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FINAL

SUMMARY OF BACKGROUND CONSTITUENT CONCENTRATIONS AND CHARACTERIZATION OF BIOTIC COMMUNITY FROM THE YORK RIVER DRAINAGE BASIN

NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CONTRACT TASK ORDER 0252

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LIST OF ACRONYMS AND ABBREVIATIONS

$\#/m^2$	Individuals per Square Meter
AFETA	Armed Forces Experimental Training Activity
AQTESOLV	Aquifer Test Solver
ASTM	American Society for Testing and Materials
ATV	All-Terrain Vehicle
Baker	Baker Environmental, Inc.
bgs	Below Ground Surface
BTAG	Biological Technical Assistance Group
cPAH	Carcinogenic Polynuclear Aromatic Hydrocarbon
CO	Carbon Monoxide
COC	Chain-of-Custody
CWA	Clean Water Act
°F	Degrees Fahrenheit
DoN	United States Department of the Navy
Eh	Oxidation-Reduction Potential
ER-L	Effects Range - Low
FFA	Federal Facilities Agreement
FSP	Field Sampling Plan
ft/day	Feet Per Day
gpm/ft	Gallons per Minute Per Foot
gpd/mi^2	Gallons per Day per Square Mile
gpd/ft	Gallons per Day per Foot
HASP	Health and Safety Plan
IAS	Initial Assessment Study
ID	Inside Diameter
IDW	Investigation Derived Waste
LANTDIV	Atlantic Division, Naval Facilities Engineering Command
mgd	Million Gallons per Day
MCL	Maximum Contaminant Level
mg/kg	Milligram per Kilogram
msl	Mean Sea Level
$\mu g/m^3$	Microgram per Cubic Meter
µg/kg	Microgram per Kilogram
µg/L	Microgram per Liter

LIST OF ACRONYMS AND ABBREVIATIONS
(Continued)

NERRS	National Estuarine Research Reserves
NOAA	National Oceanic and Atmospheric Administration
nPAH	Noncarcinogenic Polynuclear Aromatic Hydrocarbon
NWI	National Wetlands Inventory
NTU	Nephelometric Turbidity Unit
O_3	Ozone
Park	Colonial National Historical Park
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
PM 10	Particulate Matter Smaller Than 10 Microns
PPE	Personal Protective Equipment
ppm	Parts Per Million
PVC	Polyvinyl Chloride
ppt	Part per Thousand
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RI/FS	Remedial Investigation/Feasibility Study
RI	Remedial Investigation
SO_2	Sulfur Dioxide
SOP	Standard Operating Procedure
SSA	Site Screening Area
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TDS/TSS	Total Disolved Solids/Total Suspended Solids
TOC	Top-of-Casing
TTO	Total Toxic Organics
TPH	Total Petroleum Hydrocarbons
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

LIST OF ACRONYMS AND ABBREVIATIONS
(Continued)

VDEQ	Virginia Department of Environmental Quality
VOC	Volatile Organic Compound
VIMS	Virginia Institute of Marine Science
VR	Virginia Regulation
VWCB	Virginia State Water Control Board
VWQS	Virginia Water Quality Standard
WPNSTA Yorktown	Naval Weapons Station Yorktown

APPENDIX A
ROUND ONE REMEDIAL INVESTIGATION DATA TABLES AND BACKGROUND SAMPLE NUMBER CALCULATIONS

APPENDIX A.1
ROUND ONE REMEDIAL INVESTIGATION DATA TABLES

Appendix A Table of Contents

A.1 Round One Remedial Investigation Data Tables
A.2 Sample Number Calculations

Appendix A

The data tables presented in this appendix are from the Round One Remedial Investigation (Baker/Weston, 1993a)

Table 5-8

Background Soil Sample Data for WPNSTA Yorktown

Sample ID Depth	BGSB01-001	BGSB01-002	BGSB02-001	BGSB02-002
Parameter				
Volatile Organic Compounds (VOCs) (μg/kg)	none	4 J methylene chloride	3 J acetone	5 J methylene chloride
Base/Neutral Acid Extractables (BNAs) (μg/kg)	37 J di-n-butylphthalate	52 J di-n-butylphthalate	none detected	59 J di-n-butylphthalate
Pesticides (μg/kg)	18 J 4,4'-DDE 5 J DDT	none detected	none detected	none detected
pH (units)	5.0	4.8	5.8	5.3
TPH (mg/kg)	none detected	none detected	3.1 J	6.5

Sample ID Depth	BGSB03-001	BGSB03-002	BGSB04-001	BGSB04-002
Parameter				
Volatile Organic Compounds (VOCs) (μg/kg)	none detected	9 J acetone	14 J acetone	none detected
Base/Neutral Acid Extractables (BNAs) (μg/kg)	none detected	none detected	none detected	27 J phenol
Pesticides (μg/kg)	1.1 J 4,4'-DDE 0.75 J 4,4'-DDT	none detected	0.77 J 4,4'-DDE	none detected
pH (units)	5.4	5.4	4.8	6.2
TPH (mg/kg)	4.2 J	none detected	5.0 J	4.4 J

Table 5-8

Background Soil Sample Data for WPNSTA Yorktown (Continued)

Sample ID Depth	BGSB05-001	BGSB05-002	BGSB06-001	BGSB06-002
Parameter				
Volatile Organic Compounds (VOCs) (μg/kg)	54 acetone	16 methylene chloride	none detected	none detected
Base/Neutral Acid Extractables (BNAs) (μg/kg)	none detected	none detected	none detected	none detected
Pesticides (μg/kg)	1.4 J Endosulfan I 0.72 J Dieldrin	none detected	5.5 4,4'-DDE 3.3 J 4,4'-DDT	0.36 J 4,4'-DDE
pH (units)	5.9	6.3	4.7	5.2
TPH (mg/kg)	9.5	4.8	5.2	3.2 J

Sample ID Depth	BGS01-001	BGS02-001	BGS03-001
Parameter			
Volatile Organic Compounds (VOCs) (μg/kg)	19 2-Butanone	none detected	10 J 2-Butanone
Base/Neutral Acid Extractables (BNAs) (μg/kg)	44 J di-n-butylphthalate 260 J bis(2-ethylhexyl) phthalate	30 J di-n-butylphthalate 280 J bis(2-ethylhexyl) phthalate	36 J di-n-butylphthalate 270 J bis(2-ethylhexyl) phthalate
Pesticides (μg/kg)	none detected	none detected	none detected
pH (units)	5.0	4.7	4.6
TPH (mg/kg)	10	5.2	15
Total Organic Carbon (TOC)	1%	0.81%	1.4%

Note:

J = Estimated value. Compound detected at a level below the established detection limit, but above the instrument detection limit.

Table 5-9

Background Concentrations of Metals in Soil at WPNSTA Yorktown

Sample ID	BGSB01-001	BGSB01-002	BGSB02-001	BGSB02-002	BGSB03-001	BGSB03-002	BGSB04-001	BGSB04-002	BGSB05-001
Parameter									
Aluminum	3,930J	10,200J	7,130	8,100	2,460	2,610	6,290	5,000	2,070
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	0.64	42	ND	5.7	0.66	ND	0.74	8.1	0.52
Barium	24.4	57.6	23.3	57.5	13.8	14	37	27.6	19.1
Beryllium	ND	2.9	0.25	3.4	ND	ND	ND	1J	ND
Cadmium	ND	ND	ND	1.2	ND	ND	ND	ND	ND
Calcium	275	222	620	1,150	70.6	150	338	2,920	435
Chromium	3.6	22.6	8	20.7	2.6	9.4	5.6	16.5	1.7
Cobalt	1.9	114	1.7	47.3	1.6	ND	2.2	8.2	ND
Copper	ND	4.6	ND	3.1	ND	12.1	ND	4.7	ND
Iron	3,270J	81,500J	9,070	58,300	2,330	7,860	7,450	20,800	1,790
Lead	3.31J	13.7J	5.3	8.8	4.9	5.8	8.2	8.4	3.5
Magnesium	113	817	205	927	106	223	296	1,220	117
Manganese	60.3J	1,840J	19.1J	935J	6.5J	9.9J	63.5	247	39.4
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	0.06
Nickel	ND	23.7	ND	19.2	ND	ND	ND	20.8	ND
Potassium	ND	743	255	915	ND	835	ND	1,230	ND
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	22	6.6	ND	4.4	ND	ND	ND	ND	ND
Sodium	ND	44	36.8	56.9	27.5	51.7	ND	ND	ND
Thallium	ND	0.6	ND	ND	ND	ND	ND	ND	ND
Vanadium	3.9J	ND	11.9	17	3.7	12	9.8	2.3	2.3
Zinc	7J	72	4.1	90.4	5.3	7	5.2J	68.5	3

Table 5-9

Background Concentrations of Metals in Soil at WPNSTA Yorktown (Continued)

Sample ID	BGSB05-002	BGSB06-001	BGSB06-002	BGS01-001	BGS02-002	BGS03-003
Parameter						
Aluminum	1,120	2,760	2,440	4,720	5,270	3,870
Antimony	ND	ND	ND	ND	ND	ND
Arsenic	ND	0.75	0.62	ND	0.71J	0.97J
Barium	4.9	12.6	6.9	39.4	39.9	19
Beryllium	ND	ND	ND	ND	0.34	ND
Cadmium	ND	ND	ND	ND	ND	ND
Calcium	128	100	60	266	104	119
Chromium	1.9	3.3	4.5	4.4	4.1	5.9
Cobalt	ND	ND	ND	ND	ND	ND
Copper	ND	2	ND	1.4	ND	2.5
Iron	1,300	3,210	1,990	6,270	5,350	6,090
Lead	1.4	3.6	2.2	9.5J	8.4J	5
Magnesium	47	151	48.4	191	187	186
Manganese	5.5	8.6J	3.2J	44.8J	89.5J	28.6J
Mercury	ND	ND	ND	0.11	0.1	ND
Nickel	ND	ND	ND	3.9	ND	4
Potassium	ND	ND	ND	281	ND	375
Selenium	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND
Sodium	ND	34	ND	62.8	ND	ND
Thallium	ND	ND	ND	ND	ND	ND
Vanadium	1.2	4.9	2	11.1	10.6	10.9
Zinc	ND	11.6	1.7	11.1J	7.9J	7J

Notes:

All analytical results are presented in units of milligrams per kilogram (mg/kg).
J = Estimated concentration.
ND = Not detected above the detection limit.

Table 5-10

Background Total and Dissolved Metals Concentrations in Groundwater at WPNSTA Yorktown

Parameter	BGGW01A		BGGW02		BGGW02A		BGGW03	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Aluminum	20,100J[a]	1,320J[a]	1,290J[a]	ND	3,030J[a]	89.5J	12,000J[a]	ND
Antimony	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	30.2	ND	ND	ND	9	ND	ND	ND
Barium	233	91.9	45.9	37.2	38.6	38.5	72.9	20.2
Beryllium	2.6	ND	ND	ND	ND	ND	1.3	ND
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	361,000	145,000	93,100	94,300	66,700	95,300	20,400	13,000
Chromium	107[b,c]	ND	ND	ND	16.6	ND	22.6	ND
Cobalt	15.6	ND	ND	ND	ND	ND	8.7	ND
Copper	25.9	ND	ND	ND	7.3	ND	10.6	ND
Iron	54,400J[a,c]	ND	3,650J[a,c]	ND	8,110J[a,c]	ND	34,100J[a,c]	ND
Lead	19.6J[b]	ND	2.1J	ND	4.7J	ND	10.9J	ND
Magnesium	9,310J	208J	2,010J	1,730J	2,090J	1,780J	2,460J	1,190J
Manganese	284[a,c]	ND	57.8[a,c]	8.7	55.3[a,c]	8	118[a,c]	17.1[a,c]
Mercury	ND	ND	ND	ND	ND	ND	0.15[c]	ND
Nickel	51.6	ND	ND	ND	ND	ND	ND	ND
Potassium	26,700	19,800	1,680	1,600	3,890	1,610	2,640	1,340
Selenium	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	46,200J	48,100J	4,070J	4,170J	21,500J	4,270J	5,640J	5,210J
Thallium	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	98.10	26.1	9.8	13.5	20.1	12.9	19	ND
Zinc	126[c]	ND	25.5	ND	35.3	ND	86.6[c]	ND

Notes:
All analytical results are presented in units of micrograms per liter (μg/L).
J = Estimated value.
ND = Not detected above the detection limit.
Shaded boxes indicate concentration exceeds one or more ARARs.

[a] Exceeds federal SMCL.
[b] Exceeds federal MCL.
[c] Exceeds VGS.

Table 5-11

Background Results for Nonmetals Analyses of Surface Water and Sediment Samples at WPNSTA Yorktown

	BGSW01-001	BGSD01-001	BGSD01-002	BGSW02-001	BGSD02-001	BGSD02-002	BGSW03-001	BGSD03-001	BGSD03-002
Volatile Organic Compounds	12 µg/L carbon disulfide	29J µg/kg toluene	None detected	7J µg/kg acetone	21 µg/g toluene	None detected	None detected	20J µg/kg carbon disulfide	None detected
Base/Neutral Acid Compounds	3J µg/L di-n-butylphthalate 5J µg/L bis-(2 ethylhexyl) phthalate	650J µg/kg di-n-butylphthalate	300J µg/kg bis-(2 ethylhexyl) phthalate	3J µg/L di-n-butylphthalate	None detected	None detected	None detected	170J µg/kg phenol 259J µg/kg pentachlorophenol	140J µg/kg 4-methylphenol
Pesticides/PCBs	Rejected	None detected	None detected	None detected	3.2J µg/kg 4,4'-DDD	8.4J µg/kg 4,4'-DDD	None detected	27J µg/kg 4,4'-DDD	11 µg/kg 4,4'-DDE 7.6 µg/kg 4,4'-DDD
TOC	NA	2.3%	1.9%	NA	2.3%	663 mg/kg	NA	0.9%	1.2%
pH	NA	7.8	7.6	NA	6.2	6.6	NA	6.9	7.0
Hardness	986 mg/L	NA	NA	44.6 mg/L	NA	NA	62 mg/L	NA	NA

Notes:

J = Estimated value.
Rejected = Data were rejected by data validators based on internal laboratory QA/QC difficulties.
NA = Not analyzed for this parameter.

Table 5-12

Background Total and Dissolved Metals Concentrations for Surface Water at WPNSTA Yorktown

Parameter	BGSW01		BGSW02		BGSW03	
	Total	Dissolved	Total	Dissolved	Total	Dissolved
Aluminum	42,800	147	713	ND	ND	ND
Antimony	ND	ND	ND	ND	ND	ND
Arsenic	26.7J	5.8J	3.5J	2.0	ND	ND
Barium	138	68.6	37.6	28.1	31.5	36.2
Beryllium	3.4	ND	1	ND	ND	ND
Cadmium	ND	ND	ND	ND	ND	ND
Calcium	185,000	137,000	14,200	13,300	26,800	22,800
Chromium	109J	ND	ND	ND	ND	ND
Cobalt	18.7	ND	6.2	ND	ND	ND
Copper	47.2J[1]	12.5J[1]	14.4J[2]	ND	5	ND
Iron	90,900	419	1,900	199	344	ND
Lead	50J[3]	ND	ND	ND	5.1J[2]	ND
Magnesium	146,000	124,000	2,290	2,080	1,290	1,160
Manganese	1,040	362	32.2	28	52	3.8
Mercury	ND	ND	ND	ND	ND	ND
Nickel	43[1]	ND	ND	ND	19.7	ND
Potassium	59,500	47,500	3,240	2,050	ND	ND
Selenium	ND	ND	ND	ND	ND	ND
Silver	ND	17.2	6	ND	ND	ND
Sodium	1,150,000J	1,160,000J	4,630J	4,280J	7,960	7,430
Thallium	ND	ND	ND	ND	ND	ND
Vanadium	111	8.2	ND	ND	7.5	ND
Zinc	301J[2]	25.2J	13.3J	11.8J	15.5	ND

Notes:

All analytical results reported in units of micrograms per liter (μg/L).
J = Estimated value. ND = Not detected above the detection limit.
Shaded boxes indicate concentration exceeds one or more ARARs.

[1]Concentration exceeds the VWQS and CWA salt water chronic criteria.
[2]Concentration exceeds the CWA freshwater chronic criteria.
[3]Concentration exceeds the CWA salt water chronic criteria.

Table 5-13

Background Concentrations of Metals in Sediments at WPNSTA Yorktown

Sample ID	BGSD01-001	BGSD01-002	BGSD02-001	BGSD02-002	BGSD03-001	BGSD03-002
Depth (ft bgs)	0.0-0.5	0.5-1.0	0.0-0.5	0.5-1.0	0.0-0.5	0.5-1.0
Aluminum	9,690J	4,480J	252J	544J	4,260	676
Antimony	ND	ND	ND	ND	ND	ND
Arsenic	6.3J	4.9J	0.55	0.57J	19.7	2.3
Barium	30J	14.5J	2.3J	4.6J	63.2	4.8
Beryllium	ND	ND	0.33	0.25	ND	ND
Cadmium	ND	ND	ND	ND	ND	ND
Calcium	16,500J	80,400J	149J	324J	151,000	3,090
Chromium	28.6J	19.4J	4.1J	ND	16.3	ND
Cobalt	16	ND	ND	ND	ND	ND
Copper	16.3J	6.5J	ND	ND	27	ND
Iron	23,100J	13,500J	316J	270J	14,200	2,860
Lead	19.4J	10.7J	1.6J	2.2J	34J	3.8J
Magnesium	5,730	3,330	ND	ND	670	108
Manganese	170J	86.4J	2.8J	1.7J	178	11.9
Mercury	ND	ND	ND	ND	ND	ND
Nickel	25.6	ND	ND	ND	ND	ND
Potassium	3,010	2,160	ND	ND	ND	ND
Selenium	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND
Sodium	10,500	5,330	69	49.2	560	110
Thallium	ND	ND	ND	ND	ND	ND
Vanadium	29	14.5	ND	1.9	29.4	4.3
Zinc	76.6J	50.2J	7.1J	13.2J	67.9	11

Notes:
J = Estimated value.
All results reported in units of milligrams per kilogram (mg/kg).

APPENDIX A.2
BACKGROUND SAMPLE NUMBER CALCULATIONS

SITE DATA - WPNSTA Yorktown, Yorktown, Virginia

Purpose: To determine statistically the number of soil samples necessary to determine background. Test power of 80 percent, 95% CI.

Soil Samples

Contaminant

Aluminum (mg/Kg)	2130	1920	1890	4220	3460	2510	3280	1760	3550	2130	2050	2090
log Al.	7.7	7.6	7.5	8.3	8.1	7.8	8.1	7.5	8.2	7.7	7.6	7.6

REMOVE BLATANT OUTLIERS (i.e. conc>10000 ppm)

Aluminum (mg/Kg)	2130	1920	1890	4220	3460	2510	3280	1760	3550	2130	2050	2090
log Al.	7.7	7.6	7.5	8.3	8.1	7.8	8.1	7.5	8.2	7.7	7.6	7.6

Groundwater Samples

Aluminum (ug/L)	6430	10500	389	377	401	1400	1140	5810	19900	15700	35800	10600
log Al.	8.8	9.3	6.0	5.9	6.0	7.2	7.0	8.7	9.9	9.7	10.5	9.3

REMOVE BLATANT OUTLIERS

Aluminum (ug/L)	6430	10500	389	377	401	1400	1140	5810	19900	15700	35800	10600
log Al.	8.8	9.3	6.0	5.9	6.0	7.2	7.0	8.7	9.9	9.7	10.5	9.3

REMOVE HYDROPUNCH DATA

Aluminum (ug/L)	6430	10500	389	377	401	1400	1140	5810	19900	15700	35800	10600
log Al.	8.8	9.3	6.0	5.9	6.0	7.2	7.0	8.7	9.9	9.7	10.5	9.3

5240	3390	4240	2980	3920	1230	2070	1860	3480	3060	3890	3270	52700
8.6	8.1	8.4	8.0	8.3	7.1	7.6	7.5	8.2	8.0	8.3	8.1	10.9

5240	3390	4240	2980	3920	1230	2070	1860	3480	3060	3890	3270	
8.6	8.1	8.4	8.0	8.3	7.1	7.6	7.5	8.2	8.0	8.3	8.1	

6970	34900	202000	6450	53700	34300	70800	26000	54000	67.8	108	126000	27700
8.8	10.5	12.2	8.8	10.9	10.4	11.2	10.2	10.9	4.2	4.7	11.7	10.2

6970	34900		6450	53700	34300	70800	26000	54000	67.8	108		27700
8.8	10.5		8.8	10.9	10.4	11.2	10.2	10.9	4.2	4.7		10.2

6970	34900	202000	6450	53700	34300	70800	26000	54000	67.8	108		
8.8	10.5	12.2	8.8	10.9	10.4	11.2	10.2	10.9	4.2	4.7		

2630	3550	4540	6790	4810	4660	3770	5560	10400	3620	4220	4010	2870
7.9	8.2	8.4	8.8	8.5	8.4	8.2	8.6	9.2	8.2	8.3	8.3	8.0

2630	3550	4540	6790	4810	4660	3770	5560		3620	4220	4010	2870
7.9	8.2	8.4	8.8	8.5	8.4	8.2	8.6		8.2	8.3	8.3	8.0

85300	62800	31100	15400	20000	1370	1460	14500	17200	2150	1930	509	706
11.4	11.0	10.3	9.6	9.9	7.2	7.3	9.6	9.8	7.7	7.6	6.2	6.6

85300	62800	31100	15400	20000	1370	1460	14500	17200	2150	1930	509	706
11.4	11.0	10.3	9.6	9.9	7.2	7.3	9.6	9.8	7.7	7.6	6.2	6.6

			15400	20000	1370	1460	14500	17200	2150	1930	509	706
			9.6	9.9	7.2	7.3	9.6	9.8	7.7	7.6	6.2	6.6

9170	4560	3270	3380	2560	4040	3250	9030	1130	2610	3890	4630	2280	3030	2310	2790	3240	2030
9.1	8.4	8.1	8.1	7.8	8.3	8.1	9.1	7.0	7.9	8.3	8.4	7.7	8.0	7.7	7.9	8.1	7.6

9170	4560	3270	3380	2560	4040	3250	9030	1130	2610	3890	4630	2280	3030	2310	2790	3240	2030
9.1	8.4	8.1	8.1	7.8	8.3	8.1	9.1	7.0	7.9	8.3	8.4	7.7	8.0	7.7	7.9	8.1	7.6

1490	1300	1620	3220	2810	2920	7260	2040	1830	3620	1670	2240	2930	2390	2970	1450	6900	5910
7.3	7.2	7.4	8.1	7.9	8.0	8.9	7.6	7.5	8.2	7.4	7.7	8.0	7.8	8.0	7.3	8.8	8.7

1490	1300	1620	3220	2810	2920	7260	2040	1830	3620	1670	2240	2930	2390	2970	1450	6900	5910
7.3	7.2	7.4	8.1	7.9	8.0	8.9	7.6	7.5	8.2	7.4	7.7	8.0	7.8	8.0	7.3	8.8	8.7

6140	5560	4430	6850	7960	7640	8790	44700	8390	8380	6420	4150	3100	4650	4730	5120
8.7	8.6	8.4	8.8	9.0	8.9	9.1	10.7	9.0	9.0	8.8	8.3	8.0	8.4	8.5	8.5

6140	5560	4430	6850	7960	7640	8790		8390	8380	6420	4150	3100	4650	4730	5120
8.7	8.6	8.4	8.8	9.0	8.9	9.1		9.0	9.0	8.8	8.3	8.0	8.4	8.5	8.5

5150	6500	5890	2790	2940	5660	5630	2520	6590	6390	655	1070	1210	939	1000
8.5	8.8	8.7	7.9	8.0	8.6	8.6	7.8	8.8	8.8	6.5	7.0	7.1	6.8	6.9

5150	6500	5890	2790	2940	5660	5630	2520	6590	6390	655	1070	1210	939	1000
8.5	8.8	8.7	7.9	8.0	8.6	8.6	7.8	8.8	8.8	6.5	7.0	7.1	6.8	6.9

								n	mean	st dev	var
1010	2490	5620	924	1770	13700	1370	1170	139	4620.1	5891.8	34712876.3
6.9	7.8	8.6	6.8	7.5	9.5	7.2	7.1		8.2	0.7	0.5
1010	2490	5620	924	1770		1370	1170	134	3756.0	1984.6	3938604.3
6.9	7.8	8.6	6.8	7.5		7.2	7.1		8.1	0.6	0.3

Assume that the data is log-normally distributed....

N= 40

APPENDIX B
TEST BORING RECORDS/WELL CONSTRUCTION RECORDS

Baker Environmental, Inc.

WELL/BORING NO.: BGGW01

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: BACKGROUND
COORDINATES: NORTH: 3436726.22, EAST: 2566002.18
ELEVATIONS: SURFACE: 80.46

CTO NO.: 0252
TYPE OF WELL: II
TOP OF PVC CASING: 82.76

RIG: MOBILE B-57 ATV (#R-39)

	SPLIT SPOON	AUGERS	SURFACE CASING	REAMING TOOL
SIZE (DIAM.)	2"	4-1/4" ID	—	—
LENGTH	2.0'	5.0'	—	—
TYPE	Std.	HSA	—	—
HAMMER WT.	140#	—	—	—
FALL	30"	—	—	—

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
8-30-94	0.0-51.0	BREEZY, ~80	42.0 (WD)
8-31-94	51.0-54.0	PT CLOUDY, ~85	42.3 (INSIDE HSA)

REMARKS: ABANDONED EXISTING BGGW01 WELL

SAMPLE TYPE
S = Split Spoon, A = Auger, T = Shelby Tube, W = Wash, R = Air Rotary, C = Core, D = Denison, P = Piston, N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	+2.2 AGS	37.9 BGS
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	37.9 BGS	51.9 BGS

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1	A-N	—	—	—	—	AUGERED TO 1.0'		
2	S-1	1.5/2.0 75%	4 5 10 13	—	0.4/0.4	CLAYEY SILT, little sand, trace root hairs, light brown to orangish brown, stiff, damp (FILL)	35 CEMENT-BENT. GROUT	77.46
3								
4	S-2	1.8/2.0 90%	6 9 11 15	—	0.2/0.2	SILTY CLAY, little sand, yellowish brown with gray and red mottling, very stiff, damp		
5								
6	S-3	1.5/2.0 75%	9 12 18 21	—	0.0/0.0	SAME	RISER	
7								
8	S-4	1.5/2.0 75%	9 9 10 12	—	0.2/0.2	SAME with trace root hairs, very light gray and orangish brown mottled, with red, very stiff, damp		
9								
10	S-5	1.3/2.0 65%	7 8 7	—	0.2/0.2	SANDY CLAY, little silt, orangish brown and gray mottled, stiff, damp		

Match to Sheet 2

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: K. CALLENDER
BAKER REP.: M. TAUBE
WELL/BORING NO.: BGGW01

Baker Environmental, Inc.

WELL/BORING NO.: BGGW01

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: BACKGROUND
CTO NO.: 0252

SAMPLE TYPE
S = Split Spoon; T = Shelby Tube; R = Air Rotary; D = Denison; N = No Sample
A = Auger; W = Wash; C = Core; P = Piston

ACRONYMS
BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter
PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet 1		
11			10					69.46
12	S-6	1.3/2.0 65%	4/5/5/7	—	0.2/0.2	SAND, fine to medium, little silt, trace clay, orangish yellow, loose, damp		
13								
14	S-7	1.2/2.0 60%	6/6/6/6	—	0.2/0.2	SAME, little clay, light yellowish brown, medium dense		
15								
16	S-8	1.6/2.0 80%	5/5/5/6	—	0.2/0.2	SAND, fine, little to some silt, trace clay, light brown with orangish red, loose, damp	CEMENT BENT. GROUT	63.
17								
18	S-9	1.5/2.0 75%	3/4/7/8	—	0.2/0.2	SILT, little sand, trace clay, very light orangish brown, w/ gray, orangish red, mottled, medium dense, damp		
19								
20	S-10	1.0/2.0 50%	3/6/7/7	—	0.0/0.2	SAME, trace mineralized nodules, yellowish orange with pink, medium dense, damp	RISER	
21								
22	S-11	1.1/2.0 55%	5/5/7/8	—	0.0/0.0	SAME (no mineralization) orangish brown		
23								
24	S-12	1.5/2.0 75%	4/5/8/8	—	0.0/0.0	SAME, little clay		
25								
26	S-13	2.0/2.0 100%	4/6/9/12	—	0.2/0.2	SILT, some clay, little sand, trace mineralization nodules, orangish brown with red, stiff, damp		
27								
28	S-14	2.0/2.0 100%	1/2/3/4	—	0.0/0.0	CLAYEY SILT, trace sand, brown with black, medium stiff, damp to moist		
29								
30	S-15	2.0/2.0 100%	1/1	—	0.0/0.0	CLAYEY SILT, little sand, brown with light Match to Sheet 3		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: K. CALLENDER
BAKER REP.: M. TAURE
WELL/BORING NO.: BGGW01

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGGW01

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: BACKGROUND

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
31			2/3			brown, black, Continued from Sheet _ mottled, soft, moist	CEMENT-BENT. GROUT	
32	S-16	2.0/2.0 100%	1/1/1/1	—	0.0/0.0	CLAYEY SILT, little sand, brown, soft, moist	32.0	48.44
33							BENT. PELLETS	
34	S-17	2.0/2.0 100%	WOH/12"/1/1	—	0.0/0.0	SAME with light brown mottling, moist to wet		
35							35.0	45.46
36	S-18	2.0/2.0 100%	1/2/5/5	—	0.0/0.0	SILTY CLAY and SHELL FRAGMENTS, light brown, medium stiff, damp	RISER	
37								
38	S-19	2.0/2.0 100%	4/5/5/8	—	0.0/0.0	SAME, stiff, moist	37.9	42.56
39							NO. 1 SAND	
40	S-20	2.0/2.0 100%	7/7/9/12	—	0.2/0.2	SHELLS, fine sand to coarse gravel sized, some silty clay, little sand, off-white, very stiff, moist to wet		
41								
42	S-21	2.0/2.0 100%	10/7/10/8	—	0.0/0.0	SAME, wet below 42.0'	SCREEN	
43								
44	S-22	2.0/2.0 100%	8/8/9/8	—	0.0/0.0	SAME		
45								
46	S-23	2.0/2.0 100%	6/8/8/12	—	0.0/0.0	SAME		
47								33.46
48	S-24	2.0/2.0 100%	10/13/13/21	—	0.0/0.0	SILTY CLAY and SHELLS, portion cemented, off white with orange, very stiff, wet		
49								
50	S-25	2.0/2.0 100%	7/13	—	0.0/0.0	SILTY CLAY, some shells little sand		

Match to Sheet

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: M. TAUBE
DRILLER: K. CALENDER WELL/BORING NO.: BGGW01 SHEET 3 OF 4

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGGW01

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: BACKGROUND

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS
BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
51			14 17			very light Continued from Sheet _ olive-brown, very stiff, wet	NO. 1 SAND	
52	★ S-26	2.0 / 2.0	16 20 28	—	0.0 / 0.0	SILTY CLAY and SHELLS, little Sand, partially cemented, olive-gray to olive-gray, medium dense, wet	SCREEN 51.9 RISER 53.0	28.56
53		100%	5½"					27.46
54	A-N	—	—	—	—		54.0	26.46
55						BORING TERMINATED AT A DEPTH OF 54.0'		
56								
57								
58								
59								
60								
61								
62								
63								
64								
65								
66								
67								
68								
69								
70						Match to Sheet		

★ INDICATES 3" ϕ SPLIT SPOON, 2" ϕ IF NOT INDICATED

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: K. CALLENDER
BAKER REP.: M. TAUBE
WELL/BORING NO.: BGGW01
SHEET 4 OF 4

Baker Environmental, Inc.

WELL/BORING NO.: BG6W03A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background locations
COORDINATES: NORTH: 353018.71, EAST: 2562608.58
ELEVATIONS: SURFACE: 84.78

CTO NO.: 0252
TYPE OF WELL: Type III
TOP OF PVC CASING: 86.89

RIG: Mobile B-80	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)		4-1/4" ID	10" ID	13"	7-22-94	37'	Partly Cloudy 80°	27'
LENGTH	2.0'	5.0'	35.5'	–	7-23-94	32'	Overcast 80°	57'
TYPE	Std.	HSA	Steel	drag bit				
HAMMER WT.	140#	–	–	–				
FALL	30"	–	–	–				

REMARKS:

SAMPLE TYPE
S = Split Spoon, A = Auger
T = Shelby Tube, W = Wash
R = Air Rotary, C = Core
D = Denison, P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	+2.1 AGS	57' bgs
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	57' bgs	67' bgs

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft/%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1	A-N					Topsoil - 3.6"		
2	S1	1.3/2.0 65%	4 3 3 9		0/0	SILT, some clay, trace fine sand yellow brown, medium stiff, dry		
4	S2	1.0/2.0 50%	9 14 13 9		0/0	SAME except color mottled yellow brown, light gray & red brown		
6	S3	1.4/2.0 70%	6 8 10 15		0/0	SAME except damp		
8	S4	1.2/2.0 60%	8 13 8 13		0/0			77.89
10	S5	1.8/2.0 90%	9 10	BG6W03A-05	0/0	CLAY, some silt, little fine sand mottled yellow, brown, lt. gray & red stiff, damp Match to Sheet 2		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. Martin
WELL/BORING NO.: BG6W03A
SHEET 1 OF 4

Baker Environmental, Inc

WELL/BORING NO.: BGGW03A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background locations

CTO NO.: 0252

SAMPLE TYPE
S = Split Spoon; T = Shelby Tube; R = Air Rotary; D = Denison; A = Auger; W = Wash; C = Core; P = Piston; N = No Sample

ACRONYMS
BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft/%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet 1		
11	S5	90%	10 9		0/0			
12	S6	1.8/2.0 90%	4 6 8 10		0/0	CLAY, some silt, little fine sand, mottled light gray and red brown, stiff, damp		73.89
13						SAND, fine grained, some silt, trace clay mottled light gray & red brown, medium dense, moist		
14	S7	1.7/2.0 85%	4 8 5 6	BGGW03A-07	0/0			
15								71.89
16	S8	1.4/2.0 70%	1 2 2 4		0/0	SILT, some clay, mottled light gray, yellow brown & red brown, soft, moist	10" diameter steel casing	
17								
18	S9	1.6/2.0 80%	2 4 4 8	BGGW03A-09	0/0		cement bentonite grout	
19								
20	S10	1.8/2.0 90%	2 3 5 5		0/0	SILT and clay, little fine grained sand, mottled light gray, yellow brown & red brown, medium stiff moist		
21								
22	S11	1.8/2.0 90%	4 5 5 6		0/0	same except little clay		
23								
24	S12	1.7/2.0 85%	2 3 3 5		0/0	SAME		
25								
26	S13	1.8/2.0 90%	3 2 2 2		0/0	SAME		
27						▽		59.89
28	S14	2.0/2.0 100%	1 2 1 2		0/0	SILT & clay some fine sand = mottled light gray & yellow brown soft, wet		
29								
30	S15	2.0/2.0	2		0/0	SAME Match to Sheet 3		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Carron

BAKER REP.: D. Martin
WELL/BORING NO.: BGGW03A

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BG6W03A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background Locations

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft/%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
31	S15	100%	2/12"		0/0	Continued from Sheet _		
32	S16	2.0/2.0 100%	2, 2/18"		0/0	SILT and fine sand, mottled yellow brown and light gray, very soft wet	10" diameter steel casing	
33								58.89
34	S17	1.8/2.0 90%	1, 2, 2, 2		0/0	CLAY, some very fine grained sand laminea, little silt, gray, soft moist to damp		
35								51.39
36	S18	2.0/2.0 100%	2, 2, 2, 1		0/0	SAME except damp	36'	50.89
37							Top of bentonite slurry	
38	S19	1.6/2.0 80%	1, 2, 2, 1		0/0	SAME except very fine sand in partings and moist		
39								
40	S20	2.0/2.0 100%	WOH/18", 1		0/0	SAME except and silt, little fine sand		
41								46.59
42	S21	1.9/2.0 95%	WOH/18", 3		0/0	SILT & clay, some medium to fine grained sand, gray very soft, moist		
43								
44	S22	1.6/2.0 80%	4, 12, 20, 20		0/0	SAME except some clay, trace fine sand, marine shell fragments		
45								
46	S23	1.5/2.0 75%	6, 11, 10, 16		0/0	SAME except, some fine sand, trace clay, shells		
47								39.89
48	S24	1.2/2.0 60%	8, 10, 11, 12		0/0	SHELL FRAGMENTS, little silt, fine sand, trace clay, greenish gray, medium dense, moist		
49								
50	S25	1.8/2.0	8, 10		0/0	Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin
DRILLER: M. Corron WELL/BORING NO.: BG6W03A SHEET 3 OF 4

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BG6W03A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background Locations

SAMPLE TYPE
S = Split Spoon, T = Shelby Tube, R = Air Rotary, D = Denison, A = Auger, W = Wash, C = Core, P = Piston, N = No Sample

ACRONYMS
BG = Background, HSA = Hollow Stem Augers, ID = Inside Diameter, PID = Photoionization Detector, ppm = parts per million, SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'), WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet _		
51		90%	11 12		0.6/0.6			
52	S26	1.1/2.0	10 11		0.6/0.6	SHELL FRAGMENTS, little silt, fine sand, trace clay, green, medium dense, moist	Top of Sand	34.89
53		80%	14 12					
54	S27	1.5/2.0	7 10		0.6/0.6	SAME		
55		75%	9 11					
56	S28	1.8/2.0	10 9		0.6/0.6	SAME except moist to wet, ▽ and blue		30.89
57		90%	9 11				Top of Screen	29.8'
58	S29	2.0/2.0	7 8		0.6/0.6	SAME except, little medium to fine sand, trace silt, clay, light blue gray in color		
59		100%	9 12					
60	S30	1.9/2.0	3 6		0.6/0.6	SAME except and fine sand		
61		95%	7 9					
62	S31	2.0/2.0	9 7		0.6/0.6	SAME also calcite cementation of some shells		
63		100%	8 11					
64	S32	2.0/2.0	7 9		0.6/0.6	SAME except, and coarse to fine sand		
65		100%	16 22					21.89
66	S33	1.2/2.0	6 8		0.6/0.6	SILT, some fine sand, trace clay, marine shells, dark green gray, very siff, moist.	Bottom of Screen	19.89
67		60%	11 14					
68	S34	1.8/2.0	4 4		0.6/0.6	CLAY, little silt, fine sand in partings, gray, stiff, moist		
69		90%	8 6					17.89
0						Boring terminated @ 69' bgs Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin
DRILLER: M. Corron WELL/BORING NO.: BG6W03A SHEET 4 OF 4

Baker
Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB04

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background
COORDINATES: NORTH: _____, EAST: _____
SURFACE ELEVATION: 45.4

RIG: Mobile B-80			DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
BG = .1 ppm	SPLIT SPOON	AUGERS				
SIZE (DIAM.)	1 3/8" ID	4-1/4" ID	8-8-94	0-71.0	clear, mild (70's), calm	38.0
LENGTH	2.0'	5.0'	8-9-94	71.0-79.0	clear, cool, (70's), calm	
TYPE	Std.	HSA				
HAMMER WT.	140#	--				
FALL	30"	--				

