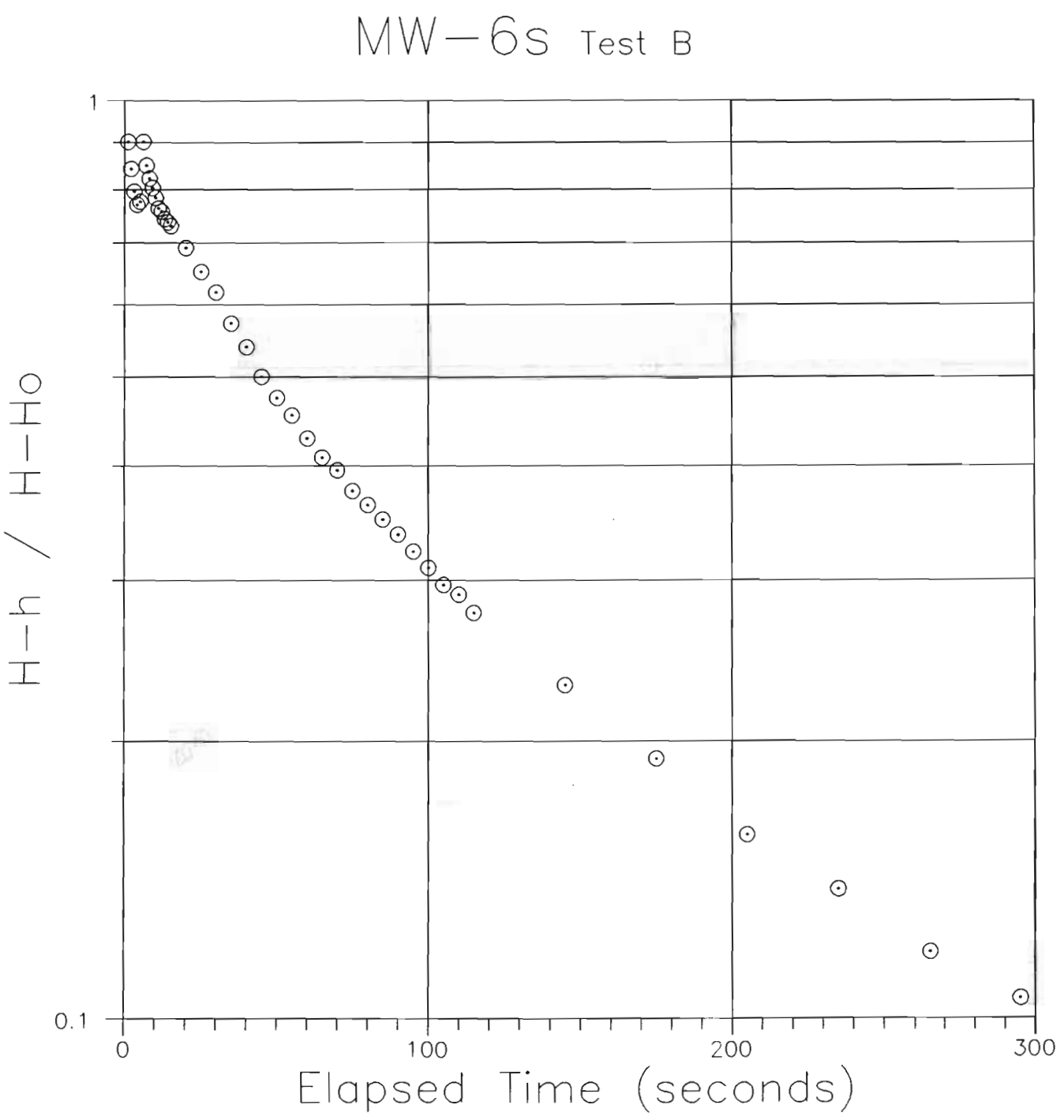

MW-5s Test B
1
0.1
H-h / H-Ho
0
100
200
300
400
500
600
Elapsed Time (seconds)

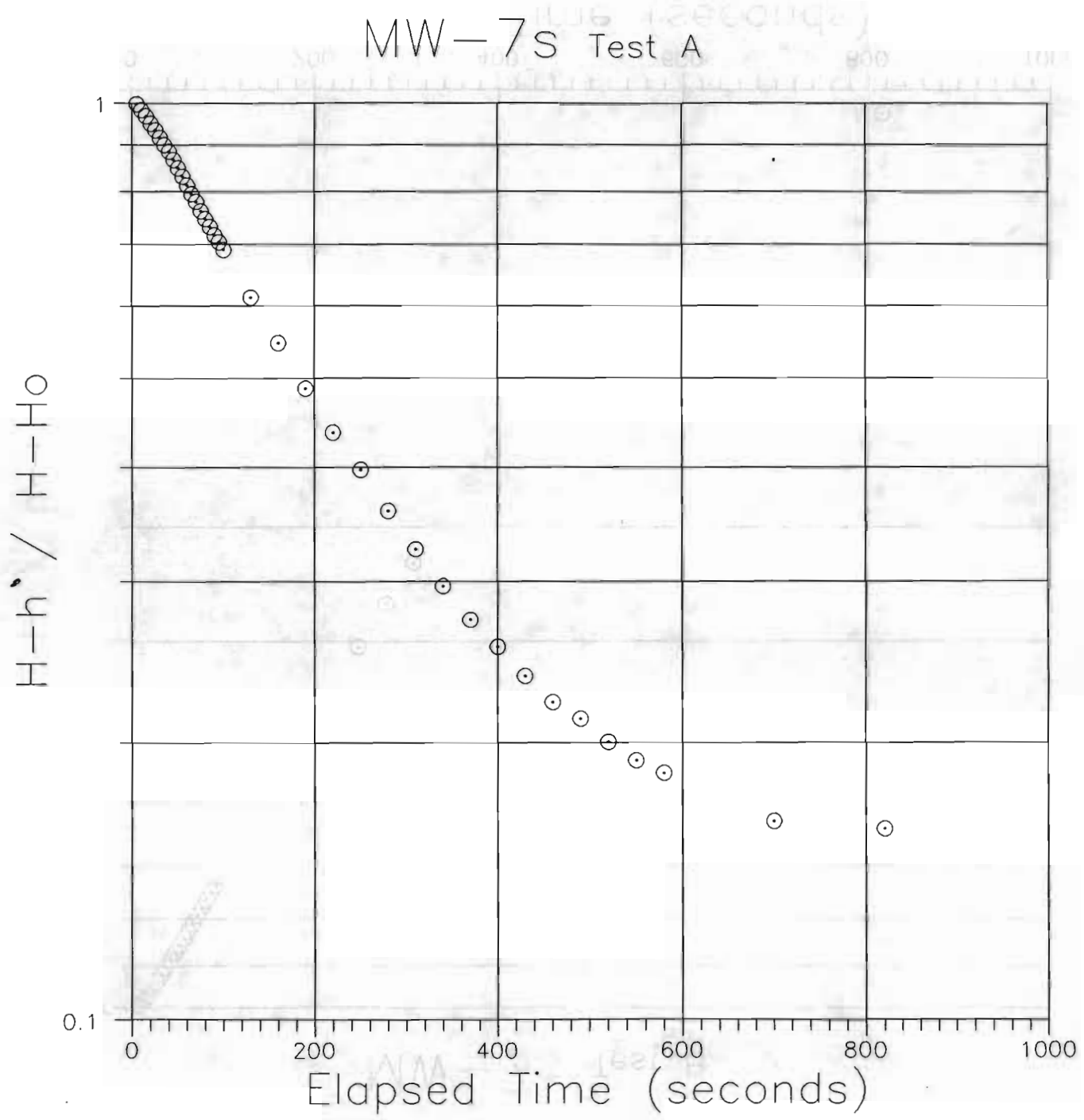

MW-5d Test A
1
0.1
H-h / H-Ho
0
20
40
60
80
Elapsed Time (seconds)

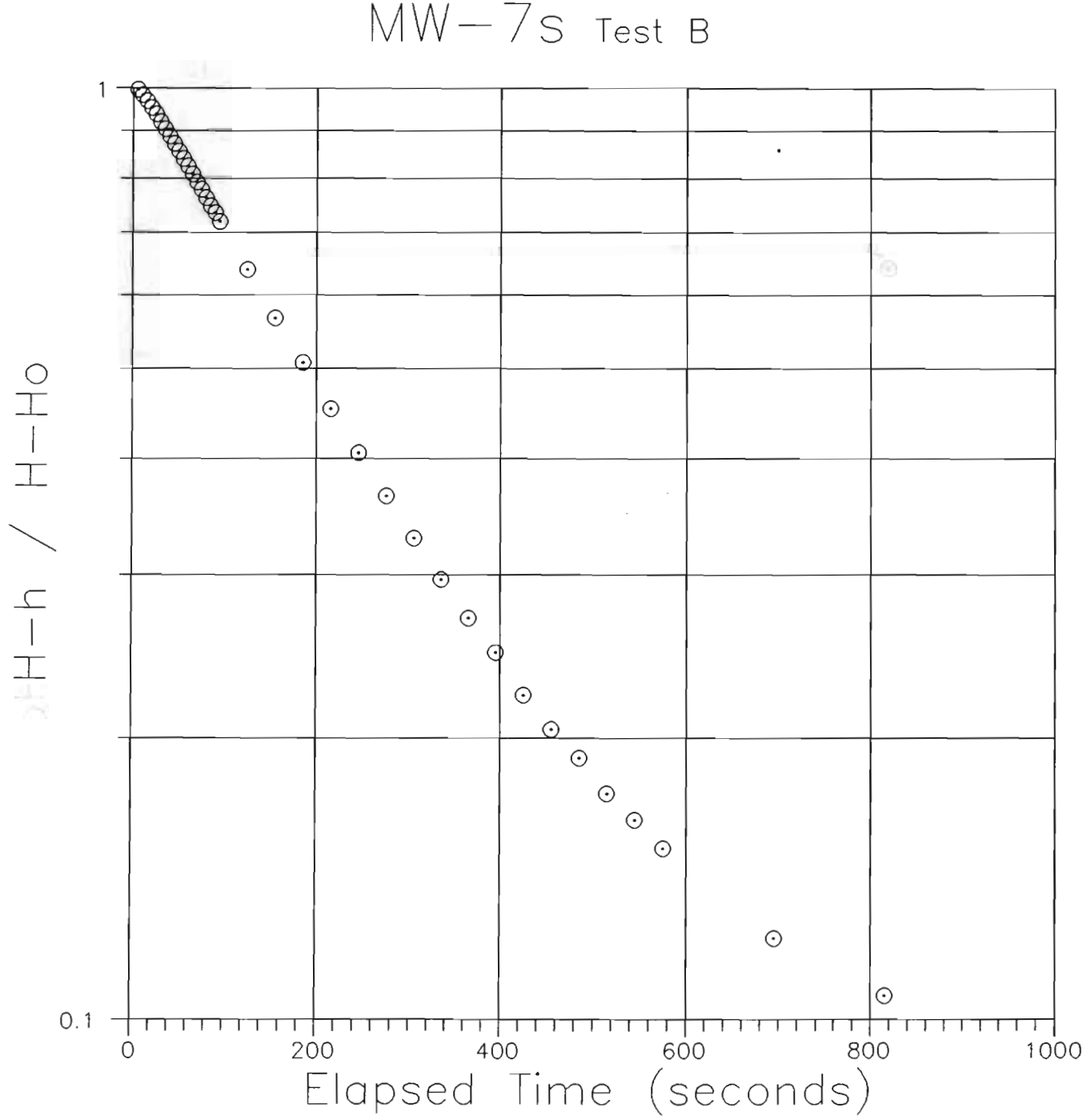
MW-5d Test B

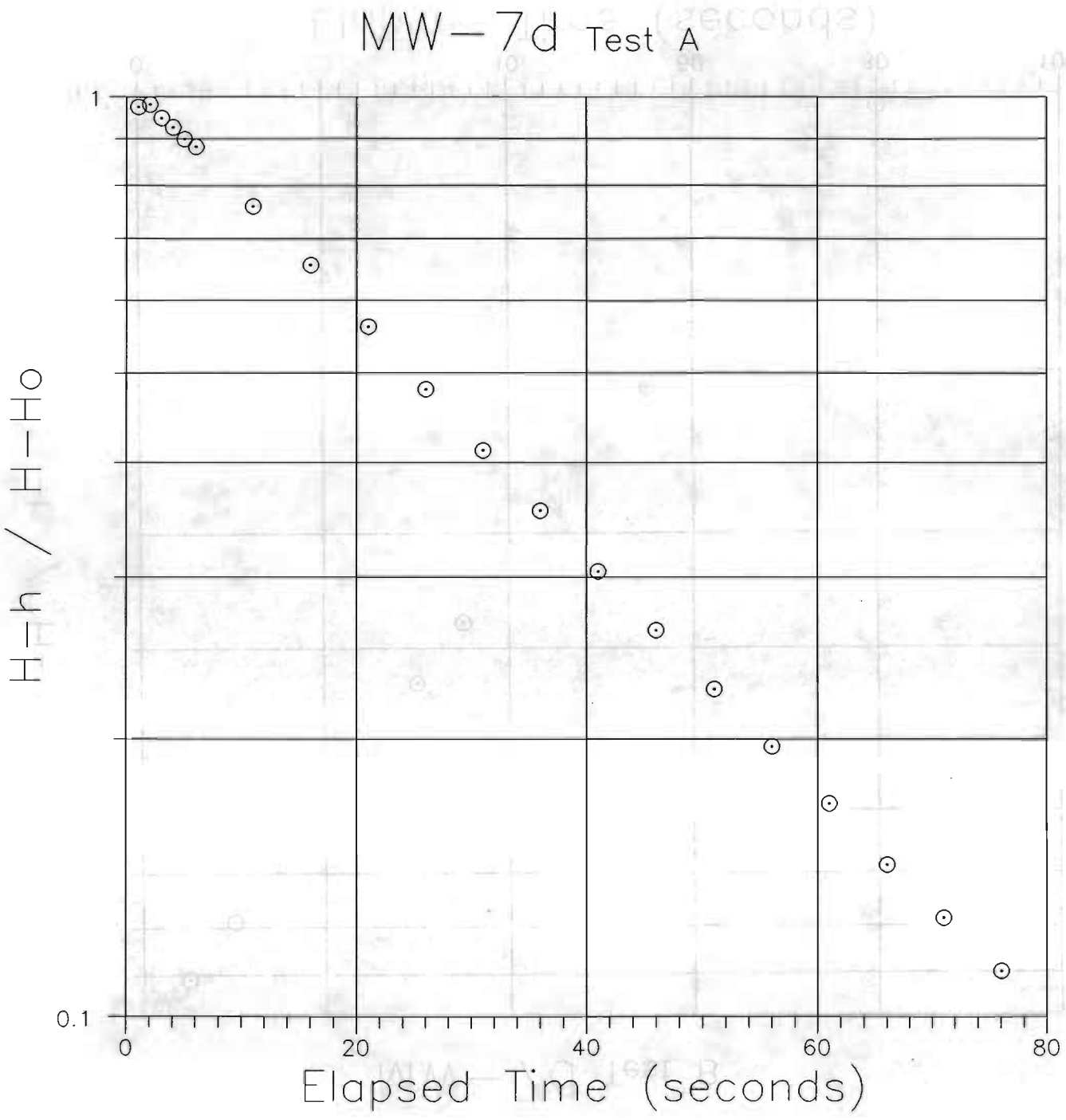


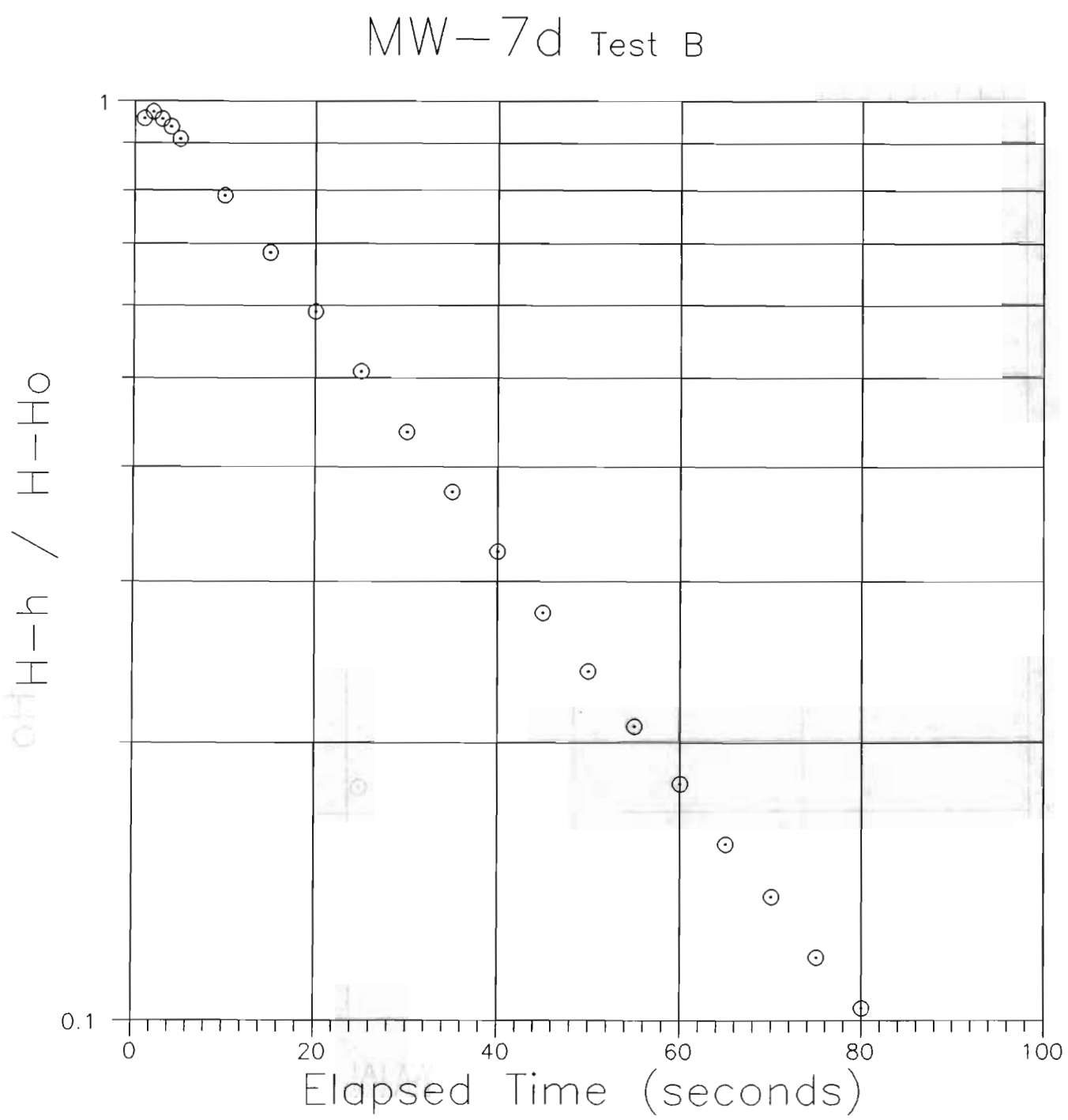

MW-6S Test A
1
0.1
H-h / H-HO
0
50
100
150
Elapsed Time (seconds)

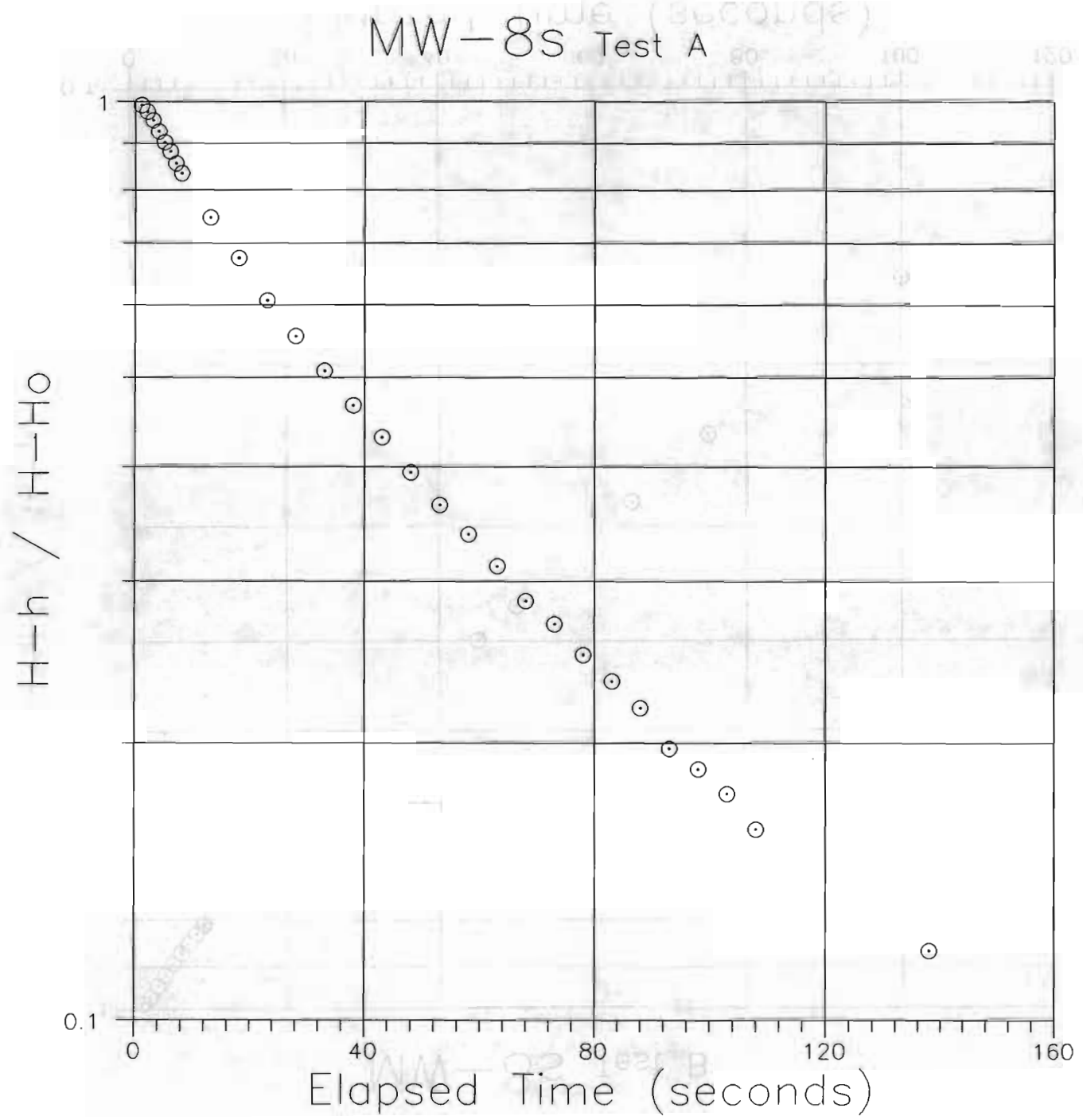

MW-6S Test B
1
0.1
H-h / H-HO
0
100
200
300
Elapsed Time (seconds)


MW-7S Test A
1
0.1
0
200
400
600
800
1000
Elapsed Time (seconds)
H-H / H-H0

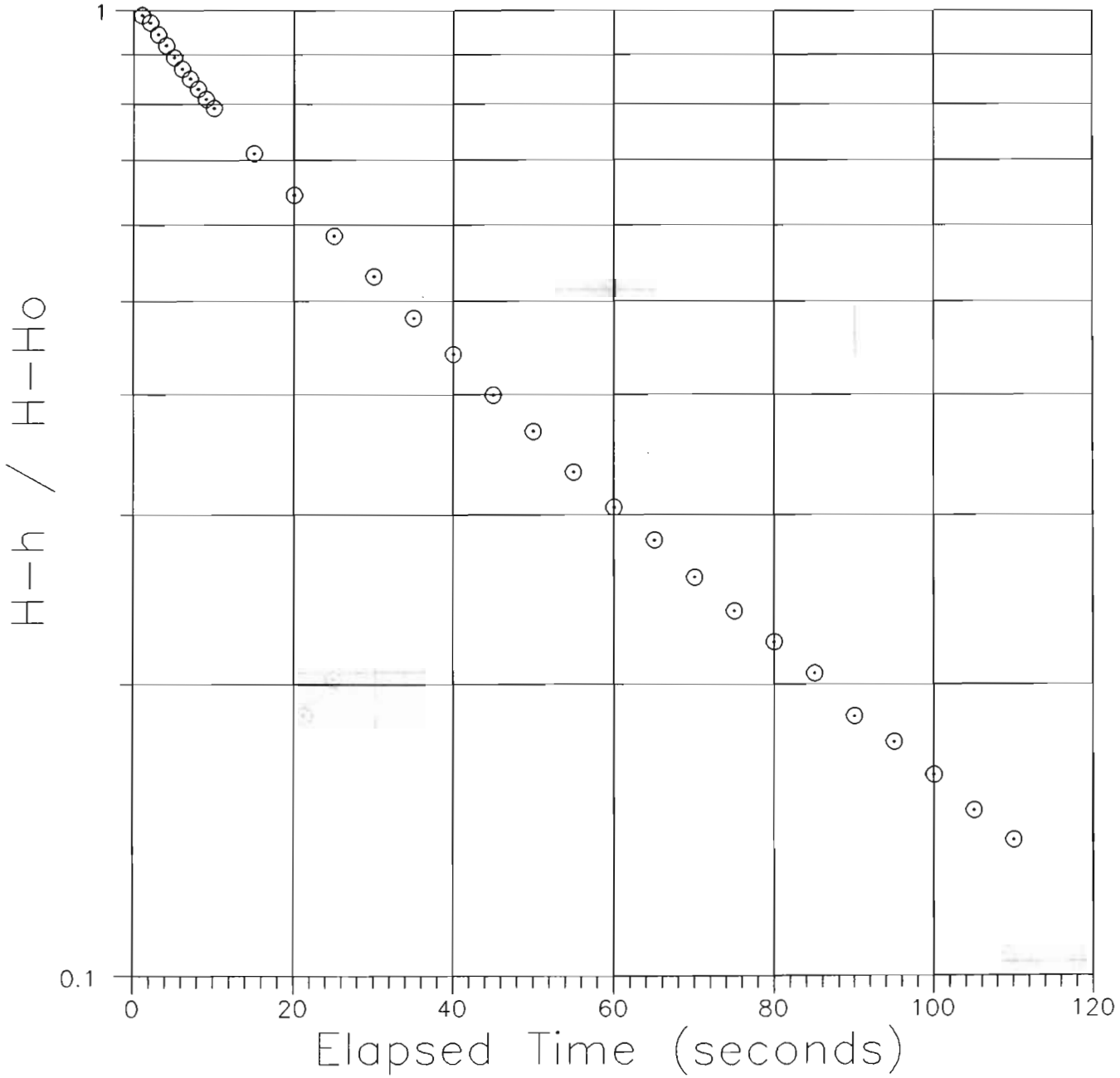

MW-7S Test B
1
0.1
H-h / H-Ho
0
200
400
600
800
1000
Elapsed Time (seconds)

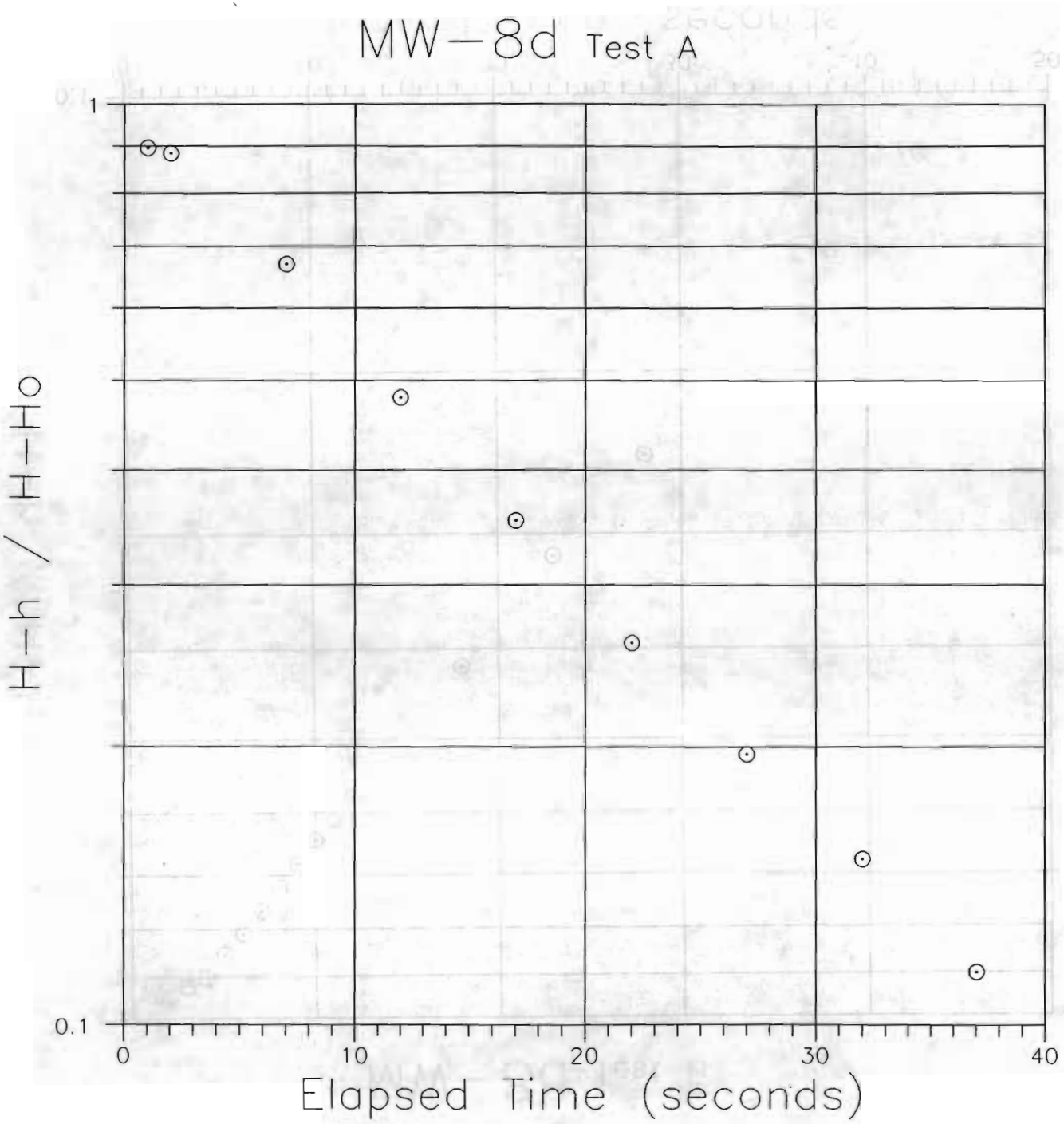

MW-7d Test A
1
0.1
H-h / H-Ho
0
20
40
60
80
Elapsed Time (seconds)

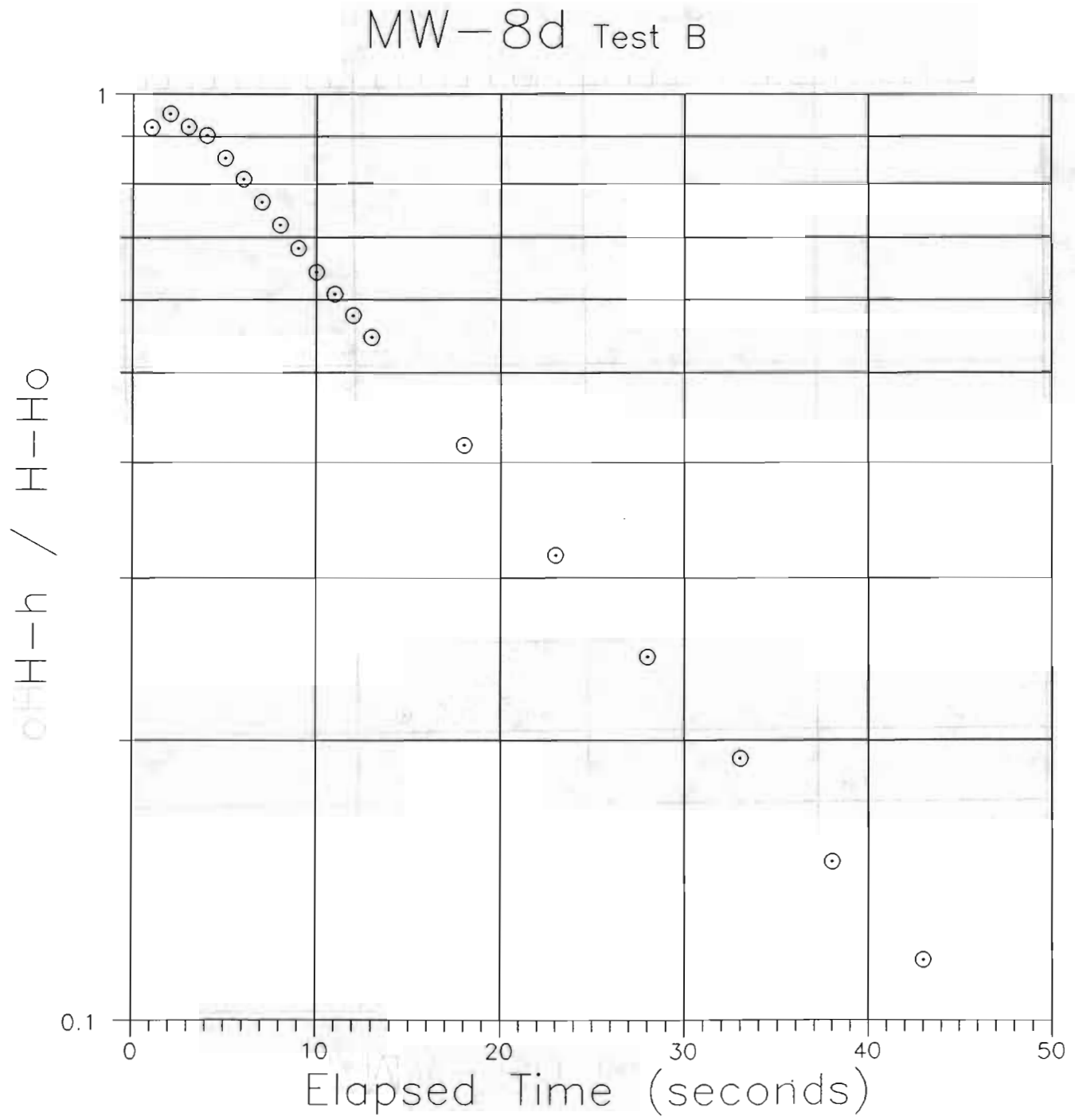

MW-7d Test B
1
0.1
H-h / H-Ho
0
20
40
60
80
100
Elapsed Time (seconds)

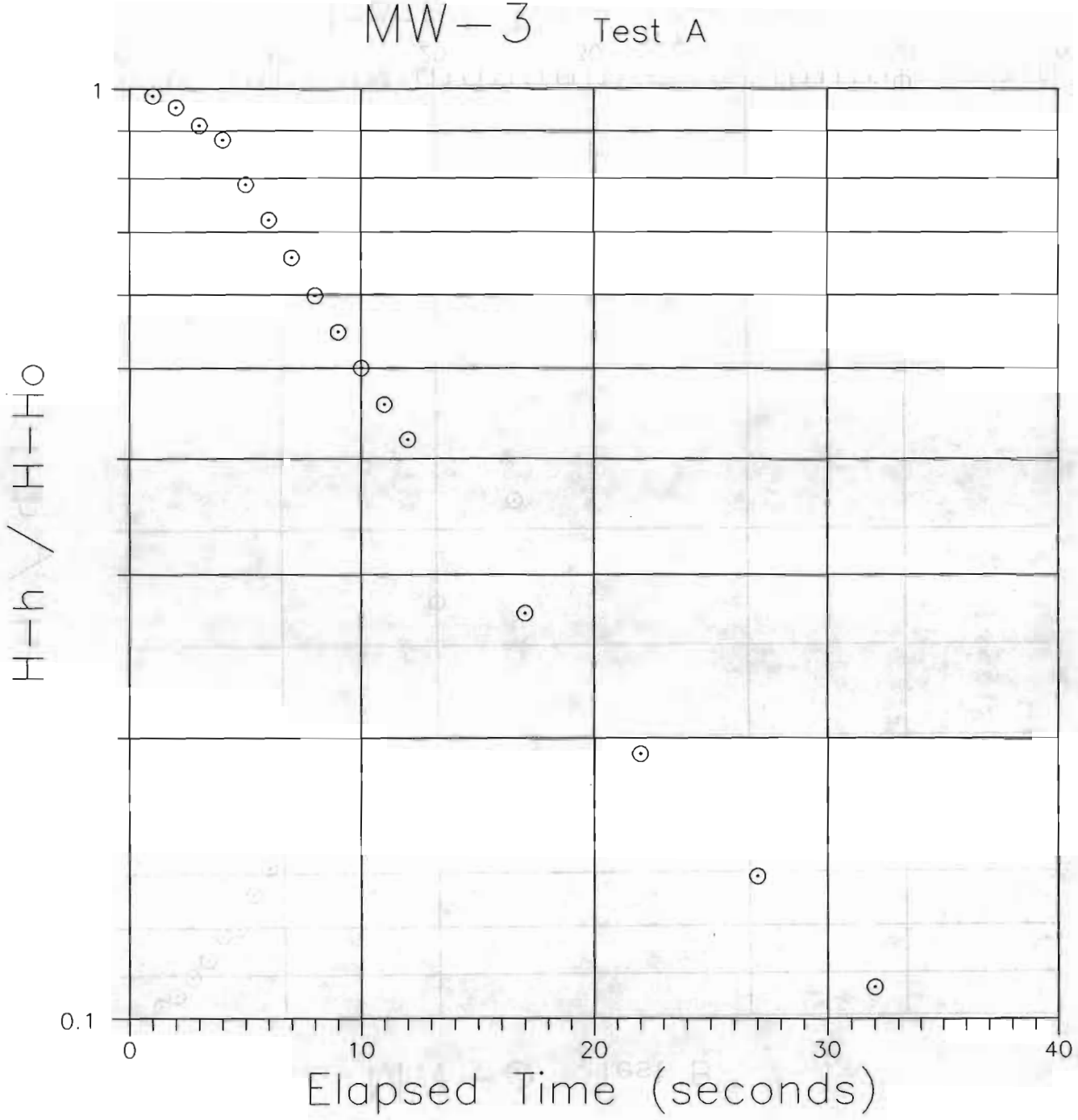

MW-8s Test A
1
0.1
H-h / H-Ho
0
40
80
120
160
Elapsed Time (seconds)

MW-8S Test B

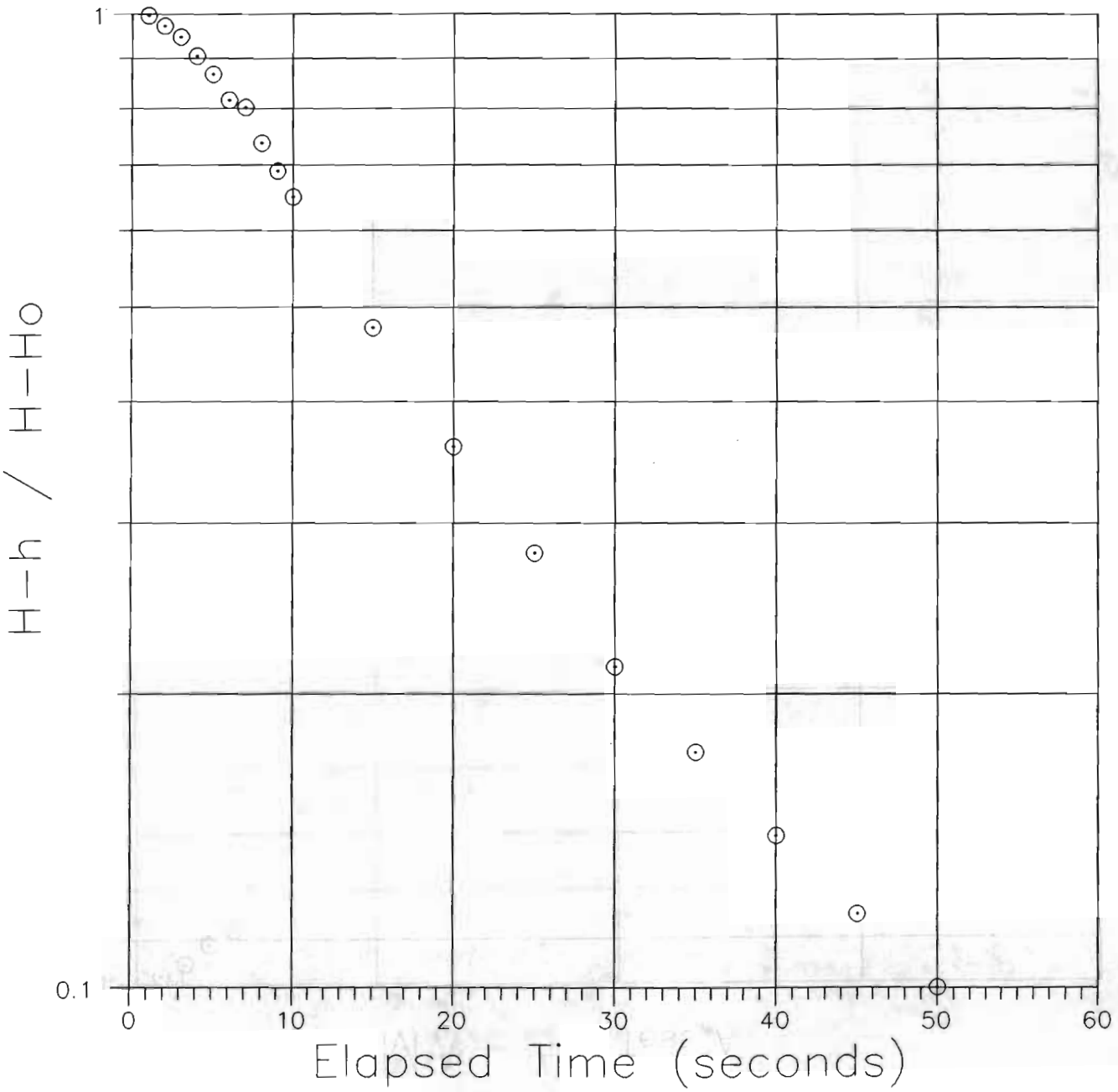


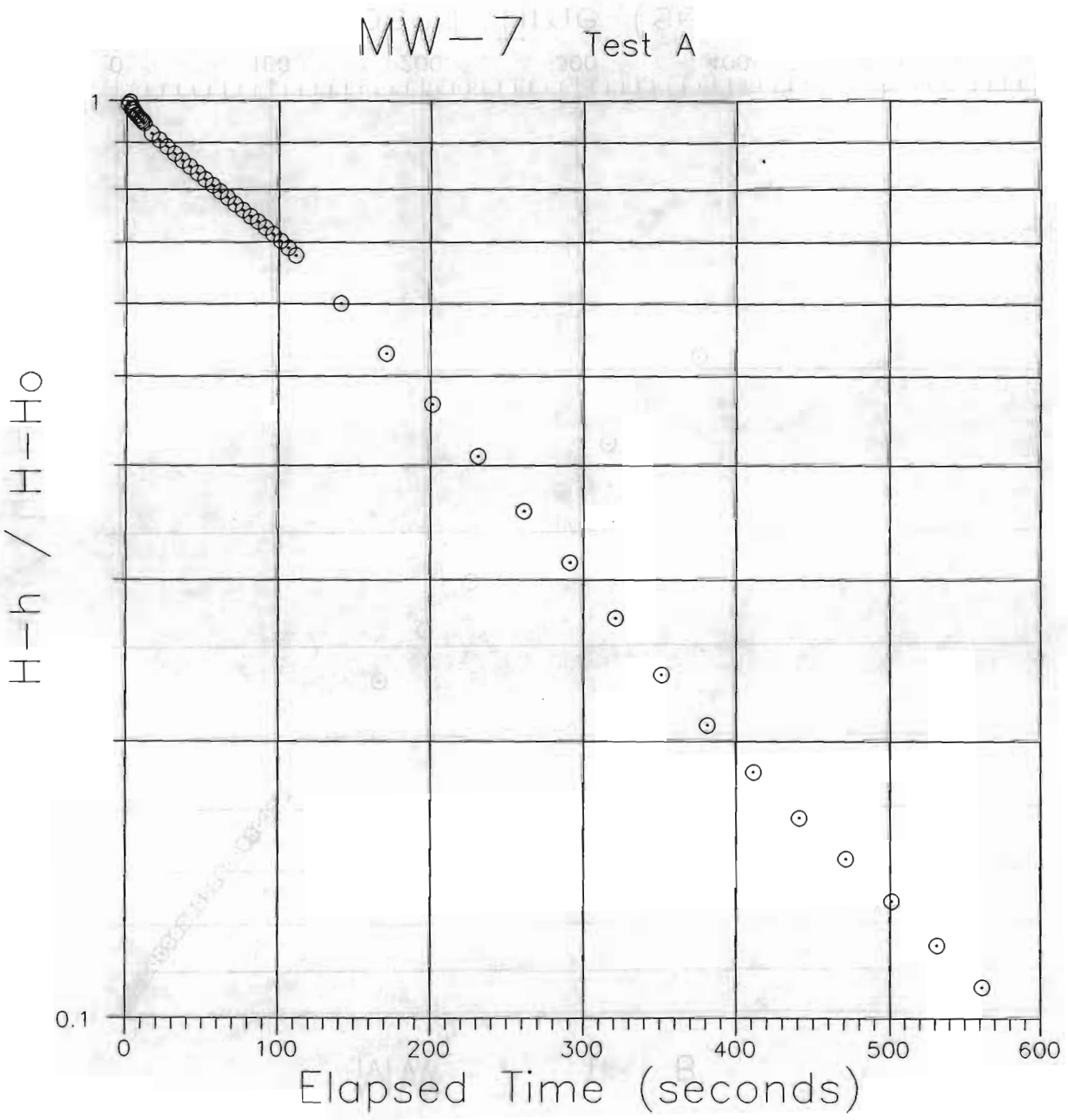

MW-8d Test A
1
0.1
H-h / H-Ho
0
10
20
30
40
Elapsed Time (seconds)

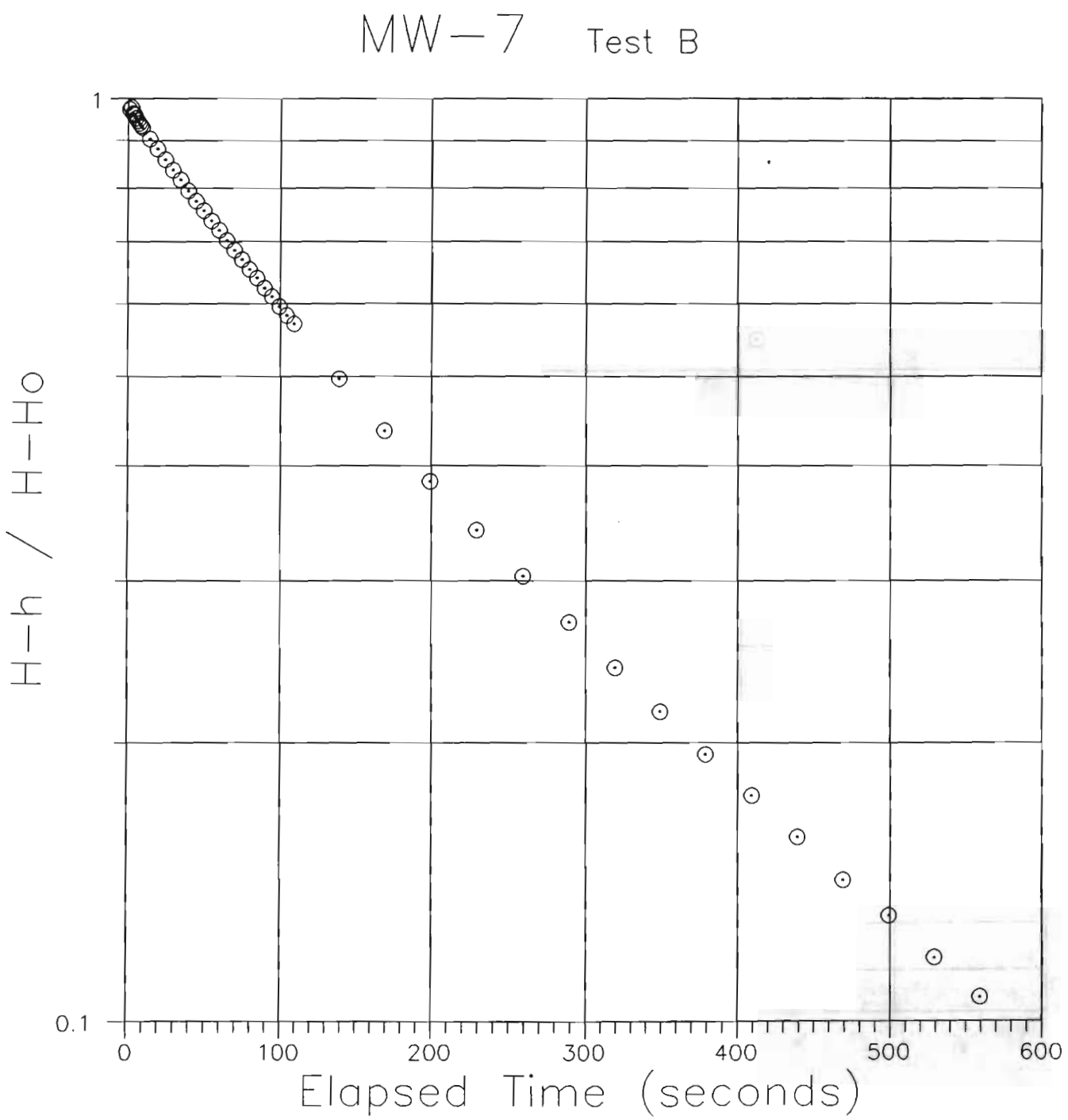

MW-8d Test B
1
0.1
H-h / H-Ho
0
10
20
30
40
50
Elapsed Time (seconds)

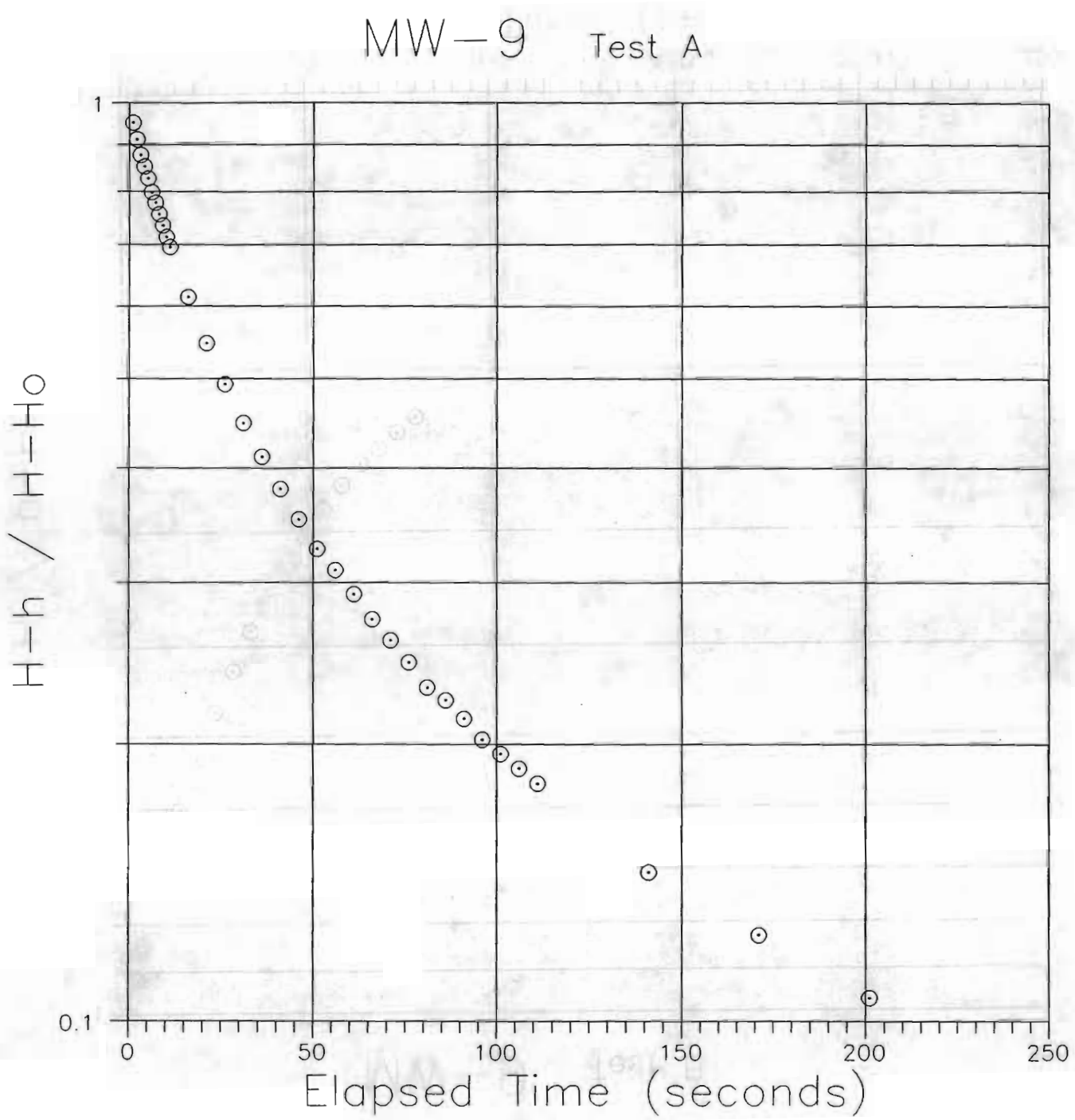

MW-3 Test A
1
0.1
H-h / H-Ho
0
10
20
30
40
Elapsed Time (seconds)

