



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

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DATE RECEIVED: 01/08/90

DATE REPORTED: 01/16/90

PAGE 1 OF 2

LAB NUMBER: 19125

CLIENT: SUBSURFACE CONSULTANTS

REPORT ON: 2 SOIL SAMPLES

PROJECT #: 537.002

LOCATION: EMERYVILLE SENIOR HOUSING

RESULTS: SEE ATTACHED

M.S. Pruitter

QA/QC Officer

[Signature]

Laboratory Director

LABORATORY NUMBER: 19125
 CLIENT: SUBSURFACE CONSULTANTS
 JOB #: 537.002
 LOCATION: EMERYVILLE SENIOR HOUSING

DATE RECEIVED: 01/08/90
 DATE ANALYZED: 01/13/90
 DATE REPORTED: 01/16/90
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Extractable Petroleum Hydrocarbons in Soils & Wastes
 EPA 8015 (Modified)
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	KEROSENE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
19125-1	1 @ 5.5'	ND(10)	ND(10)	ND(10)
19125-2	1 @ 9.5'	ND(10)	ND(10)	ND(10)

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	2
Spike: % Recovery	116



LABORATORY NUMBER: 19125
CLIENT: SUBSURFACE CONSULTANTS
JOB #: 537.002
LOCATION: EMERYVILLE SENIOR HOUSING

DATE RECEIVED: 01/08/90
DATE ANALYZED: 01/13/90
DATE REPORTED: 01/22/90
PAGE 2A OF 2

Extractable Petroleum Hydrocarbons in Soils & Wastes
EPA 8015 (Modified)
Extraction Method: EPA 3550

LAB ID	CLIENT ID	GASOLINE (mg /Kg)	KEROSENE (mg /Kg)	DIESEL (mg /Kg)	OTHER (mg /Kg)
19125-1	1 @ 5.5'	ND(10)	ND(10)	ND(10)	ND(10)
19125-2	1 @ 9.5'	120*	ND(10)	ND(10)	ND(10)

ND = Not Detected; Limit of detection in parentheses.

* = Fingerprint Pattern does not match Hydrocarbon Standards.
Quantitation based on area sum within C8 to C12 boiling range.

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JUL -3 1990
AM 7:18:00 PM 12:15:04 16

QA/QC SUMMARY

Duplicate: Relative % Difference	2
Spike: % Recovery	116

LABORATORY NUMBER: 100753
 CLIENT: SUBSURFACE CONSULTANTS
 LOCATION: EMERYVILLE SENIOR HOUSING
 PROJECT #: 537.003

DATE RECEIVED: 06/08/90
 DATE ANALYZED: 06/21/90
 DATE REPORTED: 06/26/90
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=====
 ANALYSIS: CYANIDE
 ANALYSIS METHOD: SMWW 17:4500CN-E
 =====

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
100753-8	MW-1 @ 6' / MW-2 @ 7' / MW-3 @ 2'	ND	mg /Kg	0.1

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====
 RPD, % 5
 RECOVERY, % 97
 =====



LABORATORY NUMBER: 100753
CLIENT: SUBSURFACE CONSULTANTS
LOCATION: EMERYVILLE SENIOR HOUSING
PROJECT #: 537.003

DATE RECEIVED: 06/08/90
DATE ANALYZED: 06/12/90
DATE REPORTED: 06/26/90
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=====
ANALYSIS: LEAD
ANALYSIS METHOD: EPA 7420
=====

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
100753-1	MW-1 @ 6'	16	mg /Kg	2.5
100753-3	MW-2 @ 7'	15	mg /Kg	2.5
100753-6	MW-3 @ 2'	17	mg /Kg	2.5

QA/QC SUMMARY

=====
RPD, % 1
RECOVERY, % 106
=====

LABORATORY NUMBER: 100753-8
 CLIENT: SUBSURFACE CONSULTANTS
 LOCATION: EMERYVILLE SENIOR HOUSING
 PROJECT #: 537.003
 SAMPLE ID: MV-1 @ 6' /MV-2 @ 7' /MV-3 @ 2'

DATE RECEIVED: 06/08/90
 DATE ANALYZED: 06/12/90
 DATE REPORTED: 06/26/90
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Title 26 Metals in Soils & Wastes
 Digestion Method: EPA 3050