REMARKS: Sampled continuously from 1'(bgs) to 79'(bgs). HNu bkg = .1 ppm

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation (ft.)
1		-	-	-	-	Auger to 1.0' (bgs)	
1.0 2		-	-	/	BG	SAND, fine grained w/ trace SILT, dark brown, very loose, damp	
2.0 3		-	-	-	-	Auger to 3.0' (bgs)	
3.0 4	S-1	1.3/2.0 65%	4 5 7 7		.2	SAND, fine to medium grained w/ trace SILT yellow brown, medium dense, damp	
5 6							
5.0 7	S-2	1.8/2.0 90%	2 3 4 6		BG	SAND, fine to medium to coarse grained w/ little fine grained GRAVEL Brown, loose to medium dense, damp	
7.0 8	S-3	1.6/2.0 80%	5 5 5 7		BG		
9							
9.0 10	S-4	1.1/2.0 55%	5 7		BG		

Match to Sheet 2

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman
DRILLER: Mike Corron BORING NO.: BGSB04 SHEET 1 OF 5

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB04

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon; T = Shelby Tube; R = Air Rotary; D = Denison; A = Auger; W = Wash; C = Core; P = Piston; N = No Sample

ACRONYMS

BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation (ft.)
11	S-4	55%	9/10			Continued from Sheet 1 SAND, fine to medium to coarse grained w/ little fine grained GRAVEL. Brown w/ oxidation (reddish brown @ 12'), medium dense damp	
11.0							
12	S-5	1.1/2.0 55%	3 5 6 5		BG		
13							32.4
13.0						SILTY CLAY, brown, damp	31.4
14	S-6	1.1/2.0 55%	5 7 11 9	7	BG	SAND, fine to medium to coarse grained w/ trace fine grained GRAVEL, damp.	
15						SAND, fine to medium with. SILT	29.9
15.0							
16	S-7	1.8/2.0 90%	4 4 4 4		BG	SILTY CLAY w/ SHELL FRAGMENTS. orange brown & white, loose to med. stiff	
17							28.4
17.0							
18	S-8	1.5/2.0 75%	3 1 2 5	9	BG	CLAY w/ trace SHELL FRAGMENTS Dark greenish gray and white, soft, moist	
19							
19.0							
20	S-9	1.9/2.0 95%	2 2 3 3		BG		
21							
21.0							
22	S-10	1.9/2.0 95%	WOH/6" 2 2 2		BG		
23							22.4
23.0							
24	S-11	2.0/2.0 100%	2 2 11 10		BG	CLAY, soft, dark greenish gray; moist	21.4
25						SANDY CLAY, medium stiff, dark greenish gray, moist	
25.0							
26	S-12	1.9/2.0 95%	2 2 2 3		BG		
27							18.4
27.0							
28	S-13	1.5/2.0 75%	1 1 2 3		BG	CLAY, soft to medium stiff, dark greenish gray, moist	
29							
29.0							
30	S-14	1.5/2.0	2 3			Match to Sheet 3	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman

DRILLER: Mike Corron BORING NO.: BGSB04 SHEET 2 OF 5

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB04

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS

BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation (ft.)
31	S-14	75%	4 4			Continued from Sheet 2	
31.0							
32	S-15	1.9/2.0 95%	WOH/12" 5 5		BG	CLAY, soft to medium stiff w/ trace SAND, fine grained. Greenish gray, moist	
33							
33.0							
34	S-16	1.9/2.0 95%	WOH/6" 2 4		BG		
35							
35.0							
36	S-17	1.9/2.0 95%	2 3 3 4		BG	CLAY, medium stiff. Greenish gray to green, moist.	
37							
37.0							▼ 7.4 7.2
38	S-18	1.7/2.0 85%	2 3 3 3		BG	SAND, fine grained w/ trace SILT, loose, wet	
39							
39.0							
40	S-19	1.8/2.0 90%	2 3 3 3		BG	SILTY SAND, fine grained w/ trace CLAY. Green, loose, wet	
41							
41.0							
42	S-20	1.2/2.0 60%	2 12 17 19		BG	SAND, fine grained w/ trace SILT. Green, medium dense, wet	
43							
43.0							
44	S-21	NR	6 4 6 5		—	NO RECOVERY	
45							0.4
45.0							
46	S-22	1.0/2.0 50%	4 5 6 6		BG	CLAY w/ trace SILT Greenish gray, medium stiff to stiff, moist	
47							
47.0							
48	S-23	2.0/2.0 100%	6 4 4 5		BG	SILTY CLAY w/ WOOD and PEAT like material Greenish gray to dark brown, med. stiff, moist	
49							-3.6
49.0							
50	S-24	2.0/2.0	4 3		BG	SILTY CLAY w/ WOOD Dark Greenish Match to Sheet	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman

DRILLER: Mike Corron BORING NO.: BGSB04 SHEET 3 OF 3

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB04

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon; T = Shelby Tube; R = Air Rotary; D = Denison; A = Auger; W = Wash; C = Core; P = Piston; N = No Sample

ACRONYMS

BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation (ft.)
S1 51.0	S-24	100%	3 4			Continued from Sheet 3 gray, medium stiff, moist	-5.6
S2 S3 53.0	S-25	1.0/2.0 50%	13 17 17 19		BG	SILT SAND, fine grained w/ WOOD and little CLAY Dark Greenish gray & brown, med. dense, moist	
S4 S5 55.0	S-26	1.8/2.0 90%	7 4 4 6		BG		
S6 S7 57.0	S-27	.9/2.0 45%	4 5 5 5		BG	SILTY SAND, fine grained w/ little CLAY. Dark greenish gray to green, loose to medium dense, moist	
S8 S9 59.0	S-28	1.0/2.0 50%	4 5 6 7		BG		
S60 S61 61.0	S-29	1.0/2.0 50%	3 3 5 7		BG		
						SILTY SAND w/ little CLAY and WOOD	-16.1
S62 S63 63.0	S-30	2.0/2.0 100%	3 12 6 8		BG	SAND, fine grained w/ trace SILT. Green, loose to medium dense, moist to wet	
S64 S65 65.0	S-31	1.8/2.0 90%	1 2 2 1		BG		
S66 S67 67.0	S-32	1.1/2.0 55%	5 7 11 20		BG	SAND, fine grained w/ trace SILT and SHELL MATERIAL/ FRAGMENTS w/ micrite cement. Green and white, medium dense, wet	
S68 S69 69.0	S-33	2.0/2.0 100%	10 11 5 6		BG		
S70	S-34	2.0/2.0	3 5		BG	Match to Sheet ___	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman

DRILLER: Mike Corron BORING NO.: BGSB04 SHEET 4 OF 5

Baker
Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB04

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon, A = Auger, T = Shelby Tube, W = Wash, R = Air Rotary, C = Core, D = Denison, P = Piston, N = No Sample

ACRONYMS
BG = Background, PID = Photoionization Detector, HSA = Hollow Stem Augers, ppm = parts per million, ID = Inside Diameter, SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'), WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation (ft.)
71 71.0	S-34	100%	6/10			Continued from Sheet 4	
72	S-35	1.8/2.0 90%	6 8 11 13		BG	SAND, fine grained w/ some to little SILT and SHELL FRAGMENTS. Green and white, medium dense, wet	
73 73.0							
74	S-36	1.8/2.0 90%	6 8 10 11		BG		
75 75.0							
76	S-37	1.8/2.0 90%	6 7 20 20		BG		
77 77.0							
78	S-38	2.0/2.0 100%	7 11 12 11		BG		
79 79.0							33.6
80						End of Boring TD = 79.0'	
1							
2							
3							
4							
5							
6							
7							
8							
9							
0						Match to Sheet ___	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman
DRILLER: Mike Corron BORING NO.: BGSB04 SHEET 5 OF 5

Baker Environmental, Inc.

WELL/BORING NO.: BGGW04

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background
COORDINATES: NORTH: 3~~4~~09830.57, EAST: 2563474.20
ELEVATIONS: SURFACE: 45.41

CTO NO.: 0252
TYPE OF WELL: Type II
TOP OF PVC CASING: 47.79

RIG: Mobile B-80	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)		4-1/4" ID		13"	8-16-94	48'	Sunny 85°	38'
LENGTH	2.0'	5.0'		–				
TYPE	Std.	HSA		drag				
HAMMER WT.	140#	–	–	–				
FALL	30"	–	–	–				

REMARKS:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	-2.38 (AGS) Stick up	38.3 (bgs)
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	38.3 bgs	47.2 bgs

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1	A-N					For soil descriptions from 0-33' bgs refer to boring BGSB04		
2								
3								
4								
5								
6								
7								
8								
9								
10						Match to Sheet 2		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. CORRON
BAKER REP.: D. MARTIN
WELL/BORING NO.: BGGW04
SHEET 1 OF 3

Baker Environmental, Inc

WELL/BORING NO.: BGGW04

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11	A-N					Continued from Sheet 1		
12						For soil descriptions from 0-33' bgs refer to BGSB04		
13								
14								
15								
16								
17								
18								
19								
20								
21							Top of bentonite 22'	
22								25.79
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. Martin
WELL/BORING NO.: BGGW04
SHEET 2 OF 3

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGGW04

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet _		
31	A-N					For Soil descriptions refer to BGSB04		
32								
33								
34	S16	1.7/2.0 85%	2 3 5 7		0.2/0.2	CLAY, some silt, little fine sand, greenish gray, medium stiff, moist		
35								
36	S17	2.0/2.0 100%	4 10 5 5		0.2/0.2	SAME except trace fine sand, organic material, blue gray, moist		
37						SAME except little fine sand		
38	S18	2.0/2.0	4 5		0.2/0.2	Same except wet	▽ = 38.3	9.79 9.49
39		100%	6 10				Top of screen	
40	S19	2.0/2.0	2 3		0.2/0.2			7.49
41		100%	4 4			SILT, some fine sand, little clay, light gray, medium dense, wet		6.79
42	S20	1.2/2.0	4 3		0.2/0.2	SAND, fine grained, little silt, trace clay, light gray, loose, wet		
43		60%	10 10					
44	S21	2.0/2.0	2 3		0.2/0.2			4.04
45		100%	4 5			CLAY, some silt, trace fine sand, black brown, medium stiff, moist, 20% organic material		
46	S22	2.0/2.0	2 3		0.2/0.2			
47		100%	5 8				Screen bottom 47.2	0.59
48	A-N						Bottom of well 47.8	-0.01
49						Boring terminated.. @ 48' bgs		
50						Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin
DRILLER: M. Corron WELL/BORING NO.: BGGW04 SHEET 3 OF 3

Baker Environmental, Inc.

WELL/BORING NO.: BGGW04A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background
COORDINATES: NORTH: 340940.56 EAST: 2563478.80
ELEVATIONS: SURFACE: 45.22

CTO NO.: 0252
TYPE OF WELL: Type III constr
TOP OF PVC CASING: 47.43

RIG: Mobile B-80

	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL
SIZE (DIAM.)	1 3/8" ID	4-1/4" ID	10"	14"
LENGTH	2.0'	5.0'	48.5'	–
TYPE	Std.	HSA	Steel	Drag
HAMMER WT.	140#	–	–	–
FALL	30"	–	–	–

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
8-11-94	48.5'	Sunny 85°	37.5'
8-15-94	12'	Overcast 80°	65'

REMARKS:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded		
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded		

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1						For soil description from 0 to 65.0' (bgs) please refer to boring # BGSB04		
2								
3								
4								
5								
6								
7								
8								
9								
10						Match to Sheet 2		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. J. Martin
WELL/BORING NO.: BGGW04A
SHEET 1 OF 5

Baker Environmental, Inc.

WELL/BORING NO.: BGGW04A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11						Continued from Sheet 1		
12								
13								
14								
15								
16								
17								
18						For soil description		
19						from 0 to 65.0' (bgs)		
20						please refer to boring		
21						# BGSB04		
22								
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. J. Martin
WELL/BORING NO.: BGGW04A
SHEET 2 OF 5

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGGW04A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
31						Continued from Sheet 2		
32								
33								
34								
35								
36								
37								
38						For soil description from 0 to 65.0' (bgs) please refer to boring # BGSB04		9.43
39								
40								
41								
42								
43								
44								
45								
46								
47							Top of bentonite slurry 48'	-0.57
48							48.5' bottom of steel casing	-1.07
49								
50						Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. J. Martin
WELL/BORING NO.: BGGW04A
SHEET 3 OF 5

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGGW04A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet 3		
51								
52								
53								
54								
55								
56						For soil description from 0 to 65.0' (bgs) please refer to boring # BGSB04		
57								
58							Top of sand 58.5'	-11.07
59								
60								
61								
62								
63								
64							Top of screen 64.35'	-11.92
65								
66		S-33	1.8/2.0	14 37		.2	CLAY, some silt, trace fine sand, green gray, hard, wet	-18.07
67	67.0		90%	40 26		.2	SAND, fine grained, little silt, green gray, very dense, wet	-19.57
68		S-34	1.8/2.0	5 7 8		.2	SILT, little fine sand, trace clay, trace marine shell fragments, green gray, stiff, wet	
69	69.0		90%	11		.2		
70		S-35	100%	5 7		.2 .2	SAME, except and fine sand	
							Match to Sheet	

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. J. Martin
WELL/BORING NO.: BGGW04A
SHEET 4 OF

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGGW04A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

ACRONYMS
BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
71	S-35	100%	9 12		.2 .2	Continued from Sheet 4		
72	S-36	1.6/2.0 80%	4 6 5 8		.2 .2	SAND, fine grained, and silt, trace clay, marine shell fragments, greengray, medium dense, wet		
74	S-37	1.3/2.0 65%	3 5 6 8		.2 .2	SAME		
76	S-38	1.8/2.0 90%	3 6 12 24	BGGW04A 38	.2 .2	SAME		
78	S-39	2.0/2.0 100%	7 12 10 12		.2 .2	SAND, little silt, trace clay, marine shell fragments, greengray, medium dense, wet	Bottom of Screen @ 78.36'	-30.93
80	A-N	—	—		—			-31.57
1						End of Boring		
2						TD = 79 ft bgs		
3								
4								
5								
6								
7								
8								
9								
0						Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. J. Martin
WELL/BORING NO.: BGGW04A
SHEET 5 OF 5

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: B6SBØ5

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background Locations
COORDINATES: NORTH: _____, EAST: _____
SURFACE ELEVATION: 66.42

RIG: Mobile B-80	SPLIT SPOON	AUGERS	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)		4-1/4" ID	7-19-94	35'	Partly Cloudy 85°	
LENGTH	2.0'	5.0'	7-20-94	4'	Sunny 90°	
TYPE	Std.	HSA				
HAMMER WT.	140#	--				
FALL	30"	--				

REMARKS:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
1	A-N						
2	S1	1.5'/2.0' 75%	3 3 3 4	B6SB05-01	0.4/0.4	Damp, gray brown, medium stiff SILT, some fine sand, trace clay, organic material	63.42
3							
4	S2	1.2'/2.0' 60%	2 3 5 5	B6SB05-02	0.4/0.4	Damp. yellow brown, loose FINE SAND, little clay, silt	61.42
5							
6	S3	1.1'/2.0' 55%	4 7 8 10		0.4/0.4	Damp, yellow brown to red brown, stiff SILT, little clay, fine sand.	
7							
8	S4	1.2'/2.0' 60%	3 8 10 11		0.4/0.4	Same as above except very stiff	
9							
10	S5	1.4'/2.0' 70%	9 8		0.4/0.4	Damp. yellow brown to red brown. very stiff SILT, little clay, fine sand	

Match to Sheet 2

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin
DRILLER: M. Curran BORING NO.: B6SBØ5 SHEET 1 OF 3

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB05

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: Background Locations

SAMPLE TYPE

S = Split Spoon; T = Shelby Tube; R = Air Rotary; D = Denison; N = No Sample; A = Auger; W = Wash; C = Core; P = Piston

ACRONYMS

BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
11	S5	70%	10 8		0.4/0.4	Continued from Sheet 1	
12 13	S6	1.5'/2.0' 75%	3 4 6 6		0.4/0.4	Damp, yellow brown to light gray mottled stiff CLAY, some silt, little fine sand; also red brown oxidation staining	
14 15	S7	2.0'/2.0' 100%	7 11 13 15		0.4/0.4	Same as above but CLAY is very stiff and laminated and fine sand is also in partings	51.4
16 17	S8	2.0'/2.0' 100%	8 10 14 16		0.4/0.4	Damp, light gray, yellow brown and red brown, medium dense FINE SAND, some clay, silt (interbedded).	49.4
18 19	S9	1.6'/2.0' 80%	8 4 5 7		0.4/0.4	Damp, mottled light grey, yellow brown and red brown, stiff CLAY, some fine sand, silt.	
20 21	S10	1.3'/2.0' 65%	3 4 6 6	BGSB05-10	0.2/0.2	Moist to very moist, mottled light gray, yellow brown and red brown, stiff CLAY and fine sand in partings, some clay	45.4
22 23	S11	1.8'/2.0' 60%	3 5 7 6	BGSB05-11	0.2/0.2	Wet, mottled light gray, yellow brown and red brown, medium dense FINE SAND and silt, some clay water @ 21.5'	▽ 44.9
24 25	S12	1.6'/2.0' 80%	4 7 7 6		0.2/0.2	Same as above except some silt, clay	41.4
26 27	S13	1.3'/2.0' 65%	6 5 6 7		0.2/0.2	Moist, mottled red brown (oxidation) and light gray CLAY, some silt, little fine sand, (clay is stiff)	39.4
28 29	S14	1.5'/2.0' 75%	7 15 18 19		0.2/0.2	Wet, light gray dense FINE SAND and silt, ≈ 85% fine gravel to fine sand sized marine shell fragments	
30	S15	1.0'/2.0'	7 8		0.2/0.2	Same as above except sand is medium dense Match to Sheet 3	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin

DRILLER: M. Corron BORING NO.: BGSB05 SHEET 2 OF 3

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BG SB05

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: Background Locations

SAMPLE TYPE

S = Split Spoon; T = Shelby Tube; R = Air Rotary; D = Denison; A = Auger; W = Wash; C = Core; P = Piston; N = No Sample

ACRONYMS

BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
31	S15	50%	9 11			Continued from Sheet 2	
32	S16	1.3/2.0' 65%	7 8 9 8		0.2/0.2	Wet, light gray medium dense FINE SAND and silt; ≈ 85% fine gravel to fine sand sized marine shell fragments	
34	S17		9 10 10 8			Same as above except 40% marine shell fragments	
36	S18		16 30 28 25			Same as above except sand is very dense and 30% marine shell fragments	29.4
38	S19		6 8 10 10			Wet, light gray very stiff SILT and fine sand; ≈ 30% fine gravel to fine sand sized marine shell fragments.	27.4
0						Boring terminated at 39' bgs	
1							
2							
3							
4							
5							
6							
7							
8							
9							
0						Match to Sheet ___	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin

DRILLER: M. Carran BORING NO.: BG SB05 SHEET 3 OF 3

Baker Environmental, Inc

WELL/BORING NO.: BGGWØ5

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background Locations
COORDINATES: NORTH: 335508.116 EAST: 2564442.65
ELEVATIONS: SURFACE: 66.42

CTO NO.: 0252
TYPE OF WELL: Type II
TOP OF PVC CASING: 69.16

RIG: Mobile B-80	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)		4-1/4" ID			7-20-94	25'	Sunny 90°	
LENGTH	2.0'	5.0'		--				
TYPE	Std.	HSA						
HAMMER WT.	140#	--	--	--				
FALL	30"	--	--	--				

REMARKS:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	+2.48	16.0'
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	16.0'	24.56'

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1	A-N					Refer to soil boring BGSBØ5 for soil descriptions	cement-bentonite grout; 2" PVC SCH 40 RISER; Top of Bentonite Pellets 9.0' 60.2	
2								
3								
4								
5								
6								
7								
8								
9								
10								

Match to Sheet 2

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER:
BAKER REP.: D. Martin
WELL/BORING NO.: BGGWØ5
SHEET 1 OF 2

Baker Environmental, Inc

WELL/BORING NO.: BGGW05

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background Locations

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11–17	A-N					Continued from Sheet 1 Refer to soil boring BGGW05 for soil descriptions	bentonite pellets; Top of #2 quartz 12.5; sand; Top of 10 slot 16.2; well screen	56.5; 53.5
18–19	S9	0.4'/2.0' 20%	4 5 5 8		0.2/0.2	Moist, gray, yellow brown and red brown interbedded stiff Clay and fine sand, some silt		50.7
20–21	S10	2.0'/2.0' 100%	4 5 6 7		0.2/0.2	Moist to very moist, gray, yellow brown and red brown medium dense FINE SAND and clay, some silt. (Sand & clay interbedded)		
22–23	S11	2.0'/2.0' 100%	4 5 6 7		0.2/0.2	Same except moist to wet and MEDIUM to FINE SAND water@22'	▽ 22'	47
24–25	S12	2.0'/2.0' 100%	4 5 8 7		0.2/0.2	Wet, yellow brown to gray brown interbedded medium dense MEDIUM to FINE SAND and clay, some silt	bottom of PVC well 24.5	44.7
25								43.9
26–30						Borehole complete @ 25.25 Match to Sheet 3	bottom of Borehole	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin
DRILLER: M. Carron WELL/BORING NO.: BGGW05 SHEET 2 OF 2

Baker Environmental, Inc.

WELL/BORING NO.: BGGWØ5A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background Locations
COORDINATES: NORTH: 3535504.21, EAST: 2564434.03
ELEVATIONS: SURFACE: 46.55

CTO NO.: 0252
TYPE OF WELL: Type III: Surface cased
TOP OF PVC CASING: 68.79

RIG: Mobile B-80	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)		4-1/4" ID			7-21-94	26.5	Partly Cloudy 90°	
LENGTH	2.0'	5.0'		–	7-22-94	14.8	Partly Cloudy 85°	
TYPE	Std.	HSA						
HAMMER WT.	140#	–	–	–				
FALL	30"	–	–	–				

REMARKS:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	+2.24	31.5 bgs
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	31.5 bgs	40.5 bgs

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1	A-N					Refer to soil boring BGSBØ5 for Data	10-inch Diameter Steel Casing; PVC Riser; cement bentonite grout	
2								
3								
4								
5								
6								
7								
8								
9								
10								

Match to Sheet 2

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron

BAKER REP.: D. Martin
WELL/BORING NO.: BGGWØ5A

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGGW05A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background locations

CTO NO.: 0252

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS
BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet 1		
11–29	A-N					Refer to soil boring BGSB05 for Data	10' dia. steel casing; Cement Bentonite grout; 24.5' Top of bentonite pellets; 27.0' Top of #1 quartz sand	44.5; 42.1; 39.6; 37.6
30	S15	0.5/2.0	1/2		0/0	SAND, coarse to fine, some silt, trace clay. Match to Sheet 3		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. Martin
WELL/BORING NO.: BGGW05A

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGGW05A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background Locations

SAMPLE TYPE
S = Split Spoon; A = Auger
T = Shelby Tube; W = Wash
R = Air Rotary; C = Core
D = Denison; P = Piston
N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector
HSA = Hollow Stem Augers; ppm = parts per million
ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
31	S15	25%	4 5		0/0	30% Marine Shells. Continued from Sheet _. Coarse to fine Sand sized light yellow brown, wet, very loose	#1 quartz sand	
32	S16	1.0/2.0 50%	3 4 9 12		0/0	SAND, Coarse to fine, some silt, trace clay, 30% fine gravel to fine sand sized marine shells, light yellow brn, wet, medium dense	31.9' Top of screen	34.7
33								
34	S17	1.3'/2.0' 65%	9 9 9 9		0/0	Same		
35								
36	S18	1.8'/2.0' 90%	8 8 8 11		0/0	SAND, fine grained and silt, trace clay 25% coarse gravel to fine sand sized marine shells, green gray, medium dense — wet		29.6
37								
38	S19		6 7 9 9		0/0	SILT and fine sand, trace clay, 75% coarse gravel to fine sand sized marine shells gray, stiff, wet		
39								
40	S20		5 6 5 11		0/0	SAND, fine grained and silt, 75% Coarse gravel to fine sand sized marine shells, green gray, medium dense, wet	Bottom of screen 40.5	26.1
41							41.3	25.3
42						Boring Complete @ 41.3' bgs		
3								
4								
5								
6								
7								
8								
9								
0						Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corran
BAKER REP.: D. Martin
WELL/BORING NO.: BGGW05A
SHEET 3 OF 3

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BG5B06

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background Locations
COORDINATES: NORTH: _____, EAST: _____
SURFACE ELEVATION: 79

RIG: Mobile B-80			DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
	SPLIT SPOON	AUGERS				
SIZE (DIAM.)	1 5/8	4-1/4" ID	7-26-94	53	Sunny 80-90°	29.5'/42'
LENGTH	2.0'	5.0'				
TYPE	Std.	HSA				
HAMMER WT.	140#	--				
FALL	30"	--				

REMARKS:

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
1	A-N						78
2	S1	1.4/2.0	1		0.2/0.2	CLAY, some silt trace fine sand, light brown to light orange brown, stiff, dry	
3		70%	3 10 12				
4	S2	1.5/2.0	17		0.2/0.2	SAME except color mottled yellow brown & red brown & damp	
5		75%	17 23 23				
6	S3	2.0/2.0	12		0.2/0.2	SAME except and silt	
7		100%	19 19 20				
8	S4	1.8/2.0	5		0.2/0.2	SAME	
9		90%	7 8 7				
10	S5	2.0/2.0	7 10	BG5B06-05 BG5B06-05D	0.2/0.2	CLAY & silt, trace fine sand, mottled red yellow brown, damp stiff	

Match to Sheet 2

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin
DRILLER: M. Corron BORING NO.: BG5B06 SHEET 1 OF 4

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB06

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: Background Locations

SAMPLE TYPE

S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS

BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
11		100%	11 23			Continued from Sheet 1	68
12	S6	1.0/2.0	7 10		0.2/0.2	SAND, fine-grained, some silt, trace clay, dark red brown,	
13		50%	10 11			medium dense, moist	66
14	S7	1.5/2.0	6 12		0.2/0.2	CLAY, some silt, little fine sand, mottled light gray & yellow brown	
15		75%	15 16			stiff, moist	
16	S8	1.5/2.0	5 8		0.2/0.2	SAME except trace fine sand	
17		75%	14 16			in partings	62
18	S9	1.7/2.0	5 7		0.2/0.2	SILT, some very fine sand, trace clay mottled yellow brown & light gray,	
19		85%	9 10			stiff, moist	
20	S10	1.9/2.0	4 5		0.2/0.2	SAME	
21		95%	6 8				
22	S11	1.8/2.0	2 3	BGSB06-11	0.2/0.2	SAME except and fine sand, trace clay also in stringers	
23		90%	5 6				56
24	S12	1.8/2.0	3 4		0.2/0.2	LAMINATED CLAY, little silt, very fine sand in partings, color	
25		90%	7 8			Alt. brown, red brown & light gray, stiff moist	
26	S13	2.0/2.0	3 5		0.2/0.2	SAME	
27		100%	6 5				
28	S14	2.0/2.0	2 2	BGSB06-14	0.2/0.2	SAME	
29		100%	3 5				50
30	S15	1.2/2.0	4 5			SAND, fine-grained, and clay (seam) ▽ Some silt, Match to Sheet 3	49.5

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin

DRILLER: M. Corron BORING NO.: BGSB06 SHEET 2 OF 4

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB06

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA:

SAMPLE TYPE

S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS

BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
31		60%	5 6			Continued from Sheet mottled orange red brown, loose, wet	
32	S16	1.1/2.0 55%	1 2 4 6		0.3/0.3	SAND, fine grained, and laminated clay some silt, orange brown to light gray, loose, wet, Also V. fine sand laminea	
33							
34	S17	1.7/2.0 85%	2 4 5 3		0.3/0.3	SAME	
35							
36	S18	1.1/2.0 55%	3 4 5 7		0.3/0.3	SAME except some laminated clay	
37							
38	S19	1.2/2.0 60%	3 4 4 4		0.3/0.3	SAND, fine-grained, little clay, silt orange brown, loose wet	41.
39							
40	S20	2.0/2.0 100%	1 2 2 3		0.3/0.3	CLAY, some silt, little fine sand, mottled yellow brown, light gray, red brown, medium stiff moist	
41						SAME - ½" oxidation/mineralization zone at 40.5'	
42	S21	2.0/2.0 100%	2 3 9 9		0.3/0.3		37
43						SHELL FRAGMENTS, some fine sand, little silt, trace clay light gray, medium dense, wet	
44	S22	1.8/2.0 90%	7 9 12 16		0.3/0.3		
45							
46	S23	1.8/2.0 90%	3 8 7 7		0.3/0.3	SAME	
47							
48	S24	2.0/2.0 100%	4 6 5 6		0.2/0.2	SAME	
49							
50	S25	2.0/2.0	4 8			SILT, and Shell fragments, some fine sand, trace clay Match to Sheet	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin

DRILLER: M. Porron BORING NO.: BGSB06 SHEET 3 OF 4

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: B65B06

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: Background location

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
51		100%	10 14		0.3/0.3	Continued from Sheet 3: light gray, stiff, very moist	
52	S26	2.0 / 2.0	8 7		0.3/0.3	SHELL FRAGMENTS, fine Sand, little silt, trace clay, light gray to green, medium dense, wet	26.7
53		100%	12 19				26
4						Boring terminated at 53' bgs	
5							
6							
7							
8							
9							
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
0						Match to Sheet ___	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: D. Martin

DRILLER: M. Carron BORING NO.: B65B06 SHEET 4 OF 4

Baker
Baker Environmental, Inc.

WELL/BORING NO.: well # BGGW06

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background
COORDINATES: NORTH: 336385.12 EAST: 2555752.37
ELEVATIONS: SURFACE: 79.08

CTO NO.: 0252
TYPE OF WELL: Type II constr.
TOP OF PVC CASING: 81.39

RIG: Mobile B-80					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
BG=.6 ppm	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL				
SIZE (DIAM.)	1 3/8" ID	4-1/4" ID	-NA-	-NA-	8-2-94	0-42.0	partly cloudy, mid, (70's), humid	32.0
LENGTH	2.0'	5.0'	-NA-	--				
TYPE	Std.	HSA						
HAMMER WT.	140#	--	--	--				
FALL	30"	--	--	--				

REMARKS: Borehole sampled to 41.0'. Borehole drilled out to 42.0'. well set @ 41.0'(bgs)

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
	2"	II		
Well Riser	2"	Sch. 40 PVC, Threaded	+2.5'	31.0'(bgs)
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	31.0'(bgs)	41.0'(bgs)

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1						Auger to 1.0' (bgs).		
1.0								
2	S-1	1.9/2.0 95%	3 4 9 10		BG	SILTY SAND, fine grained orange brown w/ oxidation (reddish brown) streaking, medium dense, damp.	cement grout	
3								
3.0								
4	S-2	1.7/2.0 85%	8 13 14 20		BG		well riser	
5								
5.0								
6	S-3	1.8/2.0 90%	12 12 18 22		BG	SILTY SAND, fine grained w/ trace CLAY, orange brown w/ oxidation (reddish brown) streaking, medium dense, damp		
7								
7.0								
8	S-4	1.5/2.0 75%	2 5 10 13		BG			
9								
9.0								
10	S-5	1.4/2.0 70%	6 7		BG	SAND, fine grained w/ Match to Sheet 2		71.19

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: Mike Corron
BAKER REP.: John Zimmerman
WELL/BORING NO.: well # BGGW06 SHEET 1 OF 3

Baker
Baker Environmental, Inc.

WELL/BORING NO.: well # BGGW06

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11 / 11.0	S-5	70%	14 19			trace SILT. Continued from Sheet 1 orange brown w/ oxidation (reddish brown) streaking, medium dense, damp		69.99
12 / 13.0	S-6	1.3/2.0 65%	3 6 10 11		BG	SILTY CLAY. orange brown w/ oxidation (reddish brown) streaking very stiff, damp		
14 / 15.0	S-7	1.4/2.0 70%	4 6 12 14		BG	SILTY CLAY w/ little SAND, fine grained. orange brown and light gray w/ oxidation (dark reddish brown), medium stiff (top) to medium dense (bottom), damp		cement grout
16 / 17.0	S-8	1.3/2.0 65%	4 7 10 11		BG	SILTY SAND, fine grained w/ little CLAY. orange brown and light gray w/ oxidation (reddish brown) streaking, medium dense, damp.		64.39
18 / 19.0	S-9	1.4/2.0 70%	3 6 7 12		BG	SAND, fine grained w/ trace SILT and little CLAY. orange brown w/ oxidation (reddish brown) streaking, medium dense, damp		well riser
20 / 21.0	S-10	1.4/2.0 70%	2 3 4 9		BG			59.89
22 / 23.0	S-11	1.6/2.0 80%	3 4 8 7		BG	SAND, fine grained w/ trace SILT. SILTY CLAY w/ some SAND, fine grained. orange brown to brown w/ oxidation (reddish brown) streaking, medium dense, damp.		
24 / 25.0	S-12	2.0/2.0 100%	3 5 5 5		BG			
26 / 27.0	S-13	1.8/2.0 90%	3 4 4 5		BG		27.0	54.39
28 / 29.0	S-14	1.8/2.0 90%	2 2 3 5		BG	SILTY SAND, fine grained w/ trace to little CLAY. orange brown to brown w/ oxidation (reddish brown) streaking, loose / stiff, damp/moist	29.0	Bentonite pellet 52.39
30	S-15	1.6/2.0	2 3		BG	SILTY SAND, fine grained w/ trace CLAY. Match to Sheet 3		

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman

Mike Carson BORING NO.: well #BGGW06 SHEET 2 OF 3

Baker
Baker Environmental, Inc.

WELL/BORING NO.: Well # BGGW06

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
31 / 31.0	S-15	80%	3 8			Orange brown Continued from Sheet to brown w/oxidation (reddish brown) streaking, loose, moist.		
32	S-16	1.2/2.0	2 6 9 9		BG			▼ 49.4
33 / 33.0		60%				SAND, fine grained w/ trace SILT. Orange brown w/ oxidation (reddish brown) staining medium dense, wet.	well screen	
34	S-17	1.5/2.0	5 5 8 9		BG			
35 / 35.0		75%					sand pack (#1)	
36	S-18	1.8/2.0	5 6 7 7		BG			
37 / 37.0		90%						43.19
38	S-19	1.5/2.0	4 4 3 4		BG	ORGANIC MATERIAL w/ possible charcoal flecks w/ heavy oxidation (dk. reddish brn)		42.39
39 / 39.0		75%				SAND, fine grained w/ trace SILT		
40	S-20	1.4/2.0	3 4 4 3		BG	ORGANIC MATERIAL w/ possible charcoal flecks orange brown to brown w/ heavy oxidation (dark reddish brown), loose wet.		40.39
41 / 41.0		70%						39.39
42 / 42.0						End of Boring		
43						TD = 42.0'		
44								
45								
46								
47								
48								
49								
50						Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman

BORING NO.: Well # BGGW06 SHEET 3 OF 3

Baker
Baker Environmental, Inc.

WELL/BORING NO.: Well # BGGW06A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background
COORDINATES: NORTH: 333026.0, EAST: 2562598.0
ELEVATIONS: SURFACE: 78.81

CTO NO.: 0252
TYPE OF WELL: Type III constr.
TOP OF PVC CASING: 81.0

RIG: #13					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
BG = .2ppm to .6ppm.	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL				
SIZE (DIAM.)	1 3/8" ID	4-1/4" ID	10"	14" wing	7-27-94	0-41.0	overcast, mild (70's) humid	29.5 (DTW)
LENGTH	2.0'	5.0'	41.0'	–	8-1-94	41.0-66.0	cloudy, warm (80's) humid	
TYPE	Std.	HSA	Steel					
HAMMER WT.	140#	–	–	–				
FALL	30"	–	–	–				

REMARKS: Borehole sampled continuously from 35.0'. Borehole drilled out to 66.0'. Well set 65.0'

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
	2"	III		
Well Riser	2"	Sch. 40 PVC, Threaded	+2.5'	50.0' (bgs)
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	50.0' (bgs)	65.0' (bgs)

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1						Auger to 35.0' (bgs) Refer to boring # SB06 for descriptions	Cement grout; Steel Casing (10")	
2								
3								
4								
5								
6								
7								
8								
9								
10						Match to Sheet 2		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: Mike Corron
BAKER REP.: John Zimmerman
WELL/BORING NO.: Well # BGGW06A SHEET 1 OF 4

Baker Environmental, Inc.

WELL/BORING NO.: Well #BGGW06A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background

CTO NO.: 0252

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11						Continued from Sheet 1	Cement grout	
12								
13								
14								
15								
16								
17								
18							Steel casing (10")	
19								
20								
21								
22								
23						Auger to 35.0' (bgs) Refer to boring # SB06 for descriptions		
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		51

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: Mike Corron

BAKER REP.: John Zimmerman
WELL/BORING NO.: Well #BGGW06A SHEET 2 OF 4

Baker
Baker Environmental, Inc.

WELL/BORING NO.: well # BGGW06A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet 2		
31–35						Auger to 35.0' (bgs) Refer to boring # SB06 for descriptions	cement grout; steel casing (10")	
35.0								46.0
36–37	S-18	1.0/2.0 50%	6 10 11 14		.2/.2	SAND, fine grained w/SILT CLAY stringers are present orange brown w/oxidation (deep reddish brown) streaking, medium dense, moist to wet. Black organic flecks are occasional		
37.0								
38–39	S-19	1.1/2.0 55%	2 3 5 4		.2/.2			
39.0								42.0
40–41	S-20	1.4/2.0 70%	3 4 3 3		.2/.2	CLAY w/SILT and trace SAND, fine grained. orange brown w/ oxidation (deep reddish brown) streaking, medium stiff to loose, wet. Black organic flecks		
41.0								40
42–43	S-21	1.6/2.0 80%	WOH/6" 4 7 11		.6/.6	SAND, fine grained w/ SILT and little CLAY SHELL MATERIAL/FRAGS are present. Green to orange brown & white w/ oxidation (deep reddish brown) streaking to only 46.0' (bgs), medium dense, wet	Bentonite Slurry	
43.0								
44–45	S-22	1.8/2.0 90%	4 12 12 13		.6/.6			
45.0								
46–47	S-23	2.0/2.0 100%	4 7 7 7		.6/.6		well riser	
47.0								34.0
48–49	S-24	1.8/2.0 90%	3 5 5 7		.6/.6		sand pack (#1)	
49.0								32.0
50	S-25	90%	3 4		.6/.6	Match to Sheet	Top of screen	31.0

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman
DRILLER: Mike Corron WELL/BORING NO.: well # BGGW06A SHEET 3 OF 4

Baker
Baker Environmental, Inc.