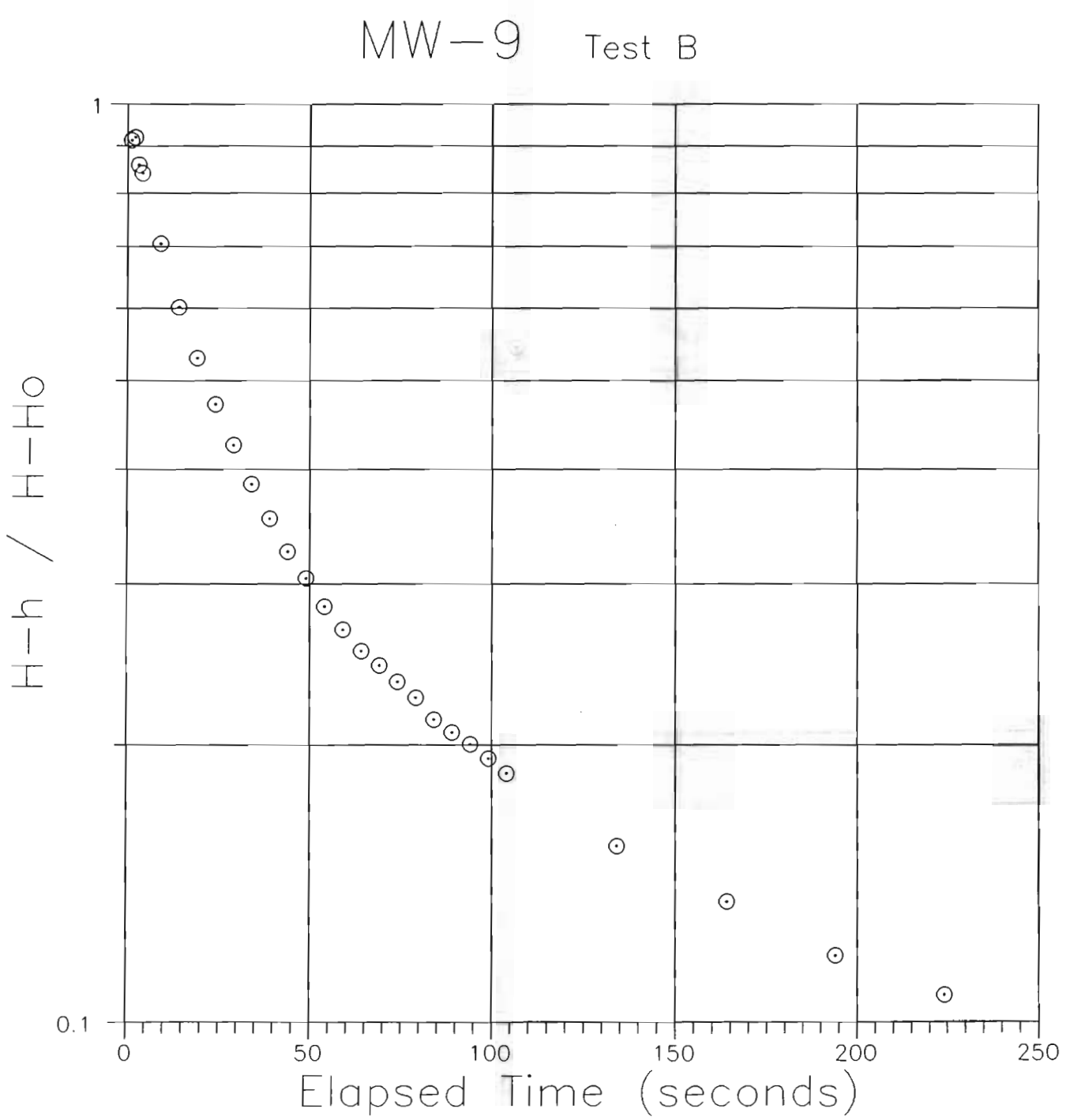
MW-3 Test B

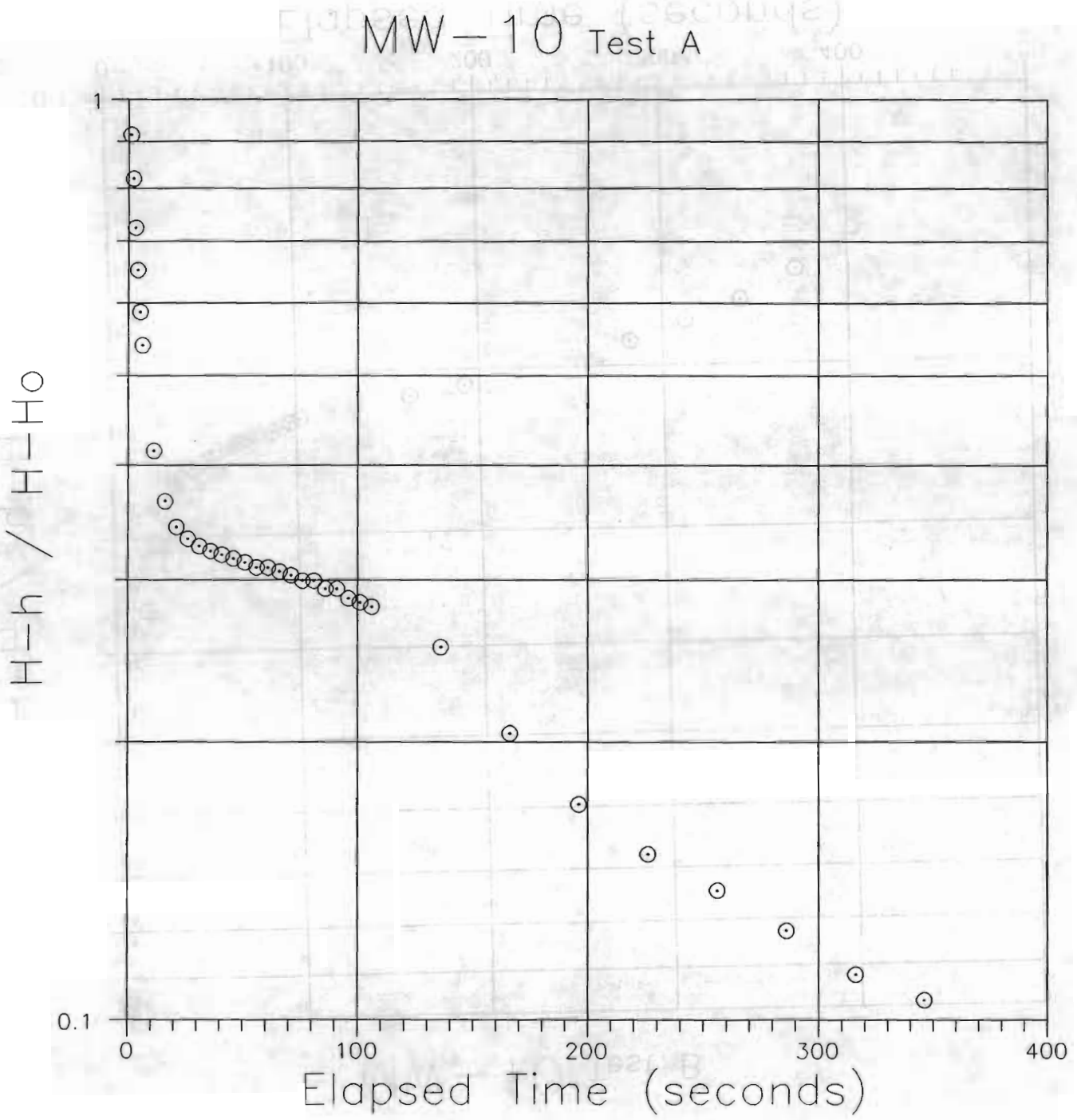


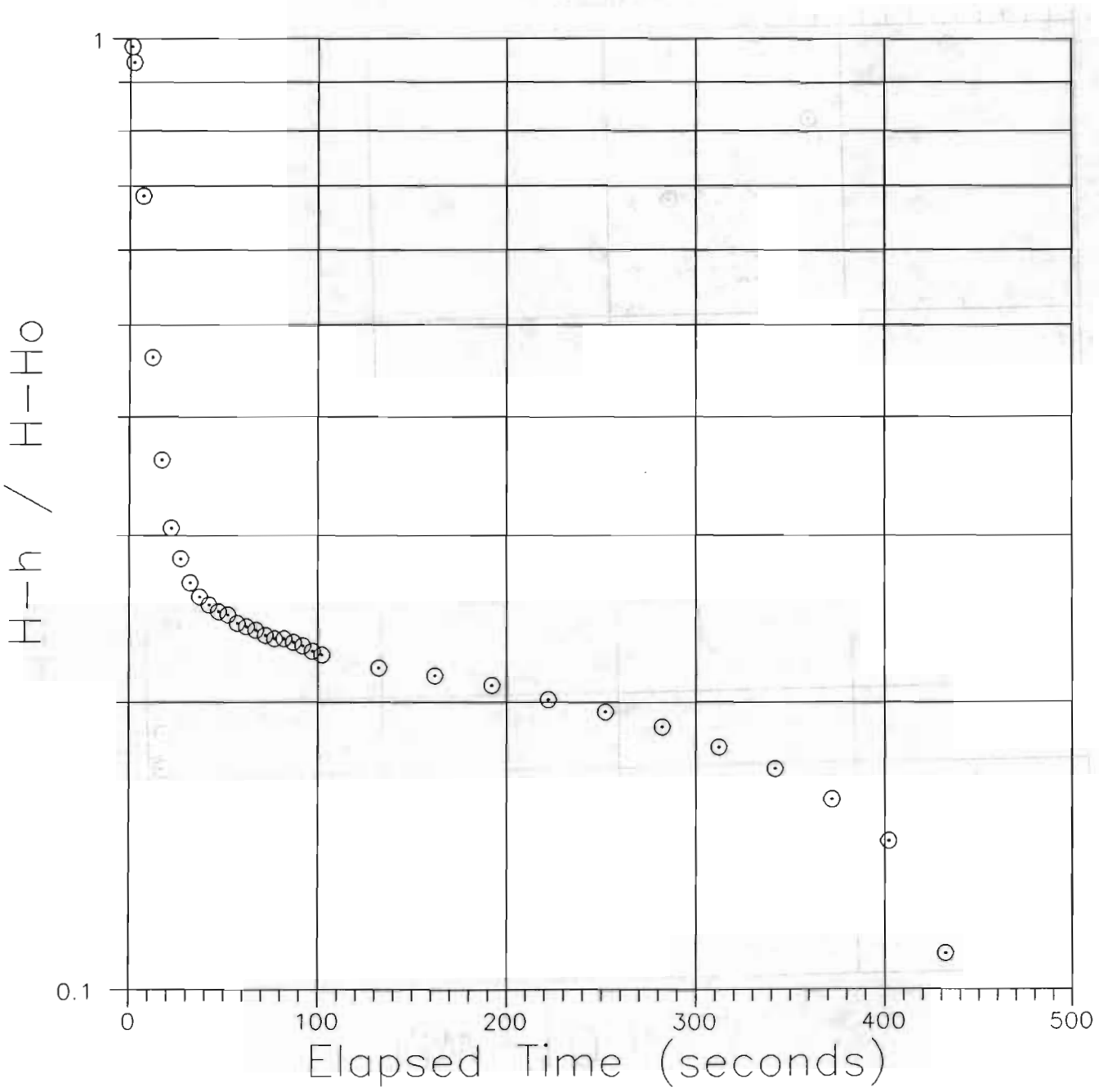

MW-7 Test A
1
0.1
H-h / H-Ho
0
100
200
300
400
500
600
Elapsed Time (seconds)

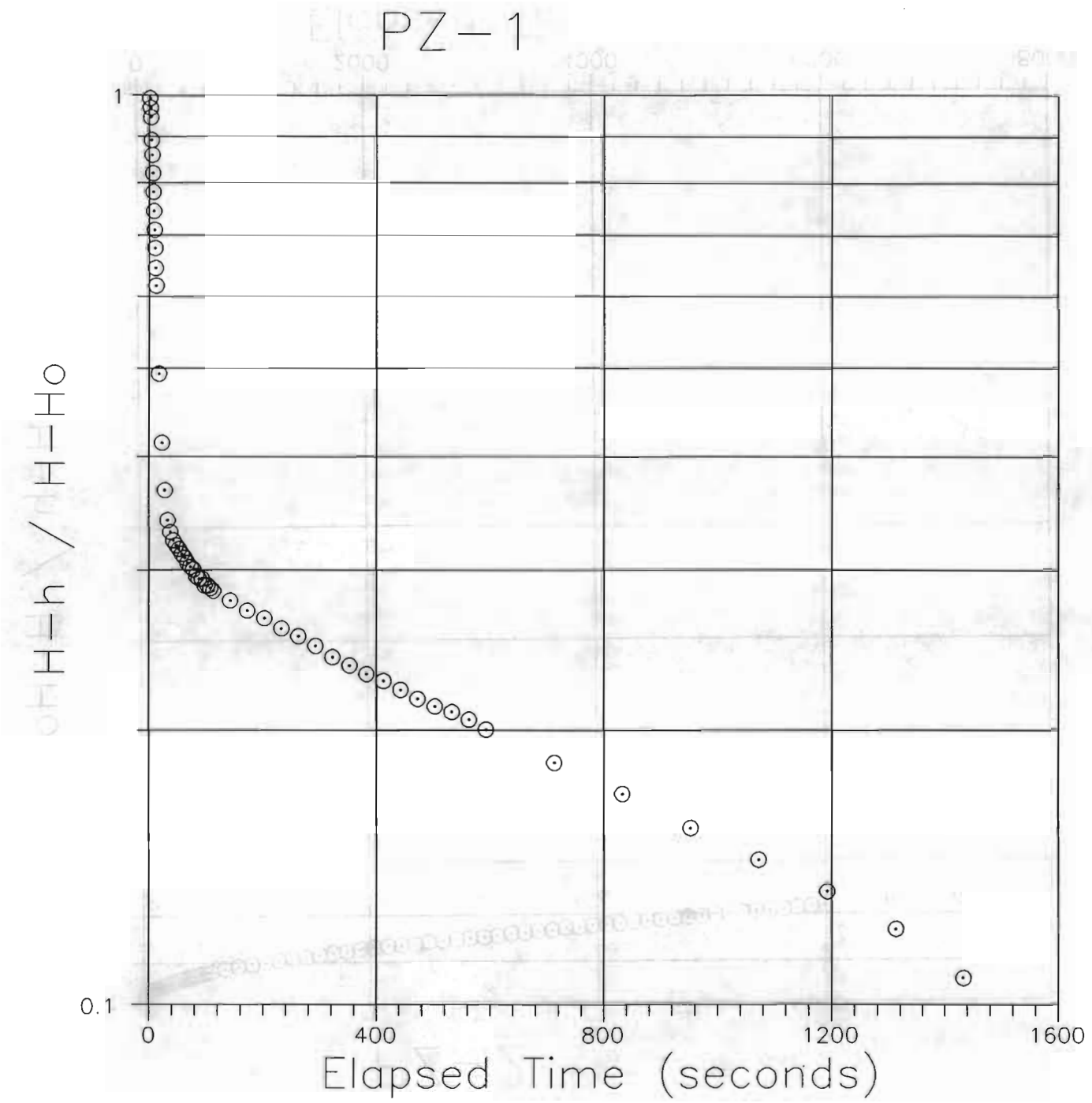

MW-7 Test B
1
0.1
H-h / H-Ho
0
100
200
300
400
500
600
Elapsed Time (seconds)


MW-9 Test A
1
0.1
H-h / H-Ho
0
50
100
150
200
250
Elapsed Time (seconds)

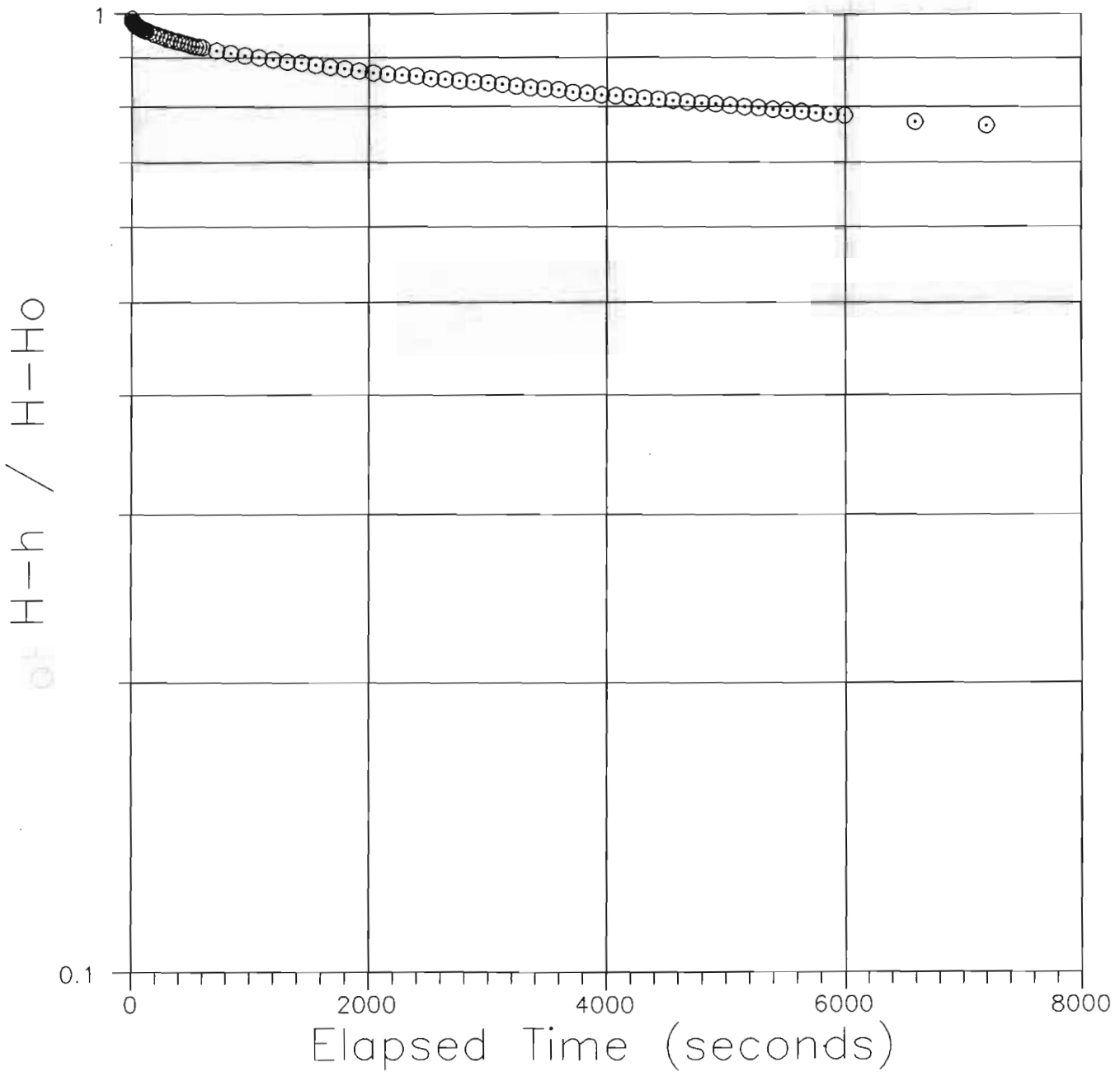

MW-9 Test B
1
0.1
H-h / H-Ho
0
50
100
150
200
250
Elapsed Time (seconds)


MW-10 Test A
1
0.1
H-h / H-Ho
0
100
200
300
400
Elapsed Time (seconds)


MW-10 Test B
1
0.1
H-h / H-HO
0
100
200
300
400
500
Elapsed Time (seconds)


PZ-1
1
0.1
H-h / H-Ho
0
400
800
1200
1600
Elapsed Time (seconds)

PZ-2



APPENDIX H

In tests where the ratio of (H-h/H-Ho) falls below 0.37 (that is, in which the well recovers by at least 63 percent before the test is ended) and where the plot of the logarithm of this ratio versus the elapsed time is linear, the hydraulic conductivity (K) of the well is determined using the following formula taken from Freeze and Cherry, Groundwater, 1979, page 341:

$$K = \frac{r^2 \ln (L/R)}{2LTo}$$ where

K = hydraulic conductivity (ft/sec)
r = radius of well casing (ft)
R = Radius of filter pack (borehole) (ft)
L = length of saturated open screen (ft)
To = "basic time lag" (sec)
= value of t on plot of (H-h)/(H-Ho) vs t where (H-h)/(H-Ho) = 0.37

H = initial water level prior to start of test
Ho = water level at t=0 (highest value of h)
h = recorded water levels at t>0

In tests where the ratio of (H-h)/H-Ho) fails to recover to 0.37 or where the plot of the logarithm of this ratio versus the elapsed time is not linear (e.g., "sags" or is "kinked"), the hydraulic conductivity is determined using the following formula taken from Ground Water Journal, September/October 1989, p. 715:

$$K = \frac{r^{*2} \ln (L/R) \ln (H1/H2)}{2L (t_2 - t_1)}$$ where

K = hydraulic conductivity (ft/sec)
r = radius of well casing (ft)
r* = effective radius of well casing (ft)
R = radius of filter pack (borehole) (ft)
L = length of saturated open screen

r* = r+n (R-r), where n equals porosity (assumed 0.35)

H1, t1 = (H-h)/(H-Ho) at time t1
H2, t2 = (H-h)/(H-Ho) at time t2

H = initial water level prior to start of test
Ho = water level at t=0 (highest value of h)
h = recorded water levels at t>0

Where two tests were run on the same monitor well, it is expected that the calculated values of K will be in close agreement. The value of K is calculated in feet per second, centimeters per second, and gallons per day per square foot.

The localized hydraulic conductivity of each well, determined by the slug tests, indicates the degree of isotropic homogeneity of the aquifer.

Typical Hydraulic Conductivity Calculation

Example: MW 1S $K = \frac{r^2 \ln (L/R)}{2LTo}$

$$K = \frac{(0.167)^2 \ln (5/0.417)}{2\ (5)\ (1276)}$$

$$K = \frac{(0.028)\ (2.48)}{12760}$$

$$K = \frac{0.07}{12760}$$

$$K = 5.4 \times 10^{-6} \text{ ft/sec}$$

$$K = \frac{5.44 \times 10^{-6} \text{ ft/sec} \times 646272 \text{ GPD/ft}^2}{3.50}$$

APPENDIX I

GROUNDWATER VELOCITY AND FLOW CALCULATIONS

APPENDIX I

To determine the groundwater flow velocities in the northwesterly and southeasterly directions.

ASSUMPTION

Hydraulic conductivites determined from the slug test (k)

Minimum Value = 2.4×10^{-7} ft/sec (0.15 gpd/ft^2, 2.07×10^{-2} ft/day)

Maximum Value = 3.8×10^{-4} ft/sec (245.67 gpd/ft^2, 32.83 ft/day)

Average Value = 7.8 C 10^{-5} ft/sec (3.12 gpd/ft^2, 6.74 ft/day)

HYDRAULIC GRADIENT (i)

Northwesterly direction = 0.057 ft/ft

Southwesterly direction - 0.077 ft/ft

effective porosity (n) - 0.2

$$V = \frac{Ki}{n}$$

CALCULATIONS

For southereasterly direction

$$\text{Minimum Estimate} = \frac{2.07 \times 10^{-2} \times 0.077 \text{ ft/ft}}{0.2} = 7.96 \times 10^{-3} \text{ ft/day}$$

$$\text{Maximum Estimate} = \frac{32.83 \text{ ft/day} \times 0.077 \text{ ft/ft}}{0.2}$$

$$= 12.64 \text{ ft/day}$$

$$\text{Average Estimate} = \frac{6.74 \text{ ft/day} \times 0.077 \text{ ft/ft}}{0.2}$$

$$= 2.59 \text{ ft/day}$$

for Northwesterly direction

$$\text{Minimum Estimate} = \frac{2.07 \times 10^{-2} \text{ ft/day} \times 0.057 \text{ ft/ft}}{0.2} = 5.90 \times 10^{-3} \text{ ft/day}$$

$$\text{Maximum Estimate} = \frac{32.83 \text{ ft/day} \times 0.057 \text{ ft/ft}}{0.2} = 9.36 \text{ ft/day}$$

$$\text{Average Estimate} = \frac{6.74 \text{ ft/day} \times 0.057}{0.2}$$

$$= 1.92 \text{ ft/day}$$

Calculation for Southeasterly Flow Quantity

255' x 7' = 1785 ft^2 (cross-section area of groundwater flow)
(width of site south of divide) (aquifer thickness)

average of MW-7 and MW-9 elev. water = 19
elev. clay = 12
thickness of aquifer = 7

Q = KIA

Q = flow quantity
K = hydraulic conductivity = 3.12 gpd/ft^2
I = hydraulic gradient = 0.007 ft/ft
A = cross-sectional area = 1785 ft^2

Q = (3.12 gpd/ft^2) (0.007 ft/ft) (1785 ft^2)

Q = 429 gallons per day in a SE direction

Calculation for Northwesterly Flow Quantity

Q = KIA

Q = (3.12 gpd/ft^2) (0.057 ft/ft) (6840 ft^2)

Q = 1,216 gallons per day in a NW direction

K = hydraulic conductivity = 3.12 gpd/ft^2
I = hydraulic conductivity = 0.057 ft/ft
A = cross-sectional area = 6840 ft^2
Q = flow quantity

APPENDIX I (Continued)

SUMMARY

Southeasterly Flows	Minimum	= 7.96×10^{-3} ft/day
	Maximum	= 12.64 x 12.64 ft/day
	Average	= 2.59 ft/day
Northwesterly Flows	Minimum	= 5.90×10^{-3} ft/day
	Maximum	= 9.36 ft/day
	Average	= 1.92 ft/day

APPENDIX J

AIR MODELING RESULTS

OCT 1989
NEW YORK (LAGUARDIA AP), NY
WEA SER CONT MET OFC
MARINE TERMINAL BLDG 3RD FLOOR

ISSN 0198-3644

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

LA GUARDIA AIRPORT

LATITUDE 40° 46' N LONGITUDE 73° 54' W ELEVATION (GROUND) 11 FEET TIME ZONE EASTERN 14732

OCT 1989
NEW YORK (LAGUARDIA AP), NY

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 0700 INCHES	PRECIPITATION WATER EQUIVALENT (INCHES)	PRECIPITATION SNOW, ICE PELLETS (INCHES)	AVERAGE STATION PRESSURE IN INCHES ELEV 31 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	SUNSHINE PERCENT OF TOTAL POSSIBLE	SKY COVER (TENTHS) SUNRISE TO SUNSET	SKY COVER (TENTHS) MIDNIGHT TO MIDNIGHT
1	2	3	4	5	6	7A	7B	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	71	56	64	1	53	1	0		0	0.00	0.0	30.220	10	6.5	8.4	22	SE	13	15			9	8
02	72	65	69*	6	66	0	4	1	0	1.00	0.0	29.890	15	8.3	9.7	33	S	22	16			10	10
03	70	51	61	-1	50	4	0		0	0.00	0.0	29.810	32	14.9	15.0	39	NW	24	33			1	1
04	60	47	54	-8	31	11	0		0	0.00	0.0	29.860	30	17.3	17.6	39	W	25	29			1	1
05	67	50	59	-2	37	6	0		0	0.00	0.0	29.860	28	13.0	13.9	29	NW	20	29			1	2
06	74	57	66	5	49	0	1		0	T	0.0	29.730	25	11.8	12.8	26	W	21	27			6	8
07	66	53	60	-1	40	5	0		0	T	0.0	29.830	32	14.0	14.6	33	NW	23	33			2	4
08	57	48	53	-7	35	12	0		0	0.00	0.0	29.890	31	10.6	11.4	24	NW	20	32			6	6
09	53	45	49	-11	32	16	0		0	0.00	0.0	30.060	33	12.4	13.1	29	NW	20	33			5	4
10	58	44	51	-9	39	14	0	1	0	0.04	0.0	30.200	16	9.9	10.1	26	S	20	17			7	8
11	63	52	58	-1	44	7	0	1	0	0.06	0.0	30.060	30	9.8	11.1	24	NW	17	31			3	3
12	70	49	60	1	49	5	0	8	0	0.00	0.0	30.090	19	9.8	10.4	28	S	22	18			0	1
13	78*	57	68	10	48	0	3	8	0	0.00	0.0	30.030	28	7.3	8.1	23	W	15	29			1	2
14	72	57	65	7	47	0	0		0	0.00	0.0	30.075	16	5.0	7.9	22	S	14	18			8	8
15	65	59	62	4	55	3	0	1 8	0	0.00	0.0	30.030	06	7.9	10.0	36	N	21	02			1	5
16	77	59	68	11	61	0	3	1 8	0	0.00	0.0	29.990	18	6.3	8.1	23	SW	15	21			7	8
17	72	52	62	5	62	3	0	1 8	0	0.48	0.0	29.900	22	5.5	11.4	31	NE	22	04			10	10
18	52	46	49	-8	44	16	0	1	0	0.06	0.0	30.110	03	17.2	17.3	31	NE	25	05			10	10
19	55	46	51	-5	46	14	0	1	0	0.91	0.0	30.110	06	27.5	27.9	48	NE	36	06			10	10
20	72	45	59	3	59	6	0	1	0	2.36	0.0	29.780	14	7.8	18.6			31	06			10	10
21	52	42*	47*	-9	32	18	0		0	T	0.0	29.840	24	15.0	15.2	30	SW	23	24			6	7
22	55	46	51	-4	38	14	0		0	0.00	0.0	30.090	30	11.8	14.5	33	NW	24	31			6	4
23	64	44	54	-1	40	11	0		0	0.00	0.0	30.410	25	2.6	4.9	23	S	12	18			2	2
24	68	43	56	1	44	9	0	1 8	0	0.00	0.0	30.410	18	2.4	4.6	16	S	10	18			5	2
25	71	50	61	7	47	4	0		0	0.00	0.0	30.320	04	2.7	3.8	17	NE	10	05			2	1
26	74	53	64	10	49	1	0		0	0.00	0.0	30.290	32	2.7	3.6	16	N	10	01			3	2
27	74	54	64	10	53	1	0	1 8	0	0.00	0.0	30.270	34	2.9	4.1	15	N	10	35			3	3
28	76	60	68	15	57	0	3	1 8	0	0.00	0.0	30.240	11	1.0	3.3	10	S	9	16			1	1
29	73	58	66	13	56	0	1	1 8	0	0.00	0.0	30.255	13	2.2	4.6	16	S	10	17			8	6
30	73	55	64	11	54	1	0	1 8	0	0.00	0.0	30.230	16	4.1	5.8	17	S	12	16			6	5
31	69	61	65	13	61	0	0	2	0	0.54	0.0	29.920	06	8.9	13.7	31	NE	22	04			10	10
SUM	SUM					TOTAL	TOTAL			TOTAL	TOTAL	FOR THE MONTH:								TOTAL	%	SUM	SUM
2073	1604					182	15	NUMBER OF DAYS		5.45	0.0	30.060	31	1.9	10.8	48	NE	36	06		FOR	160	162
AVG	AVG.	AVG	DEP.	AVG		DEP.	DEP	PRECIPITATION		DEP						DATE: 19		DATE: 19		POSSIBLE	MONTH	AVG	AVG
66.9	51.7	59.3	1.8	47.6		-6.4	2	≥ .01 INCH	8	2.21												5.2	5.2

NUMBER OF DAYS				SEASON TO DATE TOTAL	SEASON TO DATE TOTAL	SNOW, ICE PELLETS		GREATEST IN 24 HOURS AND DATES			GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE
MAXIMUM TEMP.		MINIMUM TEMP.				≥ 1.0 INCH	0				
≥ 90°	≤ 32°	≥ 32°	≤ 0°	220	1197	THUNDERSTORMS	0	PRECIPITATION	SNOW, ICE PELLETS		0
0	0	0	0	DEP	DEP	HEAVY FOG	1	2.61	19-20	0.0	
				-61	146	CLEAR 13	PARTLY CLOUDY 9	CLOUDY 9			

* 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 Hadeen
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

TOTAL SUSPENDED PARTICULATES - HIGH VOLUME AIR SAMPLERS

ANNUAL GEOMETRIC MEANS 1978 THROUGH 1988
AND
COMPARISON BETWEEN NEW YORK STATE AMBIENT AIR QUALITY & AMBIENT AIR QUALITY STANDARDS FOR CALENDAR YEAR 1988

Long Island and Westchester County Sites

STATION (Encon. Region)	SITE NO.	AAQS G. M. µg/m³*	ANNUAL GEOMETRIC MEAN (G.M.) Not to exceed AAQS (G.M.) µg/m3 78	79	80	81	82	83	84	85	86	87	88	24-HOUR AVERAGE-1988 Maximum - Not to exceed 250 µg/m³ more than once per calendar year * NO. OF OBSERVATIONS Total	>150** µg/m3	>250* µg/m3	>260** µg/m3	HIGHEST VALUES µg/m³ 1st	2nd	3rd
Glen Cove(1)	2901-01N	65	52	50	51	56	54	39	42	43	48	44	45	60	0	0	0	118 [1/16]	105 [6/14]	86 [8/13]
Hempstead(1) Eisenhower Pk.	2950-10	65	63	54	50	55	46	43	49	48	40	41	46	54	0	0	0	125 [6/14]	118 [1/16]	105 [1/28]
Hempstead (1)	2950-18	75	-	-	45	46	43	41	40	41	37	39	xx	20	0	0	0	68 [1/16]	65 [4/21]	59 [1/10]
Oyster Bay(1)	2952-05	55	38	34	39	41	38	34	35	34	27	33	30	61	0	0	0	79 [1/16]	73 [6/14]	69 [8/13]
Babylon(1)	5150-01	65	42	46	59	54	40	44	44	44	45	48	46	55	0	0	0	119 [6/14]	94 [1/16]	90 [1/28]
Mt. Vernon(3)	5903-05N	75	-	-	-	-	-	40	43	44	37	40	42	57	0	0	0	111 [6/20]	96 [6/14]	96 [7/8]
Ossining(3)	5905-01	65	39	40	55	44	42	45	43	37	34	50	46	56	0	0	0	146 [3/16]	125 [4/15]	103 [8/13]

[Date of occurrence] *** Particulate sampling at Hempstead (2950-18) was terminated on 5/21/88.

* New York State Ambient Air Quality Standard (AAQS) ** Federal Ambient Air Quality Standards - Primary (260 µg/m³) and Secondary (150 µg/m³)
+ Denotes A Contravention of N.Y. State Ambient Air Quality Standard + + Denotes a Contravention of Federal Ambient Air Quality Standards
N = NAMS (National Air Monitoring Station)

Standard Method for
PARTICLE-SIZE ANALYSIS OF SOILS[1]

This standard is issued under the fixed designation D 422; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

[1] NOTE—Section 2 was added editorially and subsequent sections renumbered in July 1984.

1. Scope

1.1 This method covers the quantitative determination of the distribution of particle sizes in soils. The distribution of particle sizes larger than 75 μm (retained on the No. 200 sieve) is determined by sieving, while the distribution of particle sizes smaller than 75 μm is determined by a sedimentation process, using a hydrometer to secure the necessary data (Notes 1 and 2).

NOTE 1—Separation may be made on the No. 4 (4.75-mm), No. 40 (425-μm), or No. 200 (75-μm) sieve instead of the No. 10. For whatever sieve used, the size shall be indicated in the report.

NOTE 2—Two types of dispersion devices are provided: (*1*) a high-speed mechanical stirrer, and (*2*) air dispersion. Extensive investigations indicate that air-dispersion devices produce a more positive dispersion of plastic soils below the 20-μm size and appreciably less degradation on all sizes when used with sandy soils. Because of the definite advantages favoring air dispersion, its use is recommended. The results from the two types of devices differ in magnitude, depending upon soil type, leading to marked differences in particle size distribution, especially for sizes finer than 20 μm.

2. Applicable Documents

2.1 *ASTM Standards:*

D 421 Practice for Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants[2]

E 11 Specification for Wire-Cloth Sieves for Testing Purposes[3]

E 100 Specification for ASTM Hydrometers[4]

3. Apparatus

3.1 *Balances*—A balance sensitive to 0.01 g for weighing the material passing a No. 10 (2.00-mm) sieve, and a balance sensitive to 0.1 % of the mass of the sample to be weighed for weighing the material retained on a No. 10 sieve.

3.2 *Stirring Apparatus*—Either apparatus A or B may be used.

3.2.1 Apparatus A shall consist of a mechanically operated stirring device in which a suitably mounted electric motor turns a vertical shaft at a speed of not less than 10 000 rpm without load. The shaft shall be equipped with a replaceable stirring paddle made of metal, plastic, or hard rubber, as shown in Fig. 1. The shaft shall be of such length that the stirring paddle will operate not less than ¾ in. (19.0 mm) nor more than 1½ in. (38.1 mm) above the bottom of the dispersion cup. A special dispersion cup conforming to either of the designs shown in Fig. 2 shall be provided to hold the sample while it is being dispersed.

3.2.2 Apparatus B shall consist of an air-jet dispersion cup[5] (Note 3) conforming to the general details shown in Fig. 3 (Notes 4 and 5).

NOTE 3—The amount of air required by an air-jet dispersion cup is of the order of 2 ft³/min; some small air compressors are not capable of supplying sufficient air to operate a cup.

NOTE 4—Another air-type dispersion device, known as a dispersion tube, developed by Chu and Davidson at Iowa State College, has been shown to give results equivalent to those secured by the air-jet dispersion cups. When it is used, soaking of the sample can be done in the sedimentation cylinder, thus eliminating the need for transferring the slurry. When the air-dispersion tube is used, it shall be so indicated in the report.

NOTE 5—Water may condense in air lines when not in use. This water must be removed, either by using a water trap on the air line, or by blowing the water out of the line before using any of the air for dispersion purposes.

3.3 *Hydrometer*—An ASTM hydrometer, graduated to read in either specific gravity of the suspension or grams per litre of suspension, and conforming to the requirements for hydrometers 151H or 152H in Specifications E 100. Dimensions of both hydrometers are the same, the scale being the only item of difference.

3.4 *Sedimentation Cylinder*—A glass cylinder essentially 18 in. (457 mm) in height and 2½ in. (63.5 mm) in diameter, and marked for a volume of 1000 mL. The inside diameter shall be such that the 1000-mL mark is 36 ± 2 cm from the bottom on the inside.

3.5 *Thermometer*—A thermometer accurate to 1°F (0.5°C).

3.6 *Sieves*—A series of sieves, of square-mesh woven-wire cloth, conforming to the requirements of Specification E 11. A full set of sieves includes the following (Note 6):

3-in. (75-mm)	No. 10 (2.00-mm)
2-in. (50-mm)	No. 20 (850-μm)
1½-in. (37.5-mm)	No. 40 (425-μm)
1-in. (25.0-mm)	No. 60 (250-μm)
¾-in. (19.0-mm)	No. 140 (106-μm)
⅜-in. (9.5-mm)	No. 200 (75-μm)
No. 4 (4.75-mm)	

NOTE 6—A set of sieves giving uniform spacing of points for the graph, as required in Section 17, may be used if desired. This set consists of the following sieves:

3-in. (75-mm)	No. 16 (1.18-mm)
1½-in. (37.5-mm)	No. 30 (600-μm)
¾-in. (19.0-mm)	No. 50 (300-μm)
⅜-in. (9.5-mm)	No. 100 (150-μm)
No. 4 (4.75-mm)	No. 200 (75-μm)
No. 8 (2.36-mm)	

3.7 *Water Bath or Constant-Temperature Room*—A water bath or constant-temperature room for maintaining the soil suspension at a constant temperature during the hydrometer analysis. A satisfactory water tank is an insulated tank that maintains the temperature of the suspension at a convenient constant temperature at or near 68°F (20°C). Such a device is illustrated in Fig. 4. In cases where the work is performed in a room at an automatically controlled constant temperature, the water bath is not necessary.

3.8 *Beaker*—A beaker of 250-mL capacity.

3.9 *Timing Device*—A watch or clock with a second hand.

4. Dispersing Agent

4.1 A solution of sodium hexametaphosphate (sometimes called sodium metaphosphate) shall be used in distilled or demineralized water, at the rate of 40 g of sodium hexametaphosphate/litre of solution (Note 7).

NOTE 7—Solutions of this salt, if acidic, slowly revert or hydrolyze back to the orthophosphate form with a resultant decrease in dispersive action. Solutions should be prepared frequently (at least once a month) or adjusted to pH of 8 or 9 by means of sodium carbonate. Bottles containing solutions should have the date of preparation marked on them.

4.2 All water used shall be either distilled or demineralized water. The water for a hydrometer test shall be brought to the temperature that is expected to prevail during the hydrometer test. For example, if the sedimentation cylinder is to be placed in the water bath, the distilled or demineralized water to be used shall be brought to the temperature of the controlled water bath; or, if the sedimentation cylinder is used in a room with controlled temperature, the water for the test shall be at the temperature of the room. The basic temperature for the hydrometer test is 68°F (20°C). Small variations of temperature do not introduce differences that are of practical significance and do not prevent the use of corrections derived as prescribed.

5. Test Sample

5.1 Prepare the test sample for mechanical analysis as outlined in Practice D 421. During the preparation procedure the sample is divided into two portions. One portion contains only particles retained on the No. 10 (2.00-mm) sieve while the other portion contains only particles passing the No. 10 sieve. The mass of air-dried soil selected for purpose of tests, as prescribed in Practice D 421, shall be sufficient to yield quantities for mechanical analysis as follows:

5.1.1 The size of the portion retained on the No. 10 sieve shall depend on the maximum size of particle, according to the following schedule:

Nominal Diameter of Largest Particles, in. (mm)	Approximate Minimum Mass of Portion, g
⅜ (9.5)	500
¾ (19.0)	1000

[1] This method is under the jurisdiction of ASTM Committee D-18 on Soil and Rock and is the direct responsibility of Subcommittee D18.03 on Texture, Plasticity, and Density Characteristics of Soils.

Current edition approved Nov. 21, 1963. Originally published 1935. Replaces D 422 – 62.

[2] *Annual Book of ASTM Standards*, Vol 04.08.

[3] *Annual Book of ASTM Standards*, Vol 14.02.

[4] *Annual Book of ASTM Standards*, Vol 14.01.

[5] Detailed working drawings for this cup are available at a nominal cost from the American Society for Testing and Materials, 1916 Race St., Philadelphia, PA 19103. Order Adjunct No. 12-404220-00.

SUMMARY FORM.

EPA-CLP
SAS # 5024-B
FINAL RESULTS

NOVEMBER 27, 1989

SMO SAMPLE NUMBER:	5024B-0001	5024B-0002	5024B-0003	5024B-0004	5024B-0005	5024B-0006	5024B-0007	5024B-0008	5024B-0009	5024B-0010	5024B-0011	5024B-0012	5024B-0013	5024B-0014	5024B-00
ESE FILTER NUMBER:	0131	0132	0133	0134	0130	0135	0137	0138	0139	0140	0136	0141	0142	0143	0144
UNITS:	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
TARE WEIGHT:	2.7554	2.7494	2.7506	2.8256	2.7741	2.8131	2.7789	2.8095	2.779	2.7846	2.7887	2.7696	2.7682	2.92	2.896
GROSS WEIGHT:	2.826	~~2.8138~~ 2.9125 BV	2.8138	2.8946	2.827	2.8125	2.8734	2.8989	2.8768	2.8149	2.8614	2.7688	2.9049	3.0647	3.120
NET WEIGHT:	0.0706	0.0631	0.0632	0.069	0.0529	-0.0006	0.0945	0.0894	0.0978	0.0303	0.0727	-0.0008	0.1367	0.1447	0.2234
TOTAL-PARTICULATES:	70.6 J	63.1	63.	69	52.9 J	-0.6	94.5 J	89.4	97.8	30.3	72.7 J	-0.8	136.7	144.7	223.4

SMO SAMPLE NUMBER:	5024B-0016	5024B-0017	5024B-0018	5024B-0019	5024B-0020	5024B-0021	5024B-0022	5024B-0023	5024B-0024	5024B-0025	5024B-0026	5024B-0027	5024B-0028	5024B-0029	5024B-003
ESE FILTER NUMBER:	0119	0146	0147	0116	0117	0118	0145	0120	0121	0122	0123	0124	0125	0126	0127
UNITS:	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
TARE WEIGHT:	3.0001	2.8974	2.9164	3.0024	2.9906	2.9787	2.9071	2.9748	2.9795 ~~2.9796~~ BV	2.9879	3.0036	2.7895	2.7875	2.7746	2.7661
GROSS WEIGHT:	3.1273	3.0037	2.9153	3.1409	3.1151	3.098	3.0646	3.0814	2.9784	3.1358	3.137	2.9216	2.9312	2.889	2.7648
NET WEIGHT:	~~0.1279~~ BV 0.1272	0.1063	-0.0011	0.1385	0.1245	0.1193	0.1575	0.1066	-0.0011	0.1479	0.1334	0.1321	0.1437	0.1144	-0.0013
TOTAL-PARTICULATES:	127.2	106.3	-1.1	138.5 J	124.5	119.3	157.5	106.6 J	-1.1	147.9 J	133.4	132.1	143.7	114.4 J	-1.3

030063

Nominal Diameter of Largest Particles, in. (mm)	Approximate Minimum Mass of Portion, g
1 (25.4)	2000
1½ (38.1)	3000
2 (50.8)	4000
3 (76.2)	5000

5.1.2 The size of the portion passing the No. 0 sieve shall be approximately 115 g for sandy oils and approximately 65 g for silt and clay oils.

5.2 Provision is made in Section 5 of Practice) 421 for weighing of the air-dry soil selected for urpose of tests, the separation of the soil on the lo. 10 sieve by dry-sieving and washing, and the eighing of the washed and dried fraction re- ined on the No. 10 sieve. From these two asses the percentages retained and passing the lo. 10 sieve can be calculated in accordance ith 12.1.

NOTE 8—A check on the mass values and the thor- ughness of pulverization of the clods may be secured weighing the portion passing the No. 10 sieve and lding this value to the mass of the washed and oven- ied portion retained on the No. 10 sieve.

SIEVE ANALYSIS OF PORTION RETAINED ON NO. 10 (2.00-mm) SIEVE

Procedure

6.1 Separate the portion retained on the No.) (2.00-mm) sieve into a series of fractions using e 3-in. (75-mm), 2-in. (50-mm), 1½-in. (37.5- m), 1-in. (25.0-mm), ¾-in. (19.0-mm), ⅜-in.).5-mm), No. 4 (4.75-mm), and No. 10 sieves, r as many as may be needed depending on the mple, or upon the specifications for the mate- al under test.

6.2 Conduct the sieving operation by means a lateral and vertical motion of the sieve, companied by a jarring action in order to keep e sample moving continuously over the surface the sieve. In no case turn or manipulate frag- ents in the sample through the sieve by hand. ontinue sieving until not more than 1 mass % the residue on a sieve passes that sieve during min of sieving. When mechanical sieving is ed, test the thoroughness of sieving by using e hand method of sieving as described above.

6.3 Determine the mass of each fraction on a lance conforming to the requirements of 3.1. t the end of weighing, the sum of the masses tained on all the sieves used should equal sely the original mass of the quantity sieved.

HYDROMETER AND SIEVE ANALYSIS OF PORTION PASSING THE NO. 10 (2.00-mm) SIEVE

7. Determination of Composite Correction for Hydrometer Reading

7.1 Equations for percentages of soil remaining in suspension, as given in 14.3, are based on the use of distilled or demineralized water. A dispersing agent is used in the water, however, and the specific gravity of the resulting liquid is appreciably greater than that of distilled or demineralized water.

7.1.1 Both soil hydrometers are calibrated at 68°F (20°C), and variations in temperature from this standard temperature produce inaccuracies in the actual hydrometer readings. The amount of the inaccuracy increases as the variation from the standard temperature increases.

7.1.2 Hydrometers are graduated by the manufacturer to be read at the bottom of the meniscus formed by the liquid on the stem. Since it is not possible to secure readings of soil suspensions at the bottom of the meniscus, readings must be taken at the top and a correction applied.

7.1.3 The net amount of the corrections for the three items enumerated is designated as the composite correction, and may be determined experimentally.

7.2 For convenience, a graph or table of composite corrections for a series of 1° temperature differences for the range of expected test temperatures may be prepared and used as needed. Measurement of the composite corrections may be made at two temperatures spanning the range of expected test temperatures, and corrections for the intermediate temperatures calculated assuming a straight-line relationship between the two observed values.

7.3 Prepare 1000 mL of liquid composed of distilled or demineralized water and dispersing agent in the same proportion as will prevail in the sedimentation (hydrometer) test. Place the liquid in a sedimentation cyclinder and the cylinder in the constant-temperature water bath, set for one of the two temperatures to be used. When the temperature of the liquid becomes constant, insert the hydrometer, and, after a short interval to permit the hydrometer to come to the temperature of the liquid, read the hydrometer at the top of the meniscus formed on the stem. For hydrometer 151H the composite correction is the difference between this reading and one; for hydrometer 152H it is the difference between the reading and zero. Bring the liquid and the hydrometer to the other temperature to be used, and secure the composite correction as before.

8. Hygroscopic Moisture

8.1 When the sample is weighed for the hydrometer test, weigh out an auxiliary portion of from 10 to 15 g in a small metal or glass container, dry the sample to a constant mass in an oven at 230 ± 9°F (110 ± 5°C), and weigh again. Record the masses.

9. Dispersion of Soil Sample

9.1 When the soil is mostly of the clay and silt sizes, weigh out a sample of air-dry soil of approximately 50 g. When the soil is mostly sand the sample should be approximately 100 g.

9.2 Place the sample in the 250-mL beaker and cover with 125 mL of sodium hexametaphosphate solution (40 g/L). Stir until the soil is thoroughly wetted. Allow to soak for at least 16 h.

9.3 At the end of the soaking period, disperse the sample further, using either stirring apparatus A or B. If stirring apparatus A is used, transfer the soil - water slurry from the beaker into the special dispersion cup shown in Fig. 2, washing any residue from the beaker into the cup with distilled or demineralized water (Note 9). Add distilled or demineralized water, if necessary, so that the cup is more than half full. Stir for a period of 1 min.

NOTE 9—A large size syringe is a convenient device for handling the water in the washing operation. Other devices include the wash-water bottle and a hose with nozzle connected to a pressurized distilled water tank.

9.4 If stirring apparatus B (Fig. 3) is used, remove the cover cap and connect the cup to a compressed air supply by means of a rubber hose. A air gage must be on the line between the cup and the control valve. Open the control valve so that the gage indicates 1 psi (7 kPa) pressure (Note 10). Transfer the soil - water slurry from the beaker to the air-jet dispersion cup by washing with distilled or demineralized water. Add distilled or demineralized water, if necessary, so that the total volume in the cup is 250 mL, but no more.

NOTE 10—The initial air pressure of 1 psi is required to prevent the soil - water mixture from entering the air-jet chamber when the mixture is transferred to the dispersion cup.

9.5 Place the cover cap o the cup and open the air control valve until the gage pressure is 20 psi (140 kPa). Disperse the soil according to the following schedule:

Plasticity Index	Dispersion Period, min
Under 5	5
6 to 20	10
Over 20	15

Soils containing large percentages of mica need be dispersed for only 1 min. After the dispersion period, reduce the gage pressure to 1 psi preparatory to transfer of soil - water slurry to the sedimentation cylinder.

10. Hydrometer Test

10.1 Immediately after dispersion, transfer the soil - water slurry to the glass sedimentation cylinder, and add distilled or demineralized water until the total volume is 1000 mL.

10.2 Using the palm of the hand over the open end of the cylinder (or a rubber stopper in the open end), turn the cylinder upside down and back for a period of 1 min to complete the agitation of the slurry (Note 11). At the end of 1 min set the cylinder in a convenient location and take hydrometer readings at the following intervals of time (measured from the beginning of sedimentation), or as many as may be needed, depending on the sample or the specification for the material under test: 2, 5, 15, 30, 60, 250, and 1440 min. If the controlled water bath is used, the sedimentation cylinder should be placed in the bath between the 2- and 5-min readings.

NOTE 11—The number of turns during this minute should be approximately 60, counting the turn upside down and back as two turns. Any soil remaining in the bottom of the cylinder during the first few turns should be loosened by vigorous shaking of the cylinder while it is in the inverted position.

10.3 When it is desired to take a hydrometer reading, carefully insert the hydrometer about 20 to 25 s before the reading is due to approximately the depth it will have when the reading is taken. As soon as the reading is taken, carefully remove the hydrometer and place it with a spinning motion in a graduate of clean distilled or demineralized water.

NOTE 12—It is important to remove the hydrometer immediately after each reading. Readings shall be taken at the top of the meniscus formed by the suspension around the stem, since it is not possible to secure readings at the bottom of the meniscus.

10.4 After each reading, take the temperature of the suspension by inserting the thermometer into the suspension.

11. Sieve Analysis

11.1 After taking the final hydrometer reading, transfer the suspension to a No. 200 (75-μm) sieve and wash with tap water until the wash water is clear. Transfer the material on the No. 200 sieve to a suitable container, dry in an oven at 230 ± 9°F (110 ± 5°C) and make a sieve analysis of the portion retained, using as many sieves as desired, or required for the material, or upon the specification of the material under test.

CALCULATIONS AND REPORT

12. Sieve Analysis Values for the Portion Coarser than the No. 10 (2.00-mm) Sieve

12.1 Calculate the percentage passing the No. 10 sieve by dividing the mass passing the No. 10 sieve by the mass of soil originally split on the No. 10 sieve, and multiplying the result by 100. To obtain the mass passing the No. 10 sieve, subtract the mass retained on the No. 10 sieve from the original mass.

12.2 To secure the total mass of soil passing the No. 4 (4.75-mm) sieve, add to the mass of the material passing the No. 10 sieve the mass of the fraction passing the No. 4 sieve and retained on the No. 10 sieve. To secure the total mass of soil passing the ⅜-in. (9.5-mm) sieve, add to the total mass of soil passing the No. 4 sieve, the mass of the fraction passing the ⅜-in. sieve and retained on the No. 4 sieve. For the remaining sieves, continue the calculations in the same manner.

12.3 To determine the total percentage passing for each sieve, divide the total mass passing (see 12.2) by the total mass of sample and multiply the result by 100.

13. Hygroscopic Moisture Correction Factor

13.1 The hydroscopic moisture correction factor is the ratio between the mass of the oven-dried sample and the air-dry mass before drying. It is a number less than one, except when there is no hygroscopic moisture.

14. Percentages of Soil in Suspension

14.1 Calculate the oven-dry mass of soil used in the hydrometer analysis by multiplying the air-dry mass by the hygroscopic moisture correction factor.

14.2 Calculate the mass of a total sample represented by the mass of soil used in the hydrometer test, by dividing the oven-dry mass used by the percentage passing the No. 10 (2.00-mm) sieve, and multiplying the result by 100. This value is the weight W in the equation for percentage remaining in suspension.

14.3 The percentage of soil remaining in suspension at the level at which the hydrometer is measuring the density of the suspension may be calculated as follows (Note 13): For hydrometer 151H:

$$P = [(100\,000/W) \times G/(G - G_1)](R - G_1)$$

NOTE 13—The bracketed portion of the equation for hydrometer 151H is constant for a series of readings and may be calculated first and then multiplied by the portion in the parentheses.

For hydrometer 152H:

$$P = (Ra/W) \times 100$$

where:

a = correction faction to be applied to the reading of hydrometer 152H. (Values shown on the scale are computed using a specific gravity of 2.65. Correction factors are given in Table 1),

P = percentage of soil remaining in suspension at the level at which the hydrometer measures the density of the suspension,

R = hydrometer reading with composite correction applied (Section 7),

W = oven-dry mass of soil in a total test sample represented by mass of soil dispersed (see 14.2), g,

G = specific gravity of the soil particles, and

G_1 = specific gravity of the liquid in which soil particles are suspended. Use numerical value of one in both instances in the equation. In the first instance any possible variation produces no significant effect, and in the second instance, the composite correction for R is based on a value of one for G_1.

15. Diameter of Soil Particles

15.1 The diameter of a particle corresponding to the percentage indicated by a given hydrometer reading shall be calculated according to Stokes' law (Note 14), on the basis that a particle of this diameter was at the surface of the suspension at the beginning of sedimentation and had settled to the level at which the hydrometer is measuring the density of the suspension. According to Stokes' law:

$$D = \sqrt{[30n/980(G - G_1)]} \times \sqrt{L/T}$$

where:

D = diameter of particle, mm,

n = coefficient of viscosity of the suspending medium (in this case water) in poises (varies with changes in temperature of the suspending medium),

L = distance from the surface of the suspension to the level at which the density of the suspension is being measured, cm. (For a given hydrometer and sedimentation cylinder, values vary according to the hydrometer readings. This distance is known as effective depth (Table 2)),

T = interval of time from beginning of sedimentation to the taking of the reading, min,

G = specific gravity of soil particles, and

G_1 = specific gravity (relative density) of suspending medium (value may be used as 1.000 for all practical purposes).

NOTE 14—Since Stokes' law considers the terminal velocity of a single sphere falling in an infinity of liquid, the sizes calculated represent the diameter of spheres that would fall at the same rate as the soil particles.

15.2 For convenience in calculations the above equation may be written as follows:

$$D = K\sqrt{L/T}$$

where:

K = constant depending on the temperature of the suspension and the specific gravity of the soil particles. Values of K for a range of temperatures and specific gravities are given in Table 3. The value of K does not change for a series of readings constituting a test, while values of L and T do vary.

15.3 Values of D may be computed with sufficient accuracy, using an ordinary 10-in. slide rule.

NOTE 15—The value of L is divided by T using the A- and B-scales, the square root being indicated on the D-scale. Without ascertaining the value of the square root it may be multiplied by K, using either the C- or CI-scale.

16. Sieve Analysis Values for Portion Finer than No. 10 (2.00-mm) Sieve

16.1 Calculation of percentages passing the various sieves used in sieving the portion of the sample from the hydrometer test involves several steps. The first step is to calculate the mass of the fraction that would have been retained on the No. 10 sieve had it not been removed. This mass is equal to the total percentage retained on the No. 10 sieve (100 minus total percentage passing) times the mass of the total sample represented by the mass of soil used (as calculated in 14.2), and the result divided by 100.

16.2 Calculate next the total mass passing the No. 200 sieve. Add together the fractional masses retained on all the sieves, including the No. 10 sieve, and subtract this sum from the mass of the total sample (as calculated in 14.2).

16.3 Calculate next the total masses passing each of the other sieves, in a manner similar to that given in 12.2.

16.4 Calculate last the total percentages passing by dividing the total mass passing (as calculated in 16.3) by the total mass of sample (as calculated in 14.2), and multiply the result by 100.

17. Graph

17.1 When the hydrometer analysis is performed, a graph of the test results shall be made, plotting the diameters of the particles on a logarithmic scale as the abscissa and the percentages smaller than the corresponding diameters to an arithmetic scale as the ordinate. When the hydrometer analysis is not made on a portion of the soil, the preparation of the graph is optional, since values may be secured directly from tabulated data.

18. Report

18.1 The report shall include the following:

18.1.1 Maximum size of particles,

18.1.2 Percentage passing (or retained on) each sieve, which may be tabulated or presented by plotting on a graph (Note 16),

18.1.3 Description of sand and gravel particles:

18.1.3.1 Shape—rounded or angular,

18.1.3.2 Hardness—hard and durable, soft, or weathered and friable,

18.1.4 Specific gravity, if unusually high or low,

18.1.5 Any difficulty in dispersing the fraction passing the No. 10 (2.00-mm) sieve, indicating any change in type and amount of dispersing agent, and

18.1.6 The dispersion device used and the length of the dispersion period.

NOTE 16—This tabulation of graph represents the gradation of the sample tested. If particles larger than those contained in the sample were removed before testing, the report shall so state giving the amount and maximum size.

18.2 For materials tested for compliance with definite specifications, the fractions called for in such specifications shall be reported. The fractions smaller than the No. 10 sieve shall be read from the graph.

18.3 For materials for which compliance with definite specifications is not indicated and when the soil is composed almost entirely of particles passing the No. 4 (4.75-mm) sieve, the results read from the graph may be reported as follows:

(*1*) Gravel, passing 3-in. and retained on No. 4 sieve ..... %
(*2*) Sand, passing No. 4 sieve and retained on No. 200 sieve ..... %
  (*a*) Coarse sand, passing No. 4 sieve and retained on No. 10 sieve ..... %
  (*b*) Medium sand, passing No. 10 sieve and retained on No. 40 sieve ..... %
  (*c*) Fine sand, passing No. 40 sieve and retained on No. 200 sieve ..... %
(*3*) Silt size, 0.074 to 0.005 mm ..... %
(*4*) Clay size, smaller than 0.005 mm ..... %
  Colloids, smaller than 0.001 mm ..... %

18.4 For materials for which compliance with definite specifications is not indicated and when the soil contains material retained on the No. 4 sieve sufficient to require a sieve analysis on that portion, the results may be reported as follows (Note 17):

SIEVE ANALYSIS

Sieve Size	Percentage Passing
3-in.	.....
2-in.	.....
1½-in.	.....
1-in.	.....
⅜-in.	.....
⅜-in.	.....
No. 4 (4.75-mm)	.....
No. 10 (2.00-mm)	.....
No. 40 (425-μm)	.....
No. 200 (75-μm)	.....

HYDROMETER ANALYSIS

0.074 mm	.....
0.005 mm	.....
0.001 mm	.....

NOTE 17—No. 8 (2.36-mm) and No. 50 (300-μm) sieves may be substituted for No. 10 and No. 40 sieves.