METAL	RESULT mg /Kg	REPORTING LIMIT mg /Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	ND	2.5	EPA 7060
Barium	140	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	1.0	0.5	EPA 6010
Chromium (total)	18	0.5	EPA 6010
Cobalt	11	0.5	EPA 6010
Copper	23	1	EPA 6010
Lead	16	2.5	EPA 7420
Mercury	ND	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	24	0.5	EPA 6010
Selenium	ND	2.5	EPA 7740
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	12	1	EPA 6010
Zinc	40	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD, %	RECOVERY, %		RPD, %	RECOVERY, %
Antimony	1	101	Mercury	<1	94
Arsenic	4	100	Molybdenum	<1	89
Barium	1	96	Nickel	6	94
Beryllium	<1	95	Selenium	8	103
Cadmium	4	80	Silver	<1	80
Chromium	10	101	Thallium	<1	86
Cobalt	1	96	Vanadium	3	96
Copper	5	94	Zinc	5	93
Lead	11	85			

LABORATORY NUMBER: 100753
 CLIENT: SUBSURFACE CONSULTANTS
 JOB #: 537.003
 LOCATION: EMERYVILLE SENIOR HOUSING

DATE RECEIVED: 06/08/90
 DATE EXTRACTED: 06/19/90
 DATE ANALYZED: 06/22/90
 DATE REPORTED: 06/26/90
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Extractable Petroleum Hydrocarbons in Soils & Wastes
 California DOHS Method
 LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (mg / Kg)	DIESEL RANGE (mg / Kg)	REPORTING LIMIT (mg / Kg)
100753-1	MW-1 @ 6'	ND	ND	10
100753-2	MW-1 @ 10'	ND	ND	10
100753-3	MW-2 @ 7'	ND	ND	10
100753-4	MW-2 @ 12'	ND	ND	10
100753-7	MW-3 @ 6'	ND	ND	10

ND = Not Detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	81



LABORATORY NUMBER: 100753
CLIENT: SUBSURFACE CONSULTANTS
JOB #: 537.003
LOCATION: EMERYVILLE SENIOR HOUSING

DATE RECEIVED: 06/08/90
DATE ANALYZED: 06/22/90
DATE REPORTED: 06/26/90
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Total Volatile Hydrocarbons as Gasoline in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	TVH AS GASOLINE (mg /Kg)	REPORTING LIMIT (mg /Kg)
100753-2	MW-1 @ 10'	63	1.0
100753-3	MW-2 @ 7'	4.1	1.0
100753-7	MW-3 @ 6'	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	109

LABORATORY NUMBER: 100753
 CLIENT: SUBSURFACE CONSULTANTS
 JOB NUMBER: 537.003
 JOB LOCATION: EMERYVILLE SENIOR HOUSING

DATE RECEIVED: 06/08/90
 DATE ANALYZED: 06/22/90
 DATE REPORTED: 06/26/90
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Total Volatile Hydrocarbons with BTXE in Soils & Wastes
 TVH by California DOHS Method/LUFT Manual October 1989
 BTXE by EPA 5030/8020

LAB ID	CLIENT ID	TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
100753-1	MW-1 @ 6'	ND(1.0)	ND(5.0)	11	ND(5.0)	20
100753-4	MW-2 @ 12'	ND(1.0)	ND(5.0)	7.0	ND(5.0)	7.0
100753-5	MW-2 @ 16.5'	ND(1.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)

ND = Not detected at or above reporting limit; Reporting limit
 indicated in parentheses.

QA/QC SUMMARY

RPD, % <1
 RECOVERY, % 111

LABORATORY NUMBER: 100753-2
 CLIENT: SUBSURFACE CONSULTANTS
 JOB #: 537.003
 SAMPLE ID: MW-1 @ 10'