WELL/BORING NO.: Well # BGGW06A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet 3		
51 51.0	S-25	90%	5 5		.6 .6	SILT w/some SAND, fine grained and little CLAY. SHELL MAT/FRAGS are present. Green & white, medium dense, wet		
52	S-26	2.0/2.0	8 10		.6			29.0
53 53.0		100%	14 16		.6	SAND, fine grained w/SHELL MAT/FRAGS. Micrite is matrix only, wet		Sand 28.0
54	S-27	1.7/2.0	8 9		.6	SILT w/some SAND, fine grained and little CLAY. SHELL MAT/FRAGS are present. Green & white, medium dense, wet.		Pack (#1)
55 55.0		85%	14 13		.6			26.0
56	S-28	1.7/2.0	5 12		.6	SAND, fine grained w/SHELL MAT/FRAGS and trace SILT Micrite is matrix only. Green & white, medium dense, wet		
57 57.0		85%	16 18		.6			24.0
58	S-29	1.9/2.0	9 10		.6	SILT w/some SAND, fine grained w/little to trace CLAY. SHELL MAT. is present. Dark green & white, medium dense, moist		Well Screen
59 59.0		95%	10 12		.6			21.0
60	S-30	1.9/2.0	6 9		.6			
61 61.0		95%	15 22		.6	SAND, fine grained w/ trace SILT and trace SHELL MATERIAL. Dark green to green & white, medium dense, moist to wet.		
62	S-31	1.8/2.0	6 9	31	.6			
63 63.0		90%	11 18		.6			18.0
64	S-32	2.0/2.0	6 9		.6	SILT w/some SAND, fine grained and SHELL MAT w/ FRAGS. Green & white, medium dense, moist to wet.		
65 65.0		100%	10 13		.6			16.0
66 66.0	A-N							15.0
67						End of Boring		
68						TD: 66.0'		
69								
70						Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman
DRILLER: Mike Carron WELL/BORING NO.: Well # BGGW06A SHEET 4 OF 4

Baker Environmental, Inc

TEST BORING RECORD

BORING NO.: BG-SB07

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: BACKGROUND
CTO NO.: 0252
COORDINATES: NORTH: _____, EAST: _____
SURFACE ELEVATION: B1

RIG: MOBILE B-57 ATV (#R-39)	SPLIT SPOON	AUGERS	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)	2"/3" OD	4-1/4" ID	8-9-94	0.0-67.0	CLEAR, ~85°	34.0 (WD)
LENGTH	2.0'	5.0'				
TYPE	Std.	HSA				
HAMMER WT.	140#	--				
FALL	30"	--				

REMARKS:

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. FT/%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
1	A-N	—	—	—	—	AUGERED TO 1.0'	
2	S-1	1.0/2.0 50%	3 5 8 10	—	0.2/0.2	SILTY CLAY, little sand, trace roots, light brown with gray mottling, stiff, damp (fill)	
3							
4	S-2	1.5/2.0 75%	5 9 14 18	—	0.2/0.2	SILTY CLAY, little sand, light brown to orangish brown with gray mottling, very stiff, damp (fill)	76
5							
6	★ S-3	1.0/2.0 50%	5 6 23 25	—	0.2/0.2	CLAYEY SILT, some sand, orangish brown and gray mottled, very stiff, damp (fill)	
7							
8	# S-4	2.0/2.0 100%	4 13 14 18	BG SB07 -04	0.2/0.2	SANDY SILT, trace clay, orangish brown with gray mottling, medium dense, damp	73
9						CLAYEY SILT, trace sand orange with gray mottling,	
10	S-5	2.0/2.0 100%	6 8 8	—	0.2/0.2	SILTY CLAY and CLAYEY SILT, trace to some sand, trace root hairs orangish brown w/gray, very stiff, damp Match to Sheet 2	

★ 3" ϕ SPLIT SPOON. 2" ϕ IF NOT INDICATED

DRILLING CO.: HARDIN-HUBER, INC.
BAKER REP.: M. TAUBE
DRILLER: K. CALLENDER
BORING NO.: BG-SB07
SHEET 1 OF 4

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BG-SB07

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: BACKGROUND

SAMPLE TYPE

S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS

BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. FT/%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
11			11			Continued from Sheet 1	
12	S-6	1.2/2.0 60%	4 6 11 12	—	0.2/0.2	CLAYEY SILT, little sand, light brownish gray and orange mottled, very stiff, damp	
13							
14	S-7	1.4/2.0 70%	4 6 9 12	—	0.2/0.2	SILT, some sand, fine, little clay, light brown and gray mottled, stiff, damp	
15							
16	S-8	1.5/2.0 75%	3 4 6 6	—	0.2/0.2	SANDY SILT, little clay, light orangish brown and gray, loose, damp	
17							
18	S-9	1.4/2.0 70%	4 5 6 8	—	0.2/0.2	SAME, medium dense	
19							
20	S-10	1.4/2.0 70%	4 6 6 7	—	0.2/0.2	SAME, light brown and light orange mottled	
21							60
22	S-11	2.0/2.0 100%	1 3 3 4	BG-SB07-11	0.2/0.2	SILTY CLAY, trace sand, orangish brown and dark gray, medium stiff, damp to moist	
23							
24	S-12	2.0/2.0 100%	1 3 5 9	—	0.2/0.2	SAME, greenish gray, moist	57
25						SHELL FRAGMENTS (fine sand sized), little sand, little silt, moist	
26	S-13	2.0/2.0 100%	5 3 7 9	—	0.2/0.2	SHELL FRAGMENTS, fine sand sized, some clay, little sand, trace silt, orangish brown, loose, damp	
27							
28	S-14	2.0/2.0 100%	8 11 13 14	—	0.2/0.2	SAME, medium dense	
29							
30	S-15	1.5/2.0 75%	7 12	—	0.2/0.2	CLAYEY SILT AND SHELL FRAGMENTS, some sand, dk. brown, med. dense, damp Match to Sheet 3	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: M. TAUBE

DRILLER: K. CALLENDER BORING NO.: BG-SB07 SHEET 2 OF 4

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BG-SB07

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: BACKGROUND

SAMPLE TYPE

S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS

BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. FT/%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
31			13 15			Continued from Sheet 2	50
32 33	S-16	2.0/2.0 100%	8 10 11 11	BG SB07-16	0.2/0.2	SAND, fine to medium and SHELL FRAGMENTS, fine sand to fine gravel sized, little silt, little clay, dk. brown, dense,	48
34 35	S-17	2.0/2.0 100%	4 7 8 10	—	0.2/0.2	SHELL FRAGMENTS, fine sand to fine gravel sized, some sand, little silt, little clay, orangish brown to light brown, medium dense, moist to wet	
36 37	S-18	2.0/2.0 100%	6 7 7 8	—	0.2/0.2	SHELL FRAGMENTS (fine sand to coarse gravel size), little sand, little silt, trace clay, orangish brown, medium stiff, wet	
38 39	S-19	2.0/2.0 100%	3 7 7 16	—	0.2/0.2	SAME, bluish gray	
40 41	S-20	2.0/2.0 100%	4 11 12 10	—	0.2/0.2	SAME, light blue	
42 43	S-21	2.0/2.0 100%	7 8 9 10	—	0.2/0.2	SAME	
44 45	S-22	2.0/2.0 100%	6 9 7 12	—	0.2/0.2	SHELL FRAGMENTS, fine sand to coarse gravel sized, some silty clay, little sand, light blue, medium dense, wet	
46 47	S-23	2.0/2.0 100%	7 7 10 16	—	0.2/0.2	SAME,	
48 49	S-24	2.0/2.0 100%	3 6 8 8	—	0.2/0.2	SHELL FRAGMENTS, fine sand to coarse gravel sized, and SILTY CLAY, little sand, light blue, medium dense, wet	32
50	S-25	2.0/2.0 100%	4 3	—	0.2/0.2	SILTY CLAY and SHELL FRAGMENTS (cont'd) Match to Sheet	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: M. TAUBE

DRILLER: K. CALLENDER BORING NO.: BG-SB07 SHEET 3 OF 4

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BG-SB07

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: BACKGROUND

SAMPLE TYPE

S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS

BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. FT/%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation
51			7 6			Continued from Sheet 3, fine sand to coarse gravel sized, little sand, dark green, loose, wet	
52	S-26	2.0 / 2.0 100%	6 9 5 4	—	0.2/0.2	SAME	29
53						SILTY CLAY, little shell fragments, little sand, dark green, wet	
54	S-27	2.0 / 2.0 100%	1 5 7 12	—	0.2/0.2	SILTY CLAY, little shell fragments, trace sand, dark green, stiff, moist	
55							
56	S-28	2.0 / 2.0 100%	3 5 9 12	—	0.2/0.2	SILTY CLAY, little to some shell fragments, little sand, dark green, stiff, moist to wet	
57							
58	S-29	2.0 / 2.0 100%	9 11 15 20	—	0.2/0.2	SILTY CLAY and SHELL FRAGMENTS (portion cemented), some sand, blue gray, very stiff, wet	
59							22
60	S-30	2.0 / 2.0 100%	6 7 8 9	—	0.2/0.2	SAND, fine to medium, some silty clay, little shell fragments, blue gray, medium stiff, wet	
61							
62	S-31	2.0 / 2.0 100%	11 16 12 25	—	0.2/0.2	CLAYEY SAND, fine to medium, little shell frags, trace silt, dark blue-gray, moist	19
63						SHELL FRAGMENTS, fine sand to coarse gravel sized, portion cemented, little sand, little silty clay, wet	18
64	S-32	2.0 / 2.0 100%	3 11 10 21	—	0.2/0.2	SANDY CLAY and SHELL FRAGMENTS, portion cemented, trace silt, blue-green, very stiff, wet	
65							
66	S-33	2.0 / 2.0 100%	8 9 12 17	—	0.2/0.2	SILTY CLAY, some shell fragments, portion cemented, little sand, green-gray very stiff, damp to wet	
67							14
68						BORING TERMINATED AT A DEPTH OF 67.0'	
69							
70						Match to Sheet ___	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: M. TAUBE

DRILLER: K CALLENDER BORING NO.: BG-SB07 SHEET 4 OF 4

Baker Environmental, Inc.

WELL/BORING NO.: BG GW07

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: BACKGROUND
COORDINATES: NORTH: 341510.33, EAST: 2551422.44
ELEVATIONS: SURFACE: 81.56

CTO NO.: 0252
TYPE OF WELL: II
TOP OF PVC CASING: 83.91

RIG: MOBILE B-57 ATV (#R-39)	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)	2" OD	4-1/4" ID	—	—	8-10-94	0.0-43.5	CLEAR, ~85°	34.0 (WD)
LENGTH	2.0'	5.0'	—	–				
TYPE	Std.	HSA	—	—				
HAMMER WT.	140#	–	–	–				
FALL	30"	–	–	–				

REMARKS: LOCATED ~ 10' NORTHEAST OF BORING BGSB07

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	2.5' AGS	32.91 BGS
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	32.91 BGS	41.9 BGS

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1						AUGERED TO 30.0'	CEMENT-BENTONITE GROUT	
2						REFER TO TEST BORING RECORD FOR BORING BGSB07 FOR DATA		
3							RISER	
4								
5	A-N							
6								
7								
8								
9								
10								

Match to Sheet 2

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: K. CALLENDER
BAKER REP.: M. TAUBE
WELL/BORING NO.: BG GW07
SHEET 1 OF 3

Baker Environmental, Inc.

WELL/BORING NO.: BGGW07

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: BACKGROUND

CTO NO.: 0252

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11						Continued from Sheet 1	CEMENT-BENTONITE GROUT	
12						AUGERED TO 30.0'		
13								
14								
15								
16								
17							RISER	
18								
19								
20	A-N							
21								
22								
23								
24								
25								
26								
27							27.5	56.4
28							BENTONITE PELLETS	
29							29.5	54
30						Match to Sheet 3	NO.1 SAND	

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: K. CALLENDER

BAKER REP.: M. TAUBE
WELL/BORING NO.: BGGW07

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGGW07

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: BACKGROUND

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet _		
31	S-1	1.5/2.0 75%	2 5 8 12	—	—	SAND, fine to medium, and SHELL FRAGMENTS, orangish brown, little silt, little clay, medium dense, moist	RISER	
32								
33	S-2	1.7/2.0 85%	6 9 8 6	—	—	SAME, portion of shells cemented	32.91	51.0
34								49.9
35	S-3	1.5/2.0 75%	1 1 4 7	—	—	SHELL FRAGMENTS, fine sand to coarse gravel sized, little sand, little silt, trace clay, loose, wet	SCREEN	
36								
37	A-N	—	—	—	—			
38	S-4	2.0/2.0 100%	7 7 10 12	BG GW07 -PT	—	SHELL FRAGMENTS, fine sand to coarse gravel sized, some silty clay, trace sand, blue-gray, medium dense, wet	NO.1 SAND	
39								
40						AUGERED TO 43.5'		
41	A-N	—	—	—	—			
42							41.9	42.0
43							RISER 42.75	41.2
							43.5	40.4
44						BORING TERMINATED AT A DEPTH OF 43.5'		
45								
46								
47								
48								
49								
50						Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: M. TAUBE
DRILLER: K. CALLENDER WELL/BORING NO.: BGGW07 SHEET 3 OF 3

Baker Environmental, Inc.

WELL/BORING NO.: BG6W07A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background Location
COORDINATES: NORTH: 34503.01, EAST: 25514 05.30
ELEVATIONS: SURFACE: 81.34

CTO NO.: 0252
TYPE OF WELL: Type III
TOP OF PVC CASING: 83.16

RIG: Mobile B-80

	SPLIT SPOON	AUGERS	SURFACE CASING	REAMING TOOL
SIZE (DIAM.)		4-1/4" ID	10" ID	13"
LENGTH	2.0'	5.0'		–
TYPE	Std.	HSA	Steel	Drag
HAMMER WT.	140#	–	–	–
FALL	30"	–	–	–

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
8/18/94	56	Partly Sunny 85°	
8/20/94	13	Overcast 80	

REMARKS:

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	+2.32 AGS	58.4 bgs
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	58.4 bgs	68.1 bgs

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1	A-N					For soil descriptions refer to soil boring BGSB07		
2								
3								
4								
5								
6								
7								
8								
9								
10						Match to Sheet 2		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. Martin
WELL/BORING NO.: BG6W07A
SHEET 1 OF 4

Baker
Baker Environmental, Inc

WELL/BORING NO.: BGGW07A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background

CTO NO.: 0252

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11	A-N					Continued from Sheet 1 For Soil Descriptions refer to BGGW07A		
12								
13								
14								
15							bentonite slurry	
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27							cement bentonite grout	
28								
29								54.7
30						Match to Sheet 3		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M Corrow

BAKER REP.: D. Martin
WELL/BORING NO.: BGGW07A

Baker
Baker Environmental, Inc.

WELL/BORING NO.: BGSB07A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
31	A-N					Continued from Sheet _ For Soil Descriptions refer to soil boring BGSB07		
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50						Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Carron
BAKER REP.: D. Martin
WELL/BORING NO.: BGGW07A
SHEET 3 OF 4

Baker
Baker Environmental, Inc

WELL/BORING NO.: BGGW07A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background Locations
CTO NO.: 0252

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter

ACRONYMS
PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet		
51	S25	2.0/2.0	4		0.2/0.2	SAND, medium to fine grained and silt, little clay, marine shells green gray, medium dense, wet		
52		100%	5 5					31.2
53	S26	2.0/2.0	7 6		0.2/0.2	CLAY, some silt, trace fine sand dark green, stiff, moist		
54		100%	7 12					
55	S27	2.0/2.0	7 8		0.2/0.2	SAME		28.7
56		100%	9 23				Top of #1 qtz Sand 56	27.7
57	A-N							
58	S28	1.7/2.0	12 16		0.2/0.2	SAND, medium to fine grained, little marine shells, silt, trace clay gray, medium dense, wet	Top of Screen 58.4	25.3
59		85%	14 15					
60	S29	1.8/2.0	8 10		0.2/0.2	SAME, except only fine sand and green gray		
		90%	12 15					22
	S30	1.4/2.0	6 5		0.2/0.2	SILT and fine sand, little marine shells, trace clay, green gray		
63		70%	10 19					20.7
64	S31	2.0/2.0	7 8		0.2/0.2	SAND, fine grained, some shell fragments, silt, trace clay, green gray, med. dense, wet		19.7
65		100%	8 17			SILT and clay, little fine sand, shell fragments blue gray, stiff wet		
66	S32	1.8/2.0	1 6		0.2/0.2			
67		90%	9 10				Bottom of Screen 67.36	
68	S33	1.7/2.0	3 9		0.2/0.2	SAME		16.3
69		85%	9 10				68.15	15.5
70						Boring Terminated @ 69' BGS Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: M. Corron
BAKER REP.: D. Martin
WELL/BORING NO.: BGGW07A
SHEET 4 OF 4

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB08

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background
COORDINATES: NORTH: _____, EAST: _____
SURFACE ELEVATION: 90

RIG: Mobile B-80	SPLIT SPOON	AUGERS	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)	1 3/8" ID	4-1/4" ID	8-4-94	0-49.0	Broken overcast, warm (70's) humid, calm	18.0
LENGTH	2.0'	5.0'				
TYPE	Std.	HSA				
HAMMER WT.	140#	--				
FALL	30"	--				

REMARKS: Sampled continuously from 1'(bgs) to 49'(bgs). HNu bkg = .3 ppm

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation (ft.)
1		-	-	-	-	-	Auger to 1.0' (bgs)	89
1.0							
2	S-1	1.7/2.0 85%	3 5 12 13		BG	CLAY w/ little SAND, fine grained and trace SILT Brown to yellow brown w/ trace oxidation (reddish brown), very stiff to medium dense, damp.	87
3							
3.0							
4	S-2	1.6/2.0 80%	12 13 16 18	2	BG	SAND, fine grained w/ little CLAY and trace SILT. Brown to light gray, med. dense, damp	85
5							
5.0							
6	S-3	1.5/2.0 75%	10 12 17 18		BG	SILTY SAND, fine grained w/ little CLAY. Brown to light gray w/ oxidation reddish orange), medium dense to v. stiff, damp	83
7							
7.0							
8	S-4	1.5/2.0 75%	7 9 12 17		BG	SAND, fine grained w/ trace SILT and trace CLAY. Light gray w/ heavy oxidation (orangish yellow) streaking, loose to medium stiff, Match to Sheet 2	
9							
9.0							
10	S-5	1.5/2.0 75%	6 7 9 11		BG		

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman
DRILLER: Mike Corron BORING NO.: BGSB08 SHEET 1 OF 3

Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB08

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252

SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon; T = Shelby Tube; R = Air Rotary; D = Denison; A = Auger; W = Wash; C = Core; P = Piston; N = No Sample

ACRONYMS

BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation (ft.)
11 / 11.0	S-5					Continued from Sheet 1 damp SAND, fine grained w/ SILT and little CLAY. Light gray w/ oxidation loose to medium stiff damp to moist	
12 / 13 / 13.0	S-6	1.5/2.0 75%	3 4 5 8		BG		77
14 / 15 / 15.0	S-7	1.3/2.0 65%	3 6 5 5		BG	SAND, fine grained w/ trace SILT. Light gray to yellow brown to orange brown w/ very heavy oxidation (dark reddish brown) streaking and staining, loose to medium dense, moist to wet.	
16 / 17 / 17.0	S-8	1.6/2.0 80%	2 3 5 10		BG		
18 / 19 / 19.0	S-9	1.6/2.0 80%	3 4 13 4		BG		▼ 72
20 / 21 / 21.0	S-10	1.5/2.0 75%	5 5 5 5		BG		
22 / 23 / 23.0	S-11	1.5/2.0 75%	3 4 6 7		BG		
24 / 25 / 25.0	S-12	1.3/2.0 65%	2 2 4 4		BG		64.5
26 / 27 / 27.0	S-13	2.0/2.0 100%	1 1 1 3	13	BG	SILTY CLAY, greenish gray, soft, moist	
28 / 29 / 29.0	S-14	1.3/2.0 65%	1 2 3 7		BG	SILTY CLAY w/ occasional SHELL MATERIAL. Greenish gray and white, medium stiff, moist	61
30	S-15	100%	2 4		BG	SILTY CLAY w/ little SAND fine grained w/ Match to Sheet 3	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman

DRILLER: Mike Corron BORING NO.: BGSB08 SHEET 2 OF 3

Baker
Baker Environmental, Inc.

TEST BORING RECORD

BORING NO.: BGSB08

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon, T = Shelby Tube, R = Air Rotary, D = Denison, N = No Sample
A = Auger, W = Wash, C = Core, P = Piston

ACRONYMS
BG = Background, HSA = Hollow Stem Augers, ID = Inside Diameter
PID = Photoionization Detector, ppm = parts per million, SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'), WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Elevation (ft.)
31 / 31.0	S-15	100%	5 6			Continued from Sheet 2 occasional SHELL MATERIAL. Greenish gray and white, medium stiff to loose, moist to wet	
32 / 33.0	S-16	2.0/2.0 100%	2 3 4 6		BG		57
34 / 35.0	S-17	2.0/2.0 100%	2 2 4 7		BG		
36 / 37.0	S-18	2.0/2.0 100%	4 4 6 10	18	BG	SAND, fine grained w/some SILT and trace to little SHELL MATERIAL w/micrite cement (as matrix only). Light gray and white, loose to medium dense, wet	
38 / 39.0	S-19	2.0/2.0 100%	2 2 3 5		BG		
40 / 41.0	S-20	1.8/2.0 90%	2 2 4 7		BG		
42 / 43.0	S-21	2.0/2.0 100%	3 5 5 10		BG		
44 / 45.0	S-22	2.0/2.0 100%	8 9 14 3		BG	SILT w/some SAND, fine grained w/SHELL MATERIAL and FRAGMENTS.	
46 / 47.0	S-23	2.0/2.0 100%	10 11 11 15		BG	SAND, fine grained w/SILT and little SHELL MATERIAL w/ micrite cement. Light gray and white, medium dense, wet.	
48 / 49.0	S-24	2.0/2.0 100%	4 7 7 8		BG		41
50						End of Boring TD = 49.0' Match to Sheet ___	

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman
DRILLER: Mike Corron BORING NO.: BGSB08 SHEET 3 OF 3

Baker
Baker Environmental, Inc.

WELL/BORING NO.: Well # BGGW08

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background
COORDINATES: NORTH: 337942.67, EAST: 254757.91
ELEVATIONS: SURFACE: 90.19

CTO NO.: 0252
TYPE OF WELL: Type II constr.
TOP OF PVC CASING: 92.47

RIG: Mobile B-80					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
BG = .2 ppm	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL				
SIZE (DIAM.)	1 3/8" ID	4-1/4" ID	-NA-	-NA-	8-6-94	0-25.5	overcast, cool breezy (60's)	18.0
LENGTH	2.0'	5.0'	-NA-	--				
TYPE	Std.	HSA						
HAMMER WT.	140#	--	--	--				
FALL	30"	--	--	--				

REMARKS: Borehole sampled to 25.0'. Borehole drilled out to 25.5'. Well set @ 25.0' (bgs)

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
	2"	II		
Well Riser	2"	Sch. 40 PVC, Threaded	+2.5'	15.0' (bgs)
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	15.0' (bgs)	25.0' (bgs)

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1	—	—	—		—	Auger to 1.0' (bgs)		
1.0								
2	S-1	1.5/2.0 75%	4 5 12 13		BG	CLAYEY SILT and SAND, fine grained. Brown to yellow brown, medium dense, damp.	cement grout	
3								89.97
3.0								
4	S-2	1.7/2.0 85%	10 12 13 15		BG	SAND, fine grained w/ little CLAYEY SILT. Brown to light gray w/ trace of oxidation (reddish orange) streaking, medium dense, damp	well riser	87.47
5								
5.0								
6	S-3	1.9/2.0 95%	6 11 13 15		BG	SILTY SAND, fine grained w/ little CLAY. Light gray w/ oxidation (reddish orange streaking), medium stiff to medium dense, damp		85.47
7								
7.0								
8	S-4	1.7/2.0 85%	5 10 13 16		BG	SAND, fine grained w/ little SILT and trace CLAY. Light gray w/ oxidation (reddish orange) streaking, medium dense, damp		
9								
9.0								
10	S-5	1.7/2.0 85%	3 6		BG	SAND, fine grained w/ trace SILT and trace CLAY. Light gray w/ oxidation (reddish orange) streaking,		

Match to Sheet 2

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: Mike Corron
BAKER REP.: John Zimmerman
WELL/BORING NO.: Well # BGGW08 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

WELL/BORING NO.: well # BGGW08

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11		85%	7 12			medium dense, damp (Continued from Sheet 1)	cement grout	81.97
11.0								
12	S-6	1.7/2.0	5 6		BG	SAND, fine grained w/SILT and little CLAY. Light gray w/ heavy oxidation (orangish yellow) streaking, loose to medium dense, damp to moist	Bentonite pellets	
13		85%	6 6					79.47
13.0							well riser	
14	S-7	1.9/2.0	4 5		BG	SAND, fine grained w/trace SILT. Light gray to yellow brown w/heavy oxidation (orangish yellow) staining, medium dense, moist		
15		95%	4 4				well screen	
15.0								
16	S-8	1.5/2.0	2 3		BG	SAND, fine grained w/trace SILT. Yellow brown to light gray w/ heavy oxidation (dark reddish brown, orange brown) streaking, loose, moist		
17		75%	5 5				sand pack (#1)	
17.0								74.47
18	S-9	1.8/2.0	2 8		BG	SAND, fine grained w/trace SILT. Yellow brown w/heavy oxidation (orange brown to orange yellow) staining, medium dense, wet.		
19		90%	13 14					
19.0								
20	S-10	1.7/2.0	2 3	10	BG	SAND, fine grained w/trace SILT. orange brown w/oxidation (dark reddish brown, orange brown) streaking/staining, loose, wet.		
21		85%	5 8					
21.0								
22	S-11	1.9/2.0	2 4		BG	SAND, fine grained w/trace SILT. orange brown w/heavy oxidation (dark reddish brown) staining, loose, wet.		
23		95%	3 4					
23.0								
24	S-12	1.7/2.0	2 3		BG	SAND, fine grained w/trace SILT. orange brown w/ oxidation (reddish to orange brown) staining, loose, wet.		
25		85%	5 8					67.47
25.0								66.97
25.5								
26						End of Boring		
27						TD = 25.5'		
28								
29								
30						Match to Sheet 3		

DRILLING CO.: HARDIN-HUBER, INC. BAKER REP.: John Zimmerman
DRILLER: Mike Corron BORING NO.: well # BGGW08 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

WELL/BORING NO.: Well # BGGW08A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN
SITE/AREA: Background
COORDINATES: NORTH: 337933.42 EAST: 2547588.05
ELEVATIONS: SURFACE: 89.78

CTO NO.: 0252
TYPE OF WELL: Type III constr
TOP OF PVC CASING: 92.27

RIG: # 13

BG = .2 ppm to .3 ppm	SPLIT SPOON	AUGERS	SURFACE CASING	REAMING TOOL
SIZE (DIAM.)	1 3/8" ID	4-1/4" ID	10"	14" wing
LENGTH	2.0'	5.0'	28.5'	–
TYPE	Std.	HSA	Steel	
HAMMER WT.	140#	–	–	–
FALL	30"	–	–	–

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
8-4-94	0-28.5	Sunny, hot (90's) humid / rain	18.0 (JEZ)
8-5-94	28.5-39.0	overcast, warm (70's) humid	
8-6-94	39.0-51.0	overcast, cool (60's) breezy	

REMARKS: Borehole continuously sampled from 29.0'. Borehole drilled out to 51.0'. Well set @ 50.0' (bgs)

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
	2"	III		
Well Riser	2"	Sch. 40 PVC, Threaded	+ 2.5'	35.0' (bgs)
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	35.0' (bgs)	50.0' (bgs)

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1						Auger to 28.5' (bgs) Refer to boring # SB08 for descriptions	cement grout	
2								
3								
4							Steel casing (10")	
5								
6								
7							well riser	
8								
9								
10						Match to Sheet 2		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: Mike Corron
BAKER REP.: John Zimmerman
WELL/BORING NO.: Well #BGGW08A SHEET 1 OF 4

Baker
Baker Environmental, Inc.

WELL/BORING NO.: Well # BGGW08A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet 1		
11							Cement grout	
12								
13							Steel casing (10")	
14								
15								
16								
17								
18							▼ 14.3	
19								
20								
21						Auger to 28.5' (bgs)	Well riser	
22						Refer to boring #		
23						SB08 for descriptions		
24								
25								
26								
27								
28							bottom 10" casing 28.5	
29	29.0							63.8
30		S-15	100%	3/5		.3/.3	Bentonite Slurry	
						Match to Sheet 3		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: Mike Corron
BAKER REP.: John Zimmerman
WELL/BORING NO.: Well # BGGW08A SHEET 2 OF 4

Baker
Baker Environmental, Inc.

WELL/BORING NO.: Well # BGGW08A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments
						Continued from Sheet 2
31	S-15	100%	5 7		.3 / .3	SILTY CLAY w/ little SAND, fine grained and SHELL MATERIAL. Greenish gray & white, medium stiff to loose, moist to wet
31.0						
32	S-16	2.0 / 2.0	2 3		.3 / .3	
33		100%	5 7			
33.0						
34	S-17	2.0 / 2.0	2 3		.3 / .3	
35		100%	4 6			
35.0						
36	S-18	2.0 / 2.0	2 3		.3 / .3	
37		100%	5 8			
37.0						
38	S-19	2.0 / 2.0	2 3		.3 / .3	SAND, fine grained w/ some SILT and trace to little SHELL MATERIAL. Micrite is present (as matrix only). Light gray & white, loose to medium dense, wet.
39		100%	4 7			
39.0						
40	S-20	2.0 / 2.0	3 5		.2 / .2	
41		100%	11 14			
41.0						
42	S-21	2.0 / 2.0	3 5		.2 / .2	
43		100%	7 10			
43.0						
44	S-22	2.0 / 2.0	5 7		.2 / .2	
45		100%	9 8			SILT and some SAND, fine grained w/ SHELL MATERIAL / SHELL FRAGMENTS. Light gray & white & Green, medium dense, wet/moist
45.0						
46	S-23	2.0 / 2.0	7 9		.2 / .2	SAND, fine grained w/ some SILT and little SHELL MATERIAL. Micrite is present (as matrix only). Light gray & white, medium dense, wet.
47		100%	9 12			
47.0						
48	S-24	2.0 / 2.0	6 7		.2 / .2	
49		100%	7 12			
49.0						
50	S-25	100%	4 9		.2 / .2	Match to Sheet

Well Installation Detail: Bentonite Slurry; Top of #1 Qtz Sand; Well Riser; Top of screen; Sand Pack (#1); Well Screen; Bottom of screen

Elevation (ft.): 60.3; 59.3; 57.3; 48.3; 47.3; 42.3

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: Mike Corron

BAKER REP.: John Zimmerman
WELL/BORING NO.: Well # BGGW08A SHEET 3 OF 4

Baker
Baker Environmental, Inc.

WELL/BORING NO.: Well # BGGW08A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0252
SITE/AREA: Background

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
51	S-25	100%	9 16		.2 .2	Continued from Sheet 3 End of Boring TD: 51.0'	SAND PACK	41.3 (*1)
52								
53								
54								
55								
6								
7								
8								
9								
0								
1								
2								
3								
4								
5								
6								
7								
8								
9								
0						Match to Sheet		

DRILLING CO.: HARDIN-HUBER, INC.
DRILLER: Mike Corron
BAKER REP.: John Zimmerman
WELL/BORING NO.: Well # BGGW08A SHEET 4 OF 4

APPENDIX C
WELL DEVELOPMENT FORMS

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc.

PROJECT: (WPNSTA) Yorktown

CTO NO.: 0252 WELL NO.: BGGW01

DATE: 9-7-94

GEOLOGIST/ENGINEER: T. L. Beckman

TIME START	0835
TIME FINISH	1210
INITIAL WATER LEVEL (FT)	9.40
TOTAL WELL DEPTH (TD)	51.9
WELL DIAMETER (INCHES)	2.0"
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8.0"
BOREHOLE VOLUME	1 Volume = 8.4 gal
AMOUNT OF WATER ADDED DURING DRILLING	None
DEVELOPMENT METHOD	Hand Bailing
PUMP TYPE	-NA-
TOTAL TIME (A)	3 hrs. 35 min.
AVERAGE FLOW (GPM)(B)	not calculated
TOTAL ESTIMATED WITHDRAWAL AxB =	42 gallons
HNU/OVA READING	

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	NTU
0855	4.2 gallons	7.62	17.8	490.0	17.5	Light brown/ SILTY	>200
0915	8.4 gallons	7.48	17.1	450.0	17.1	Light brown/ SILTY	>200
0942	12.6 gallons	7.47	17.0	434.0	18.0	Light brown/ little SILTY	60.0
1002	16.8 gallons	7.45	17.0	428.0	17.1	Light brown/ little SILTY	4.3
1022	21 gallons	7.36	17.0	415.0	17.9	Light brown/ little SILTY	36.2
1046	25.2 gallons	7.42	16.9	415.0	18.0	Light brown little SILTY	85.1
1111	29.4 gallons	7.44	17.0	418.0	17.8	Light brown/ little SILTY	138.6
1129	33.6 gallons	7.36	17.1	412.0	18.0	Light brown/ little SILTY	>200
1147	37.8 gallons	7.51	17.9	418.0	18.0	Light brown/ little SILTY	172.2
1210	42 gallons	7.42	17.7	430.0	20.0	Light brown/ little SILTY	>200

OBSERVATIONS/NOTES satisfied criteria for well development (pH, specific conductivity, and temperature).

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc.

PROJECT: (WPNSTA) Yorktown
CTO NO.: 0252 WELL NO.: BGGW03A
DATE: 8-22-94
GEOLOGIST/ENGINEER: D. J. Martin

TIME START	1030
TIME FINISH	1440
INITIAL WATER LEVEL (FT)	21.3
TOTAL WELL DEPTH (TD)	67.0
WELL DIAMETER (INCHES)	2.0"
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8.0"
BOREHOLE VOLUME	1 Volume = 14.5 gal
AMOUNT OF WATER ADDED DURING DRILLING	48 gallons
DEVELOPMENT METHOD	pumping/surging
PUMP TYPE	Redi-Flo2/surge block
TOTAL TIME (A)	4 hrs 10 min
AVERAGE FLOW (GPM)(B)	not calculated
TOTAL ESTIMATED WITHDRAWAL AxB=	158 gallons
HNU/OVA READING	

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	MV
1124	15 gallons	8.82	16.9	394.0	18.5	Light gray/ Very SILTY	-103.3
1157	35 gallons	7.86	17.2	400.0	18.0	Light gray/ SILTY	-49.6
1345	55 gallons	7.87	16.7	380.0	18.5	Light gray/ SILTY	-49.3
1412	75 gallons	7.45	16.8	380.0	18.0	clear/ trace SILT	-25.8
1440	110 gallons	7.46	17.4	390.0	18.0	Clear	-25.6

OBSERVATIONS/NOTES satisfied criteria for well development (pH, specific conductivity, and temperature)

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc

PROJECT: WPNSTA Yorktown

CTO NO.: 252 WELL NO.: BGGW04

DATE: 8-22-94 to 8-24-94

GEOLOGIST/ENGINEER: B. Cummings, M. Davidson

TIME START 1412- 8-22-94 intermittently to 0848 8-24-94

TIME FINISH 1205 8-24-94

INITIAL WATER LEVEL (FT) 18.52' BGS

TOTAL WELL DEPTH (TD) 47.8' BGS

WELL DIAMETER (INCHES) 2"

CALCULATED WELL VOLUME 4.77 g.

BOREHOLE DIAMETER (INCHES) 9"

BOREHOLE VOLUME 22.49 g.

AMOUNT OF WATER ADDED DURING DRILLING 0

DEVELOPMENT METHOD hand bail

PUMP TYPE —

TOTAL TIME (A) 118 ~~245 min~~ 42 ~~537 min (8.9 hrs)~~

AVERAGE FLOW (GPM)(B) —

TOTAL ESTIMATED WITHDRAWAL AxB= 67 gal.

HNU/OVA READING PS=2 1/2 ppm BG, BZ= 1 1/2 ppm

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
8-22 1412	1/2 bh (10g.)	7.71	16.3	350	22	greyish, turbid
1526	1 bh (20g)	7.81	16.9	470	20	lt. grey, turbid
8-23 0918	1 1/2 bh (30g)	7.74	15.5	500	17.5	med. grey, turbid
0944	1 3/4 bh (35)	7.64	15.9	490	17.0	"
1326	2 bb (40g)	7.18	16.5	580	20.5	lt./med grey; turbid
1346	2 1/4 bh (45)	—	—	—	— (1)	"
8-24 0848	2 1/2 bh (50g)	7.85	15.3	540	17.5	lt. grey, turbid
0907	2 3/4 (58 g.)	—	—	—	—	"
1138	3 bh (61g)	7.32	25.0	510	21.0	" (2)
1155	3+ bh (64g)	7.30	25.0	500	23.0	lt. grey; slightly transparent
1205	3+ bh (67g)	7.38	25.0	490	19.1	lt. grey; turbid

OBSERVATIONS/NOTES

Very low flow - took 3 days to remove 3 bh volumes.

(1) Did not take readings for 1/4 volumes; only 1/2. Was bailing well dry at almost 1 full bh volume. Total time to bail ~ 2 hrs but took 3 days to do so for recharge.

(2) Switched sets 10 meters

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc.

PROJECT: (WPNSTA) Yorktown
CTO NO.: 0252 WELL NO.: BGGW04A
DATE: 8-22-94
GEOLOGIST/ENGINEER: D.J. Martin

TIME START: 1840
TIME FINISH: 2004
INITIAL WATER LEVEL (FT): 28.0
TOTAL WELL DEPTH (TD): 79.0
WELL DIAMETER (INCHES): 2.0"
CALCULATED WELL VOLUME: —
BOREHOLE DIAMETER (INCHES): 8.0"
BOREHOLE VOLUME: 1 Volume = 23 gal
AMOUNT OF WATER ADDED DURING DRILLING: 150 gallons
DEVELOPMENT METHOD: Pumping / Surging
PUMP TYPE: Redi-Flo2 / surge block
TOTAL TIME (A): 1 hr. 34 min.
AVERAGE FLOW (GPM)(B): not calculated
TOTAL ESTIMATED WITHDRAWAL AxB=: 228 gallons
HNU/OVA READING:

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	MV
1903	26 gallons	8.06	18.3	375.0	19.0	Clear /	-59.9
1930	52 gallons	8.32	18.0	380.0	20.0	Gray / very SILTY	-49.6
2004	78 gallons	7.87	18.9	385.0	20.0	Light gray / little SILTY	-45.1

OBSERVATIONS/NOTES satisfied criteria for well development (pH, specific conductivity, and temperature).

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc.

PROJECT: (WPNSTA) Yorktown
CTO NO.: 0252 WELL NO.: BGGW05
DATE: 8-24-94
GEOLOGIST/ENGINEER: M. C. Davidson

TIME START	0905
TIME FINISH	1052
INITIAL WATER LEVEL (FT)	23.94
TOTAL WELL DEPTH (TD)	27.67
WELL DIAMETER (INCHES)	2.0"
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8.0"
BOREHOLE VOLUME	1 volume = 4 gal
AMOUNT OF WATER ADDED DURING DRILLING	None
DEVELOPMENT METHOD	Hand Bailing
PUMP TYPE	-NA-
TOTAL TIME (A)	1 hr 42 min
AVERAGE FLOW (GPM)(B)	not calculated
TOTAL ESTIMATED WITHDRAWAL AxB=	26 gallons
HNU/OVA READING	

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	MV
0925	4 gallons	8.74	25.0	60.0	15.0	orange brown/ very SILTY	—
0945	8 gallons	5.76	25.0	68.0	15.0	orange brown/ very SILTY	49.4
1010	13 gallons	6.02	25.0	69.0	15.0	orange brown/ very SILTY	42.9
1028	18 gallons	5.89	25.0	69.0	15.0	orange brown/ very SILTY	50.0
1041	21 gallons	6.02	25.0	69.0	15.5	orange brown/ little SILTY	43.3
1052	26 gallons	6.02	25.0	65.0	16.0	orange brown/ little SILTY	42.2

OBSERVATIONS/NOTES Satisfied criteria for well development (pH, specific conductivity, and temperature).