TABLE 1 Values of Correction Factor, α, for Different Specific Gravities of Soil Particles[A]

Specific Gravity	Correction Factor[A]
2.95	0.94
2.90	0.95
2.85	0.96
2.80	0.97
2.75	0.98
2.70	0.99
2.65	1.00
2.60	1.01
2.55	1.02
2.50	1.03
2.45	1.05

[A] For use in equation for percentage of soil remaining in suspension when using Hydrometer 152H.

TABLE 2 Values of Effective Depth Based on Hydrometer and Sedimentation Cylinder of Specified Sizes[A]

Hydrometer 151H		Hydrometer 152H			
Actual Hydrometer Reading	Effective Depth, *L*, cm	Actual Hydrometer Reading	Effective Depth, *L*, cm	Actual Hydrometer Reading	Effective Depth, *L*, cm
1.000	16.3	0	16.3	31	11.2
1.001	16.0	1	16.1	32	11.1
1.002	15.8	2	16.0	33	10.9
1.003	15.5	3	15.8	34	10.7
1.004	15.2	4	15.6	35	10.6
1.005	15.0	5	15.5		
1.006	14.7	6	15.3	36	10.4
1.007	14.4	7	15.2	37	10.2
1.008	14.2	8	15.0	38	10.1
1.009	13.9	9	14.8	39	9.9
1.010	13.7	10	14.7	40	9.7
1.011	13.4	11	14.5	41	9.6
1.012	13.1	12	14.3	42	9.4
1.013	12.9	13	14.2	43	9.2
1.014	12.6	14	14.0	44	9.1
1.015	12.3	15	13.8	45	8.9
1.016	12.1	16	13.7	46	8.8
1.017	11.8	17	13.5	47	8.6
1.018	11.5	18	13.3	48	8.4
1.019	11.3	19	13.2	49	8.3
1.020	11.0	20	13.0	50	8.1
1.021	10.7	21	12.9	51	7.9
1.022	10.5	22	12.7	52	7.8
1.023	10.2	23	12.5	53	7.6
1.024	10.0	24	12.4	54	7.4
1.025	9.7	25	12.2	55	7.3
1.026	9.4	26	12.0	56	7.1
1.027	9.2	27	11.9	57	7.0
1.028	8.9	28	11.7	58	6.8
1.029	8.6	29	11.5	59	6.6
1.030	8.4	30	11.4	60	6.5

TABLE 2 Continued

Hydrometer 151H		Hydrometer 152 H			
Actual Hydrometer Reading	Effective Depth, *L*, cm	Actual Hydrometer Reading	Effective Depth, *L*, cm	Actual Hydrometer Reading	Effective Depth, *L*, cm
1.031	8.1				
1.032	7.8				
1.033	7.6				
1.034	7.3				
1.035	7.0				
1.036	6.8				
1.037	6.5				
1.038	6.2				

[A] Values of effective depth are calculated from the equation:

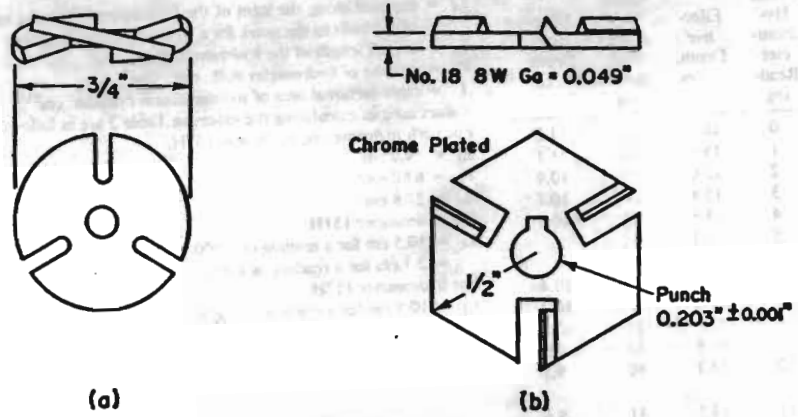
$$L = L_1 + \tfrac{1}{2}\,[L_2 - (V_B/A)]$$

where:
L = effective depth, cm,
L_1 = distance along the stem of the hydrometer from the top of the bulb to the mark for a hydrometer reading, cm,
L_2 = overall length of the hydrometer bulb, cm,
V_B = volume of hydrometer bulb, cm^3, and
A = cross-sectional area of sedimentation cylinder, cm^2

Values used in calculating the values in Table 2 are as follows:
For both hydrometers, 151H and 152H:
L_2 = 14.0 cm
V_B = 67.0 cm^3
A = 27.8 cm^2
For hydrometer 151H:
L_1 = 10.5 cm for a reading of 1.000
= 2.3 cm for a reading of 1.031
For hydrometer 152H:
L_1 = 10.5 cm for a reading of 0 g/litre
= 2.3 cm for a reading of 50 g/litre

TABLE 3 Values of K for Use in Equation for Computing Diameter of Particle in Hydrometer Analysis

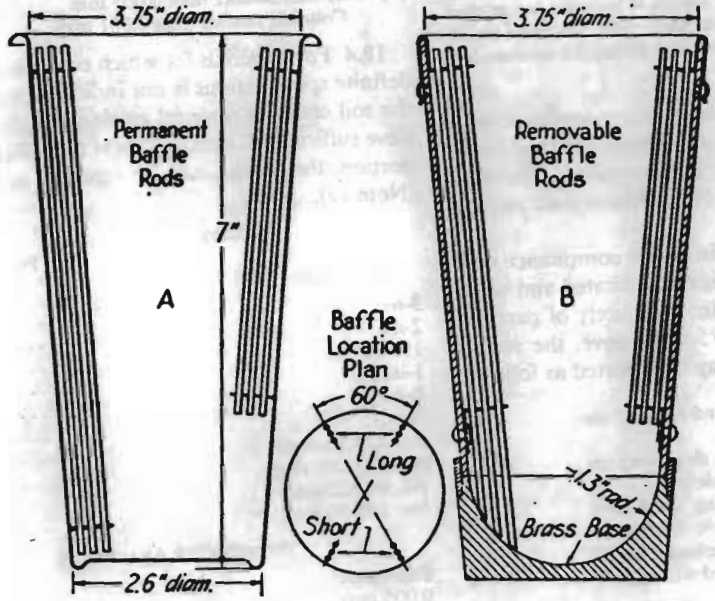
erature, °C	Specific Gravity of Soil Particles								
	2.45	2.50	2.55	2.60	2.65	2.70	2.75	2.80	2.85
16	0.01510	0.01505	0.01481	0.01457	0.01435	0.01414	0.01394	0.01374	0.01356
17	0.01511	0.01486	0.01462	0.01439	0.01417	0.01396	0.01376	0.01356	0.01338
18	0.01492	0.01467	0.01443	0.01421	0.01399	0.01378	0.01359	0.01339	0.01321
19	0.01474	0.01449	0.01425	0.01403	0.01382	0.01361	0.01342	0.1323	0.01305
20	0.01456	0.01431	0.01408	0.01386	0.01365	0.01344	0.01325	0.01307	0.01289
21	0.01438	0.01414	0.01391	0.01369	0.01348	0.01328	0.01309	0.01291	0.01273
22	0.01421	0.01397	0.01374	0.01353	0.01332	0.01312	0.01294	0.01276	0.01258
23	0.01404	0.01381	0.01358	0.01337	0.01317	0.01297	0.01279	0.01261	0.01243
24	0.01388	0.01365	0.01342	0.01321	0.01301	0.01282	0.01264	0.01246	0.01229
25	0.01372	0.01349	0.01327	0.01306	0.01286	0.01267	0.01249	0.01232	0.01215
26	0.01357	0.01334	0.01312	0.01291	0.01272	0.01253	0.01235	0.01218	0.01201
27	0.01342	0.01319	0.01297	0.01277	0.01258	0.01239	0.01221	0.01204	0.01188
28	0.01327	0.01304	0.01283	0.01264	0.01244	0.01255	0.01208	0.01191	0.01175
29	0.01312	0.01290	0.01269	0.01249	0.01230	0.01212	0.01195	0.01178	0.01162
30	0.01298	0.01276	0.01256	0.01236	0.01217	0.01199	0.01182	0.01165	0.01149



Metric Equivalents

in.	0.001	0.049	0.203	½	¾
mm	0.03	1.24	5.16	12.7	19.0

FIG. 1 Detail of Stirring Paddles



Metric Equivalents

in.	1.3	2.6	3.75
mm	33	66	95.2

FIG. 2 Dispersion Cups of Apparatus

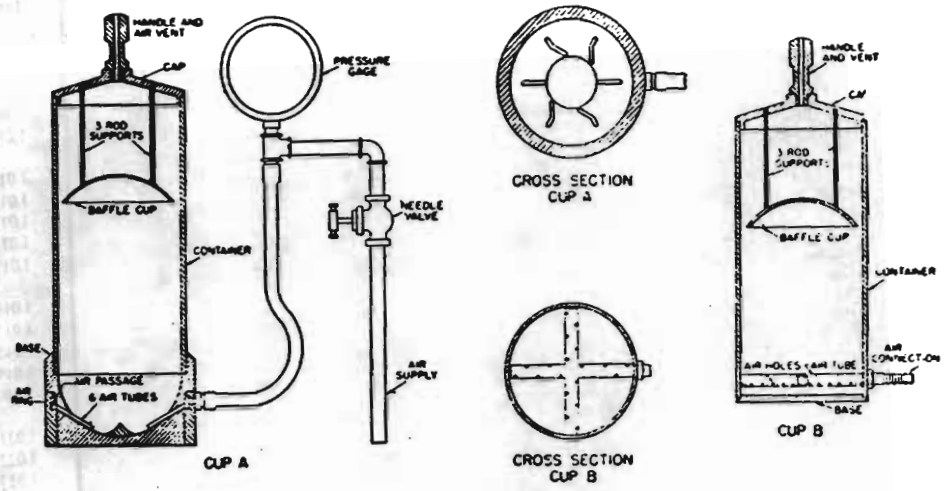
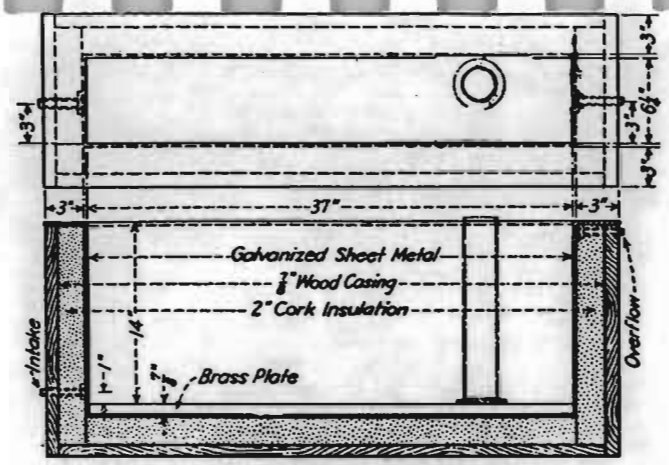


FIG. 3 Air-Jet Dispersion Cups of Apparatus B



Metric Equivalents

in.	⅛	1	3	6¼	14	37
mm	22.2	25.4	76.2	158.2	356	940

FIG. 4 Insulated Water Bath

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Standard Test Method for LIQUID LIMIT OF SOILS

This method covers the determination of the liquid limit of soils using a mechanical device, securing the results of at least three trials, and the plotting of a flow curve.

Formerly under the jurisdiction of ASTM Committee D-18 on Soil and Rock.

This test method was withdrawn in 1983 and replaced by D 4318, Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.[1]

[1] *Annual Book of ASTM Standards*, Vol 04.08.

INDUSTRIAL SOURCE COMPLEX MODEL- SHORT TERM
MATTIACE PETROCHEMICAL RISK ASSESSMENT

ISCST - VERSION 3.4 (DATED 88348)

IBM-PC VERSION (1.64)
(C) COPYRIGHT 1988, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 5222 SOLD TO I.T. CORPORATION
RUN BEGAN ON 11-28-90 AT 12:14:13

*** MATTIACE - 25 AREA SOURCES WITH UNITY EMISSIONS ***

CALCULATE (CONCENTRATION=1,DEPOSITION=2) ISW(1) = 1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4) ISW(2) = 3
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2) ISW(3) = 1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0) ISW(4) = 0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0) ISW(5) = 0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2) ISW(6) = 1

COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)
WITH THE FOLLOWING TIME PERIODS:
HOURLY (YES=1,NO=0) ISW(7) = 1
2-HOUR (YES=1,NO=0) ISW(8) = 0
3-HOUR (YES=1,NO=0) ISW(9) = 0
4-HOUR (YES=1,NO=0) ISW(10) = 0
6-HOUR (YES=1,NO=0) ISW(11) = 0
8-HOUR (YES=1,NO=0) ISW(12) = 0
12-HOUR (YES=1,NO=0) ISW(13) = 0
24-HOUR (YES=1,NO=0) ISW(14) = 0
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0) ISW(15) = 0

PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE
SPECIFIED BY ISW(7) THROUGH ISW(14):
DAILY TABLES (YES=1,NO=0) ISW(16) = 0
HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0) ISW(17) = 1
MAXIMUM 50 TABLES (YES=1,NO=0) ISW(18) = 0
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2) ISW(19) = 1
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3) ISW(20) = 3
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3) ISW(21) = 1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3) ISW(22) = 1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0) ISW(23) = 0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2) ISW(24) = 2
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1) ISW(25) = 1
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2) ISW(26) = 2
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2) ISW(27) = 2
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2) ISW(28) = 2
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER) ISW(29) = 2
DEBUG OPTION CHOSEN (YES=1,NO=2) ISW(30) = 2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0) ISW(31) = 0

NUMBER OF INPUT SOURCES NSOURC = 28
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES) NGROUP = 0
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS) IPERD = 0
NUMBER OF X (RANGE) GRID VALUES NXPNTS = 51
NUMBER OF Y (THETA) GRID VALUES NYPNTS = 51
NUMBER OF DISCRETE RECEPTORS NXWYPT = 6
SOURCE EMISSION RATE UNITS CONVERSION FACTOR TK =.10000E+04
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED ZR = 10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA IMET = 9
DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION DECAY = .000000E+00
SURFACE STATION NO. ISS = 14732
YEAR OF SURFACE DATA ISY = 86
UPPER AIR STATION NO. IUS = 93755
YEAR OF UPPER AIR DATA IUY = 86
ALLOCATED DATA STORAGE LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN MIMIT = 26399 WORDS

*** METEOROLOGICAL DAYS TO BE PROCESSED ***
(IF=1)

1 1 1

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** X-COORDINATES OF RECTANGULAR GRID SYSTEM ***
(METERS)

-250.0, -240.0, -230.0, -220.0, -210.0, -200.0, -190.0, -180.0, -170.0, -160.0,
-150.0, -140.0, -130.0, -120.0, -110.0, -100.0, -90.0, -80.0, -70.0, -60.0,
-50.0, -40.0, -30.0, -20.0, -10.0, .0, 10.0, 20.0, 30.0, 40.0,
50.0, 60.0, 70.0, 80.0, 90.0, 100.0, 110.0, 120.0, 130.0, 140.0,
150.0, 160.0, 170.0, 180.0, 190.0, 200.0, 210.0, 220.0, 230.0, 240.0,
250.0,

*** Y-COORDINATES OF RECTANGULAR GRID SYSTEM ***
(METERS)

-250.0, -240.0, -230.0, -220.0, -210.0, -200.0, -190.0, -180.0, -170.0, -160.0,
-150.0, -140.0, -130.0, -120.0, -110.0, -100.0, -90.0, -80.0, -70.0, -60.0,
-50.0, -40.0, -30.0, -20.0, -10.0, .0, 10.0, 20.0, 30.0, 40.0,
50.0, 60.0, 70.0, 80.0, 90.0, 100.0, 110.0, 120.0, 130.0, 140.0,
150.0, 160.0, 170.0, 180.0, 190.0, 200.0, 210.0, 220.0, 230.0, 240.0,
250.0,

*** X,Y COORDINATES OF DISCRETE RECEPTORS ***
(METERS)

(39.0, -8.5), (102.4, 12.8), (76.8, 112.2), (14.6, 51.2), (12.2, 232.8),
(-140.1, 320.8), (

*** SOURCE DATA ***

SOURCE NUMBER	T Y P E	W A K E	EMISSION RATE PART. CATS.	EMISSION RATE (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	VERT.DIM HEIGHT (METERS)	TEMP. EXIT VEL. TYPE=0 (DEG.K); TYPE=0 (M/SEC); TYPE=1	HORZ.DIM BLDG. TYPE=1,2	DIAMETER BLDG. TYPE=0	HEIGHT BLDG. TYPE=0	LENGTH BLDG. TYPE=0	WIDTH BLDG. TYPE=0
1	2	0	0	.10000E+01	.0	.0	.0	.00	.00	20.12	.00	.00	.00	.00
2	2	0	0	.10000E+01	20.1	.0	.0	.00	.00	20.12	.00	.00	.00	.00
3	2	0	0	.10000E+01	40.2	.0	.0	.00	.00	20.12	.00	.00	.00	.00
4	2	0	0	.10000E+01	60.3	.0	.0	.00	.00	20.12	.00	.00	.00	.00
5	2	0	0	.10000E+01	80.5	.0	.0	.00	.00	10.06	.00	.00	.00	.00
6	2	0	0	.10000E+01	.0	20.1	.0	.00	.00	20.12	.00	.00	.00	.00
7	2	0	0	.10000E+01	20.1	20.1	.0	.00	.00	20.12	.00	.00	.00	.00
8	2	0	0	.10000E+01	40.2	20.1	.0	.00	.00	20.12	.00	.00	.00	.00
9	2	0	0	.10000E+01	60.3	20.1	.0	.00	.00	20.12	.00	.00	.00	.00
10	2	0	0	.10000E+01	80.5	20.1	.0	.00	.00	20.12	.00	.00	.00	.00
11	2	0	0	.10000E+01	.0	40.2	.0	.00	.00	20.12	.00	.00	.00	.00
12	2	0	0	.10000E+01	20.1	40.2	.0	.00	.00	20.12	.00	.00	.00	.00
13	2	0	0	.10000E+01	40.2	40.2	.0	.00	.00	20.12	.00	.00	.00	.00
14	2	0	0	.10000E+01	60.3	40.2	.0	.00	.00	20.12	.00	.00	.00	.00
15	2	0	0	.10000E+01	80.5	40.2	.0	.00	.00	20.12	.00	.00	.00	.00
16	2	0	0	.10000E+01	.0	60.3	.0	.00	.00	20.12	.00	.00	.00	.00
17	2	0	0	.10000E+01	20.1	60.3	.0	.00	.00	20.12	.00	.00	.00	.00
18	2	0	0	.10000E+01	40.2	60.3	.0	.00	.00	20.12	.00	.00	.00	.00
19	2	0	0	.10000E+01	60.3	60.3	.0	.00	.00	20.12	.00	.00	.00	.00
20	2	0	0	.10000E+01	80.5	60.3	.0	.00	.00	20.12	.00	.00	.00	.00
21	2	0	0	.10000E+01	.0	80.5	.0	.00	.00	20.12	.00	.00	.00	.00
22	2	0	0	.10000E+01	20.1	80.5	.0	.00	.00	20.12	.00	.00	.00	.00
23	2	0	0	.10000E+01	40.2	80.5	.0	.00	.00	20.12	.00	.00	.00	.00
24	2	0	0	.10000E+01	60.3	80.5	.0	.00	.00	20.12	.00	.00	.00	.00
25	2	0	0	.10000E+01	80.5	80.5	.0	.00	.00	20.12	.00	.00	.00	.00
26	2	0	0	.10000E+01	90.5	.0	.0	.00	.00	10.06	.00	.00	.00	.00
27	2	0	0	.10000E+01	80.5	10.1	.0	.00	.00	10.06	.00	.00	.00	.00
28	2	0	0	.10000E+01	90.5	10.1	.0	.00	.00	10.06	.00	.00	.00	.00

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 001 METERS OR THREE BUILDING HEIGHTS IN DISTANCE. NO AVERAGE CONCENTRATION IS CALCULATED *

SOURCE NUMBER	- - RECEPTOR LOCATION - - X OR RANGE (METERS)	Y (METERS) OR DIRECTION (DEGREES)	DISTANCE BETWEEN (METERS)
1	10.0	.0	-1.29
1	.0	10.0	-1.29
1	10.0	10.0	-11.27
1	20.0	10.0	-1.41
1	10.0	20.0	-1.41
2	30.0	.0	-1.29
2	20.0	10.0	-1.17
2	30.0	10.0	-11.16
2	40.0	10.0	-1.53
2	30.0	20.0	-1.41
3	50.0	.0	-1.29
3	40.0	10.0	-1.06
3	50.0	10.0	-11.06
3	60.0	10.0	-1.64
3	50.0	20.0	-1.41
4	70.0	.0	-1.28
4	60.0	10.0	-.94
4	70.0	10.0	-10.94
4	80.0	10.0	-1.76
4	70.0	20.0	-1.40
6	10.0	20.0	-1.17
6	.0	30.0	-1.29
6	10.0	30.0	-11.16
6	20.0	30.0	-1.41
6	10.0	40.0	-1.53
7	30.0	20.0	-1.17
7	20.0	30.0	-1.17
7	30.0	30.0	-11.10
7	40.0	30.0	-1.53
7	30.0	40.0	-1.53
8	50.0	20.0	-1.17
8	40.0	30.0	-1.06
8	50.0	30.0	-11.01
8	60.0	30.0	-1.64
8	50.0	40.0	-1.53
9	70.0	20.0	-1.16
9	60.0	30.0	-.94
9	70.0	30.0	-10.90
9	80.0	30.0	-1.76
9	70.0	40.0	-1.52
10	90.0	20.0	-1.16

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 001 METERS OR THREE BUILDING HEIGHTS IN DISTANCE. NO AVERAGE CONCENTRATION IS CALCULATED *

SOURCE NUMBER	- - RECEPTOR LOCATION - - X OR RANGE (METERS)	Y (METERS) OR DIRECTION (DEGREES)	DISTANCE BETWEEN (METERS)
10	80.0	30.0	-.82
10	90.0	30.0	-10.79
10	100.0	30.0	-1.88
10	90.0	40.0	-1.52
11	10.0	40.0	-1.06
11	.0	50.0	-1.29
11	10.0	50.0	-11.06
11	20.0	50.0	-1.41
11	10.0	60.0	-1.64
11	14.6	51.2	-6.69
12	30.0	40.0	-1.06
12	20.0	50.0	-1.17
12	30.0	50.0	-11.01
12	40.0	50.0	-1.53
12	30.0	60.0	-1.64
13	50.0	40.0	-1.06
13	40.0	50.0	-1.06
13	50.0	50.0	-10.94
13	60.0	50.0	-1.64
13	50.0	60.0	-1.64
14	70.0	40.0	-1.05
14	60.0	50.0	-.94
14	70.0	50.0	-10.85
14	80.0	50.0	-1.76
14	70.0	60.0	-1.63
15	90.0	40.0	-1.05
15	80.0	50.0	-.82
15	90.0	50.0	-10.75
15	100.0	50.0	-1.88
15	90.0	60.0	-1.63
16	10.0	60.0	-.94
16	.0	70.0	-1.28
16	10.0	70.0	-10.94
16	20.0	70.0	-1.40
16	10.0	80.0	-1.76
17	30.0	60.0	-.94
17	20.0	70.0	-1.16
17	30.0	70.0	-10.90
17	40.0	70.0	-1.52
17	30.0	80.0	-1.76
18	50.0	60.0	-.94

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 001 METERS OR THREE BUILDING HEIGHTS IN DISTANCE. NO AVERAGE CONCENTRATION IS CALCULATED *

SOURCE NUMBER	- - RECEPTOR LOCATION - - X OR RANGE (METERS)	Y (METERS) OR DIRECTION (DEGREES)	DISTANCE BETWEEN (METERS)
18	40.0	70.0	-1.05
18	50.0	70.0	-10.85
18	60.0	70.0	-1.63
18	50.0	80.0	-1.76
19	70.0	60.0	-.93
19	60.0	70.0	-.93
19	70.0	70.0	-10.77
19	80.0	70.0	-1.75
19	70.0	80.0	-1.75
20	90.0	60.0	-.93
20	80.0	70.0	-.81
20	90.0	70.0	-10.68
20	100.0	70.0	-1.87
20	90.0	80.0	-1.75
21	10.0	80.0	-.82
21	.0	90.0	-1.28
21	10.0	90.0	-10.82
21	20.0	90.0	-1.40
21	10.0	100.0	-1.88
22	30.0	80.0	-.82
22	20.0	90.0	-1.16
22	30.0	90.0	-10.79
22	40.0	90.0	-1.52
22	30.0	100.0	-1.88
23	50.0	80.0	-.82
23	40.0	90.0	-1.05
23	50.0	90.0	-10.75
23	60.0	90.0	-1.63
23	50.0	100.0	-1.88
24	70.0	80.0	-.81
24	60.0	90.0	-.93
24	70.0	90.0	-10.68
24	80.0	90.0	-1.75
24	70.0	100.0	-1.87
25	90.0	80.0	-.81
25	80.0	90.0	-.81
25	90.0	90.0	-10.60
25	100.0	90.0	-1.87
25	90.0	100.0	-1.87
26	100.0	10.0	.99
27	90.0	20.0	.98

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 001 METERS OR THREE BUILDING HEIGHTS IN DISTANCE. NO AVERAGE CONCENTRATION IS CALCULATED *

SOURCE NUMBER	- - RECEPTOR LOCATION - - X Y (METERS) OR RANGE (METERS)	OR DIRECTION (DEGREES)	DISTANCE BETWEEN (METERS)
28	100.0	20.0	.94

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -250.0	-240.0	-230.0	-220.0	-210.0
250.0 /	3124.26300 (350,23)	3220.92200 (17, 1)	3442.68500 (17, 1)	3625.51900 (17, 1)	3756.70600 (17, 1)
240.0 /	3326.96300 (350,23)	3362.25600 (350,23)	3352.87400 (350,23)	3597.45800 (17, 1)	3818.08400 (17, 1)
230.0 /	3426.57100 (350,23)	3537.26100 (350,23)	3608.07000 (350,23)	3632.02800 (350,23)	3753.72600 (17, 1)
220.0 /	3411.43900 (350,23)	3593.87200 (350,23)	3745.65300 (350,23)	3858.27100 (350,23)	3923.09600 (350,23)
210.0 /	3533.15700 (137,20)	3608.11900 (137,20)	3750.06500 (350,23)	3947.66800 (350,23)	4108.41000 (350,23)
200.0 /	3595.91000 (137,20)	3743.63600 (137,20)	3864.23200 (137,20)	3951.46400 (137,20)	4138.33300 (350,23)
190.0 /	3650.71900 (91, 3)	3745.71300 (91, 3)	3933.28100 (137,20)	4104.56000 (137,20)	4245.79400 (137,20)
180.0 /	3696.50600 (91, 3)	3858.90400 (91, 3)	4002.99300 (91, 3)	4124.13700 (91, 3)	4320.15800 (137,20)
170.0 /	3758.73900 (84, 3)	3911.94400 (84, 3)	4050.07400 (84, 3)	4226.69500 (91, 3)	4404.86800 (91, 3)
160.0 /	3688.04500 (84, 3)	3895.79700 (84, 3)	4096.37000 (84, 3)	4286.69500 (84, 3)	4463.48200 (84, 3)
150.0 /	3481.78200 (84, 3)	3730.65800 (84, 3)	3980.10600 (84, 3)	4227.39600 (84, 3)	4469.76900 (84, 3)
140.0 /	3747.67000 (361, 3)	3839.02100 (361, 3)	3924.21700 (361, 3)	4007.74700 (84, 3)	4300.05100 (84, 3)
130.0 /	3912.52100 (361, 3)	4052.00600 (361, 3)	4189.95200 (361, 3)	4325.96100 (361, 3)	4459.66700 (361, 3)
120.0 /	3933.91200 (258, 2)	4095.59900 (361, 3)	4276.12900 (361, 3)	4458.65700 (361, 3)	4643.22900 (361, 3)
110.0 /	3975.10200 (258, 3)	4132.94000 (258, 3)	4304.79800 (258, 2)	4487.33300 (258, 2)	4674.59700 (258, 2)
100.0 /	3920.62900 (258, 3)	4105.64200 (258, 3)	4296.71700 (258, 3)	4494.04600 (258, 3)	4698.03700 (258, 3)
90.0 /	3715.52100 (258, 3)	3920.03000 (258, 3)	4133.34100 (258, 3)	4355.38900 (258, 3)	4586.17600 (258, 3)
80.0 /	3373.62400 (258, 3)	3588.13800 (258, 3)	3815.19300 (258, 3)	4054.82700 (258, 3)	4306.98500 (258, 3)
70.0 /	2916.38500 (258, 3)	3127.50200 (258, 3)	3355.08700 (258, 3)	3599.84900 (258, 3)	3862.34300 (258, 3)
60.0 /	2777.54800 (197, 5)	2939.04100 (197, 5)	3115.12600 (197, 5)	3307.41500 (197, 5)	3517.69100 (197, 5)
50.0 /	3282.66800 (197, 5)	3462.22100 (197, 5)	3655.36500 (197, 5)	3863.16300 (197, 5)	4086.71800 (197, 5)
40.0 /	3673.23300 (197, 5)	3857.02000 (197, 5)	4052.10500 (197, 5)	4259.07500 (197, 5)	4478.54100 (197, 5)
30.0 /	3923.61900 (197, 5)	4101.50000 (197, 5)	4288.59000 (197, 5)	4485.35400 (197, 5)	4692.36400 (197, 5)

20.0 /	4021.86500 (197, 5)	4187.35200 (197, 5)	4360.89300 (197, 5)	4543.14900 (197, 5)	4734.97200 (197, 5)
10.0 /	3961.27400 (197, 5)	4108.60600 (197, 5)	4263.30800 (197, 5)	4426.29400 (197, 5)	4598.70000 (197, 5)
.0 /	3738.88700 (197, 5)	3860.32900 (197, 5)	3987.76300 (197, 5)	4212.19800 (295, 7)	4465.74100 (295, 7)
-10.0 /	3782.98200 (295, 7)	3989.44100 (295, 7)	4201.26200 (295, 7)	4418.08900 (295, 7)	4639.76700 (295, 7)
-20.0 /	3922.39400 (295, 7)	4098.67700 (295, 7)	4276.90800 (295, 7)	4456.93200 (295, 7)	4646.76500 (77, 3)
-30.0 /	3918.82000 (77, 3)	4077.74000 (77, 3)	4242.89100 (77, 6)	4422.96100 (77, 6)	4610.74500 (77, 7)
-40.0 /	3881.92400 (77, 6)	4043.25800 (77, 7)	4201.60200 (77, 7)	4363.41400 (77, 4)	4568.05100 (77, 4)
-50.0 /	3834.62700 (77, 4)	4002.11500 (77, 4)	4162.52800 (77, 4)	4313.91400 (77, 4)	4518.37800 (84, 5)
-60.0 /	3787.45300 (77, 4)	3953.20300 (84, 5)	4117.55100 (84, 5)	4286.22600 (77, 5)	4458.56700 (77, 5)
-70.0 /	3759.69000 (77, 5)	3909.24000 (77, 5)	4043.21300 (77, 5)	4227.06300 (84, 6)	4400.49100 (84, 6)
-80.0 /	3699.17300 (84, 6)	3857.81000 (84, 6)	4005.40500 (118, 5)	4163.87900 (118, 5)	4296.11300 (118, 5)
-90.0 /	3662.32100 (118, 5)	3793.11400 (118, 5)	3899.16500 (118, 5)	3975.28000 (118, 5)	4025.06900 (332, 3)
-100.0 /	3554.84600 (118, 5)	3613.65000 (118, 5)	3640.86100 (118, 5)	3899.82300 (332, 3)	4142.84200 (332, 3)
-110.0 /	3318.59500 (118, 5)	3534.13300 (332, 3)	3755.25400 (332, 3)	3948.21500 (332, 3)	4103.46200 (332, 3)
-120.0 /	3417.06300 (332, 3)	3595.59300 (332, 3)	3742.75000 (332, 3)	3850.06600 (332, 3)	3909.00500 (332, 3)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -250.0	-240.0	-230.0	-220.0	-210.0
-130.0 /	3425.24600 (332, 3)	3531.46000 (332, 3)	3597.28400 (332, 3)	3627.79000 (138, 3)	3873.97200 (138, 3)
-140.0 /	3318.81000 (332, 3)	3349.51400 (332, 3)	3484.29900 (138, 3)	3689.26700 (138, 3)	3847.48400 (138, 3)
-150.0 /	3135.98700 (138, 3)	3339.70000 (138, 3)	3507.97600 (138, 3)	3629.75900 (138, 3)	3694.42400 (138, 3)
-160.0 /	3195.55500 (138, 3)	3331.45500 (138, 3)	3421.96000 (138, 3)	3458.36600 (138, 3)	3627.79000 (301,23)
-170.0 /	3160.75700 (138, 3)	3224.61700 (138, 3)	3258.12200 (301,23)	3444.03600 (301,23)	3575.16200 (301,23)
-180.0 /	3037.96800 (138, 3)	3112.09400 (301,23)	3271.49400 (301,23)	3379.05000 (301,23)	3424.09800 (301,23)
-190.0 /	2973.31500 (301,23)	3109.54400 (301,23)	3196.94600 (301,23)	3243.82900 (116,22)	3393.43000 (116,22)
-200.0 /	2957.57500 (301,23)	3027.74800 (301,23)	3083.75200 (116,22)	3215.94600 (116,22)	3307.51500 (132, 1)
-210.0 /	2870.44400 (301,23)	2935.18000 (116,22)	3052.17600 (116,22)	3135.79400 (132, 1)	3192.62700 (132, 1)
-220.0 /	2797.07600 (116,22)	2900.76300 (116,22)	2977.54300 (132, 1)	3027.97800 (132, 1)	3033.91700 (120,20)
-230.0 /	2760.52200 (116,22)	2831.38700 (132, 1)	2876.24600 (132, 1)	2873.24300 (120,20)	3031.86900 (120,20)
-240.0 /	2696.13100 (132, 1)	2736.11200 (132, 1)	2725.23100 (120,20)	2876.55500 (120,20)	2970.84000 (120,20)
-250.0 /	2606.42400 (132, 1)	2593.34600 (132, 1)	2732.91500 (120,20)	2825.92000 (120,20)	2858.31000 (120,20)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -200.0	-190.0	-180.0	-170.0	-160.0
250.0 /	3824.08700 (17, 1)	3855.91800 (16,24)	4117.86700 (16,24)	4299.00200 (16,24)	4377.92400 (16,24)
240.0 /	3986.27700 (17, 1)	4087.39400 (17, 1)	4108.24400 (17, 1)	4368.84200 (16,24)	4583.10800 (16,24)
230.0 /	4017.05500 (17, 1)	4228.26600 (17, 1)	4369.97500 (17, 1)	4425.54800 (17, 1)	4642.36800 (16,24)
220.0 /	3931.86600 (350,23)	4221.33800 (17, 1)	4482.17500 (17, 1)	4672.39300 (17, 1)	4771.35900 (17, 1)
210.0 /	4222.11700 (350,23)	4278.33500 (350,23)	4429.62000 (17, 1)	4747.17100 (17, 1)	4994.92000 (17, 1)
200.0 /	4353.12000 (350,23)	4523.78400 (350,23)	4637.87400 (350,23)	4682.27900 (350,23)	5022.11000 (17, 1)
190.0 /	4349.52200 (137,20)	4586.42000 (350,23)	4821.53400 (350,23)	5004.05400 (350,23)	5118.14100 (350,23)
180.0 /	4520.90400 (137,20)	4689.08600 (137,20)	4815.70800 (137,20)	5108.05200 (350,23)	5368.68900 (350,23)
170.0 /	4560.02200 (91, 3)	4766.43800 (137,20)	5004.76000 (137,20)	5209.07700 (137,20)	5376.37200 (350,23)
160.0 /	4643.70800 (91, 3)	4864.56600 (91, 3)	5064.06600 (91, 3)	5284.93600 (137,20)	5572.17300 (137,20)
150.0 /	4704.46800 (84, 3)	4928.67000 (84, 3)	5139.23200 (84, 3)	5392.07800 (91, 3)	5649.34200 (91, 3)
140.0 /	4592.78100 (84, 3)	4883.59100 (84, 3)	5170.49900 (84, 3)	5451.82300 (84, 3)	5725.87200 (84, 3)
130.0 /	4590.64500 (361, 3)	4718.32800 (361, 3)	4999.66700 (84, 3)	5346.21900 (84, 3)	5693.78600 (84, 3)
120.0 /	4830.14700 (361, 3)	5019.98800 (361, 3)	5213.54800 (361, 3)	5411.79600 (361, 3)	5615.72700 (361, 3)
110.0 /	4867.33300 (258, 2)	5096.84900 (361, 3)	5338.55300 (361, 3)	5588.90600 (361, 3)	5850.33100 (361, 3)
100.0 /	4909.41600 (258, 3)	5129.29700 (258, 3)	5361.35100 (258, 2)	5616.84800 (258, 2)	5886.18100 (258, 2)
90.0 /	4825.89300 (258, 3)	5075.00800 (258, 3)	5334.44300 (258, 3)	5605.67700 (258, 3)	5890.92100 (258, 3)
80.0 /	4571.57600 (258, 3)	4848.53300 (258, 3)	5137.97600 (258, 3)	5440.38200 (258, 3)	5756.81000 (258, 3)
70.0 /	4142.94200 (258, 3)	4441.82700 (258, 3)	4759.02000 (258, 3)	5094.48300 (258, 3)	5448.30100 (258, 3)
60.0 /	3747.90800 (197, 5)	4000.18800 (197, 5)	4276.81000 (197, 5)	4580.19200 (197, 5)	4912.86800 (197, 5)
50.0 /	4327.16900 (197, 5)	4585.68600 (197, 5)	4863.48200 (197, 5)	5161.83200 (197, 5)	5482.14600 (197, 5)
40.0 /	4711.15900 (197, 5)	4957.67500 (197, 5)	5218.98800 (197, 5)	5496.26200 (197, 5)	5791.05300 (197, 5)
30.0 /	4910.32000 (197, 5)	5140.14700 (197, 5)	5383.07300 (197, 5)	5640.73900 (197, 5)	5915.33300 (197, 5)
20.0 /	4937.44300 (197, 5)	5151.94600 (197, 5)	5380.22800 (197, 5)	5624.48100 (197, 5)	5887.43700 (197, 5)
10.0 /	4781.92300 (197, 5)	4977.68800 (197, 5)	5188.09000 (197, 5)	5415.65400 (197, 5)	5696.82900 (295, 7)
.0 /	4727.16000 (295, 7)	4996.35000 (295, 7)	5273.71800 (295, 7)	5560.36300 (295, 7)	5858.25600 (295, 7)
-10.0 /	4866.48900 (295, 7)	5098.87800 (295, 7)	5338.09600 (295, 7)	5586.23400 (77, 3)	5862.75000 (77, 3)
-20.0 /	4852.21000 (77, 3)	5069.14100 (77, 6)	5303.08600 (77, 6)	5555.90200 (77, 7)	5823.23700 (77, 7)
-30.0 /	4813.15400 (77, 7)	5013.91800 (77, 7)	5257.97900 (77, 4)	5511.44500 (77, 4)	5764.16700 (77, 4)
-40.0 /	4767.15000 (77, 4)	4960.43400 (84, 5)	5210.15000 (84, 5)	5453.02300 (77, 5)	5721.84300 (77, 5)
-50.0 /	4714.40800 (84, 5)	4926.46300 (77, 5)	5131.71700 (77, 5)	5391.45100 (84, 6)	5651.40000 (118, 5)
-60.0 /	4645.98700 (84, 6)	4861.75500 (84, 6)	5081.14500 (118, 5)	5293.60600 (118, 5)	5472.68100 (118, 5)
-70.0 /	4589.72700 (118, 5)	4756.41600 (118, 5)	4889.18400 (118, 5)	5009.89000 (332, 3)	5384.33600 (332, 3)
-80.0 /	4395.94400 (118, 5)	4479.34200 (332, 3)	4810.90600 (332, 3)	5110.22400 (332, 3)	5362.90400 (332, 3)
-90.0 /	4321.45600 (332, 3)	4589.94400 (332, 3)	4818.44700 (332, 3)	4993.04000 (332, 3)	5097.92300 (332, 3)
-100.0 /	4352.10100 (332, 3)	4516.19200 (332, 3)	4622.70800 (332, 3)	4794.22300 (138, 3)	5102.84000 (138, 3)
-110.0 /	4210.85900 (332, 3)	4260.07700 (332, 3)	4549.48700 (138, 3)	4793.13300 (138, 3)	4956.24300 (138, 3)
-120.0 /	4060.42700 (138, 3)	4308.82000 (138, 3)	4496.22400 (138, 3)	4604.68900 (138, 3)	4810.73200 (301,23)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	-200.0	-190.0	-180.0	-170.0	-160.0
-130.0 /	4074.26200 (138, 3)	4213.59700 (138, 3)	4277.31800 (138, 3)	4524.82000 (301,23)	4709.05900 (301,23)
-140.0 /	3946.18200 (138, 3)	4031.42200 (301,23)	4259.85600 (301,23)	4405.09900 (301,23)	4550.21000 (116,22)
-150.0 /	3823.37800 (301,23)	4014.23300 (301,23)	4127.09500 (301,23)	4275.36300 (116,22)	4433.47400 (132, 1)
-160.0 /	3786.46300 (301,23)	3872.42100 (301,23)	4024.90600 (116,22)	4164.77600 (132, 1)	4272.40200 (132, 1)
-170.0 /	3638.76500 (301,23)	3795.98400 (116,22)	3920.59100 (132, 1)	4014.70700 (132, 1)	4086.83400 (120,20)
-180.0 /	3586.18300 (116,22)	3697.93000 (132, 1)	3780.52500 (132, 1)	3835.90500 (120,20)	4033.98500 (120,20)
-190.0 /	3494.28400 (132, 1)	3566.99700 (132, 1)	3607.60700 (120,20)	3797.61500 (120,20)	3887.42600 (120,20)
-200.0 /	3371.71400 (132, 1)	3399.29400 (120,20)	3581.23300 (120,20)	3674.07100 (120,20)	3664.60700 (120,20)
-210.0 /	3208.70900 (120,20)	3382.68600 (120,20)	3477.23200 (120,20)	3479.90400 (120,20)	3566.90800 (128, 5)
-220.0 /	3200.10500 (120,20)	3295.32400 (120,20)	3307.91700 (120,20)	3339.38500 (128, 5)	3532.97400 (128, 5)
-230.0 /	3126.93800 (120,20)	3147.60100 (120,20)	3128.64000 (128, 5)	3327.70700 (128, 5)	3438.51100 (128, 5)
-240.0 /	2998.01400 (120,20)	2952.20100 (120,20)	3135.05300 (128, 5)	3259.66700 (128, 5)	3293.28000 (128, 5)
-250.0 /	2824.28500 (120,20)	2954.58300 (128, 5)	3089.28500 (128, 5)	3143.12700 (128, 5)	3108.05400 (128, 5)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	-150.0	-140.0	-130.0	-120.0	-110.0
250.0 /	4593.81500 (179, 4)	4683.39900 (179, 4)	4625.68100 (179, 4)	4418.72100 (179, 4)	4078.60800 (179, 4)
240.0 /	4685.01300 (16,24)	4910.47900 (179, 4)	5009.04900 (179, 4)	4941.37700 (179, 4)	4707.00600 (179, 4)
230.0 /	4896.06400 (16,24)	5026.24800 (16,24)	5263.47200 (179, 4)	5372.44000 (179, 4)	5292.73400 (179, 4)
220.0 /	4941.18200 (16,24)	5242.05100 (16,24)	5407.24900 (16,24)	5659.25900 (179, 4)	5780.34100 (179, 4)
210.0 /	5147.73200 (17, 1)	5268.47600 (16,24)	5626.13000 (16,24)	5835.03000 (16,24)	6106.06800 (179, 4)
200.0 /	5337.43600 (17, 1)	5556.58200 (17, 1)	5647.81200 (17, 1)	6054.50000 (16,24)	6318.50600 (16,24)
190.0 /	5305.62800 (17, 1)	5699.38500 (17, 1)	5999.54300 (17, 1)	6165.74800 (17, 1)	6534.82600 (16,24)
180.0 /	5566.75000 (350,23)	5680.93800 (350,23)	6079.84000 (17, 1)	6477.79300 (17, 1)	6740.74000 (17, 1)
170.0 /	5722.64700 (350,23)	6017.63400 (350,23)	6237.81600 (350,23)	6477.84800 (17, 1)	6991.96100 (17, 1)
160.0 /	5826.24800 (137,20)	6057.73800 (350,23)	6459.02300 (350,23)	6803.46100 (350,23)	7056.98200 (350,23)
150.0 /	5892.92900 (137,20)	6245.16600 (137,20)	6569.53100 (137,20)	6881.34400 (350,23)	7362.13600 (350,23)

140.0 /	6000.51000 (91, 3)	6332.57800 (91, 3)	6652.51800 (91, 3)	7055.46300 (137,20)	7481.62400 (137,20)
130.0 /	6042.67500 (84, 3)	6393.94200 (84, 3)	6748.79900 (84, 3)	7137.68200 (91, 3)	7573.67700 (91, 3)
120.0 /	5874.18400 (84, 3)	6292.68300 (84, 3)	6721.26400 (84, 3)	7165.06800 (84, 3)	7631.23100 (84, 3)
110.0 /	6125.96000 (361, 3)	6419.66400 (361, 3)	6736.08400 (361, 3)	7080.72400 (361, 3)	7531.62900 (84, 3)
100.0 /	6172.82000 (258, 2)	6499.61100 (361, 3)	6855.78600 (361, 3)	7242.48700 (361, 3)	7668.43000 (361, 3)
90.0 /	6193.27100 (258, 3)	6516.83200 (258, 3)	6866.89600 (258, 3)	7250.78500 (258, 2)	7681.32900 (258, 2)
80.0 /	6089.17600 (258, 3)	6440.53200 (258, 3)	6815.31700 (258, 3)	7219.69100 (258, 3)	7661.97400 (258, 3)
70.0 /	5820.99300 (258, 3)	6213.89400 (258, 3)	6629.66400 (258, 3)	7072.75900 (258, 3)	7549.83900 (258, 3)
60.0 /	5324.84500 (258, 3)	5765.71500 (258, 3)	6235.70800 (258, 3)	6736.67100 (258, 3)	7272.74400 (258, 3)
50.0 /	5826.08900 (197, 5)	6195.80000 (197, 5)	6594.22200 (197, 5)	7025.64800 (197, 5)	7496.44600 (197, 5)
40.0 /	6105.54300 (197, 5)	6442.75500 (197, 5)	6806.87200 (197, 5)	7203.54800 (197, 5)	7640.22400 (197, 5)
30.0 /	6209.74700 (197, 5)	6527.74800 (197, 5)	6874.21000 (197, 5)	7255.40500 (197, 5)	7679.52300 (197, 5)
20.0 /	6172.44700 (197, 5)	6483.62400 (197, 5)	6826.01400 (197, 5)	7205.79000 (197, 5)	7630.53600 (197, 5)
10.0 /	6046.64900 (295, 7)	6412.62400 (295, 7)	6799.26400 (295, 7)	7212.94200 (295, 7)	7662.21800 (295, 7)
.0 /	6170.40900 (295, 7)	6501.01000 (295, 7)	6855.54300 (295, 7)	7243.22300 (77, 3)	7677.33300 (77, 3)
-10.0 /	6156.27600 (77, 6)	6479.95100 (77, 6)	6834.81800 (77, 7)	7222.50700 (77, 7)	7660.84200 (77, 4)
-20.0 /	6113.18900 (77, 4)	6446.08100 (77, 4)	6792.36300 (77, 4)	7192.08300 (84, 5)	7631.04400 (77, 5)
-30.0 /	6074.86600 (84, 5)	6394.11900 (77, 5)	6743.43100 (77, 5)	7137.12000 (84, 6)	7574.59900 (118, 5)
-40.0 /	6002.64900 (84, 6)	6328.44900 (84, 6)	6674.22300 (118, 5)	7013.07700 (118, 5)	7320.49300 (118, 5)
-50.0 /	5925.10900 (118, 5)	6169.93800 (118, 5)	6383.81100 (332, 3)	6887.41300 (332, 3)	7357.22100 (332, 3)
-60.0 /	5635.57600 (332, 3)	6064.87100 (332, 3)	6457.07900 (332, 3)	6789.40900 (332, 3)	7050.49000 (138, 3)
-70.0 /	5723.02500 (332, 3)	6008.30400 (332, 3)	6216.33600 (332, 3)	6592.43800 (138, 3)	7006.41500 (138, 3)
-80.0 /	5551.25800 (332, 3)	5752.22000 (138, 3)	6151.90800 (138, 3)	6448.06300 (138, 3)	6740.69900 (301,23)
-90.0 /	5423.32100 (138, 3)	5730.99900 (138, 3)	5930.79300 (138, 3)	6251.66900 (301,23)	6542.79200 (301,23)
-100.0 /	5331.92800 (138, 3)	5454.28700 (138, 3)	5808.98900 (301,23)	6024.67600 (301,23)	6332.35100 (116,22)
-110.0 /	5119.33700 (301,23)	5407.29200 (301,23)	5563.68800 (301,23)	5858.98300 (116,22)	6064.65400 (132, 1)
-120.0 /	5041.97700 (301,23)	5187.33400 (116,22)	5439.84800 (116,22)	5619.30800 (132, 1)	5816.66800 (120,20)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -150.0	-140.0	-130.0	-120.0	-110.0
-130.0 /	4852.83900 (116,22)	5066.21300 (116,22)	5224.73000 (132, 1)	5389.99800 (120,20)	5621.74000 (120,20)
-140.0 /	4731.22900 (116,22)	4872.77400 (132, 1)	5010.02600 (120,20)	5236.97700 (120,20)	5275.71700 (120,20)
-150.0 /	4557.03700 (132, 1)	4669.73900 (120,20)	4890.49800 (120,20)	4946.47500 (120,20)	5131.34000 (128, 5)
-160.0 /	4363.52700 (120,20)	4577.19600 (120,20)	4646.04700 (120,20)	4753.81400 (128, 5)	4989.30400 (128, 5)
-170.0 /	4292.86100 (120,20)	4371.18200 (120,20)	4407.36100 (128, 5)	4664.43800 (128, 5)	4750.67600 (128, 5)
-180.0 /	4119.10400 (120,20)	4089.81000 (128, 5)	4360.27400 (128, 5)	4482.62800 (128, 5)	4440.25700 (128, 5)

-190.0 / 3863.18200 (120,20) 4076.43400 (128, 5) 4226.23300 (128, 5) 4228.63400 (128, 5) 4139.22900 (262,23)
-200.0 / 3812.26300 (128, 5) 3982.25700 (128, 5) 4021.48100 (128, 5) 3922.62900 (128, 5) 4091.84900 (262,23)
-210.0 / 3751.12100 (128, 5) 3820.08300 (128, 5) 3763.23000 (128, 5) 3798.55400 (262,23) 3987.88900 (262,23)
-220.0 / 3625.49900 (128, 5) 3604.36300 (128, 5) 3513.81600 (262,23) 3741.56700 (262,23) 3837.32300 (262,23)
-230.0 / 3447.33700 (128, 5) 3349.72000 (128, 5) 3495.93200 (262,23) 3637.50200 (262,23) 3649.95500 (262,23)
-240.0 / 3229.27100 (128, 5) 3255.22400 (262,23) 3432.11500 (262,23) 3494.61700 (262,23) 3435.06900 (262,23)
-250.0 / 3022.68400 (262,23) 3225.47300 (262,23) 3328.98300 (262,23) 3321.13600 (262,23) 3201.22800 (262,23)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

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Y-AXIS / (METERS) /	-100.0	-90.0	-80.0	-70.0	-60.0
250.0 /	3635.52300 (179, 4)	3227.96000 (22, 2)	2982.97700 (22, 2)	3607.02900 (98, 2)	4601.18000 (98, 2)
240.0 /	4327.53000 (179, 4)	3839.79000 (179, 4)	3386.69800 (22, 2)	3350.14700 (98, 2)	4462.32800 (98, 2)
230.0 /	5026.46400 (179, 4)	4602.88800 (179, 4)	4066.84100 (179, 4)	3552.46900 (22, 2)	4251.86500 (98, 2)
220.0 /	5685.85000 (179, 4)	5382.25300 (179, 4)	4909.54000 (179, 4)	4321.79300 (179, 4)	3965.92500 (98, 2)
210.0 /	6241.37100 (179, 4)	6128.37400 (179, 4)	5780.87700 (179, 4)	5253.91000 (179, 4)	4611.49400 (179, 4)
200.0 /	6614.56500 (179, 4)	6766.68800 (179, 4)	6630.07500 (179, 4)	6230.79300 (179, 4)	5644.76000 (179, 4)
190.0 /	6869.18400 (16,24)	7198.85000 (179, 4)	7371.04100 (179, 4)	7203.76500 (179, 4)	6743.36600 (179, 4)
180.0 /	7076.71300 (16,24)	7502.15700 (16,24)	7877.94100 (179, 4)	8074.40700 (179, 4)	7866.79200 (179, 4)
170.0 /	7378.62000 (17, 1)	7692.39800 (16,24)	8237.54300 (16,24)	8677.99600 (179, 4)	8904.71200 (179, 4)
160.0 /	7542.42100 (17, 1)	8085.03200 (17, 1)	8422.18800 (17, 1)	9102.56600 (16,24)	9635.52300 (179, 4)
150.0 /	7782.15800 (350,23)	8130.75400 (17, 1)	8865.76000 (17, 1)	9413.77900 (17, 1)	10134.87000 (16,24)
140.0 /	7902.86300 (350,23)	8506.54000 (350,23)	9047.80000 (350,23)	9729.99500 (17, 1)	10559.86000 (17, 1)
130.0 /	8051.99200 (137,20)	8630.19600 (137,20)	9218.50600 (350,23)	10028.54000 (350,23)	10761.46000 (350,23)
120.0 /	8128.74400 (84, 3)	8697.99100 (91, 3)	9347.10200 (91, 3)	10139.79000 (137,20)	11027.81000 (137,20)
110.0 /	8089.88500 (84, 3)	8693.34000 (84, 3)	9366.23800 (84, 3)	10154.35000 (84, 3)	11109.95000 (91, 3)
100.0 /	8144.87300 (361, 3)	8687.66800 (361, 3)	9321.89000 (361, 3)	10086.18000 (361, 3)	11020.90000 (361, 3)
90.0 /	8161.71300 (258, 2)	8713.51900 (361, 3)	9342.11100 (361, 3)	10056.17000 (361, 3)	11005.31000 (84, 3)
80.0 /	8153.51800 (258, 3)	8709.93600 (258, 3)	9352.29600 (258, 2)	10115.40000 (361, 3)	11063.40000 (361, 3)
70.0 /	8069.98400 (258, 3)	8645.04300 (258, 3)	9291.87800 (258, 3)	10041.04000 (258, 3)	10956.44000 (258, 3)
60.0 /	7851.77900 (258, 3)	8486.77700 (258, 3)	9196.09200 (258, 3)	9998.72900 (258, 3)	10912.91000 (258, 2)
50.0 /	8016.17900 (197, 5)	8599.26300 (197, 5)	9267.18300 (197, 5)	10050.47000 (197, 5)	10987.73000 (197, 5)
40.0 /	8126.35300 (197, 5)	8673.53400 (197, 5)	9295.85100 (197, 5)	10012.07000 (197, 5)	10858.48000 (295, 7)
30.0 /	8157.55000 (197, 5)	8704.85000 (197, 5)	9343.50500 (197, 5)	10104.53000 (197, 5)	11027.12000 (197, 5)
20.0 /	8109.48500 (197, 5)	8660.20500 (295, 7)	9327.67700 (295, 7)	10114.27000 (295, 7)	11062.26000 (77, 3)
10.0 /	8158.04600 (295, 7)	8713.27400 (295, 7)	9346.51000 (77, 6)	10094.23000 (77, 4)	11013.54000 (84, 5)
.0 /	8165.02600 (77, 6)	8718.06600 (77, 7)	9355.49500 (77, 7)	10116.93000 (77, 6)	11072.93000 (77, 6)