DATE RECEIVED: 06/08/90
 DATE ANALYZED: 06/19/90
 DATE REPORTED: 06/26/90
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EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES
 Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/kg	Reporting Limit (ug/kg)
chloromethane	ND	2500
bromomethane	ND	2500
vinyl chloride	ND	2500
chloroethane	ND	2500
methylene chloride	ND	1250
acetone	ND	2500
carbon disulfide	ND	1250
trichlorofluoromethane	ND	1250
1,1-dichloroethene	ND	1250
1,1-dichloroethane	ND	1250
1,2-dichloroethene (total)	ND	1250
chloroform	ND	1250
freon 113	ND	1250
1,2-dichloroethane	ND	1250
2-butanone	ND	2500
1,1,1-trichloroethane	ND	1250
carbon tetrachloride	ND	1250
vinyl acetate	ND	2500
bromodichloromethane	ND	1250
1,2-dichloropropane	ND	1250
cis-1,3-dichloropropene	ND	1250
trichloroethylene	ND	1250
dibromochloromethane	ND	1250
1,1,2-trichloroethane	ND	1250
benzene	ND	1250
trans-1,3-dichloropropene	ND	1250
2-chloroethylvinyl ether	ND	2500
bromoform	ND	1250
2-hexanone	ND	2500
4-methyl-2-pentanone	ND	2500
1,1,2,2-tetrachloroethane	ND	1250
tetrachloroethylene	ND	1250
toluene	ND	1250
chlorobenzene	ND	1250
ethyl benzene	ND	1250
styrene	ND	1250
total xylenes	ND	1250

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	100%
Toluene-d8	102%
Bromofluorobenzene	119%



LABORATORY NUMBER: 100753-3
CLIENT: SUBSURFACE CONSULTANTS
JOB #: 537.003
SAMPLE ID: MW-2 @ 7'

DATE RECEIVED: 06/08/90
DATE ANALYZED: 06/19/90
DATE REPORTED: 06/26/90
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EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/kg	Reporting Limit (ug/kg)
chloromethane	ND	500
bromomethane	ND	500
vinyl chloride	ND	500
chloroethane	ND	500
methylene chloride	ND	250
acetone	ND	500
carbon disulfide	ND	250
trichlorofluoromethane	ND	250
1,1-dichloroethene	ND	250
1,1-dichloroethane	ND	250
1,2-dichloroethene (total)	ND	250
chloroform	ND	250
freon 113	ND	250
1,2-dichloroethane	ND	250
2-butanone	ND	500
1,1,1-trichloroethane	ND	250
carbon tetrachloride	ND	250
vinyl acetate	ND	500
bromodichloromethane	ND	250
1,2-dichloropropane	ND	250
cis-1,3-dichloropropene	ND	250
trichloroethylene	ND	250
dibromochloromethane	ND	250
1,1,2-trichloroethane	ND	250
benzene	ND	250
trans-1,3-dichloropropene	ND	250
2-chloroethylvinyl ether	ND	500
bromoform	ND	250
2-hexanone	ND	500
4-methyl-2-pentanone	ND	500
1,1,2,2-tetrachloroethane	ND	250
tetrachloroethylene	ND	250
toluene	ND	250
chlorobenzene	ND	250
ethyl benzene	ND	250
styrene	ND	250
total xylenes	ND	250

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	100%
Toluene-d8	99%
Bromofluorobenzene	110%

LABORATORY NUMBER: 100753-7
 CLIENT: SUBSURFACE CONSULTANTS
 JOB #: 537.003
 SAMPLE ID: MW-3 @ 6'

DATE RECEIVED: 06/08/90
 DATE ANALYZED: 06/15/90
 DATE REPORTED: 06/26/90
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EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES
 Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/kg	Reporting Limit (ug/kg)
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5.0
acetone	ND	10
carbon disulfide	ND	5.0
trichlorofluoromethane	ND	5.0
1,1-dichloroethene	ND	5.0
1,1-dichloroethane	ND	5.0
1,2-dichloroethene (total)	ND	5.0
chloroform	ND	5.0
freon 113	ND	5.0
1,2-dichloroethane	ND	5.0
2-butanone	ND	10
1,1,1-trichloroethane	ND	5.0
carbon tetrachloride	ND	5.0
vinyl acetate	ND	10
bromodichloromethane	ND	5.0
1,2-dichloropropane	ND	5.0
cis-1,3-dichloropropene	ND	5.0
trichloroethylene	ND	5.0
dibromochloromethane	ND	5.0
1,1,2-trichloroethane	ND	5.0
benzene	ND	5.0
trans-1,3-dichloropropene	ND	5.0
2-chloroethylvinyl ether	ND	10
bromoform	ND	5.0
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
1,1,2,2-tetrachloroethane	ND	5.0
tetrachloroethylene	ND	5.0
toluene	ND	5.0
chlorobenzene	ND	5.0
ethyl benzene	ND	5.0
styrene	ND	5.0
total xylenes	ND	5.0