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: (WPNSTA) Yorktown

CTO NO.: 0252 WELL NO.: BGGW05A

DATE: 8-24-94

GEOLOGIST/ENGINEER: M. C. Davidson

TIME START: 0840

TIME FINISH: 1100

INITIAL WATER LEVEL (FT): 21.41

TOTAL WELL DEPTH (TD): 41.12

WELL DIAMETER (INCHES): 2.0"

CALCULATED WELL VOLUME: —

BOREHOLE DIAMETER (INCHES): 8.0"

BOREHOLE VOLUME: 1 volume = 10 gal

AMOUNT OF WATER ADDED DURING DRILLING: None

DEVELOPMENT METHOD: Hand Bailing

PUMP TYPE: -NA-

TOTAL TIME (A): 2 hrs. 20 min

AVERAGE FLOW (GPM)(B): not calculated

TOTAL ESTIMATED WITHDRAWAL AxB=: 50 gallons

HNU/OVA READING:

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	MV
0850	5 gallons	11.50	25.0	350.0	16.5	yellow brown/ very SILTY	-234.7
0904	10 gallons	9.49	25.0	250.0	16.5	yellow brown/ very SILTY	-158.3
0922	20 gallons	9.02	25.0	260.0	16.0	yellow brown/ very SILTY	-132.1
0954	30 gallons	8.75	25.0	275.0	16.5	yellow brown/ very SILTY	-119.0
1030	40 gallons	8.63	25.0	270.0	16.0	Light yellow brown/ little SILTY	-109.3
1047	45 gallons	8.62	25.0	279.0	16.0	Light yellow brown/ little SILTY	-109.3
1100	50 gallons	8.50	25.0	280.0	16.0	Light yellow brown/ little SILTY	-101.9

OBSERVATIONS/NOTES satisfied criteria for well development (pH, specific conductivity, and temperature).

FIELD WELL DEVELOPMENT RECORD

Baker Environmental, Inc

PROJECT: NPNSTA Yorktown

CTO NO.: 252 WELL NO.: BGGW06

DATE: 8-22-94

GEOLOGIST/ENGINEER: B. Cummings, M. Davidson

TIME START 8-22-94 0936

TIME FINISH 8-23-94 1129

INITIAL WATER LEVEL (FT) 29.37 ' BGS

TOTAL WELL DEPTH (TD) 41' BGS

WELL DIAMETER (INCHES) 2"

CALCULATED WELL VOLUME 1.86 g.

BOREHOLE DIAMETER (INCHES) 8"

BOREHOLE VOLUME 10.71

AMOUNT OF WATER ADDED DURING DRILLING 0

DEVELOPMENT METHOD hand bailing

PUMP TYPE —

TOTAL TIME (A) 142 MIN ~~93 min~~

AVERAGE FLOW (GPM)(B) —

TOTAL ESTIMATED WITHDRAWAL AxB = 55 gal ~~35 gal~~

HNU/OVA READING PS = 2 ppm, BG, BZ = 0 ppm } 22 aug → PS = 0.4 ppm, BG, BG = 0.2 ppm } 23 aug

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
8-22 0936	½ bh (5g.)	5.93	15.1	40	17.0	lt. orange-med brn; turbid
0952	1 bh (10g.)	6.01	15.0	45	17.0	"
1008	1½ bh (15g.)	6.11	14.2	45	16.5	"
1028	2 bh (20)	6.04	14.6	47	17.0	lt. orange-brn; turbid
1042	2½ bh (25)	6.06	14.8	45	17.0	"
1057	3 bh (30)	6.13	14.2	47	17.0	"
1109	3+ bh (35)	6.02	14.7	47	17.0	"
8-23 1040	3½ bh (40)	6.41	15.0	49	17.5	"
1055	4 bh (45)	6.15	13.8	45	16.0	"
1114	4½ bh (50)	6.05	14.4	45	16.5	"
1129	5 bh (55)	6.03	14.3	40	16.5	"

OBSERVATIONS/NOTES

bh = borehole

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: (WPNSTA) Yorktown

CTO NO.: 0252 WELL NO.: BGGW06A

DATE: 8-31-94 & 9-1-94

GEOLOGIST/ENGINEER: M.G. Taube / M.C. Davidson

TIME START: 1946 (8-31-94)

TIME FINISH: 1040 *(9-1-94)

INITIAL WATER LEVEL (FT): 30.64

TOTAL WELL DEPTH (TD): 65.0

WELL DIAMETER (INCHES): 2.0"

CALCULATED WELL VOLUME: —

BOREHOLE DIAMETER (INCHES): 8.0"

BOREHOLE VOLUME: 1 volume = 20 gal

AMOUNT OF WATER ADDED DURING DRILLING: 100 gallons

DEVELOPMENT METHOD: pump

PUMP TYPE: Redi-F102

TOTAL TIME (A): 1 hr. 46 min.

AVERAGE FLOW (GPM)(B): not calculated

TOTAL ESTIMATED WITHDRAWAL AxB=: 52 gallons

HNU/OVA READING:

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	mV	NTU
1952	25 gallons	—	—	—	—		—	—
*0900	38.5 gallons	7.24	17.7	330.0	19.0	Light brown/ SILTY	-18.3	14.05
*1040	52.0 gallons	6.79	19.0	200.0	21.0	Light brown/ SILTY	20.5	14.44

OBSERVATIONS/NOTES Well pumped dry at each recorded interval due to slow recharge. To induce development 100 gallons of potable water was injected into well 8-31-94.

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: (WPNSTA) Yorktown

CTO NO.: 0252 WELL NO.: BGGW07

DATE: 8-29-94

GEOLOGIST/ENGINEER: M. C. Davidson

TIME START: 1450

TIME FINISH: 1716

INITIAL WATER LEVEL (FT): 33.2

TOTAL WELL DEPTH (TD): 42.7

WELL DIAMETER (INCHES): 2.0"

CALCULATED WELL VOLUME: —

BOREHOLE DIAMETER (INCHES): 8.0"

BOREHOLE VOLUME: 1 volume = 8.6 gal.

AMOUNT OF WATER ADDED DURING DRILLING: 40 gallons

DEVELOPMENT METHOD: Hand Bailing

PUMP TYPE: -NA-

TOTAL TIME (A): 2 hrs 26 min

AVERAGE FLOW (GPM)(B): not calculated

TOTAL ESTIMATED WITHDRAWAL AxB=: 86 gallons

HNU/OVA READING:

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	MV
1510	5 gallons	7.69	16.4	500.0	20.0	Light yellow brown/ Very SILTY	-39.3
1523	9 gallons	7.90	16.7	500.0	18.5	Light yellow brown/ Very SILTY	-42.2
1536	14 gallons	7.73	17.0	500.0	19.0	Light yellow brown/ Very SILTY	-40.9
1551	18 gallons	7.68	15.2	500.0	17.5	Light yellow brown/ Very SILTY	-39.3
1606	23 gallons	7.77	15.7	500.0	18.0	Light yellow brown/ Very SILTY	-41.6
1623	28 gallons	7.69	15.2	500.0	18.0	Light yellow brown/ Very SILTY	-38.0
1637	32 gallons	7.71	14.7	500.0	17.5	Light yellow brown/ Very SILTY	-39.8
1651	37 gallons	7.67	14.8	500.0	18.0	V. Light yellow brown/ little SILTY	-37.9
1703	41 gallons	7.40	15.2	500.0	18.0	V. Light yellow brown/ little SILTY	-21.8
1716	46 gallons	7.59	14.3	500.0	18.0	V. Light yellow brown/ little SILTY	-33.0

OBSERVATIONS/NOTES Satisfied criteria for well development (pH, specific conductivity, and temperature).

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc.

PROJECT: (WPNSTA) Yorktown
CTO NO.: 0252 WELL NO.: BGGW07A
DATE: 8-23-94
GEOLOGIST/ENGINEER: D.J. Martin

TIME START: 1130
TIME FINISH: 1806
INITIAL WATER LEVEL (FT): 35.0
TOTAL WELL DEPTH (TD): 42.7
WELL DIAMETER (INCHES): 2.0"
CALCULATED WELL VOLUME: —
BOREHOLE DIAMETER (INCHES): 8.0"
BOREHOLE VOLUME: 1 volume = 15 gal
AMOUNT OF WATER ADDED DURING DRILLING: 40 gallons
DEVELOPMENT METHOD: Hand Bailing
PUMP TYPE: -NA-
TOTAL TIME (A): 6 hrs 36 min
AVERAGE FLOW (GPM)(B): not calculated
TOTAL ESTIMATED WITHDRAWAL AxB=: 95 gallons
HNU/OVA READING:

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	MV
1157	15 gallons	7.98	25.0	525.0	27.0	Light gray / Very SILTY	-55.9
1507	30 gallons	7.82	25.0	500.0	27.0	Light gray / Very SILTY	-50.2
1806	45 gallons	7.72	25.0	500.0	21.0	Light gray / Very SILTY	-41.8

OBSERVATIONS/NOTES Satisfied criteria for well development (pH, specific conductivity, and temperature).

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc

PROJECT: (WPNSTA) Yorktown
CTO NO.: 0252 WELL NO.: BGGW08
DATE: 8-21-94
GEOLOGIST/ENGINEER: T.L. Beckman

TIME START	1515
TIME FINISH	1850
INITIAL WATER LEVEL (FT)	11.02
TOTAL WELL DEPTH (TD)	25.0
WELL DIAMETER (INCHES)	2.0"
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8.0"
BOREHOLE VOLUME	1 volume = 10 gal
AMOUNT OF WATER ADDED DURING DRILLING	None
DEVELOPMENT METHOD	Hand Bailing
PUMP TYPE	-NA-
TOTAL TIME (A)	3 hrs. 35 min.
AVERAGE FLOW (GPM)(B)	not calculated
TOTAL ESTIMATED WITHDRAWAL AxB=	60 gallons
HNU/OVA READING	

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	mV
1528	5 gallons	4.96	11.1	76.0	26.0	orange brown/ SILTY	10.3
1547	10 gallons	5.38	10.9	78.0	21.0	orange brown/ SILTY	67.2
1620	20 gallons	4.96	9.1	65.0	23.0	orange brown/ SILTY	114.8
1700	30 gallons	4.87	7.2	50.0	20.5	orange brown/ little SILTY	91.2
1730	40 gallons	4.69	14.7	43.0	21.0	orange brown/ little SILTY	114.8
1816	50 gallons	4.83	16.7	43.0	19.9	orange brown/ little SILTY	97.8
1850	60 gallons	4.95	14.3	45.0	20.0	orange brown/ little SILTY	94.1

OBSERVATIONS/NOTES Satisfied criteria for well development (pH, specific conductivity, and temperature).

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc.

PROJECT: (WPNSTA) Yorktown
CTO NO.: 0252 WELL NO.: BGGW08A
DATE: 8-21-94 & 8-22-94
GEOLOGIST/ENGINEER: D. J. Martin

TIME START 1345	**DEVELOPMENT DATA**							
TIME FINISH 0834 *(8-22-94)	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY	mV
INITIAL WATER LEVEL (FT) 6.94	1704	25 gallons	7.82	17.5	340.0	22.0	Gray/ very SILTY	69.8
TOTAL WELL DEPTH (TD) 51.0	1753	50 gallons	7.79	20.2	360.0	22.5	Gray/ very SILTY	80.9
WELL DIAMETER (INCHES) 2.0"	*0834	100 gallons	7.55	19.5	362.0	21.0	Clear/ trace SILT	30.3
CALCULATED WELL VOLUME —								
BOREHOLE DIAMETER (INCHES) 8.0"								
BOREHOLE VOLUME 1 volume = 25 gal								
AMOUNT OF WATER ADDED DURING DRILLING 64 gallons								
DEVELOPMENT METHOD pumping / surging								
PUMP TYPE Redi-F102 / surge block								
TOTAL TIME (A) 4 hrs. 10 min.								
AVERAGE FLOW (GPM)(B) not calculated								
TOTAL ESTIMATED WITHDRAWAL AxB = 164 gallons								
HNU/OVA READING								

OBSERVATIONS/NOTES satisfied criteria for well development (pH, specific conductivity, and temperature). Well development was completed over a (2) day period

APPENDIX D
HYDRAULIC CONDUCTIVITY DATA

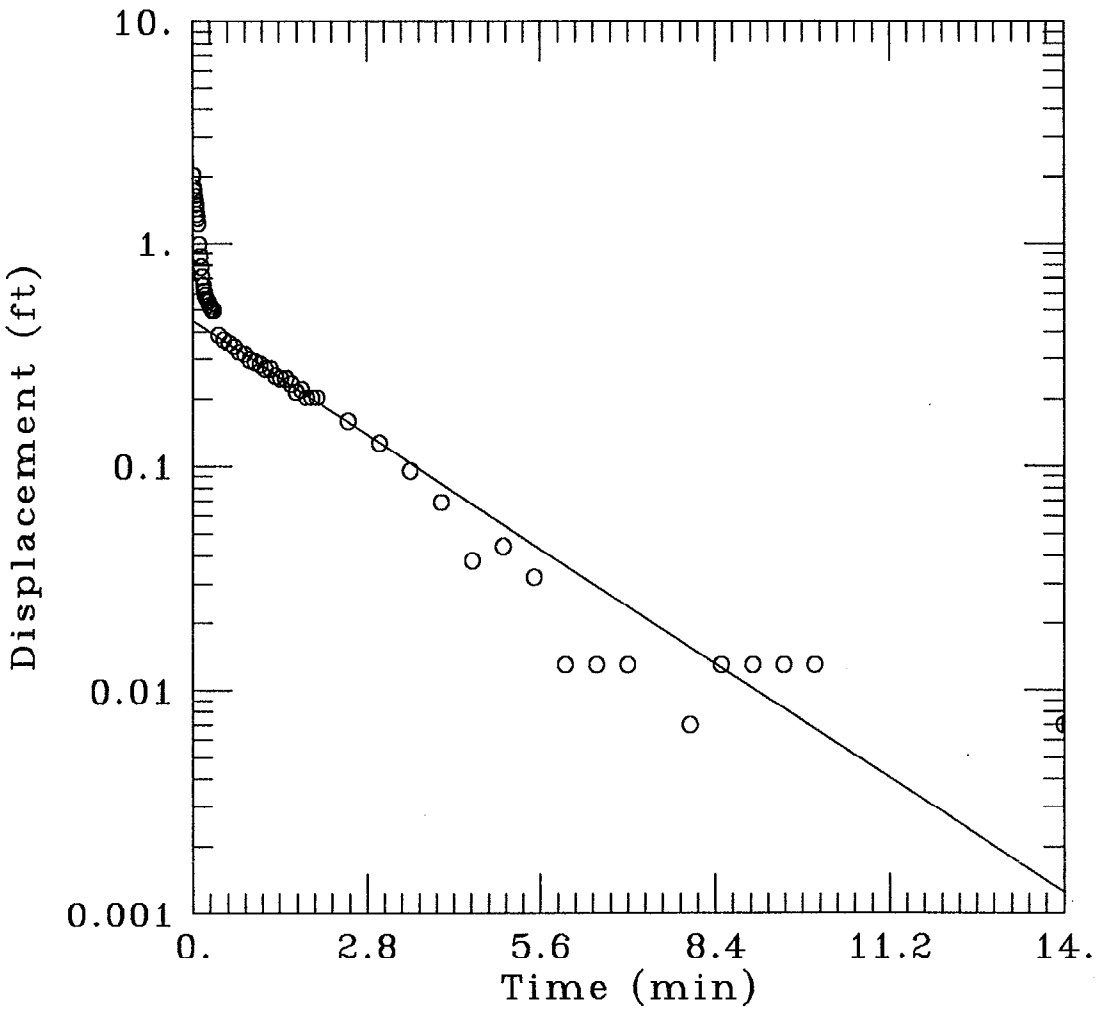
Appendix D Table of Contents

D.1 Shallow (Type II) Monitoring Wells
D.2 Deep (Type III) Monitoring Wells

APPENDIX D.1
SHALLOW (TYPE II) MONITORING WELLS

Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA-Background Locations

BGGW01 Rising Head Test



DATA SET:
b:gw01r.dt
02/20/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
October 9, 1994

ESTIMATED PARAMETERS:
K = 0.0002494 ft/min
y0 = 0.4481 ft

TEST DATA:
H0 = 2.02 ft
rc = 0.083 ft
rw = 0.334 ft
L = 15. ft
b = 9.2 ft
H = 9.2 ft

TEST DESCRIPTION

Data set..... b:gw01r.dt
Data set title..... BGGW01 Rising Head Test
Company..... Baker Environmental, Inc.
Project..... CTO-252
Client..... LANTDIV
Location..... WPNSTA-Background Locations
Test date..... October 9, 1994

Knowns and Constants:
- No. of data points..... 63
- Radius of well casing..... 0.083
- Radius of well..... 0.334
- Aquifer saturated thickness..... 9.2
- Well screen length..... 15
- Static height of water in well..... 9.2
- Log(Re/Rw)..... 2.587
- A, B, C..... 0.000, 0.000, 2.464

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	2.4940E-004	+/-	5.1372E-006
y0 =	4.4808E-001	+/-	4.4521E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
- Number of residuals..... 21
- Number of estimated parameters.... 2
- Degrees of freedom..... 19
- Residual mean..... 4.713E-005
- Residual standard deviation..... 0.005333
- Residual variance..... 2.844E-005

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.4166	0.384	0.37617	0.0078289	1
0.5	0.365	0.36323	0.0017739	1
0.5833	0.353	0.35074	0.0022587	1
0.6666	0.34	0.33869	0.0013144	1
0.75	0.321	0.32703	-0.0060306	1
0.8333	0.315	0.31579	-0.00078989	1
0.9166	0.296	0.30494	-0.0089356	1
1	0.29	0.29444	-0.004442	1
1.0833	0.283	0.28432	-0.0013214	1

1.1666	0.271	0.27455	-0.0035487	1
1.25	0.271	0.2651	0.0058992	1
1.3333	0.252	0.25599	-0.0039888	1
1.4166	0.246	0.24719	-0.0011899	1
1.5	0.246	0.23868	0.0073165	1
1.5833	0.233	0.23048	0.0025205	1
1.6666	0.214	0.22256	-0.0085574	1
1.75	0.22	0.2149	0.0051013	1
1.8333	0.202	0.20751	-0.0055122	1
1.9166	0.202	0.20038	0.0016204	1
2	0.202	0.19348	0.008516	1
2.5	0.158	0.15684	0.0011561	1

==

RESULTS FROM VISUAL CURVE MATCHING

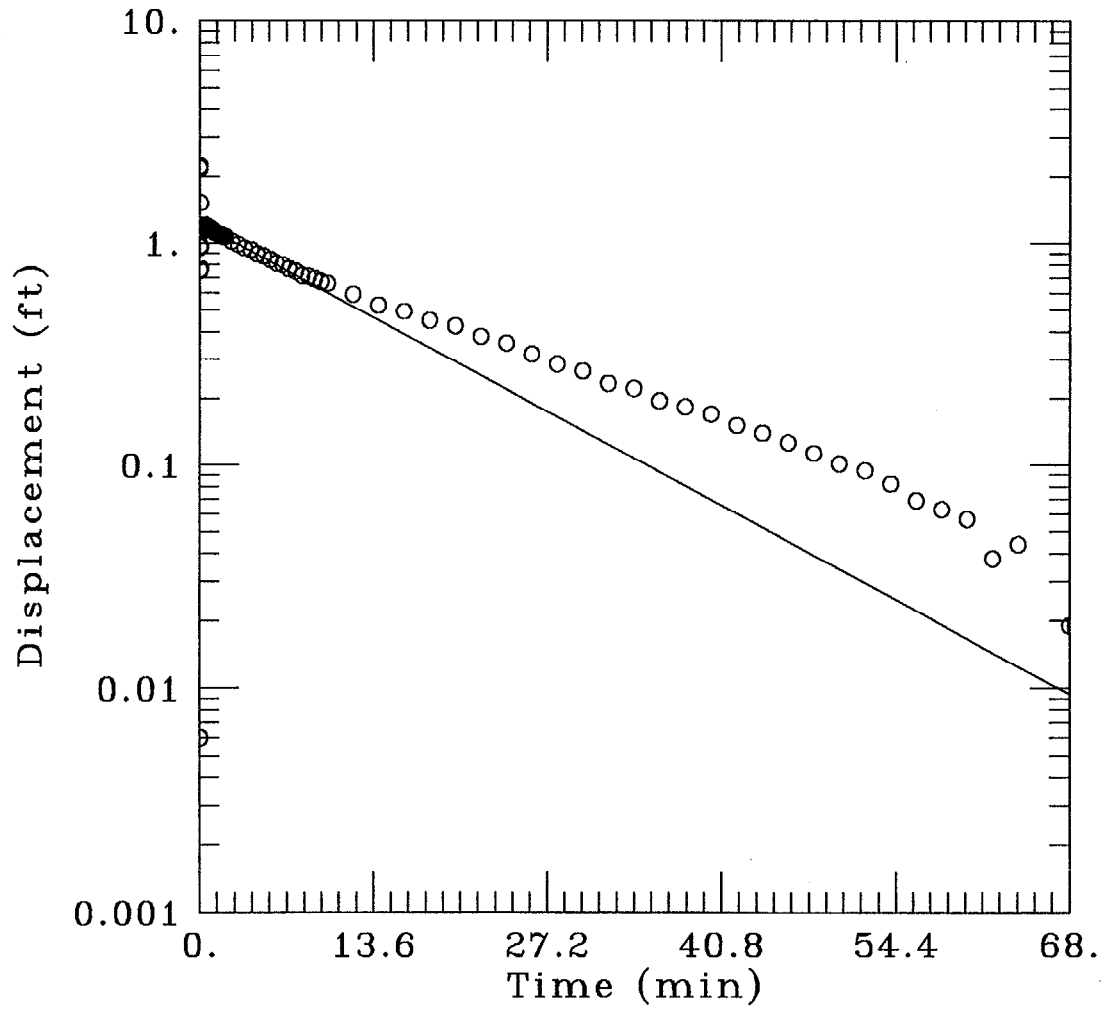
VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	2.4940E-004
y0 =	4.4808E-001

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>

Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA-Background Locations

BGGW04 Falling Head Test



DATA SET:
b:gw04f.dt
02/20/95

AQUIFER TYPE:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATE:
October 10, 1994

ESTIMATED PARAMETERS:
K = 7.5125E-05 ft/min
y0 = 1.222 ft

TEST DATA:
H0 = 1.16 ft
rc = 0.083 ft
rw = 0.334 ft
L = 10. ft
b = 22. ft
H = 22. ft

TEST DESCRIPTION

Data set..... b:gw04f.dt
Data set title..... BGGW04 Falling Head Test
Company..... Baker Environmental, Inc.
Project..... CTO-252
Client..... LANTDIV
Location..... WPNSTA-Background Locations
Test date..... October 10, 1994

Knowns and Constants:
No. of data points..... 90
Radius of well casing..... 0.083
Radius of well..... 0.334
Aquifer saturated thickness..... 22
Well screen length..... 10
Static height of water in well..... 22
Log(Re/Rw)..... 3.045
A, B, C..... 0.000, 0.000, 1.967

==========

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==========

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	7.5125E-005	+/-	1.6111E-006
y0 =	1.2218E+000	+/-	3.4520E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals..... 24
Number of estimated parameters.... 2
Degrees of freedom..... 22
Residual mean..... 1.136E-005
Residual standard deviation..... 0.007788
Residual variance..... 6.066E-005

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.5	1.194	1.1788	0.015204	1
0.5833	1.181	1.1718	0.0092155	1
0.6666	1.162	1.1648	-0.0028146	1
0.75	1.156	1.1579	-0.0018778	1
0.8333	1.162	1.151	0.011009	1
0.9166	1.156	1.1441	0.011856	1
1	1.13	1.1373	-0.0073308	1
1.0833	1.13	1.1306	-0.00056583	1
1.1666	1.111	1.1238	-0.012841	1
1.25	1.105	1.1171	-0.012148	1

1.3333	1.105	1.1105	-0.0055035	1
1.4166	1.099	1.1039	-0.0048981	1
1.5	1.093	1.0973	-0.0043241	1
1.5833	1.086	1.0908	-0.0047971	1
1.6666	1.086	1.0843	0.0016911	1
1.75	1.08	1.0779	0.0021484	1
1.8333	1.067	1.0714	-0.0044404	1
1.9166	1.061	1.0651	-0.0040674	1
2	1.067	1.0587	0.0082753	1
2.5	1.017	1.0215	-0.004483	1
3	0.985	0.98555	-0.00055141	1
3.5	0.947	0.95088	-0.0038837	1
4	0.928	0.91744	0.010565	1
4.5	0.89	0.88516	0.0048362	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

		Estimate
K	=	7.5125E-005
y0	=	1.2218E+000

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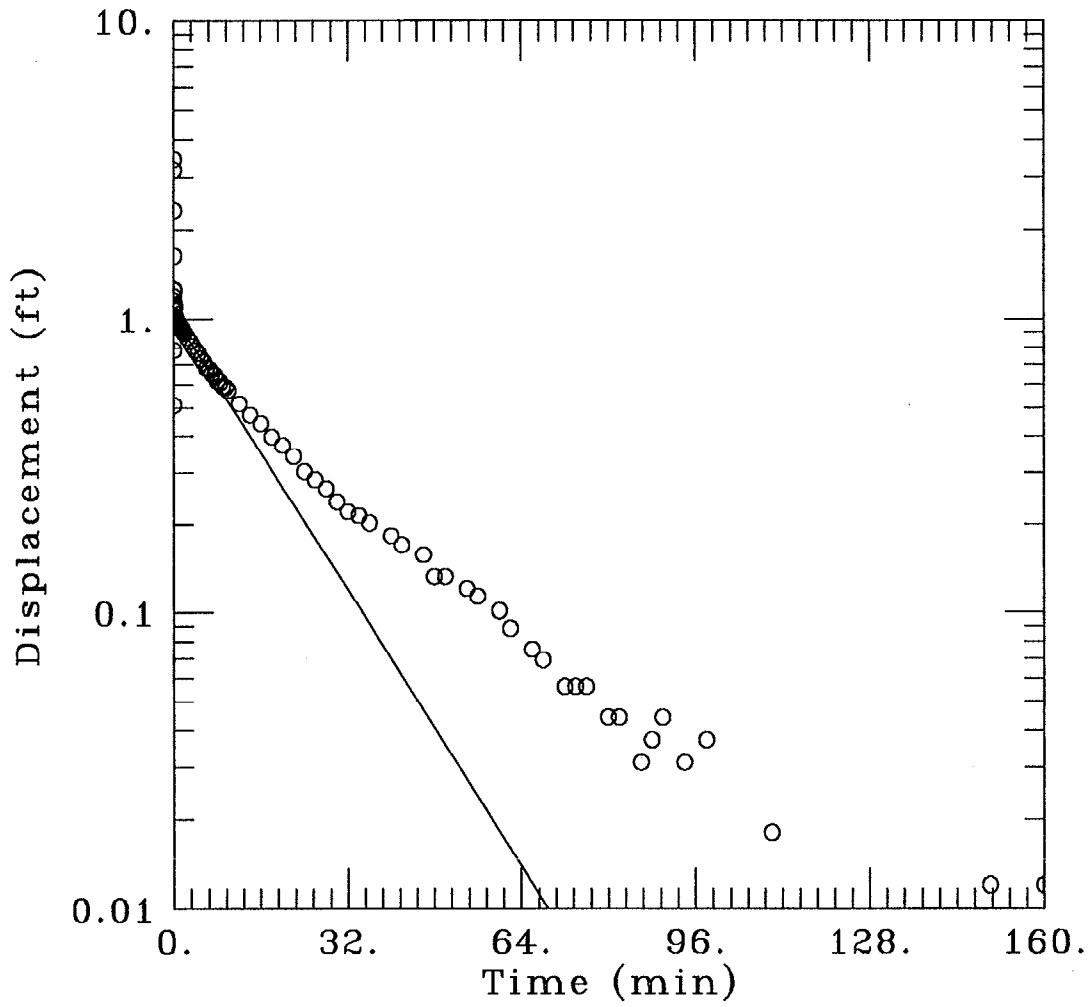
Baker Environmental, Inc	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA-Background Locations

BGGW04 Rising Head Test



DATA SET:
b:gw04r.dt
02/20/95

AQUIFER TYPE:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATE:
October 10, 1994

ESTIMATED PARAMETERS:
K = 7.0429E-05 ft/min
y0 = 1.024 ft

TEST DATA:
H0 = 1.16 ft
rc = 0.083 ft
rw = 0.334 ft
L = 10. ft
b = 22. ft
H = 22. ft

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A Q T E S O L V   R E S U L T S
Version 1.10

02/20/95 16:31:46

TEST DESCRIPTION

Data set........... b:gw04r.dt
Data set title..... BGGW04 Rising Head Test
Company............ Baker Environmental, Inc
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA-Background Locations
Test date.......... October 10, 1994

Knowns and Constants:
No. of data points................. 109
Radius of well casing.............. 0.083
Radius of well..................... 0.334
Aquifer saturated thickness........ 22
Well screen length................. 10
Static height of water in well...... 22
Log(Re/Rw)......................... 3.045
A, B, C............................ 0.000, 0.000, 1.967

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	7.0429E-005	+/-	1.1984E-006
y0 =	1.0244E+000	+/-	2.1649E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 24
Number of estimated parameters.... 2
Degrees of freedom................ 22
Residual mean..................... 5.884E-006
Residual standard deviation....... 0.004923
Residual variance................. 2.423E-005

Model Residuals:

Time	Observed	Calculated	Residual	Weight

0.5	1.004	0.99057	0.013428	1
0.5833	0.991	0.98505	0.0059526	1
0.6666	0.978	0.97955	-0.0015534	1
0.75	0.972	0.97408	-0.0020836	1
0.8333	0.966	0.96865	-0.0026507	1
0.9166	0.966	0.96325	0.0027518	1
1	0.947	0.95787	-0.010869	1
1.0833	0.953	0.95253	0.000473	1
1.1666	0.947	0.94721	-0.0002144	1
1.25	0.94	0.94193	-0.0019251	1
1.3333	0.94	0.93667	0.0033284	1
1.4166	0.928	0.93145	-0.0034475	1
1.5	0.928	0.92625	0.0017538	1
1.5833	0.915	0.92108	-0.0060802	1
1.6666	0.921	0.91594	0.005057	1
1.75	0.909	0.91083	-0.0018283	1
1.8333	0.903	0.90575	-0.0027483	1
1.9166	0.896	0.9007	-0.0046966	1
2	0.896	0.89567	0.00033293	1
2.5	0.865	0.8661	-0.0010975	1
3	0.839	0.8375	0.0014959	1
3.5	0.808	0.80985	-0.0018546	1
4	0.783	0.78312	-0.00011805	1
4.5	0.764	0.75726	0.0067359	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	7.0429E-005
y0 =	1.0244E+000

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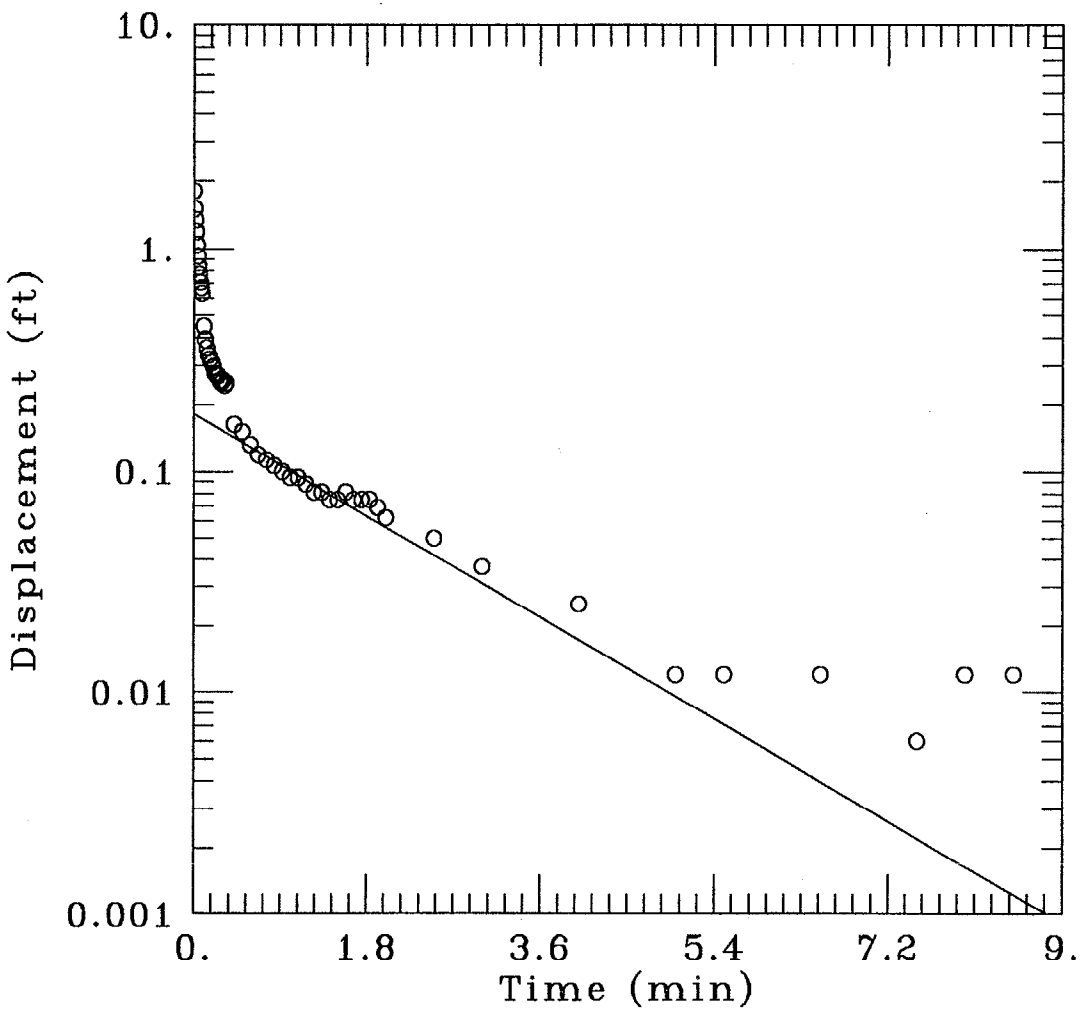
Baker Envirinmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW07 Rising Head Test



DATA SET:
b:gw07r.dt
02/02/95

AQUIFER TYPE:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATE:
October 9, 1994

ESTIMATED PARAMETERS:
K = 0.0005082 ft/min
y0 = 0.1817 ft

TEST DATA:
H0 = 1.8 ft
rc = 0.083 ft
rw = 0.334 ft
L = 10. ft
b = 9.07 ft
H = 9.07 ft

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A Q T E S O L V   R E S U L T S
Version 1.10

02/02/95 10:43:06

TEST DESCRIPTION

```
Data set........... b:gw07r.dt
Data set title..... BGGW07 Rising Head Test
Company............ Baker Envirinmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 9, 1994

Knowns and Constants:
   No. of data points................. 58
   Radius of well casing.............. 0.083
   Radius of well..................... 0.334
   Aquifer saturated thickness........ 9.07
   Well screen length................. 10
   Static height of water in well..... 9.07
   Log(Re/Rw)......................... 2.507
   A, B, C............................  0.000,  0.000,  1.967
```

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	5.0822E-004	+/-	4.3193E-005
y0 =	1.8167E-001	+/-	9.2721E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

```
Weighted Residual Statistics:
   Number of residuals.............. 16
   Number of estimated parameters.... 2
   Degrees of freedom............... 14
   Residual mean.................... 0.0001358
   Residual standard deviation....... 0.007089
   Residual variance................ 5.025E-005
```

Model Residuals:

Time	Observed	Calculated	Residual	Weight

0.5	0.151	0.13536	0.015643	1
0.5833	0.132	0.12888	0.0031188	1
0.6666	0.119	0.12272	-0.0037155	1
0.75	0.113	0.11684	-0.0038378	1
0.8333	0.106	0.11125	-0.0052482	1
0.9166	0.1	0.10593	-0.005926	1
1	0.094	0.10085	-0.0068524	1
1.0833	0.094	0.096028	-0.0020276	1
1.1666	0.088	0.091434	-0.0034335	1
1.25	0.081	0.087054	-0.0060541	1
1.3333	0.081	0.082889	-0.0018894	1
1.4166	0.075	0.078924	-0.0039239	1
1.5	0.075	0.075144	-0.0001437	1
1.5833	0.081	0.071549	0.0094512	1
1.6666	0.075	0.068126	0.0068742	1
1.75	0.075	0.064863	0.010137	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	5.0822E-004
y0 =	1.8167E-001

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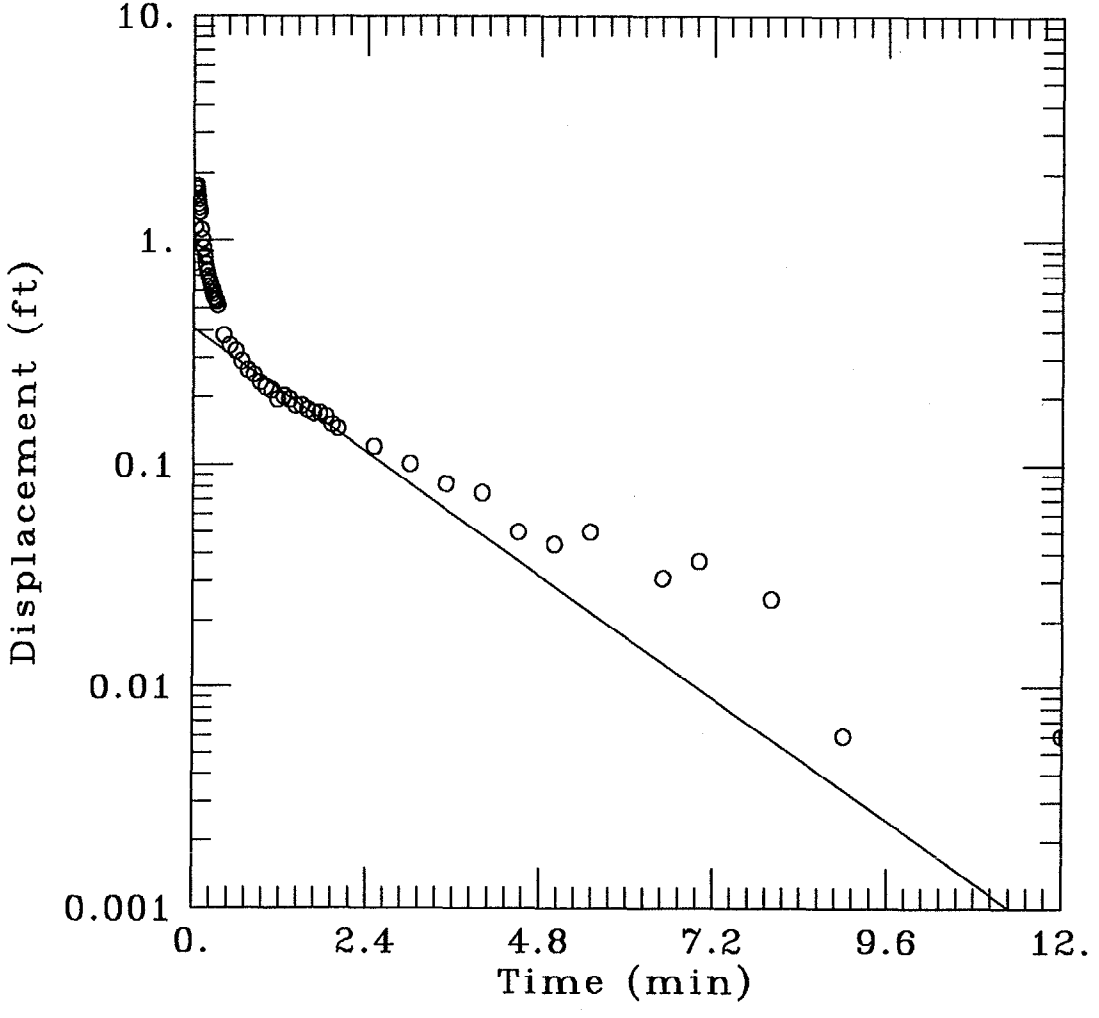
Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW08 Rising Head Test



DATA SET:
b:gw08r.dt
02/03/95

AQUIFER TYPE:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATE:
October 11, 1994

ESTIMATED PARAMETERS:
K = 0.0004418 ft/min
y0 = 0.4067 ft

TEST DATA:
H0 = 1.75 ft
rc = 0.083 ft
rw = 0.334 ft
L = 10. ft
b = 7.79 ft
H = 7.79 ft

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A Q T E S O L V   R E S U L T S

Version 1.10

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TEST DESCRIPTION

Data set........... b:gw08r.dt
Data set title..... BGGW08 Rising Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 11, 1994

Knowns and Constants:
No. of data points................. 60
Radius of well casing.............. 0.083
Radius of well..................... 0.334
Aquifer saturated thickness......... 7.79
Well screen length................. 10
Static height of water in well...... 7.79
Log(Re/Rw)......................... 2.41
A, B, C............................ 0.000, 0.000, 1.967

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	4.4176E-004	+/-	2.5456E-005
y0 =	4.0671E-001	+/-	1.4568E-002

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals.............. 21
Number of estimated parameters..