-10.0 /	8156.89200 (77, 4)	8714.82400 (84, 5)	9374.56000 (84, 5)	10155.69000 (77, 5)	11113.31000 (84, 6)
-20.0 /	8123.72000 (77, 5)	8695.81300 (84, 6)	9354.30700 (118, 5)	10086.45000 (118, 5)	11030.60000 (332, 3)
-30.0 /	8048.63900 (118, 5)	8518.92000 (118, 5)	9222.34300 (332, 3)	10014.10000 (332, 3)	10808.17000 (138, 3)
-40.0 /	7907.70400 (332, 3)	8497.80600 (332, 3)	9017.50700 (332, 3)	9780.87100 (138, 3)	10468.83000 (301,23)
-50.0 /	7761.58300 (332, 3)	8242.77800 (138, 3)	8858.77100 (138, 3)	9437.56100 (301,23)	10070.18000 (116,22)
-60.0 /	7605.01600 (138, 3)	8024.18100 (138, 3)	8556.87500 (301,23)	9057.14600 (116,22)	9578.15600 (132, 1)
-70.0 /	7282.41000 (301,23)	7794.29100 (301,23)	8210.07800 (116,22)	8625.55500 (132, 1)	9078.16400 (120,20)
-80.0 /	7128.36100 (301,23)	7490.51800 (116,22)	7829.37600 (132, 1)	8214.16100 (120,20)	8403.40300 (120,20)
-90.0 /	6871.24400 (116,22)	7153.28800 (132, 1)	7480.01600 (120,20)	7694.48800 (120,20)	8067.27400 (128, 5)
-100.0 /	6571.32900 (132, 1)	6848.34600 (120,20)	7076.34200 (120,20)	7355.92300 (128, 5)	7545.84800 (128, 5)
-110.0 /	6298.94300 (120,20)	6532.66900 (120,20)	6714.99500 (128, 5)	6988.92800 (128, 5)	6911.32400 (128, 5)
-120.0 /	6051.05100 (120,20)	6138.35000 (128, 5)	6469.69900 (128, 5)	6489.46100 (128, 5)	6595.68300 (262,23)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-90.0	-80.0	-70.0	-60.0
-130.0 /	5637.60900 (120,20)	5987.67000 (128, 5)	6085.85500 (128, 5)	6038.40000 (262,23)	6274.29800 (262,23)
-140.0 /	5542.01900 (128, 5)	5700.66700 (128, 5)	5612.82600 (128, 5)	5837.56200 (262,23)	5894.71300 (262,23)
-150.0 /	5334.86100 (128, 5)	5317.09800 (128, 5)	5393.11200 (262,23)	5561.68300 (262,23)	5478.84500 (262,23)
-160.0 /	5029.28000 (128, 5)	4952.54200 (262,23)	5211.17200 (262,23)	5233.73400 (262,23)	5345.44800 (36,23)
-170.0 /	4654.92200 (128, 5)	4851.46700 (262,23)	4966.63400 (262,23)	4870.68100 (262,23)	5218.47100 (36,23)
-180.0 /	4491.52800 (262,23)	4682.61900 (262,23)	4676.52700 (262,23)	4752.08900 (36,23)	5054.44700 (36,23)
-190.0 /	4388.64400 (262,23)	4461.22500 (262,23)	4354.73800 (262,23)	4669.24200 (36,23)	4861.68300 (36,23)
-200.0 /	4229.71700 (262,23)	4200.72400 (262,23)	4253.81100 (36,23)	4549.77400 (36,23)	4655.22200 (350, 4)
-210.0 /	4026.73000 (262,23)	3912.83500 (262,23)	4200.95500 (36,23)	4400.60000 (36,23)	4461.84300 (350, 4)
-220.0 /	3790.72800 (262,23)	3831.61200 (36,23)	4113.75000 (36,23)	4227.56000 (36,23)	4269.03700 (118, 2)
-230.0 /	3531.71600 (262,23)	3799.21400 (36,23)	3997.82600 (36,23)	4066.10700 (350, 4)	4118.01500 (118, 2)
-240.0 /	3470.90200 (36,23)	3735.50400 (36,23)	3858.26600 (36,23)	3895.77200 (350, 4)	3953.85400 (118, 2)
-250.0 /	3452.51000 (36,23)	3645.02300 (36,23)	3714.57400 (350, 4)	3755.60200 (118, 2)	3787.93700 (109, 2)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
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Y-AXIS / (METERS) /	-50.0	-40.0	-30.0	-20.0	-10.0
250.0 /	5414.20900 (98, 2)	5915.34300 (98, 2)	6092.36800 (98, 2)	6052.58700 (131,22)	6174.33100 (131,22)
240.0 /	5447.56300 (98, 2)	6114.68500 (98, 2)	6407.12100 (98, 2)	6404.55600 (98, 2)	6499.16000 (131,22)
230.0 /	5418.54200 (98, 2)	6285.26400 (98, 2)	6722.95800 (98, 2)	6802.37800 (98, 2)	6845.16200 (131,22)
220.0 /	5310.03400 (98, 2)	6411.79800 (98, 2)	7037.41900 (98, 2)	7217.07200 (98, 2)	7218.75000 (131,22)
210.0 /	5105.42300 (98, 2)	6471.77400 (98, 2)	7343.11000 (98, 2)	7655.03800 (98, 2)	7632.30300 (98, 2)
200.0 /	4945.16200 (179, 4)	6435.49800 (98, 2)	7623.38300 (98, 2)	8122.89600 (98, 2)	8166.82000 (98, 2)
190.0 /	6094.38000 (179, 4)	6269.97200 (98, 2)	7847.15300 (98, 2)	8623.90400 (98, 2)	8753.11500 (98, 2)
180.0 /	7334.40500 (179, 4)	6620.60600 (179, 4)	7966.63300 (98, 2)	9147.62500 (98, 2)	9418.01400 (98, 2)
170.0 /	8643.66500 (179, 4)	8026.58900 (179, 4)	7921.46900 (98, 2)	9655.49100 (98, 2)	10199.97000 (98, 2)
160.0 /	9903.14100 (179, 4)	9570.14800 (179, 4)	8854.26000 (179, 4)	10088.54000 (98, 2)	11108.03000 (98, 2)
150.0 /	10801.36000 (179, 4)	11136.51000 (179, 4)	10696.95000 (179, 4)	10384.72000 (98, 2)	12051.01000 (98, 2)
140.0 /	11389.98000 (16,24)	12242.68000 (179, 4)	12731.32000 (179, 4)	12080.85000 (179, 4)	12998.53000 (98, 2)
130.0 /	11905.51000 (17, 1)	12966.63000 (16,24)	14036.42000 (179, 4)	14962.99000 (179, 4)	14183.99000 (98, 2)
120.0 /	12206.91000 (350,23)	13591.77000 (17, 1)	15092.41000 (16,24)	16287.81000 (16,24)	18423.33000 (179, 4)
110.0 /	12313.09000 (137,20)	13890.03000 (350,23)	15946.76000 (17, 1)	18341.96000 (179, 4)	19964.75000 (17, 1)
100.0 /	12119.73000 (361, 3)	13852.84000 (84, 3)	16136.79000 (137,20)	19406.24000 (350,23)	24204.21000 (179, 4)
90.0 /	12163.93000 (91, 3)	13792.92000 (258, 3)	16069.55000 (258, 2)	19075.55000 (361, 3)	26228.28000 (137,20)
80.0 /	12163.93000 (361, 3)	13762.00000 (84, 3)	15973.68000 (91, 3)	18900.18000 (350,23)	22107.58000 (197, 5)
70.0 /	12157.35000 (258, 3)	13815.75000 (258, 3)	16078.47000 (258, 2)	19029.64000 (361, 3)	25964.40000 (137,20)
60.0 /	12040.27000 (361, 3)	13270.72000 (361, 3)	15208.14000 (84, 3)	17691.66000 (197, 5)	22290.17000 (197, 5)
50.0 /	12117.24000 (197, 5)	13739.06000 (258, 3)	16014.33000 (258, 2)	19146.19000 (77, 7)	24290.15000 (137,20)
40.0 /	12016.14000 (77, 3)	13408.69000 (77, 4)	15111.67000 (77, 5)	17621.73000 (197, 5)	21937.91000 (197, 5)
30.0 /	12150.41000 (197, 5)	13582.36000 (295, 7)	16037.53000 (295, 7)	19504.32000 (77, 4)	25891.02000 (332, 3)
20.0 /	12259.65000 (77, 7)	13826.37000 (84, 5)	15960.74000 (118, 5)	18660.59000 (332, 3)	21855.72000 (132, 1)
10.0 /	12143.65000 (84, 6)	13584.16000 (295, 7)	16036.63000 (295, 7)	19503.29000 (77, 4)	26456.49000 (332, 3)
.0 /	12283.69000 (77, 7)	13895.02000 (84, 5)	16113.68000 (118, 5)	19691.79000 (138, 3)	23928.50000 (132, 1)
-10.0 /	12309.08000 (118, 5)	13891.55000 (332, 3)	15956.16000 (138, 3)	18296.14000 (132, 1)	19882.39000 (128, 5)
-20.0 /	12174.40000 (332, 3)	13552.09000 (138, 3)	15010.54000 (116,22)	16226.20000 (120,20)	18128.67000 (120,20)
-30.0 /	11843.93000 (138, 3)	12918.48000 (301,23)	13962.46000 (132, 1)	15021.22000 (120,20)	15937.52000 (128, 5)
-40.0 /	11330.57000 (301,23)	12173.20000 (132, 1)	12931.67000 (120,20)	13562.81000 (128, 5)	13499.46000 (262,23)
-50.0 /	10738.05000 (132, 1)	11363.38000 (120,20)	11874.92000 (128, 5)	11829.33000 (262,23)	12259.98000 (36,23)
-60.0 /	10109.74000 (120,20)	10522.82000 (128, 5)	10709.68000 (128, 5)	10718.64000 (262,23)	11109.58000 (350, 4)
-70.0 /	9370.86000 (128, 5)	9729.33300 (128, 5)	9729.46900 (262,23)	10015.08000 (36,23)	10144.01000 (118, 2)
-80.0 /	8855.30400 (128, 5)	8782.52100 (128, 5)	8961.24300 (262,23)	9332.26600 (36,23)	9369.83900 (118, 2)
-90.0 /	8141.87400 (128, 5)	8256.01700 (262,23)	8406.87900 (36,23)	8692.20400 (36,23)	8711.25000 (118, 2)
-100.0 /	7539.57500 (262,23)	7684.14600 (262,23)	7992.12200 (36,23)	8124.31100 (350, 4)	8152.46000 (109, 2)
-110.0 /	7148.21500 (262,23)	7174.04700 (36,23)	7562.28900 (36,23)	7624.51800 (118, 2)	7657.63000 (109, 2)
-120.0 /	6693.39200 (262,23)	6925.68700 (36,23)	7134.85700 (36,23)	7189.42000 (118, 2)	7204.83300 (109, 2)

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Y-AXIS / (METERS) /	-50.0	-40.0	-30.0	-20.0	-10.0
-130.0 /	6205.72100 (262,23)	6637.42000 (36,23)	6744.20100 (350, 4)	6789.07700 (109, 2)	6782.40100 (109, 2)
-140.0 /	6058.87900 (36,23)	6326.56300 (36,23)	6386.95000 (118, 2)	6444.07600 (109, 2)	6381.51100 (109, 2)
-150.0 /	5866.76600 (36,23)	6010.94200 (350, 4)	6073.69100 (118, 2)	6112.51100 (109, 2)	5995.54800 (109, 2)
-160.0 /	5641.06300 (36,23)	5715.46300 (350, 4)	5762.40500 (109, 2)	5790.50700 (109, 2)	5619.94400 (109, 2)
-170.0 /	5391.16400 (36,23)	5451.30300 (118, 2)	5510.69900 (109, 2)	5474.97600 (109, 2)	5252.09400 (109, 2)
-180.0 /	5150.83000 (350, 4)	5210.13100 (118, 2)	5258.16000 (109, 2)	5163.85100 (109, 2)	4891.18000 (109, 2)
-190.0 /	4907.68400 (350, 4)	4961.18200 (118, 2)	5004.56300 (109, 2)	4856.18200 (109, 2)	4537.83100 (109, 2)
-200.0 /	4714.43500 (118, 2)	4767.23300 (109, 2)	4749.91700 (109, 2)	4552.06400 (109, 2)	4193.69300 (109, 2)
-210.0 /	4518.91400 (118, 2)	4568.63700 (109, 2)	4494.65000 (109, 2)	4252.46200 (109, 2)	3860.94800 (109, 2)
-220.0 /	4314.07600 (109, 2)	4364.33200 (109, 2)	4239.67500 (109, 2)	3958.91300 (109, 2)	3541.88900 (109, 2)
-230.0 /	4163.00400 (109, 2)	4155.73600 (109, 2)	3986.31100 (109, 2)	3673.26700 (109, 2)	3238.59500 (109, 2)
-240.0 /	4002.79100 (109, 2)	3944.37800 (109, 2)	3736.15200 (109, 2)	3397.42500 (109, 2)	2952.72000 (109, 2)
-250.0 /	3835.38600 (109, 2)	3731.90400 (109, 2)	3490.92000 (109, 2)	3133.11300 (109, 2)	2685.39500 (109, 2)

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Y-AXIS / (METERS) /	.0	10.0	20.0	30.0	40.0
250.0 /	6200.42000 (137,23)	6191.35300 (137,24)	6213.12100 (137,24)	6227.85300 (137,22)	6125.23900 (137,22)
240.0 /	6521.01700 (138, 1)	6501.09200 (137,24)	6538.90200 (137,24)	6547.48100 (137,22)	6464.41300 (137,22)
230.0 /	6877.16900 (138, 1)	6862.91600 (137,23)	6892.00600 (137,24)	6895.83300 (137,22)	6830.85200 (137,22)
220.0 /	7264.49200 (138, 1)	7265.25700 (137,23)	7278.98800 (137,24)	7279.25000 (137,22)	7230.29500 (137,22)
210.0 /	7702.09900 (131,22)	7705.95600 (137,23)	7708.25600 (137,24)	7706.01400 (137,22)	7670.26900 (137,22)
200.0 /	8196.30700 (131,22)	8195.60400 (137,23)	8190.54400 (137,24)	8187.27600 (137,22)	8160.32100 (137,22)
190.0 /	8751.64300 (131,22)	8749.72300 (138, 1)	8739.00700 (137,24)	8738.69600 (137,22)	8712.11100 (137,22)
180.0 /	9392.45100 (131,22)	9391.30300 (131,22)	9390.69800 (137,23)	9382.80800 (137,22)	9339.84700 (137,22)
170.0 /	10163.82000 (131,22)	10129.14000 (131,22)	10172.11000 (137,23)	10151.18000 (137,22)	10086.39000 (332, 6)
160.0 /	11130.33000 (131,22)	11081.58000 (98, 2)	11125.59000 (131,22)	11105.45000 (137,24)	11033.01000 (332, 6)
150.0 /	12312.10000 (131,22)	12290.11000 (137,24)	12320.94000 (131,22)	12341.40000 (137,24)	12232.62000 (332, 6)
140.0 /	14004.51000 (98, 2)	13884.42000 (137,24)	13949.41000 (98, 2)	13919.98000 (137,24)	13824.29000 (332, 6)

130.0 /	15638.67000 (98, 2)	16227.49000 (137,23)	15751.22000 (332, 6)	16239.42000 (137,23)	16072.75000 (332, 6)
120.0 /	17424.16000 (98, 2)	19482.10000 (98, 2)	19415.13000 (332, 6)	19515.22000 (98, 2)	19588.58000 (332, 6)
110.0 /	24160.34000 (179, 4)	22846.76000 (98, 2)	26367.16000 (332, 6)	22707.79000 (98, 2)	26202.62000 (332, 6)
100.0 /	26498.46000 (350,23)	23012.88000 (179, 4)	24887.52000 (98, 2)	20565.90000 (179, 4)	24836.28000 (98, 2)
90.0 /	23028.97000 (16,24)	23892.46000 (137,20)	24113.20000 (332, 6)	21094.46000 (137,20)	23839.42000 (332, 6)
80.0 /	26341.81000 (350,23)	21641.12000 (179, 4)	23880.88000 (350,23)	20218.17000 (179, 4)	22313.47000 (98, 2)
70.0 /	20894.69000 (16,24)	23829.53000 (137,20)	21300.63000 (332, 6)	21066.84000 (137,20)	20990.58000 (332, 6)
60.0 /	25379.75000 (350,23)	19985.68000 (197, 5)	23688.31000 (350,23)	18500.27000 (179, 4)	20614.82000 (350,23)
50.0 /	17577.99000 (17, 1)	23234.54000 (137,20)	18208.83000 (112, 1)	21033.66000 (332, 3)	18216.71000 (70, 2)
40.0 /	25018.68000 (332, 3)	19635.51000 (197, 5)	23417.27000 (138, 3)	18238.54000 (132, 1)	20905.98000 (138, 3)
30.0 /	20651.26000 (301,23)	24026.94000 (332, 3)	21941.90000 (112, 1)	21246.30000 (332, 3)	21946.31000 (70, 2)
20.0 /	26306.80000 (138, 3)	21373.57000 (132, 1)	24113.34000 (138, 3)	19962.06000 (120,20)	23069.38000 (128, 5)
10.0 /	22820.76000 (132, 1)	24081.36000 (332, 3)	24776.49000 (112, 1)	23349.80000 (262,23)	24795.40000 (70, 2)
.0 /	26742.07000 (138, 3)	22735.73000 (120,20)	25999.25000 (128, 5)	20652.77000 (120,20)	24437.45000 (118, 2)
-10.0 /	23896.62000 (132, 1)	25710.88000 (262,23)	27087.71000 (112, 1)	25161.34000 (262,23)	27159.30000 (70, 2)
-20.0 /	19422.26000 (128, 5)	19498.51000 (109, 2)	19754.66000 (112, 1)	19504.31000 (109, 2)	19867.05000 (112, 1)
-30.0 /	16006.50000 (36,23)	15163.02000 (109, 2)	16021.31000 (70, 2)	15146.20000 (109, 2)	16168.69000 (112, 1)
-40.0 /	13889.28000 (118, 2)	13298.88000 (36,23)	13826.29000 (118, 2)	13166.27000 (278,23)	13857.97000 (112, 1)
-50.0 /	12270.12000 (109, 2)	12143.51000 (36,23)	12217.58000 (109, 2)	11750.43000 (70, 2)	12240.50000 (112, 1)
-60.0 /	11020.28000 (109, 2)	11012.92000 (118, 2)	10915.43000 (109, 2)	10785.96000 (70, 2)	11030.42000 (112, 1)
-70.0 /	10091.27000 (109, 2)	10093.05000 (109, 2)	9911.94300 (109, 2)	9951.64700 (70, 2)	10086.47000 (70, 2)
-80.0 /	9343.82700 (109, 2)	9289.66300 (109, 2)	9071.51900 (109, 2)	9224.93800 (70, 2)	9322.51300 (70, 2)
-90.0 /	8693.23300 (109, 2)	8579.60500 (109, 2)	8310.07600 (109, 2)	8589.30900 (70, 2)	8683.33700 (70, 2)
-100.0 /	8108.12700 (109, 2)	7940.12000 (109, 2)	7655.78500 (70, 2)	8030.17200 (70, 2)	8135.27400 (70, 2)
-110.0 /	7572.72900 (109, 2)	7347.58600 (109, 2)	7131.53500 (70, 2)	7534.85900 (70, 2)	7656.41900 (70, 2)
-120.0 /	7074.01400 (109, 2)	6786.50900 (109, 2)	6669.73000 (70, 2)	7092.86200 (70, 2)	7231.89600 (70, 2)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35603.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	.0	10.0	20.0	30.0	40.0
			X-AXIS (METERS)		
-130.0 /	6601.20700 (109, 2)	6247.86300 (109, 2)	6260.28300 (70, 2)	6695.75200 (70, 2)	6851.11600 (70, 2)
-140.0 /	6146.46900 (109, 2)	5727.20500 (109, 2)	5895.28000 (70, 2)	6336.80100 (70, 2)	6506.24000 (70, 2)
-150.0 /	5704.96700 (109, 2)	5223.71400 (109, 2)	5568.30600 (70, 2)	6010.62400 (70, 2)	6191.28500 (70, 2)
-160.0 /	5274.61200 (109, 2)	4739.25900 (109, 2)	5274.04000 (70, 2)	5712.83100 (70, 2)	5901.64500 (70, 2)
-170.0 /	4855.60900 (109, 2)	4281.28600 (70, 2)	5008.03200 (70, 2)	5439.79000 (70, 2)	5633.70400 (70, 2)
-180.0 /	4449.79900 (109, 2)	4081.19900 (70, 2)	4766.52100 (70, 2)	5188.45300 (70, 2)	5384.59900 (70, 2)
-190.0 /	4059.90700 (109, 2)	3900.01800 (70, 2)	4546.31600 (70, 2)	4956.24500 (70, 2)	5152.06000 (70, 2)
-200.0 /	3688.86000 (109, 2)	3735.12300 (70, 2)	4344.69100 (70, 2)	4740.96800 (70, 2)	4934.26300 (70, 2)
-210.0 /	3339.25000 (109, 2)	3584.32600 (70, 2)	4159.32900 (70, 2)	4540.75100 (70, 2)	4729.71500 (70, 2)
-220.0 /	3013.02500 (109, 2)	3445.78500 (70, 2)	3988.24400 (70, 2)	4353.98600 (70, 2)	4537.19300 (70, 2)
-230.0 /	2805.98600 (311, 1)	3317.94700 (70, 2)	3829.74000 (70, 2)	4179.29900 (70, 2)	4355.66800 (70, 2)
-240.0 /	2692.63900 (311, 1)	3199.48800 (70, 2)	3682.36900 (70, 2)	4015.51000 (70, 2)	4184.26800 (70, 2)
-250.0 /	2582.88500 (311, 1)	3089.28600 (70, 2)	3544.88500 (70, 2)	3861.59400 (70, 2)	4022.24500 (70, 2)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) 50.0	60.0	70.0	80.0	90.0
250.0 /	6196.16400 (332, 6)	6234.23600 (332, 6)	6131.41600 (332, 6)	5810.08200 (332, 6)	5816.78200 (90,23)
240.0 /	6518.00100 (332, 6)	6549.33400 (332, 6)	6452.47400 (332, 6)	6135.28000 (332, 6)	6233.78200 (90,23)
230.0 /	6869.21200 (332, 6)	6894.34200 (332, 6)	6805.50000 (332, 6)	6496.93900 (332, 6)	6668.09200 (90,23)
220.0 /	7255.72300 (332, 6)	7275.37800 (332, 6)	7196.22500 (332, 6)	6901.25400 (332, 6)	7124.81600 (90,23)
210.0 /	7685.21100 (332, 6)	7700.37300 (332, 6)	7631.93200 (332, 6)	7391.84900 (90,23)	7611.87800 (90,23)
200.0 /	8167.57100 (332, 6)	8179.81300 (332, 6)	8121.97900 (332, 6)	7972.04400 (90,23)	8140.71600 (90,23)
190.0 /	8715.32800 (332, 6)	8728.08000 (332, 6)	8678.35800 (332, 6)	8599.83600 (90,23)	8726.65700 (90,23)
180.0 /	9343.83500 (332, 6)	9365.94400 (332, 6)	9316.02900 (332, 6)	9297.60400 (90,23)	9386.17500 (90,23)
170.0 /	10110.07000 (137,22)	10125.24000 (332, 6)	10052.82000 (332, 6)	10110.08000 (90,23)	10142.96000 (91, 1)
160.0 /	11059.09000 (137,22)	11056.67000 (332, 6)	10909.11000 (332, 6)	11107.78000 (90,23)	11077.70000 (282,19)
150.0 /	12280.61000 (137,24)	12242.26000 (332, 6)	11909.53000 (332, 6)	12340.87000 (299, 4)	12230.31000 (90,24)
140.0 /	13881.82000 (137,24)	13818.64000 (332, 6)	13348.43000 (90,23)	13929.51000 (282,19)	13571.66000 (105, 3)
130.0 /	16137.18000 (137,23)	16042.84000 (332, 6)	15811.56000 (90,23)	16134.00000 (170,21)	15794.36000 (90,23)
120.0 /	19495.44000 (299, 4)	19493.61000 (332, 6)	19757.51000 (299, 4)	19377.88000 (332, 6)	19785.19000 (299, 4)
110.0 /	24519.95000 (170,21)	25804.99000 (332, 6)	26509.28000 (105, 3)	25386.73000 (332, 6)	26998.01000 (105, 3)
100.0 /	17583.06000 (204, 2)	25710.14000 (105, 4)	21078.87000 (65, 6)	27115.88000 (151,20)	23179.98000 (104, 2)
90.0 /	23443.61000 (105, 3)	23446.72000 (332, 6)	24563.81000 (105, 3)	23056.58000 (332, 6)	24625.13000 (105, 3)
80.0 /	17446.88000 (204, 2)	24282.00000 (151,20)	20366.49000 (269, 2)	24775.63000 (105, 5)	21822.01000 (104, 2)
70.0 /	21580.36000 (105, 3)	20604.75000 (332, 6)	21758.22000 (105, 3)	20332.06000 (104, 2)	24563.81000 (305, 7)
60.0 /	16801.57000 (269, 2)	21537.22000 (105, 5)	18648.69000 (104, 2)	24282.00000 (242, 4)	19384.66000 (39,19)
50.0 /	18094.34000 (105, 3)	18225.79000 (70, 2)	21580.36000 (305, 7)	18206.74000 (70, 2)	23520.60000 (305, 6)
40.0 /	16668.09000 (289, 5)	21375.85000 (246, 7)	18363.09000 (217, 3)	24063.77000 (246, 7)	19741.49000 (39,19)
30.0 /	20896.16000 (65, 2)	21954.56000 (70, 2)	21458.47000 (242, 1)	21934.51000 (70, 2)	24217.13000 (242, 1)
20.0 /	17355.75000 (292,19)	23871.19000 (65, 4)	20241.29000 (289, 5)	24624.56000 (246, 7)	21502.61000 (217, 3)
10.0 /	22774.24000 (65, 2)	24802.44000 (70, 2)	23825.41000 (65, 2)	24760.01000 (70, 2)	33707.56000 (242, 1)
.0 /	17537.33000 (292,19)	25306.18000 (65, 4)	20936.22000 (174,23)	26664.69000 (65, 1)	34481.83000 (175, 1)
-10.0 /	23985.27000 (115,22)	27165.02000 (70, 2)	25821.48000 (65, 2)	26386.49000 (70, 2)	24292.10000 (65, 2)
-20.0 /	19085.58000 (197,23)	19846.93000 (70, 2)	19329.78000 (246, 5)	19475.39000 (70, 2)	19018.39000 (197,23)
-30.0 /	15996.37000 (340, 4)	16154.07000 (112, 1)	16070.22000 (340, 4)	15959.79000 (115,22)	15936.37000 (340, 4)
-40.0 /	13796.96000 (363, 9)	13849.87000 (112, 1)	13844.52000 (112, 5)	13813.23000 (246, 5)	13813.36000 (363, 9)
-50.0 /	12196.62000 (278,23)	12236.72000 (112, 1)	12242.29000 (363, 9)	12219.88000 (197,23)	12212.22000 (363, 9)
-60.0 /	10996.49000 (278,23)	11031.07000 (112, 1)	11048.24000 (278,23)	11062.94000 (197,23)	11029.72000 (246, 4)
-70.0 /	10023.90000 (278,23)	10088.19000 (112, 1)	10106.57000 (278,23)	10122.70000 (363, 7)	10105.14000 (246, 5)
-80.0 /	9297.11600 (70, 2)	9322.73500 (112, 1)	9341.97100 (278,23)	9355.42300 (340, 4)	9362.36100 (197,23)
-90.0 /	8682.60900 (112, 1)	8681.37700 (112, 1)	8703.59400 (278,23)	8718.28000 (112, 5)	8725.81300 (363, 7)
-100.0 /	8146.34300 (112, 1)	8130.30700 (112, 1)	8155.91000 (278,23)	8168.69400 (363, 9)	8174.81300 (363, 7)
-110.0 /	7673.90700 (112, 1)	7647.59800 (112, 1)	7675.76200 (278,23)	7687.97900 (363, 9)	7691.68400 (340, 4)
-120.0 /	7253.76100 (112, 1)	7218.45700 (112, 1)	7247.78500 (278,23)	7259.95700 (363, 9)	7259.19500 (340, 4)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	50.0	60.0	70.0	80.0	90.0
-130.0 /	6876.41300 (112, 1)	6832.49700 (112, 1)	6861.12500 (278,23)	6873.78500 (363, 9)	6866.83100 (340, 4)
-140.0 /	6534.26600 (112, 1)	6482.14700 (112, 1)	6507.70000 (278,23)	6524.30200 (278,23)	6521.01800 (112, 5)
-150.0 /	6221.35400 (112, 1)	6161.73600 (112, 1)	6181.34000 (278,23)	6210.42900 (278,23)	6204.88600 (112, 5)
-160.0 /	5933.01900 (112, 1)	5866.90000 (112, 1)	5877.34500 (278,23)	5921.33200 (278,23)	5911.95800 (112, 5)
-170.0 /	5665.65100 (112, 1)	5594.22200 (112, 1)	5592.17900 (278,23)	5652.92500 (278,23)	5637.90200 (112, 5)
-180.0 /	5416.45200 (112, 1)	5340.99900 (112, 1)	5323.25500 (278,23)	5401.95400 (278,23)	5387.61400 (363, 9)
-190.0 /	5183.23800 (112, 1)	5105.01900 (112, 1)	5068.70100 (278,23)	5165.85400 (278,23)	5153.37600 (363, 9)
-200.0 /	4964.28600 (112, 1)	4884.48200 (112, 1)	4827.19000 (278,23)	4942.63500 (278,23)	4931.01100 (363, 9)
-210.0 /	4758.23300 (112, 1)	4677.88100 (112, 1)	4597.77900 (278,23)	4730.77100 (278,23)	4718.88000 (363, 9)
-220.0 /	4563.95600 (112, 1)	4483.94500 (112, 1)	4379.78600 (278,23)	4529.12100 (278,23)	4515.79700 (363, 9)
-230.0 /	4380.52200 (112, 1)	4301.58700 (112, 1)	4172.68200 (278,23)	4336.82900 (278,23)	4334.38200 (278,23)
-240.0 /	4207.14300 (112, 1)	4129.86100 (112, 1)	3976.03800 (278,23)	4153.25300 (278,23)	4169.16100 (278,23)
-250.0 /	4043.12300 (112, 1)	3967.94600 (112, 1)	3789.47000 (278,23)	3977.90400 (278,23)	4011.14000 (278,23)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	100.0	110.0	120.0	130.0	140.0
250.0 /	6078.49400 (90,23)	6174.41600 (90,23)	6130.61900 (91, 1)	6094.80200 (282,19)	6021.54300 (90,24)
240.0 /	6447.06300 (90,23)	6501.67600 (90,23)	6467.69700 (91, 1)	6414.44300 (282,19)	6352.86300 (90,24)
230.0 /	6835.14100 (90,23)	6857.33700 (299, 4)	6818.84400 (91, 1)	6736.49000 (282,19)	6690.95100 (170,21)
220.0 /	7249.47900 (90,23)	7249.33000 (299, 4)	7217.17700 (282,19)	7163.35900 (90,24)	7084.65300 (170,21)
210.0 /	7698.88400 (90,23)	7687.07700 (91, 1)	7659.65000 (282,19)	7599.68900 (90,24)	7456.90100 (170,21)
200.0 /	8194.48300 (90,23)	8188.31900 (91, 1)	8137.82100 (90,24)	8101.74300 (170,21)	7987.02700 (105, 3)
190.0 /	8751.02100 (299, 4)	8749.11600 (91, 1)	8732.90200 (90,24)	8634.06100 (170,21)	8522.20000 (105, 3)
180.0 /	9393.07200 (299, 4)	9414.68700 (282,19)	9390.11100 (170,21)	9306.08400 (105, 3)	9136.04200 (105, 4)
170.0 /	10161.97000 (90,23)	10201.88000 (282,19)	10180.56000 (170,21)	10065.37000 (105, 4)	9847.35700 (105, 5)
160.0 /	11132.22000 (90,23)	11171.28000 (90,24)	11129.30000 (105, 3)	10955.87000 (151,20)	10603.10000 (204, 2)

150.0 / 12367.52000 (299, 4) 12408.30000 (170,21) 12295.76000 (105, 4) 11896.27000 (204, 2) 11453.56000 (65, 6)
140.0 / 13998.64000 (282,19) 14012.70000 (105, 3) 13618.70000 (105, 5) 13048.49000 (65, 6) 12288.73000 (104, 2)
130.0 / 16337.33000 (170,21) 16083.96000 (105, 5) 15168.39000 (269, 2) 14091.18000 (104, 2) 13048.33000 (253, 3)
120.0 / 20107.77000 (151,20) 18519.57000 (104, 2) 16393.57000 (65, 6) 15132.21000 (253, 3) 13549.70000 (210, 3)
110.0 / 24408.45000 (104, 2) 20072.78000 (204, 2) 18519.61000 (104, 2) 15978.91000 (242, 4) 14011.77000 (305, 7)
100.0 / 27429.62000 (105, 5) 24408.45000 (104, 2) 20107.75000 (242, 4) 16087.58000 (305, 6) 13993.19000 (110, 7)
90.0 / 23179.98000 (104, 2) 26998.00000 (305, 7) 19777.12000 (110, 4) 15976.95000 (110, 5) 13636.29000 (305, 6)
80.0 / 27115.88000 (242, 4) 22215.36000 (104, 2) 19239.13000 (242, 4) 15699.31000 (110, 7) 13929.43000 (110, 7)
70.0 / 21078.87000 (253, 3) 26509.28000 (305, 7) 19757.47000 (110, 4) 16000.42000 (110, 5) 13496.40000 (39,19)
60.0 / 25637.45000 (302, 3) 21679.71000 (39,19) 17832.79000 (39,19) 15271.85000 (110, 7) 13544.25000 (110, 4)
50.0 / 17583.13000 (210, 3) 24395.80000 (305, 6) 19495.46000 (110, 4) 15803.63000 (110, 5) 13480.83000 (39,19)
40.0 / 25267.87000 (246, 7) 22040.98000 (39,19) 17930.91000 (39,19) 15230.86000 (39,19) 13342.46000 (39,19)
30.0 / 20770.90000 (104, 6) 26225.68000 (242, 1) 17049.83000 (39,19) 14902.58000 (39,19) 13238.87000 (39,19)
20.0 / 26924.11000 (246, 7) 23276.12000 (39,19) 19099.56000 (246, 7) 15780.34000 (242, 1) 12652.62000 (242, 1)
10.0 / 35144.51000 (329,17) 24657.07000 (246, 7) 17487.09000 (242, 1) 15201.29000 (246, 7) 13621.14000 (242, 1)
.0 / 35803.94000 (246, 7) 25723.40000 (329,17) 18989.59000 (246, 7) 15890.61000 (242, 1) 13422.30000 (242, 1)
-10.0 / 24985.18000 (65, 4) 22648.27000 (349,17) 19156.64000 (349,17) 16157.79000 (242, 1) 14004.08000 (242, 1)
-20.0 / 19276.92000 (246, 5) 19006.39000 (292,19) 17670.89000 (217, 3) 15758.37000 (349,17) 13908.63000 (246, 7)
-30.0 / 15895.63000 (246, 5) 16034.84000 (65, 2) 15691.83000 (174,23) 14637.30000 (217, 3) 13377.72000 (349,17)
-40.0 / 13840.39000 (246, 5) 13886.51000 (115,22) 13830.57000 (65, 1) 13326.02000 (174,23) 12488.16000 (217, 3)
-50.0 / 12301.86000 (197,23) 12356.99000 (115,22) 12323.16000 (65, 2) 12077.42000 (175, 1) 11545.36000 (174,24)
-60.0 / 11085.55000 (197,23) 11132.85000 (246, 4) 11081.59000 (65, 2) 10987.00000 (65, 4) 10673.09000 (292,19)
-70.0 / 10125.40000 (197,23) 10171.12000 (246, 4) 10112.06000 (115,22) 10062.93000 (65, 2) 9845.19600 (65, 1)
-80.0 / 9364.55800 (246, 5) 9389.21200 (246, 4) 9371.41000 (115,22) 9284.73100 (65, 2) 9148.26800 (65, 4)
-90.0 / 8724.28700 (197,23) 8730.55200 (246, 5) 8713.49500 (115,22) 8541.16100 (65, 2) 8516.65600 (65, 2)
-100.0 / 8175.58200 (197,23) 8172.37200 (246, 5) 8120.35900 (246, 4) 8031.70700 (115,22) 7969.59800 (65, 2)
-110.0 / 7689.94600 (197,23) 7672.44700 (246, 5) 7645.41600 (246, 4) 7585.89900 (115,22) 7401.48200 (65, 2)
-120.0 / 7252.60400 (197,23) 7213.94000 (246, 5) 7203.26900 (246, 4) 7148.66200 (115,22) 6960.35700 (115,22)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) 100.0	110.0	120.0	130.0	140.0
-130.0 /	6856.90200 (363, 7)	6806.08200 (197,23)	6806.41300 (246, 5)	6724.39800 (246, 4)	6659.59400 (115,22)
-140.0 /	6510.51400 (363, 7)	6473.22900 (197,23)	6455.39300 (246, 5)	6402.06700 (246, 4)	6339.64300 (115,22)
-150.0 /	6190.05700 (363, 7)	6162.86500 (197,23)	6118.18300 (246, 5)	6082.28300 (246, 4)	6007.78900 (115,22)
-160.0 /	5892.34600 (340, 4)	5869.87500 (197,23)	5790.83300 (246, 5)	5776.02300 (246, 5)	5698.80900 (246, 4)
-170.0 /	5622.28300 (340, 4)	5590.17300 (197,23)	5503.43800 (197,23)	5518.88000 (246, 5)	5461.19600 (246, 4)
-180.0 /	5366.23000 (340, 4)	5329.50800 (363, 7)	5283.56600 (197,23)	5261.41900 (246, 5)	5214.54600 (246, 4)

-190.0 /	5121.48700 (340, 4)	5105.35100 (363, 7)	5068.60600 (197,23)	5003.38900 (246, 5)	4969.20700 (246, 5)
-200.0 /	4901.28600 (112, 5)	4888.78600 (363, 7)	4857.38500 (197,23)	4744.81800 (246, 5)	4773.12200 (246, 5)
-210.0 /	4703.59400 (112, 5)	4678.40600 (363, 7)	4649.06600 (197,23)	4557.87900 (197,23)	4570.44800 (246, 5)
-220.0 /	4513.78300 (112, 5)	4490.10300 (340, 4)	4443.19200 (197,23)	4400.70800 (197,23)	4362.55700 (246, 5)
-230.0 /	4330.86000 (112, 5)	4307.46900 (340, 4)	4271.41900 (363, 7)	4241.72800 (197,23)	4150.84800 (246, 5)
-240.0 /	4154.24300 (363, 9)	4129.13700 (340, 4)	4110.74100 (363, 7)	4081.31800 (197,23)	3956.94400 (197,23)
-250.0 /	3996.65800 (363, 9)	3954.91200 (340, 4)	3951.69300 (363, 7)	3919.96900 (197,23)	3841.95500 (197,23)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS /	X-AXIS (METERS)				
(METERS) /	150.0	160.0	170.0	180.0	190.0

250.0 /	5955.20000 (170,21)	5767.80400 (105, 3)	5755.89700 (105, 3)	5630.85800 (105, 4)	5497.53800 (105, 5)
240.0 /	6256.87600 (170,21)	6147.82900 (105, 3)	6036.93300 (105, 4)	5903.93700 (151,20)	5729.83400 (105, 5)
230.0 /	6524.02300 (170,21)	6483.66700 (105, 3)	6326.86500 (105, 4)	6191.04200 (105, 5)	5951.46800 (204, 2)
220.0 /	6967.17200 (105, 3)	6843.74200 (105, 4)	6676.70100 (151,20)	6401.99100 (105, 5)	6303.01500 (204, 2)
210.0 /	7380.41800 (105, 3)	7225.15800 (151,20)	7004.91100 (105, 5)	6822.77700 (204, 2)	6598.44200 (65, 6)
200.0 /	7844.83500 (105, 4)	7652.28500 (105, 5)	7398.32000 (204, 2)	7166.32300 (65, 6)	6884.05800 (269, 2)
190.0 /	8352.61600 (151,20)	8036.86100 (204, 2)	7812.12900 (65, 6)	7520.95600 (269, 2)	7219.63100 (104, 2)
180.0 /	8865.78800 (105, 5)	8602.72000 (204, 2)	8261.64200 (269, 2)	7901.49000 (104, 2)	7450.93800 (253, 3)
170.0 /	9525.90000 (204, 2)	9134.03000 (269, 2)	8705.10000 (104, 2)	8207.63800 (253, 3)	7812.35900 (253, 3)
160.0 /	10176.66000 (269, 2)	9667.32900 (104, 2)	9099.16600 (253, 3)	8601.33100 (210, 3)	8037.39800 (210, 3)
150.0 /	10839.44000 (104, 2)	10163.68000 (253, 3)	9525.05600 (210, 3)	8768.01200 (242, 4)	8350.63900 (242, 4)
140.0 /	11453.11000 (253, 3)	10602.73000 (210, 3)	9810.02700 (242, 4)	9130.03400 (242, 4)	8538.03800 (302, 3)
130.0 /	11896.19000 (210, 3)	10954.54000 (242, 4)	10070.27000 (302, 3)	9313.73400 (305, 6)	8627.29300 (305, 6)
120.0 /	12263.97000 (302, 3)	11137.53000 (305, 6)	10130.87000 (305, 6)	9239.97300 (305, 6)	8639.09900 (110, 7)
110.0 /	12288.00000 (305, 6)	11121.85000 (110, 7)	10195.97000 (110, 7)	9410.10300 (110, 7)	8744.62800 (110, 7)
100.0 /	12357.68000 (110, 4)	11122.91000 (110, 6)	10154.23000 (110, 6)	9387.71600 (110, 4)	8746.68500 (110, 4)
90.0 /	12120.61000 (110, 7)	11077.14000 (110, 7)	10141.87000 (119,20)	9383.33600 (110, 6)	8737.81300 (110, 5)
80.0 /	12340.14000 (110, 4)	11121.09000 (110, 5)	10140.05000 (110, 5)	9335.73600 (110, 5)	8653.23300 (110, 5)
70.0 /	12168.16000 (39,19)	11053.77000 (39,19)	10133.21000 (39,19)	9369.83900 (39,19)	8727.52400 (39,19)
60.0 /	12113.24000 (110, 5)	10921.84000 (39,19)	10062.12000 (39,19)	9337.84100 (39,19)	8713.62200 (39,19)
50.0 /	12156.76000 (39,19)	11040.55000 (39,19)	10112.77000 (39,19)	9336.61300 (39,19)	8675.67600 (39,19)
40.0 /	11941.67000 (39,19)	10843.46000 (39,19)	9935.50000 (39,19)	9154.88000 (39,19)	8467.11100 (39,19)
30.0 /	11817.01000 (39,19)	10606.87000 (39,19)	9573.42400 (39,19)	8677.47000 (39,19)	7890.06900 (39,19)
20.0 /	10976.76000 (242, 1)	9519.15500 (242, 1)	8284.85600 (39,19)	7299.70000 (39,19)	6470.41500 (39,19)
10.0 /	11808.12000 (242, 1)	10229.31000 (242, 1)	8953.92600 (242, 1)	7782.43300 (242, 1)	6676.07700 (242, 1)
.0 /	12009.16000 (242, 1)	10795.38000 (242, 1)	9597.22300 (242, 1)	8507.04200 (242, 1)	7504.90400 (242, 1)
-10.0 /	12275.55000 (242, 1)	10981.92000 (242, 1)	9949.03300 (242, 1)	8997.19500 (242, 1)	8095.43100 (242, 1)
-20.0 /	12336.50000 (242, 1)	11184.88000 (242, 1)	10155.06000 (242, 1)	9271.48400 (242, 1)	8470.37600 (242, 1)
-30.0 /	12075.88000 (329,17)	10990.50000 (246, 7)	10030.79000 (242, 1)	9339.30000 (242, 1)	8650.37400 (242, 1)
-40.0 /	11562.01000 (349,17)	10706.03000 (329,17)	9891.06300 (246, 7)	9095.93600 (246, 7)	8464.49200 (242, 1)
-50.0 /	10896.63000 (217, 3)	10203.58000 (104, 6)	9538.14500 (329,17)	8878.03900 (329,17)	8355.73900 (246, 7)

-60.0 /	10222.19000 (174,24)	9664.71900 (217, 3)	9142.03600 (104, 6)	8621.17400 (349,17)	8112.38700 (329,17)
-70.0 /	9541.72500 (174,23)	9151.00400 (174,24)	8676.12900 (217, 3)	8265.72800 (104, 6)	7835.52300 (349,17)
-80.0 /	8914.11900 (175, 1)	8608.87400 (174,23)	8264.83400 (174,24)	7860.49500 (217, 3)	7528.14800 (104, 6)
-90.0 /	8345.33500 (65, 1)	8088.02200 (292,19)	7803.27100 (174,23)	7519.20800 (289, 5)	7173.14600 (217, 3)
-100.0 /	7822.25400 (65, 4)	7625.07600 (175, 1)	7414.49700 (292,19)	7103.13100 (174,23)	6892.89800 (289, 5)
-110.0 /	7368.53100 (65, 2)	7212.90000 (65, 4)	7027.31400 (175, 1)	6807.29300 (174,23)	6542.61500 (174,24)
-120.0 /	6950.49000 (65, 2)	6796.69300 (65, 4)	6664.02300 (65, 1)	6469.30800 (175, 1)	6289.63000 (174,23)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS /	X-AXIS (METERS)				
(METERS) /	150.0	160.0	170.0	180.0	190.0
-130.0 /	6493.61000 (65, 2)	6470.32400 (65, 2)	6335.07600 (65, 4)	6159.83200 (175, 1)	5996.17000 (292,19)
-140.0 /	6089.33600 (115,22)	6131.78700 (65, 2)	5969.60400 (65, 2)	5888.93800 (65, 1)	5740.70200 (175, 1)
-150.0 /	5887.09500 (115,22)	5750.26000 (65, 2)	5742.68100 (65, 2)	5612.50500 (65, 4)	5483.85200 (65, 1)
-160.0 /	5653.34500 (115,22)	5372.56400 (115,22)	5456.81500 (65, 2)	5335.20900 (65, 2)	5253.33500 (65, 4)
-170.0 /	5396.71100 (115,22)	5237.14300 (115,22)	5129.27000 (65, 2)	5138.34300 (65, 2)	5003.36600 (65, 4)
-180.0 /	5123.00400 (115,22)	5066.07800 (115,22)	4776.38800 (115,22)	4889.64500 (65, 2)	4803.06600 (65, 2)
-190.0 /	4907.78500 (246, 4)	4867.31900 (115,22)	4686.43100 (115,22)	4602.87100 (65, 2)	4627.17000 (65, 2)
-200.0 /	4720.46800 (246, 4)	4647.02900 (115,22)	4560.85100 (115,22)	4289.54100 (65, 2)	4406.33300 (65, 2)
-210.0 /	4520.53200 (246, 4)	4415.74500 (246, 4)	4406.39400 (115,22)	4216.77600 (115,22)	4151.87300 (65, 2)
-220.0 /	4322.18000 (246, 5)	4276.42900 (246, 4)	4228.79700 (115,22)	4124.29200 (115,22)	3873.83400 (65, 2)
-230.0 /	4167.33800 (246, 5)	4121.39500 (246, 4)	4033.07300 (115,22)	4003.74800 (115,22)	3813.76300 (115,22)
-240.0 /	4003.80200 (246, 5)	3953.73600 (246, 4)	3878.80500 (246, 4)	3860.17800 (115,22)	3745.51100 (115,22)
-250.0 /	3833.49900 (246, 5)	3794.28200 (246, 5)	3760.39600 (246, 4)	3698.18700 (115,22)	3651.00600 (115,22)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS /	X-AXIS (METERS)				
(METERS) /	200.0	210.0	220.0	230.0	240.0
250.0 /	5294.24800 (105, 5)	5204.03600 (204, 2)	5043.19200 (65, 6)	4909.77900 (269, 2)	4689.55700 (269, 2)
240.0 /	5563.42000 (204, 2)	5406.92900 (204, 2)	5258.22700 (269, 2)	5032.15000 (269, 2)	4922.96600 (104, 2)
230.0 /	5832.87900 (204, 2)	5647.91300 (65, 6)	5414.77000 (269, 2)	5277.19200 (104, 2)	5012.61700 (104, 2)
220.0 /	6095.68300 (65, 6)	5844.50200 (269, 2)	5674.37000 (104, 2)	5376.06700 (104, 2)	5246.37400 (253, 3)
210.0 /	6330.36800 (269, 2)	6122.76600 (104, 2)	5783.91800 (104, 2)	5647.31200 (253, 3)	5406.00900 (210, 3)
200.0 /	6633.11900 (104, 2)	6244.72900 (104, 2)	6095.19900 (253, 3)	5832.05800 (210, 3)	5564.07500 (210, 3)
190.0 /	6800.75700 (253, 3)	6598.14700 (253, 3)	6302.41700 (210, 3)	5952.56200 (210, 3)	5644.20300 (242, 4)

180.0 /	7166.27700 (253, 3)	6822.50500 (210, 3)	6371.81400 (210, 3)	6146.27500 (242, 4)	5903.47100 (242, 4)
170.0 /	7398.44800 (210, 3)	6910.86600 (242, 4)	6675.11600 (242, 4)	6319.93900 (242, 4)	6033.41600 (302, 3)
160.0 /	7608.49100 (242, 4)	7224.19300 (242, 4)	6820.40400 (302, 3)	6481.97100 (302, 3)	6162.28500 (305, 6)
150.0 /	7801.35500 (302, 3)	7388.17000 (302, 3)	6976.84200 (305, 6)	6580.80800 (305, 6)	6154.95500 (305, 6)
140.0 /	7994.26600 (305, 6)	7486.36400 (305, 6)	6963.69000 (305, 6)	6436.35500 (305, 6)	6138.91100 (110, 7)
130.0 /	7962.56900 (305, 6)	7371.00200 (110, 7)	7054.58900 (110, 7)	6732.85700 (110, 7)	6412.03100 (110, 7)
120.0 /	8128.84700 (110, 7)	7655.72700 (110, 7)	7214.59500 (110, 7)	6815.62200 (119,20)	6465.77400 (119,20)
110.0 /	8183.99000 (119,20)	7683.97300 (119,20)	7245.47900 (110, 4)	6854.75000 (110, 4)	6499.35700 (110, 6)
100.0 /	8190.14900 (110, 6)	7700.11300 (110, 5)	7263.41700 (110, 5)	6864.62900 (110, 5)	6494.75400 (110, 5)
90.0 /	8167.23500 (110, 5)	7655.92500 (110, 5)	7189.47300 (110, 5)	6756.15500 (110, 5)	6347.24400 (110, 5)
80.0 /	8100.13300 (39,19)	7614.85200 (39,19)	7184.83200 (39,19)	6800.93700 (39,19)	6455.66800 (39,19)
70.0 /	8177.13700 (39,19)	7697.29700 (39,19)	7272.73800 (39,19)	6892.39200 (39,19)	6547.96300 (39,19)
60.0 /	8168.08100 (39,19)	7685.83600 (39,19)	7254.72300 (39,19)	6864.95900 (39,19)	6508.82700 (39,19)
50.0 /	8100.92100 (39,19)	7591.26300 (39,19)	7132.00000 (39,19)	6712.99700 (39,19)	6327.30700 (39,19)
40.0 /	7851.54700 (39,19)	7294.78300 (39,19)	6787.82800 (39,19)	6324.51800 (39,19)	5900.38800 (39,19)
30.0 /	7192.60600 (39,19)	6572.86900 (39,19)	6021.84700 (39,19)	5531.96800 (39,19)	5096.42600 (39,19)
20.0 /	5771.93600 (39,19)	5182.15900 (39,19)	4682.04500 (39,19)	4404.78900 (116, 4)	4151.65300 (116, 4)
10.0 /	5639.89500 (242, 1)	5002.91000 (116, 4)	4721.32700 (116, 4)	4466.26400 (116, 4)	4232.15900 (116, 4)
.0 /	6558.32000 (242, 1)	5658.06700 (242, 1)	4807.53600 (242, 1)	4432.57700 (116, 4)	4213.89700 (116, 4)
-10.0 /	7240.21000 (242, 1)	6422.05000 (242, 1)	5635.41200 (242, 1)	4882.12000 (242, 1)	4213.98000 (332, 7)
-20.0 /	7711.61800 (242, 1)	6980.93200 (242, 1)	6272.06900 (242, 1)	5582.65500 (242, 1)	4914.67300 (242, 1)
-30.0 /	7989.17800 (242, 1)	7349.66500 (242, 1)	6724.63300 (242, 1)	6110.25400 (242, 1)	5505.76200 (242, 1)
-40.0 /	8003.64400 (242, 1)	7501.57600 (242, 1)	6983.80100 (242, 1)	6459.54200 (242, 1)	5932.55600 (242, 1)
-50.0 /	7715.43100 (246, 7)	7312.50800 (242, 1)	6977.66200 (242, 1)	6589.53000 (242, 1)	6169.54500 (242, 1)
-60.0 /	7651.17700 (246, 7)	7187.11000 (246, 7)	6636.93500 (246, 7)	6418.79400 (242, 1)	6159.01200 (242, 1)
-70.0 /	7423.40200 (329,17)	6990.45800 (246, 7)	6674.31900 (246, 7)	6250.11100 (246, 7)	5843.53700 (242, 1)
-80.0 /	7154.13500 (349,17)	6804.78400 (329,17)	6465.40200 (329,17)	6181.71400 (246, 7)	5867.79900 (246, 7)
-90.0 /	6897.37700 (104, 6)	6558.32100 (349,17)	6277.48400 (349,17)	6008.51900 (329,17)	5713.91600 (246, 7)
-100.0 /	6584.31200 (217, 3)	6350.87400 (104, 6)	6033.36800 (349,17)	5827.49900 (349,17)	5586.56400 (329,17)
-110.0 /	6349.53500 (289, 5)	6073.25800 (217, 3)	5872.30300 (104, 6)	5582.30800 (104, 6)	5420.34100 (349,17)
-120.0 /	6059.52700 (174,24)	5873.22400 (289, 5)	5625.03400 (217, 3)	5449.51900 (104, 6)	5206.41300 (104, 6)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS /	X-AXIS (METERS)				
(METERS) /	200.0	210.0	220.0	230.0	240.0
-130.0 /	5821.69900 (174,23)	5629.35200 (174,24)	5452.08300 (289, 5)	5228.52900 (217, 3)	5073.27100 (104, 6)
-140.0 /	5581.90100 (292,19)	5397.96900 (174,23)	5244.09600 (174,24)	5077.04300 (289, 5)	4875.26100 (217, 3)
-150.0 /	5343.27100 (175, 1)	5198.86400 (292,19)	5013.53100 (174,23)	4897.34600 (174,24)	4741.03400 (289, 5)
-160.0 /	5105.59600 (175, 1)	4969.06500 (175, 1)	4858.38400 (174,23)	4664.10700 (174,23)	4583.88900 (174,24)
-170.0 /	4919.02400 (65, 1)	4797.86200 (175, 1)	4667.75900 (292,19)	4552.91700 (174,23)	4370.05700 (174,24)
-180.0 /	4719.62900 (65, 4)	4608.07700 (65, 1)	4502.74200 (175, 1)	4388.70500 (292,19)	4270.42600 (174,23)
-190.0 /	4481.49500 (65, 4)	4434.56200 (65, 4)	4309.07200 (175, 1)	4221.67700 (175, 1)	4126.94800 (292,19)

-200.0 / 4349.13900 (65, 2) 4256.30000 (65, 4) 4178.24100 (65, 1) 4076.36500 (175, 1) 3958.66700 (292,19)
-210.0 / 4188.94700 (65, 2) 4063.27100 (65, 2) 4026.90700 (65, 4) 3934.15300 (65, 1) 3851.23700 (175, 1)
-220.0 / 3990.18000 (65, 2) 3957.05500 (65, 2) 3850.63200 (65, 4) 3797.30800 (65, 4) 3696.59000 (65, 1)
-230.0 / 3762.36900 (65, 2) 3809.46300 (65, 2) 3717.06000 (65, 2) 3665.68200 (65, 4) 3597.13500 (65, 1)
-240.0 / 3514.21600 (65, 2) 3629.02500 (65, 2) 3615.19500 (65, 2) 3493.47800 (65, 4) 3478.13800 (65, 4)
-250.0 / 3465.87400 (115,22) 3423.83900 (65, 2) 3478.32200 (65, 2) 3412.73500 (65, 2) 3344.34200 (65, 4)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / X-AXIS (METERS)
(METERS) / 250.0

250.0 / 4605.20000 (104, 2)
240.0 / 4686.83800 (104, 2)
230.0 / 4885.82700 (253, 3)
220.0 / 5043.70700 (253, 3)
210.0 / 5204.35300 (210, 3)
200.0 / 5185.32300 (210, 3)
190.0 / 5494.83900 (242, 4)
180.0 / 5576.23000 (302, 3)
170.0 / 5754.92300 (305, 7)
160.0 / 5840.62500 (305, 6)
150.0 / 5711.13800 (305, 6)
140.0 / 5932.02400 (110, 7)
130.0 / 6093.69600 (110, 7)
120.0 / 6130.03700 (119,20)
110.0 / 6173.36100 (110, 6)
100.0 / 6146.64700 (110, 5)
90.0 / 5956.65600 (110, 5)
80.0 / 6142.88600 (39,19)
70.0 / 6233.06900 (39,19)
60.0 / 6180.36900 (39,19)
50.0 / 5970.13400 (39,19)
40.0 / 5511.96200 (39,19)
30.0 / 4708.95400 (39,19)
20.0 / 3912.92700 (116, 4)
10.0 / 4014.56000 (116, 4)
.0 / 4013.36200 (116, 4)
-10.0 / 3990.71800 (332, 7)
-20.0 / 4274.26500 (242, 1)

-30.0 / 4913.44000 (242, 1)
-40.0 / 5405.62800 (242, 1)
-50.0 / 5729.90000 (242, 1)
-60.0 / 5845.23700 (242, 1)
-70.0 / 5699.90100 (242, 1)
-80.0 / 5473.83600 (246, 7)
-90.0 / 5493.40800 (246, 7)
-100.0 / 5300.23000 (329,17)
-110.0 / 5197.54900 (329,17)
-120.0 / 5050.95000 (349,17)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35803.94000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / X-AXIS (METERS)
(METERS) / 250.0

-130.0 / 4868.36800 (104, 6)
-140.0 / 4741.12900 (217, 3)
-150.0 / 4558.62400 (217, 3)
-160.0 / 4438.44300 (289, 5)
-170.0 / 4299.46300 (174,24)
-180.0 / 4118.67400 (174,24)
-190.0 / 4009.19700 (174,23)
-200.0 / 3881.94800 (292,19)
-210.0 / 3750.21300 (292,19)
-220.0 / 3634.93800 (175, 1)
-230.0 / 3508.57200 (175, 1)
-240.0 / 3402.26800 (65, 1)
-250.0 / 3291.92800 (65, 1)