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	103%
Toluene-d8	106%
Bromofluorobenzene	98%

LABORATORY NUMBER: 100753-8
 CLIENT: SUBSURFACE CONSULTANTS
 JOB #: 537.003
 SAMPLE ID: MW-1 @ 6' / MW-2 @ 7' / MW-3 @ 2'

DATE RECEIVED: 06/08/90
 DATE EXTRACTED: 06/14/90
 DATE ANALYZED: 06/19/90
 DATE REPORTED: 06/26/90
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EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
 Extraction Method: EPA 3550 Sonication

ACID COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Phenol	ND	330
2-Chlorophenol	ND	330
Benzyl Alcohol	ND	330
2-Methylphenol	ND	330
4-Methylphenol	ND	330
2-Nitrophenol	ND	1650
2,4-Dimethylphenol	ND	330
Benzoic Acid	ND	1650
2,4-Dichlorophenol	ND	330
4-Chloro-3-methylphenol	ND	330
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	1650
2,4-Dinitrophenol	ND	1650
4-Nitrophenol	ND	1650
4,6-Dinitro-2-methylphenol	ND	1650
Pentachlorophenol	ND	1650
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	330
Aniline	ND	330
Bis(2-chloroethyl)ether	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
Bis(2-chloroisopropyl)ether	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
Bis(2-chloroethoxy)methane	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1650

LABORATORY NUMBER: 100753-8
 SAMPLE ID: MW-1 @ 6' / MW-2 @ 7' / MW-3 @ 2'

 EPA 8270
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BASE/NEUTRAL COMPOUNDS

	RESULT ug / kg	REPORTING LIMIT ug / kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	ND	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	84%	Nitrobenzene-d5	95%
Phenol-d5	110%	2-Fluorobiphenyl	98%
2,4,6-Tribromophenol	91%	Terphenyl-d14	78%



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

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AM 7,8,9,10,11,12,1,2,3,4,5,6 PM

DATE RECEIVED: 06/13/90
DATE REPORTED: 06/26/90
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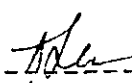
LAB NUMBER: 100776

CLIENT: SUBSURFACE CONSULTANTS

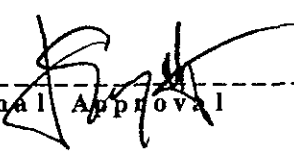
REPORT ON: 3 WATER SAMPLES

PROJECT #: 537.003
LOCATION: EMERYVILLE SENIOR HOUSING

RESULTS: SEE ATTACHED



QA/QC Approval



Final Approval

LABORATORY NUMBER: 100776
 CLIENT: SUBSURFACE CONSULTANTS
 JOB #: 537.003
 LOCATION: EMERYVILLE SENIOR HOUSING

DATE RECEIVED: 06/13/90
 DATE EXTRACTED: 06/20/90
 DATE ANALYZED: 06/26/90
 DATE REPORTED: 06/26/90
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Extractable Petroleum Hydrocarbons in Aqueous Solutions
 California DOHS Method
 LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (mg/L)	DIESEL RANGE (mg/L)	REPORTING LIMIT (mg/L)
100776-1	MW-1	ND	1.9	0.5
100776-2	MW-2	ND	2.8	0.5
100776-3	MW-3	ND	ND	0.5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	18
RECOVERY, %	97



LABORATORY NUMBER: 100776
CLIENT: SUBSURFACE CONSULTANTS
JOB NUMBER: 537.003
JOB LOCATION: EMERYVILLE SENIOR HOUSING

DATE RECEIVED: 06/13/90
DATE ANALYZED: 06/26/90
DATE REPORTED: 06/26/90
PAGE 3 OF 4

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	CLIENT ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
100776-1	MW-1	940	5.3	1.8	1.8	1.9
100776-2	MW-2	1,800	ND(0.5)	ND(0.5)	3.8	3.8
100776-3	MW-3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	0.5

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	1
RECOVERY, %	116

LABORATORY NUMBER: 100776-2
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT #: 537.003
 SAMPLE ID: MW-2

DATE RECEIVED: 06/13/90
 DATE ANALYZED: 06/15/90
 DATE REPORTED: 06/26/90
 PAGE 4 OF 4

EPA 8010
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	1.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
1,2-dichloroethene (total)	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethylvinyl ether	ND	1.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	1
RECOVERY, %	80