.. 2
Degrees of freedom................ 19
Residual mean..................... 0.0005559
Residual standard deviation....... 0.01426
Residual variance................. 0.0002034

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.5	0.341	0.31169	0.02931	1
0.5833	0.322	0.29817	0.023826	1
0.6666	0.29	0.28524	0.0047557	1
0.75	0.265	0.27286	-0.0078605	1
0.8333	0.252	0.26103	-0.0090282	1
0.9166	0.233	0.24971	-0.016709	1
1	0.221	0.23887	-0.017868	1
1.0833	0.214	0.22851	-0.01451	1
1.1666	0.195	0.2186	-0.023601	1
1.25	0.202	0.20911	-0.0071101	1
1.3333	0.195	0.20004	-0.0050422	1
1.4166	0.183	0.19137	-0.0083676	1
1.5	0.183	0.18306	-5.9429E-005	1
1.5833	0.176	0.17512	0.00087874	1
1.6666	0.17	0.16753	0.0024727	1
1.75	0.17	0.16025	0.0097459	1
1.8333	0.164	0.1533	0.010695	1
1.9166	0.151	0.14666	0.004343	1
2	0.145	0.14029	0.0047101	1
2.5	0.12	0.10751	0.012487	1
3	0.101	0.082394	0.018606	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

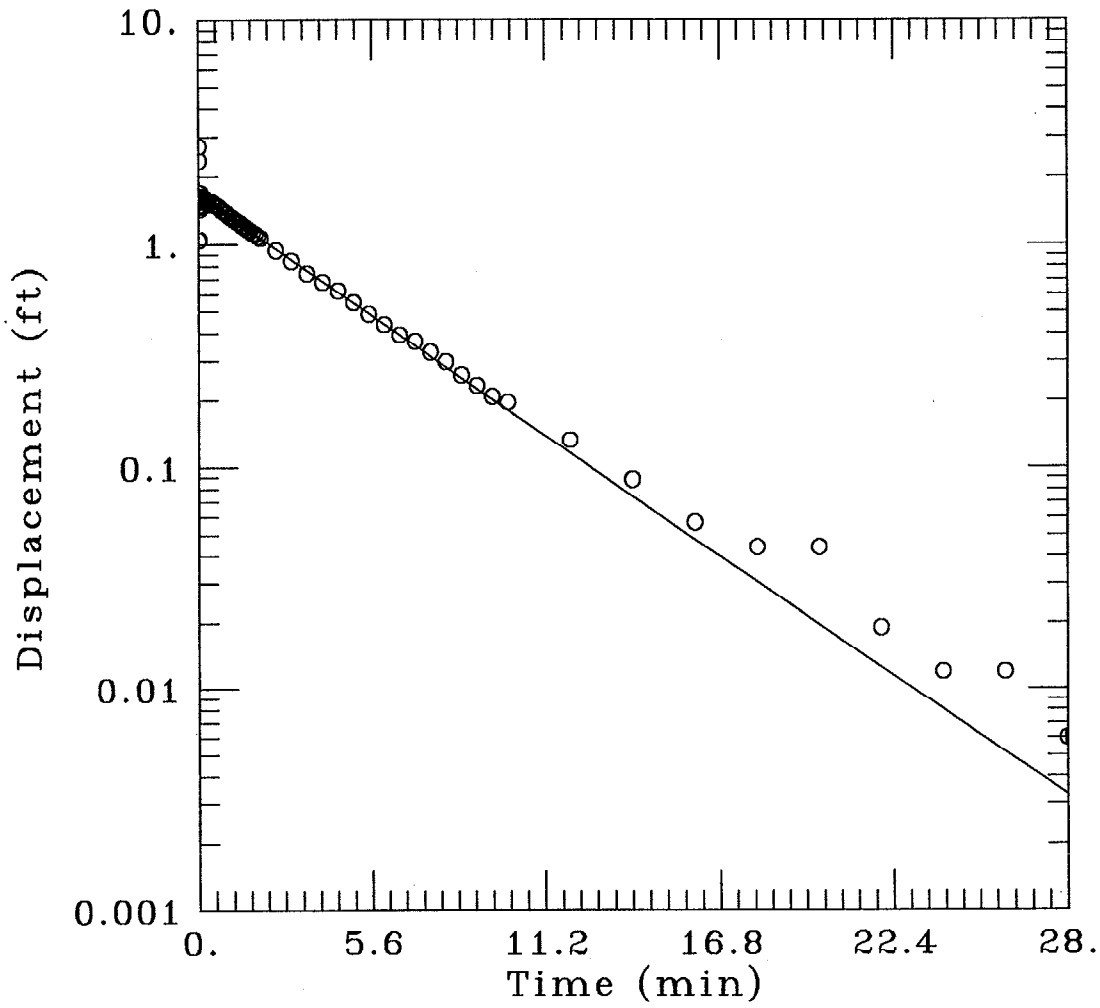
	Estimate
K =	4.4176E-004
y0 =	4.0671E-001

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

APPENDIX D.2
DEEP (TYPE III) MONITORING WELLS

Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA-Background Locations

BGGW04A Falling Head Test



DATA SET:
b:gw04af.dt
02/20/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
October 9, 1994

ESTIMATED PARAMETERS:
K = 0.0001846 ft/min
y0 = 1.659 ft

TEST DATA:
H0 = 1.04 ft
rc = 0.083 ft
rw = 0.334 ft
L = 15. ft
b = 20. ft
H = 48.26 ft

```
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                         A Q T E S O L V   R E S U L T S
                                  Version 1.10

02/20/95                                                                15:03:33

=================================================================================
                                TEST DESCRIPTION

Data set........... b:gw04af.dt
Data set title..... BGGW04A Falling Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA-Background Locations
Test date.......... October 9, 1994

Knowns and Constants:
   No. of data points................. 70
   Radius of well casing.............. 0.083
   Radius of well..................... 0.334
   Aquifer saturated thickness........ 20
   Well screen length................. 15
   Static height of water in well..... 48.26
   Log(Re/Rw)......................... 3.623
   A, B, C............................  0.000,  0.000,  2.464

=================================================================================
                               ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

=================================================================================
                     RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

          Estimate          Std. Error
   K  =   1.8461E-004 +/-   1.2227E-006
   y0 =   1.6592E+000 +/-   3.2913E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
   Number of residuals............... 49
   Number of estimated parameters.... 2
   Degrees of freedom................ 47
   Residual mean..................... 0.0004292
   Residual standard deviation....... 0.01347
   Residual variance................. 0.0001814

Model Residuals:

     Time          Observed      Calculated     Residual       Weight
 ------------- ------------- ------------- ------------- -------------
```

0.1	1.63	1.6228	0.0071973	1
0.1166	1.624	1.6168	0.0071647	1
0.1333	1.624	1.6109	0.013146	1
0.15	1.617	1.6049	0.012105	1
0.1666	1.605	1.599	0.0060064	1
0.1833	1.598	1.5931	0.0049216	1
0.2	1.586	1.5872	-0.0011851	1
0.2166	1.579	1.5813	-0.0023488	1
0.2333	1.567	1.5755	-0.0084989	1
0.25	1.56	1.5697	-0.0096706	1
0.2666	1.554	1.5639	-0.0098986	1
0.2833	1.541	1.5581	-0.017113	1
0.3	1.535	1.5523	-0.017349	1
0.3166	1.516	1.5466	-0.030641	1
0.3333	1.503	1.5409	-0.03792	1
0.4166	1.541	1.5127	0.028305	1
0.5	1.51	1.485	0.025045	1
0.5833	1.478	1.4578	0.020245	1
0.6666	1.453	1.4311	0.021946	1
0.75	1.415	1.4048	0.010189	1
0.8333	1.39	1.3791	0.01092	1
0.9166	1.364	1.3538	0.01018	1
1	1.327	1.329	-0.0019927	1
1.0833	1.308	1.3047	0.00335	1
1.1666	1.282	1.2808	0.0012468	1
1.25	1.257	1.2573	-0.00026628	1
1.3333	1.238	1.2342	0.0037626	1
1.4166	1.207	1.2116	-0.0046304	1
1.5	1.188	1.1894	-0.001411	1
1.5833	1.162	1.1676	-0.005625	1
1.6666	1.143	1.1462	-0.0032381	1
1.75	1.118	1.1252	-0.0072179	1
1.8333	1.105	1.1046	0.00039226	1
1.9166	1.08	1.0844	-0.0043751	1
2	1.061	1.0645	-0.0034894	1
2.5	0.935	0.95269	-0.017688	1
3	0.84	0.85263	-0.012629	1
3.5	0.739	0.76308	-0.024079	1
4	0.676	0.68293	-0.0069341	1
4.5	0.619	0.61121	0.0077932	1
5	0.549	0.54701	0.0019871	1
5.5	0.486	0.48956	-0.0035611	1
6	0.436	0.43814	-0.0021434	1
6.5	0.391	0.39213	-0.001126	1
7	0.366	0.35094	0.015058	1
7.5	0.328	0.31408	0.013917	1
8	0.297	0.2811	0.015905	1
8.5	0.259	0.25157	0.0074275	1
9	0.233	0.22515	0.0078497	1

==========

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	1.8461E-004
y0 =	1.6592E+000

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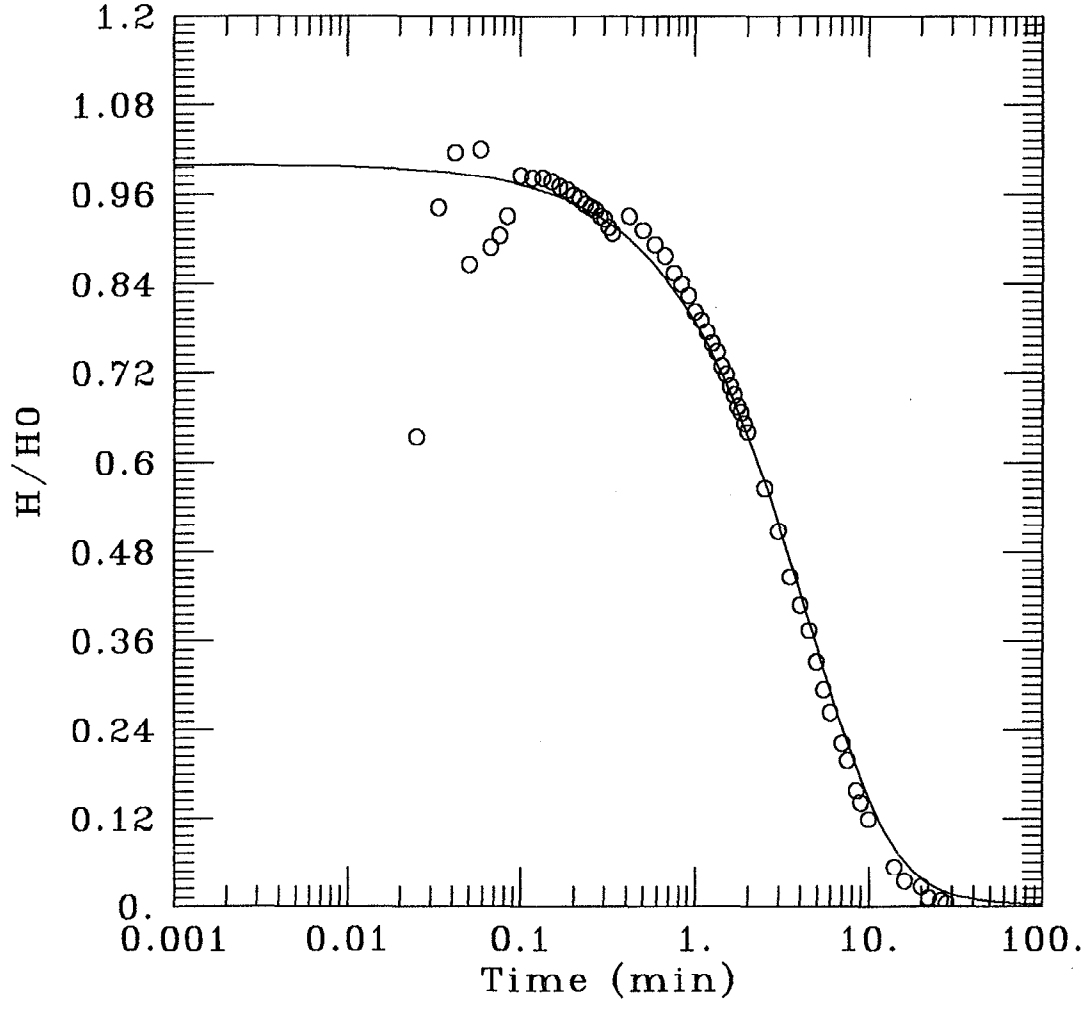
Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA-Background Locations

BGGW04A Falling Head Test



DATA SET:
gw04af.dt
02/20/95

AQUIFER TYPE:
Confined

SOLUTION METHOD:
Cooper et al.

TEST DATE:
October 9, 1994

ESTIMATED PARAMETERS:
T = 0.006376 ft^2/min
S = 1.E-08

TEST DATA:
H0 = 1.656 ft
rc = 0.083 ft
rw = 0.334 ft

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Version 1.10

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TEST DESCRIPTION

Data set........... gw04af.dt
Data set title..... BGGW04A Falling Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA-Background Locations
Test date.......... October 9, 1994

Knowns and Constants:
No. of data points................. 70
Pumping rate....................... 1
Radius (distance) to obs. well...... 0.083

==

ANALYTICAL METHOD

Cooper et al. (Confined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
T =	6.6100E-003	+/-	1.0460E-003
S =	1.0000E-008	+/-	2.5148E-008

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 49
Number of estimated parameters.... 2
Degrees of freedom................ 47
Residual mean..................... 0.01437
Residual standard deviation....... 0.03008
Residual variance................. 0.000905

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.1	1.63	1.6084	0.021569	1
0.1166	1.624	1.6013	0.022698	1
0.1333	1.624	1.5942	0.029765	1
0.15	1.617	1.5873	0.02974	1
0.1666	1.605	1.5804	0.024588	1

0.1833	1.598	1.5736	0.0244	1
0.2	1.586	1.5669	0.01914	1
0.2166	1.579	1.5602	0.018771	1
0.2333	1.567	1.5536	0.013379	1
0.25	1.56	1.5471	0.012926	1
0.2666	1.554	1.5406	0.013377	1
0.2833	1.541	1.5342	0.006811	1
0.3	1.535	1.5278	0.007192	1
0.3166	1.516	1.5215	-0.005516	1
0.3333	1.503	1.5152	-0.012235	1
0.4166	1.541	1.4846	0.056407	1
0.5	1.51	1.455	0.055046	1
0.5833	1.478	1.4263	0.051721	1
0.6666	1.453	1.3985	0.054549	1
0.75	1.415	1.3714	0.043608	1
0.8333	1.39	1.3451	0.044937	1
0.9166	1.364	1.3195	0.044547	1
1	1.327	1.2945	0.032485	1
1.0833	1.308	1.2701	0.037854	1
1.1666	1.282	1.2464	0.035584	1
1.25	1.257	1.2233	0.033742	1
1.3333	1.238	1.2006	0.037359	1
1.4166	1.207	1.1786	0.028438	1
1.5	1.188	1.157	0.031035	1
1.5833	1.162	1.1359	0.026115	1
1.6666	1.143	1.1153	0.027721	1
1.75	1.118	1.0951	0.022892	1
1.8333	1.105	1.0754	0.029594	1
1.9166	1.08	1.0561	0.023866	1
2	1.061	1.0373	0.023742	1
2.5	0.935	0.93222	0.0027801	1
3	0.84	0.83957	0.00042713	1
3.5	0.739	0.75755	-0.018546	1
4	0.676	0.68471	-0.008709	1
4.5	0.619	0.61988	-0.00087534	1
5	0.549	0.56205	-0.013047	1
5.5	0.486	0.51037	-0.024375	1
6	0.436	0.46413	-0.028128	1
6.5	0.391	0.42268	-0.031676	1
7	0.366	0.38547	-0.019471	1
7.5	0.328	0.35203	-0.024034	1
8	0.297	0.32195	-0.024947	1
8.5	0.259	0.29484	-0.035842	1
9	0.233	0.2704	-0.037397	1

==

RESULTS FROM VISUAL CURVE MATCHING

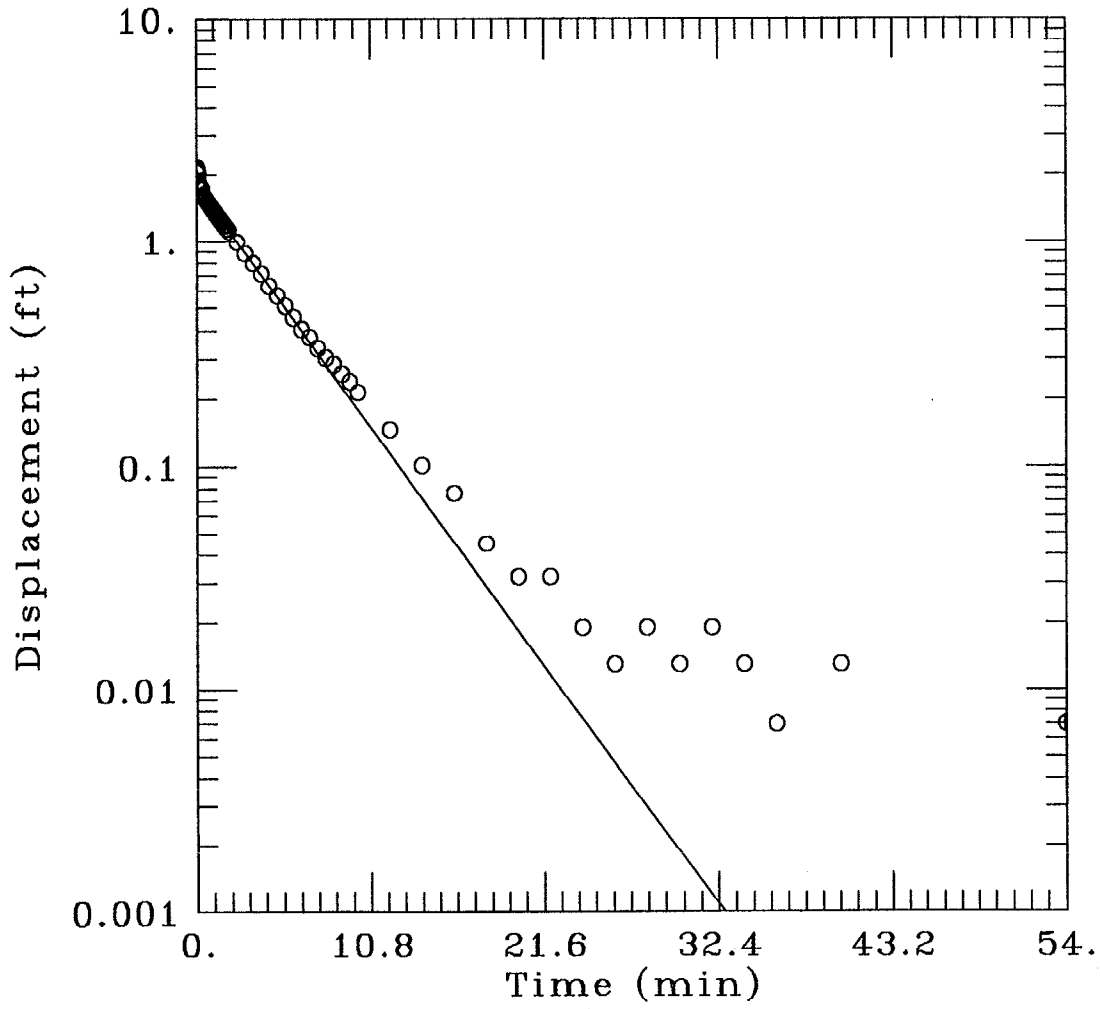
VISUAL MATCH PARAMETER ESTIMATES

		Estimate
T	=	6.3764E-003
S	=	1.0000E-008

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA-Background Locations

BGGW04A Rising Head Test



DATA SET:
b:gw04ar.dt
02/22/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
October 11, 1994

ESTIMATED PARAMETERS:
K = 0.0001899 ft/min
y0 = 1.765 ft

TEST DATA:
H0 = 2.07 ft
rc = 0.083 ft
rw = 0.334 ft
L = 15. ft
b = 20. ft
H = 48.26 ft

```
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

                        A Q T E S O L V    R E S U L T S
                                 Version  1.10

02/22/95                                                                08:10:22

================================================================================
                                TEST DESCRIPTION

Data set........... b:gw04ar.dt
Data set title..... BGGW04A Rising Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA-Background Locations
Test date.......... October 11, 1994

Knowns and Constants:
   No. of data points................. 76
   Radius of well casing.............. 0.083
   Radius of well..................... 0.334
   Aquifer saturated thickness........ 20
   Well screen length................. 15
   Static height of water in well..... 48.26
   Log(Re/Rw)......................... 3.623
   A, B, C............................  0.000,  0.000,  2.464

================================================================================
                               ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

================================================================================
                    RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

            Estimate            Std. Error
   K  =    1.8989E-004 +/-    2.5812E-006
   y0 =    1.7647E+000 +/-    9.3772E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
   Number of residuals............... 38
   Number of estimated parameters.... 2
   Degrees of freedom................ 36
   Residual mean..................... 0.001903
   Residual standard deviation....... 0.02533
   Residual variance........
```

.... 0.0006416

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.3	1.713	1.6479	0.065115	1
0.3166	1.725	1.6417	0.083347	1
0.3333	1.7	1.6354	0.064594	1
0.4166	1.593	1.6046	-0.011602	1
0.5	1.555	1.5743	-0.019343	1
0.5833	1.529	1.5447	-0.015689	1
0.6666	1.498	1.5156	-0.017594	1
0.75	1.473	1.487	-0.014012	1
0.8333	1.441	1.459	-0.018003	1
0.9166	1.416	1.4315	-0.015522	1
1	1.384	1.4045	-0.020526	1
1.0833	1.365	1.3781	-0.013071	1
1.1666	1.333	1.3521	-0.019114	1
1.25	1.308	1.3266	-0.018616	1
1.3333	1.283	1.3016	-0.018628	1
1.4166	1.264	1.2771	-0.013111	1
1.5	1.239	1.253	-0.014027	1
1.5833	1.22	1.2294	-0.0094258	1
1.6666	1.194	1.2063	-0.012269	1
1.75	1.176	1.1835	-0.0075208	1
1.8333	1.15	1.1612	-0.011228	1
1.9166	1.138	1.1394	-0.0013559	1
2	1.112	1.1179	-0.0058698	1
2.5	0.992	0.99729	-0.005291	1
3	0.879	0.88972	-0.010718	1
3.5	0.796	0.79375	0.002251	1
4	0.714	0.70813	0.0058686	1
4.5	0.626	0.63175	-0.005749	1
5	0.569	0.56361	0.0053945	1
5.5	0.512	0.50281	0.0091877	1
6	0.455	0.44858	0.0064235	1
6.5	0.405	0.40019	0.0048091	1
7	0.373	0.35702	0.015976	1
7.5	0.335	0.31851	0.016486	1
8	0.304	0.28416	0.019842	1
8.5	0.285	0.25351	0.031493	1
9	0.259	0.22616	0.032838	1
54	0.007	7.8195E-006	0.0069922	1

==

RESULTS FROM VISUAL CURVE MATCHING

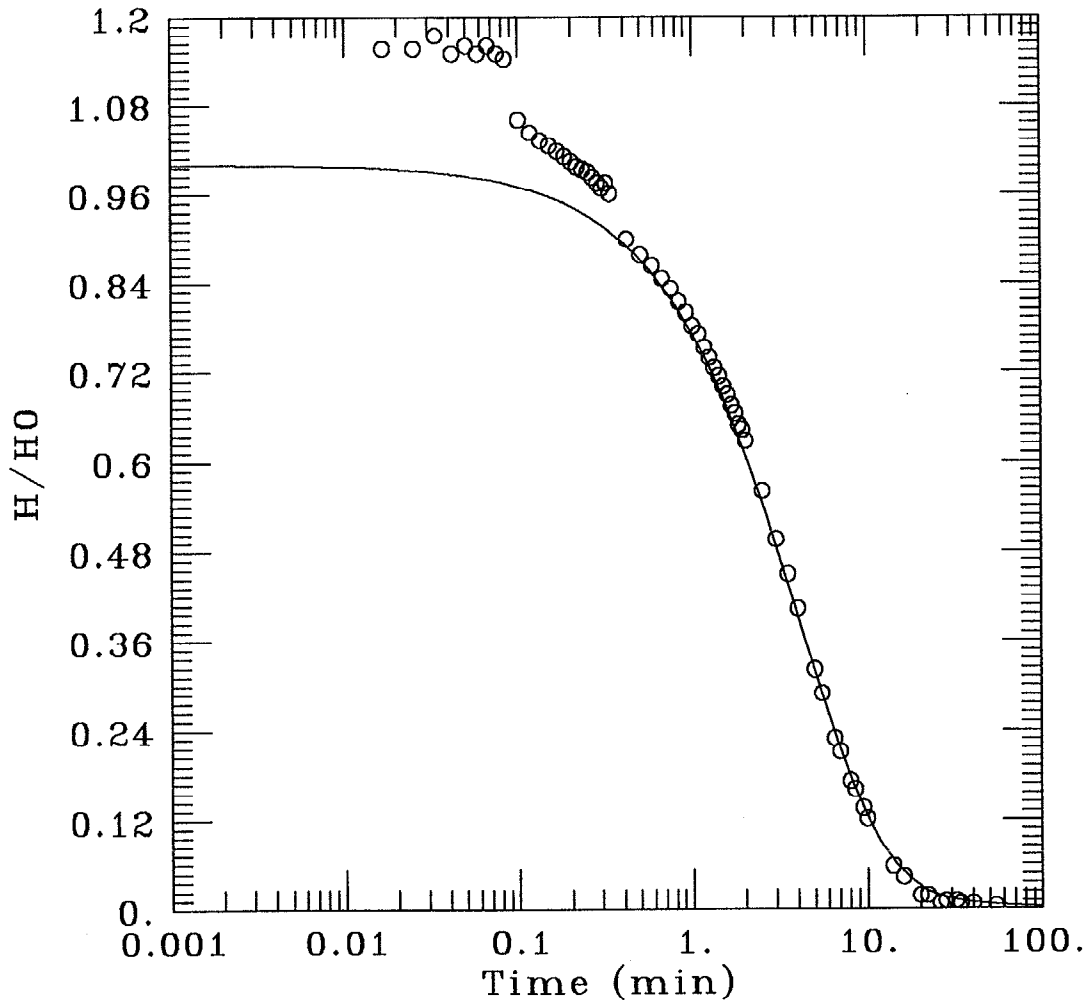
VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	1.8989E-004
y0 =	1.7647E+000

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA-Background Locations

BGGW04A Rising Head Test



DATA SET:
b:gw04ar.dt
02/22/95

AQUIFER TYPE:
Confined

SOLUTION METHOD:
Cooper et al.

TEST DATE:
October 11, 1994

ESTIMATED PARAMETERS:
T = 0.007024 ft^2/min
S = 1.E-08

TEST DATA:
H0 = 1.77 ft
rc = 0.083 ft
rw = 0.334 ft

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S
Version 1.10

02/22/95 08:34:45

==

TEST DESCRIPTION

Data set........... b:gw04ar.dt
Data set title..... BGGW04A Rising Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA-Background Locations
Test date.......... October 11, 1994

Knowns and Constants:
No. of data points................. 76
Pumping rate....................... 1
Radius (distance) to obs. well...... 0.083

==

ANALYTICAL METHOD

Cooper et al. (Confined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
T =	6.7757E-003	+/-	9.9876E-004
S =	1.0000E-008	+/-	2.3637E-008

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 38
Number of estimated parameters.... 2
Degrees of freedom................ 36
Residual mean..................... 0.007131
Residual standard deviation....... 0.03059
Residual variance................. 0.0009359

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.3	1.713	1.6299	0.083071	1
0.3166	1.725	1.6231	0.10194	1
0.3333	1.7	1.6162	0.083795	1
0.4166	1.593	1.5828	0.010233	1
0.5	1.555	1.5504	0.0045601	1

0.5833	1.529	1.5192	0.0098226	1
0.6666	1.498	1.4889	0.0091426	1
0.75	1.473	1.4594	0.013614	1
0.8333	1.441	1.4307	0.010276	1
0.9166	1.416	1.4029	0.013096	1
1	1.384	1.3757	0.0082639	1
1.0833	1.365	1.3492	0.015755	1
1.1666	1.333	1.3235	0.0095105	1
1.25	1.308	1.2983	0.0096908	1
1.3333	1.283	1.2738	0.009244	1
1.4166	1.264	1.2498	0.014201	1
1.5	1.239	1.2264	0.012626	1
1.5833	1.22	1.2035	0.016478	1
1.6666	1.194	1.1812	0.012807	1
1.75	1.176	1.1593	0.016655	1
1.8333	1.15	1.138	0.011985	1
1.9166	1.138	1.1172	0.02084	1
2	1.112	1.0967	0.015258	1
2.5	0.992	0.9833	0.0087026	1
3	0.879	0.8835	-0.0044959	1
3.5	0.796	0.79536	0.0006391	1
4	0.714	0.7173	-0.0032961	1
4.5	0.626	0.64798	-0.021981	1
5	0.569	0.58631	-0.017306	1
5.5	0.512	0.53133	-0.019327	1
6	0.455	0.48224	-0.027238	1
6.5	0.405	0.43834	-0.033339	1
7	0.373	0.39903	-0.026027	1
7.5	0.335	0.36378	-0.028776	1
8	0.304	0.33213	-0.028126	1
8.5	0.285	0.30367	-0.018674	1
9	0.259	0.27807	-0.019067	1
54	0.007			

0.010575   -0.003575   1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

		Estimate
T	=	7.0239E-003
S	=	1.0000E-008

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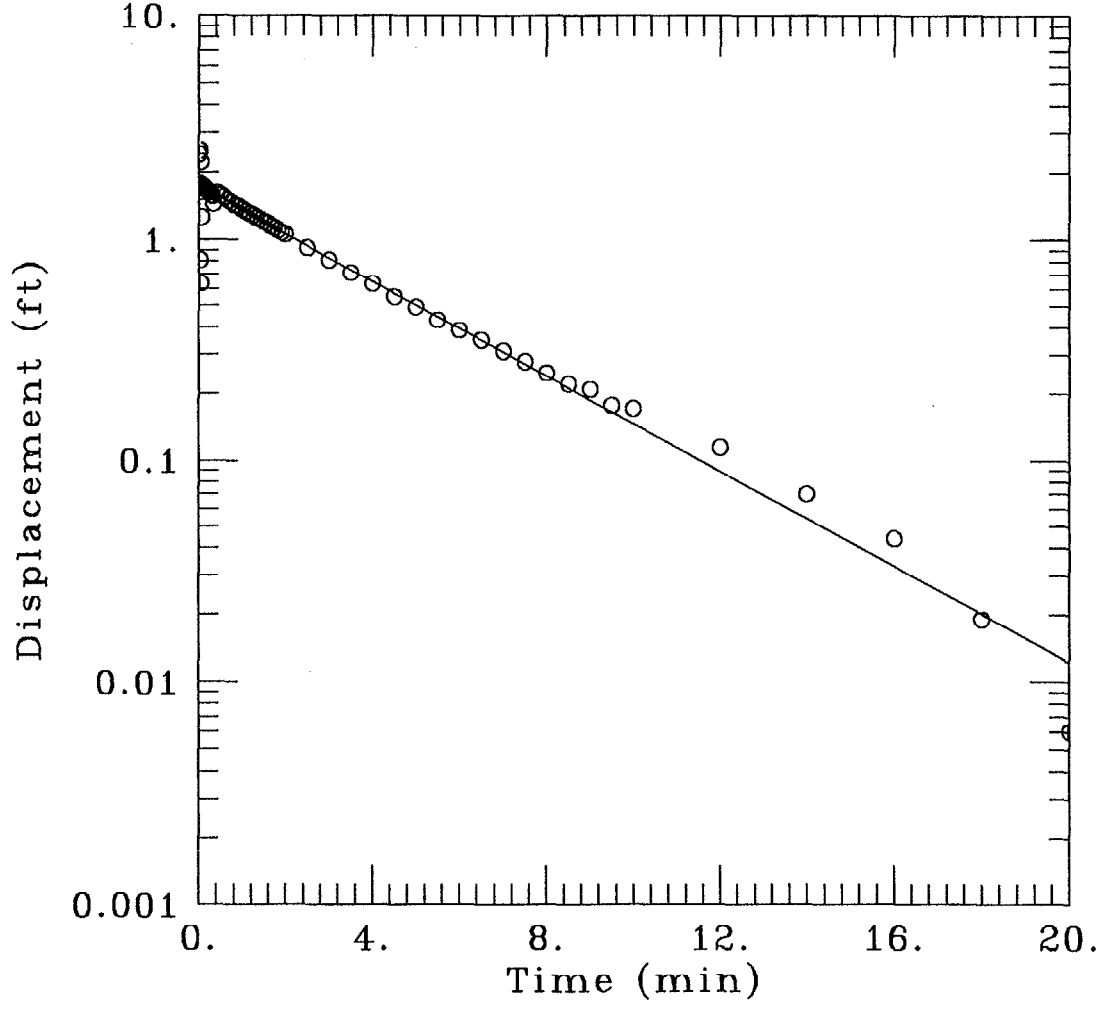
Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW05A Falling Head Test



DATA SET:
b:gw05af.dt
02/07/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
October 8, 1994

ESTIMATED PARAMETERS:
K = 0.0002185 ft/min
y0 = 1.732 ft

TEST DATA:
H0 = 1.72 ft
rc = 0.083 ft
rw = 0.334 ft
L = 10. ft
b = 20. ft
H = 17.04 ft

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V R E S U L T S
Version 1.10

02/07/95 13:04:25

TEST DESCRIPTION

```
Data set........... b:gw05af.dt
Data set title..... BGGW05A Falling Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 8, 1994

Knowns and Constants:
   No. of data points................. 66
   Radius of well casing.............. 0.083
   Radius of well..................... 0.334
   Aquifer saturated thickness........ 20
   Well screen length................. 10
   Static height of water in well..... 17.04
   Log(Re/Rw)......................... 2.562
   A, B, C............................  2.442,  0.397,  0.000
```

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	2.1854E-004	+/-	2.8449E-006
y0 =	1.7323E+000	+/-	7.0311E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

```
Weighted Residual Statistics:
   Number of residuals............... 50
   Number of estimated parameters.... 2
   Degrees of freedom................ 48
   Residual mean..................... 0.0003056
   Residual standard deviation....... 0.02806
   Residual variance................. 0.0007871
```

Model Residuals:

Time	Observed	Calculated	Residual	Weight

0.1	1.7	1.6899	0.010092	1
0.1166	1.7	1.683	0.017023	1
0.1333	1.7	1.676	0.023968	1
0.15	1.681	1.6691	0.011883	1
0.1666	1.668	1.6623	0.0057294	1
0.1833	1.656	1.6554	0.00058833	1
0.2	1.643	1.6486	-0.005581	1
0.2166	1.637	1.6418	-0.0048192	1
0.2333	1.624	1.635	-0.011045	1
0.25	1.624	1.6283	-0.0042979	1
0.2666	1.618	1.6216	-0.0036193	1
0.2833	1.58	1.6149	-0.034928	1
0.3	1.58	1.6083	-0.028264	1
0.3166	1.561	1.6017	-0.040668	1
0.3333	1.447	1.5951	-0.14806	1
0.4166	1.611	1.5625	0.048501	1
0.5	1.573	1.5306	0.042435	1
0.5833	1.542	1.4993	0.042679	1
0.6666	1.491	1.4687	0.022285	1
0.75	1.46	1.4387	0.021302	1
0.8333	1.422	1.4093	0.01267	1
0.9166	1.403	1.3806	0.022439	1
1	1.365	1.3523	0.012655	1
1.0833	1.333	1.3247	0.0082603	1
1.1666	1.302	1.2977	0.0043026	1
1.25	1.283	1.2712	0.011824	1
1.3333	1.251	1.2452	0.0057731	1
1.4166	1.226	1.2198	0.0061923	1
1.5	1.201	1.1949	0.0061221	1
1.5833	1.182	1.1705	0.011513	1
1.6666	1.144	1.1466	-0.002593	1
1.75	1.125	1.1232	0.0018405	1
1.8333	1.1	1.1002	-0.00023217	1
1.9166	1.074	1.0778	-0.0037728	1
2	1.055	1.0557	-0.00074583	1
2.5	0.916	0.93281	-0.016814	1
3	0.809	0.8242	-0.015197	1
3.5	0.708	0.72823	-0.020227	1
4	0.632	0.64343	-0.011432	1
4.5	0.55	0.56851	-0.018511	1
5	0.493	0.50231	-0.0093131	1
5.5	0.43	0.44382	-0.013824	1
6	0.386	0.39214	-0.0061446	1
6.5	0.348	0.34648	0.0015169	1
7	0.31	0.30614	0.0038615	1
7.5	0.278	0.27049	0.0075084	1
8	0.247	0.239	0.0080045	1
8.5	0.221	0.21117	0.0098333	1
9	0.209	0.18658	0.022422	1
9.5	0.177	0.16485	0.012147	1

==

RESULTS FROM VISUAL CURVE MATCHING

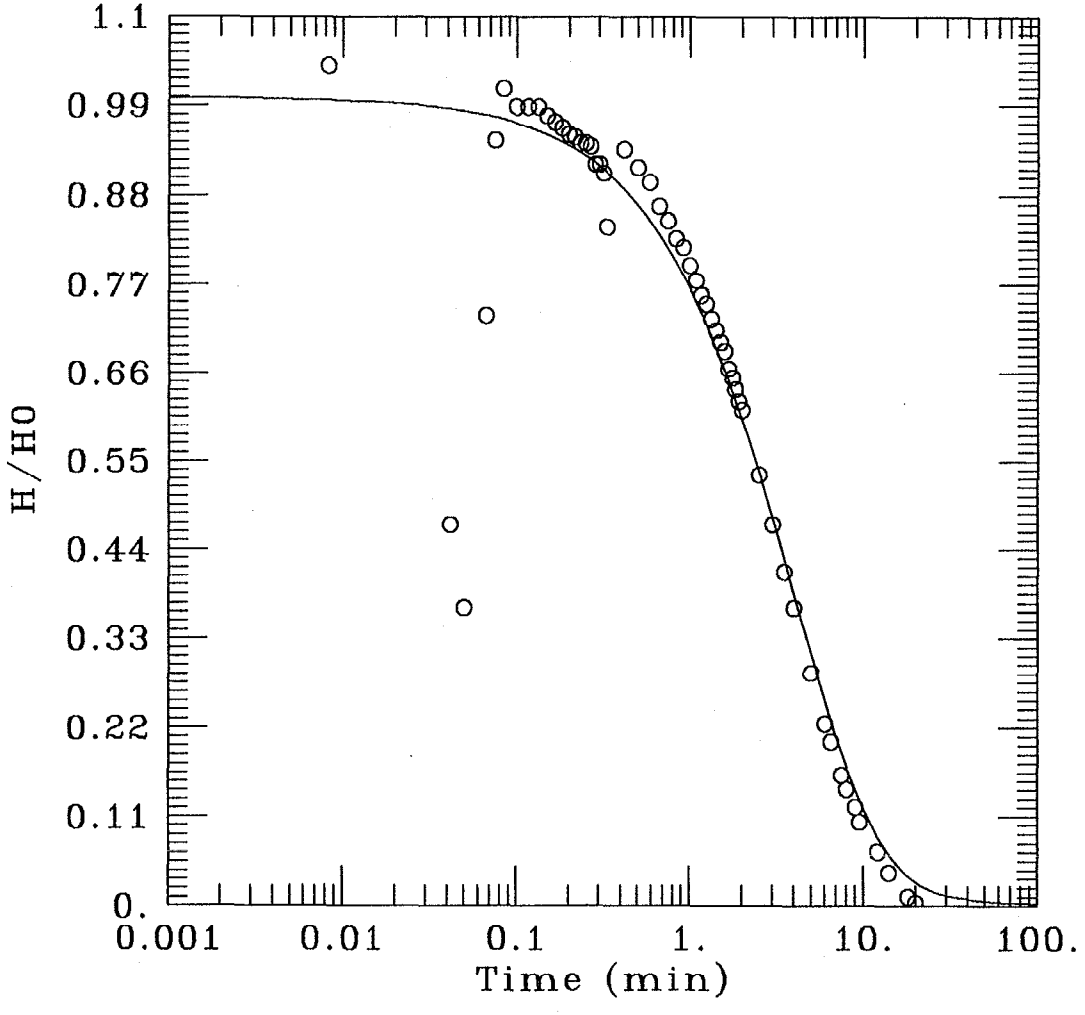
VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	2.1854E-004
y0 =	1.7323E+000

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW05A Falling Head Test



DATA SET:
gw05af.dt
02/07/95

AQUIFER TYPE:
Confined

SOLUTION METHOD:
Cooper et al.