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
39.0	-8.5	27230.34000	(70, 2)	102.4	12.8	32289.79000	(242, 1)
76.8	112.2	24074.53000	(137,24)	14.6	51.2	26142.60000	(332, 3)
12.2	232.8	6767.26200	(137,24)	-140.1	320.8	2122.81100	(22, 2)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -250.0	-240.0	-230.0	-220.0	-210.0
250.0 /	2972.57000 (17, 1)	3088.32200 (350,23)	3008.07400 (350,23)	2882.66000 (350,23)	3182.56600 (16,24)
240.0 /	2762.55000 (17, 1)	3056.68200 (17, 1)	3339.07400 (17, 1)	3294.58200 (350,23)	3184.88300 (350,23)
230.0 /	3050.71600 (137,20)	2984.60800 (137,20)	3135.78000 (17, 1)	3454.94100 (17, 1)	3603.00200 (350,23)
220.0 /	3344.76600 (137,20)	3345.63500 (137,20)	3308.29700 (137,20)	3229.75200 (137,20)	3567.21900 (17, 1)
210.0 /	3281.65600 (350,23)	3525.14600 (350,23)	3648.34400 (137,20)	3648.63200 (137,20)	3604.22000 (137,20)
200.0 /	3466.62600 (91, 3)	3489.60600 (91, 3)	3620.75000 (350,23)	3890.80100 (350,23)	3998.82700 (137,20)
190.0 /	3527.16000 (137,20)	3738.74800 (137,20)	3814.44000 (91, 3)	3852.28400 (91, 3)	4011.95200 (350,23)
180.0 /	3683.27700 (84, 3)	3771.49200 (84, 3)	3851.20200 (137,20)	4094.63300 (137,20)	4217.21200 (91, 3)
170.0 /	3602.09500 (91, 3)	3820.97900 (91, 3)	4030.56300 (91, 3)	4169.51300 (84, 3)	4266.21600 (84, 3)
160.0 /	3379.19600 (91, 3)	3640.17600 (91, 3)	3900.87200 (91, 3)	4157.62700 (91, 3)	4406.59100 (91, 3)
150.0 /	3429.75300 (361, 3)	3466.32100 (361, 3)	3631.37000 (91, 3)	3932.32900 (91, 3)	4235.03900 (91, 3)
140.0 /	3419.54900 (258, 2)	3467.05700 (258, 2)	3718.47600 (84, 3)	4002.19900 (361, 3)	4071.67500 (361, 3)
130.0 /	3753.89100 (258, 2)	3851.54000 (258, 2)	3946.68300 (258, 2)	4038.88600 (258, 2)	4127.59700 (258, 2)
120.0 /	3917.23500 (361, 3)	4074.26800 (258, 2)	4215.93500 (258, 2)	4359.04100 (258, 2)	4503.82700 (258, 2)
110.0 /	3952.41000 (258, 2)	4126.55400 (258, 2)	4294.63500 (258, 3)	4460.56700 (258, 3)	4633.04300 (361, 3)
100.0 /	3815.76200 (258, 2)	4015.41900 (258, 2)	4221.85200 (258, 2)	4434.97800 (258, 2)	4654.89200 (258, 2)
90.0 /	3536.53000 (258, 2)	3753.00600 (258, 2)	3979.78200 (258, 2)	4216.61700 (258, 2)	4463.26200 (258, 2)
80.0 /	3132.52900 (258, 2)	3354.19300 (258, 2)	3590.49800 (258, 2)	3841.55700 (258, 2)	4107.30400 (258, 2)
70.0 /	2631.82300 (258, 2)	2843.17800 (258, 2)	3073.03700 (258, 2)	3322.42900 (258, 2)	3592.21000 (258, 2)
60.0 /	2409.98100 (17, 2)	2570.48600 (258, 3)	2780.65400 (258, 3)	3011.39100 (258, 3)	3264.38700 (258, 3)
50.0 /	2564.60100 (17, 2)	2672.62600 (17, 2)	2787.03800 (17, 2)	2908.29800 (17, 2)	3036.93100 (17, 2)
40.0 /	2617.90500 (17, 2)	2724.14900 (17, 2)	2836.37000 (17, 2)	2955.02100 (17, 2)	3080.63000 (17, 2)
30.0 /	2605.50600 (128, 3)	2709.03100 (128, 3)	2818.38000 (128, 3)	2934.07700 (128, 3)	3056.75000 (128, 3)
20.0 /	2610.87800 (295, 7)	2838.70600 (295, 7)	3085.78200 (295, 7)	3352.68000 (295, 7)	3639.65900 (295, 7)
10.0 /	3103.48100 (295, 7)	3338.78100 (295, 7)	3588.50800 (295, 7)	3852.31700 (295, 7)	4129.63900 (295, 7)

.0 /	3503.57900 (295, 7)	3730.53800 (295, 7)	3966.94200 (295, 7)	4122.05800 (197, 5)	4309.04400 (77, 3)
-10.0 /	3630.92600 (77, 3)	3854.03300 (77, 3)	4083.95100 (77, 3)	4319.98700 (77, 3)	4561.60300 (77, 3)
-20.0 /	3847.84300 (77, 3)	4043.79600 (77, 3)	4242.51500 (77, 3)	4443.57100 (77, 3)	4638.79600 (295, 7)
-30.0 /	3907.89300 (295, 7)	4061.84500 (77, 6)	4242.89100 (142,24)	4422.96100 (142,24)	4601.53000 (77, 6)
-40.0 /	3881.92400 (142,24)	4018.94900 (77, 6)	4154.66300 (77, 4)	4354.75200 (77, 7)	4501.51700 (77, 7)
-50.0 /	3812.76500 (77, 7)	3923.51000 (77, 7)	4097.93300 (84, 5)	4312.03700 (84, 5)	4476.10800 (77, 5)
-60.0 /	3778.71000 (84, 5)	3902.52100 (77, 5)	4099.76400 (77, 5)	4268.88700 (84, 5)	4413.20000 (84, 6)
-70.0 /	3755.14100 (84, 5)	3870.09800 (84, 5)	4035.00300 (84, 6)	4182.25600 (118, 5)	4396.31200 (118, 5)
-80.0 /	3675.12400 (77, 5)	3826.22700 (118, 5)	4005.40500 (131, 4)	4163.87900 (131, 4)	4296.11300 (131, 4)
-90.0 /	3662.32100 (131, 4)	3793.11400 (131, 4)	3899.16500 (131, 4)	3975.28000 (131, 4)	4015.91500 (118, 5)
-100.0 /	3554.84600 (131, 4)	3613.65000 (131, 4)	3640.86100 (131, 4)	3632.04500 (118, 5)	3583.00300 (118, 5)
-110.0 /	3318.59500 (131, 4)	3305.24900 (118, 5)	3257.36600 (118, 5)	3172.41100 (118, 5)	3539.70400 (138, 3)
-120.0 /	2978.45300 (118, 5)	2901.45500 (118, 5)	3115.37000 (138, 3)	3448.75900 (138, 3)	3768.43800 (138, 3)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -250.0	-240.0	-230.0	-220.0	-210.0
-130.0 /	2750.78700 (138, 3)	3053.96800 (138, 3)	3350.09900 (138, 3)	3627.79000 (301,22)	3873.97200 (301,22)
-140.0 /	2984.23200 (138, 3)	3245.30500 (138, 3)	3484.29900 (301,22)	3689.26700 (301,22)	3847.48400 (301,22)
-150.0 /	3135.98700 (301,22)	3339.70000 (301,22)	3507.97600 (301,22)	3629.75900 (301,22)	3694.42400 (301,22)
-160.0 /	3195.55500 (301,22)	3331.45500 (301,22)	3421.96000 (301,22)	3458.36600 (301,22)	3433.63900 (138, 3)
-170.0 /	3160.75700 (301,22)	3224.61700 (301,22)	3237.76000 (138, 3)	3194.93000 (138, 3)	3349.06800 (116,22)
-180.0 /	3037.96800 (301,22)	3032.12300 (138, 3)	2975.30400 (138, 3)	3189.52700 (116,22)	3416.58900 (116,22)
-190.0 /	2840.82000 (138, 3)	2799.22100 (116,22)	3040.75100 (116,22)	3226.59400 (301,23)	3346.26800 (132, 1)
-200.0 /	2683.36700 (116,22)	2901.83500 (116,22)	3044.64000 (301,23)	3174.81300 (132, 1)	3286.43200 (116,22)
-210.0 /	2771.97400 (116,22)	2876.79000 (301,23)	3016.52800 (132, 1)	3112.55000 (116,22)	3108.32900 (116,22)
-220.0 /	2721.74600 (301,23)	2870.10300 (132, 1)	2952.44900 (116,22)	2945.25600 (116,22)	3014.17600 (132, 1)
-230.0 /	2734.39000 (132, 1)	2804.71900 (116,22)	2795.15800 (116,22)	2862.61400 (132, 1)	2787.47400 (132, 1)
-240.0 /	2668.13400 (116,22)	2656.69700 (116,22)	2722.73000 (132, 1)	2653.29800 (132, 1)	2528.67400 (132, 1)
-250.0 /	2528.69900 (116,22)	2588.60600 (120,20)	2529.09100 (132, 1)	2414.35200 (132, 1)	2502.84900 (128, 5)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -200.0	-190.0	-180.0	-170.0	-160.0
250.0 /	3536.59100 (16,24)	3817.36100 (17, 1)	3729.67200 (17, 1)	4055.14600 (179, 4)	4374.94200 (179, 4)
240.0 /	3314.18800 (16,24)	3707.87900 (16,24)	4067.98800 (16,24)	4039.03800 (17, 1)	4310.25300 (179, 4)
230.0 /	3516.39600 (350,23)	3452.24000 (16,24)	3890.06000 (16,24)	4296.40400 (16,24)	4381.42600 (17, 1)
220.0 /	3910.16900 (17, 1)	3877.44800 (350,23)	3754.88700 (350,23)	4084.03400 (16,24)	4542.78300 (16,24)
210.0 /	3674.64500 (17, 1)	4065.39900 (17, 1)	4267.01100 (350,23)	4179.66400 (350,23)	4290.90600 (16,24)
200.0 /	3999.73600 (137,20)	3947.91600 (137,20)	4218.09600 (17, 1)	4640.46900 (17, 1)	4644.32800 (350,23)
190.0 /	4312.56700 (350,23)	4407.61500 (137,20)	4411.44400 (137,20)	4367.26500 (17, 1)	4852.55300 (17, 1)
180.0 /	4276.53700 (91, 3)	4465.80200 (350,23)	4802.36300 (350,23)	4890.34700 (137,20)	4901.22400 (137,20)
170.0 /	4502.87200 (137,20)	4686.31700 (91, 3)	4776.81100 (91, 3)	4996.07200 (350,23)	5368.45200 (137,20)
160.0 /	4623.07000 (84, 3)	4761.19100 (84, 3)	4974.05800 (137,20)	5235.90200 (91, 3)	5371.83100 (91, 3)
150.0 /	4535.89100 (91, 3)	4831.35200 (91, 3)	5117.96100 (91, 3)	5332.26500 (84, 3)	5522.34600 (137,20)
140.0 /	4261.04700 (91, 3)	4612.31000 (91, 3)	4964.34600 (91, 3)	5314.40800 (91, 3)	5660.39100 (91, 3)
130.0 /	4313.28900 (84, 3)	4654.80300 (84, 3)	4841.82000 (361, 3)	5044.94500 (91, 3)	5456.74900 (91, 3)
120.0 /	4650.66000 (258, 2)	4799.95600 (258, 2)	4952.12900 (258, 2)	5107.48100 (258, 2)	5462.65600 (84, 3)
110.0 /	4862.05600 (361, 3)	5066.63400 (258, 2)	5273.99400 (258, 2)	5491.31000 (258, 2)	5720.90100 (258, 2)
100.0 /	4881.98400 (258, 2)	5117.03700 (258, 2)	5359.28900 (258, 3)	5601.55100 (258, 3)	5858.91100 (258, 3)
90.0 /	4719.56000 (258, 2)	4985.56100 (258, 2)	5261.70500 (258, 2)	5548.97900 (258, 2)	5849.14400 (258, 2)
80.0 /	4387.52600 (258, 2)	4681.90700 (258, 2)	4990.17700 (258, 2)	5312.27800 (258, 2)	5648.64800 (258, 2)
70.0 /	3883.00100 (258, 2)	4195.13300 (258, 2)	4528.64200 (258, 2)	4883.30500 (258, 2)	5258.79800 (258, 2)
60.0 /	3541.24700 (258, 3)	3843.43100 (258, 3)	4172.15300 (258, 3)	4528.31100 (258, 3)	4912.45100 (258, 3)
50.0 /	3173.53900 (17, 2)	3318.83200 (17, 2)	3473.66900 (17, 2)	3727.72900 (258, 3)	4109.95700 (258, 3)
40.0 /	3213.82800 (17, 2)	3355.37700 (17, 2)	3506.21800 (17, 2)	3667.52400 (17, 2)	4014.93000 (295, 7)
30.0 /	3318.90700 (295, 7)	3648.56400 (295, 7)	4006.98200 (295, 7)	4394.08600 (295, 7)	4809.18800 (295, 7)
20.0 /	3946.61800 (295, 7)	4273.06500 (295, 7)	4618.19200 (295, 7)	4981.01000 (295, 7)	5360.63700 (295, 7)
10.0 /	4419.75500 (295, 7)	4721.90700 (295, 7)	5035.48700 (295, 7)	5360.29100 (295, 7)	5663.43600 (197, 5)
.0 /	4590.21400 (77, 3)	4880.00700 (77, 3)	5178.19000 (77, 3)	5485.19900 (77, 3)	5802.38100 (77, 3)
-10.0 /	4808.54800 (77, 3)	5061.00400 (77, 3)	5319.74100 (77, 3)	5585.91700 (295, 7)	5848.44000 (77, 6)
-20.0 /	4838.56300 (77, 6)	5069.14100 (142,24)	5303.08600 (142,24)	5541.53600 (77, 6)	5789.93700 (77, 4)
-30.0 /	4778.21100 (77, 6)	5003.64400 (77, 4)	5212.82000 (77, 7)	5449.02000 (84, 5)	5761.62900 (84, 5)
-40.0 /	4704.77200 (84, 5)	4959.28000 (77, 4)	5176.21500 (77, 5)	5452.25300 (84, 5)	5684.62500 (84, 5)
-50.0 /	4706.84500 (77, 5)	4897.32800 (84, 5)	5122.61600 (84, 6)	5357.20100 (118, 5)	5651.40000 (131, 4)
-60.0 /	4613.07300 (77, 5)	4843.38600 (118, 5)	5081.14500 (131, 4)	5293.60600 (131, 4)	5472.68100 (131, 4)
-70.0 /	4589.72700 (131, 4)	4756.41600 (131, 4)	4889.18400 (131, 4)	4979.33600 (118, 5)	5016.40200 (118, 5)
-80.0 /	4395.94400 (131, 4)	4456.44300 (118, 5)	4469.91100 (118, 5)	4428.10600 (118, 5)	4785.81300 (138, 3)
-90.0 /	4015.29500 (118, 5)	3967.62100 (118, 5)	4155.90800 (138, 3)	4611.00200 (138, 3)	5040.82500 (138, 3)
-100.0 /	3621.56600 (138, 3)	4034.04700 (138, 3)	4430.87500 (138, 3)	4794.22300 (301,22)	5102.84000 (301,22)
-110.0 /	3904.43000 (138, 3)	4246.73100 (138, 3)	4549.48700 (301,22)	4793.13300 (301,22)	4956.24300 (301,22)
-120.0 /	4060.42700 (301,22)	4308.82000 (301,22)	4496.22400 (301,22)	4604.68900 (301,22)	4617.51900 (138, 3)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	-200.0	-190.0	-180.0	-170.0	-160.0
-130.0 /	4074.26200 (301,22)	4213.59700 (301,22)	4277.31800 (301,22)	4252.85800 (138, 3)	4524.60500 (116,22)
-140.0 /	3946.18200 (301,22)	3973.63700 (138, 3)	3920.66500 (138, 3)	4264.11500 (116,22)	4462.95800 (132, 1)
-150.0 /	3692.78400 (138, 3)	3704.61300 (116,22)	4025.24700 (116,22)	4197.64000 (132, 1)	4429.40600 (116,22)
-160.0 /	3520.38100 (116,22)	3805.66600 (116,22)	3955.89500 (132, 1)	4156.30600 (116,22)	4181.95400 (116,22)
-170.0 /	3603.36100 (116,22)	3734.93300 (132, 1)	3908.27600 (116,22)	3925.15600 (116,22)	4002.55800 (132, 1)
-180.0 /	3532.39700 (132, 1)	3682.26600 (116,22)	3692.07000 (116,22)	3767.52900 (132, 1)	3653.39300 (132, 1)
-190.0 /	3475.71200 (116,22)	3479.80400 (116,22)	3553.48200 (132, 1)	3448.83800 (132, 1)	3426.25200 (128, 5)
-200.0 /	3285.91600 (116,22)	3357.92800 (132, 1)	3261.82600 (132, 1)	3174.10800 (128, 5)	3532.72400 (128, 5)
-210.0 /	3178.75900 (132, 1)	3090.36200 (132, 1)	2945.65800 (128, 5)	3289.01700 (128, 5)	3385.45800 (120,20)
-220.0 /	2932.73500 (132, 1)	2784.99600 (132, 1)	3065.91900 (128, 5)	3232.22600 (120,20)	3069.96000 (120,20)
-230.0 /	2651.89400 (132, 1)	2861.62100 (128, 5)	3088.00200 (120,20)	2948.57800 (120,20)	2736.46000 (120,20)
-240.0 /	2674.44900 (128, 5)	2933.58800 (128, 5)	2832.87800 (120,20)	2645.39800 (120,20)	2645.38500 (262,23)
-250.0 /	2753.14600 (128, 5)	2722.61900 (120,20)	2557.23300 (120,20)	2410.77600 (262,23)	2742.10700 (262,23)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	-150.0	-140.0	-130.0	-120.0	-110.0
250.0 /	4339.05700 (16,24)	4176.65900 (16,24)	3897.65600 (16,24)	3521.49500 (16,24)	3367.79900 (22, 2)
240.0 /	4666.38200 (179, 4)	4655.13600 (16,24)	4485.81600 (16,24)	4185.04900 (16,24)	3776.10900 (16,24)
230.0 /	4591.53100 (179, 4)	4989.82000 (179, 4)	5008.45100 (16,24)	4832.43100 (16,24)	4507.67500 (16,24)
220.0 /	4760.71700 (17, 1)	4902.92200 (179, 4)	5350.58300 (179, 4)	5405.54300 (16,24)	5223.16100 (16,24)
210.0 /	4808.99300 (16,24)	5181.23900 (17, 1)	5249.21700 (179, 4)	5755.30900 (179, 4)	5854.70800 (16,24)
200.0 /	4513.79600 (350,23)	5097.24300 (16,24)	5628.01900 (16,24)	5636.31900 (179, 4)	6212.43200 (179, 4)
190.0 /	5146.58300 (350,23)	5072.77000 (350,23)	5410.23300 (16,24)	6024.31700 (16,24)	6158.43500 (17, 1)
180.0 /	5065.03600 (17, 1)	5596.45600 (17, 1)	5687.37700 (350,23)	5751.42300 (16,24)	6462.86400 (16,24)
170.0 /	5469.09100 (137,20)	5494.22800 (137,20)	5894.05500 (17, 1)	6352.56400 (350,23)	6326.96100 (350,23)
160.0 /	5621.63400 (350,23)	6033.81000 (137,20)	6176.04600 (137,20)	6227.93000 (137,20)	6893.44100 (17, 1)
150.0 /	5883.71000 (91, 3)	6086.06700 (91, 3)	6369.91200 (350,23)	6849.97100 (137,20)	7060.06300 (137,20)
140.0 /	5990.32700 (84, 3)	6241.21800 (84, 3)	6615.12000 (137,20)	6951.98100 (91, 3)	7283.22800 (350,23)
130.0 /	5871.11600 (91, 3)	6288.23500 (91, 3)	6709.67100 (91, 3)	7107.40200 (84, 3)	7489.68500 (137,20)

120.0 / 5826.16700 (361, 3) 6043.46600 (361, 3) 6528.47300 (91, 3) 7032.57200 (91, 3) 7555.05600 (91, 3)
110.0 / 5965.50700 (258, 2) 6228.27800 (258, 2) 6512.77100 (258, 2) 7004.48000 (84, 3) 7459.98500 (361, 3)
100.0 / 6167.06000 (361, 3) 6481.18000 (258, 2) 6816.75400 (258, 2) 7186.39000 (258, 2) 7598.73900 (258, 2)
90.0 / 6164.90200 (258, 2) 6500.08500 (258, 2) 6859.83100 (258, 2) 7250.11700 (258, 3) 7674.75900 (258, 3)
80.0 / 6000.52500 (258, 2) 6370.31400 (258, 2) 6761.91300 (258, 2) 7181.06700 (258, 2) 7635.81600 (258, 2)
70.0 / 5654.98500 (258, 2) 6072.34700 (258, 2) 6512.58500 (258, 2) 6979.24400 (258, 2) 7478.25500 (258, 2)
60.0 / 5277.47100 (197, 5) 5676.73900 (197, 5) 6113.59900 (197, 5) 6591.36100 (197, 5) 7119.53300 (258, 2)
50.0 / 4534.00700 (258, 3) 5002.04000 (258, 3) 5515.53200 (258, 3) 6075.41800 (258, 3) 6682.64300 (258, 3)
40.0 / 4476.96700 (295, 7) 4982.10800 (295, 7) 5529.35900 (295, 7) 6117.30700 (295, 7) 6745.38200 (295, 7)
30.0 / 5251.14200 (295, 7) 5718.77500 (295, 7) 6211.60700 (295, 7) 6730.81600 (295, 7) 7280.26200 (295, 7)
20.0 / 5756.72300 (295, 7) 6169.95400 (295, 7) 6602.61800 (295, 7) 7059.11300 (295, 7) 7546.42000 (295, 7)
10.0 / 5944.77900 (77, 3) 6332.50000 (77, 3) 6738.92700 (77, 3) 7169.94200 (77, 3) 7633.90800 (77, 3)
.0 / 6132.22100 (77, 3) 6478.51600 (77, 3) 6846.54900 (77, 3) 7241.00200 (295, 7) 7673.66900 (77, 6)
-10.0 / 6156.27600 (142,24) 6479.95100 (142,24) 6824.62900 (77, 6) 7206.63700 (77, 4) 7644.66200 (77, 7)
-20.0 / 6098.43500 (77, 7) 6383.88500 (77, 7) 6778.78300 (84, 5) 7169.13500 (77, 5) 7628.51800 (84, 5)
-30.0 / 6047.61800 (77, 5) 6389.41000 (84, 5) 6714.80700 (84, 6) 7108.34900 (118, 5) 7574.59900 (131, 4)
-40.0 / 5980.12500 (77, 5) 6318.30400 (118, 5) 6674.22300 (131, 4) 7013.07700 (131, 4) 7320.49300 (131, 4)
-50.0 / 5925.10900 (131, 4) 6169.93800 (131, 4) 6372.77900 (118, 5) 6513.59900 (118, 5) 6777.39100 (138, 3)
-60.0 / 5607.51700 (118, 5) 5683.66100 (118, 5) 5777.43800 (138, 3) 6428.23400 (138, 3) 7050.49000 (301,22)
-70.0 / 4988.30400 (118, 5) 5532.55000 (138, 3) 6087.42000 (138, 3) 6592.43800 (301,22) 7006.41500 (301,22)
-80.0 / 5287.29300 (138, 3) 5752.22000 (301,22) 6151.90800 (301,22) 6448.06300 (301,22) 6593.98600 (138, 3)
-90.0 / 5423.32100 (301,22) 5730.99900 (301,22) 5930.79300 (301,22) 5987.21000 (138, 3) 6437.76000 (116,22)
-100.0 / 5331.92800 (301,22) 5454.28700 (301,22) 5465.86100 (116,22) 5972.93100 (116,22) 6303.34100 (132, 1)
-110.0 / 5017.20100 (138, 3) 5121.92000 (116,22) 5558.65900 (116,22) 5838.41900 (132, 1) 5973.64300 (116,22)
-120.0 / 4809.45800 (116,22) 5151.52600 (301,23) 5426.68100 (132, 1) 5527.82300 (116,22) 5619.91100 (132, 1)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	-150.0	-140.0	-130.0	-120.0	-110.0
-130.0 /	4781.46100 (301,23)	5059.55100 (132, 1)	5133.07500 (116,22)	5221.20100 (132, 1)	5038.52600 (132, 1)
-140.0 /	4730.27500 (132, 1)	4781.24400 (116,22)	4866.05200 (132, 1)	4700.86800 (132, 1)	5153.16400 (128, 5)
-150.0 /	4465.92000 (116,22)	4547.91000 (132, 1)	4397.93600 (132, 1)	4733.10000 (128, 5)	4824.77400 (120,20)
-160.0 /	4261.50600 (132, 1)	4124.91000 (132, 1)	4354.57900 (128, 5)	4555.93600 (120,20)	4312.12600 (120,20)
-170.0 /	3877.82600 (132, 1)	4013.16000 (128, 5)	4307.29100 (120,20)	4102.43900 (120,20)	4028.14400 (262,23)
-180.0 /	3704.89000 (128, 5)	4076.92300 (120,20)	3905.96200 (120,20)	3618.57100 (120,20)	4120.58900 (262,23)
-190.0 /	3798.97800 (128, 5)	3721.57000 (120,20)	3471.15400 (120,20)	3741.27400 (262,23)	4081.17200 (128, 5)
-200.0 /	3548.33500 (120,20)	3330.89900 (120,20)	3390.43800 (262,23)	3800.65800 (262,23)	3693.75500 (128, 5)
-210.0 /	3197.29600 (120,20)	3068.85700 (262,23)	3480.03500 (262,23)	3583.25900 (128, 5)	3295.32200 (128, 5)
-220.0 /	2830.44400 (120,20)	3179.93700 (262,23)	3468.15100 (128, 5)	3226.93900 (128, 5)	2900.22800 (128, 5)
-230.0 /	2901.62900 (262,23)	3241.34000 (262,23)	3151.46000 (128, 5)	2867.62600 (128, 5)	3010.56400 (36,23)
-240.0 /	2983.61700 (262,23)	3069.97200 (128, 5)	2826.43100 (128, 5)	2640.64800 (36,23)	3092.11600 (36,23)
-250.0 /	2983.66600 (128, 5)	2777.52500 (128, 5)	2504.16900 (128, 5)	2744.89200 (36,23)	3141.37700 (36,23)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-90.0	-80.0	-70.0	-60.0
250.0 /	3362.81700 (22, 2)	3125.57300 (179, 4)	2613.16900 (98, 2)	2719.32300 (330, 4)	2981.97000 (98, 1)
240.0 /	3602.35900 (22, 2)	3563.96800 (22, 2)	3284.24500 (179, 4)	3098.81100 (22, 2)	2970.27400 (330, 4)
230.0 /	4062.58300 (16,24)	3856.03000 (22, 2)	3776.80100 (22, 2)	3462.48000 (179, 4)	3220.12500 (22, 2)
220.0 /	4871.77000 (16,24)	4386.79200 (16,24)	4130.20800 (22, 2)	4002.25400 (22, 2)	3727.47100 (22, 2)
210.0 /	5666.41600 (16,24)	5285.13400 (16,24)	4756.17100 (16,24)	4426.50700 (22, 2)	4242.32800 (22, 2)
200.0 /	6366.66900 (16,24)	6173.05100 (16,24)	5757.74900 (16,24)	5180.31700 (16,24)	4747.17400 (22, 2)
190.0 /	6732.85900 (179, 4)	6955.61700 (16,24)	6757.43500 (16,24)	6302.70700 (16,24)	5671.97500 (16,24)
180.0 /	6812.97200 (17, 1)	7330.95400 (179, 4)	7640.76200 (16,24)	7439.20400 (16,24)	6937.71900 (16,24)
170.0 /	6950.59500 (16,24)	7561.80000 (17, 1)	8026.14300 (179, 4)	8448.79700 (16,24)	8246.34800 (16,24)
160.0 /	7172.11200 (350,23)	7496.72000 (16,24)	8397.93600 (16,24)	8845.60500 (179, 4)	9417.65100 (16,24)
150.0 /	7329.65200 (17, 1)	8087.13800 (350,23)	8198.59300 (350,23)	9215.77000 (16,24)	9829.65600 (179, 4)
140.0 /	7875.48800 (137,20)	8198.84800 (137,20)	8763.03400 (17, 1)	9430.06300 (350,23)	10180.52000 (16,24)
130.0 /	8014.66000 (91, 3)	8445.46700 (91, 3)	9207.01900 (137,20)	9721.69400 (137,20)	10697.62000 (17, 1)
120.0 /	8105.61400 (91, 3)	8666.88600 (84, 3)	9317.73000 (137,20)	10047.29000 (91, 3)	11025.73000 (350,23)
110.0 /	7952.88500 (91, 3)	8607.71100 (91, 3)	9317.01500 (91, 3)	10122.79000 (91, 3)	11104.20000 (84, 3)
100.0 /	8065.23000 (258, 2)	8601.86900 (258, 2)	9283.85400 (84, 3)	10069.49000 (84, 3)	10950.58000 (84, 3)
90.0 /	8157.12800 (361, 3)	8703.94100 (258, 2)	9322.58900 (258, 2)	10041.73000 (258, 2)	10943.11000 (258, 3)
80.0 /	8137.38700 (258, 2)	8701.93700 (258, 2)	9351.53300 (258, 3)	10115.19000 (258, 2)	11005.84000 (258, 2)
70.0 /	8018.16700 (258, 2)	8609.98800 (258, 2)	9267.99100 (258, 2)	10016.95000 (258, 2)	10914.69000 (258, 2)
60.0 /	7727.99500 (258, 2)	8391.02300 (258, 2)	9128.60300 (258, 2)	9964.93500 (258, 2)	10902.19000 (258, 3)
50.0 /	7339.19600 (258, 3)	8049.94300 (258, 3)	8826.23500 (258, 3)	9695.03500 (258, 3)	10717.66000 (258, 3)
40.0 /	7416.06700 (295, 7)	8138.24200 (295, 7)	8931.80300 (295, 7)	9829.09600 (295, 7)	10853.55000 (197, 5)
30.0 /	7867.15500 (295, 7)	8501.62500 (295, 7)	9195.07000 (295, 7)	9962.33000 (295, 7)	10844.67000 (295, 7)
20.0 /	8074.87400 (295, 7)	8653.69200 (197, 5)	9301.21200 (77, 3)	10098.15000 (77, 3)	11053.00000 (295, 7)
10.0 /	8142.04600 (77, 3)	8708.14600 (77, 3)	9346.51000 (142,24)	10091.97000 (77, 7)	11001.37000 (77, 5)
.0 /	8165.02600 (142,24)	8716.93800 (77, 6)	9353.02900 (77, 6)	10116.93000 (142,24)	11072.93000 (142,24)
-10.0 /	8132.34600 (84, 5)	8711.22300 (77, 4)	9367.85300 (77, 5)	10150.06000 (84, 5)	11095.90000 (77, 5)
-20.0 /	8108.47800 (84, 6)	8681.79100 (118, 5)	9354.30700 (131, 4)	10086.45000 (131, 4)	10815.71000 (118, 5)
-30.0 /	8048.63900 (131, 4)	8518.92000 (131, 4)	8949.08700 (118, 5)	9651.87700 (138, 3)	10808.17000 (301,22)
-40.0 /	7569.18100 (118, 5)	8025.14100 (138, 3)	8921.68800 (138, 3)	9780.87100 (301,22)	10449.34000 (138, 3)
-50.0 /	7526.08500 (138, 3)	8242.77800 (301,22)	8858.77100 (301,22)	9249.53800 (138, 3)	10030.52000 (301,23)
-60.0 /	7605.01600 (301,22)	8024.18100 (301,22)	8247.03900 (116,22)	8979.92700 (132, 1)	9495.18500 (116,22)
-70.0 /	7270.93400 (138, 3)	7560.35900 (116,22)	8147.40800 (132, 1)	8539.68000 (116,22)	8669.97000 (132, 1)
-80.0 /	6962.76900 (116,22)	7440.68400 (132, 1)	7741.60700 (116,22)	7860.17900 (132, 1)	8376.35700 (128, 5)
-90.0 /	6832.55200 (132, 1)	7064.11500 (116,22)	7173.86900 (132, 1)	7515.43600 (128, 5)	7521.03000 (120,20)
-100.0 /	6481.08600 (116,22)	6583.75500 (132, 1)	6767.49700 (128, 5)	6970.32600 (120,20)	6917.19400 (262,23)
-110.0 /	6070.51200 (132, 1)	6114.62400 (128, 5)	6478.63400 (120,20)	6155.79000 (120,20)	6825.28900 (262,23)
-120.0 /	5541.95300 (128, 5)	6036.72600 (120,20)	5777.48800 (120,20)	6134.62500 (262,23)	6227.05400 (128, 5)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	-100.0	-90.0	-80.0	-70.0	-60.0
-130.0 /	5619.73700 (128, 5)	5432.45800 (120,20)	5485.06200 (262,23)	5915.79700 (128, 5)	5527.22200 (128, 5)
-140.0 /	5116.04000 (120,20)	4886.88700 (262,23)	5491.95700 (262,23)	5306.38000 (128, 5)	5441.32600 (36,23)
-150.0 /	4536.44600 (120,20)	4969.50200 (262,23)	5088.37900 (128, 5)	4692.16800 (36,23)	5424.41300 (36,23)
-160.0 /	4479.92900 (262,23)	4871.26900 (128, 5)	4540.03900 (128, 5)	4773.56400 (36,23)	5170.02500 (350, 4)
-170.0 /	4525.91000 (262,23)	4390.61300 (128, 5)	4142.44200 (36,23)	4790.06100 (36,23)	5093.57500 (350, 4)
-180.0 /	4237.51700 (128, 5)	3896.88800 (128, 5)	4231.22500 (36,23)	4565.81400 (350, 4)	4976.96000 (350, 4)
-190.0 /	3798.54300 (128, 5)	3694.25100 (36,23)	4266.11800 (36,23)	4530.51500 (350, 4)	4828.65600 (350, 4)
-200.0 /	3355.73800 (128, 5)	3783.67100 (36,23)	4062.63100 (350, 4)	4456.77100 (350, 4)	4646.54600 (36,23)
-210.0 /	3322.79500 (36,23)	3827.99900 (36,23)	4053.81000 (350, 4)	4351.17400 (350, 4)	4414.18300 (36,23)
-220.0 /	3409.20900 (36,23)	3639.75500 (350, 4)	4009.75600 (350, 4)	4219.33700 (350, 4)	4252.86400 (350, 4)
-230.0 /	3457.60000 (36,23)	3647.77000 (350, 4)	3935.51000 (350, 4)	4035.73300 (36,23)	4032.13000 (350, 4)
-240.0 /	3281.26900 (350, 4)	3624.23600 (350, 4)	3835.70400 (350, 4)	3870.39000 (118, 2)	3899.31600 (109, 2)
-250.0 /	3299.78300 (350, 4)	3572.99200 (350, 4)	3699.73100 (36,23)	3712.23500 (350, 4)	3779.42900 (118, 2)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	-50.0	-40.0	-30.0	-20.0	-10.0
250.0 /	3770.81300 (131,22)	4829.68400 (131,22)	5622.61400 (131,22)	6018.34800 (98, 2)	6133.66000 (138, 1)
240.0 /	3606.55500 (131,22)	4811.35900 (131,22)	5767.44900 (131,22)	6314.73900 (131,22)	6425.57500 (138, 1)
230.0 /	3511.69200 (98, 1)	4745.65700 (131,22)	5893.69800 (131,22)	6587.52500 (131,22)	6740.05800 (138, 1)
220.0 /	3441.37000 (98, 1)	4620.64600 (131,22)	5990.50100 (131,22)	6870.87600 (131,22)	7133.49800 (98, 2)
210.0 /	3915.69200 (22, 2)	4424.56200 (131,22)	6042.02800 (131,22)	7162.06100 (131,22)	7627.83800 (131,22)
200.0 /	4793.78300 (98, 2)	4171.72900 (179, 4)	6026.87900 (131,22)	7453.24400 (131,22)	8082.10700 (131,22)
190.0 /	5096.08100 (22, 2)	5335.12300 (179, 4)	5919.06300 (131,22)	7728.03000 (131,22)	8592.42800 (131,22)
180.0 /	6248.67300 (16,24)	5947.92400 (98, 2)	5797.59800 (179, 4)	7958.92800 (131,22)	9166.18900 (131,22)
170.0 /	7687.42000 (16,24)	6935.76100 (16,24)	7250.35200 (179, 4)	8107.62200 (131,22)	9796.24600 (131,22)
160.0 /	9221.13100 (16,24)	8586.54600 (16,24)	7773.04500 (16,24)	8118.65600 (131,22)	10458.44000 (131,22)
150.0 /	10601.95000 (16,24)	10433.25000 (16,24)	9682.52000 (16,24)	9878.77100 (179, 4)	11153.30000 (131,22)
140.0 /	11044.65000 (179, 4)	12078.45000 (16,24)	12013.53000 (16,24)	11031.14000 (16,24)	11926.25000 (131,22)
130.0 /	11349.09000 (16,24)	12727.36000 (17, 1)	13940.93000 (16,24)	14252.50000 (16,24)	13725.44000 (179, 4)
120.0 /	11839.67000 (137,20)	13155.41000 (350,23)	14834.20000 (179, 4)	16282.96000 (179, 4)	17872.38000 (16,24)
110.0 /	12289.73000 (91, 3)	13757.03000 (137,20)	15460.89000 (350,23)	18314.64000 (16,24)	19409.56000 (16,24)
100.0 /	12105.21000 (84, 3)	13701.95000 (91, 3)	16085.80000 (91, 3)	19169.72000 (17, 1)	23955.14000 (16,24)

90.0 /	12135.60000 (258, 3)	13717.40000 (258, 2)	16031.92000 (258, 3)	18543.01000 (258, 2)	25698.48000 (350,23)
80.0 /	12007.57000 (258, 2)	13511.01000 (91, 3)	15867.25000 (137,20)	18009.48000 (137,20)	22099.67000 (16,24)
70.0 /	12086.54000 (258, 2)	13740.02000 (258, 2)	16032.67000 (258, 3)	18493.49000 (258, 2)	25323.17000 (350,23)
60.0 /	11955.18000 (258, 2)	13162.11000 (197, 5)	15107.92000 (91, 3)	17062.20000 (84, 3)	20426.62000 (91, 3)
50.0 /	12010.33000 (258, 3)	13620.55000 (258, 2)	15987.25000 (258, 3)	19076.36000 (77, 4)	24021.21000 (91, 3)
40.0 /	12000.09000 (295, 7)	13406.21000 (77, 7)	15086.95000 (84, 5)	17019.38000 (84, 5)	20291.28000 (118, 5)
30.0 /	11966.17000 (295, 7)	13490.60000 (197, 5)	15938.55000 (77, 3)	19422.21000 (77, 7)	24873.91000 (118, 5)
20.0 /	12238.19000 (77, 6)	13786.15000 (77, 5)	15960.74000 (131, 4)	18549.10000 (138, 3)	21836.12000 (116,22)
10.0 /	12132.88000 (118, 5)	13461.81000 (77, 3)	15930.23000 (77, 3)	19459.44000 (77, 7)	25097.31000 (118, 5)
.0 /	12277.14000 (77, 4)	13881.12000 (77, 5)	16113.68000 (131, 4)	19691.79000 (301,22)	23790.28000 (116,22)
-10.0 /	12309.08000 (131, 4)	13467.13000 (118, 5)	15956.16000 (301,22)	18247.19000 (116,22)	19834.01000 (138, 3)
-20.0 /	11973.98000 (138, 3)	13552.09000 (301,22)	14946.14000 (132, 1)	16214.58000 (116,22)	18120.91000 (132, 1)
-30.0 /	11843.93000 (301,22)	12876.08000 (116,22)	13925.55000 (116,22)	14672.91000 (128, 5)	14915.92000 (262,23)
-40.0 /	11307.81000 (116,22)	12108.06000 (116,22)	12646.65000 (128, 5)	12852.17000 (120,20)	13334.69000 (36,23)
-50.0 /	10660.55000 (116,22)	10938.92000 (128, 5)	11375.28000 (120,20)	11822.10000 (128, 5)	12191.36000 (350, 4)
-60.0 /	9644.06100 (132, 1)	10196.72000 (120,20)	10408.41000 (262,23)	10672.25000 (36,23)	11109.41000 (36,23)
-70.0 /	9225.79900 (120,20)	9099.14800 (262,23)	9481.70200 (128, 5)	9918.78300 (350, 4)	10143.44000 (350, 4)
-80.0 /	8143.67500 (120,20)	8759.56800 (262,23)	8764.54300 (36,23)	9288.75300 (350, 4)	9347.26000 (350, 4)
-90.0 /	7813.52300 (262,23)	7826.19200 (128, 5)	8260.01200 (350, 4)	8683.03800 (350, 4)	8705.63800 (109, 2)
-100.0 /	7354.04300 (128, 5)	7352.66800 (36,23)	7903.48000 (350, 4)	8106.18800 (36,23)	8129.98600 (118, 2)
-110.0 /	6550.96700 (128, 5)	7092.39400 (262,23)	7519.23200 (350, 4)	7606.95800 (350, 4)	7599.97300 (118, 2)
-120.0 /	6278.91000 (36,23)	6797.89600 (350, 4)	7130.04100 (350, 4)	7151.74900 (109, 2)	7105.30500 (118, 2)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS /	X-AXIS (METERS)				
(METERS) /	-50.0	-40.0	-30.0	-20.0	-10.0
-130.0 /	6203.13100 (36,23)	6560.80000 (350, 4)	6714.12800 (36,23)	6777.60800 (118, 2)	6634.90000 (118, 2)
-140.0 /	5902.29600 (350, 4)	6294.71500 (350, 4)	6363.07600 (350, 4)	6382.49200 (118, 2)	6180.75700 (118, 2)
-150.0 /	5762.37400 (350, 4)	6002.14200 (36,23)	6013.31200 (109, 2)	5998.59600 (118, 2)	5737.68700 (118, 2)
-160.0 /	5584.11600 (350, 4)	5682.67900 (118, 2)	5761.70900 (118, 2)	5621.92000 (118, 2)	5303.22700 (118, 2)
-170.0 /	5377.93000 (350, 4)	5411.40400 (350, 4)	5450.17900 (118, 2)	5250.16900 (118, 2)	4877.36600 (118, 2)
-180.0 /	5123.26700 (36,23)	5141.53300 (109, 2)	5138.46000 (118, 2)	4882.73700 (118, 2)	4462.00900 (118, 2)
-190.0 /	4896.71400 (118, 2)	4958.72600 (109, 2)	4826.56000 (118, 2)	4520.54100 (118, 2)	4060.26800 (118, 2)
-200.0 /	4652.21400 (350, 4)	4706.05100 (118, 2)	4515.31800 (118, 2)	4165.62800 (118, 2)	3675.69800 (118, 2)
-210.0 /	4453.90300 (109, 2)	4446.37100 (118, 2)	4206.34500 (118, 2)	3820.71300 (118, 2)	3311.66900 (118, 2)
-220.0 /	4312.91000 (118, 2)	4184.01900 (118, 2)	3901.82800 (118, 2)	3488.70100 (118, 2)	2970.91100 (118, 2)
-230.0 /	4098.96000 (118, 2)	3921.13200 (118, 2)	3604.24200 (118, 2)	3172.28800 (118, 2)	2740.47600 (311, 1)
-240.0 /	3879.53400 (118, 2)	3660.04600 (118, 2)	3316.08700 (118, 2)	2873.71000 (118, 2)	2647.30700 (311, 1)
-250.0 /	3657.10100 (118, 2)	3403.13900 (118, 2)	3039.64000 (118, 2)	2594.58000 (118, 2)	2556.44500 (311, 1)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	.0	10.0	20.0	30.0	40.0
	X-AXIS (METERS)				
250.0 /	6200.42000 (208,24)	6140.87400 (137,23)	6189.34300 (137,22)	6227.85300 (208,23)	6125.23900 (208,23)
240.0 /	6519.41300 (137,23)	6490.34700 (137,23)	6501.85900 (137,22)	6547.48100 (208,23)	6464.41300 (208,23)
230.0 /	6864.46700 (137,23)	6862.91600 (208,24)	6845.76700 (137,22)	6895.83300 (208,23)	6830.85200 (208,23)
220.0 /	7254.12300 (131,22)	7265.25700 (208,24)	7227.28700 (137,22)	7279.25000 (208,23)	7230.29500 (208,23)
210.0 /	7691.82800 (138, 1)	7705.95600 (208,24)	7654.07000 (137,22)	7706.01400 (208,23)	7670.26900 (208,23)
200.0 /	8170.70800 (138, 1)	8195.60400 (208,24)	8148.31200 (137,23)	8187.27600 (208,23)	8160.32100 (208,23)
190.0 /	8717.59100 (138, 1)	8746.44300 (137,23)	8726.29400 (137,23)	8738.69600 (208,23)	8712.11100 (208,23)
180.0 /	9363.94400 (98, 2)	9381.41900 (138, 1)	9390.69800 (208,24)	9382.80800 (208,23)	9339.84700 (208,23)
170.0 /	10130.80000 (98, 2)	10101.57000 (138, 1)	10172.11000 (208,24)	10151.18000 (208,23)	10062.65000 (137,22)
160.0 /	11063.80000 (138, 1)	11046.53000 (137,24)	11118.83000 (138, 1)	11083.37000 (137,22)	10957.95000 (137,23)
150.0 /	12282.29000 (98, 2)	12128.44000 (137,23)	12198.25000 (138, 1)	12218.04000 (137,22)	12088.53000 (131,22)
140.0 /	13581.93000 (131,22)	13804.94000 (137,23)	13589.81000 (131,22)	13826.67000 (137,23)	13445.00000 (131,22)
130.0 /	14948.76000 (131,22)	16227.49000 (208,24)	15601.35000 (98, 2)	16239.42000 (208,24)	15197.72000 (98, 2)
120.0 /	16948.29000 (131,22)	19447.06000 (131,22)	17703.85000 (137,22)	19408.74000 (131,22)	17815.95000 (137,22)
110.0 /	23839.35000 (16,24)	21664.77000 (138, 1)	21994.30000 (179, 4)	21672.70000 (138, 1)	22309.65000 (137,22)
100.0 /	26426.02000 (17, 1)	22349.25000 (16,24)	24694.04000 (131,22)	19691.44000 (16,24)	24671.97000 (131,22)
90.0 /	22920.98000 (179, 4)	23182.66000 (350,23)	21611.20000 (179, 4)	20455.03000 (98, 2)	19989.67000 (137,22)
80.0 /	25905.17000 (17, 1)	21449.08000 (16,24)	23810.84000 (17, 1)	19488.62000 (16,24)	22285.08000 (91, 1)
70.0 /	20860.14000 (17, 1)	23355.98000 (350,23)	20299.22000 (16,24)	20444.29000 (350,23)	18505.98000 (179, 4)
60.0 /	24892.69000 (137,20)	18885.90000 (16,24)	23038.87000 (17, 1)	18433.44000 (16,24)	20613.38000 (17, 1)
50.0 /	17291.82000 (77, 4)	22763.70000 (332, 3)	18130.35000 (70, 2)	21004.40000 (137,20)	18159.34000 (112, 1)
40.0 /	24448.65000 (138, 3)	18639.55000 (132, 1)	23417.27000 (301,22)	18130.33000 (116,22)	20905.98000 (301,22)
30.0 /	20590.41000 (116,22)	22683.61000 (118, 5)	21855.03000 (70, 2)	20647.52000 (262,23)	21893.51000 (112, 1)
20.0 /	26306.80000 (301,22)	21250.61000 (116,22)	24113.34000 (301,22)	19727.17000 (132, 1)	22608.40000 (262,23)
10.0 /	22813.93000 (116,22)	23402.66000 (262,23)	24693.70000 (70, 2)	22184.23000 (36,23)	24743.09000 (112, 1)
.0 /	26742.07000 (301,22)	22567.82000 (132, 1)	25233.33000 (262,23)	20166.66000 (128, 5)	24427.12000 (350, 4)
-10.0 /	23747.88000 (116,22)	24598.12000 (36,23)	27024.04000 (70, 2)	24392.39000 (36,23)	27105.16000 (112, 1)
-20.0 /	18611.30000 (262,23)	19079.94000 (118, 2)	19731.42000 (70, 2)	19105.54000 (118, 2)	19842.32000 (70, 2)
-30.0 /	15869.34000 (350, 4)	14842.02000 (118, 2)	16001.03000 (112, 1)	15069.94000 (363, 9)	16146.59000 (70, 2)
-40.0 /	13831.32000 (350, 4)	13225.33000 (350, 4)	13783.59000 (109, 2)	13012.59000 (109, 2)	13843.37000 (70, 2)
-50.0 /	12187.70000 (118, 2)	12124.74000 (350, 4)	12067.01000 (118, 2)	11730.75000 (109, 2)	12232.48000 (70, 2)
-60.0 /	10970.14000 (118, 2)	10981.75000 (109, 2)	10772.63000 (70, 2)	10753.13000 (112, 1)	11028.23000 (70, 2)
-70.0 /	10075.46000 (118, 2)	10036.65000 (118, 2)	9774.48100 (70, 2)	9913.30100 (112, 1)	10083.39000 (112, 1)
-80.0 /	9315.26300 (118, 2)	9175.11000 (118, 2)	8952.13900 (70, 2)	9178.53300 (112, 1)	9314.59500 (112, 1)
-90.0 /	8628.26900 (118, 2)	8413.37700 (118, 2)	8256.08900 (70, 2)	8532.81200 (112, 1)	8670.71900 (112, 1)
-100.0 /	7998.64800 (118, 2)	7713.97900 (118, 2)	7598.07200 (109, 2)	7962.30900 (112, 1)	8117.79700 (112, 1)
-110.0 /	7412.78300 (118, 2)	7053.27300 (118, 2)	6923.75500 (109, 2)	7455.12000 (112, 1)	7633.76500 (112, 1)
-120.0 /	6857.38800 (118, 2)	6419.64400 (118, 2)	6449.85100 (112, 1)	7001.39400 (112, 1)	7203.77000 (112, 1)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) .0	10.0	20.0	30.0	40.0
-130.0 /	6322.73300 (118, 2)	5808.19200 (118, 2)	6032.46100 (112, 1)	6593.18400 (112, 1)	6817.35700 (112, 1)
-140.0 /	5803.29400 (118, 2)	5218.80800 (118, 2)	5661.69400 (112, 1)	6224.11400 (112, 1)	6466.89800 (112, 1)
-150.0 /	5297.36300 (118, 2)	4751.52100 (70, 2)	5330.79800 (112, 1)	5889.00200 (112, 1)	6146.64400 (112, 1)
-160.0 /	4806.35600 (118, 2)	4503.44400 (70, 2)	5034.17600 (112, 1)	5583.56800 (112, 1)	5852.16400 (112, 1)
-170.0 /	4333.78000 (118, 2)	4277.24500 (109, 2)	4767.12700 (112, 1)	5304.22500 (112, 1)	5579.98000 (112, 1)
-180.0 /	3884.08500 (118, 2)	3841.46800 (109, 2)	4525.69100 (112, 1)	5047.90100 (112, 1)	5327.33000 (112, 1)
-190.0 /	3461.59300 (118, 2)	3574.31000 (112, 1)	4306.49800 (112, 1)	4811.97000 (112, 1)	5091.97700 (112, 1)
-200.0 /	3171.23000 (311, 1)	3418.10200 (112, 1)	4106.70400 (112, 1)	4594.15000 (112, 1)	4872.08500 (112, 1)
-210.0 /	3044.74000 (311, 1)	3275.71300 (112, 1)	3923.86500 (112, 1)	4392.46700 (112, 1)	4666.13000 (112, 1)
-220.0 /	2923.20800 (311, 1)	3145.33300 (112, 1)	3755.89700 (112, 1)	4205.20500 (112, 1)	4472.82700 (112, 1)
-230.0 /	2753.13000 (165,23)	3025.43000 (112, 1)	3601.01800 (112, 1)	4030.87200 (112, 1)	4291.08000 (112, 1)
-240.0 /	2656.53300 (165,23)	2914.71500 (112, 1)	3457.70100 (112, 1)	3868.17000 (112, 1)	4119.94200 (112, 1)
-250.0 /	2563.60300 (165,23)	2812.08100 (112, 1)	3324.63200 (112, 1)	3715.96800 (112, 1)	3958.58200 (112, 1)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) 50.0	60.0	70.0	80.0	90.0
250.0 /	5847.29300 (137,22)	5299.66500 (137,22)	4656.05800 (90,23)	5358.81900 (90,23)	5816.78200 (299, 3)
240.0 /	6219.16400 (137,22)	5701.39500 (137,22)	5179.93500 (90,23)	5833.44500 (90,23)	6233.78200 (299, 3)
230.0 /	6620.11200 (137,22)	6141.01900 (137,22)	5738.70100 (90,23)	6328.84000 (90,23)	6668.09200 (299, 3)
220.0 /	7054.53400 (137,22)	6621.91700 (137,22)	6330.36300 (90,23)	6846.76600 (90,23)	7124.81600 (299, 3)
210.0 /	7528.96800 (137,22)	7148.29100 (137,22)	6955.25300 (90,23)	7391.84900 (299, 3)	7611.87800 (299, 3)
200.0 /	8053.21400 (137,22)	7725.76600 (137,22)	7617.91700 (90,23)	7972.04400 (299, 3)	8140.71600 (299, 3)
190.0 /	8642.01700 (137,22)	8362.18800 (137,22)	8328.04000 (90,23)	8599.83600 (299, 3)	8726.65700 (299, 3)
180.0 /	9317.30500 (137,22)	9068.75800 (137,22)	9097.48600 (90,23)	9297.60400 (299, 3)	9386.17500 (299, 3)
170.0 /	10110.07000 (208,23)	9862.85500 (137,22)	9932.13100 (90,23)	10110.08000 (299, 3)	10142.96000 (299, 2)
160.0 /	11059.09000 (208,23)	10776.35000 (137,22)	10836.76000 (90,23)	11107.78000 (299, 3)	11049.06000 (91, 1)
150.0 /	12201.92000 (137,22)	12084.42000 (90,23)	11885.19000 (90,23)	12327.45000 (90,23)	12230.31000 (134, 3)
140.0 /	13658.99000 (137,23)	13543.59000 (299, 4)	13348.43000 (299, 3)	13910.25000 (91, 1)	13569.04000 (170,21)
130.0 /	16137.18000 (208,24)	15271.58000 (282,19)	15811.56000 (299, 3)	16134.00000 (170,22)	15794.36000 (299, 3)
120.0 /	19415.08000 (90,23)	17910.04000 (137,22)	19679.51000 (91, 1)	19239.13000 (151,20)	19675.24000 (90,23)

110.0 / 24519.95000 (170,22) 22726.20000 (137,22) 25965.90000 (170,21) 22641.41000 (137,22) 26457.89000 (105, 4)
100.0 / 17573.68000 (299, 4) 25603.11000 (151,20) 21078.87000 (269, 4) 27071.94000 (105, 5) 23179.98000 (269, 3)
90.0 / 23235.78000 (170,21) 20403.53000 (137,22) 24043.89000 (105, 4) 21822.01000 (104, 2) 24625.11000 (305, 7)
80.0 / 17403.91000 (65, 6) 24196.20000 (105, 5) 20332.06000 (104, 2) 24756.85000 (151,20) 21822.01000 (269, 3)
70.0 / 21006.40000 (105, 4) 18648.69000 (104, 2) 21758.21000 (305, 7) 20332.06000 (269, 3) 24483.31000 (305, 6)
60.0 / 16734.06000 (104, 2) 21502.55000 (151,20) 18648.69000 (269, 3) 23882.95000 (302, 3) 18964.82000 (104, 2)
50.0 / 18094.34000 (305, 7) 18033.61000 (112, 1) 21535.77000 (305, 6) 17877.65000 (112, 1) 23443.61000 (305, 7)
40.0 / 16657.13000 (174,24) 21108.42000 (65, 1) 18363.09000 (329,18) 23244.45000 (329,17) 18783.07000 (217, 3)
30.0 / 20896.16000 (65, 3) 21762.65000 (112, 1) 20979.95000 (65, 2) 21601.90000 (112, 1) 22758.37000 (246, 7)
20.0 / 17335.69000 (174,23) 23844.13000 (65, 1) 20213.02000 (174,24) 24329.43000 (65, 1) 21502.61000 (329,18)
10.0 / 22774.24000 (65, 3) 24608.74000 (112, 1) 23825.41000 (65, 3) 24432.53000 (112, 1) 32931.80000 (65, 2)
.0 / 17487.69000 (175, 1) 25238.53000 (65, 2) 20906.71000 (292,19) 26652.20000 (65, 4) 34198.71000 (65, 1)
-10.0 / 23583.92000 (65, 2) 26967.76000 (112, 1) 25821.48000 (65, 3) 25852.50000 (112, 1) 24292.10000 (65, 3)
-20.0 / 19076.49000 (109, 2) 19833.07000 (112, 1) 19252.08000 (197,23) 19449.16000 (112, 1) 18919.09000 (246, 5)
-30.0 / 15946.19000 (363, 7) 16145.01000 (70, 2) 16047.95000 (363, 7) 15903.32000 (112, 1) 15928.81000 (112, 5)
-40.0 / 13788.50000 (112, 5) 13839.07000 (70, 2) 13844.52000 (361, 1) 13813.16000 (246, 4) 13794.56000 (112, 5)
-50.0 / 12175.30000 (363, 9) 12227.23000 (70, 2) 12227.54000 (278,23) 12193.00000 (246, 5) 12190.47000 (278,23)
-60.0 / 10908.28000 (363, 9) 11022.41000 (70, 2) 11022.67000 (363, 9) 11045.53000 (363, 7) 11016.61000 (246, 5)
-70.0 / 10004.76000 (70, 2) 10078.52000 (70, 2) 10079.84000 (363, 9) 10120.54000 (340, 4) 10091.21000 (197,23)
-80.0 / 9296.21200 (112, 1) 9309.96700 (70, 2) 9321.08600 (363, 9) 9354.00200 (112, 5) 9351.34600 (363, 7)
-90.0 / 8682.45500 (70, 2) 8663.79500 (70, 2) 8683.09600 (363, 9) 8718.28000 (361, 1) 8720.08500 (340, 4)
-100.0 / 8145.35400 (70, 2) 8106.58700 (70, 2) 8128.68200 (363, 9) 8166.65900 (112, 5) 8174.64400 (340, 4)
-110.0 / 7672.06800 (70, 2) 7616.72000 (70, 2) 7636.18500 (363, 9) 7681.33500 (112, 5) 7685.07400 (363, 7)
-120.0 / 7250.91600 (70, 2) 7179.69400 (70, 2) 7191.57600 (363, 9) 7247.95700 (278,23) 7245.82500 (112, 5)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / X-AXIS (METERS)
(METERS) / 50.0 60.0 70.0 80.0 90.0

-130.0 / 6872.37200 (70, 2) 6785.44300 (70, 2) 6784.72500 (363, 9) 6868.03700 (278,23) 6865.76800 (112, 5)
-140.0 / 6528.85800 (70, 2) 6426.72400 (70, 2) 6408.00800 (363, 9) 6521.05800 (363, 9) 6521.01800 (361, 1)
-150.0 / 6214.43800 (70, 2) 6098.18000 (70, 2) 6055.77700 (363, 9) 6195.27200 (363, 9) 6204.88600 (361, 1)
-160.0 / 5924.50900 (70, 2) 5795.71600 (70, 2) 5724.00600 (363, 9) 5891.38600 (363, 9) 5911.95800 (361, 1)
-170.0 / 5655.52400 (70, 2) 5516.11600 (70, 2) 5409.97100 (363, 9) 5605.55700 (363, 9) 5637.90200 (361, 1)
-180.0 / 5404.72400 (70, 2) 5256.79700 (70, 2) 5111.93400 (363, 9) 5334.93400 (363, 9) 5379.32200 (112, 5)
-190.0 / 5169.97400 (70, 2) 5015.62100 (70, 2) 4837.72900 (112, 1) 5077.47900 (363, 9) 5133.62800 (112, 5)
-200.0 / 4949.58500 (70, 2) 4790.80200 (70, 2) 4618.52500 (112, 1) 4831.79400 (363, 9) 4898.92600 (112, 5)
-210.0 / 4742.20600 (70, 2) 4580.80400 (70, 2) 4415.49300 (112, 1) 4596.96300 (363, 9) 4689.69300 (278,23)
-220.0 / 4546.73400 (70, 2) 4384.30500 (70, 2) 4226.93400 (112, 1) 4372.40700 (363, 9) 4507.56500 (278,23)
-230.0 / 4362.24200 (70, 2) 4200.14500 (70, 2) 4051.36200 (112, 1) 4157.76900 (363, 9) 4320.93300 (363, 9)
-240.0 / 4187.93700 (70, 2) 4027.30400 (70, 2) 3887.48200 (112, 1) 3952.82300 (363, 9) 4133.72100 (363, 9)
-250.0 / 4023.12400 (70, 2) 3864.87300 (70, 2) 3734.16700 (112, 1) 3757.39500 (363, 9) 3953.78800 (363, 9)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) 100.0	110.0	120.0	130.0	140.0
250.0 /	6078.49400 (299, 3)	6174.41600 (299, 3)	6130.61900 (299, 2)	6044.12600 (91, 1)	6021.54300 (134, 3)
240.0 /	6447.06300 (299, 3)	6501.67600 (299, 3)	6467.69700 (299, 2)	6313.76500 (90,24)	6352.86300 (134, 3)
230.0 /	6835.14100 (299, 3)	6850.37100 (90,23)	6818.84400 (299, 2)	6735.19700 (90,24)	6690.95100 (170,22)
220.0 /	7249.47900 (299, 3)	7228.36200 (91, 1)	7188.61100 (91, 1)	7163.35900 (134, 3)	7084.65300 (170,22)
210.0 /	7698.88400 (299, 3)	7687.07700 (299, 2)	7585.81400 (90,24)	7599.68900 (134, 3)	7456.90100 (170,22)
200.0 /	8194.48300 (299, 3)	8188.31900 (299, 2)	8137.82100 (134, 3)	8101.74300 (170,22)	7854.45300 (105, 4)
190.0 /	8750.95200 (90,23)	8749.11600 (299, 2)	8732.90200 (134, 3)	8634.06100 (170,22)	8518.61900 (105, 4)
180.0 /	9391.80500 (90,23)	9393.77300 (91, 1)	9390.11100 (170,22)	9191.53000 (105, 4)	9131.12800 (151,20)
170.0 /	10161.97000 (299, 3)	10170.52000 (90,24)	10180.56000 (170,22)	10045.10000 (105, 3)	9812.53900 (151,20)
160.0 /	11132.22000 (299, 3)	11171.28000 (134, 3)	11023.91000 (105, 4)	10933.83000 (105, 5)	10419.40000 (65, 6)
150.0 /	12341.54000 (91, 1)	12408.30000 (170,22)	12248.31000 (151,20)	11866.09000 (105, 5)	11453.56000 (269, 4)
140.0 /	13950.88000 (91, 1)	13942.72000 (105, 4)	13549.69000 (204, 2)	13048.49000 (269, 4)	12288.73000 (269, 3)
130.0 /	16337.33000 (170,22)	15979.12000 (151,20)	15132.23000 (65, 6)	14091.18000 (269, 3)	13048.33000 (332,22)
120.0 /	20102.92000 (105, 5)	18519.57000 (269, 3)	16393.57000 (269, 4)	15132.21000 (332,22)	13549.70000 (294, 5)
110.0 /	24408.45000 (269, 3)	20072.73000 (210, 3)	18519.61000 (269, 3)	15810.86000 (210, 3)	14000.12000 (302, 3)
100.0 /	27410.30000 (151,20)	24408.45000 (269, 3)	19477.61000 (302, 3)	15888.67000 (305, 7)	13942.09000 (119,20)
90.0 /	23179.98000 (269, 3)	26911.43000 (305, 6)	19664.98000 (110, 6)	15786.36000 (110, 6)	13571.75000 (305, 7)
80.0 /	26605.09000 (302, 3)	22215.36000 (269, 3)	18975.09000 (302, 3)	15644.88000 (305, 6)	13909.98000 (119,20)
70.0 /	21078.87000 (332,22)	26494.11000 (305, 6)	19679.50000 (119,20)	15811.47000 (110, 6)	13477.69000 (110, 5)
60.0 /	25603.11000 (242, 4)	20388.54000 (110, 7)	17223.24000 (110, 7)	15205.84000 (39,19)	13531.29000 (119,20)
50.0 /	17583.13000 (294, 5)	24208.65000 (305, 7)	19415.08000 (110, 6)	15535.29000 (110, 6)	13136.02000 (110, 5)
40.0 /	25038.16000 (242, 1)	19943.59000 (242, 1)	16839.08000 (242, 1)	14076.22000 (110, 5)	12300.69000 (110, 5)
30.0 /	20715.74000 (349,17)	24417.01000 (246, 7)	16979.12000 (110, 5)	13954.81000 (242, 1)	12292.32000 (242, 1)
20.0 /	26227.18000 (329,17)	21999.23000 (217, 3)	18262.81000 (242, 1)	14699.25000 (39,19)	12545.32000 (39,19)
10.0 /	34900.88000 (349,17)	24646.38000 (242, 1)	16689.17000 (246, 7)	14974.56000 (242, 1)	12499.04000 (246, 7)
.0 /	35028.27000 (65, 4)	25470.07000 (349,17)	18805.26000 (242, 1)	14981.00000 (246, 7)	13008.67000 (246, 7)
-10.0 /	24958.00000 (65, 1)	22615.95000 (329,17)	19153.92000 (329,17)	16037.37000 (246, 7)	13481.10000 (246, 7)
-20.0 /	19239.86000 (246, 4)	18984.84000 (174,23)	17670.89000 (329,18)	15738.62000 (329,17)	13685.41000 (329,17)
-30.0 /	15877.01000 (197,23)	16034.84000 (65, 3)	15691.42000 (292,19)	14637.30000 (329,18)	13222.32000 (329,17)
-40.0 /	13823.09000 (197,23)	13825.06000 (65, 2)	13817.95000 (65, 4)	13253.44000 (292,19)	12488.16000 (329,18)
-50.0 /	12227.08000 (246, 5)	12296.29000 (246, 4)	12323.16000 (65, 3)	11992.36000 (292,19)	11496.27000 (174,23)
-60.0 /	11045.13000 (363, 7)	11109.14000 (115,22)	11081.59000 (65, 3)	10971.47000 (65, 1)	10625.44000 (174,23)
-70.0 /	10110.18000 (246, 5)	10140.79000 (246, 5)	10027.14000 (65, 2)	10062.93000 (65, 3)	9835.88100 (175, 1)
-80.0 /	9359.92700 (197,23)	9374.11200 (246, 5)	9203.65400 (246, 4)	9284.73100 (65, 3)	9114.25700 (65, 1)
-90.0 /	8707.90900 (246, 5)	8728.81400 (246, 4)	8638.21300 (246, 4)	8541.16100 (65, 3)	8516.65600 (65, 3)
-100.0 /	8131.36900 (363, 7)	8143.03300 (246, 4)	8119.87500 (115,22)	7831.95000 (65, 2)	7969.59800 (65, 3)
-110.0 /	7657.19000 (363, 7)	7606.45300 (246, 4)	7569.53000 (246, 5)	7370.34700 (246, 4)	7401.48200 (65, 3)
-120.0 /	7236.20200 (363, 7)	7167.75500 (197,23)	7176.00700 (246, 5)	7048.56200 (246, 4)	6827.44900 (65, 2)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) 100.0	110.0	120.0	130.0	140.0
-130.0 /	6852.61900 (197,23)	6785.44100 (246, 5)	6784.95900 (246, 4)	6720.12500 (115,22)	6318.21600 (246, 4)
-140.0 /	6489.56200 (340, 4)	6378.47800 (246, 5)	6383.43800 (246, 4)	6297.98400 (115,22)	6133.73400 (246, 4)
-150.0 /	6179.94600 (340, 4)	6069.63900 (363, 7)	5993.37200 (246, 4)	6033.07700 (246, 5)	5924.56800 (246, 4)
-160.0 /	5889.95600 (363, 7)	5808.87300 (363, 7)	5729.65500 (197,23)	5764.38900 (246, 4)	5667.66600 (115,22)
-170.0 /	5605.82200 (363, 7)	5563.18600 (363, 7)	5470.34700 (246, 5)	5447.45800 (246, 4)	5335.14900 (246, 5)
-180.0 /	5334.32300 (363, 7)	5320.61200 (197,23)	5154.79900 (246, 5)	5130.90700 (246, 4)	5157.20200 (246, 5)
-190.0 /	5108.24300 (112, 5)	5069.88400 (340, 4)	4933.67500 (363, 7)	4865.50400 (197,23)	4960.73800 (246, 4)
-200.0 /	4901.28600 (361, 1)	4870.37300 (340, 4)	4764.38900 (363, 7)	4712.92400 (197,23)	4701.34200 (246, 4)
-210.0 /	4703.59400 (361, 1)	4677.48500 (340, 4)	4597.93800 (363, 7)	4486.15900 (246, 5)	4437.99400 (246, 4)
-220.0 /	4513.78300 (361, 1)	4473.29500 (363, 7)	4433.74700 (363, 7)	4228.33300 (246, 5)	4172.57400 (246, 4)
-230.0 /	4330.86000 (361, 1)	4272.93600 (363, 7)	4239.66200 (197,23)	4091.85600 (363, 7)	4066.40500 (197,23)
-240.0 /	4154.14000 (112, 5)	4093.77500 (112, 5)	4075.41100 (340, 4)	3975.98600 (363, 7)	3936.83700 (246, 5)
-250.0 /	3983.18500 (112, 5)	3951.45300 (112, 5)	3935.14500 (340, 4)	3858.05700 (363, 7)	3722.14600 (246, 5)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) 150.0	160.0	170.0	180.0	190.0
250.0 /	5955.20000 (170,22)	5766.93300 (170,21)	5679.77100 (105, 4)	5570.47900 (151,20)	5495.69300 (151,20)
240.0 /	6256.87600 (170,22)	5974.50100 (105, 4)	5979.30400 (105, 3)	5864.67700 (105, 5)	5646.30200 (151,20)
230.0 /	6524.02300 (170,22)	6433.22100 (105, 4)	6319.80000 (151,20)	6148.24700 (151,20)	5845.66900 (105, 5)
220.0 /	6814.44200 (105, 4)	6751.02200 (105, 3)	6674.37800 (105, 5)	6370.20100 (204, 2)	6196.63700 (65, 6)
210.0 /	7354.49600 (105, 4)	7175.57500 (105, 5)	6914.10700 (151,20)	6663.20700 (65, 6)	6598.44200 (269, 4)
200.0 /	7786.93200 (151,20)	7611.24900 (151,20)	7181.08500 (65, 6)	7166.32300 (269, 4)	6803.00600 (65, 6)
190.0 /	8340.28600 (105, 5)	7975.12000 (105, 5)	7812.12900 (269, 4)	7453.03700 (65, 6)	7219.63100 (269, 3)
180.0 /	8771.67200 (151,20)	8552.38700 (65, 6)	8209.44500 (65, 6)	7901.49000 (269, 3)	7450.93800 (332,22)
170.0 /	9409.71500 (65, 6)	9100.54300 (65, 6)	8705.10000 (269, 3)	8207.63800 (332,22)	7812.35900 (332,22)
160.0 /	10164.56000 (65, 6)	9667.32900 (269, 3)	9099.16600 (332,22)	8601.33100 (294, 5)	8037.39800 (294, 5)
150.0 /	10839.44000 (269, 3)	10163.68000 (332,22)	9525.05600 (294, 5)	8748.74200 (210, 3)	8095.84900 (302, 3)
140.0 /	11453.11000 (332,22)	10602.73000 (294, 5)	9547.19500 (210, 3)	9071.33400 (302, 3)	8518.92200 (305, 7)
130.0 /	11896.19000 (294, 5)	10791.77000 (302, 3)	10041.79000 (305, 7)	9304.09900 (305, 7)	8566.20900 (305, 7)
120.0 /	12247.85000 (242, 4)	11127.65000 (305, 7)	10070.96000 (305, 7)	9179.24400 (110, 7)	8436.11300 (305, 6)
110.0 /	12204.92000 (305, 7)	10975.19000 (119,20)	10136.53000 (119,20)	9387.03400 (119,20)	8743.63400 (119,20)
100.0 /	12334.78000 (119,20)	11113.86000 (110, 4)	10150.95000 (110, 5)	9385.35000 (110, 6)	8745.58100 (110, 6)

90.0 / 12008.25000 (119,20) 11047.55000 (119,20) 10139.37000 (110, 4) 9381.81800 (110, 5) 8724.70000 (110, 6)
80.0 / 12326.27000 (110, 6) 11106.75000 (110, 6) 10109.46000 (110, 6) 9298.13400 (110, 6) 8651.82600 (39,19)
70.0 / 11936.91000 (110, 5) 10861.37000 (110, 5) 9976.45500 (110, 5) 9180.09500 (110, 5) 8450.39700 (110, 5)
60.0 / 12088.01000 (110, 6) 10859.26000 (110, 5) 9761.48100 (110, 5) 8817.46100 (110, 5) 7980.02700 (110, 5)
50.0 / 11418.25000 (110, 5) 10134.65000 (110, 5) 9031.02800 (110, 5) 8016.62400 (110, 5) 7071.44400 (110, 5)
40.0 / 10677.74000 (110, 5) 9160.96800 (110, 5) 7800.00400 (110, 5) 6593.01800 (110, 5) 5657.27800 (166, 1)
30.0 / 10168.18000 (242, 1) 8300.01900 (242, 1) 6782.23500 (242, 1) 6040.91000 (166, 1) 5627.76700 (166, 1)
20.0 / 10851.30000 (39,19) 9455.18500 (39,19) 8074.03100 (242, 1) 6756.87500 (242, 1) 5666.75300 (116, 4)
10.0 / 10252.85000 (246, 7) 8596.86400 (246, 7) 7038.65700 (246, 7) 6089.30800 (332, 7) 5673.68100 (116, 4)
.0 / 11290.77000 (246, 7) 9541.65400 (246, 7) 8062.34100 (246, 7) 6729.09300 (246, 7) 5683.88300 (332, 7)
-10.0 / 11689.89000 (246, 7) 10271.10000 (246, 7) 8900.36100 (246, 7) 7632.35400 (246, 7) 6464.55800 (246, 7)
-20.0 / 12165.36000 (246, 7) 10706.11000 (246, 7) 9480.96900 (246, 7) 8338.99600 (246, 7) 7254.76900 (246, 7)
-30.0 / 12066.48000 (246, 7) 10660.57000 (329,17) 9869.66200 (246, 7) 8834.01300 (246, 7) 7856.67900 (246, 7)
-40.0 / 11519.97000 (104, 6) 10601.20000 (349,17) 9724.93300 (329,17) 8821.58900 (242, 1) 8259.39500 (246, 7)
-50.0 / 10896.63000 (329,18) 10145.64000 (349,17) 9534.11200 (349,17) 8875.90400 (246, 7) 8062.40500 (329,17)
-60.0 / 10161.44000 (289, 5) 9664.71900 (329,18) 9069.49400 (217, 3) 8543.78900 (329,17) 7959.39600 (246, 7)
-70.0 / 9536.30100 (292,19) 9116.39500 (289, 5) 8676.12900 (329,18) 8210.29700 (217, 3) 7692.56600 (329,17)
-80.0 / 8832.59900 (292,19) 8560.19700 (292,19) 8250.21300 (289, 5) 7860.49500 (329,18) 7486.23200 (217, 3)
-90.0 / 8317.31400 (65, 4) 8072.61800 (175, 1) 7719.68300 (292,19) 7517.91300 (174,24) 7173.14600 (329,18)
-100.0 / 7765.93700 (65, 1) 7606.66000 (65, 1) 7380.74900 (174,23) 7088.63300 (174,24) 6878.51900 (174,24)
-110.0 / 7368.53100 (65, 3) 7208.99600 (65, 1) 6924.60100 (292,19) 6806.99700 (292,19) 6490.22800 (174,23)
-120.0 / 6950.49000 (65, 3) 6743.22600 (65, 2) 6616.14700 (65, 4) 6443.29300 (292,19) 6259.43800 (292,19)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	150.0	160.0	170.0	180.0	190.0
-130.0 /	6493.61000 (65, 3)	6470.32400 (65, 3)	6301.73700 (65, 1)	6138.89100 (65, 1)	5952.46700 (175, 1)
-140.0 /	6014.53400 (65, 2)	6131.78700 (65, 3)	5969.60400 (65, 3)	5876.03100 (65, 4)	5640.35300 (65, 1)
-150.0 /	5522.91400 (65, 2)	5750.26000 (65, 3)	5742.68100 (65, 3)	5552.31500 (65, 1)	5427.88900 (65, 4)
-160.0 /	5357.01400 (246, 4)	5340.82700 (65, 2)	5456.81500 (65, 3)	5335.20900 (65, 3)	5235.26500 (65, 1)
-170.0 /	5230.90100 (246, 4)	4914.28800 (65, 2)	5129.27000 (65, 3)	5138.34300 (65, 3)	4921.25500 (65, 2)
-180.0 /	5079.29300 (246, 4)	4700.67200 (246, 4)	4773.24600 (65, 2)	4889.64500 (65, 3)	4803.06600 (65, 3)
-190.0 /	4836.52500 (115,22)	4632.50300 (246, 4)	4399.38800 (65, 2)	4602.87100 (65, 3)	4627.17000 (65, 3)
-200.0 /	4597.29000 (246, 5)	4535.82500 (246, 4)	4146.78100 (246, 4)	4289.54100 (65, 3)	4406.33300 (65, 3)
-210.0 /	4466.27100 (246, 5)	4410.25000 (115,22)	4118.13000 (246, 4)	3959.56500 (65, 2)	4151.87300 (65, 3)
-220.0 /	4310.68000 (246, 4)	4161.40300 (115,22)	4061.19200 (246, 4)	3678.62300 (246, 4)	3873.83400 (65, 3)
-230.0 /	4093.42000 (246, 4)	4010.82300 (246, 5)	3980.17900 (246, 4)	3676.44100 (246, 4)	3581.13500 (65, 2)
-240.0 /	3871.20600 (246, 4)	3909.12100 (246, 5)	3823.72700 (115,22)	3647.79200 (246, 4)	3281.71700 (65, 2)
-250.0 /	3646.47000 (246, 4)	3776.28700 (246, 4)	3604.92700 (115,22)	3595.98000 (246, 4)	3296.77500 (246, 4)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) 200.0	210.0	220.0	230.0	240.0
250.0 /	5183.53600 (204, 2)	5015.02300 (65, 6)	5043.19200 (269, 4)	4886.45100 (65, 6)	4685.94800 (104, 2)
240.0 /	5335.98500 (105, 5)	5391.68400 (65, 6)	5247.01500 (65, 6)	5011.48600 (104, 2)	4922.96600 (269, 3)
230.0 /	5774.62900 (65, 6)	5647.91300 (269, 4)	5374.67500 (104, 2)	5277.19200 (269, 3)	5012.61700 (269, 3)
220.0 /	6095.68300 (269, 4)	5782.26000 (104, 2)	5674.37000 (269, 3)	5376.06700 (269, 3)	5246.37400 (332,22)
210.0 /	6242.81700 (104, 2)	6122.76600 (269, 3)	5783.91800 (269, 3)	5647.31200 (332,22)	5406.00900 (294, 5)
200.0 /	6633.11900 (269, 3)	6244.72900 (269, 3)	6095.19900 (332,22)	5832.05800 (294, 5)	5564.07500 (294, 5)
190.0 /	6800.75700 (332,22)	6598.14700 (332,22)	6302.41700 (294, 5)	5952.56200 (294, 5)	5492.39100 (210, 3)
180.0 /	7166.27700 (332,22)	6822.50500 (294, 5)	6371.81400 (294, 5)	5816.89800 (210, 3)	5683.52600 (302, 3)
170.0 /	7398.44800 (294, 5)	6824.19000 (210, 3)	6353.04700 (302, 3)	6246.84500 (302, 3)	5977.02600 (305, 7)
160.0 /	7313.12200 (210, 3)	7065.67500 (302, 3)	6747.70800 (305, 7)	6481.82700 (305, 7)	6147.54900 (305, 7)
150.0 /	7786.74100 (242, 4)	7377.71300 (305, 7)	6966.14100 (305, 7)	6512.97700 (305, 7)	6036.86600 (305, 7)
140.0 /	7985.31200 (305, 7)	7421.95500 (305, 7)	6851.14300 (305, 7)	6319.53200 (110, 7)	5907.45000 (305, 6)
130.0 /	7858.15100 (305, 7)	7321.12800 (305, 6)	6792.96800 (119,20)	6549.20700 (119,20)	6296.75400 (119,20)
120.0 /	7993.15400 (119,20)	7575.93100 (119,20)	7184.21200 (119,20)	6797.84200 (110, 7)	6410.05500 (110, 4)
110.0 /	8157.81200 (110, 7)	7671.59300 (110, 4)	7226.67400 (119,20)	6846.84200 (110, 6)	6490.64100 (110, 4)
100.0 /	8186.03100 (110, 5)	7695.70700 (110, 6)	7247.66900 (110, 6)	6834.85200 (110, 6)	6448.28900 (110, 6)
90.0 /	8140.07100 (110, 6)	7612.95300 (110, 6)	7127.75500 (110, 6)	6672.69200 (110, 6)	6239.55900 (110, 6)
80.0 /	8048.53900 (110, 5)	7496.22700 (110, 5)	6981.49100 (110, 5)	6494.80400 (110, 5)	6030.12400 (110, 5)
70.0 /	7778.48800 (110, 5)	7153.13800 (110, 5)	6564.15000 (110, 5)	6005.39400 (110, 5)	5474.91800 (110, 5)
60.0 /	7211.85400 (110, 5)	6494.43600 (110, 5)	5822.17700 (110, 5)	5196.00000 (110, 5)	4618.90600 (110, 5)
50.0 /	6195.92200 (110, 5)	5395.55500 (110, 5)	4703.33300 (166, 1)	4453.80600 (166, 1)	4227.11300 (166, 1)
40.0 /	5301.97000 (166, 1)	4991.43300 (166, 1)	4716.17300 (166, 1)	4469.34000 (166, 1)	4245.79100 (166, 1)
30.0 /	5266.54500 (166, 1)	4947.92800 (166, 1)	4664.37200 (166, 1)	4409.95400 (166, 1)	4180.04200 (166, 1)
20.0 /	5298.04300 (116, 4)	4971.46200 (116, 4)	4676.24100 (116, 4)	4255.66700 (39,19)	3963.52500 (166, 1)
10.0 /	5317.74100 (116, 4)	4903.36200 (332, 7)	4573.90500 (332, 7)	4262.78900 (332, 7)	3965.23600 (332, 7)
.0 /	5317.30800 (332, 7)	4987.83600 (332, 7)	4686.70500 (332, 7)	4406.89600 (332, 7)	4142.80300 (332, 7)
-10.0 /	5377.18500 (246, 7)	4979.48300 (332, 7)	4703.35600 (332, 7)	4450.06700 (332, 7)	4169.87700 (242, 1)
-20.0 /	6229.95100 (246, 7)	5262.82700 (246, 7)	4550.67000 (332, 7)	4346.49800 (332, 7)	4152.26500 (332, 7)
-30.0 /	6917.74800 (246, 7)	6014.97200 (246, 7)	5151.37000 (246, 7)	4334.47800 (246, 7)	3880.89800 (332, 7)
-40.0 /	7428.52900 (246, 7)	6612.00000 (246, 7)	5814.13800 (246, 7)	5040.97500 (246, 7)	4301.43300 (246, 7)
-50.0 /	7556.50100 (242, 1)	7027.66200 (246, 7)	6324.37000 (246, 7)	5621.26500 (246, 7)	4929.38000 (246, 7)
-60.0 /	7490.51600 (329,17)	6779.58300 (329,17)	6599.55900 (242, 1)	6042.74800 (246, 7)	5429.35200 (246, 7)
-70.0 /	7330.26300 (349,17)	6958.91300 (329,17)	6380.01800 (329,17)	5896.47000 (242, 1)	5759.93600 (246, 7)
-80.0 /	7010.44800 (104, 6)	6776.17600 (349,17)	6378.71900 (246, 7)	6000.85300 (329,17)	5461.46000 (329,17)
-90.0 /	6866.54200 (217, 3)	6475.17300 (104, 6)	6249.29800 (329,17)	5846.27100 (349,17)	5640.96400 (329,17)
-100.0 /	6584.31200 (329,18)	6329.37000 (217, 3)	6002.53400 (104, 6)	5749.83400 (329,17)	5479.22400 (349,17)
-110.0 /	6324.17400 (174,24)	6073.25800 (329,18)	5858.80100 (217, 3)	5567.77500 (349,17)	5299.93800 (329,17)
-120.0 /	5976.13200 (289, 5)	5838.54300 (174,24)	5625.03400 (329,18)	5442.94500 (217, 3)	5152.48400 (349,17)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) 200.0	210.0	220.0	230.0	240.0
-130.0 /	5765.57800 (292,19)	5561.06800 (289, 5)	5409.46200 (174,24)	5228.52900 (329,18)	5072.74200 (217, 3)
-140.0 /	5545.49600 (174,23)	5319.57400 (292,19)	5189.30100 (289, 5)	5027.65700 (174,24)	4875.26100 (329,18)
-150.0 /	5279.06100 (292,19)	5188.62200 (174,23)	4943.82800 (174,24)	4854.60300 (289, 5)	4685.91600 (174,24)
-160.0 /	5091.93300 (65, 1)	4964.48800 (292,19)	4845.23900 (292,19)	4644.17800 (174,24)	4551.92500 (289, 5)
-170.0 /	4897.43700 (65, 4)	4717.46600 (65, 1)	4618.77300 (175, 1)	4519.10900 (292,19)	4345.97000 (174,23)
-180.0 /	4674.37800 (65, 1)	4550.53600 (65, 4)	4406.34400 (292,19)	4347.29800 (174,23)	4218.55100 (292,19)
-190.0 /	4460.46800 (65, 2)	4426.10000 (65, 1)	4306.25800 (65, 1)	4177.48900 (292,19)	4106.79000 (174,23)
-200.0 /	4349.13900 (65, 3)	4187.71300 (65, 1)	4152.91000 (65, 4)	4016.51200 (65, 1)	3955.57800 (175, 1)
-210.0 /	4188.94700 (65, 3)	4063.27100 (65, 3)	3992.56000 (65, 1)	3878.60200 (65, 4)	3740.90200 (65, 1)
-220.0 /	3990.18000 (65, 3)	3957.05500 (65, 3)	3776.66600 (65, 2)	3794.72600 (65, 1)	3688.22600 (175, 1)
-230.0 /	3762.36900 (65, 3)	3809.46300 (65, 3)	3717.06000 (65, 3)	3609.48900 (65, 1)	3570.90800 (65, 4)
-240.0 /	3514.21600 (65, 3)	3629.02500 (65, 3)	3615.19500 (65, 3)	3474.76900 (65, 2)	3451.76000 (65, 1)
-250.0 /	3253.57800 (65, 2)	3423.83900 (65, 3)	3478.32200 (65, 3)	3412.73500 (65, 3)	3270.13800 (65, 1)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) 250.0
250.0 /	4605.20000 (269, 3)
240.0 /	4686.83800 (269, 3)
230.0 /	4885.82700 (332,22)
220.0 /	5043.70700 (332,22)
210.0 /	5204.35300 (294, 5)
200.0 /	5185.32300 (294, 5)
190.0 /	5144.21100 (302, 3)
180.0 /	5571.40800 (242, 4)
170.0 /	5743.54600 (302, 3)
160.0 /	5768.98300 (305, 7)
150.0 /	5547.80900 (305, 7)
140.0 /	5651.50400 (119,20)
130.0 /	6041.37500 (119,20)
120.0 /	6120.70000 (110, 4)

110.0 / 6171.92000 (110, 5)
100.0 / 6081.02400 (110, 6)
90.0 / 5827.35200 (39,19)
80.0 / 5584.33300 (110, 5)
70.0 / 4973.58300 (110, 5)
60.0 / 4093.38100 (110, 5)
50.0 / 4019.40300 (166, 1)
40.0 / 4041.58000 (166, 1)
30.0 / 3970.98900 (166, 1)
20.0 / 3751.98500 (166, 1)
10.0 / 3678.47200 (332, 7)
.0 / 3890.24200 (332, 7)
-10.0 / 3865.57800 (116, 4)
-20.0 / 3966.50600 (332, 7)
-30.0 / 3762.78500 (332, 7)
-40.0 / 3632.63000 (37, 1)
-50.0 / 4259.52000 (246, 7)
-60.0 / 4813.29400 (246, 7)
-70.0 / 5232.82900 (246, 7)
-80.0 / 5273.51000 (242, 1)
-90.0 / 5189.13000 (329,17)
-100.0 / 5274.06600 (246, 7)
-110.0 / 5140.24600 (349,17)
-120.0 / 4893.93500 (329,17)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 35028.27000 AND OCCURRED AT (100.0, .0) *

Y-AXIS / X-AXIS (METERS)
(METERS) / 250.0

-130.0 / 4780.28900 (349,17)
-140.0 / 4741.12900 (329,18)
-150.0 / 4558.62400 (329,18)
-160.0 / 4378.50500 (174,24)
-170.0 / 4277.12400 (289, 5)
-180.0 / 4055.86400 (174,23)
-190.0 / 3941.68400 (292,19)
-200.0 / 3880.90000 (174,23)
-210.0 / 3704.87500 (175, 1)
-220.0 / 3559.84900 (292,19)
-230.0 / 3467.64000 (65, 1)
-240.0 / 3350.43400 (65, 4)
-250.0 / 3290.96200 (65, 4)

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
39.0	-8.5	25992.67000	(112, 1)	102.4	12.8	32246.92000	(349,17)
76.8	112.2	23430.29000	(137,22)	14.6	51.2	26014.33000	(138, 3)
12.2	232.8	6734.91100	(137,23)	-140.1	320.8	1748.34000	(285,24)

RUN ENDED ON 11-30-90 AT 05:15:36

INDUSTRIAL SOURCE COMPLEX MODEL- LONG TERM
MATTIACE PETROCHEMICAL RISK ASSESSMENT

ISCLT - VERSION DATED 90008

IBM-PC VERSION (1.42)
(C) COPYRIGHT 1988, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 5223 SOLD TO I.T. CORPORATION
RUN BEGAN ON 11-26-90 AT 16:19:18

- ISCLT INPUT DATA -

NUMBER OF SOURCES = 28
NUMBER OF X AXIS GRID SYSTEM POINTS = 51
NUMBER OF Y AXIS GRID SYSTEM POINTS = 51
NUMBER OF SPECIAL POINTS = 6
NUMBER OF SEASONS = 1
NUMBER OF WIND SPEED CLASSES = 6
NUMBER OF STABILITY CLASSES = 6
NUMBER OF WIND DIRECTION CLASSES = 16
FILE NUMBER OF DATA FILE USED FOR REPORTS = 1
THE PROGRAM IS RUN IN URBAN MODE 3
CONCENTRATION (DEPOSITION) UNITS CONVERSION FACTOR = .10000000E+04
ACCELERATION OF GRAVITY (METERS/SEC**2) = 9.800
HEIGHT OF MEASUREMENT OF WIND SPEED (METERS) = 10.000
CORRECTION ANGLE FOR GRID SYSTEM VERSUS DIRECTION DATA NORTH (DEGREES) = .000
DECAY COEFFICIENT = .00000000E+00
PROGRAM OPTION SWITCHES = 1, 1, 1, 0, 0, 3, 2, 2, 4, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 1, 1, 0,
ALL SOURCES ARE USED TO FORM SOURCE COMBINATION 1
DISTANCE X AXIS GRID SYSTEM POINTS (METERS)= -250.00, -240.00, -230.00, -220.00, -210.00, -200.00,
-190.00, -180.00, -170.00, -160.00, -150.00, -140.00, -130.00, -120.00, -110.00, -100.00,
-90.00, -80.00, -70.00, -60.00, -50.00, -40.00, -30.00, -20.00, -10.00, .00,
10.00, 20.00, 30.00, 40.00, 50.00, 60.00, 70.00, 80.00, 90.00, 100.00,
110.00, 120.00, 130.00, 140.00, 150.00, 160.00, 170.00, 180.00, 190.00, 200.00,
210.00, 220.00, 230.00, 240.00, 250.00,
DISTANCE X SPECIAL DISCRETE POINTS (METERS)= 39.01, 102.41, 76.81, 14.63, 12.20, -140.10,

DISTANCE Y AXIS GRID SYSTEM POINTS (METERS)= -250.00, -240.00, -230.00, -220.00, -210.00, -200.00,
-190.00, -180.00, -170.00, -160.00, -150.00, -140.00, -130.00, -120.00, -110.00, -100.00,
-90.00, -80.00, -70.00, -60.00, -50.00, -40.00, -30.00, -20.00, -10.00, .00,
10.00, 20.00, 30.00, 40.00, 50.00, 60.00, 70.00, 80.00, 90.00, 100.00,
110.00, 120.00, 130.00, 140.00, 150.00, 160.00, 170.00, 180.00, 190.00, 200.00,
210.00, 220.00, 230.00, 240.00, 250.00,
DISTANCE Y SPECIAL DISCRETE POINTS (METERS)= -8.53, 12.80, 112.17, 51.21, 232.80, 320.80,

- AMBIENT AIR TEMPERATURE (DEGREES KELVIN) -

	STABILITY CATEGORY 1	STABILITY CATEGORY 2	STABILITY CATEGORY 3	STABILITY CATEGORY 4	STABILITY CATEGORY 5	STABILITY CATEGORY 6
SEASON 1	298.0030	298.0030	298.0030	285.6600	273.0390	273.0390

- MIXING LAYER HEIGHT (METERS) -

SEASON 1

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	.180000E+04	.180000E+04	.180000E+04	.180000E+04	.180000E+04	.180000E+04
STABILITY CATEGORY 2	.120000E+04	.120000E+04	.120000E+04	.120000E+04	.120000E+04	.120000E+04
STABILITY CATEGORY 3	.120000E+04	.120000E+04	.120000E+04	.120000E+04	.120000E+04	.120000E+04
STABILITY CATEGORY 4	.100500E+04	.100500E+04	.100500E+04	.100500E+04	.100500E+04	.100500E+04
STABILITY CATEGORY 5	.100000E+05	.100000E+05	.100000E+05	.100000E+05	.100000E+05	.100000E+05
STABILITY CATEGORY 6	.100000E+05	.100000E+05	.100000E+05	.100000E+05	.100000E+05	.100000E+05

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 1

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
.000	.00024000	.00041000	.00000000	.00000000	.00000000	.00000000
22.500	.00014000	.00014000	.00000000	.00000000	.00000000	.00000000
45.000	.00009000	.00007000	.00000000	.00000000	.00000000	.00000000
67.500	.00003000	.00009000	.00000000	.00000000	.00000000	.00000000
90.000	.00007000	.00011000	.00000000	.00000000	.00000000	.00000000
112.500	.00001000	.00002000	.00000000	.00000000	.00000000	.00000000
135.000	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
157.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
180.000	.00011000	.00005000	.00000000	.00000000	.00000000	.00000000
202.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
225.000	.00003000	.00000000	.00000000	.00000000	.00000000	.00000000
247.500	.00004000	.00011000	.00000000	.00000000	.00000000	.00000000
270.000	.00002000	.00007000	.00000000	.00000000	.00000000	.00000000
292.500	.00007000	.00021000	.00000000	.00000000	.00000000	.00000000
315.000	.00013000	.00018000	.00000000	.00000000	.00000000	.00000000
337.500	.00019000	.00034000	.00000000	.00000000	.00000000	.00000000

SEASON 1
STABILITY CATEGORY 2

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
.000	.00057001	.00169002	.00066001	.00000000	.00000000	.00000000
22.500	.00049000	.00084001	.00025000	.00000000	.00000000	.00000000
45.000	.00036000	.00151001	.00151001	.00000000	.00000000	.00000000
67.500	.00032000	.00078001	.00155002	.00000000	.00000000	.00000000
90.000	.00022000	.00075001	.00055001	.00000000	.00000000	.00000000
112.500	.00006000	.00011000	.00011000	.00000000	.00000000	.00000000
135.000	.00005000	.00007000	.00002000	.00000000	.00000000	.00000000
157.500	.00015000	.00011000	.00011000	.00000000	.00000000	.00000000
180.000	.00007000	.00027000	.00039000	.00000000	.00000000	.00000000
202.500	.00006000	.00016000	.00016000	.00000000	.00000000	.00000000
225.000	.00014000	.00032000	.00050000	.00000000	.00000000	.00000000
247.500	.00030000	.00048000	.00078001	.00000000	.00000000	.00000000
270.000	.00022000	.00075001	.00091001	.00000000	.00000000	.00000000
292.500	.00032000	.00119001	.00084001	.00000000	.00000000	.00000000
315.000	.00051001	.00192002	.00183002	.00000000	.00000000	.00000000
337.500	.00044000	.00196002	.00126001	.00000000	.00000000	.00000000

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -
SEASON 1
STABILITY CATEGORY 3

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
.000	.00026000	.00126001	.00406004	.00144001	.00027000	.00000000
22.500	.00015000	.00082001	.00222002	.00034000	.00007000	.00000000
45.000	.00029000	.00137001	.00507005	.00119001	.00000000	.00000000
67.500	.00024000	.00135001	.00630006	.00146001	.00000000	.00000000
90.000	.00004000	.00064001	.00169002	.00048000	.00000000	.00000000
112.500	.00008000	.00011000	.00034000	.00007000	.00000000	.00000000
135.000	.00006000	.00016000	.00046000	.00009000	.00000000	.00000000
157.500	.00006000	.00011000	.00107001	.00048000	.00000000	.00000000
180.000	.00009000	.00027000	.00258003	.00203002	.00030000	.00000000
202.500	.00013000	.00043000	.00171002	.00082001	.00002000	.00000000
225.000	.00013000	.00080001	.00327003	.00128001	.00005000	.00000000
247.500	.00020000	.00084001	.00386004	.00123001	.00002000	.00000000
270.000	.00010000	.00041000	.00368004	.00103001	.00007000	.00000000
292.500	.00023000	.00082001	.00409004	.00121001	.00018000	.00000000
315.000	.00023000	.00158002	.00534005	.00194002	.00025000	.00007000
337.500	.00028000	.00155002	.00409004	.00126001	.00025000	.00007000

SEASON 1
STABILITY CATEGORY 4

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
.000	.00065001	.00285003	.01434014	.03492035	.00891009	.00167002
22.500	.00048000	.00297003	.01160011	.01800018	.00258003	.00011000
45.000	.00086001	.00464005	.02142021	.02711027	.00582006	.00146001
67.500	.00061001	.00484005	.01911019	.02469024	.00820008	.00178002
90.000	.00043000	.00397004	.01076011	.01085011	.00260003	.00096001
112.500	.00026000	.00137001	.00473005	.00388004	.00096001	.00014000
135.000	.00015000	.00126001	.00461005	.00347003	.00071001	.00034000
157.500	.00021000	.00096001	.00699007	.00589006	.00089001	.00030000
180.000	.00066001	.00340003	.02329023	.03850038	.00863009	.00073001
202.500	.00043000	.00215002	.01338013	.01640016	.00139001	.00014000
225.000	.00043000	.00247002	.01800018	.02156021	.00153002	.00002000
247.500	.00035000	.00235002	.01322013	.02571025	.00345003	.00025000
270.000	.00025000	.00153002	.00888009	.03014030	.00806008	.00162002
292.500	.00030000	.00130001	.00879009	.02978029	.01126011	.00285003
315.000	.00037000	.00164002	.00950009	.03656036	.01434014	.00646006
337.500	.00028000	.00171002	.00724007	.03231032	.01217012	.00404004

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -
SEASON 1
STABILITY CATEGORY 5

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
.000	.00000000	.00171002	.01108011	.00000000	.00000000	.00000000
22.500	.00000000	.00144001	.00649006	.00000000	.00000000	.00000000
45.000	.00000000	.00215002	.00475005	.00000000	.00000000	.00000000
67.500	.00000000	.00169002	.00235002	.00000000	.00000000	.00000000
90.000	.00000000	.00171002	.00185002	.00000000	.00000000	.00000000
112.500	.00000000	.00059001	.00135001	.00000000	.00000000	.00000000
135.000	.00000000	.00069001	.00094001	.00000000	.00000000	.00000000
157.500	.00000000	.00107001	.00148001	.00000000	.00000000	.00000000
180.000	.00000000	.00263003	.00989010	.00000000	.00000000	.00000000
202.500	.00000000	.00190002	.00763008	.00000000	.00000000	.00000000
225.000	.00000000	.00244002	.00877009	.00000000	.00000000	.00000000
247.500	.00000000	.00176002	.00653006	.00000000	.00000000	.00000000
270.000	.00000000	.00110001	.00571006	.00000000	.00000000	.00000000
292.500	.00000000	.00110001	.00708007	.00000000	.00000000	.00000000
315.000	.00000000	.00094001	.00886009	.00000000	.00000000	.00000000
337.500	.00000000	.00094001	.00678007	.00000000	.00000000	.00000000

SEASON 1
STABILITY CATEGORY 6

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
.000	.00120001	.00324003	.00000000	.00000000	.00000000	.00000000
22.500	.00105001	.00263003	.00000000	.00000000	.00000000	.00000000
45.000	.00150001	.00359004	.00000000	.00000000	.00000000	.00000000
67.500	.00114001	.00233002	.00000000	.00000000	.00000000	.00000000
90.000	.00089001	.00196002	.00000000	.00000000	.00000000	.00000000
112.500	.00034000	.00078001	.00000000	.00000000	.00000000	.00000000
135.000	.00039000	.00059001	.00000000	.00000000	.00000000	.00000000
157.500	.00037000	.00119001	.00000000	.00000000	.00000000	.00000000
180.000	.00169002	.00365004	.00000000	.00000000	.00000000	.00000000
202.500	.00132001	.00295003	.00000000	.00000000	.00000000	.00000000
225.000	.00142001	.00361004	.00000000	.00000000	.00000000	.00000000
247.500	.00152002	.00288003	.00000000	.00000000	.00000000	.00000000
270.000	.00095001	.00167002	.00000000	.00000000	.00000000	.00000000
292.500	.00094001	.00240002	.00000000	.00000000	.00000000	.00000000
315.000	.00072001	.00269003	.00000000	.00000000	.00000000	.00000000
337.500	.00083001	.00155002	.00000000	.00000000	.00000000	.00000000

- VERTICAL POTENTIAL TEMPERATURE GRADIENT (DEGREES KELVIN/METER) -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00
STABILITY CATEGORY 2	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00
STABILITY CATEGORY 3	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00
STABILITY CATEGORY 4	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00
STABILITY CATEGORY 5	.200000E-01	.200000E-01	.200000E-01	.200000E-01	.200000E-01	.200000E-01
STABILITY CATEGORY 6	.350000E-01	.350000E-01	.350000E-01	.350000E-01	.350000E-01	.350000E-01

- WIND PROFILE POWER LAW EXPONENTS -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	.150000E+00	.150000E+00	.150000E+00	.150000E+00	.150000E+00	.150000E+00
STABILITY CATEGORY 2	.150000E+00	.150000E+00	.150000E+00	.150000E+00	.150000E+00	.150000E+00
STABILITY CATEGORY 3	.200000E+00	.200000E+00	.200000E+00	.200000E+00	.200000E+00	.200000E+00
STABILITY CATEGORY 4	.250000E+00	.250000E+00	.250000E+00	.250000E+00	.250000E+00	.250000E+00
STABILITY CATEGORY 5	.300000E+00	.300000E+00	.300000E+00	.300000E+00	.300000E+00	.300000E+00
STABILITY CATEGORY 6	.300000E+00	.300000E+00	.300000E+00	.300000E+00	.300000E+00	.300000E+00

- SOURCE INPUT DATA -

C T SOURCE SOURCE X Y EMISSION BASE / A A NUMBER TYPE COORDINATE COORDINATE HEIGHT ELEV- / R P (M) (M) (M) ATION / D E (M) /	- SOURCE DETAILS DEPENDING ON TYPE -
X 1 AREA .00 .00 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 2 AREA 20.12 .00 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 3 AREA 40.23 .00 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 4 AREA 60.35 .00 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 5 AREA 80.47 .00 .00	.00 WIDTH OF AREA (M)= 10.06
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 6 AREA .00 20.12 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 7 AREA 20.12 20.12 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 8 AREA 40.23 20.12 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 9 AREA 60.35 20.12 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 10 AREA 80.47 20.12 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00
X 11 AREA .00 40.23 .00	.00 WIDTH OF AREA (M)= 20.12
	- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
	SEASON 1 SEASON 2 SEASON 3 SEASON 4
	1.00000E+00

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X   12 AREA     20.12     40.23  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   13 AREA     40.23     40.23  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   14 AREA     60.35     40.23  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   15 AREA     80.47     40.23  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   16 AREA      .00      60.35  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   17 AREA     20.12     60.35  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   18 AREA     40.23     60.35  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   19 AREA     60.35     60.35  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   20 AREA     80.47     60.35  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   21 AREA      .00      80.47  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   22 AREA     20.12     80.47  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
                            1.00000E+00
X   23 AREA     40.23     80.47  .00    .00 WIDTH OF AREA (M)=  20.12
                          - SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER      ) -
                            SEASON 1    SEASON 2    SEASON 3    SEASON 4
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1.00000E+00

X 24 AREA 60.35 80.47 .00 .00 WIDTH OF AREA (M)= 20.12
- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
SEASON 1 SEASON 2 SEASON 3 SEASON 4
1.00000E+00

X 25 AREA 80.47 80.47 .00 .00 WIDTH OF AREA (M)= 20.12
- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
SEASON 1 SEASON 2 SEASON 3 SEASON 4
1.00000E+00

X 26 AREA 90.53 .00 .00 .00 WIDTH OF AREA (M)= 10.06
- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
SEASON 1 SEASON 2 SEASON 3 SEASON 4
1.00000E+00

X 27 AREA 80.47 10.06 .00 .00 WIDTH OF AREA (M)= 10.06
- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
SEASON 1 SEASON 2 SEASON 3 SEASON 4
1.00000E+00

X 28 AREA 90.53 10.06 .00 .00 WIDTH OF AREA (M)= 10.06
- SOURCE STRENGTHS (GRAMS PER SECONDPER SQUARE METER) -
SEASON 1 SEASON 2 SEASON 3 SEASON 4
1.00000E+00

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED
- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-250.000	-240.000	-230.000	-220.000	-210.000	-200.000	-190.000	-180.000	-170.000
	- CONCENTRATION -								
250.000	5.427453	5.652483	5.924588	6.198545	6.532564	6.846854	7.259055	7.628948	8.135698
240.000	5.637171	5.866383	6.112881	6.411788	6.713419	7.093226	7.452335	7.923436	8.348682
230.000	5.914555	6.128826	6.372483	6.649431	6.974752	7.314518	7.732220	8.143430	8.685339
220.000	6.264800	6.479181	6.708352	6.980916	7.274632	7.641384	8.016726	8.489596	8.948101
210.000	6.685302	6.913501	7.142628	7.398888	7.696949	8.026504	8.429967	8.845970	9.387382
200.000	7.150751	7.402277	7.662038	7.942678	8.232967	8.561759	8.935493	9.385592	9.860471
190.000	7.656466	7.941592	8.234323	8.541749	8.875190	9.223147	9.622364	10.034790	10.556890
180.000	8.216763	8.524494	8.851181	9.207365	9.584669	9.973943	10.404970	10.878290	11.399290
170.000	8.827018	9.177430	9.539811	9.924152	10.349270	10.800160	11.296610	11.812670	12.401270
160.000	9.500519	9.878129	10.282540	10.727960	11.204360	11.702040	12.258030	12.850680	13.511040
150.000	10.234980	10.662290	11.110330	11.590460	12.122270	12.696910	13.334140	14.005120	14.737820
140.000	11.010290	11.493020	12.002110	12.552320	13.148180	13.779610	14.487960	15.254590	16.114850
130.000	11.796090	12.349810	12.939680	13.561700	14.246750	14.968810	15.775170	16.637530	17.590550
120.000	12.567720	13.200220	13.877300	14.600310	15.385330	16.215910	17.139950	18.127810	19.229960
110.000	13.424630	14.138250	14.920660	15.756060	16.673300	17.652390	18.730890	19.900050	21.182990
100.000	14.617960	15.435160	16.330140	17.310440	18.397260	19.581770	20.890480	22.323560	23.909110
90.000	15.880000	16.802940	17.823100	18.942130	20.184800	21.557680	23.093360	24.810830	26.716490
80.000	16.995220	18.023420	19.151210	20.392080	21.770370	23.304690	25.020810	26.946420	29.117840

70.000	18.137940	19.272560	20.520570	21.897880	23.423210	25.118620	27.014380	29.156790	31.575120
60.000	19.197240	20.429400	21.787540	23.289610	24.956820	26.814540	28.893150	31.229440	33.868140
50.000	20.283590	21.613600	23.081880	24.708390	26.516800	28.535190	30.797830	33.345390	36.228470
40.000	21.269420	22.686240	24.251900	25.988010	27.920220	30.079150	32.501680	35.232380	38.325730
30.000	22.258660	23.759820	25.419980	27.261800	29.312850	31.605980	34.210800	37.225000	40.680210
20.000	23.106930	24.677730	26.415000	28.342920	30.544530	33.032920	35.887130	39.141060	42.895960
10.000	23.900360	25.540020	27.404320	29.484200	31.856640	34.524090	37.607730	41.120370	45.105060
.000	24.334280	26.065310	28.004320	30.183560	32.690280	35.455410	38.620280	42.150120	46.203840
-10.000	24.803270	26.612570	28.649640	30.888550	33.417910	36.218440	39.419980	42.984370	47.005570
-20.000	25.391040	27.250790	29.295840	31.580430	34.150440	36.950370	40.127180	43.627060	47.610260
-30.000	25.914010	27.804690	29.878540	32.149760	34.675060	37.457570	40.589660	44.064460	47.971350
-40.000	26.365850	28.238710	30.271810	32.527450	35.033030	37.763850	40.845940	44.236890	48.072360
-50.000	26.674780	28.524970	30.544840	32.755110	35.206290	37.901540	40.920600	44.264580	47.993620
-60.000	26.877560	28.697780	30.673070	32.857880	35.280480	37.911560	40.861130	44.084120	47.713860
-70.000	26.983360	28.775780	30.736350	32.866750	35.219760	37.786350	40.629400	43.676980	47.089050
-80.000	27.026910	28.784950	30.683760	32.771880	35.030620	37.428580	40.056650	42.900350	45.999380
-90.000	26.992460	28.709590	30.521930	32.468280	34.547090	36.757350	39.176360	41.772710	44.748730
-100.000	26.838940	28.435710	30.109870	31.891080	33.778060	35.857290	38.123590	40.655690	43.277530
-110.000	26.491800	27.951190	29.477450	31.145770	32.951760	34.918290	37.138190	39.412090	42.031820
-120.000	25.970130	27.339440	28.789950	30.393340	32.127700	34.079950	36.068800	38.359480	40.555290
-130.000	25.406310	26.709450	28.135180	29.677880	31.400490	33.166210	35.180370	37.089860	39.384130
-140.000	24.859020	26.136340	27.514020	29.057710	30.617380	32.387670	34.057970	36.059700	37.805080
-150.000	24.360490	25.599910	26.973980	28.356050	29.920630	31.389970	33.147210	34.671230	36.618230
-160.000	23.882690	25.110220	26.340530	27.730030	29.029750	30.581320	31.919780	33.627950	34.943210
-170.000	23.436250	24.536440	25.776370	26.931490	28.308620	29.490590	30.997820	32.152070	33.658010
-180.000	22.915150	24.026170	25.057680	26.285480	27.334850	28.672940	29.690520	31.020010	31.839800
-190.000	22.452430	23.377250	24.477090	25.412800	26.605510	27.508210	28.688090	29.412280	30.417760
-200.000	21.864340	22.853270	23.691560	24.759470	25.564090	26.616260	27.259230	28.154840	28.676240

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-250.000	-240.000	-230.000	-220.000	-210.000	-200.000	-190.000	-180.000	-170.000
	- CONCENTRATION -								
-210.000	21.389880	22.143940	23.104040	23.824450	24.766890	25.340410	26.140870	26.605860	27.310810
-220.000	20.747130	21.613650	22.261280	23.108960	23.622770	24.341210	24.757680	25.390100	25.775280
-230.000	20.266900	20.851340	21.616680	22.078830	22.726220	23.100690	23.670650	24.017790	24.475480
-240.000	19.575020	20.268510	20.685740	21.271230	21.609220	22.124430	22.438670	22.853450	23.126210
-250.000	19.046290	19.424290	19.955620	20.261710	20.729020	21.014390	21.391670	21.641040	21.940090

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-160.000	-150.000	-140.000	-130.000	-120.000	-110.000	-100.000	-90.000	-80.000
	- CONCENTRATION -								
250.000	8.576880	9.173879	9.666924	10.316750	10.878630	11.643100	12.530220	13.840190	15.567410
240.000	8.931721	9.442036	10.132330	10.704760	11.458650	12.112240	13.104260	14.295880	16.098920
230.000	9.177490	9.852884	10.447840	11.252240	11.922150	12.803780	13.653460	14.966770	16.601600
220.000	9.564768	10.138620	10.927340	11.626650	12.572110	13.363160	14.414160	15.578960	17.355670
210.000	9.901538	10.611860	11.261870	12.190870	13.020740	14.142750	15.086250	16.470170	18.024030
200.000	10.458630	11.058700	11.867760	12.630420	13.703250	14.686120	16.032260	17.227120	19.111470
190.000	11.089790	11.786780	12.462440	13.403670	14.300820	15.564550	16.733770	18.333580	19.960530
180.000	12.001920	12.614960	13.430280	14.217010	15.329340	16.365450	17.900710	19.290570	21.379010
170.000	13.036390	13.794100	14.560050	15.502260	16.457040	17.767160	19.035050	20.862090	22.581190
160.000	14.250130	15.028760	15.994300	16.955310	18.185680	19.335730	20.923610	22.489330	24.747650
150.000	15.551960	16.483670	17.519430	18.718430	19.987300	21.555520	23.119600	25.189500	27.113610
140.000	17.046330	18.043610	19.241550	20.545070	22.159120	23.837840	25.879990	28.024070	30.807060
130.000	18.653560	19.835580	21.164380	22.666460	24.377530	26.461090	28.734330	31.599920	34.485260
120.000	20.441620	21.758570	23.280160	24.966250	26.990180	29.264570	31.985260	35.102100	38.997260
110.000	22.611800	24.184720	25.972600	27.953520	30.238640	32.951800	36.117430	40.044640	44.411340
100.000	25.680950	27.621320	29.868490	32.360280	35.270310	38.619690	42.589240	47.402840	53.393870
90.000	28.863030	31.256760	33.989760	37.079070	40.657790	44.812030	49.702060	55.699980	62.868770
80.000	31.597110	34.383430	37.583430	41.222470	45.442150	50.381040	56.119920	63.116110	71.646420
70.000	34.333000	37.480440	41.121280	45.328370	50.210950	55.936800	62.680450	71.142730	81.620510
60.000	36.885360	40.341110	44.337150	48.976190	54.435770	61.247110	69.340860	79.517960	91.940410
50.000	39.508420	43.261920	47.694860	52.997220	59.338880	67.021770	76.356700	88.234850	102.607100
40.000	41.978160	46.192670	51.197610	57.060290	64.098690	72.785230	82.987480	95.682990	111.007600
30.000	44.706620	49.370360	54.944190	61.434540	69.109150	78.187160	89.068550	102.520100	118.747800
20.000	47.338790	52.327490	58.247260	65.010490	73.088030	82.706440	93.945450	107.710400	124.624000
10.000	49.681220	54.921730	61.075660	68.118520	76.392170	86.055660	97.597890	111.944900	129.164300
.000	50.875890	56.078460	62.173970	69.077810	77.214300	86.854410	98.305800	112.229400	129.393900
-10.000	51.551010	56.719570	62.694980	69.498990	77.455180	86.886860	98.053130	111.965800	127.632600
-20.000	52.143070	57.184600	63.041110	69.666630	77.568150	86.888140	97.956210	110.599300	126.096800
-30.000	52.367120	57.339390	63.069060	69.693780	77.368960	86.497560	96.637000	108.993900	121.633100
-40.000	52.422520	57.240050	62.907090	69.266650	76.880630	85.024330	94.584630	104.432100	116.480800
-50.000	52.173530	56.956680	62.362930	68.487050	75.038430	82.640830	90.234470	99.552380	108.305900
-60.000	51.774690	56.185020	61.282540	66.510220	72.638780	78.594530	86.049850	92.944880	102.070800
-70.000	50.788750	54.949150	59.241760	64.201480	69.139860	75.147370	80.711590	88.030760	94.153700