TEST DATE:
October 8, 1994

ESTIMATED PARAMETERS:
T = 0.007211 ft^2/min
S = 1.E-08

TEST DATA:
H0 = 1.72 ft
rc = 0.083 ft
rw = 0.334 ft

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S
Version 1.10

02/07/95 13:30:59

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TEST DESCRIPTION

Data set........... gw05af.dt
Data set title..... BGGW05A Falling Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 8, 1994

Knowns and Constants:
No. of data points................. 66
Pumping rate....................... 1
Radius (distance) to obs. well...... 0.083

==

ANALYTICAL METHOD

Cooper et al. (Confined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
T =	7.2105E-003	+/-	1.6234E-003
S =	1.0000E-008	+/-	3.6280E-008

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals.............. 50
Number of estimated parameters.... 2
Degrees of freedom............... 48
Residual mean.................... 0.01064
Residual standard deviation....... 0.04505
Residual variance................ 0.002029

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.1	1.7	1.6665	0.033474	1
0.1166	1.7	1.6585	0.04148	1
0.1333	1.7	1.6506	0.049415	1
0.15	1.681	1.6428	0.038242	1
0.1666	1.668	1.6351	0.032925	1

0.1833	1.656	1.6274	0.028565	1
0.2	1.643	1.6199	0.023121	1
0.2166	1.637	1.6124	0.024554	1
0.2333	1.624	1.605	0.018957	1
0.25	1.624	1.5977	0.026289	1
0.2666	1.618	1.5905	0.02751	1
0.2833	1.58	1.5833	-0.0032889	1
0.3	1.58	1.5762	0.0038498	1
0.3166	1.561	1.5691	-0.0081134	1
0.3333	1.447	1.5621	-0.11509	1
0.4166	1.611	1.5279	0.083129	1
0.5	1.573	1.4948	0.078172	1
0.5833	1.542	1.4629	0.079086	1
0.6666	1.491	1.432	0.058987	1
0.75	1.46	1.402	0.058008	1
0.8333	1.422	1.3728	0.049158	1
0.9166	1.403	1.3446	0.058417	1
1	1.365	1.317	0.048026	1
1.0833	1.333	1.2902	0.042795	1
1.1666	1.302	1.2641	0.037889	1
1.25	1.283	1.2386	0.044353	1
1.3333	1.251	1.2139	0.037131	1
1.4166	1.226	1.1897	0.036291	1
1.5	1.201	1.1661	0.034884	1
1.5833	1.182	1.1431	0.038875	1
1.6666	1.144	1.1207	0.023312	1
1.75	1.125	1.0988	0.026239	1
1.8333	1.1	1.0774	0.022623	1
1.9166	1.074	1.0565	0.017505	1
2	1.055	1.0361	0.018926	1
2.5	0.916	0.92306	-0.0070596	1
3	0.809	0.82431	-0.015312	1
3.5	0.708	0.73769	-0.029688	1
4	0.632	0.66146	-0.029464	1
4.5	0.55	0.59422	-0.044219	1
5	0.493	0.53476	-0.041763	1
5.5	0.43	0.48209	-0.052093	1
6	0.386	0.43535	-0.049351	1
6.5	0.348	0.3938	-0.045802	1
7	0.31	0.35681	-0.046813	1
7.5	0.278	0.32384	-0.045836	1
8	0.247	0.2944	-0.047395	1
8.5	0.221	0.26808	-0.047076	1
9	0.209	0.24452	-0.035516	1
9.5	0.177	0.2234	-0.046401	1

==

RESULTS FROM VISUAL CURVE MATCHING

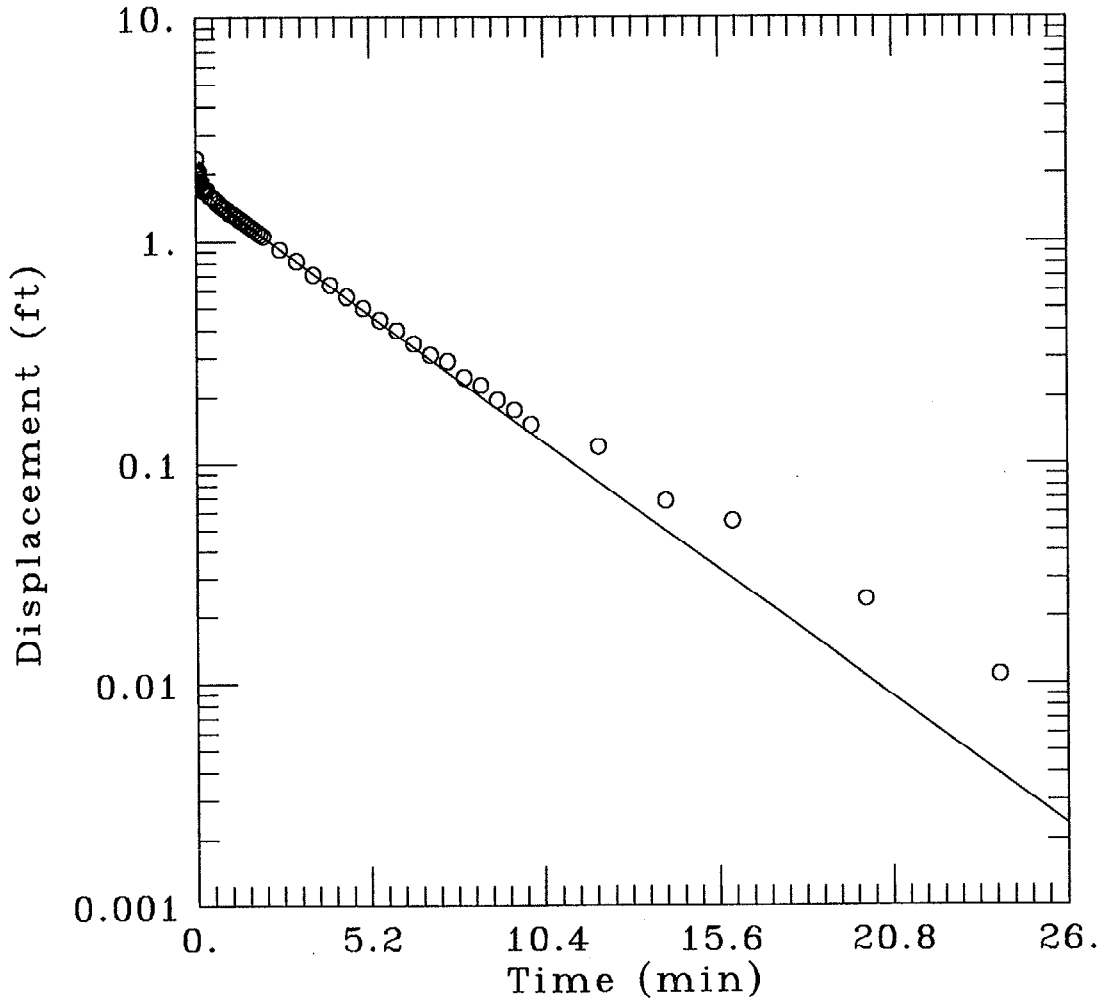
VISUAL MATCH PARAMETER ESTIMATES

```
         Estimate
  T  =   7.2105E-003
  S  =   1.0000E-008
```

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA-Background Locations

BGGW05A Rising Head Test



DATA SET:
gw05ar.dt
02/09/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
October 8, 1994

ESTIMATED PARAMETERS:
K = 0.0002243 ft/min
y0 = 1.742 ft

TEST DATA:
H0 = 2.33 ft
rc = 0.083 ft
rw = 0.334 ft
L = 10. ft
b = 20. ft
H = 17.02 ft

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A Q T E S O L V   R E S U L T S
Version 1.10

02/09/95 11:03:59

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TEST DESCRIPTION

```
Data set........... gw05ar.dt
Data set title..... BGGW05A Rising Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA-Background Locations
Test date.......... October 8, 1994

Knowns and Constants:
   No. of data points.................. 69
   Radius of well casing............... 0.083
   Radius of well...................... 0.334
   Aquifer saturated thickness......... 20
   Well screen length.................. 10
   Static height of water in well...... 17.02
   Log(Re/Rw).......................... 2.561
   A, B, C............................. 2.442,  0.397,  0.000
```

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	2.2428E-004	+/-	2.6848E-006
y0 =	1.7423E+000	+/-	6.5098E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

```
Weighted Residual Statistics:
   Number of residuals.............. 19
   Number of estimated parameters.... 2
   Degrees of freedom............... 17
   Residual mean.................... 2.509E-005
   Residual standard deviation....... 0.007633
   Residual variance................ 5.826E-005
```

Model Residuals:

Time	Observed	Calculated	Residual	Weight

0.5	1.553	1.5343	0.018669	1
0.5833	1.509	1.5022	0.0068184	1
0.6666	1.471	1.4707	0.00029427	1
0.75	1.433	1.4399	-0.0068528	1
0.8333	1.401	1.4097	-0.0086829	1
0.9166	1.376	1.3801	-0.0041451	1
1	1.332	1.3512	-0.019192	1
1.0833	1.319	1.3229	-0.0038799	1
1.1666	1.294	1.2952	-0.001161	1
1.25	1.268	1.268	9.3764E-006	1
1.3333	1.243	1.2414	0.0015782	1
1.4166	1.218	1.2154	0.0025902	1
1.5	1.193	1.1899	0.0030875	1
1.5833	1.167	1.165	0.0020203	1
1.6666	1.142	1.1406	0.0014306	1
1.75	1.117	1.1166	0.00035789	1
1.8333	1.092	1.0932	-0.0012446	1
1.9166	1.073	1.0703	0.0026626	1
2	1.054	1.0479	0.0061166	1

===

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	2.2428E-004
y0 =	1.7423E+000

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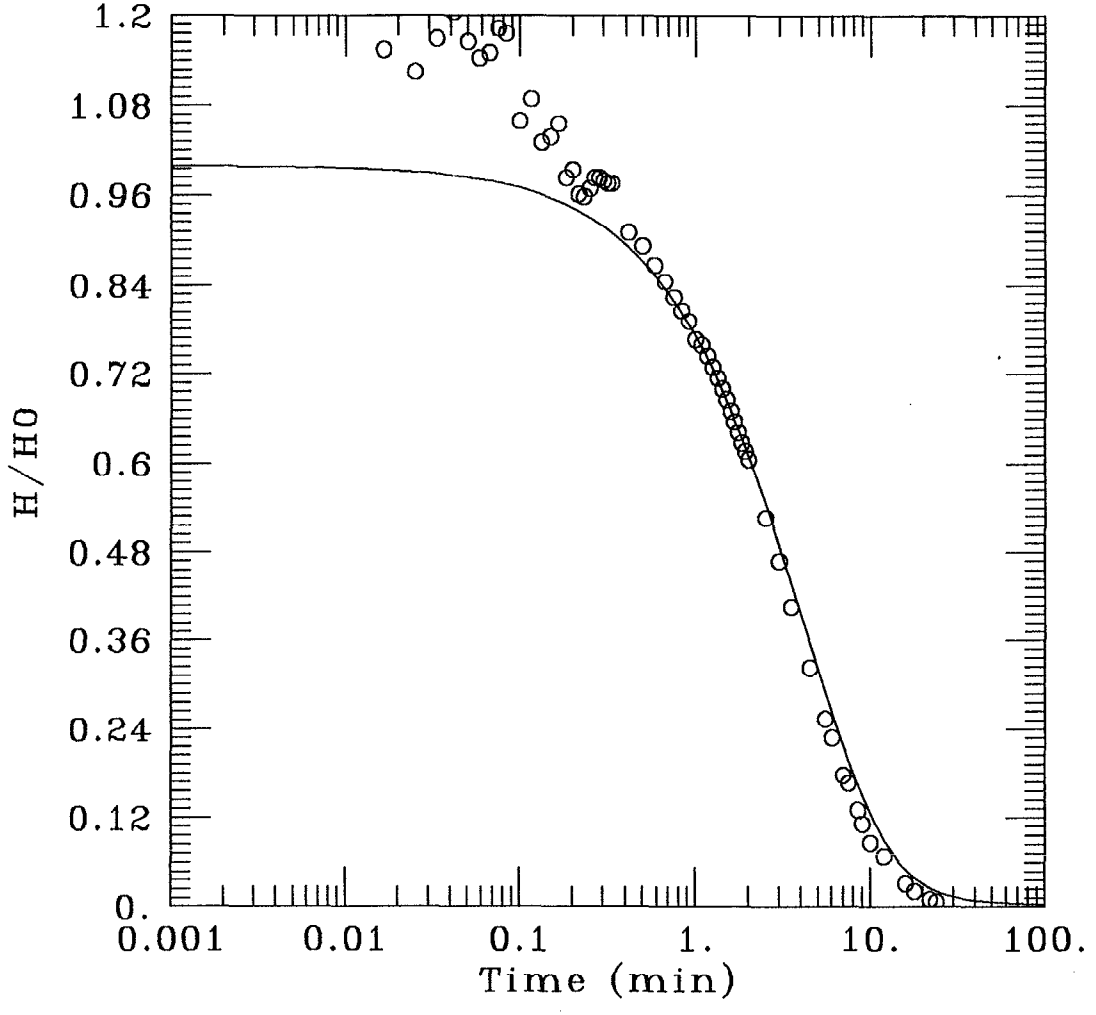
Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA-Background Locations

BGGW05A Rising Head Test



DATA SET:
gw05ar.dt
02/09/95

AQUIFER TYPE:
Confined

SOLUTION METHOD:
Cooper et al.

TEST DATE:
October 8, 1994

ESTIMATED PARAMETERS:
T = 0.006994 ft^2/min
S = 1.E-08

TEST DATA:
H0 = 1.74 ft
rc = 0.083 ft
rw = 0.334 ft

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A Q T E S O L V   R E S U L T S
Version 1.10

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TEST DESCRIPTION

Data set........... gw05ar.dt
Data set title..... BGGW05A Rising Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA-Background Locations
Test date.......... October 8, 1994

Knowns and Constants:
No. of data points................. 69
Pumping rate....................... 1
Radius (distance) to obs. well...... 0.083

==

ANALYTICAL METHOD

Cooper et al. (Confined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
T =	6.9936E-003	+/-	1.1109E-003
S =	1.0000E-008	+/-	2.4145E-008

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals.............. 19
Number of estimated parameters.... 2
Degrees of freedom............... 17
Residual mean.................... 0.002456
Residual standard deviation....... 0.01245
Residual variance................ 0.0001549

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.5	1.553	1.5182	0.034844	1
0.5833	1.509	1.4866	0.022359	1
0.6666	1.471	1.4561	0.014893	1
0.75	1.433	1.4264	0.0065767	1
0.8333	1.401	1.3976	0.0034157	1

0.9166	1.376	1.3696	0.0063906	1
1	1.332	1.3423	-0.010262	1
1.0833	1.319	1.3157	0.0032987	1
1.1666	1.294	1.2899	0.0041499	1
1.25	1.268	1.2646	0.0034188	1
1.3333	1.243	1.24	0.0030218	1
1.4166	1.218	1.216	0.0020264	1
1.5	1.193	1.1925	0.00048113	1
1.5833	1.167	1.1696	-0.0026497	1
1.6666	1.142	1.1473	-0.0053184	1
1.75	1.117	1.1255	-0.0084811	1
1.8333	1.092	1.1042	-0.012173	1
1.9166	1.073	1.0834	-0.010353	1
2	1.054	1.063	-0.0089801	1

===

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

```
        Estimate
   T  =   7.2498E-003
   S  =   1.0000E-008
```

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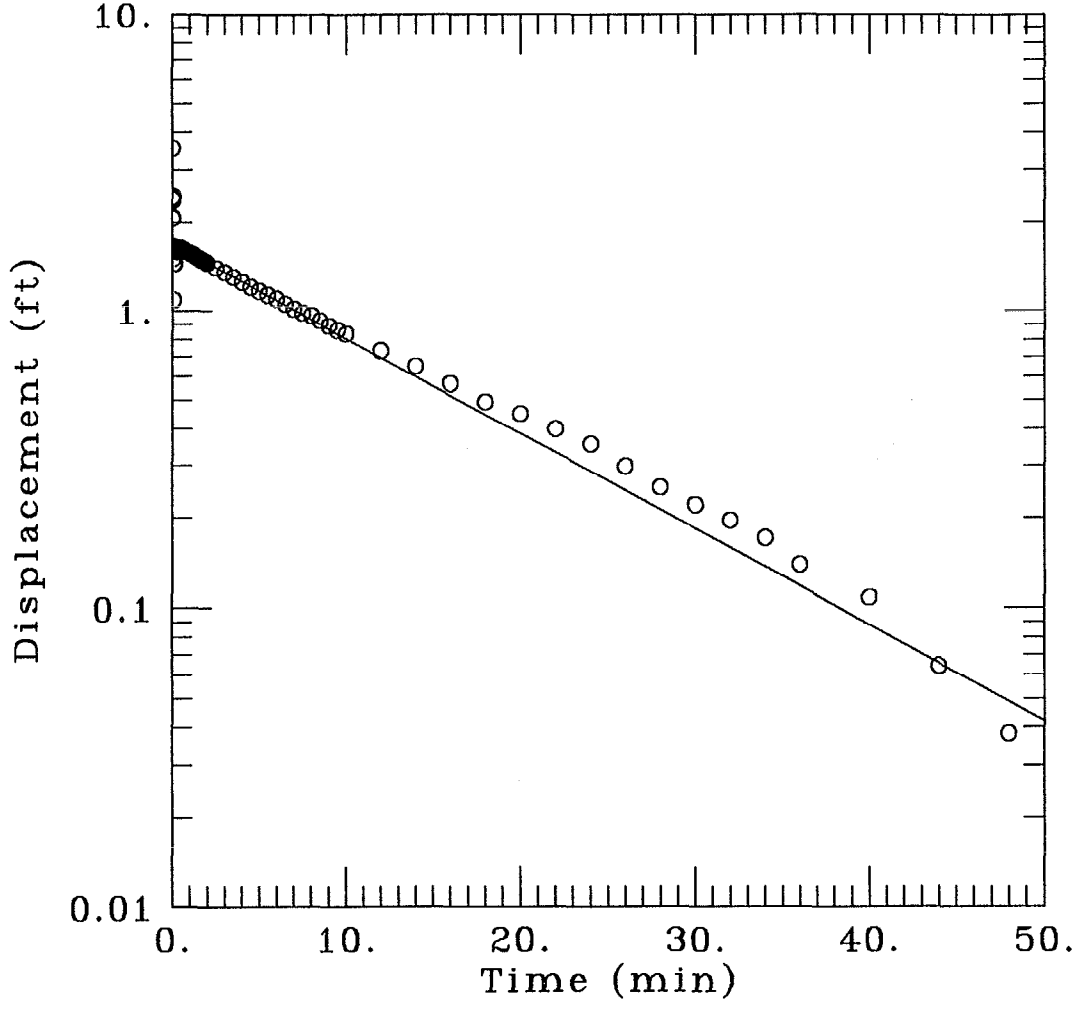
Baker Environmental, Inc.	Client: LANTDIV
Project No.: 62470-252	Location: WPNSTA Yorktown

BGGW07A Falling Head Test



DATA SET:
gw07af.dt
02/01/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice

ESTIMATED PARAMETERS:
K = 8.2868E-05 ft/min
y0 = 1.679 ft

TEST DATA:
H0 = 1.65 ft
rc = 0.083 ft
rw = 0.334 ft
L = 10. ft
b = 20. ft
H = 32. ft

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A Q T E S O L V   R E S U L T S

Version 1.10

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TEST DESCRIPTION

Data set........... b:gw07af.dt
Data set title..... BGGW07A Falling Head Test

Knowns and Constants:
No. of data points.................. 81
Radius of well casing............... 0.083
Radius of well...................... 0.334
Aquifer saturated thickness......... 20
Well screen length.................. 10
Static height of water in well...... 32
Log(Re/Rw).......................... 3.259
A, B, C............................. 0.000, 0.000, 1.967

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	8.2868E-005	+/-	5.3433E-007
y0 =	1.6792E+000	+/-	1.9276E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 28
Number of estimated parameters.... 2
Degrees of freedom................ 26
Residual mean..................... 2.914E-005
Residual standard deviation....... 0.005318
Residual variance................. 2.828E-005

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.5	1.627	1.6183	0.0086899	1
0.5833	1.614	1.6084	0.0056095	1
0.6666	1.602	1.5985	0.0034682	1
0.75	1.589	1.5887	0.00027825	1
0.8333	1.577	1.579	-0.0019836	1

0.9166	1.57	1.5693	0.00069492	1
1	1.564	1.5597	0.0043256	1
1.0833	1.551	1.5501	0.00088573	1
1.1666	1.545	1.5406	0.0043873	1
1.25	1.532	1.5312	0.00084186	1
1.3333	1.52	1.5218	-0.0017728	1
1.4166	1.513	1.5124	0.00055501	1
1.5	1.501	1.5032	-0.0021633	1
1.5833	1.495	1.4939	0.0010505	1
1.6666	1.476	1.4848	-0.0087922	1
1.75	1.476	1.4757	0.00031979	1
1.8333	1.463	1.4666	-0.0036349	1
1.9166	1.457	1.4576	-0.00064509	1
2	1.444	1.4487	-0.0046997	1
2.5	1.387	1.3962	-0.0092094	1
3	1.343	1.3456	-0.002621	1
3.5	1.293	1.2969	-0.0038656	1
4	1.242	1.2499	-0.0078767	1
4.5	1.198	1.2046	-0.0065904	1
5	1.16	1.1609	-0.00094486	1
5.5	1.123	1.1189	0.0041193	1
6	1.091	1.0783	0.012659	1
6.5	1.047	1.0393	0.0077304	1

==========

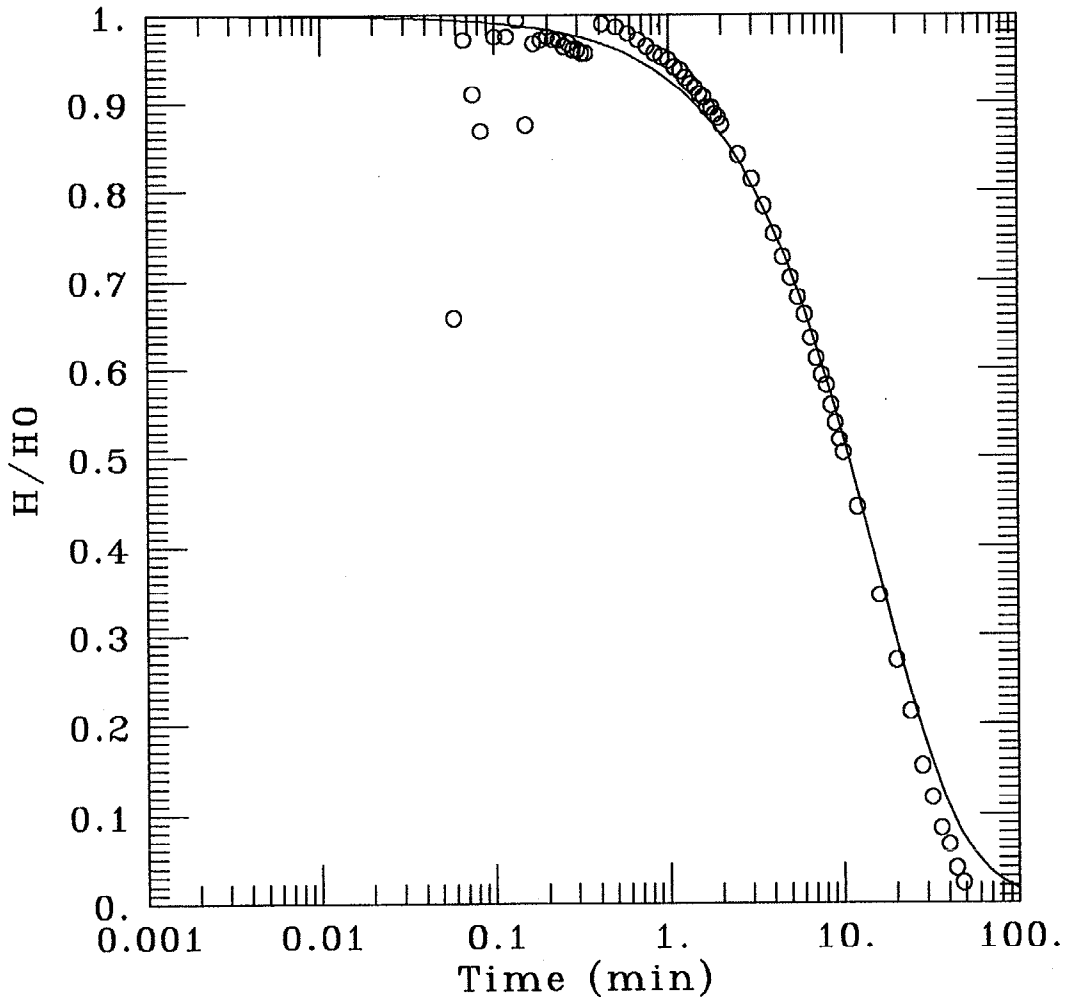
RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	8.2868E-005

Baker Environmental, Inc.	Client: LANTDIV
Project No.: 62470-252	Location: WPNSTA Yorktown

BGGW07A Falling Head Test



DATA SET:
gw07af.dt
02/01/95

AQUIFER TYPE:
Confined

SOLUTION METHOD:
Cooper et al.

TEST DATE:
October 9, 1994

ESTIMATED PARAMETERS:
T = 0.00189 ft^2/min
S = 1.E-08

TEST DATA:
H0 = 1.65 ft
rc = 0.083 ft
rw = 0.334 ft

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A Q T E S O L V   R E S U L T S
Version 1.10

02/01/95 17:41:11

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TEST DESCRIPTION

Data set........... gw07af.dt
Data set title..... BGGW07A Falling Head Test
Company............ Baker Environmental, Inc.
Project............ 62470-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 9, 1994

Knowns and Constants:
No. of data points................. 81
Pumping rate....................... 1
Radius (distance) to obs. well...... 0.083

==

ANALYTICAL METHOD

Cooper et al. (Confined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
T =	1.8228E-003	+/-	8.8428E-004
S =	1.0000E-008	+/-	7.1002E-008

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 29
Number of estimated parameters.... 2
Degrees of freedom................ 27
Residual mean..................... 0.01273
Residual standard deviation....... 0.02637
Residual variance................. 0.0006955

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.4166	1.633	1.5962	0.03677	1
0.5	1.627	1.5865	0.040457	1
0.5833	1.614	1.577	0.036961	1
0.6666	1.602	1.5677	0.034314	1
0.75	1.589	1.5585	0.030541	1

0.8333	1.577	1.5494	0.027632	1
0.9166	1.57	1.5404	0.029606	1
1	1.564	1.5315	0.032484	1
1.0833	1.551	1.5228	0.028248	1
1.1666	1.545	1.5141	0.030916	1
1.25	1.532	1.5055	0.026501	1
1.3333	1.52	1.497	0.022989	1
1.4166	1.513	1.4886	0.024391	1
1.5	1.501	1.4803	0.020722	1
1.5833	1.495	1.472	0.022964	1
1.6666	1.476	1.4639	0.01213	1
1.75	1.476	1.4558	0.020232	1
1.8333	1.463	1.4477	0.015252	1
1.9166	1.457	1.4398	0.017203	1
2	1.444	1.4319	0.012095	1
2.5	1.387	1.3859	0.0010687	1
3	1.343	1.3421	0.00094411	1
3.5	1.293	1.3001	-0.0071401	1
4	1.242	1.2599	-0.017883	1
4.5	1.198	1.2213	-0.023309	1
5	1.16	1.1842	-0.024204	1
5.5	1.123	1.1485	-0.025522	1
6	1.091	1.1142	-0.02317	1
6.5	1.047	1.0811	-0.034077	1

===

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

		Estimate
Γ	=	1.8896E-003
S	=	1.0000E-008

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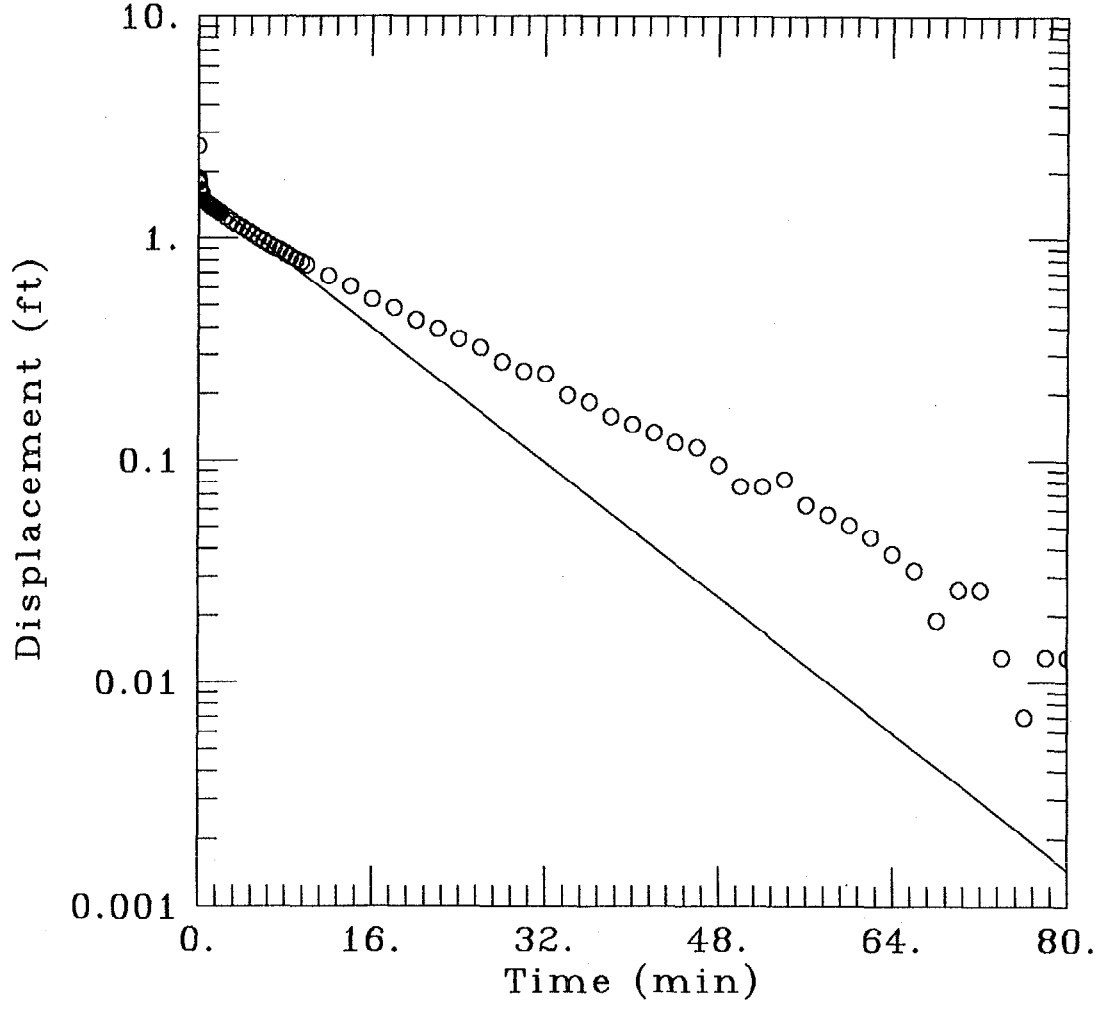
Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW07A Rising Head Test



DATA SET:
b:gw07ar.dt
02/07/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
October 9, 1994

ESTIMATED PARAMETERS:
K = 9.9601E-05 ft/min
y0 = 1.604 ft

TEST DATA:
H0 = 1.85 ft
rc = 0.083 ft
rw = 0.334 ft
L = 10. ft
b = 20. ft
H = 34.7 ft

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A Q T E S O L V   R E S U L T S
Version 1.10

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TEST DESCRIPTION

Data set........... b:gw07ar.dt
Data set title..... BGGW07A Rising Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 9, 1994

Knowns and Constants:
No. of data points.................. 96
Radius of well casing............... 0.083
Radius of well...................... 0.334
Aquifer saturated thickness......... 20
Well screen length.................. 10
Static height of water in well...... 34.7
Log(Re/Rw).......................... 3.305
A, B, C............................. 0.000, 0.000, 1.967

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	9.9601E-005	+/-	4.5194E-006
y0 =	1.6035E+000	+/-	1.4451E-002

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 53
Number of estimated parameters.... 2
Degrees of freedom................ 51
Residual mean..................... 0.001012
Residual standard deviation....... 0.0739
Residual variance................. 0.005462

Model Residuals:

Time	Observed	Calculated	Residual	Weight

0.0666	1.815	1.5942	0.2208	1
0.075	1.815	1.593	0.22197	1
0.0833	1.802	1.5919	0.21012	1
0.1	1.664	1.5896	0.074448	1
0.1166	1.645	1.5872	0.057755	1
0.1333	1.626	1.5849	0.041073	1
0.15	1.62	1.5826	0.037387	1
0.1666	1.626	1.5803	0.045684	1
0.1833	1.601	1.578	0.022992	1
0.2	1.613	1.5757	0.037296	1
0.2166	1.613	1.5734	0.039583	1
0.2333	1.588	1.5711	0.01688	1
0.25	1.588	1.5688	0.019174	1
0.2666	1.588	1.5665	0.021451	1
0.2833	1.582	1.5643	0.017739	1
0.3	1.582	1.562	0.020023	1
0.3166	1.563	1.5597	0.00329	1
0.3333	1.569	1.5574	0.011567	1
0.4166	1.469	1.5461	-0.077122	1
0.5	1.462	1.5349	-0.072881	1
0.5833	1.456	1.5237	-0.067734	1
0.6666	1.443	1.5127	-0.069669	1

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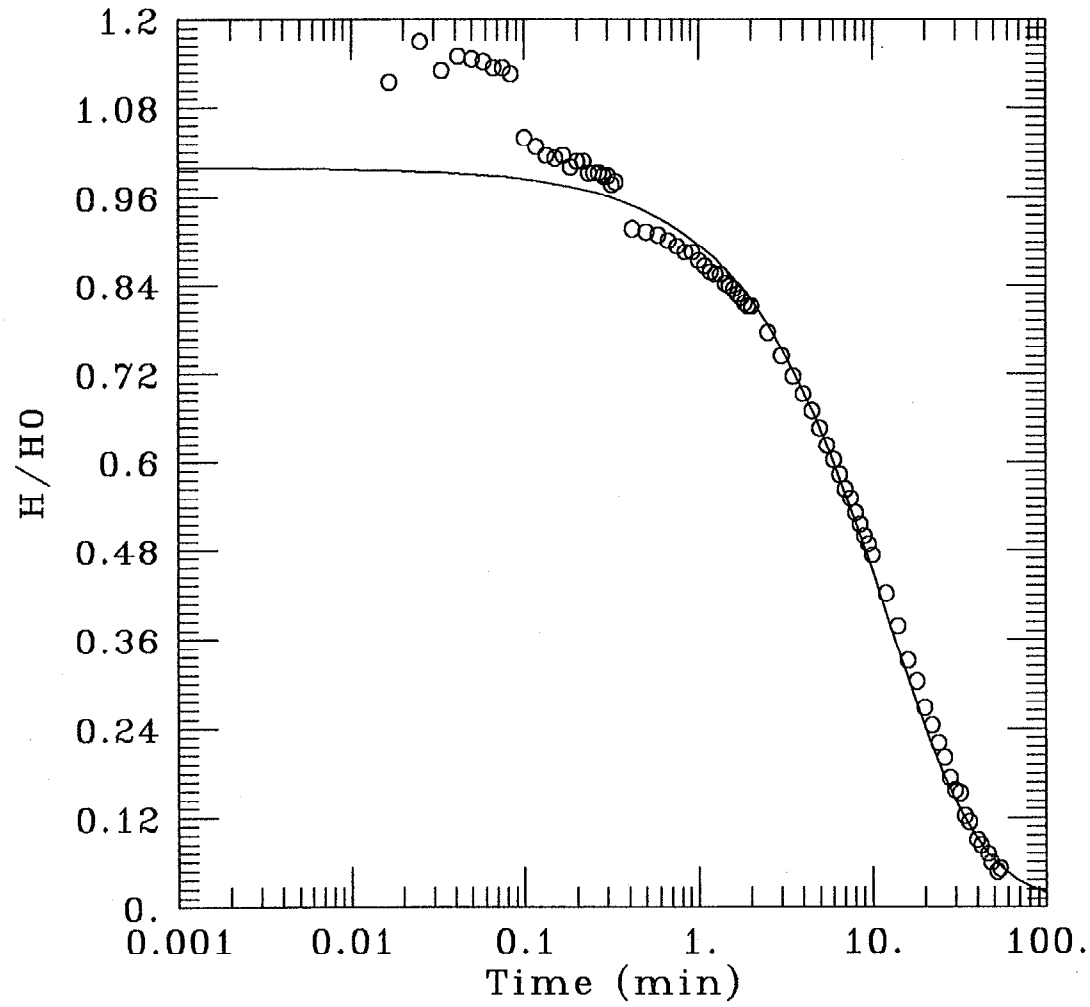
Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW07A Rising Head Test



DATA SET:
gw07ar.dt
02/07/95

AQUIFER TYPE:
Confined

SOLUTION METHOD:
Cooper et al.

TEST DATE:
October 9, 1994

ESTIMATED PARAMETERS:
T = 0.001348 ft^2/min
S = 9.1157E-06

TEST DATA:
H0 = 1.6 ft
rc = 0.083 ft
rw = 0.334 ft

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A Q T E S O L V   R E S U L T S
Version 1.10

02/07/95 08:26:38

TEST DESCRIPTION

Data set........... gw07ar.dt
Data set title..... BGGW07A Rising Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 9, 1994

Knowns and Constants:
No. of data points.................. 96
Pumping rate........................ 1
Radius (distance) to obs. well...... 0.083

ANALYTICAL METHOD

Cooper et al. (Confined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
T =	1.3481E-003	+/-	4.4243E-004
S =	9.1157E-006	+/-	2.3779E-005

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals.............. 53
Number of estimated parameters.... 2
Degrees of freedom............... 51
Residual mean.................... 0.01723
Residual standard deviation....... 0.06704
Residual variance................ 0.004494

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0666	1.815	1.5817	0.23326	1
0.075	1.815	1.5799	0.23507	1
0.0833	1.802	1.5782	0.22383	1
0.1	1.664	1.5747	0.089271	1
0.1166	1.645	1.5714	0.073599	1

0.1333	1.626	1.5681	0.057866	1
0.15	1.62	1.5649	0.055065	1
0.1666	1.626	1.5618	0.064187	1
0.1833	1.601	1.5587	0.042275	1
0.2	1.613	1.5557	0.057317	1
0.2166	1.613	1.5527	0.060298	1
0.2333	1.588	1.5497	0.038258	1
0.25	1.588	1.5468	0.041183	1
0.2666	1.588	1.5439	0.044058	1
0.2833	1.582	1.5411	0.040919	1
0.3	1.582	1.5382	0.043752	1
0.3166	1.563	1.5355	0.027541	1
0.3333	1.569	1.5327	0.036321	1
0.4166	1.469	1.5191	-0.050148	1
0.5	1.462	1.5061	-0.04408	1
0.5833	1.456	1.4934	-0.037426	1
0.6666	1.443	1.4811	-0.038112	1
0.75	1.431	1.4691	-0.038085	1
0.8333	1.418	1.4573	-0.03934	1
0.9166	1.418	1.4458	-0.027839	1
1	1.399	1.4345	-0.035549	================

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

		Estimate
T	=	1.3481E-003
S	=	9.1157E-006

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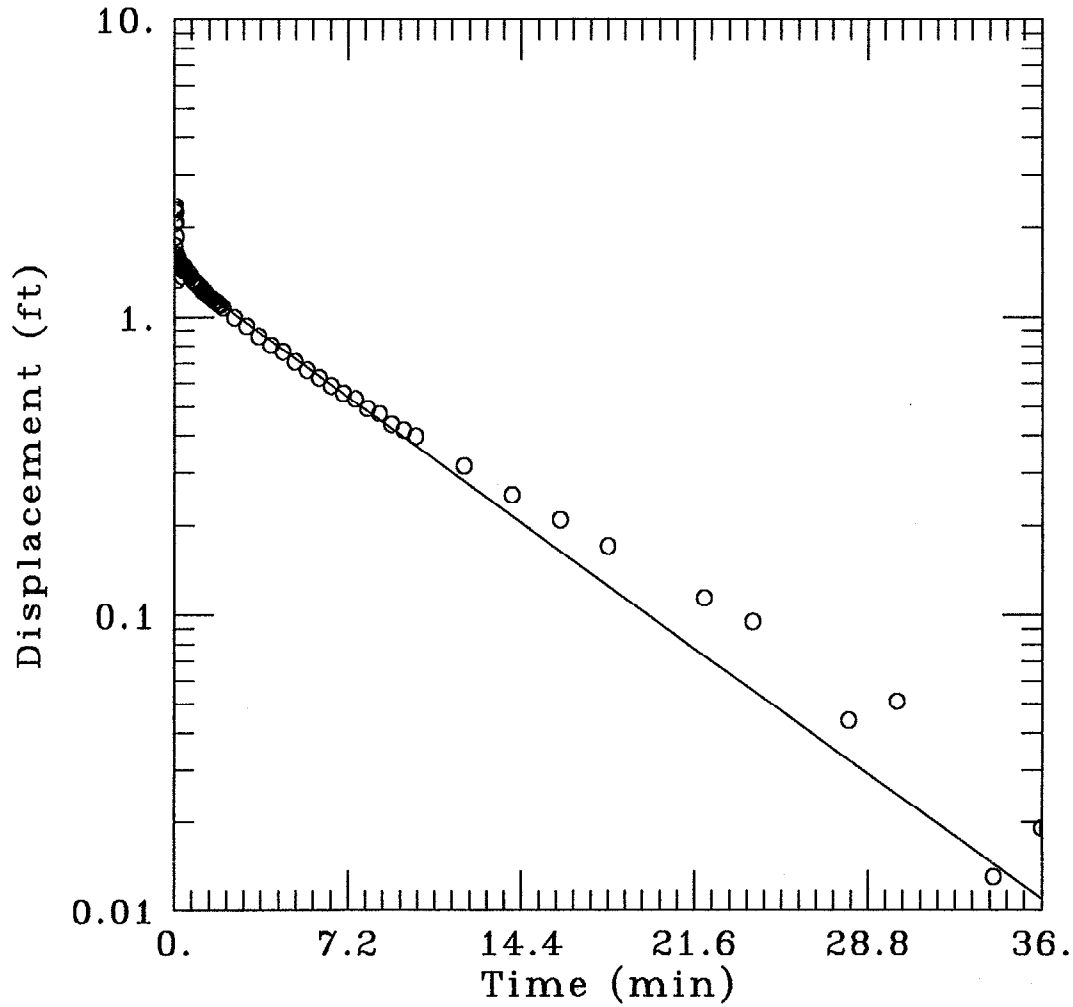
Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW08A Falling Head Test



DATA SET:
gw08af.dt
02/03/95

AQUIFER TYPE:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATE:
October 8, 1994

ESTIMATED PARAMETERS:
K = 0.0001057 ft/min
y0 = 1.425 ft

TEST DATA:
H0 = 1.47 ft
rc = 0.083 ft
rw = 0.334 ft
L = 15. ft
b = 20. ft
H = 33.56 ft

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S

Version 1.10

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TEST DESCRIPTION

Data set........... gw08af.dt
Data set title..... BGGW08A Falling Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 8, 1994

Knowns and Constants:
No. of data points................... 74
Radius of well casing................ 0.083
Radius of well....................... 0.334
Aquifer saturated thickness.......... 20
Well screen length................... 15
Static height of water in well...... 33.56
Log(Re/Rw)........................... 3.407
A, B, C.............................. 0.000, 0.000, 2.464

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	1.0573E-004	+/-	1.4094E-006
y0 =	1.4247E+000	+/-	8.0310E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 29
Number of estimated parameters.... 2
Degrees of freedom................ 27
Residual mean..................... 0.0007883
Residual standard deviation....... 0.0173
Residual variance................. 0.0002992

Model Residuals:

Time	Observed	Calculated	Residual	Weight

1	1.277	1.2447	0.032326	1
1.0833	1.258	1.2307	0.027257	1
1.1666	1.226	1.217	0.0090327	1
1.25	1.22	1.2033	0.01667	1
1.3333	1.201	1.1899	0.011138	1
1.4166	1.175	1.1765	-0.0015439	1
1.5	1.163	1.1634	-0.0003596	1
1.5833	1.15	1.1503	-0.00033857	1
1.6666	1.131	1.1375	-0.0064633	1
1.75	1.125	1.1247	0.00028311	1
1.8333	1.106	1.1121	-0.0061284	1
1.9166	1.093	1.0997	-0.0066808	1
2	1.074	1.0874	-0.013358	1
2.5	0.992	1.0163	-0.024321	1
3	0.929	0.94993	-0.020925	1
3.5	0.86	0.88787	-0.027867	1
4	0.803	0.82986	-0.026863	1
4.5	0.765	0.77565	-0.010648	1
5	0.708	0.72498	-0.016976	1
5.5	0.664	0.67761	-0.013613	1
6	0.626	0.63334	-0.0073449	1
6.5	0.588	0.59197	-0.0039687	1
7	0.556	0.5533	0.0027043	1
7.5	0.531	0.51715	0.013851	1
8	0.493	0.48336	0.0096361	1
8.5	0.474	0.45179	0.022214	1
9	0.436	0.42227	0.013729	1
9.5	0.417	0.39468	0.022316	1
10	0.398	0.3689	0.0291	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

```
         Estimate
  K  =   1.0573E-004
  y0 =   1.4247E+000
```

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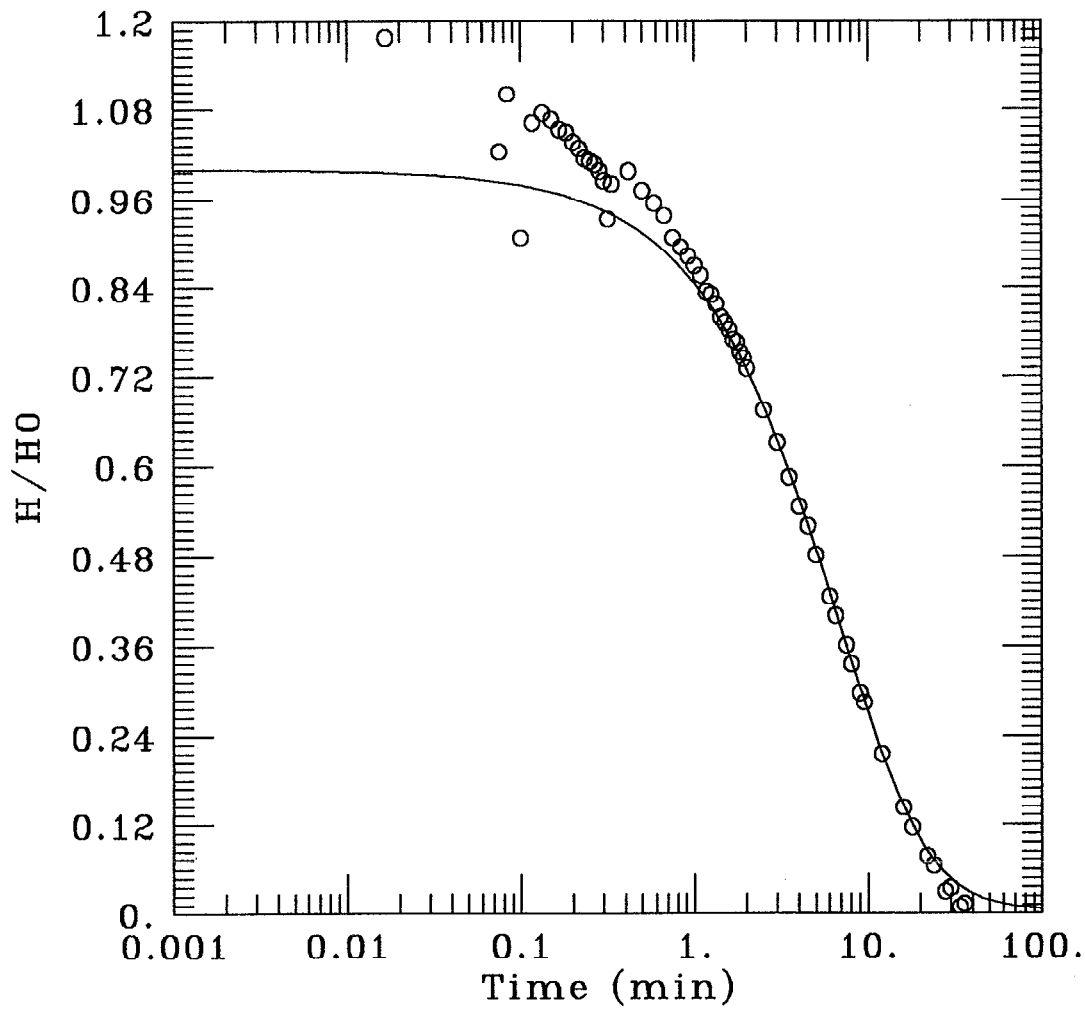
Baker Environmental, Inc.	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW08A Falling Head Test



DATA SET:
gw08af.dt
02/03/95

AQUIFER TYPE:
Confined

SOLUTION METHOD:
Cooper et al.

TEST DATE:
October 8, 1994

ESTIMATED PARAMETERS:
T = 0.003128 ft^2/min
S = 5.7019E-07

TEST DATA:
H0 = 1.47 ft
rc = 0.083 ft
rw = 0.334 ft

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TEST DESCRIPTION

Data set........... b:gw08af.dt
Data set title..... BGGW08A Falling Head Test
Company............ Baker Environmental, Inc.
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 8, 1994

Knowns and Constants:
No. of data points.................. 74
Pumping rate........................ 1
Radius (distance) to obs. well...... 0.083

==

ANALYTICAL METHOD

Cooper et al. (Confined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

		Estimate		Std. Error
T	=	3.1284E-003	+/-	2.6796E-004
S	=	5.7019E-007	+/-	6.3368E-007

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 29
Number of estimated parameters.... 2
Degrees of freedom................ 27
Residual mean..................... 0.002646
Residual standard deviation....... 0.01386
Residual variance................. 0.0001921

Model Residuals:

Time	Observed	Calculated	Residual	Weight
1	1.277	1.2419	0.035125	1
1.0833	1.258	1.2263	0.031661	1
1.1666	1.226	1.2111	0.014888	1
1.25	1.22	1.1962	0.023838	1
1.3333	1.201	1.1815	0.019489	1

1.4166	1.175	1.1671	0.007871	1
1.5	1.163	1.153	0.010011	1
1.5833	1.15	1.1391	0.010885	1
1.6666	1.131	1.1255	0.005519	1
1.75	1.125	1.1121	0.012937	1
1.8333	1.106	1.0989	0.0071143	1
1.9166	1.093	1.0859	0.0070741	1
2	1.074	1.0732	0.00083799	1
2.5	0.992	1.0008	-0.0087586	1
3	0.929	0.93469	-0.0056857	1
3.5	0.86	0.87413	-0.014133	1
4	0.803	0.81846	-0.015461	1
4.5	0.765	0.76715	-0.0021483	1
5	0.708	0.71976	-0.011755	1
5.5	0.664	0.67591	-0.011906	1
6	0.626	0.63527	-0.0092746	1
6.5	0.588	0.59758	-0.009575	1
7	0.556	0.56255	-0.0065543	1
7.5	0.531	0.52999	0.0010126	1
8	0.493	0.49967	-0.0066725	1
8.5	0.474	0.47143	0.0025715	1
9	0.436	0.44509	-0.0090916	1
9.5	0.417	0.42051	-0.0035138	1
10	0.398	0.39756	0.00043972	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

		Estimate
T	=	3.4849E-003
S	=	5.7019E-007

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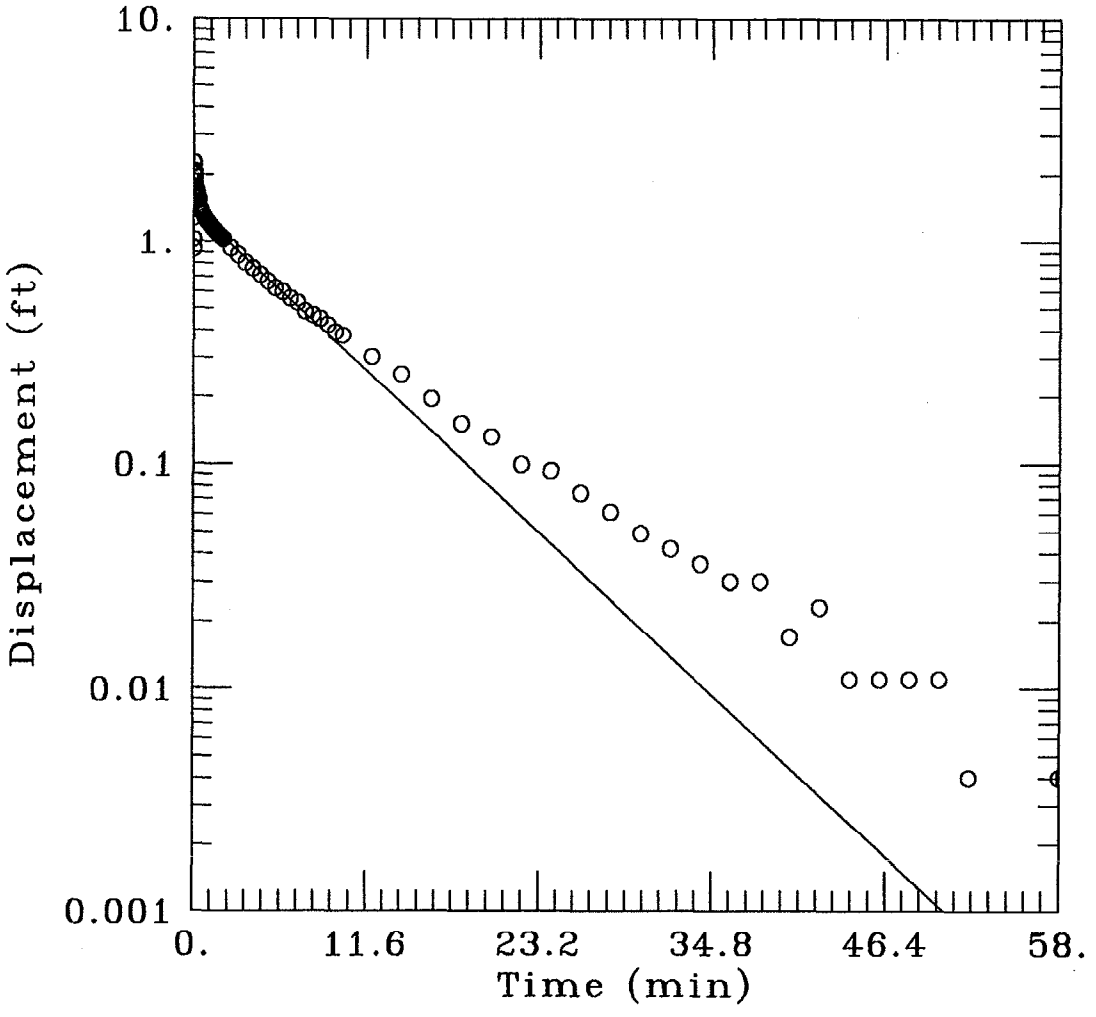
Baker Environmental, Inc	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW08A Rising Head Test



DATA SET:
gw08ar.dt
02/03/95

AQUIFER TYPE:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATE:
October 11, 1994

ESTIMATED PARAMETERS:
K = 0.0001125 ft/min
y0 = 1.393 ft

TEST DATA:
H0 = 2.25 ft
rc = 0.083 ft
rw = 0.334 ft
L = 15. ft
b = 20. ft
H = 33.55 ft

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TEST DESCRIPTION

Data set........... gw08ar.dt
Data set title..... BGGW08A Rising Head Test
Company............ Baker Environmental, Inc
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 11, 1994

Knowns and Constants:
No. of data points.................. 83
Radius of well casing............... 0.083
Radius of well...................... 0.334
Aquifer saturated thickness......... 20
Well screen length.................. 15
Static height of water in well...... 33.55
Log(Re/Rw).......................... 3.407
A, B, C............................. 0.000, 0.000, 2.464

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	1.1252E-004	+/-	2.3495E-006
y0 =	1.3932E+000	+/-	1.0809E-002

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 35
Number of estimated parameters.... 2
Degrees of freedom................ 33
Residual mean..................... 0.001578
Residual standard deviation....... 0.02983
Residual variance................. 0.0008896

Model Residuals:

Time	Observed	Calculated	Residual	Weight

0.5	1.369	1.2965	0.072477	1
0.5833	1.331	1.2811	0.049917	1
0.6666	1.312	1.2658	0.046173	1
0.75	1.281	1.2507	0.030265	1
0.8333	1.255	1.2358	0.019159	1
0.9166	1.23	1.2211	0.0088765	1
1	1.217	1.2066	0.010436	1
1.0833	1.192	1.1922	-0.00019575	1
1.1666	1.173	1.178	-0.0049984	1
1.25	1.148	1.164	-0.015953	1
1.3333	1.135	1.1501	-0.015092	1
1.4166	1.123	1.1364	-0.013396	1
1.5	1.104	1.1228	-0.018847	1
1.5833	1.085	1.1095	-0.024476	1
1.6666	1.078	1.0963	-0.018263	1
1.75	1.059	1.0832	-0.024193	1
1.8333	1.047	1.0703	-0.023294	1
1.9166	1.034	1.0575	-0.023548	1
2	1.022	1.0449	-0.022939	1
2.5	0.933	0.97244	-0.039436	1
3	0.87	0.90496	-0.034964	1
3.5	0.8	0.84217	-0.042173	1
4	0.756	0.78374	-0.02774	1
4.5	0.706	0.72936	-0.02336	1
5	0.661	0.67875	-0.017754	1
5.5	0.617	0.63166	-0.014659	1
6	0.592	0.58783	0.0041687	1
6.5	0.554	0.54704	0.0069552	1
7	0.529	0.50909	0.019912	1
7.5	0.484	0.47377	0.010235	1
8	0.466	0.44089	0.025107	1
8.5	0.447	0.4103	0.036698	1
9	0.421	0.38183	0.039167	1
9.5	0.39	0.35534	0.03466	1
10	0.377	0.33068	0.046315	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	1.1252E-004
y0 =	1.3932E+000

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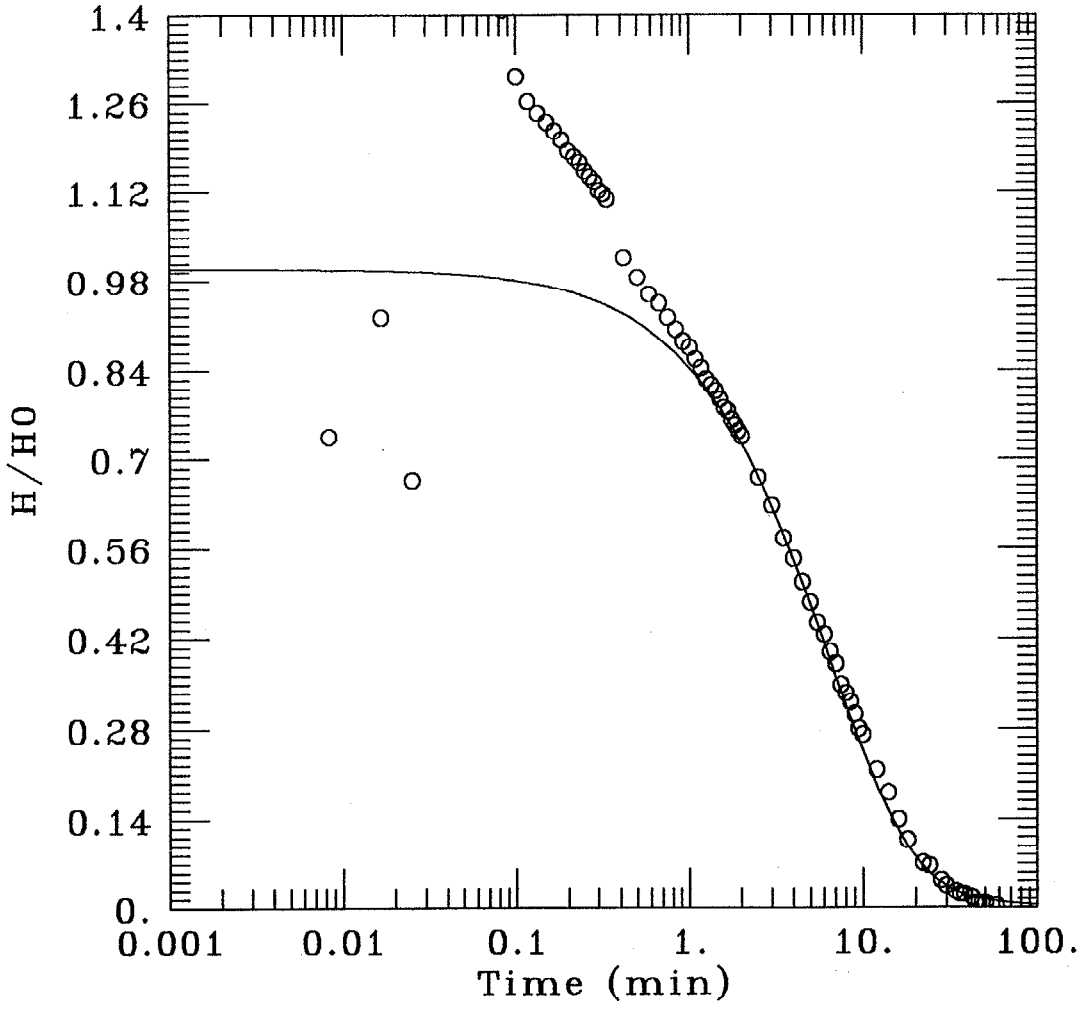
Baker Environmental, Inc	Client: LANTDIV
Project No.: CTO-252	Location: WPNSTA Yorktown

BGGW08A Rising Head Test



DATA SET:
gw08ar.dt
02/03/95

AQUIFER TYPE:
Confined

SOLUTION METHOD:
Cooper et al.

TEST DATE:
October 11, 1994

ESTIMATED PARAMETERS:
T = 0.004426 ft^2/min
S = 1.E-08

TEST DATA:
H0 = 1.39 ft
rc = 0.083 ft
rw = 0.334 ft

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                               Version 1.10

02/03/95                                                                14:32:36

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                              TEST DESCRIPTION

Data set........... gw08ar.dt
Data set title..... BGGW08A Rising Head Test
Company............ Baker Environmental, Inc
Project............ CTO-252
Client............. LANTDIV
Location........... WPNSTA Yorktown
Test date.......... October 11, 1994

Knowns and Constants:
   No. of data points................. 83
   Pumping rate....................... 1
   Radius (distance) to obs. well..... 0.083

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ANALYTICAL METHOD

Cooper et al. (Confined Aquifer Slug Test)

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RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
T =	4.2692E-003 +/-	1.0935E-003
S =	1.0000E-008 +/-	4.0908E-008

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals	35
Number of estimated parameters	2
Degrees of freedom	33
Residual mean	0.01517
Residual standard deviation	0.03096
Residual variance	0.0009585

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.5	1.369	1.2751	0.093888	1
0.5833	1.331	1.2583	0.072682	1
0.6666	1.312	1.2419	0.070091	1
0.75	1.281	1.2258	0.055163	1
0.8333	1.255	1.2101	0.044885	1
0.9166	1.23	1.1947	0.035298	1
1	1.217	1.1796	0.037432	1
1.0833	1.192	1.1647	0.027268	1
1.1666	1.173	1.1502	0.022826	1
1.25	1.148	1.1358	0.012154	1
1.3333	1.135	1.1218	0.013241	1
1.4166	1.123	1.1079	0.015067	1
1.5	1.104	1.0944	0.0096427	1
1.5833	1.085	1.081	0.0040142	1
1.6666	1.078	1.0678	0.010207	1
1.75	1.059	1.0548	0.0041694	1
1.8333	1.047	1.0421	0.0048896	1
1.9166	1.034	1.0296	0.0044336	1
2	1.022	1.0172	0.0048071	1
2.5	0.933	0.94687	-0.013866	1
3	0.87	0.88246	-0.012462	1
3.5	0.8	0.8233	-0.023296	1
4	0.756	0.76881	-0.012813	1
4.5	0.706	0.71855	-0.012547	1
5	0.661	0.6721	-0.011099	1
5.5	0.617	0.62912	-0.012123	1
6	0.592	0.58931	0.0026862	1
6.5	0.554	0.5524	0.0015997	1
7	0.529	0.51814	0.010859	1
7.5	0.484	0.48632	-0.0023183	1
8	0.466	0.45674	0.0092631	1

8.5	0.447	0.42922	0.017781	1
9	0.421	0.4036	0.017395	1
9.5	0.39	0.37975	0.010253	1
10	0.377	0.35751	0.019489	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

		Estimate
T	=	4.4256E-003
S	=	1.0000E-008

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APPENDIX E
INVESTIGATION DERIVED WASTE RECOMMENDATIONS

Baker

Baker Environmental, Inc.
Airport Office Park, Building 3
420 Rouser Road
Coraopolis, Pennsylvania 15108

(412) 269-6000
FAX (412) 269-2002

February 14, 1995

Commanding Officer
Atlantic Division
Naval Facilities Engineering Command
Building N-26, Naval Station
Norfolk, Virginia 23511-6287

Attn Mrs. Brenda Norton, P.E.
Code 1822

Re: Contract N62470-89-D-4814
Navy CLEAN District III
Contract Task Orders (CTOs) 0252 and 0228
Investigation-Derived Wastes Summary and Recommendations
Naval Weapons Station Yorktown, Yorktown, Virginia

Dear Mrs. Norton:

Investigation-derived wastes (IDW) were generated during the recent field investigations at Sites 6, 7, 12, and 16 (CTO 252) and Site Screening Areas (SSAs) 1, 6, 7, and 15 (CTO 228) at Naval Weapons Station Yorktown, Yorktown, Virginia. These IDW included soil cuttings (solids), well development/purge water, and decontamination fluids (liquids). Presently, for CTO 252 the solids are being stored in four, 20 cubic yard roll-off boxes and four, 55-gallon steel drums while the liquids were being stored in tanker trucks (due to the recent freezing temperatures the tanker trucks were transported to Hampton Roads Sanitation District {HRSD} for disposal) and nine, 55-gallon steel drums. For CTO 228, the liquids are being stored in twelve, 55-gallon steel drums. Tables 1 and 2 provide a summary of the various IDW and estimated volumes from CTO-0252 and CTO-0228, respectively.

Between the time period of November 22, 1994 and December 9, 1994, samples were collected from the various IDW streams for laboratory analysis. Composite samples were collected from each roll-off box (composed of three grab samples from each roll-off box) and one composite sample was collected from all of the drums for CTO 252.

Liquid wastes generated from CTO-0228 were separated into two groups: water containing decontamination chemicals and water collected during the development and purging of groundwater monitoring wells. A composite sample was collected from each group.

For the solids, a single composite sample from each rolloff box was submitted for analysis of full Toxicity Characteristics Leaching Procedure (TCLP) compounds and the Resource Conservation and Recovery Act (RCRA) hazardous waste characteristics of ignitability, corrosivity, and reactivity. Samples of the liquid waste were submitted for the analysis of the Total Toxic Organic (TTO) and TAL metals lists as requested by HRSD.

Table 3 compares the analytical results against the contaminants applicable to identify the wastes as potentially hazardous by characteristics under RCRA for purposes of proper handling and disposal. Tables 4 and 5 summarize the organic and inorganic contaminants detected in the IDW samples collected, respectively. The results in Tables 4 and 5 are useful in determining appropriate treatment and disposal options.

CONCLUSIONS AND RECOMMENDATIONS - SOLID IDW

Composite samples from the roll-off boxes and drums of drill cuttings did not exhibit any contaminant at levels which exceed the regulatory level as defined by RCRA. Therefore, the soil contained in the roll-off boxes and drums are not a hazardous waste by characteristic.

Based on these results, Baker recommends that the soils be dumped at their respective sites and graded to match the existing surface topography using a backhoe. This alternative is acceptable (and encouraged) at Superfund sites per U.S. Environmental Protection Agency (USEPA) Management of IDW Guidelines (See Attachment 1).

CONCLUSIONS AND RECOMMENDATIONS - LIQUID IDW

As with the solid IDW, the liquid IDW sample results did not exhibit any contaminant at levels exceeding the regulatory levels. However, five inorganic compounds and one organic compound were detected above the Federal drinking water standards. The inorganic compounds included arsenic, barium, cadmium, lead, and mercury. The single organic compound to exceed the Federal drinking water standard was trichloroethene (TCE). Trichloroethene concentrations exceeded the Federal drinking water standard of 5 µg/L in samples IDW-Drums and IDW-D/W with concentrations of 34 µg/L and 8 µg/L, respectively.

Based on the analytical results presented above, WPNSTA Yorktown and HRSD authorized that the water contained in the tanker trucks (CTO 252) and drums (CTO 228) be disposed of by discharging to HRSD. The tanker trucks were transported to HRSD and pumped into the sanitary system. To dispose of the liquid contained in the 55-gallon drums, it will be necessary to either use a vacuum truck to transport the liquids or to pump the water into the nearest tanker truck. The drummed water can then be disposed of along with the water already in the tanker. It is anticipated that this activity can be performed during the current phase of the field investigation for CTO-302.

For the nine drums (CTO 252) which were not authorized (from composite sample IDW-drums) for discharge to HRSD, Baker recommends that C&M Waste Oil Division mobilize to the Station and dispose of the waste. The cost is $120 for the truck mobilization and $0.30/gallon of IDW Liquid. The company can manifest the waste as a non-hazardous waste for tracking purposes.

If you have any questions or require additional information, please do not hesitate to contact me at (412)-269-2038 or Mr. Richard F. Hoff (Activity Coordinator) at (412) 269-2099.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Donald C. Shields
Project Manager

DCS/lq

Attachments

cc: Mr. Jeffrey Harlow, WPNSTA
Mr. Gregory P. Hatchett, Code 1822
Ms. Ollie Glodis, Code 02116 (w/out attachments)
Ms. Lee Anne Rapp, Code 183 (w/out attachments)

TABLE 1

SUMMARY OF INVESTIGATION-DERIVED WASTES AND ESTIMATED VOLUMES
CTO-0252 - SITES 6, 7, 12 AND 16

Sample Number	Media	Quantities	Containment	Estimate Volume
6 IDW-T	Liquid	1	Tanker Truck	Approximately 800 gallons
6 IDS DS	Solid	1	Steel 55-Gallon Drums	Approximately 200 pounds
6 IDW RS	Solid	1	Roll-Off Box	Approximately 8 cubic yards
7 IDW-T	Liquid	1	Tanker Truck	Approximately 800 gallons
7 IDW DS	Solid	3	Steel 55-Gallon Drums	Approximately 500 pounds
7 IDW RS	Solid	1	Roll-Off Box	Approximately 8 cubic yards
12 IDW-T	Liquid	1	Tanker Truck	Approximately 800 gallons
12 IDW RS	Solid	1	Roll-Off Box	Approximately 8 cubic yards
16 IDW-T	Liquid	1	Tanker Truck	Approximately 900 gallons
16 IDW RS	Solid	1	Roll-Off Box	Approximately 5 cubic yards
IDW-Drums	Liquid	9	Steel 55 Gallon Drums	Approximately 275 gallons

Notes: T = Tanker Trucks
DS = Drummed Soil
RS = Roll-Off Box Soil
55-Gallon Drums not Filled to Capacity

TABLE 2

SUMMARY OF INVESTIGATION-DERIVED WASTES AND ESTIMATED VOLUMES
CTO-0228 - SSAs 1, 6, 7 AND 15

Sample Number	Media	Quantities	Containment	Estimate Volume
IDW - D/C	Liquid	4	Steel 55-Gallon Drums	Approximately 160 gallons
IDW - D/W	Liquid	8	Steel 55-Gallon Drums	Approximately 320 gallons

Notes: D/C = Drummed Chemicals
D/W = Drummed Water

TABLE 3

COMPARISON OF ANALYTICAL RESULTS AGAINST RCRA HAZARDOUS WASTE CHARACTERISTIC PARAMETERS

EPA HW No.	Contaminant	Regulatory Level (µg/L)	CTO-0252 Sites 6, 7, 12, and 16											CTO-0228 SSAs 1, 6, 7 and 15	
			6IDW-T[1]	6IDW DS[2]	6IDW RS[2]	7 IDW-T[1]	7 IDW DS[2]	7 IDW RS[2]	12 IDW-T[1]	12 IDW RS[2]	16 IDW-T[1]	16 IDW RS[2]	IDW - Drums[2]	IDW-D/C[1]	IDW-D/W[1]
D004	Arsenic	5,000	224	300U	300U	130	300U	300U	225	300U	10U	300U	434	10U	29.6
D005	Barium	100,000	613	852	970	273	974	800	496	953	200U	1,040	3,330	398	200U
D018	Benzene	500	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U
D006	Cadmium	1,000	11.4	5U	5U	6.3	5U	5U	7.3	5U	5U	5U	25U	10U	5U
D019	Carbon Tetrachloride	500	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U
D020	Chlordane	30	NA	0.0014U	0.0014U	NA	0.0014U	0.0014U	NA	0.0014U	NA	0.0014U	NA	NA	NA
D021	Chlorobenzene	100,000	5U	5U	5U	1J	5U	5U	5U	5U	5U	5U	5U	5U	5U
D022	Chloroform	6,000	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U
D007	Chromium	5,000	606	50U	50U	273	50U	50U	357	50U	10U	50U	1,590	260	141
D026	Creosol	200,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D016	2,4-D	10,000	NA	0.015U	0.015U	NA	0.015U	0.015U	NA	0.015U	NA	0.015	NA	NA	NA
D027	1,4-Dichlorobenzene	7,500	1J	50U	50U	5U	50U	50U	5U	50U	5U	50U	5U	10U	10U
D028	1,2-Dichlorobenzene	500	1J	NA	NA	5U	NA	NA	5U	NA	5U	NA	5U	10U	NA
D029	1,1-Dichloroethylene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D030	2,4-Dinitrotoluene	130	10U	50U	50U	10U	50U	50U	10U	50U	10U	NA	10U	10U	10U
D012	Endrin	20	0.006U	0.0006U	0.0006U	0.006U	0.0006U	0.0006U	0.006U	0.0006U	0.006U	0.0006U	0.006U	0.006U	0.006U
D031	Heptachlor	8	0.003U	0.0003U	0.0003U	0.003U	0.0003U	0.0003U	0.003U	0.0003U	0.003U	0.0003U	0.004	0.003U	0.03U
D032	Hexachlorobenzene	130	10U	50U	50U	10U	50U	50U	10U	50U	10U	NA	10U	10U	10U
D033	Hexachlorobutadiene	500	10U	50U	50U	10U	50U	50U	50U	50U	10U	50U	10U	10U	10U
D034	Hexachloroethane	1,000	10U	50U	50U	10U	50U	50U	10U	50U	10U	50U	10U	10U	10U
D008	Lead	5,000	230	50U	50U	75	50U	50U	423	50U	3U	50U	351	13.3	38.5
D013	Lindane	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D009	Mercury	200	5U	0.2U	20U	5U	0.2U	0.2U	5U	0.2U	5U	0.2U	168	0.2U	0.2U

TABLE 3 (Continued)