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CON

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-160.000	-150.000	-140.000	-130.000	-120.000	-110.000	-100.000	-90.000	-80.000
	- CONCENTRATION -								
-80.000	49.446410	53.035560	57.203710	61.250940	66.265400	70.818400	76.801340	81.713360	88.375740
-90.000	47.772960	51.296050	54.723050	58.920240	62.718100	67.669340	71.739720	77.069200	80.766200
-100.000	46.297470	49.223780	52.780390	55.996430	60.166500	63.534190	67.930000	70.832310	75.045270
-110.000	44.546010	47.617970	50.354130	53.873270	56.688740	60.359620	62.718350	66.058490	68.394200
-120.000	43.202030	45.539250	48.538220	50.915740	54.014660	55.991750	58.700950	60.541500	63.470890
-130.000	41.396280	43.972930	46.000310	48.641580	50.315600	52.603660	54.043050	56.358970	58.191320
-140.000	40.038280	41.779100	44.049660	45.479840	47.440480	48.603910	50.477460	51.887240	53.942910
-150.000	38.126260	40.093100	41.324830	43.017410	44.020230	45.556080	46.655910	48.279470	49.708890
-160.000	36.658850	37.727430	39.201500	40.069550	41.369580	42.234500	43.506610	44.648350	46.168330
-170.000	34.591170	35.881320	36.639570	37.777680	38.478160	39.515940	40.392020	41.604160	42.897460
-180.000	32.975700	33.641910	34.643700	35.248980	36.091790	36.764330	37.724890	38.752970	39.991900
-190.000	31.006320	31.892810	32.430210	33.132350	33.674420	34.428920	35.258620	36.317130	37.429690
-200.000	29.464940	29.943830	30.571020	31.001210	31.606080	32.262260	33.098880	34.102820	35.057360
-210.000	27.739300	28.301960	28.663400	29.150440	29.662300	30.353630	31.188960	32.068980	32.920150
-220.000	26.281730	26.610140	27.014930	27.425800	27.981000	28.660980	29.440920	30.198820	30.925110
-230.000	24.774310	25.130630	25.459140	25.895650	26.455730	27.098610	27.793870	28.467120	29.088560
-240.000	23.452350	23.723110	24.087870	24.532890	25.071210	25.683030	26.288350	26.877270	27.435910
-250.000	22.188540	22.485640	22.846350	23.281810	23.781970	24.339340	24.870920	25.379430	25.914520

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-70.000	-60.000	-50.000	-40.000	-30.000	-20.000	-10.000	.000	10.000
	- CONCENTRATION -								
250.000	18.022540	20.856960	24.270090	28.088440	32.502900	37.316100	42.943230	49.741250	56.932430
240.000	18.518230	21.610020	25.213500	29.356960	34.120600	39.378740	45.539160	53.178850	61.269450
230.000	19.089710	22.313020	26.209250	30.698930	35.839640	41.651330	48.360600	56.937450	66.065880
220.000	19.698930	23.164980	27.283700	32.263120	37.819200	44.276360	51.635390	61.258510	71.619960
210.000	20.533820	23.851820	28.470860	33.798680	40.041780	47.093770	55.362350	66.096390	77.907770
200.000	21.340950	24.870090	29.623090	35.562730	42.476240	50.340770	59.708790	71.761940	85.279590
190.000	22.544240	25.810030	30.983640	37.341320	45.238540	54.005090	64.727330	78.493510	93.966600
180.000	23.636220	27.288150	32.082310	39.495880	47.881630	58.295070	70.204120	86.583750	104.181700
170.000	25.443770	28.681690	34.073010	41.426560	51.420560	62.947070	77.145290	96.152630	117.109700
160.000	27.155830	31.060410	35.973130	44.095510	54.770750	68.457660	84.779600	107.761800	132.674000
150.000	30.109530	33.603160	39.443860	47.040250	59.846230	74.682980	95.065960	121.798300	152.957200
140.000	33.566580	37.815160	43.022720	52.150620	64.854400	83.800360	107.058400	141.501000	180.338000
130.000	38.435110	42.587500	49.521970	58.177970	72.579790	94.501110	124.115400	167.327100	220.356500
120.000	43.294670	48.962300	55.703700	67.186080	82.934560	111.164800	148.404400	209.833300	284.378600
110.000	50.156720	56.594780	66.083460	78.369290	98.674890	131.274100	191.185500	293.405700	419.275700
100.000	60.549370	69.916870	81.036610	98.867650	123.793100	171.741000	271.473800	462.984500	391.891500
90.000	72.164670	83.479350	98.826370	121.182200	157.280700	219.489600	362.320300	366.161100	570.982700
80.000	82.521790	97.566670	116.941200	145.904100	188.867500	270.125600	444.087300	795.681000	544.088700
70.000	95.395390	113.130600	137.398700	171.970700	225.096400	314.008700	506.578200	581.165900	867.868900
60.000	108.028000	129.316100	156.713600	196.722200	252.416100	355.295800	550.946800	936.315100	709.312000

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-70.000	-60.000	-50.000	-40.000	-30.000	-20.000	-10.000	.000	10.000
	- CONCENTRATION -								
50.000	120.786700	143.704900	175.025500	218.423500	280.757000	381.141400	585.410200	669.482300	969.370800
40.000	130.649200	156.466900	189.446400	236.304200	297.271200	405.536700	603.615500	991.056500	759.650600
30.000	139.738100	166.046000	201.551700	247.411900	314.967300	413.034500	616.628800	689.801200	976.223000
20.000	145.917800	174.015400	207.918800	255.765200	316.952300	421.224600	608.658300	975.301500	712.222000
10.000	151.366300	177.513100	212.524100	256.435700	321.575900	411.135300	588.049000	606.631600	825.220200
.000	149.637800	176.136200	206.224600	250.197600	303.170700	390.505300	516.457300	728.610500	635.095900
-10.000	147.725600	169.873800	200.430700	235.059600	285.427300	345.127800	438.228400	552.458000	690.049200
-20.000	143.146400	164.868800	187.805600	220.832100	255.294700	307.038500	354.670000	426.418100	486.546000
-30.000	137.801400	153.734700	176.096500	197.972300	229.141500	258.828600	296.618500	333.446500	379.635300
-40.000	128.109600	143.763200	158.795700	180.130000	198.967300	224.667000	245.567200	276.141900	302.214000
-50.000	120.134400	130.826200	146.013500	158.541800	176.963300	191.028400	210.098800	228.386600	250.020200
-60.000	110.070400	121.171700	130.034700	142.934400	153.837600	167.870400	178.385400	194.802900	209.227100
-70.000	102.656500	109.099300	118.593600	126.692300	137.507800	145.641800	155.026600	165.986200	178.840500
-80.000	93.231780	100.297700	105.974600	114.540100	121.013200	128.222100	134.227400	144.042800	153.728300
-90.000	86.161590	90.360020	96.863480	102.181100	108.288900	112.623800	118.217900	125.847400	134.388900
-100.000	78.177690	83.035510	87.303670	92.268100	96.094150	100.031400	104.358600	111.180700	118.604900
-110.000	72.180280	75.364410	79.536070	82.871420	86.174160	89.306210	93.271610	99.354930	105.631600
-120.000	65.897440	69.284200	72.049610	75.033240	77.487310	80.392170	84.085110	89.297690	94.725520
-130.000	60.803590	63.160970	65.725880	67.883380	70.260630	72.963160	76.218480	80.735210	85.329420
-140.000	55.849030	58.069240	60.036930	61.990350	64.182320	66.645210	69.502060	73.458030	77.238100
-150.000	51.628590	53.312480	55.081800	56.843530	58.862340	61.045290	63.593420	67.014450	70.213390
-160.000	47.680460	49.286580	50.786430	52.444630	54.231680	56.244870	58.461150	61.411580	64.215220
-170.000	44.287920	45.678050	47.002300	48.485410	50.149390	51.943700	53.933050	56.395690	58.952220
-180.000	41.240360	42.409560	43.635110	44.995140	46.528620	48.135920	49.876510	52.042930	54.323760
-190.000	38.515070	39.524710	40.643850	41.924900	43.326320	44.790920	46.241790	48.226710	50.258820
-200.000	35.977490	36.894060	37.954350	39.133550	40.428410	41.730050	42.985470	44.782840	46.685650
-210.000	33.702440	34.576970	35.560810	36.680910	37.849680	38.977110	40.121720	41.739520	43.542390
-220.000	31.631650	32.456020	33.391240	34.430580	35.497320	36.455520	37.520480	39.020870	40.723980
-230.000	29.773460	30.547850	31.443680	32.393920	33.348850	34.212300	35.188550	36.617530	38.234680
-240.000	28.078700	28.833590	29.673570	30.558030	31.371150	32.191100	33.088720	34.456560	35.994380
-250.000	26.538670	27.256390	28.044120	28.848050	29.571030	30.334010	31.208620	32.510160	33.949750

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000
	- CONCENTRATION -								
250.000	61.844410	66.663760	69.572590	72.498970	73.809190	75.271230	74.994680	74.326990	70.986210
240.000	66.901530	72.421950	75.687110	79.032220	80.675160	82.462130	82.122600	81.289990	77.442410
230.000	72.559110	78.947330	82.678270	86.668960	88.599080	90.757670	90.210010	89.187430	84.680110
220.000	79.016280	86.427050	90.754970	95.598170	97.887050	100.379200	99.653630	98.381470	93.150510
210.000	86.369870	95.015880	100.447700	106.172600	109.077600	111.628300	110.751500	109.070700	103.054800
200.000	94.865330	104.982800	111.750300	118.736200	122.059600	124.861100	123.570900	121.718100	114.814800
190.000	104.975100	116.971600	125.468600	134.189700	137.851500	140.885900	139.222300	137.278300	129.134200

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000
	- CONCENTRATION -								
180.000	117.006400	131.337900	141.834700	152.612400	156.627000	160.034000	158.262000	155.914400	146.816500
170.000	131.859300	149.701000	162.244700	175.299100	180.076100	184.574800	182.035300	180.007000	167.692400
160.000	151.110100	172.566400	188.186000	203.366300	210.273100	215.122100	213.193300	208.662000	195.209900
150.000	175.740300	202.702600	221.129300	240.465200	248.356000	256.043000	251.051100	247.161700	226.799900
140.000	210.151100	243.868800	267.388000	290.295000	301.673300	308.636600	304.588000	295.379000	272.989600
130.000	258.521600	304.064800	330.033400	360.291200	370.410300	384.397200	372.894100	366.514300	328.581300
120.000	341.800400	398.351900	435.464300	466.853500	483.783400	492.305900	485.191000	463.745200	418.727300
110.000	507.576000	586.053900	623.465800	668.014800	677.553800	696.473200	674.130400	645.767200	547.084800
100.000	851.279700	635.780900	1000.339000	727.908200	1058.967000	752.212700	1042.258000	651.928900	793.783500
90.000	561.752400	892.731900	735.350800	999.400100	793.884800	1015.546000	755.974500	863.809600	645.627400
80.000	1437.993000	907.651500	1634.513000	1015.219000	1691.256000	1023.697000	1604.609000	824.033600	1120.973000
70.000	895.116300	1256.190000	1098.249000	1370.706000	1149.303000	1367.354000	1074.759000	1142.935000	844.793500
60.000	1626.969000	1102.639000	1839.814000	1212.334000	1857.752000	1201.541000	1737.281000	961.931500	1230.710000
50.000	997.411700	1366.411000	1202.619000	1479.019000	1241.711000	1454.439000	1151.180000	1210.036000	900.520400
40.000	1676.981000	1144.801000	1850.312000	1243.314000	1848.527000	1215.439000	1753.893000	977.544400	1246.291000
30.000	993.633100	1348.995000	1177.540000	1441.014000	1201.479000	1398.170000	1097.622000	1181.813000	887.110000
20.000	1576.718000	1051.636000	1713.491000	1129.648000	1731.504000	1076.578000	1704.138000	1386.947000	1321.133000
10.000	794.268100	1117.532000	934.298600	1183.600000	949.942700	1148.158000	1326.045000	1842.039000	1342.389000
.000	1107.167000	845.332500	1219.675000	901.355100	1235.467000	885.527600	1291.448000	1328.550000	1007.973000
-10.000	753.997400	823.287600	834.171300	864.422100	845.638700	843.482800	791.840900	727.540000	593.173000
-20.000	536.145800	569.066700	594.007900	598.844800	596.017800	576.078700	547.323800	497.304400	438.882300
-30.000	401.595400	432.484300	440.335100	454.113400	440.108700	433.585400	405.991100	380.913500	340.212800
-40.000	322.108500	338.605500	349.188700	352.210600	347.525300	338.579000	323.710000	303.771000	278.638900
-50.000	261.142300	274.136300	279.663100	282.387300	279.338800	274.781500	261.987200	253.112200	229.661100
-60.000	218.124500	226.361800	231.119800	233.464000	231.511200	227.041700	220.106500	211.939300	197.196800
-70.000	183.873300	191.105400	193.852300	197.125600	194.295900	192.184500	186.499300	181.660300	169.169000
-80.000	158.399200	163.773800	165.578100	168.216000	166.402300	164.881300	161.104500	156.412300	147.407400
-90.000	138.523800	142.123700	143.526600	145.260300	144.571600	144.064100	140.808500	136.967800	129.009300
-100.000	122.070700	124.534700	125.398200	126.685200	126.594700	126.878800	124.216300	120.819700	114.195800
-110.000	108.401800	110.447400	110.815000	111.970400	112.290500	112.731500	110.702800	107.773800	102.063000
-120.000	96.740780	98.652320	98.662550	99.820710	100.180900	100.780700	99.052110	96.760460	91.846040
-130.000	86.980710	88.615040	88.827060	89.795160	90.148030	90.646750	89.222630	87.355740	83.151650
-140.000	78.749890	80.105200	80.501740	81.410880	81.632350	81.945620	80.845340	79.282330	75.743570
-150.000	71.543520	72.848560	73.355590	74.294140	74.309540	74.464070	73.516810	72.210750	69.169480
-160.000	65.371350	66.660610	67.280390	68.137340	68.019350	68.075960	67.215400	66.113880	63.538910
-170.000	59.991410	61.274560	61.978560	62.731150	62.537290	62.493970	61.618920	60.716500	58.461230
-180.000	55.357220	56.612880	57.292670	57.957210	57.784130	57.645600	56.796860	55.989430	54.002980
-190.000	51.291000	52.528250	53.130260	53.720500	53.564980	53.361450	52.555060	51.761500	50.052640
-200.000	47.696710	48.884900	49.415660	49.942050	49.802140	49.612060	48.803010	48.033350	46.498440
-210.000	44.540730	45.616190	46.086430	46.558280	46.431640	46.266040	45.477230	44.750030	43.333310
-220.000	41.707630	42.672320	43.090670	43.515130	43.400340	43.255110	42.512240	41.796100	40.461470
-230.000	39.142490	40.011200	40.384980	40.768340	40.663830	40.535960	39.867390	39.173660	37.920100
-240.000	36.812390	37.597180	37.932810	38.280300	38.184790	38.071790	37.467790	36.794830	35.625920
-250.000	34.689340	35.401090	35.703150	36.019180	35.931630	35.831270	35.283810	34.675950	33.558160

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS) - CONCENTRATION -	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000
250.000	67.386910	64.032390	60.971010	58.109150	55.651590	53.171710	50.832280	48.222450	46.272230
240.000	73.281410	69.522060	66.095440	63.080690	60.283220	57.569580	54.507420	51.941060	49.404300
230.000	79.935760	75.694530	72.043190	68.637550	65.587340	62.066880	58.850560	55.572980	53.397030
220.000	87.697320	83.078740	78.942120	75.389400	71.296500	67.494450	63.250650	60.280920	57.132990
210.000	96.920710	91.728230	87.247450	82.600110	78.083060	72.757810	68.811420	64.658880	62.137430
200.000	107.795600	102.076300	96.463720	91.186660	84.888500	79.560780	74.097040	70.672170	66.507470
190.000	121.342400	113.990700	107.854200	100.179400	93.469340	86.069530	81.317380	75.839730	72.268040
180.000	136.665100	128.727600	119.533400	111.394600	101.568800	94.956860	87.697110	82.950410	76.660810
170.000	156.556500	145.044300	134.882700	122.399400	113.047000	103.085500	96.561770	88.557620	82.731540
160.000	178.721800	166.130600	150.192000	137.413100	123.610500	114.365400	103.709600	96.306170	87.667690
150.000	209.425400	188.470600	171.942500	151.960900	138.713200	123.799400	113.719200	102.601900	94.465370
140.000	244.166800	221.127800	193.123800	172.616000	151.189000	136.632000	122.096400	111.088500	99.793410
130.000	294.726500	254.684900	222.277400	190.320900	168.642300	147.251300	132.365700	117.163600	105.133500
120.000	353.575100	303.159300	248.932700	213.629500	181.352600	159.970500	139.264100	122.846500	108.184000
110.000	444.232900	346.182000	282.714000	231.631700	197.619300	168.337600	146.471800	127.043100	111.836500
100.000	556.183500	409.188600	312.559600	256.649400	212.062900	181.056400	154.167600	133.657900	116.611200
90.000	678.996000	458.883600	349.681500	275.932100	227.495200	190.238100	162.326800	139.255900	121.246800
80.000	744.700000	503.693900	369.100800	292.828400	236.529900	196.786400	165.012100	141.283400	122.873500
70.000	800.922200	530.312300	392.420000	305.230200	244.917600	200.966000	168.455900	143.239900	123.361600
60.000	819.681000	554.330800	401.799300	315.521100	250.727300	205.188700	170.540300	144.087600	123.692300
50.000	839.410000	557.722400	413.437400	318.043700	251.712000	205.739200	171.778500	144.804800	123.633000
40.000	828.025000	557.431900	405.588600	315.648600	250.904800	204.741300	169.622900	143.274100	122.926800
30.000	819.616800	540.429100	398.499900	306.461100	244.988800	199.847400	166.970800	141.469400	122.255300
20.000	770.574000	515.011400	375.436500	293.911700	235.180300	195.003300	163.571300	139.602900	120.722200
10.000	701.475200	467.255500	350.398800	275.712300	227.177000	188.687900	160.259000	136.726400	118.622000
.000	579.280100	418.752600	318.610100	257.290500	210.163900	178.583800	152.335900	131.636100	114.289100
-10.000	459.870500	355.428300	286.920200	233.484900	197.361300	166.365000	144.259600	124.836400	109.987600
-20.000	363.340400	306.353900	253.883400	215.589800	182.839300	158.898900	137.641400	121.072300	106.237300
-30.000	298.560900	257.377400	226.905400	193.268100	169.325800	147.444500	131.443100	115.557000	103.193000
-40.000	246.661700	221.987900	195.388700	175.542200	153.501000	137.231400	121.828800	110.092700	98.342560
-50.000	210.634500	189.847200	172.801200	154.777600	140.658800	125.185700	113.968100	102.598400	93.636850
-60.000	178.963800	166.667700	151.531000	139.247000	125.836700	115.654000	104.506400	96.290850	87.574040
-70.000	156.397700	145.229700	135.826000	124.108300	115.134000	104.816400	97.414710	88.904640	82.600620
-80.000	136.345500	128.728700	119.997600	112.574000	103.801100	96.774480	88.991650	83.447580	76.828090
-90.000	121.100800	113.747100	108.048900	100.970000	95.045270	88.161090	82.781560	76.805470	72.481900
-100.000	107.331500	101.769500	96.524690	91.709100	85.966840	81.452870	75.901020	71.815650	67.137370
-110.000	96.182180	91.414020	87.205180	82.788930	78.851900	74.158940	70.497970	66.116970	63.004220
-120.000	86.700340	82.763880	78.770820	75.548580	71.822170	68.519450	64.762710	61.734450	58.302120
-130.000	78.758410	75.161720	71.858670	68.693160	65.911030	62.795640	60.110190	56.946100	54.592000
-140.000	71.926880	68.805890	65.906730	63.051420	60.481830	58.110820	55.436490	53.194660	50.574580
-150.000	65.904680	63.162040	60.654870	58.023530	55.783840	53.531580	51.523590	49.317730	47.413250
-160.000	60.665460	58.303870	56.038370	53.825100	51.609890	49.677120	47.766940	46.012680	44.129890
-170.000	55.997760	53.923100	51.922360	49.994990	47.977640	46.210230	44.532120	42.862960	41.410390
-180.000	51.875980	50.032470	48.279460	46.520500	44.785080	43.116150	41.560000	40.117600	38.680520
-190.000	48.173660	46.584030	45.014300	43.436260	41.920570	40.366940	38.998710	37.641380	36.358860
-200.000	44.830300	43.439670	42.051410	40.629790	39.254440	37.864460	36.600830	35.380260	34.201940

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000
	- CONCENTRATION -								
-210.000	41.867070	40.646500	39.413340	38.137310	36.869000	35.651320	34.443440	33.351880	32.294600
-220.000	39.148100	38.064560	36.976470	35.839930	34.677940	33.583400	32.458440	31.475800	30.507680
-230.000	36.725150	35.742470	34.797130	33.754460	32.716410	31.681520	30.694770	29.735300	28.857900
-240.000	34.483860	33.627190	32.769970	31.856270	30.906000	29.956790	29.063300	28.155660	27.366020
-250.000	32.483690	31.692320	30.915120	30.101340	29.235260	28.367500	27.527330	26.705890	25.947700

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	200.000	210.000	220.000	230.000	240.000	250.000
	- CONCENTRATION -					
250.000	44.337780	43.096860	41.488350	40.387890	38.673960	37.431380
240.000	47.762060	45.850730	44.572610	42.586490	41.143050	38.947550
230.000	50.965470	49.463900	47.146380	45.455990	42.901040	40.964690
220.000	55.238300	52.506900	50.509430	47.510500	45.237720	42.407090
210.000	58.870180	56.485930	52.931750	50.236500	46.913600	44.402430
200.000	63.628690	59.370260	56.156190	52.256400	49.296560	46.022580
190.000	67.143870	63.283450	58.637630	55.126080	51.271990	48.111150
180.000	71.981690	66.345730	62.165620	57.553690	53.762030	49.927350
170.000	75.886310	70.705380	65.140790	60.523890	55.973840	52.018370
160.000	81.233890	74.344680	68.748940	63.058430	58.244850	53.683930
150.000	85.754430	78.548750	71.521840	65.493960	59.982010	55.097430
140.000	90.471920	81.633430	74.050140	67.132160	61.341690	56.225900
130.000	93.547480	84.059080	75.667920	68.607050	62.559470	57.231450
120.000	96.174090	85.909250	77.198860	69.886080	63.631660	58.059640
110.000	98.629070	87.962700	79.035480	71.370580	64.754420	58.925930
100.000	102.704100	91.444770	81.757520	73.517010	66.501040	60.293020
90.000	106.487000	94.353670	84.113980	75.317140	67.733160	61.149640
80.000	107.582300	94.939420	84.107510	75.070950	67.470870	60.817690
70.000	107.159500	94.310680	83.558050	74.435000	66.733120	60.217210
60.000	106.918400	93.506740	82.422660	73.537710	66.087840	59.761550
50.000	106.519300	93.115810	82.174490	73.237890	65.863110	59.637550
40.000	106.429100	93.395520	82.513490	73.528970	66.029430	59.618080
30.000	106.481800	93.651250	82.976590	73.945590	66.319530	59.754180
20.000	105.492300	93.080190	82.562250	73.689850	66.240510	59.742260
10.000	103.671500	91.653790	81.658510	73.095550	65.836130	59.478500
.000	100.314800	88.871170	79.327380	71.255680	64.409960	58.372310
-10.000	96.802770	85.991620	76.934030	69.297110	62.810540	57.098750
-20.000	94.297910	84.049410	75.545030	68.087780	61.849600	56.350640
-30.000	91.694520	82.192990	73.785870	66.758430	60.803160	55.560090
-40.000	88.860980	79.759220	72.301740	65.352920	59.547200	54.424860
-50.000	84.518290	77.142830	70.034380	63.883160	58.275470	53.418170
-60.000	80.731180	73.412460	67.578450	61.774410	56.883630	52.197460
-70.000	75.714650	70.195320	64.406670	59.629740	54.889160	50.832030

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	200.000	210.000	220.000	230.000	240.000	250.000
	- CONCENTRATION -					
-80.000	71.810920	66.146350	61.676450	56.895760	52.990400	49.091520
-90.000	67.214200	63.091400	58.420400	54.680230	50.669460	47.415620
-100.000	63.740720	59.378620	55.946190	52.033380	48.874800	45.477860
-110.000	59.283840	56.527390	52.891450	50.022660	46.688470	44.009520
-120.000	55.837260	52.810600	50.500680	47.435690	45.016320	42.177970
-130.000	51.869920	49.912530	47.365910	45.410350	42.801140	40.740860
-140.000	48.735820	46.512150	44.919800	42.740310	41.069780	38.829110
-150.000	45.308260	43.846880	42.022850	40.655310	38.775610	37.337120
-160.000	42.566800	40.878720	39.706300	38.166390	36.983800	35.350340
-170.000	39.773270	38.525140	37.138200	36.172560	34.828220	33.798070
-180.000	37.402480	36.060590	35.073310	33.928970	33.099420	31.918770
-190.000	35.116460	34.005730	32.923400	32.105420	31.142460	30.409950
-200.000	33.099110	32.001540	31.103130	30.214070	29.545230	28.692160
-210.000	31.232310	30.255280	29.319910	28.593020	27.854630	27.287330
-220.000	29.569710	28.658100	27.788300	27.013960	26.417860	25.793680
-230.000	28.018140	27.175960	26.360260	25.622290	24.995170	24.504450
-240.000	26.593560	25.831800	25.093820	24.359200	23.754850	23.223860
-250.000	25.238940	24.557950	23.887000	23.215300	22.602410	22.104480

- DISCRETE RECEPTORS -

X DISTANCE (METERS)	Y DISTANCE (METERS)	CONCENTRATION	X DISTANCE (METERS)	Y DISTANCE (METERS)	CONCENTRATION	X DISTANCE (METERS)	Y DISTANCE (METERS)	CONCENTRATION
39.0	-8.5	884.330400	102.4	12.8	1190.944000	76.8	112.2	622.317800
14.6	51.2	1102.360000	12.2	232.8	66.100990	-140.1	320.8	7.373065

..... END OF ISCLT PROGRAM, 28 SOURCES PROCESSED .....

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APPENDIX K

TOXICOLOGICAL PROFILES

APPENDIX K
TOXICITY PROFILES

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TOXICITY PROFILES OF THE CONSTITUENTS OF CONCERN

The purpose of a toxicity profile is to summarize general toxicity characteristics of a constituent of concern and to provide other basic information relevant to the potential behavior of that constituent of concern when released into the environment. Toxicity is an inherent property of a constituent of concern and is not in itself representative of a potential hazard or a potential health risk. The potential hazard of a constituent of concern is determined by the toxicity of that constituent and the specific conditions of exposure. The constituents of concern reviewed are: (1) metals, (2) volatile organics, (3) semi-volatile organics.

A potential health risk is the probability of an adverse health effect given specific conditions of use and the associated likelihood of an exposure to a constituent of concern. Therefore, a health risk cannot exist without actual exposure to a constituent of concern in quantities sufficient for that constituent of concern to exert its toxic effect on the receptor. The toxicity profile addresses only the toxic characteristics of a constituent of concern while the potential hazard and potential health risks are addressed in Sections 5 and 6. A brief overview of the constituents of concern is presented. The focus of each profile is on chronic or long-term human and environmental exposures which are more relevant to the scenarios presented in the risk assessment. Where human exposure information is not available, pertinent animal information is used as an alternate.

The toxicity profiles contain the most recent data available, an introduction describing chemical and physical properties of the constituent of concern, human toxicity, acute environmental toxicity, aquatic toxicity, and chronic environmental toxicity are included when available.

ARSENIC

INTRODUCTION

Arsenic is ubiquitous in the earth's crust at low concentrations, generally below 5 mg per kg (USEPA, 1976). It occurs in the environment in four oxidation states: the -3 state, the metallic (0) state, and the +3 and +5 states. The metallic state can be found in certain types of mineral deposits, the +3 and +5 states are common in a variety of complex minerals and in dissolved salts in natural waters. The -3 state is present in gaseous AsH_3 (arsine). Arsenic occurs most frequently in nature in the pentavalent state as arsenate.

In soil, arsenic is present at concentrations from 0.1 ppm to more than 1000 ppm, depending on its particular geological history (Ehrlich, 1981). It has also been found in natural waters. Analysis of 1,577 US surface waters showed arsenic to be present in 87 samples with concentrations ranging from 5 to 336 ug/l, and a mean level of 64 ug/l (Kopp, 1969). In addition, large amounts of arsenic have been introduced into the environment in various chemical forms. Inorganic arsenic compounds such as sodium arsenite, lead arsenate, calcium arsenate have been used in agriculture; arsenic pentoxide is used as both a herbicide and/or a pesticide. Organic arsenic compounds such as monomethylarsenic acid ($CH_3AsO(OH)_2$) and dimethylarsenic acid ($(CH_3)_2$ AsOOH, also known as cacodylic acid) and their salts have been widely used as herbicides and pesticides. In addition, smelting operations and coal burning power plants have been principal sources of arsenic emissions into the environment.

Arsenic is mobile in the environment. Both natural and man-made arsenic compounds can be cycled within the air, water, and soil compartments by mechanisms such as oxidation/reduction, adsorption/desorption, precipitation/dissolution, and biological methylation and demethylation.

HUMAN TOXICITY

The major routes of arsenic exposure are inhalation or ingestion.

Percutaneous absorption of arsenic can occur in man, but appears to be a relatively minor route of exposure except under certain occupational exposure conditions. Respiratory absorption of arsenic depends on chemical species and the particulate size. Particles less than 1 um in diameter are deposited deeper in the respiratory tract, and subsequently absorbed via the alveolar parenchyma. Larger particles tend to be deposited mainly in the upper portion of the respiratory tract, undergo retrociliary movements, and ultimately are swallowed. Holland et al., (1979) observed that 75 to 85 percent of the deposited arsenic was absorbed from the lungs within four days. In man, gastrointestinal absorption of arsenic depends on the chemical form of the element and its physical characteristics. Soluble arsenicals are generally more extensively absorbed than the insoluble forms. It has been shown greater than 95 percent of inorganic arsenic taken orally by man appears to be absorbed. Once arsenic is absorbed into the blood stream, it is distributed to the heart, kidney, liver, lung and brain (Kadowski, 1980) but the highest arsenic levels are found in skin, hair, teeth, bone and nail. Thus, these are the arsenic storage organs.

The toxicity of arsenic varies according to its species. Soluble As (+3) compounds are more toxic than pentavalent compounds; methylated and more complex organic derivatives such as "fish arsenic" (arsenobetaine) are considerably less toxic than inorganic arsenic. Acute or subacute oral doses of 600 to 700 ug/kg/day inorganic arsenic have caused death in some cases (Armstrong et al., 1984). Oral exposure of humans to arsenic produces a range of gastrointestinal disturbances, whereas hemolysis is the primary manifestation of arsine poisoning. The first symptoms of acute poisoning is often a feeling of throat constriction, followed by difficulty in swallowing, epigastric discomfort, and violent abdominal pain accompanied by vomiting and watery diarrhea. Intense thirst is usually present. Systemic collapse with severe hypotension probably reflects widespread damage to the muscular system. Death which is generally preceded by restlessness, convulsions, or coma, may result from cardiac failure.

Chronic arsenic poisoning produces a range of symptoms including hyperpigmentation around the eyelids, temple, neck and groin; hyperkeratosis, "Blackfoot disease" (peripheral vascular disease leading to gangrene of the

extremities), hepatic and renal injury, peripheral and central neuropathy, and decreased hemoglobin production. In general, oral doses of around 20 to 60 ug/kg/day may begin to produce one or more of the characteristic signs of arsenic toxicity, including gastrointestinal irritation, anemia, neuropathy, skin lesions, vascular lesions, and hepatic and renal injury (Tay and Seeh, 1975). For inhalation exposure, air concentrations of approximately 100 ug/m^3 are associated with irritation to nose, throat, and exposed skin. The most sensitive effect is probably the appearance of the characteristic pigmentation pattern and hyperkeratic lesions. Doses of approximately 10 ug/kg/day generally do not result in measurable signs of arsenic intoxication. Studies in animals have revealed that at doses that may cause maternal lethality (in excess of 100 mg/kg), arsenic may be teratogenic and fetotoxic (Hood et al., 1978). Arsenic exposure have also been shown to result in chromosome aberrations and sister chromatid exchange in humans (Burgdorf et al., 1977). There is clear evidence that chronic exposure to elevated levels of arsenic increases the risk of skin cancer. The most common lesions are squamous cell carcinomas which appear to develop from the hyperkeratinized lesions described earlier. Epidemiological studies of workers in smelters have indicated inhalation exposure to arsenic may be associated with increased risk of lung cancer (USEPA, 1986a)

ENVIRONMENTAL TOXICITY

Acute oral exposure of animals to methane arsenates results in gastrointestinal irritation, accompanied by restlessness or hematuria (Palmer, 1972). In rats, estimates of the oral LD_{50} for methane arsenate range from 600-2600 mg/kg (U.S.PHS, 1987c). Calves appear to be the most sensitive with oral LD_{50} values ranging from 100-450 mg/kg (Hood, 1985).

Acute inhalation exposure to methane arsenates usually produces mild signs of respiratory distress (Stevens et al., 1977). Exposure of rats to methane arsenate aerosols for 2 hours produced an LC_{50} of 4300 mg/m^3 (Stevens et al., 1977). Mice were more tolerant with an LC_{50} >6400 mg/m^3 (Stevens et al., 1977).

Phenylarsenic compounds appear to be more toxic than methane arsenates.

Reported oral LD_{50} values for the rat range from 44-216 mg/kg (U.S.PHS, 1987c). Subcutaneous LD_{50} values range from 75 mg/kg for the rat (most sensitive) to 400 mg/kg for the mouse (least sensitive) (RTECS, 1983; Kerr et al., 1963).

The mechanism of arsenic toxicity to aquatic organism is not well understood; however, arsenic readily forms kinetically stable bonds with sulfur and carbon in organic compounds. Since arsenic (+3) reacts with sulfhydryl groups of proteins; enzyme inhibition by this mechanism may be the primary mode of arsenic toxicity. Arsenate (+5) does not react with sulfhydryl groups as readily but may uncouple oxidative phosphorylation (Anderson et al., 1975).

In general, arsenic toxicity was increased with increased duration of exposure for fish. Higher temperature also appeared to increase arsenic toxicity (Sorenson, 1976) whereas water hardness had no significant effect. Effects of other parmeters such as pH, suspended solids, and organic content in the water were not found in the literature.

Early life stage of freshwater aquatic organisms appear to be the most sensitive indicator of arsenic toxicity. The lowest value obtained for all of the arsenic data was for an early life stage exposure in the toad which resulted in a 7-day LC_{50} of 40 ug/l (Birge, 1979).

The range of acute values for trivalent inorganic arsenic (sodium arsenite) in crustaceans varied from 812 to 5,278 ug/l. The range of LC_{50} values for the seven species of fish tested was from 13,340 to 41,760 ug/l (USEPA, 1980a).

CARCINOGENICITY

The largest study of arsenic-induced skin cancer was described by Tseng et al., (1968). The study focused on a large population in Taiwan where arsenic levels in deep wells used for drinking water ranged from 0.001 to 1.82 mg/l, with average levels around 0.4 to 0.6 mg/l. Based on examination of over 40,000 people in the area, the skin cancer rate was found to be 10.6/1000. Typical arsenic blood levels in residents of this area were approximately 15 ug/l (Heydorn, 1970). There was a strong relationship between the occurrence

of skin cancer and other signs of arsenic intoxication (hyperpigmentation, hyperkeratinization, and Blackfoot disease), and skin cancer incidence was correlated with arsenic levels in the water.

Based on the study by Tseng et al., (1968), the EPA (USEPA, 1987c) calculated the unit risk for skin cancer (the increased risk of developing skin cancer after lifetime ingestion of 1 ug/kg/day) as 1.0×10^{-3} in females and 2.3×10^{-3} in males (U.S.PHS, 1987a). The oral cancer potency factor for arsenic was determined to be 1.8 $(mg/kg/day)^{-1}$ (USEPA, 1988d).

For derivation of inhalation cancer potency factor, the EPA (USEPA, 1984a) utilized 5 respiratory cancer epidemiological studies on smelter workers (Lee-Feldstein, 1983; Higgins et al., 1982; Enterline & Marsh, 1982; and Brown and Chu 1983). An overall geometric mean unit risk value of 4.29×10^{-3} (U.S.PHS, 1987c) was derived . Cancer potency factor for arsenic via the inhalation route was determined to be 50 $mg/kg/day)^{-1}$ (USEPA. 1984a).

Because arsenic has been implicated in the etiology of human cancer, it has been classified as Group A - Known Human Carcinogen (USEPA, 1986a).

BENZENE

INTRODUCTION

Benzene (CAS 71-43-2) is a clear, volatile, colorless, liquid aromatic hydrocarbon. It has the molecular formula C_6H_6 and a molecular weight of 48.1 (Weast, 1981; Ayers and Muder, 1964). Pure benzene has a boiling point of 80.1°C, a melting point of 5.5°C, and a density of 0.8765 at 20°C (Weast, 1981; Stecher, 1968). It is an intermediate in the synthesis of phenols, synthetic rubber, and styrene and is also an additive to gasoline. Benzene is water soluble and can mobilize in ground water and soils. Benzene near the surface will most likely volatilize. Benzene is very soluble in water, with a water solubility value of 1.75×10^3 mg/l (USEPA, 1986b). The solubility and volatile nature of benzene indicate possible environmental mobility. The soil adsorption coefficient value of 83 ml/g is an indicator of environmental mobility. Benzene has a half-life of 6 days in air and 1-6 days in surface water (USEPA, 1986b).

HUMAN TOXICITY

Benzene can enter the body via inhalation, ingestion or dermal contact. Inhalation absorption of benzene by humans is approximately 50 percent (IARC, 1982a). Absorption by the oral route is rapid. Data from animals indicate that virtually all of an oral dose of benzene is absorbed (Sabourin *et al.*, 1986). The rate of absorption of benzene through the skin is generally lower than that for inhalation exposure. *In vitro* investigation indicated that exposure of excised human skin to benzene resulted in the absorption of 0.17 mg/cm^2 after 0.5 hours and 1.92 mg/cm^2 after 13.5 hours (Loden, 1986). Over half of the absorbed benzene is translocated into bone marrow, adipose tissue, and liver (Duvoir *et al.*, 1946).

The most significant health effects of benzene are hematoxicity, immunotoxicity, and neurotoxicity. The lethal oral dose of benzene in humans has been estimated at 10 ml (8.8 g) (Thienes and Haley, 1972). Lethal oral doses have produced signs and symptoms of staggering gait, vomiting, shallow

and rapid pulse, somnolence, and loss of consciousness, followed by delirium, pneumonitis, collapse, and then sudden CNS depression. Following acute inhalation of benzene, individuals exhibit symptoms indicative of CNS toxicity (Sandmeyer, 1981), including drowsiness, dizziness, headache, vertigo, delirium, and perhaps, loss of consciousness. At low chronic exposure levels, workers have experienced symptoms of CNS lesions (Brzecki et al., 1973). One significant symptom in humans exposed to benzene is marked hypoplasia of the bone marrow with pancytopenia (a decrease in the various cells of the circulating blood); some individuals surviving the marrow depression have developed myelogenous leukemia. Pancytopenia and its variations and aplastic anemia have been detected following chronic exposure to benzene in a variety of situations, primarily occupational. This hematological effect of benzene poisoning may occur at levels of 10 ppm (Chang, 1972).

In addition, alterations in serum immunoglobulins and complement levels and indications of benzene-induced autoimmunity and allergy have been observed in benzene-exposed workers (Aksoy et al., 1971; Lange et al., 1973). Although there is little information in the developmental toxicity of benzene in humans, benzene has been shown to be embryo/fetotoxic in animals (Kimmel and Wilson, 1973). Available evidence in humans and animals indicate benzene is genotoxic (Snyder, 1987; IARC, 1982a; Tice et al., 1982). Many epidemiological and case studies have correlated benzene exposure with leukemia in man (Ott et al., 1978; Sellyer & Kelemen, 1971).

For benzene, EPA has proposed an oral RfD of 7.0×10^{-4} mg/kg/day using the Wolf et al., (1956) study and leukopenia as the adverse health effect of concern (USEPA, 1986c).

In this study, Wolf et al., (1956) conducted a 6-month investigation on Wistar rats using benzene doses of 0, 1, 10, 50, and 100 mg/kg/day and evaluated hematological parameters. Leukopenia (an abnormally low number of white blood cells in the circulating blood) was a dose-related effect which was slight at 10 mg/kg/day and not observed at 1 mg/kg/day (U.S. PHS, 1987b). Using 1 mg/kg/day as the NOAEL, the EPA proposed a reference dose of 7.0×10^{-4} mg/kg/day for benzene (USEPA, 1986c).

A study by Pagnotto et al., (1977) determined that workers exposed to naphtha containing benzene at a concentration of 40 ppm suffered from nose bleeds, a red blood cell count below four million, and a hemoglobin count below 12 g. After the benzene exposure was terminated, the blood chemistry returned to normal, with no signs of permanent blood abnormalities. It was concluded that 25 ppm of benzene vapor is safe for most workers, but since the margin of safety is small, a TLV of 30 mg/m^3 (10 ppm) was recommended (Pagnotto et al., 1977).

A ceiling value (TLV-C) is the concentration that should not be exceeded at any time (Olishifski, 1985). The peak limit above ceiling for benzene has been determined to be 500 ppm (OSHA, 1977).

ENVIRONMENTAL TOXICITY

Oral LD_{50} values in the rat vary from 3.4 to 5.6 ml/kg, depending on the age and strain of rat (Kimura et al., 1971). Acute lethal doses for the rat, mouse, and guinea pig, when injected intraperitoneally, are in the range of 0.5 to 1.0 g/kg (Keplinger et al., 1959; Spector, 1956). In acute animal inhalation studies, adult rats and mice were more resistant to the effects of benzene than young animals (Manyashin et al., 1968). These effects are dependent on the respiration rate and retention of benzene.

Ward et al., (1985) exposed mice to benzene via inhalation at concentrations of 1, 10, 30, or 300 ppm for 13 weeks. A LOAEL of 300 ppm was noted for histopathological changes in the ovaries (bilateral cysts) and testes (atrophy, degeneration, decrease in spermatozoa, moderate increase in abnormal sperm forms). The NOAEL for these effects is 30 ppm (U.S.PHS, 1987b). The difference between the values considered to be the NOAEL and the LOAEL was tenfold; more closely spaced doses could reveal these values to be closer.

Acute toxicity values for the freshwater invertebrates Daphnia magna and Daphnia pulex were determined as 380,000 and 300,000 ug/l (U.S.EPA, 1980b, Canton and Adema, 1978; USEPA, 1978a). 96-hour LC_{50} values for fish ranged from 5,300 ug/l for rainbow trout to 386,000 ug/l for mosquito fish (Wallen et al., 1957).

CARCINOGENICITY

For benzene, the EPA (USEPA, 1986c) derived a cancer risk estimate from data obtained in epidemiologic studies on workers exposed to benzene vapors (Wong et al., 1983; Rinsky et al., 1981; Ott et al., 1978). Rinsky et al., (1981) determined a direct correlation between benzene exposure and acute myeloblastic leukemia in a 67-year-old man who had been exposed to 16 ppm of benzene via inhalation in a rubber hydrochloride plant for 14 years. Ott et al., (1978) found a possible correlation between an acute myelogenous leukemia in a 51-year-old chemical worker exposed to <2 ppm benzene via inhalation 15 years earlier.

Using an average derived from the application of several mathematical models, a combined risk estimate of 2.6×10^{-2} was calculated for an exposure to 1 ppm benzene [equivalent to 0.028 $(mg/kg/day)^{-1}$ for a lifetime exposure]. For this estimated potency value, the air concentration associated with an excess risk of 10^{-5} was derived as 10^{-5} divided by 2.6×10^{-2} or 3.846×10^{-4} ppm (U.S.PHS, 1987b) inhalation. The cancer potency factor for benzene via the oral route was determined to be 2.9×10^{-2} $(mg/kg/day)^{-1}$ (USEPA, 1988b).

The USEPA (1986d) derived a cancer-based criterion for human exposure via inhalation and ingestion of benzene from the epidemiology studies of Ott et al., (1978), Infante et al., (1977a,b), and Aksoy et al., (1974), in which a significantly increased incidence of leukemia was observed for workers exposed to benzene principally by inhalation. Using these epidemiology studies, the USEPA Carcinogen Assessment Group (USEPA, 1978b) calculated a dose-response curve with a slope of 0.024074 units of lifetime risk/unit (ppm) of continuous exposure to atmospheric benzene. This corresponds to a unit risk of 7.5×10^{-3} $(mg/m^3)^{-1}$. Assuming an inhalation rate of 20 m^3/day for a 70 kg man, the unit risk also may be expressed as 3.76×10^{-8} $(mg/day)^{-1}$ or $2.6 \times 10^{-2}(mg/kg/day)^{-1}$.

Benzene is classified by EPA as a Group A-known human carcinogen (USEPA, 1986b).

BIS(2-ETHYLHEXYL)PHTHALATE

INTRODUCTION

Bis(2-ethyl hexyl)phthalate (DEHP) is a colorless liquid, phthalate ester with a molecular weight of 390.54, a melting point of -50°C, and a boiling point of 385°C at 760 mm Hg (ACGIH, 1986; Verschueren, 1983; IARC, 1982b; Clayton and Clayton, 1981; CHRIS, 1978). DEHP has a water solubility of 0.285 mg/l and a log octanol-water partition coefficient (log Kow) of 4.88 (Verschueren, 1983; HSDB, 1987). The log octanol-water partition coefficient suggests that DEPH would be sorbed onto particles high in organic matter (Clement Associates, 1985a).

HUMAN HEALTH EFFECTS

DEHP and its principle metabolite, MEHP, are readily absorbed from the gastrointestinal tract (U.S.PHS, 1987c). There is also evidence that DEHP can be absorbed through the skin. Although quantitative information is not available, animal studies indicate DEHP is absorbed by the lungs.

The target organs for DEHP appear to be the liver and testes (U.S.PHS, 1987c). DEHP has been found to induce morphological and biochemical changes in the liver of exposed rodents at relatively high dose levels (Gollamudi et al., 1985). Similar effects have been reported for a number of chemicals which induce hepatic xenobiotic metabolizing capabilities. A number of studies in laboratory animals have demonstrated that oral exposure to DEHP results in adverse hepatic effects. At high oral dose levels, DEHP causes functional hepatic damage characterized by morphological changes and alterations in the activity of hepatic enzyme systems (Mitchell et al., 1985; Lake et al., 1984; Carpenter et al., 1953). The testicular effects of DEHP are characterized by a decrease in relative organ weight and damage to the seminiferous tubules (Gangolli, 1982). Similar effects have been reported in animals treated with MEHP, a major metabolite of DEHP.

A reference dose (RfD) has been calculated for DEHP (USEPA, 1987b). It is based on a one-year study in guinea pigs by Carpenter et al., (1953). In this

study, groups of 23 to 24 animals of each sex were fed diets containing 0, 400, or 1300 ppm DEHP. This is equivalent to doses of approximately 19 and 64 mg/kg/day. Statistically significant increases in relative liver weights were observed in both groups of treated animals. An RfD was determined as follows:

$$RfD = \frac{(19\ mg/kg/day)}{1000} = 2 \times 10^{-2}\ mg/kg/day$$

19 mg/kg/day = NOAEL

1,000 = uncertainty factor

Studies by Milkov et al., (1973) have shown that workers exposed to 1.7 to 66 mg/m^3 DEHP complained of pain, numbness, and spasms of the upper and lower extremities. Extensive neurological studies revealed polyneuritis in 47 of 147 persons (32%) while 49.6% of the workers were classified as essentially healthy.

Eighty-one persons were evaluated for disturbance of the vestibular function and 78% showed depression of vestibular receptors. This was the first evidence of neurosomatic dysfunction as was a lowering of the level of the excitability threshold for the olefactory receptors (Milkov et al., 1973).

From this study, a TLV of 5 mg/m^3, as a time-weighted average, and a STEL of 10 mg/m^3 are recommended for DEHP, a substance of low toxicity by all routes of exposure (ACGIH, 1986).

ENVIRONMENTAL HEALTH EFFECTS

In an acute oral toxicity study reported by Shaffer et al., (1945), single doses of DEHP were administered by gavage to male Wistar rats. The median lethal dose was estimated to be 30,600 mg/kg.

In other acute studies, Shaffer et al., (1945) reported an LD_{50} of 33,900 mg/kg for rabbits, Patty (1967) reported an LD_{50} of 26,000 mg/kg for mice, and Krauskopf (1973) reported an LD_{50} of 26,300 mg/kg for guinea pigs.

Lake et al., (1984) determined a marked difference in the parameter of liver toxicity in Sprague-Dawley rats and Syrian hamsters. NOAEL levels were 25 mg/kg for the rat and 250 mg/kg for the hamster with LOAEL values of 100 mg/kg for the rat and 1000 mg/kg for the hamster (Lake et al., 1984).

Agarwal et al., (1986) evaluated the reproductive (testicular) toxicity of DEHP in sexually mature male F344 rats. DEHP was administered in the diet at levels of 0, 320, 1250, 5000, or 20,000 ppm (equivalent to 0, 16, 62.4, 250, or 1000 mg/kg/day) for 60 days. Reduced body weight, testicular weight, and epididymal weight were observed at doses of 250 mg/kg/day (NOAEL) and higher, but not at doses of 62.5 mg/kg/day (NOAEL) and lower. A decrease in various sex hormone levels was also observed at the two highest DEHP levels, with degenerative testicular alterations and reduced epididymal sperm count and motility noted at the highest DEHP level.

Acute median effect values ranged from 1,000 to 11,100 ug/l DEHP for the freshwater cladoceran Daphnia magna (USEPA, 1980d). The LC_{50} values for the midge, scud, and bluegill all exceeded the highest concentrations tested, which were 18,000, 32,000, and 770,000 ug/liter, respectively (USEPA, 1980d). Since these values are greater than the water solubility of DEHP, it is unlikely that DEHP will be acutely toxic to organisms in natural waters. Chronic toxicity testing determined reproductive impairment for Daphnia magna at 3 ug/l and reported a chronic value of 8.4 ug/l for rainbow trout (USEPA, 1980d).

CARCINOGENICITY

Data from the NTP (1982) bioassay were used by EPA (U.S.EPA 1987c) to calculate upper-bound incremental unit carcinogenic risk to humans. Using the linearized multistage model, potency slope factors were estimated. Calculations were based on combined carcinomas and neoplastic nodules (or adenomas), with a potency slope factor of 8.4×10^{-3} $(mg/kg/day)^{-1}$ for oral and inhalation pathways.

DEHP has been classified by the EPA as a Group B2--Probable Human Carcinogen (U.S.EPA, 1986b).

CADMIUM

INTRODUCTION

Cadmium is a soft, ductile, silver-white metal which has an atomic weight of 112.40 and a specific gravity of 8.642. It is readily attacked by most acids and occurs naturally as zero valence (metal and alloys) and the +2 valence (compounds) (USEPA, 1980e).

In the atmosphere, cadmium is expected to be present as dust and fumes from smelting of ores, manufacturing of metallic alloys, reprocessing of cadmium-containing alloys, recycling of scrap steel, emissions of coal-fired power plants, and incineration of solid wastes. The principal removal mechanisms for atmospheric cadmium are wet and dry deposition (Fishbein, 1981). The predominant fate of cadmium in aquatic media is sedimentation through binding onto clays or organic matter (USEPA, 1980e). Cadmium is also bound more strongly onto soil particles as the organic matter content of soil increases (USEPA, 1980e).

HUMAN TOXICITY

The major routes of cadmium entry are inhalation or ingestion. Dermal exposure to cadmium compounds have not been observed to cause significant health effects. Oral absorption of cadmium in humans is poor, with reported absorption values of 4.6 to 6 percent (McLellan et al., 1978). Absorption of cadmium from the respiratory tract appears to be much more extensive, and lung absorption of cadmium oxide has been reported to be 60 percent in rats (Boisset et al., 1978). Other estimates of lung absorption in animals range from 10 to 40 percent (USEPA, 1981).

By the oral route, cadmium in high concentrations is a powerful irritant of the gastrointestinal epithelium. Acute symptoms in humans include nausea, vomiting, salivation, abdominal pain, cramps, and diarrhea (Bernard & Lauwerys, 1984). The emetic threshold in humans is approximately 3 mg (CEC, 1978). The acute oral No-Observed-Adverse-Effect-Level (NOAEL) in adults was

estimated to be about 40 ug/kg, and the Lowest-Observed-Effect Level (LOEL), about 140 ug/kg. Lethal oral doses of cadmium in humans range from 1500 to 8900 mg (CEC, 1978), corresponding to doses of about 20 to 130 mg/kg in a 70-kg adult. Following chronic low level exposure, the kidney is generally considered the most sensitive tissue. A renal cortical concentration of 200 ug/g wet weight is associated with increased incidence of renal dysfunction in humans (Friberg et al., 1974). In rats supplied with drinking water containing cadmium, the lowest-observed-effect level (LOEL), as indicated by occurrence of proteinuria, is 3.1 mg/kg/day. The No-Observed-Effect-Level (NOEL) is 1.2 mg/kg/day (Kotsonis & Klaassen, 1978).

Inhalation of cadmium oxide fumes is acutely toxic to the respiratory epithelium, and acute lethality is typically the result of marked pulmonary edema (CEC, 1978). The lethal inhalation exposure in humans was calculated to be about 2500 (mg/m^3) per min (Barrett et al., 1947a,b) corresponding to a concentration of about 250 mg/m^3 for a 10 min exposure, or about 9 mg/m^3 for a 5 hr exposure (Beton et al., 1966). Following chronic low-level inhalation exposure, the tissues most often observed to be affected are the kidney and lung. Dyspnea and chronic obstructive lung disease, such as fibrosis and emphysema, are common findings in workers chronically exposed to cadmium (Friberg, 1950). Cadmium-induced renal injury appears to be time and dose dependent, with a value of about 500 ug/m^3/year being associated with proteinuria in exposed workers. The World Health Organization (WHO, 1980) concluded that the 8 hr time-weighted average concentration over a 20 year period should not exceed 0.02 mg/m^3. For continuous exposure (24 hr/day), the corresponding value is 0.007 mg/m^3. Anemia and painful bone disorders, including osteomalacia, osteoporosis, and spontaneous bone fracture, have been observed in some humans chronically exposed to high levels of cadmium (Scott et al., 1980). These effects on bone are generally considered as indirect, arising as a consequence of cadmium-induced renal disease, compounded by an inhibition of normal 1-hydroxylation of 25-hydroxy-vitamin D_3 in renal tubule cells.

Epidemiological studies in humans exposed to cadmium provide limited evidence that inhaled cadmium is a lung carcinogen (Thun et al., 1985).

Animal studies have shown that cadmium can cause liver damage (Dudley et al., 1982), nervous system damage (Wong & Klaasen, 1982), teratogenic and fetotoxic effects (Sato et al., 1985), suppression of immune response (Blakeley, 1985), and testicular atrophy (Parizek, 1957) resulting in reduced fertility or complete sterility. However, these effects have not been reported in humans (U.S.PHS, 1987e).

The U.S.EPA (1981; 1980e) has determined an oral RfD of 1.0×10^{-3} mg/kg/day for the ingestion pathway.

A time-weighted average TLV of 0.05 mg Cd/m^3 for all forms of dusts and salts, and a ceiling limit of 0.05 mg Cd/m^3 for cadmium oxide fume should provide adequate protection, barring simultaneous excessive or borderline exposure to other toxic or irritating impurities. Based on the NIOSH (Roe et al., 1964) and the BOHs (Kipling and Waterhouse, 1967) finding, the A designation as a suspected carcinogen has been removed for cadmium oxide production and a time-weighted TLV of 0.05 mg/m^3 is recommended.

ENVIRONMENTAL TOXICITY

The oral LD_{50} in rats varies slightly with the cadmium compound employed, i.e., oxide, 72 mg/kg; chloride, 88 mg/kg; and fluorosilicate, 100 mg/kg (USEPA, 1980e).

The lowest oral dose producing death in rats using cadmium fluoroborate has been given as 250 mg/kg. The LD_{50} for guinea pigs given cadmium fluoride is reported to be 150 mg/kg (NIOSH, 1974). The oral LD_{50} for rabbits is given as 150 to 300 mg/kg (Stokinger, 1981a).

LC_{50} values for inhaled fumes from a cadmium ore, expressed as CT, the product of time exposure in minutes and concentration in mg/m^3 are: rats, 500; mice, <700; rabbits, 2500; guinea pigs, 3500; dogs, 4000; and monkeys, 15,000 (Barrett et al., 1947a,b).

Laboratory experiments suggest that cadmium may have adverse effects on reproduction in fish at levels present in lightly polluted waters (U.S.EPA,

1980e).

The acute LC_{50} for freshwater fish and invertebrates ranges from 100 to 1,000 ug/liter, salmonids are much more sensitive than other organisms (U.S.EPA, 1980e). Chronic tests have been performed and have shown that cadmium has cumulative toxicity and acute-chronic ratios that range from 66 to 431 (Ingersoll and Winner, 1982; Bertram and Hart, 1979). Bioconcentration factors are generally less than 1,000, but are as high as 10,000 for some freshwater fish species (U.S.EPA, 1980e).

CARCINOGENICITY

EPA (USEPA, 1985b) has calculated the excess lung cancer risk associated with inhalation exposure to cadmium from two different studies. Takenaka et al., (1983) exposed rats to aerosols of cadmium chloride at concentrations of 0, 12.5, 25, or 50 ug/m^3 for 18 months and observed a dose-related increase in primary lung carcinoma frequency of 0, 15, 53, and 71 percent, respectively. The carcinogenic potency of other cadmium compounds such as cadmium oxide or cadmium sulfide has not yet been adequately tested in animals.

Epidemiological studies in humans exposed to cadmium provide limited evidence that inhaled cadmium is a lung carcinogen. Thun et al., (1985) reported that mortality from respiratory cancer tended to increase in a dose-dependent fashion in workers with cumulative daily exposure levels of <585, 585 to 2920, and >2920 (mg/m^3), although the increase was statistically significant only in the high-dose group. These exposures correspond to time-weighted daily average levels of 168, 727, and 2522 ug/m^3, respectively.

The calculated unit risk values (the increase in risk of lung cancer associated with lifetime exposure to a concentration of 1 ug/m^3) are taken from both the animal data (Takenaka et al., 1983) and the human data (Thun et al. 1985). The resulting values are 9.2×10^{-2} and 1.8×10^{-3}, respectively. Although the risk estimate based on the animal data is higher, and hence more conservative than the risk estimate based on the human data, the Carcinogen Assessment Group considers the latter more reliable, due to the species difference and the type of exposure employed (USEPA 1985a, 1985b,

1987d). The cancer potency factor derived for cadmium via inhalation route is 6.1 $(mg/kg/day)^{-1}$ (USEPA, 1988b).

Cadmium has been classified by the USEPA Carcinogen Assessment Group as a Group B2 - Probable Human Carcinogen.

CHLOROBENZENE

INTRODUCTION

Chlorobenzene is a colorless, volatile, chlorinated, organic solvent. It is used in a number of manufacturing procedures including the manufacture of dyestuffs and many pesticides. When released into the air, the degradation half-life is approximately 3.5 days (Kanno and Nojima, 1979). In water, chlorobenzene will almost completely evaporate or degrade within 2 days. The fate of chlorobenzene in soils is not completely understood; however, the elimination rate is considered to be slower than in water. Evaporation is considered to be the predominant loss mechanism from the soil surface (Wilson et al., 1981). Thus, it is concluded that chlorobenzene is not persistent in the environment.

HUMAN HEALTH STATEMENT

Chlorobenzene is absorbed by humans through the lungs, the gastrointestinal tract, and the skin. Workers exposed to occupational levels of chlorobenzene showed signs of central nervous system depression (sedation and narcosis) and irritation of the eyes and respiratory tract (Clayton and Clayton, 1981). Toxicological studies with laboratory animals indicate that this chemical is absorbed rapidly through the lungs and the gastrointestinal tract. Repeated exposure of animals to elevated levels (4500 mg/m^3) of chlorobenzene has resulted in liver damage (ACGIH, 1986).

MCB is highly lipophilic and hydrophilic, and is expected to be distributed throughout total body water space with body lipid providing a deposition site (U.S.EPA, 1980f). The data availale on the related halobenzene and bromobenzene show this to be the case (Reid et al., 1971).

The toxic effects of chlorobenzene seem to be primaily liver and kidney injury. The hematopoietic effect of the parent hydrocarbon appears to be absent (Fairhall, 1957). Occupational intoxication has not been reported.

No reports of chronic oral exposure of humans or animals to chlorobenzene could be located in the available literature. An interim AIC can be derived by using the NOEL of 27.3 ng/kg/day (Monsanto, 1967) an uncertainty factor of 100 and applying an additional uncertainty factor of 10 to convert from a subchronic study to chronic exposure; this results in an overall uncertainty factor of 1000. The resultant AIC is 3×10^{-2} mg/kg/day.

Cook (1945) proposed 3.50×10^{2} mg/m^3 (75 ppm) as a time-weighted TLV in 1945, citing the U.S. Public Health Service. This limit is believed to prevent narcotic effects or chronic poisoning.

ENVIRONMENTAL HEALTH EFFECTS

In a 13-week study in mice, 100 percent lethality occurred for males within 1 week at $\geq$500 mg/kg, accompanied by histopathological lesions in many organs (NTP, 1983). All females in the 700 mg/kg group died by week 10. A 50 percent reduction in body weight gain and histopathological lesions were noted at 150 mg/kg. Increased liver weights in males were noted at 125 mg/kg and liver necrosis was noted in one male in the 125 and one male in the 60 mg/kg group. Male mice appeared to be affected more severely than females.

In rats, decreased body weight gain in both sexes, altered serum biochemistries in females, and histopathological alterations were observed at 500 and 750 mg/kg (NTP, 1983). Decreased survival was observed at 750 mg/kg. The only effect reported at 250 mg/kg was minimal centrolobular hepatocellular necrosis.

The 96-hour LC_{50} values (the calculated concentration at which 50 percent of the individuals within an exposed population die during a defined time of exposure) for fish ranged from 24 mg/l for bluegill to 73 mg/l for goldfish (Verschueren, 1983). The 48-hour LC_{50} for Daphnia magna is 5.8 mg/l (Abernathy et al., 1986). Chlorobenzene has been shown to have a bioaccumulation factor of approximately 1,000 in freshwater species (U.S.EPA, 1980f).

CARCINOGENICITY

EPA's Carcinogen Assessment Group has not classified this chemical; however, no animal data were identified that would suggest that chlorobenzene is an animal carcinogen (U.S. EPA, 1986b).

CHROMIUM

INTRODUCTION

Chromium is a blue-white, hard metal that is not easily oxidized, and even when heated, oxidizes to only a slight extent. It has an atomic weight of 52.01 and specific gravity of 7.20. Chromium exhibits a valence of +2, +3, and +6. Elemental chromium does not exist naturally, but is found combined in the mineral chromite, $FeCr_2O_4$, the most important source (USEPA, 1980g). Bivalent chromium compounds are basic, the trivalent amphoteric compounds, and the hexavalent compounds, acidic (Trauma and Benoit, 1960). Significant quantities of chromium (III), chromium (VI) or both exist in various bodies of water and either can be converted to the other under appropriate natural conditions (Callahan et al., 1979). The chemical and toxicological properties of the two oxidation states appear to be quite different and the toxicities of the two states have not been shown to be additive.

Chromium is removed from air by atmospheric fallout and precipitation (Fishbein, 1981). Surface runoff, deposition from air, and release of municipal and industrial wastewaters are the major sources of chromium in surface waters. Hexavalent chromium exists in aquatic media is a persistent soluble form (USEPA, 1980g). Hexavalent chromium in soils is expected to be reduced to trivalent chromium by the organic matter in soil (Callahan et al., 1979). The primary processes by which chromium is lost from soil are physical (USEPA, 1980g).

HUMAN TOXICITY

Chromium can enter the body via oral, inhalation and dermal exposure. While the gastrointestinal (GI) tract is the primary route of entry for the general population, the respiratory tract and the skin are the primary routes of entry for occupational exposure. Absorption studies of chromium compounds in humans and animals indicate that chromium (VI) compounds are more readily absorbed from all routes of exposure than are chromium (III) compounds. In humans, oral absorption was about 0.4% (Anderson et al., 1983; Donaldson and Barreras, 1966) for chromium (III) and 10.6% for chromium (VI) (Donaldson and Barreras,

1966). Intraduodenal absorption of chromium (VI) was found to be 50%. In rats, absorption of chromium (VI) compounds from the lung is about 53 to 85%, whereas absorption is only 5 to 30% for chromium (III) compounds. Also, while chromium (VI) compounds can penetrate intact skin in humans, dermal absorption of chromium (III) compounds are negligible (Mali, 1963; Samitz and Shrager, 1966). Once absorbed, chromium (VI) is reduced to chromium (III). Acute oral data indicate that chromium (VI) compounds are more toxic than chromium (III) compounds (U.S. PHS, 1987e). Inhalation exposure in chromate workers has resulted in highest chromium level in the lung, lymph nodes, kidney, liver, bladder and bone (IARC, 1980), whereas non-occupationally exposed individuals have the highest chromium concentrations in the Hilar lymph nodes and lungs, followed by spleen, liver, kidney and heart (Teraoka, 1981).

Oral dose of 2-5 g of chromium (VI) compounds are fatal to humans (Langard and Norseth, 1986). Data from human occupational exposure clearly indicates that inhaled chromium (VI) is a respiratory tract irritant. Concentrations of 0.2 - 1.2 ug/m^3 seem to be a No-Observed-Adverse-Effect-Level (NOAEL), with nasal irritation and slight transient effects on pulmonary function occurring at levels $\geq$2 ug/m^3. At concentrations of 20-46 ug/m^3, ulceration and perforation of septum have been observed (U.S. PHS, 1987e). Papillomas of the oral cavity and larynx were observed in 14/77 workers exposed for 6.6 years to a chromium (VI) concentration of 0.4 mg/m^3 (Hanslian et al., 1967). Other effects observed following chromium (VI) exposure include hepatic injury, kidney damage, and central nervous system effects. Limited evidence indicates that the brain may also be a target organ for chromium toxicity in humans (Duckett, 1986). Dermal exposure to both chromium (III) and chromium (VI) can result in chromium sensitivity (USEPA, 1984c). Limited parenteral studies in animals indicate that exposure to chromium (III) or chromium (VI) may result in developmental effects, including increased fetal death and an increase in external abnormalities (Gale and Bunch, 1979). Human epidemiology studies provide adequate evidence to indicate that in some form, chromium is a respiratory tract carcinogen (Langard and Norseth, 1975).

Barnes et al., (1987a) presented a verified chronic oral RfD of 0.005 mg/kg/day for chromium (VI) (soluble salts) based on the study by MacKenzie et al., (1958) in which groups of 9-12 male and female rats were exposed to

K_2CrO_4 (Chromium VI) in the drinking water at doses of 0, 0.45, 2.2, 4.5, 7.7, 11, or 25 ppm; chromium (VI) or $CrCl_3$ (Chromium III) at 0 or 25 ppm for 12 months. No effects were observed, parameters examined included clinical blood chemistry, body weight, and gross and microscopic pathology.

The RfD is calculated as follows:

RfD = (2.4 mg/kg/day) chromium (VI)/(100)(5) = 0.005 mg/kg/day

Where: 2.4 mg/kg/day = NOAEL, dose calculated with drinking water consumption and body weight data provided by the investigators.

Dose conversion: 25 mg/L x 0.097 l/kg/day = 2.4 mg/kg/day

100 = Uncertainty factor appropriate for use with an animal NOAEL for interspecies and intraspecies extrapolation

5 = uncertainty factor for less-than-lifetime exposure duration.

ENVIRONMENTAL TOXICITY

Chromium (VI)

Acute toxicity to hexavalent chromium ranges from a low of 24.2 ug/L for the water flea to 45.2 ug/L for Ceriodaphnia reticulata (Mount, 1982). Freshwater fish species showed acute toxicity to hexavalent chromium from 17,600 ug/L for the fathead minnow to 135,000 ug/L for the bluegill (ANS, 1960). Chronic values were determined for hexavalent chromium in fathead minnows (1,990 ug/L), the polychaete (Neanthes arenaceadentata) (25 ug/L), and the mysid shrimp (Mysidopsis bahia) (132 ug/L) (Pickering, 1980; Oshida, 1978; USEPA, 1980g).

Oral LD_{50} values for soluble chromium (VI) compounds of 16.7-22.5 mg/kg chromium (VI) have been reported by Gad et al., (1986). The lowest LD_{50} of 16.7 mg/kg was determined for the rat, deeming it the most sensitive species. The insoluble chromates (Cr VI) as determined in the mouse, rat, and

guinea pig by various test methods ranged from: a mouse intravenous LD_{50} of 30 mg/kg for basic zinc chromate; 400 mg/kg for a guinea pig intraperitoneal LD_{50} of 30 mg/kg for basic zinc chromate; to 400 mg/kg for a guinea pig intraperitoneal LD_{50} for lead chromate (NIOSH, 1976a).

Chromium (III)

The acute toxicity of trivalent chromium to the water flea ranges from 16,800 ug/L in soft water to 58,700 ug/L in hard water (Chapman et al., Manuscript). Pickering and Henderson (1966a) obtained 96-hour LC_{50} values with the fathead minnow (5,070 to 67,400 ug/L) and bluegills (7,460 to 71,900 ug/L). The lowest available chronic value (23.87 ug/L) was detected in the rainbow trout.

CARCINOGENICITY

The U.S. Environmental Protection (USEPA, 1984c) has calculated a unit risk of 1.2×10^{-2} for a lifetime inhalation exposure to 1 ug/m^3 of hexavalent chromium compounds [or potency factor of 41 $(mg/kg/day)^{-1}$) based on the following study by Mancuso (1975).

In this study 322 Painesville chromate plant workers were divided into three groups, those that worked from 1931-1932, 1933-1934, and 1935-1937. The percentage of cancer deaths due to lung cancer in the three groups were 63.6%, 62.5%, and 58.3% respectively (Mancuso, 1975). Using data from an industrial hygiene survey of the plant conducted in 1949 (Bourne and Yu, 1950), Mancuso (1975) found that lung cancer mortality was dose-related to total chromium exposure.

The Mancuso (1975) study presented exposure data based on total chromium, so that the risk may be an underestimate. The USEPA (1984c) states that since the ratio of chromium (III) to chromium (VI) rarely exceeded 6, the underestimation of risk is unlikely to be more than sevenfold (U.S.PHS, 1987e). This unit risk has been verified by Barnes et al., (1987a) who also note that there is no evidence that chromium (VI) is carcinogenic by the oral route.

Chromium VI has been identified as a carcinogen and has been classified as Group A - Human Carcinogen. There is little evidence to support trivalent chromium as a carcinogen and it therefore remains unclassified.

1,2-DICHLOROBENZENE

PHYSICAL/CHEMICAL PROPERTIES

The dichlorobenzenes are a class of halogenated aromatic compounds represented by three structurally similar isomers: 1,2-dichloro-, 1,3-dichloro-, and 1,4-dichlorobenzene. Dichlorobenzenes have the molecular formula $C_6H_4Cl_2$ and a molecular weight of 147.01 (Weast, et al., 1981).

1,2-Dichlorobenzene (1,2-DCB) is a colorless liquid at normal environmental temperatures with a specific gravity of 1.297 at 25 °C. It has a melting point of -17.6°C and a boililng point of 180.48°C. The dichlorobenzenes are soluble in water at concentrations which are toxic to aquatic organisms, with the solubility of 1,2-dichlorobenzene being 145,000 ug/L at 25°C. The dichlorobenzenes also are readily soluble in natural fats or fat soluble substances (Windholz, 1976). All three of the dichlorobenzene isomers are relatively volatile.

The major uses of 1,2-dichlorobenzene are as a process solvent in the manufacturing of toluene diisocyanate and as an intermediate in the synthesis of dye-stuffs, herbicides, and degreasers (West and Ware, 1977). 1,2-Dichlorobenzene is produced almost entirely as a by-product during the production of monochlorobenzene.

AQUATIC TOXICOLOGY

Although differences in acute toxicity of the dichlorobenzenes exist among species, the toxicity of different dichlorobenzenes to individual species is similar so for practical purposes they may be considered to be equally toxic. Daphnia magna and a midge are the only freshwater invertebrate species for which data for dichlorobenzenes are available. The 48-hour EC_{50} value for 1,2-dichlorobenzene is 2,440 ug/L (USEPA, 1978a). Comparable test results with other chlorinated benzenes and Daphnia magna resulted in values ranging from 86,000 ug/L for chlorobenzene to 5,280 ug/L for pentachlorobenzene, indicating an increase in toxicity of the chlorinated benzenes with increased

chlorination.

The bluegill (Lepomis macrochirus) has been tested (USEPA, 1978a) and 96-hour LC_{50} values, obtained under static and unmeasured test conditions, are 5,590, 5,020, and 4,280 ug/l for 1,2-, 1,3-, and 1,4-dichlorobenzene, respectively. These results indicate that the position of the chlorine atoms on the benzene ring probably does not influence the toxicity of dichlorobenzenes very much. Dawson, et al., (1977) also tested the bluegill and the 96-hour LC_{50} was 27,000 ug/l for 1,2-dichlorobenzene which is quite different from that (5,590 ug/l) for the same species by different investigators (USEPA, 1978a). This difference may be due to the fact that Dawson, et al., (1977) added 1,2-dichlorobenzene to the surface of the test water without the subsequent mixing usually done for such tests, allowing volatilization of a portion of the 1,2-dichlorobenzene added.

Two flow-through measured tests were conducted with the fathead minnow (Pimephales promelas) and the rainbow trout (Salmo gairdneri) (USEPA, 1980c); the 96-hour LC_{50} for 1,2-dichlorobenzene were 1,580 and 1,120 ug/L, respectively.

The mysid shrimp (Mysidopsis bahia) was more sensitive to the dichlorobenzenes in 96-hour acute exposures than were the fish; LC_{50} values ranged from 1,970 to 2,850 ug/L. As with the freshwater test species, comparable results (USEPA, 1978a) with other chlorinated benzenes and the mysid shrimp are also available. The LC_{50} values range from 16,400 ug/l for chlorobenzenes to 160 ug/l for pentachlorobenzene, again indicating an increase in toxicity of the chlorinated benzenes with increasing chlorination.

An embryo-larval test with fathead minnows and 1,2-dichlorobenzene has been conducted (USEPA, 1978a) and the chronic value for this test is 2,000 ug/L. The range of chronic values for the dichlorobenzenes (763 to 2,000 ug/L) and the fathead minnow demonstrate that these chemicals are less chronically toxic than the more highly chlorinated chemicals.

PHYTOTOXICOLOGY

The freshwater alga, Selenastrum capricornutum, has been tested for the effects of dichlorobenzenes on chlorophyll a and cell numbers. The EC_{50} values range from 91,600 to 179,000 ug/L for the dichlorobenzenes, which indicates little if any relationship to the location of chlorine atoms on the benzene ring.

Comparable test procedures (USEPA, 1978a) were used for other chlorinated benzenes and, as with the fish and invertebrate species, toxicity is increased with an increase in chlorination.

The saltwater algal species, Skeletonema costatum, has also been tested (USEPA, 1978a) for acute effects of exposure to the dichlorobenzenes. The EC_{50} values for cell number or chlorophyll a ranged from 44,100 to 59,100 ug/L.

BIOCONCENTRATION

Bioconcentration by the bluegill has been studied using ^{14}C-labelled dichhlorobenzens, with thin layer chromatography for verification (USEPA, 1978a). The bioconcentration factors were 89, 66, and 60 for 1,2-, 1,3-, and 1,4-dichlorobenzene, respectively. Equilibrium occurred within 14 days and the half-life for each dichlorobenzene was less than one day. These results suggest that the dichlorobenzenes are unlikely to be a tissue residue problem in the aquatic environment.

The more highly chlorinated benzenes are much more lipophilic than the dichlorobenzenes with bioconcentration factors ranging from 1,800 for tetrachlorobenzene to 23,000 for hexachlorobenzene. In addition, the half-lives of chlorinated benzenes increase with chlorination from less than one day for the dichlorobenzenes, to 2 to 4 days for tetrachlorobenzene, and greater than 7 days for pentachlorobenzene. These results indicate that the environmental risk due to tissue residues increases with increasing chlorination and support the conclusion above that dichlorobenzenes will not likely cause a serious residue problem for aquatic life.

TERATOGENICITY

Embryotoxicity and teratogenicity of dichlorobenzenes apparently have not been studied and reported. The potential for transplacental toxicosis or developmental effects may be inferred from evidence that lower chlorinated benzenes pass membrane barriers (including egg and placenta) and affect hormone-metabolizing systems (Ware and West, 1977).

CARCINOGENICITY

In an investigation an *in vitro* carcinogenicity test system, Guerin *et al.*, (1971) reported dichlorobenzene as being noncarcinogenic. This test involved treating a culture of rat pulmonary cells with test material and evaluating the inhibition of mitosis in cells fixed on slides after eight days. The test had been demonstrated as being able to detect known carcinogens, the correspondence between test results on mitotic inhibition and carcinogenic versus noncarcinogenic chemicals being significant at the one percent level.

Ware and West (1977) have summarized a series of toxicity experiments by Hollilngsworth, *et al.*, (1956, 1958) in which toxicities of 1,2- and 1,4-dichlrobenzene were studied in several animal species exposed by inhalation and gastric intubation at various dose levels over various periods of time. No tumors were reported in combined totals of 146 animals exposed to 1,2-dichlorobenzene or 189 exposed to 1,4-dichlorobenzene.

Although strong direct evidence of carcinogenicity of dichlorobenzenes is not available, there seems to be a sufficient collection of varied data to suggest a prudent regard of the dichlorobenzenes as suspected carcinogens, pending the availability of better data.

NATIONAL CRITERIA

The available data for dichlorobenzenes indicate that acute and chronic toxicity to freshwater aquatic life occur at concentrations as low as 1,120 and 763 ug/L, respectively, and would occur at lower concentrations among

species that are more sensitive than those tested.

The available data for dichlorobenzenes indicate that acute toxicity to saltwater aquatic life occurs at concentrations as low as 1,970 ug/L and would occur at lower concentrations among species that are more sensitive than those tested. No data are available concerning the chronic toxicity of dichlorobenzenes to sensitive saltwater aquatic life.

HEXACHLOROCYCLOHEXANE
(alpha Benzene Hexachloride and gamma Benzene Hexachloride or Lindane)

INTRODUCTION

The persistent organochlorine insecticide, hexachlorocyclohexane (HCH), popularly known as lindane or benzenehexachloride (BHC), has eight stereo isomers of which four (alpha, beta, gamma, and delta) predominate in the technical product because of relatively strainless bonds (Deo et al., 1982). Of the isomers, only gamma HCH is highly insecticidal (Newell et al., 1987). Gamma-hexachlorocyclohexane, also known as Lindane, is a highly chlorinated pesticide. It has a low vapor pressure and is slightly soluble in water (1.6E-04 mm Hg and 7.8 mg/L at 25°C, respectively) (U.S. EPA, 1986b). Because of these properties, Lindane is persistent in both surface and subsurface soils.

The half life of the four predominant isomers vary from 4 to 22 days when exposed to sunlight, although it can be as long as 50 days in submerged soils (Deo et al., 1982). HCH isomers degrade to chlorophenols at different rates in order of their solubilities in fat (delta>gamma>alpha>beta).

HUMAN TOXICITY

From qualitative studies, Lindane appears to be rapidly absorbed from the gastrointestinal (GI) tract; absorption is enhanced in lipid vesicles. Lindane is the most acutely toxic isomer of hexachlorocyclohexane and causes (as does the α isomer) stimulation of the central nervous system. Exposure to excessive amounts of HCH, primarily γ-HCH, have been reported to result in death in humans and animals. Causes of the acute lethality in animals may be due to its effect on the central nervous system, since convulsions and coma were often observed prior to death. The doses associated with death in animals (20 mg/kg for 10 days in mice) (Liu and Morgan, 1986), are much higher than would be found in the environment.

In humans, blood disorders, including anemia, leukopenia, and leukocytosis have been observed in individuals following long-term exposure to γ-HCH at work or at home in which HCH vaporizer was operated (Morgan et al., 1980). Hepatic effects, such as increase in liver enzymes, have been reported in individuals exposed for 10 years to technical-grade HCH, principally by inhalation in a pesticide formulating plant (Kashyap, 1986). Neurological effects, including paresthesia of the face and extremities, headaches, vertigo, abnormal EEG patterns and often seizures and convulsions, have been reported in these occupationally exposed individuals. There is also suggestive evidence that HCH may affect the human immune system. Animal studies indicate that administration of 10 ppm Lindane to the diets of rats for one to two years resulted in noxious effects to them and their offspring. Body weights were decreased after treatment for five months. Administration of 100 ppm Lindane to dogs resulted in enlarged livers without histopathological change. Fifty ppm diets of Lindane have been reported as the no-effect level in a number of animal studies. Rat and dog studies show a correlation with exposure to Lindane and reduced fertility and other maternal and paternal complications. Technical grade hexachlorocyclohexane used in the above studies reportedly contained 72 percent of the alpha isomer and 13.6 percent of the gamma isomer.

Based on studies by Zoecon Corporation (Research and Consulting Co., 1983) and the U.S.EPA (1986f), an oral reference dose of 3.0×10^{-3} mg/kg/day for gamma hexachlorocyclohexane has been determined.

A time-weighted average TLV of 5.00×10^{-1} mg/m^3 is believed to be low enough to prevent central nervous system effects due to hexachlorocyclohexane (ACGIH, 1986).

ENVIRONMENTAL TOXICITY

Of the four isomers, beta HCH is the least toxic in the rat with an LD_{50} of 6,000 mg/kg, while gamma HCH is the most acutely toxic isomer in the rat with an LD_{50} of 76 mg/kg. Short-term feeding studies of alpha, beta, and gamma HCH isomers conducted by Mueller et al., (1981) concluded that beta and gamma HCH may exert neurotoxic effects. When chickens were fed levels of 0.1 to 10

mg/kg gamma HCH, Sauter and Steele (1972) found significantly reduced hatchability. In another study, Whitehead et al., (1972) did not find reduced hatchability at 100 mg/kg dietary level, although they did note decreased egg production. The NOEL reported by Whitehead et al., (1972) was 64 mg/kg dietary level as compared to the 10 mg/kg dietary level reported by Sauter and Steele (1972).

Studies performed to assess the effects of gamma-hexachlorocyclohexane on the reproductive system indicate a no observed adverse effect level (NOAEL) of 20 mg/kg/day for the rat exposed for 30 days (Raizada et al., 1980). Rats exposed to gamma-hexachlorocyclohexane for 90 days had a NOAEL of 37.5 and a serious lowest observed adverse effect level (LOAEL) of 75 mg/kg/day (Shivanandappa and Krishnakumari, 1983). The LOAEL resulted in disrupted spermatogenesis in the animals. Both tests were performed using a feeding route of exposure.

Feeding studies were also performed to assess the reproductive effects of technical grade hexachlorocyclohexane on the mouse. The 3 month study resulted in a serious LOAEL of 64.6 mg/kg/day (Nigam et al., 1979). This dose resulted in a degeneration of the seminiferous tubules.

Lindane (gamma-HCH) is responsible for the effectiveness of hexachlorocyclohexane as an insecticide and is generally more toxic than the other isomers or technical HCH. The presence of the other HCH isomers decreases the toxicity of lindane to aquatic organisms, either by an antagonistic effect or by decreasing the chemical solubility (Clement Assoc., 1985b).

Lindane is acutely toxic to freshwater fish with LC_{50} values ranging from 2 ug/liter to 141 ug/liter (Macek and McAllister, 1970; Henderson et al., 1959). Acute-chronic ratios for lindane ranged from 7.5 to 63, with a final chronic value of 0.08 ug/liter (U.S.EPA, 1980h).

Acute tests with a freshwater alga and three different BHC isomers indicate that the alpha isomer is more toxic than the gamma (lindane) and beta isomer (U.S.EPA, 1980h). Both freshwater and saltwater algal species were much more resistant to hexachlorocyclohexane than were the invertebrates and fish

species tested.

CARCINOGENICITY

Mice (dd strain) exposed to as much as 65 mg γ-HCH/kg day in the diet for 24 weeks did not exhibit any carcinogenic effects (Ito et al., 1973), but an increased incidence of malignant hepatomas was reported in male dd mice exposed to 78 mg/kg/day in the diet for 32 weeks (Hanada et al., 1973). Liver nodules developed in mice receiving 39 mg/kg/day, although few animals were tested. Hepatocellular carcinomas have been reported in CF1, B6C3F1, and yellow (YS/UY) F-1 mice exposed to 4.7-52 mg/kg/day in the diet for 80-104 weeks (Wolff et al., 1987; NCI, 1977; Thorpe and Walker, 1973).

The EPA (U.S.EPA, 1988c) has classified Lindane (γ - HCH) as a group B2 (Probable Human) carcinogen with an estimated oral cancer potency factor for γ-HCH of 1.3 $(mg/kg/day)^{-1}$ based on the incidence of hepatocellular carcinomas observed in mice administered γ-HCH in their diet (Thorpe and Walker, 1973).

The U.S.EPA (1988b) has determined an oral potency factor of 1.8×10^{1} mg/kg/day for α-HCH.

MERCURY

INTRODUCTION

Mercury (CAS 7439-97-6) is a silver-white liquid metal with a molecular weight of 200.6. Mercury has a boiling point of 356.9°C, a specific gravity of 13.6 and a vapor pressure of 1.2×10^{-3} mm Hg (U.S. EPA, 1986b).

Several forms of mercury, including insoluble elemental mercury, inorganic species, and organic species, can exist in the environment. In general, the mercurous (+1) salts are much less soluble than the more commonly found mercuric (+2) salts (Clement Assoc., 1985c). Mercury also forms many stable organic complexes that are generally much more soluble in organic liquids than in water. The nature and solubility of the chemical species that occur in an environmental system depend on the redox potential and the pH of the environment (Clement Assoc., 1985c).

HUMAN HEALTH EFFECTS

Mercury, in the organic and inorganic forms, is absorbed via the inhalation, oral, and dermal pathways. Inorganic mercury, when inhaled is highly diffusible and lipophilic. It diffuses rapidly across the alveolar membranes of the lung into the blood (Berlin et al., 1969; Friberg and Vostal, 1972). One study indicates approximately 80 percent of the inhaled elemental mercury vapor is retained in human tissues (Teisinger and Fiserova - Bergerova, 1965).

Ingested inorganic mercury is absorbed on a limited basis. Blood levels of metallic mercury increased in people after accidental ingestion (Suzuki and Tanaka, 1971). Oral absorption of metallic mercury has been estimated to be approximately 0.10% (Friberg and Nordberg, 1973). When administered to humans, approximately 15% of a trace dose of mercuric nitrate in an aqueous solution or bound to calf liver protein is absorbed from the gastrointestinal tract (Weiss et al., 1973).

Few studies have been conducted on dermal exposure to inorganic mercury although clinical case studies in humans have reported evidence of mercury intoxication following dermal application of ointments that contain inorganic mercury salts (Bourgeois et al., 1986; DeBont et al., 1986).

Organic mercury compounds are readily absorbed in humans. Based on retention and excretion studies in man, approximately 95 percent of an oral tracer dose of aqueous methylmercuric nitrate is absorbed (Aberg et al., 1969). Absorption of mercury is also seen in studies where volunteers received doses of methylmercury bound to protein (Miettinen, 1973), or ate bread contaminated with a fungicide that contained methylmercury (Al-Shahristani et al., 1976).

Available literature indicates that effects due to inhaled mercury may occur at levels of 0.1 mg Hg/m^3 (U.S.EPA, 1984d). Therefore, the inhalation RfD is set at 0.1 mg/m^3.

Fitzhugh et al., (1950) reported morphological changes in kidney tissue in rats fed 40 ppm Hg (as mercuric acetate) in the diet for 2 years. This establishes a LOAEL of 2 mg/kg/day. Applying uncertainty factors of 10 to convert from a LOAEL to a NOAEL, 10 for interspecies conversion and 10 to allow for the most sensitive members of the population results in an AIC of 2.0×10^{-3} mg/kg/day (U.S.EPA, 1984g).

ENVIRONMENTAL HEALTH EFFECTS

In animals, death of rats, guinea pigs and mice due to severe pulmonary edema was reported following acute (24-48) hours inhalation exposure to inorganic mercury vapor (Christensen et al., 1937). Ashe et al., (1953) reported death in rabbits following exposure to metallic mercury vapor at a concentration of 28.8 mg/m^3 for 1-30 hours.

The oral LD_{50} of $HgCl_2$ ranged from 35-105 mg/kg (25.9 to 77.7 mg Hg/kg) in rats, with 2-week old rats being more sensitive (Kostial et al., 1978). The signs of acute mercury toxicity in animals are similar to those described for humans.

The toxicity of mercury compounds has been tested in a wide variety of aquatic organisms. Among freshwater species, the 96-hour LC_{50} values for inorganic mercuric salts range from 0.02 ug/liter for crayfish to 2000 ug/liter for caddisfly larvae (U.S. EPA, 1980i). In rainbow trout, methylmercuric chloride is about ten times more toxic to rainbow trout than mercuric chloride, which is acutely toxic at about 300 ug/liter at 10°C (U.S. EPA, 1980i). Methylmercury is the most chronically toxic of the tested compounds, with chronic values for Daphnia magna and brook trout of 1.00 and 0.52 ug/liter respectively (U.S. EPA, 1980i).

METHYL ETHYL KETONE

INTRODUCTION

Methyl ethyl ketone or MEK (CAS 78-93-3) is a volatile, water-soluble, colorless liquid aliphatic ketone with a molecular weight of 72.1, a vapor pressure of 77.5 mm Hg, a water solubility of 268 g/l, and an odor resembling that of acetone (Verschueren, 1983; Krasavage et al., 1982; Lande et al., 1976). MEK has a log octanol/water partition coefficient of 0.26, and an organic carbon partition coefficient (K_{OC}) of 4.5 ml/g (U.S. EPA, 1986b). Based on the low octanol water partition coefficient (log K_{OW}), the organic carbon partition coefficient (K_{OC}), and the high water solubility, MEK is expected to have a high soil mobility and may leach into ground water (U.S. EPA, 1984e).

HUMAN HEALTH EFFECTS

Methyl ethyl ketone is readily absorbed by all routes of exposure with approximately 75 percent of inhaled methyl ethyl ketone absorbed by the pulmonary route (Tada et al., 1972). It is eliminated unchanged in expired air and its metabolites are eliminated as conjugates of glucuronic acid in the urine (DiCastiglia et al., 1972; Williams, 1959).

Nelson et al., (1943) determined sensory thresholds in 10 volunteers exposed for 3 to 5 minutes to methyl ethyl ketone. Exposure to 25 ppm for 5 min had no effect while 100 ppm had an identifiable odor and produced a mild irritation of the nose and throat. Exposure to 200 ppm for 15 min produced complaints of irritation of the nose and throat, and a strong odor. MEK was objectionable at 300 ppm, while concentrations greater than 300 ppm produced nausea and irritation of the eyes, nose, and throat. The threshold for eye and nose irritation was approximately 200 ppm for 50 percent of the unacclimatized workers (Unpublished data). Elkins (1969) reported that workers exposed to 300 to 500 ppm complained of headache, irritation, and nausea. Exposures to 700 ppm led to no permanent untoward effects. Momentary exposure to 33,000 and 100,000 ppm produced intolerable irritation of the

eyes, nose, and throat (Patty et al., 1935).

Munies and Wurster (1965) added methyl ethyl ketone to an absorption cell affixed to the palmar surface of the forearm of volunteers. Shortly after skin contact was initiated, methyl ethyl ketone was detected in the expired air, with a steady state reached in 2 to 3 hr. When the skin was hydrated a more rapid uptake ocurred. Di Vincenzo et al., (1978) reported that a combination of methyl ethyl ketone and methyl n-butyl ketone was absorbed through human skin. Exposure of the forearm to methyl ethyl ketone for 1 hr/day for six consecutive days produced damage to the horny layer of the epithelium (Malten et al., 1968). Munies (1965) and Munies and Wurster (1965) demonstrated that methyl ethyl ketone can defat and partially dehydrate the stratum corneum of human skin without producing irritation or inflammation. Methyl ethyl ketone did not produce skin sensitization when tested in man (Klingman, 1966; Klingman and Epstein, 1975).

The U.S.EPA (1985c) using a study by LaBelle and Brieger (1955) derived an oral reference dose for methyl ethyl ketone. This study consisted of exposing rats to 693 mg/m^3 of MEK for 7 hours/day, 5 days/week, for 12 weeks. This investigation resulted in an RfD of 5.0×10^{-2} mg/kg/day.

Odor detection tests have detected a 50 percent response from volunteers at a concentration of 4.68 ppm, and a 100 percent response at 10 ppm. The threshold for eye and nose irritation, with a 50 percent response, is 200 ppm. Based on this information, a TLV of 5.90×10^2 mg/m^3 should prevent any injurious effects and minimize complaints about odor and irritation (ACGIH, 1986).

ENVIRONMENTAL HEALTH EFFECTS

The oral LD_{50} was reported to be 3.3, 3.4, and 3.6 g/kg and 6.86 ml/kg for rats (Kimura et al., 1971; Smyth et al., 1962; Unpublished data). The intraperitoneal LD_{50} for mice is 616 mg/kg (Opdyke, 1975). Guinea pigs dosed intraperitoneally with 1500 or 2000 mg/kg developed elevated serum ornithine carbamyl transferase activity 24 hours after treatment. One animal died at the 2000 mg/kg dose, while 750 mg/kg produced no effects (Di Vincenzo and

Krasavage, 1974). Terhaar et al., (Unpublished data) reported intraperitoneal LD_{50s} of 1.27 and 0.73 mg/kg for rats and guinea pigs respectively.

Methyl ethyl ketone is readily absorbed through intact skin (Krasavage et al., 1982). Skin contact for 24 hr produced moderate skin irritation, while dermatitis is likely to occur after repeated exposures (Smyth et al., 1962; Unpublished data). Methyl ethyl ketone is moderately irritating when applied to intact or abraded rabbit skin for 24 hr under occlusion (Klingman, 1966).

Inhalation studies have determined that rats showed no toxic effects when exposed to 2000 ppm methyl chloride for 2 hr. Exposure to 4000 ppm for the same duration killed four of six animals (Smyth, 1956). Exposure to 8000 ppm killed three of six rats in 8 hours while 10,000 ppm for 1 hr produced irritation of the eyes and nose. Specht et al., (1940) found MEK to be less irritating than other ketones in guinea pigs exposed to 25,000 ppm for 10 min. Guinea pigs exposed to 3300 ppm of methyl ethyl ketone for 13.5 hr showed no signs of intoxication (Unpublished data). Exposure to 10,000 ppm for a similar period produced irritation of the eyes and nose within 4 min and narcosis between 4 and 5 hours. Exposure to 33,000 ppm for 200 min produced narcosis and death while exposure to 100,000 ppm for 10 min produced narcosis (Unpublished data).

Only limited information on the toxicity of methyl ethyl ketone to aquatic life is available. LC_{50} concentrations for two freshwater fish were approximately 5,600 ug/liter (Turnbull et al., 1954; Wallen et al., 1957). MEK was toxic to brine shrimp at LC_{50} levels of 1950 mg/liter (Wallen et al., 1957).

NICKEL

Nickel (CAS 740-02-0) commonly occurs in the 0, +1, +2, and +3 valences with a molecular weight of 58.71 (Weast, 1981). Nickel has a boiling point of 2,732°C, a melting point of 1,453°C (Weast, 1981). Elemental nickel is insoluble in water (Weast, 1981), although many nickel compounds are highly soluble in water (USEPA, 1980j). The major uses of commercial nickel include steel and metal alloy production, electroplating, coinage, ceramics, Ni-Cd storage batteries, and electronic circuits (USEPA, 1980j).

HUMAN HEALTH EFFECTS

Nickel can enter the body via ingestion, inhalation or skin contact. Gastrointestinal absorption of nickel in humans is about 1 to 10% (USEPA, 1986e). Absorption of nickel from the respiratory tract depends on the physical properties, as well as the size of the particles and the solubility of the nickel compounds. While the gaseous form, nickel carbonyl, was reported to be readily absorbed in exposed rats (Sunderman and Sunderman, 1958), absorption of particulate nickel in the form of nickel oxide is poor. However, about 75% of an aerosol of nickel chloride is absorbed in mice (Graham et al., 1978), indicating greater absorption for soluble nickel compounds. Nickel can also penetrate human skin. An applied dose of 0.23% aqueous nickel chloride was reported to permeate the human skin, and about 3.5% of aqueous nickel chloride passed through the skin when occluded (Fullerton et al., 1986).

The lung is the primary target organ of nickel toxicity in humans. Inhalation exposure is associated with lung cancer (NAS, 1975), asthma as an allergic response (USEPA, 1986e) or as a response to primary irritation, and with increased susceptibility to pulmonary infections, probably due secondarily to the effect of nickel on the immune system. Chronic exposure to high levels may result in anosmia and severe nasal injury, such as septal perforation, chronic rhinitis, and sinusitis (USEPA, 1986e). Specific dose-response data for respiratory effects in humans are not available.

Contact dermatitis is the most prevalent effect of nickel in the general population (NAS, 1975). Dermatitis is a sensitization reaction. Acute exposure to nickel in animals have been shown to cause immunosuppression (Graham et al., 1978), atrophy of the thymus and spleen (Benson et al., 1987), aminoaciduria and proteinuria, indicative of renal dysfunction (Gitlitz et al., 1975), and hematological effects (such as increased white blood cell counts, decreased hemoglobin concentration, and decreased hematocrit) and hematopoietic effects (such as histological lesions in the bone marrow).

Exposure of animals to nickel salts is associated with delayed fetal development and increased resorptions (Lu et al., 1979). There are no studies regarding the teratogenicity or fetotoxicity of nickel in humans. Mammalian cell transformation data indicate that several nickel compounds are mutagenic and can cause chromosomal alterations (Larramendy et al., 1981; Lechner et al., 1984).

EPA has proposed an oral reference dose (RfD) of 0.02 mg/kg/day based on the 2-year feeding study in rats by Ambrose et al., (1976), using decreased body weight gain as the effect of concern. The RfD is calculated according to the methods of Barnes et al., (1987b) as follows:

RfD = 5 mg/kg/day/100 x 3 = 0.02 mg/kg/day,

where: 5 mg/kg/day = NOAEL,

100 = uncertainty factor appropriate for use with NOAEL from animal data, and

3 = modifying factor to account for the uncertainty regarding developmental effects due to inadequacies in the animal studies.

With the available knowledge, it is not felt that all forms of nickel are carcinogenic (ACGIH, 1986). Therefore, for the inhalation pathway, a time weighted average TLV of 1.0 mg/m^3 is recommended for nickel metal and insoluble nickel compounds (ACGIH, 1986).

ENVIRONMENTAL HEALTH EFFECTS

Oral LD_{50}s in rats that have been reported for various nickel compounds include: 355 mg/kg for nickel acetate (118 mg/kg nickel) (Haro et al., 1968); 1600 mg/kg for nickel hydroxide (1021 mg/kg nickel); 300 mg/kg for nickel sulfate hexahydrate (67 mg/kg nickel); >5000 mg/kg for nickel oxide (>3292 mg/kg nickel), nickel sulfide (>3233 mg/kg nickel); and nickel subsulfide (>3666 mg/kg nickel) (Mastromatteo, 1986). It appears that the soluble nickel compounds are more toxic than insoluble compounds by the oral route.

Chronic toxicities were determined by American Biogenics Corporation (1986), who dosed groups of male and female rats by gavage with nickel chloride at 0, 5, 35, or 100 mg/kg nickel per day for 91 days. High rates of mortality occurred at the 35 and 100 mg/kg doses (FELs) but not at 5 mg/kg (NOAEL). The 35 mg/kg and 5 mg/kg doses are the LOAEL and NOAEL, respectively, for lethality due to oral exposure. In a series of studies, rats and mice were exposed by inhalation to nickel sulfate, nickel subsulfide, or nickel oxide (Dunnick et al., 1985, 1987; Benson et al., 1987). When exposure concentrations of individual compounds are expressed in terms of nickel content, nickel sulfate was found to be the most toxic. In the animals exposed to nickel sulfate, the lowest concentrations of nickel that resulted in reduced survival were 1.7 mg/m^3 for mice and 3.3 mg/m^3 for rats (LOAEL) (The animals died following the development of pulmonary inflammation.) 0.8 and 1.7 mg/m^3 (NOAEL) did not result in reduced survival in mice and rats, respectively.

In a freshwater media, nickel tends to be more toxic in softer water (U.S.EPA, 1980j). Acute values for exposure to a variety of nickel salts, expressed as nickel, range from 510 ug/liter for Daphnia magna to 46,200 ug/liter for banded killifish at comparable hardness levels (Pickering and Henderson, 1966a). Chronic values range from 14.8 ug/liter for Daphnia magna in soft water to 530 ug/liter for the fathead minnow in hard water (U.S.EPA, 1980j). Residue data for the fathead minnow indicate a bioconcentration factor of 61 (U.S.EPA, 1980j).

CARCINOGENICITY

Nickel refinery dust and nickel subsulfide have been classified by EPA as Group A, human carcinogen. The Carcinogen Assessment Group (CAG) of EPA developed a quantitative unit cancer risk estimate based upon various epidemiologic studies which found an association between employment in nickel refineries and nasal lung or laryngeal cancers (USEPA, 1986e). Using additive and multiplicative excess risk models and four sets of data (Enterline and Marsh, 1982; Chovil et al., 1981; Magnus et al., 1980; Dohl et al., 1977), a range of incremental unit risks from 1.1×10^{-5} $(ug/m^3)^{-1}$ to 4.6×10^{-1} were calculated.

Using the midpoint of the calculated range, incremental unit risk estimates of 2.4×10^{-4} $(ug/m^3)^{-1}$ for nickel refinery dust and 4.8×10^{-4} $(ug/m^3)^{-1}$ for nickel subsulfide were calculated. These risk estimates were verified by the EPA agencywide CRAVE committee (USEPA, 1987e).

TETRACHLOROETHYLENE

INTRODUCTION

Tetrachloroethylene or PCE (CAS 127-18-4) is a colorless, liquid alkene with a molecular weight of 165.83, an ether-like odor, a melting point of -22.7°C and a boiling point of 121.2°C (Sax and Lewis, 1987; Keil, 1979). PCE has a water solubility of 150 mg/l, an organic-carbon partition coefficient of 364 ml/g, and a log octanol-water patition coefficient of 2.6 (U.S.EPA, 1986b). PCE will leach into the ground water, especially in soils of low organic content (Clement Assoc., 1985d). In soils with high levels of organics, PCE is adsorbed and possibly bioaccumulated (Clement Assoc., 1985d).

HUMAN HEALTH EFFECTS

Absorption following inhalation appears to be the primary route in which PCE enters the body (U.S.PHS, 1987f). PCE is readily absorbed by humans through the lungs into the blood, and pulmonary uptake of PCE is proportional to ventilation rate, duration of exposure, and (at lower atmospheric concentrations of PCE) to the concentration of PCE in the inspired air (Hake and Stewart, 1977). Target organs for PCE uptake appear to be the CNS, liver and kidneys.

Tetrachloroethylene has been known since the early 1960s to be hepatotoxic to humans. A number of reports of liver damage after inhalation of PCE in acute or chronic exposure situations have been documented (Levine et al., 1981; Hake and Stewart, 1977). Hepatotoxic effects attributed to PCE exposure include cirrhosis of the liver, toxic hepatitis, liver cell necrosis, hepatomegaly, and altered liver function indices [serum glutamic oxaloacetic transaminase (SGOT), serum glutamic-pyruvic transaminase (SGPT), lactic dehydrogenase (LDH), bilirubin, and alkaline phosphatase] (U.S.EPA, 1985d). Clinical signs indicative of liver damage that occurs after acute PCE ingestion in humans include elevated SGOT and SGPT levels, hepatomegaly, and fatty degeneration of the liver (Koppel et al., 1985).

Symptoms of renal dysfunction, including diminished excretion of urine, uremia, elevated serum creatine, proteinuria, and hematuria, have been associated with accidental exposure to PCE vapor in case reports (Hake and Stewart, 1977; Larson et al., 1977). Acute renal failure and glomerulonephritis were noted as possible late-stage consequences of acute oral PCE ingestion in humans (Koppel et al., 1985).

EPA (U.S.EPA, 1987f) has verified an oral RfD of 1×10^{-2} mg/kg/day for PCE. This value is based on a NOAEL of 14 mg/kg/day for liver effects in mice exposed to this dosage via drinking water for 90 days (Hayes et al., 1986). The RfD is calculated as follows:

$$RfD = 14 \text{ mg/kg/day}/(1000) = 1 \times 10^{-2} \text{ mg/kg/day}$$

where 14 mg/kg/day = NOAEL
1000 = uncertainty factor for inter - and intraspecies and subchronic -to-chronic extrapolation

A TLV of 50 ppm TWA is recommended to provide a margin of safety in preventing discomfort and subjective complaints which may occur from prolonged exposure to 100-200 ppm. (ACGIH, 1986). A STEL of 200 ppm is further recommended to prevent anesthetic effects. These levels provide a wide margin of safety in preventing possible liver injury.

ENVIRONMENTAL HEALTH EFFECTS

An inhalation LC_{50} of 5200 ppm for 4h for mice was reported by Friberg et al., (1953). Other data indicate that single 4-h exposures to 2445 and 2450 were not lethal to rats or to mice alone (Friberg et al., 1953). Limited acute inhalation data are available for animals: exposure to 200 ppm for 4h produced reversible fatty degeneration of the liver in mice (Kylin et al., 1963); exposure to 200 ppm for 6h/day for 4 days produced reversible, increased open-field activity, reduced brain RNA content, and increased brain nonspecific cholinesterase content in rats (Savolainen et al., 1977); and exposure to >1000 ppm for 4 to 7h/day for several days produced loss of coordination and anesthesia in rats (Goldberg et al., 1964; Rowe et al., 1952;

Carpenter, 1937). As these effects occurred at higher concentrations than the apparent threshold for CNS effects in humans (100 to 200 ppm), it is appropriate to regard 100 ppm as the LOAEL for target organ toxicity for acute inhalation exposures (U.S.PHS, 1987f).

In mice, gavage exposure to ≥100 but not 20 mg/kg, 5 days/week for 6 weeks produced dose-related hepatic alterations (Buben and O'Flaherty, 1985). Effects included increased liver weight and triglycerides at ≥100 mg/kg and degenerative changes and related histological alterations at ≥200 ppm. The NOAEL and LOAEL determined for oral exposure to PCE are 14 mg/kg/day and 71.4 mg/kg/day respectively (U.S.PHS, 1987f).

Tetrachoroethylene is the most toxic of the chloroethylenes to aquatic organisms but is only moderately toxic relative to other types of compounds (U.S.EPA, 1980k). The limited acute toxicity data indicate that the LC_{50} value for saltwater and freshwater species are similar, approximately 10,000 ug/l; the trout was the most sensitive (LC_{50} = 4,800 ug/l) (U.S.EPA, 1980k). Chronic freshwater values are 840 ug/l (U.S.EPA, 1980k).

CARCINOGENICITY

The overall weight of the evidence for the carcinogenicity of tetrachloroethylene is currently under review. Although there is agreement concerning the inadequacy of human data, the sufficiency of animal data is being debated. The weight of evidence in the EPA (U.S.EPA, 1985d) document was given as C, possible human carcinogen; however, this conclusion was made prior to the availability of the inhalation bioassays (NTP, 1986). The EPA (U.S.EPA, 1986b) has proposed a B2 classification. Using the q_1^* of 5.1×10^{-2} $(mg/kg/day)^{-1}$, the oral doses associated with individual lifetime upper-bound cancer risks of 1×10^{-4} to 1×10^{-7} are 2.0×10^{-3} to 2.0×10^{-6} mg/kg/day (U.S.PHS, 1987f).

TOLUENE

INTRODUCTION

Toluene (CAS 108-88-3) is a colorless, liquid aromatic hydrocarbon with the chemical formula $C_6H_5CH_3$ and a molecular weight of 92.15 (Weast, 1981). Toluene has a melting point of -95°C, a boiling point of 110.6°C and a water solubility of 515 mg/l (Weast, 1985; Verschueren, 1981). Toluene has an organic carbon partition coefficient (K_{OC}) of 300 ml/g (U.S. EPA, 1986b), and a log octanol/water partition coefficient (log K_{OW}) of 2.79 (Mabey et al., 1982). Based on the K_{OC} value, toluene is expected to have a high soil mobility, and may leach into ground water (U.S. EPA, 1986b).

HUMAN HEALTH EFFECTS

Toluene is readily absorbed from the respiratory and gastrointestinal tracts and to a lesser extent through the skin (Carlsson, 1982). Animals given toluene orally or by inhalation had high concentrations of toluene in their adipose tissue and bone barrow, and moderately high concentrations of toluene and its metabolites in the liver and kidney (Benignus et al., 1981). The initial step in metabolism is side-chain hydroxylation followed by oxidation to benzoic acid (Benignus et al., 1981). Benzoic acid is then conjugated with glycine to form hippuric acid. In both humans and animals, 60 to 75 percent of inhaled toluene that is absorbed can be accounted for as hippuric acid in the urine (Ogata et al., 1970) with much of the remaining toluene exhaled unchanged. The excretion of toluene and its metabolites is rapid, with the major portion occurring within 12 hours of exposure (Ogata et al., 1970).

The half-life for toluene in adipose tissue of males exposed to 300 ppm toluene for 2 hours ranged from 0.5 to 2.7 days (Carlsson and Ljungquist, 1982). Linear regression analysis indicated that toluene concentrations in adipose tissue are lower in subjects with large amounts of body fat.

The primary effect associated with inhalation exposure of humans to toluene is depression of the central nervous system effects such as fatigue, confusion,

and incoordination, as well as impairments in reaction time, perception, and motor control and function (Baelum et al., 1985; U.S. EPA, 1985g; von Oetting et al., 1942).

The liver does not appear to be a primary target organ following exposure of humans to toluene. In studies of humans exposed to toluene, exposure-related effects of the liver have not been observed (Lundberg and Hakansson, 1985; Seiji et al., 1987). The kidney also does not appear to be a primary target organ following exposure of humans to toluene. Renal acidosis has been observed in solvent abusers exposed to toluene (Goodwin, 1988; Patel and Benjamin, 1986). However, these studies are confounded by probable exposure to multiple solvents, and cannot be used to support a concern for adverse renal effects. Renal effects have not been observed in workers exposed for long durations (Nielsen et al., 1985; Askergren et al., 1986).

It is suggested that the U.S.EPA (1985e) ADI of 3×10^{-1} mg/kg/day be adopted as an interim oral AIC. This value is based on an inhalation NOAEL in rats of 1130 mg/m^3 (CIIT, 1980). Since the U.S.EPA (1985e) based an oral ADI on inhalation data, a route-to-route extrapolation was required. This was accomplished by expanding the exposure (1130 mg/m^3) from 6 hours/day, 5 days/week to continuous exposure, and multiplying by 20 m^3 (an assumed daily respiratory volume for humans) and by 0.5 to reflect an assumed 50% absorption factor. Application of an uncertainty factor of 100 (10 to afford greater protection for sensitive individuals and 10 for interspecies extrapolation) results in an ADI of 3×10^{-1} mg/kg/day (U.S.EPA, 1984f).

ENVIRONMENTAL HEALTH EFFECTS

In animals, the most profound effects of toluene are on the central nervous system (Bruckner and Peterson, 1981). A high correlation between the extent of central nervous system depression and brain toluene levels was observed in both mice and rats (Bruckner and Peterson, 1981). Locomotor activity in rats and mice increased during toluene exposure (Hinman, 1987; Bushnell et al., 1985). Exposure to toluene was reported to produce disturbances in the vestibular and opto-oculomotor systems of rats (Larsby et al., 1986). These findings suggest that the cerebellum is a target site of toluene, and confirm

an earlier report by Tham et al., (1982) that tolune caused nystagmus (involuntary eye movements) in rats administered toluene intravenously.

There are only a few animal inhalation studies that have examined the lethality of toluene, and there is suggestive evidence of a difference in sensitivity between the rat and mouse. Inhalation LC_{50} values of 5,320 ppm (approximately 920 mg/kg) for mice (Svirbely et al., 1943) and 8,800 ppm (approximately 365 mg/kg) for rats (Carpenter et al., 1976) have been reported.

In rats exposed chronically (24 months) to moderate doses of inhaled toluene (300 ppm), no histopathological lung lesions attributed to tolune were observed (CIIT, 1980). The highest dose administered in the study by CIIT (1980), 300 ppm, is indicated as a NOAEL for non-neoplastic pulmonary effects due to chronic exposure.

The limited number of studies on the acute oral toxicity of toluene have focused on lethal effects. The acute oral LD_{50} of toluene in adult rats is in the range of 5.5 to 7.3 g/kg (Withey and Hall, 1975; Kimura et al., 1971; Smyth et al., 1969; Wolf et al., 1956). Age may play a role in the acute lethality of toluene. Kimura et al., (1971) reported that the LD_{50} values for adult rats were 5.5 to 6.5 g/kg. In 14-day old rats the LD_{50} was 2.6 g/kg.

Five freshwater species have been acutely tested with toluene. The cladoceran, Daphnia magna, was more resistant than the goldfish, fathead minnow, guppy and bluegill (U.S.EPA, 1980l). The EC_{50} and LC_{50} values for all species were in the range of 12,700 to 313,000 ug/l (Pickering & Henderson, 1966b). The EC_{50} values for two algal species were 245,000 ug/l and higher (Kauss & Hutchinson, 1975; U.S.EPA, 1978a). No chronic tests have been conducted with toluene and freshwater species.

CARCINOGENICITY

Toluene has not been classified as a carcinogen by the U.S. EPA (1987g).

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