COMPARISON OF ANALYTICAL RESULTS AGAINST RCRA HAZARDOUS WASTE CHARACTERISTIC PARAMETERS

EPA HW No.	Contaminant	Regulatory Level (µg/L)	CTO-0252 Sites 6, 7, 12, and 16											CTO-0228 SSAs 1, 6, 7 and 15	
			6IDW-T[1]	6IDW DS[2]	6IDW RS[2]	7 IDW-T[1]	7 IDW DS[2]	7 IDW RS[2]	12 IDW-T[1]	12 IDW RS[2]	16 IDW-T[1]	16 IDW RS[2]	IDW - Drums[2]	IDW-D/C[1]	IDW-D/W[1]
D014	Methoxychlor	10,000	0.05U	0.005U	0.005U	0.050U	0.005U	0.005U	0.05U	0.005U	0.05U	0.005U	0.05U	0.05U	0.5U
D035	Methyl Ethyl Ketone	200,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D036	Nitrobenzene	2,000	10U	50U	50U	10U	50U	50U	50U	50U	10U	50U	10U	10U	10U
D037	Pentachlorophenol	100,000	50U	250U	250U	50U	250U	250U	250U	250U	50U	250U	50U	50U	50U
D038	Pyridine	5,000	NA	250U	250U	250U	250U	250U	NA	250U	NA	250U	NA	NA	NA
D010	Selenium	1,000	7.8	300U	300U	6.3	300U	300U	9	300U	5U	300U	25U	16.1	5.3
D011	Silver	5,000	50U	10U	10U	10U	10U	10U	50U	10U	10U	10U	100U	20U	10U
D039	Tetrachloroethene	700	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U
D015	Toxaphene	500	0.1U	0.01U	0.01U	0.1U	0.01U	0.01U	0.1U	0.01U	0.1U	0.01YU	0.1U	0.1U	1U
D040	Trichloroethene (TCE)	500	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	34	5U	8
D041	2,4,5-Trichlorophenol	400,000	NA	50U	50U	NA	50U	50U	NA	50U	NA	50U	NA	NA	NA
D042	2,4,6-Trichlorophenol	2,000	NA	50U	50U	NA	50U	50U	NA	50U	NA	50U	NA	10U	10U
D017	2,4,5-TP (Silvex)	1,000	NA	0.015U	0.015U	NA	0.015U	0.015U	NA	0.015U	NA	0.015U	NA	NA	NA
D043	Vinyl Chloride	200	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
D001	Ignitability	FP<120	NA	>140°F	>140°F	NA	>140°F	>140°F	NA	>140°F	NA	>140°F	NA	NA	NA
D002	Corrosivity	pH ≤ 2 or ≥ 12.5	7.89	6.12	6.80	8.15	6.35	10.19	8.18	7.62	7.80	5.06	5.54	4.21	7.99
D003	Reactivity	40CFR261.													
	Sulfide (µg/kg)	10,000	NA	500U	500U	NA	500U	500U	NA	500U	NA	500U	NA	NA	NA
	Cyanide (µg/kg)	10,000	NA	250U	250U	NA	250U	250U	NA	250U	NA	250U	NA	NA	NA

Notes: [1] Tanker Liquid Samples Analyzed for Total Toxic Organic (TTO) List and TAL Metals at Request of Hampton Roads Sanitation District (HRSD)
[2] Solid Waste Analyzed for Full TCLP and RCRA Hazardous Waste Characteristics
NA - Not Analyzed
U - Not Detected at Contract Required Quantification Limit (CRQL)

TABLE 4

ORGANIC COMPOUNDS DETECTED IN INVESTIGATION-DERIVED WASTE SAMPLES

Compound	CTO-0252 Sites 6, 7, 12, and 16											CTO-0228 SSAs 1, 6, 7 and 15	
	6IDW-T[1] (Liquid)	6IDW DS[2] (Solid)	6IDW RS[2] (Solid)	7 IDW-T[1] (Liquid)	7 IDW DS[2] (Solid)	7 IDW RS[2] (Solid)	12 IDW-T[1] (Liquid)	12 IDW RS[2] (Solid)	16 IDW-T[1] (Liquid)	16 IDW RS[2] (Solid)	IDW - Drums[1] (Liquid)	IDW-D/C[3] (Liquid)	IDW-D/W[3] (Liquid)
VOLATILE ORGANICS													
Acetone	5J	NA	NA	10U	NA	NA	8J	NA	8J	NA	20	NA	NA
2-Butanone	10U	100U	100U	6JB	100U	100U	7BJ	100U	4BJ	100U	5BJ	NA	NA
Chlorobenzene	5U	5U	5U	1J	5U	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichlorobenzene	1J	NA	NA	5U	NA	NA	5U	NA	5U	NA	5U	NA	NA
1,3-Dichlorobenzene	1J	NA	NA	5U	NA	NA	5U	NA	5U	NA	5U	NA	NA
1,4-Dichlorobenzene	1J	50U	50U	5U	50U	50U	5U	50U	5U	50U	5U	NA	NA
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	5U	5U	5U	5U	5U	5U	49J	5U	56J	5U	7,000J	0U	0U
2-Hexanone	2J	NA	NA	10U	NA	NA	10U	NA	5J	NA	100	NA	NA
Methylene Chloride	5U	NA	NA	5U	NA	NA	5U	NA	5U	NA	1BJ	NA	NA
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	34	5U	8
Toluene	5U	NA	NA	2J	NA	NA	5U	NA	5U	NA	5U	5U	5U
Xylenes	2JB	NA	NA	5U	NA	NA	5U	NA	5U	NA	5U	NA	NA
SEMIVOLATILE ORGANICS													
Bix(2-Ethylhexyl)phthalate	10U	NA	NA	12	NA	NA	20	NA	10	NA	98	10U	10U
2-4-Dimethylphenol	10U	NA	NA	10U	NA	NA	10U	NA	10U	NA	90	10U	10U
ORGANICS													
Alpha-BHC	0.003U	NA	NA	0.006	NA	NA	0.003U	NA	0.003U	NA	0.003U	0.003U	0.003U
Beta - BHC	0.006U	NA	NA	0.030	NA	NA	0.006U	NA	0.006U	NA	0.006U	0.006U	0.006U
Heptachlor	0.003U	0.0003U	0.0003U	0.0003U	0.0003U	0.0003U	0.0003U	0.0003U	0.0003U	0.0003U	0.004	0.0003U	0.0003U

Notes: [1] Tanker Liquid Samples Analyzed for Total Toxic Organic (TTO) List and TAL Metals at Request of Hampton Roads Sanitation District (HRSD)
[2] Solid Waste Analyzed for Full TCLP and RCRA Hazardous Waste Characteristics
NA - Not Analyzed
U - Not Detected at Contract Required Quantification Limit (CRQL)
J - Estimated Concentration

TABLE 5

INORGANIC COMPOUNDS DETECTED IN INVESTIGATION-DERIVED WASTE SAMPLES

Compound	CTO-0252 Sites 6, 7, 12, and 16											CTO-0228 SSAs 1, 6, 7 and 15	
	6IDW-T[1] (Liquid)	6IDW DS[2] (Solid)	6IDW RS[2] (Solid)	7 IDW-T[1] (Liquid)	7 IDW DS[2] (Solid)	7 IDW RS[2] (Solid)	12 IDW-T[1] (Liquid)	12 IDW RS[2] (Solid)	16 IDW-T[1] (Liquid)	16 IDW RS[2] (Solid)	IDW - Drums[1] (Liquid)	IDW-D/C[1] (Liquid)	IDW-D/W[1] (Liquid)
Aluminum	169,000	NA	NA	74,300	NA	NA	127,000	NA	200U	NA	232,000	11,400	52,100
Arsenic	224	300U	300U	130	300U	300U	225	300U	10U	300U	434	10U	29.6
Barium	613	852	970	273	974	800	496	953	200U	1,040	3,330	398	200U
Beryllium	11	NA	NA	5U	NA	NA	10.2	NA	5U	NA	25U	10U	5U
Cadmium	11.4	5U	5U	6.3	5U	5U	7.3	5U	5U	5U	25U	10U	5U
Calcium	503,000	NA	NA	415,000	NA	NA	343,000	NA	33,600	NA	1,640,000	148,000	157,000
Chromium	606	50U	50U	273	50U	50U	357	50U	10U	50U	1,590	260	141
Cobalt	105	NA	NA	50U	NA	NA	123	NA	50U	NA	262	80.5	50U
Copper	268	NA	NA	246	NA	NA	364	NA	25U	NA	694	58.9	47.6
Iron	473,000	NA	NA	190,000	NA	NA	445,000	NA	290	NA	2,110,000	909,000	106,000
Lead	230	50U	50U	75	50U	50U	423	50U	3U	50U	351	13.3	38.5
Magnesium	76,300	NA	NA	35,600	NA	NA	26,000	NA	5,000U	NA	76,800	14,900	12,600
Manganese	3,120	NA	NA	1,810	NA	NA	1,460	NA	15U	NA	9,500	5,550	656
Nickel	224	NA	NA	153	NA	NA	174	NA	40U	NA	651	192	49.7
Potassium	61,600	NA	NA	27,600	NA	NA	22,200	NA	6,880	NA	77,200	7,670	18,000
Selenium	7.8	300U	300U	6.3	300U	300U	9.0	300U	5U	300U	25U	16.1	5.3
Silver	50U	10U	10U	10U	10U	10U	50U	10U	10U	10U	100U	20U	10U
Sodium	71,000	NA	NA	68,600	NA	NA	9,080	NA	15,000	NA	34,000	93,300	17,000
Thallium	10U	NA	NA	10U	NA	NA	10U	NA	10U	NA	10U	10U	10U
Vanadium	516	NA	NA	282	NA	NA	324	NA	50U	NA	765	100U	117
Zinc	4,600	NA	NA	786	NA	NA	1,020	NA	20U	NA	7,040	280	310
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	190	11.4

Notes: [1] Tanker Liquid Samples Analyzed for Total Toxic Organic (TTO) List and TAL Metals at Request of Hampton Roads Sanitation District (HRSD)

[2] Solid Waste Analyzed for Full TCLP and RCRA Hazardous Waste Characteristics

NA - Not Analyzed.

U - Not Detected at Contract Required Quantification Limit (CRQL)

Attachment 1

9392-963353

United States Environmental Protection Agency | Office of Solid Waste and Emergency Response | Publication: 9345.3-03FS April 1992

EPA

Guide to Management of Investigation-Derived Wastes

Office of Emergency and Remedial Response
Hazardous Site Control Division OS-220W

Quick Reference Fact Sheet

CERCLA field investigation activities (e.g., remedial investigation/feasibility studies and remedial designs) may result in the generation of waste materials that may pose a risk to human health and the environment. These investigation-derived wastes (IDW) may include drilling muds, cuttings, and purge water from test pit and well installation; purge water, soil, and other materials from collection of samples; residues (e.g., ash, spent carbon, well development purge water) from testing of treatment technologies and pump and treat systems; contaminated personal protective equipment (PPE); and solutions (aqueous or otherwise) used to decontaminate non-disposable protective clothing and equipment. The management of IDW must ensure protection of human health and the environment and comply with (or waive) regulatory requirements that are applicable or relevant and appropriate requirements (ARAR). **This fact sheet presents an overview of possible IDW management options, discusses the protectiveness requirements and ARARs associated with these options, and outlines general objectives established for IDW management under Superfund.**[1]

The general options for managing IDW (see **Highlight 1**) are lection and either (1) immediate disposal or (2) some type of im management. Interim management may include storage or ...er temporary measures. As discussed below, the specific option selected will depend on the type of waste produced, its relative threat to human health and the environment, and other site-specific conditions.

IDW MANAGEMENT REQUIREMENTS

When managing IDW, site managers are required to choose an option that: (1) is protective of human health and the environment and (2) complies with (or waives) ARARs, as described below.

Protectiveness

In determining if a particular management/disposal option is protective, site managers should consider the following:

- The contaminants, their concentrations, and total volume of IDW;
- Media potentially affected (e.g., ground water, soil) under management options;
- Location of the nearest population(s) and the likelihood and/or degree of site access;
- Potential exposures to workers; and
- Potential for environmental impacts.

As a general rule, it will be necessary to use best professional judgment, in light of the site-specific conditions, to determine whether an option is protective of human health and the environment. For example, a site manager may determine that storing IDW temporarily until the final action or returning IDW to its source is protective, based on knowledge that the material poses low risk and/or that the final action will address any risks posed by the wastes and there will be no unacceptable risks in the interim.

Alternatively, if the site includes or is near residential areas, the site is unsecured, and/or contaminants appear to be present at unacceptable levels, it may not be protective to return excavated soil to the source. Storing IDW in containers in an on-site, secure location, or sending it off site immediately may be more appropriate.

Site managers also need to consider the potential effects of IDW management-related activities on environmental media. For example, pouring contaminated purge water on the ground around a well may not be prudent, because such an action could mobilize any hazardous constituents present in the soil or introduce contaminants into clean soil.

Compliance with ARARs

Remedial Investigation/Feasibility Study (RI/FS) and Remedial Design (RD) actions must comply with ARARs "to the extent practicable, considering the exigencies of the situation" (NCP, 55 FR 8756, emphasis added); therefore, it generally will not be necessary to obtain a waiver if an ARAR cannot be attained during these actions. If a site manager determines that, based on site-

[1] Management of treatability study and treatment pilot wastes is ...ssed in Guide for Conducting Treatability Studies Under ...CLA, Interim Final, December 1989, EPA/540/2-89/058. Information on management of IDW generated during Preliminary Assessments and Site Investigations is provided in Management of Investigation-Derived Waste During Site Investigations, May 1990, EPA/540/G-91/009.

Highlight 1: IDW MANAGEMENT OPTIONS

Type of IDW	Generation Processes*	Management Options
Soil	• Well/test pit installation • Borehole drilling • Soil sampling	• Return to boring, pit, or source immediately after generation • Spread around boring, pit, or source within the AOC+ • Consolidate in a pit (within the AOC) • Send to on-site TDU+ • Send to TDU off site immediately • Store for future treatment and/or disposal
Sludges/sediment	• Sludge pit/sediment sampling	• Return to boring, pit, or source immediately after generation • Send to on-site TDU • Send to TDU off site immediately • Store for future treatment and/or disposal
Aqueous liquids (ground water, surface water, drilling fluids, other wastewaters)	• Well installation/development • Well purging during sampling • Ground water discharge during pump tests • Surface water sampling	• Discharge to surface water • Pour onto ground close to well (non-hazardous waste) • Send to on-site TDU • Send to off-site commercial treatment unit • Send to POTW+ • Store for future treatment and/or disposal
Decontamination fluids	• Decontamination of PPE+ and equipment	• Send to on-site TDU • Evaporate (for small amounts of low contamination organic fluids) • Send to TDU off site immediately • Store for future treatment and/or disposal
Disposable PPE	• Sampling procedures or other on-site activities	• Send to on-site TDU • Place in on-site industrial dumpster • Send to TDU off site immediately • Store for future treatment and/or disposal

* The generation processes listed here are provided as examples. IDW may also be produced as a result of activities not listed here.

\+ AOC: Area of Contamination (AOCs at a site may not yet have been identified at the time of the RI/FS); TDU: Treatment/disposal Unit; POTW: Publicly Owned Treatment Works; PPE: Personal Protective Equipment

ecific factors, compliance with an ARAR is practicable but an ARAR waiver is warranted for an RI/FS or RD action, an interim action waiver may be available if the final remedy will attain the ARAR. An action memorandum should be prepared for the waiver, the state given an opportunity to comment, and the decision document placed in the administrative record.

Potential ARARs for IDW at CERCLA sites include regulations under the Resource Conservation and Recovery Act (RCRA) (including both Federal and State underground injection control (UIC) regulations), the Clean Water Act (CWA), the Clean Air Act (CAA), the Toxic Substances Control Act (TSCA), and other State environmental laws. How these various requirements may direct or influence IDW management decisions is described below.

Resource Conservation and Recovery Act (RCRA). Certain sections of the RCRA Subtitle C hazardous waste regulations (e.g., land disposal restrictions and storage restrictions) may be ARARs for IDW should RCRA hazardous waste be identified at a site. (Note that RCRA may be relevant and appropriate even if the IDW is not a RCRA hazardous waste.) A waste is hazardous under RCRA if it is listed as such in 40 CFR 261.31 - 261.33 or if it exhibits one of four characteristics: ignitability, corrosivity, reactivity, or toxicity.

Site managers should not assume that a waste considered to pose a potential risk at a CERCLA site is a listed or characteristic CRA hazardous waste. **Until there is positive evidence (records, test results, other knowledge of waste properties) that the IDW is a RCRA hazardous waste, site managers should manage it in a protective manner (but not necessarily in accordance with Subtitle C requirements).** Business records or facility processes should be examined to determine whether RCRA listed wastes were generated and are present in the IDW. For characteristic wastes, site managers should rely on testing results or on knowledge of the material's properties. If best professional judgment and available information indicate that, for protectiveness reasons (or because RCRA requirements are relevant and appropriate), IDW is best managed as a "hazardous waste," management in accordance with Subtitle C requirements is prudent, regardless of whether it is known to be a RCRA waste.

If aqueous liquid IDW is considered a RCRA hazardous waste, the site manager should determine whether the Domestic Sewage Exclusion (DSE) applies to the discharge of that IDW to a POTW. The RCRA DSE exempts domestic sewage and any mixture of domestic sewage and other wastes that passes through a sewer system to a POTW for treatment from classification as a solid waste and, therefore, as a RCRA hazardous waste (40 CFR 261.4).

- Land Disposal Restrictions

If IDW is determined to be a RCRA hazardous waste and subject to the land disposal restrictions (LDRs), "land disposal" of the IDW will be prohibited unless specified treatment standards are met (see Superfund LDR Guides #5 and #7, Determining When LDRs Are Applicable to CERCLA Response Actions and Determining When LDRs Are Relevant and Appropriate to CERCLA Response Actions, OSWER Directive 9347.3-05FS and 9347.3-08FS, June 1989 and December 1989 and the NCP, 55 FR 8759, March 8, 1990). "Land disposal" occurs when wastes from different AOCs are consolidated into one AOC; when wastes are moved outside an AOC (for treatment or storage) and returned to the same or a different AOC; or when wastes are excavated, placed in a separate hazardous waste management unit such as an incinerator or tank within the AOC, and then redeposited into the AOC.

Storing IDW in a container ("a portable device in which a material is stored, transported, treated, disposed of, or otherwise handled" (40 CFR 260.10)) within the AOC and then returning it to its source, however, is allowable without meeting the specified LDR treatment standards. Under the definition of "hazardous waste management unit" (40 CFR 260.10), EPA states that "a container alone does not constitute a unit; the unit includes the containers and the land or pad upon which they are placed." Therefore, returning IDW that has been stored in containers (not tanks or other RCRA-regulated units) within the AOC to its source does not constitute land disposal, as long as containers are not managed in such a manner as to constitute a RCRA storage unit as defined in 40 CFR 260.10. In addition, sampling and direct replacement of wastes within an AOC do not constitute land disposal.

- Storage

Subtitle C outlines the storage requirements for RCRA hazardous wastes. Under RCRA, "storage" is defined as "the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere" (40 CFR 260.10).

On-site Superfund actions are only required to comply with the substantive standards of other laws (see 40 CFR 300.5, definitions of applicable or relevant and appropriate requirements). Superfund sites are also exempt from permit requirements under CERCLA §121(e). Therefore, site managers are not required to comply with administrative requirements triggered by RCRA storage deadlines (e.g., contingency planning, inspections, recordkeeping). Generally equivalent administrative activities are undertaken at Superfund sites, however, under existing Superfund management practices.

Site managers storing known RCRA hazardous waste must comply with the substantive, technical requirements of 40 CFR Parts 264 and 265 Subparts I (containers), J (tanks), and L (waste piles), to the extent practicable. (See **Highlight 2** for a summary of these technical requirements for each type of unit). In addition, the ground-water monitoring requirements of 40 CFR Parts 264 and 265 Subpart F are potential ARARs, and to the extent they are determined to be ARARs at a site, they should be attained to the extent practicable (or waived). (In many cases, ground-water monitoring conducted during the RI/FS will provide protection equivalent to the Subpart F requirements.)

[NOTE: Under the LDRs, restricted RCRA hazardous waste may not be stored at a site unless the storage is solely for the purpose of accumulating sufficient quantities of the waste to facilitate proper disposal, treatment, or recovery (see 40 CFR 268.50). Generally, storing IDW until a final disposal option is

Highlight 2:
EXAMPLES OF RCRA TECHNICAL STORAGE REQUIREMENTS*

RCRA storage requirements, applicable to both less-than-90-days generators and permitted or interim status storage facilities, may include the following substantive requirements:

Containers 40 CFR 264 Subpart I and 265 Subpart I

- Containers must be in good condition
- Wastes must be compatible with container
- Container must be closed during storage
- Container storage areas must have a containment system that can contain 10 percent of the volume of containers or of the largest container
- Spilled or leaked waste must be removed from the collection area as necessary to prevent overflow

Tanks 40 CFR 264 Subpart J and 265 Subpart J

- Tanks must have a secondary containment system that includes a liner, a vault, a double-walled tank, or an equivalent device (applies only to certain tanks)

Waste Piles 40 CFR 264 Subpart L and 265 Subpart L

- Waste piles must have a liner and a leachate collection and removal system
- Owners/operators must have a run-on control system to prevent flow onto the active portion of the pile during peak discharge from at least a 25-year storm
- Owners/operators must have a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm

* This is a partial list of substantive requirements. For more detail, see 40 CFR Part 264 and 265.

selected in a Record of Decision (ROD) and implemented during the remedial action is allowable storage under the RCRA LDR storage prohibition.]

- Recordkeeping and Manifesting

If hazardous wastes are sent off site, the site manager must comply with both administrative and substantive elements of the RCRA generator requirements of 40 CFR Part 262 and LDR notification and certification requirements of Part 268. (For example, a site manager must prepare an LDR notification and certification when restricted wastes are sent off site to a land disposal facility.) These standards include requirements such as manifests for shipping waste that list all hazardous waste listings and characteristics applicable to the waste (see 40 CFR 262.11), packaging and transport requirements, and recordkeeping requirements.

If the LDRs are applicable, the following information should be collected and available before the removal of wastes to an off-site disposal facility: EPA hazardous waste number, LDR treatment standards, manifest number for the waste shipment, and waste analysis data.

- Underground Injection Control (UIC) Program

Under the UIC regulations, RCRA hazardous wastes may be injected into Class I permitted wells. In some cases, hazardous liquids, such as extracted ground water from pump and treat operations, may be injected into a Class IV UIC well. For example, ground water contaminated with RCRA hazardous wastes may be injected into Class IV permitted wells if it is part of a CERCLA response action or a RCRA corrective action and if it has been treated to "substantially reduce hazardous constituents prior to such injection..." (RCRA § 3020(b)). (See Applicability of Land Disposal Restrictions to RCRA and CERCLA Ground Water Treatment Reinjection, OSWER Directive #9234,1-06, December 1989.)

- Non-RCRA Hazardous Wastes

Some non-RCRA hazardous waste may be subject to management requirements under Subtitle D of RCRA as solid wastes. Subtitle D regulates disposal of solid waste in facilities such as municipal landfills. Therefore, non-RCRA hazardous IDW, such as decontaminated PPE or equipment, may need to be disposed of in a Subtitle D facility (depending on State requirements).

Clean Water Act (CWA). Discharges of aqueous IDW to surface water and publicly owned treatment works (POTWs) may be required to comply with CWA Federal, State, and local requirements. Requirements to be met may include water quality criteria, pre-treatment standards, State water quality standards, and NPDES permit conditions. Direct discharges to on-site waters are subject only to substantive requirements, while discharges to POTWs and other off-site discharges must comply with both substantive and administrative CWA requirements (including permitting requirements). (See Guide to Discharging CERCLA Aqueous Wastes to POTWs, June 1991 and CERCLA Compliance with the CWA and SDWA, #9234.2-06FS, January 1991.)

Toxic Substances Control Act (TSCA). If IDW contains PCBs, TSCA treatment and/or disposal requirements may apply during its management. TSCA requirements regulate the disposal of material contaminated with PCBs at concentrations of 50 ppm or greater as found on site (i.e., based on sample analysis and not the PCB concentration of the source material {e.g., transformer fluid}). (See PCB Guidance Manual, EPA/540/G-90/007, August 1990.) In addition, TSCA storage requirements may apply that limit the time that PCBs may be stored to one year. Furthermore, if PCB materials are mixed with a RCRA hazardous waste, they may be regulated by the LDR California list prohibitions. (See RCRA sections 3004(d)(2)(D) and (E).)

Department of Transportation (DOT) requirements. Where IDW will be disposed of off site or transported on public roads to a site,

T requirements for containerizing, labeling, and transporting hazardous materials and substances may apply.

State requirements. Promulgated State regulations that are legally enforceable, timely identified, and more stringent than Federal regulations may be potential ARARs for IDW managed on site. Substantive requirements of State law that may be ARARs for IDW management include State water quality standards, direct discharge limits, and RCRA requirements (including underground injection control regulations) promulgated in a State with an authorized RCRA hazardous waste management program (as well as programs authorized by State laws). Off-site, substantive and administrative requirements of State law may apply.

Off-Site Policy. In addition to complying with requirements of Federal and State laws, all off-site disposal of wastes must comply with CERCLA section 121(d)(3) and the CERCLA Off-Site Policy (OSWER Directive No. 9834.11 (November 13, 1987)). The Off-Site Policy establishes criteria for selecting an appropriate treatment, storage, or disposal facility (TSDF), including release criteria for all facilities that receive wastes from CERCLA-authorized or funded response actions. In addition, receiving facilities must be in compliance with all "applicable laws."

Before shipping wastes off site, approval should be obtained for the proposed disposal facility from EPA's Regional Off-Site Policy Coordinator. In addition, EPA has adopted a policy for Superfund ·stes shipped out of State that written notification should be ·vided to receiving States (OSWER Directive 9330.2-07, September 14, 1989).

GENERAL OBJECTIVES FOR IDW MANAGEMENT

In addition to the two requirements of protectiveness and compliance with ARARs to the extent practicable (on site) or compliance with applicable law (off site), EPA has identified two general objectives that Superfund site managers should consider when managing IDW: (1) minimization of IDW generation; and (2) management of IDW consistent with the final remedy for the site. The extent to which these objectives can be achieved is highly dependent on site-specific circumstances.

IDW Minimization

Site managers should strive to minimize the generation of IDW to reduce the need for special storage or disposal requirements that may result in substantial additional costs yet provide little or no reduction in site risks relative to the final remedial action. Generation of IDW can be minimized through proper planning of all remedial activities that may generate IDW, as well as through use of screening information from the site inspection. The potential problems of managing IDW should be a factor in choosing an investigative method. Site managers may wish to consider techniques such as replacing solvent-based cleaners with aqueous-·sed cleaners for decontamination of equipment, reuse of ·uipment (where it can be decontaminated), limitation of traffic between clean and hot zones, and drilling methods and sampling techniques that generate little waste. Examples of such techniques include using gridding techniques to minimize the number of test pits or using soil borings instead of test pits. Alternative drilling and subsurface sampling methods may include the use of small diameter boreholes, as well as borehole testing methods such as a core penetrometer instead of coring. Site managers should also be careful to keep hazardous wastes separate from nonhazardous wastes.

Management Consistent with Final Remedy

Most IDW (with the exception of non-indigenous IDW) generated during the course of an investigation are intrinsic elements of the site. If possible, IDW should be considered part of the site and should be managed with other wastes from the site, consistent with the final remedy. This will avoid the need for separate treatment and/or disposal arrangements.

Because early planning for IDW management can prevent unnecessary costs and the use of treatment or disposal capacity, IDW management should be considered as early as possible during the remedial process. A key decision to be made is whether the waste will best be treated/disposed of immediately or addressed with the final remedy. If addressed with the final remedy, IDW volumes should be considered in the FS. In addition, when IDW is stored on site, it should be managed as part of the first remedial action/operable unit that addresses the affected media.

SELECTION OF IDW DISPOSAL OPTIONS

The following sections present the Agency's presumptions for IDW management that have been established based on the above considerations. The actual option selected should be based upon best professional judgment and should take into account the following factors:

- The type and quantity of IDW generated (sludge/soil, aqueous liquid, non-indigenous IDW);
- Risk posed by managing the IDW on site (e.g., based on site access controls, contaminant concentrations);
- Compliance with ARARs, to the extent practicable (on site);
- IDW minimization; and
- Whether the final remedy is anticipated to be an off-site or on-site remedy (or this information is unknown) and whether IDW can be managed consistent with the final remedy.

Off-site Final Remedies

If a site manager believes that the final remedy will involve off-site disposal of wastes, EPA's presumption is to manage the IDW as part of the remedial action addressing the waste/medium. Thus, until the final action, the IDW may be stored (e.g., drummed, covered waste pile) or returned to its source. However, the management option selected should also take into account any protectiveness concerns, ARARs, and other relevant site-specific factors (e.g., weather, storage space, and public concern/ perceptions).

There are several potential reasons why it may be advisable to store IDW until the final action. First, because wastes at the site will be shipped off site eventually, returning IDW (especially sludges and soil) to its source would require that it be excavated again. Thus, site managers may consider it practical to containerize IDW as soon as it is generated. Second, storing IDW in containers may be more protective than returning it to its source. Third, because off-site actions may trigger such requirements as the LDRs, temporary storage will eliminate the need to meet these additional requirements until the final remedy.

In some cases, circumstances may lead site managers to choose to return the IDW to its source. This may be appropriate if it is determined that returning IDW to the source is protective and that storage at the site is not possible or practicable (i.e., given State or community concerns). In other cases, long-term storage may not be protective, and immediate off-site disposal may be a better option.

Off-site Remedy

Example: A site involves volatile organic RCRA hazardous wastes that will likely be sent off site for final treatment and disposal. Site conditions are such that temporary storage of IDW is considered protective until the remedial action begins. Because off-site disposal will trigger RCRA disposal requirements such as the LDRs and immediate containerization would be more protective than redepositing into the source area at the time of sampling, the site manager decides to containerize the IDW (and comply with RCRA substantive technical tank and container standards) until the final action is initiated.

On-site Final Remedies (or Final Management in an Unknown Location)

When final management of wastes is likely to occur on site, the management presumptions vary depending on the type of IDW produced.

Sludge/soil

Generally, the Agency expects sludge or soil IDW will be returned to its source if short-term protectiveness is not an issue. The reason behind this presumption is that IDW that may pose a risk to human health and the environment in the long term will be addressed by the final action. Storage of RCRA hazardous IDW in containers within the AOC prior to returning it to the source will not trigger the LDRs, as long as the containers are not managed in such a way as to constitute a RCRA storage unit as defined in 40 CFR 260.10. Therefore, it may be possible to store IDW temporarily before redisposing of it. However, EPA believes hat, in many cases, returning sludges and soils to their source immediately will be protective and will avoid potentially increased costs and requirements associated with storage. Site-specific decisions on how to manage sludge and soil IDW may ultimately vary from the presumption based on protectiveness, ARARs, and/or community concerns.

Sludge/Soil

Example 1: The soil at a site contains wastes that are expected to be stabilized on site during the final remedial action. The site manager determines that sending soil IDW off site is not cost-effective, because off-site disposal would involve testing and transport costs for a relatively small amount of waste. Instead, knowing that the site is secure and that redisposing the waste at the source will not increase site risk or violate ARARs, the site manager decides to return soil IDW to the source area from which it originated.

Example 2: A site manager determines that returning highly contaminated PCB wastes to the ground at a site is not protective because of the potential risks associated with the material; instead, the site manager chooses to drum the waste and send it off site (in compliance with TSCA). (Off-site disposal may occur immediately or at a later date.)

Example 3: Soil IDW contaminated with a RCRA hazardous waste is generated from a soil boring. The site manager decides to put the IDW back into the borehole immediately after generation, but ensures that site risks will not be increased (e.g., the contaminated soil will not be replaced at a greater depth than where it was originally so that it will not contaminate "clean" areas) and that the contamination will be addressed in the final remedy.

Aqueous liquids

EPA has not established a presumption for the management of aqueous liquid IDW (e.g., ground water). Site managers should determine the most appropriate disposal option for aqueous liquids on a site-specific basis. Parameters to consider, especially in making the protectiveness decision, include the volume of IDW, the contaminants present in the ground water, the presence of contaminants in the soil at the site, whether the ground or surface water is a drinking water supply, and whether the ground-water plume is contained or moving. Special disposal/handling may be needed for drilling fluids because they may contain significant solid components. Examples of aqueous liquid management decisions considering these factors are presented in the box on the next page.

Non-indigenous IDW

Non-indigenous IDW (e.g., sampling materials, disposable PPE, decontamination fluids) should be stored until the final remedy or disposed of immediately. If contaminated, such waste may not be disposed of onto the ground because such an action would add contamination that was not present when activities began at the sit (e.g., solvents used for decontamination). If non-indigenous ID is contaminated with RCRA hazardous waste, it must be managed in accordance with RCRA Subtitle C requirements. Otherwise, site

Aqueous Liquids

Example 1: A site manager has large volumes of ground water IDW and does not know if it is contaminated. Pouring this IDW on the ground would not be protective, because it may contaminate previously uncontaminated soil or may mobilize contaminants that are present in the soil. Therefore, the site manager stores the water in a mobile tank until a determination is made as to whether the water and soil are contaminated or until the final action.

Example 2: IDW is generated from the sampling of background, upgradient wells. Because there are no community concerns or evidence of any soil contamination from other sources, the site manager decides to pour this presumably uncontaminated IDW on the ground around the well.

Example 3: Purge water from a deep aquifer is known to be contaminated with a RCRA hazardous waste. At this site, if this water were poured on the ground, it could contaminate a previously uncontaminated shallow aquifer that is a potential drinking water source and would have to comply with the LDRs. The site manager decides to containerize the water within the AOC and store it until the final remedy.

managers may generally dispose of it in an on-site dumpster (for PPE).

Non-indigenous IDW

Example 1: Disposable PPE (e.g., gloves, shoe covers) becomes contaminated with RCRA hazardous waste during the field investigation. The site manager containerizes and disposes of this IDW in compliance with RCRA Subtitle C requirements.

Example 2: Disposable equipment becomes contaminated during a field investigation. The site manager decontaminates them and sends them to a Subtitle D facility.

COMMUNITY CONCERNS

Residents of communities near a CERCLA site, local governments, or States may have concerns about certain disposal methods or long-term storage of IDW at the site. As with all CERCLA activities, site managers should evaluate community concerns regarding disposal of IDW in deciding what action to take. For example, if a community is concerned about the direct discharge of IDW water to surface water on site, site managers may want to consider sending the water to a POTW, if one is located nearby. In some instances, it may be appropriate to prepare fact sheets, include options in other community relations documents, or explain IDW management decisions at public meetings prior to actions.

NOTICE: The policies set out in this memorandum are not final agency action, but are intended solely as guidance. They are not intended, nor can they be relied upon, to create any rights enforceable by any party in litigation with the United States. EPA officials may decide to follow the guidance provided in this memorandum, or to act at variance with the guidance, based on an analysis of specific site circumstances. The Agency also reserves the right to change this guidance any time without public notice.

APPENDIX F
CHAIN-OF-CUSTODY FORMS

Appendix F

Only Chain-of-Custody Forms associated with Background Sampling are included in this appendix.

③

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19001-43-SRN-214
P. O. No. 252-6200

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP 3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: M TAUBE
BJ CUMMINGS
MC DAVIDSON

Turnaround Time: ONE SAMPLE 12HP08
or
Date Needed By: 7 TO 14 DAY TURNAROUND TIME

Preservative Used: HCL, HNO_3, NaOH

Type of Analysis: SOIL: CLP VOA; CLP SVOA/PEST/PCB; TAL INORGANICS/CN/pH; N/N-SW8330; WATER: CLP VOA; TAL INORGANICS; TAL CN; N/N-SW8330

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	SOIL CLP VOA	SOIL CLP SVOA/PEST/PCB	SOIL TAL INORGANICS/CN/pH	SOIL N/N-SW8330	WATER CLP VOA	WATER TAL INORGANICS	WATER TAL CN	WATER N/N-SW8330			Field Remarks
MCD 12S47	7.8.94	0840	SOIL	4	–	X	X	X	X							
MCD 12S48	7.8.94	0910	SOIL	4	–	X	X	X	X							
12HP08	7.8.94	1330	WATER	5	–					X			X			Rapid Turn Time
12-TB004	7.8.94	1330	Water	1	–					X						
12-BG-TB003	7.8.94	0845	Water	1	–					X						
12-RB002	7.8.94	1740	Water	3	–					X			X			
BG-RB003	7.8.94	1730	Water	2	–						X	X				
BGS01	7.8.94	1040	SOIL	1	–			X								
BGS02	7.8.94	1110	SOIL	1	–			X								
BGS03	7.8.94	1135	SOIL	1	–			X								
BGS04	7.8.94	1410	SOIL	1	–			X								
BGS05	7.8.94	1446	SOIL	1	–			X								
BGS06	7.8.94	1515	SOIL	1	–			X								
BGS07	7.8.94	1535	SOIL	1	–			X								

Relinquished By:	Date/Time	Received By:
Barbara Cummings	7-8-94 1815	
Melissa C Davidson	7.8.94 18115	
		Received for Laboratory By:

Comments:

Date/Time	Shipper:	Airbill No.
7/8/94 1830	FED EX	1396786230

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

(4)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
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FAX: (703) 642-6761

Quote No. 19001-43-SEN-214

P. O. No. 252-6200

2 of 2 pages

Project Name or Number: WPNSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC

Send Results to: DONALD C. SHIELDS

Address: 420 ROSSER RD, AOF3
CORAOPOLIS, PA 15108

Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: M. Taube
BJ Cummings
MC DAVIDSON

Turnaround Time:
or
Date Needed By:

Preservative Used

Type of Analysis: SOIL; TAL INORGANICS (ICP)

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type		Field Remarks
BG508	7-8-94	1555	SOIL	1	—	X	
BG509	7-8-94	1620	SOIL	1	—	X	

Relinquished By:	Date/Time	Received By:	Comments:
Barbara J Cummings	7-8-94 1815		
Melinda C Davidson	7-8-94 1815		
Relinquished By:	Date/Time	Received for Laboratory By:	Date/Time: 7/8/94 1830

Shipper: FED EX

Airbill No. 1396786230

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P. O. No. 252-6200
1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AGP3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: BJ CUMMINGS

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: CLP VOA	CLP SVOA/PEST/PCB/pH	TAL INORGANICS/CN	N/N-SW8330	CLP VOA	CLP SVOA/pH	CLP PEST/PCB	TAL INORGANICS	N/N-SW8330	TOC, GRAIN SIZE, BULK DENSITY	TAL CN	Field Remarks
											HCL				HNO3		NAOH	
16S26	7-11-94	1455	SOIL	4			X	X	X	X		X						
6S14	7-11-94	1425	SOIL	4			X		X	X		X						
16S27	7-11-94	1510	SOIL	4			X	X	X	X		X						
6S13	7-11-94	1400	SOIL	4			X		X	X		X						
~~16S27~~	~~7-11-94~~																	
6S25	7-11-94	1135	SOIL	4			X		X	X		X						
6S24	7-11-94	1110	SOIL	1			X											
6S12	7-11-94	1040	SOIL	1			X											
6S15	7-11-94	0910	SOIL	1			X											
6S23	7-11-94	0945	SOIL	2			X											MS/MSD
6S23D	7-11-94	0945	SOIL	1			X											
6S22	7-11-94	0840	SOIL	4			X		X	X		X						
16-7-6-TB009	7-11-94	0840	WATER	1							X							
BGS45-BG	7-9-94	1155	SOIL	3				X	X	X								

Relinquished By: [signature] Date/Time 7-11-94 1630
Received By:
Relinquished By: Date/Time
Received By:
Relinquished By: Date/Time
Received for Laboratory By:

Comments: NOTE: ALL CLP VOA'S ARE LOW LEVEL (WATER)

Date/Time 7-11-94 1630 | Shipper: FED-EX | Airbill No. 139678624 1

Distribution: Original Plus One Accompanies Shipment (White and Yellow); Copy to Coordinator Field Files (Pink)

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P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 POUSER RD, AOP 3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: B J CUMMINGS

Turnaround Time: or Date Needed By:

Preservative Used: HCL, HNO_3, NaOH

Type of Analysis: CLP VOA; CLP SVOA/PEST/PCB/PH; TAL INORGANICS/CN; N/N-SW8330; CLP VOA; CLP SVOA; CLP PEST/PCB; TAL INORGANICS; N/N-SW8330; TAL CN; SOIL GRAIN SIZE, BULK DENSITY TOC

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP VOA	CLP SVOA/PEST/PCB/PH	TAL INORGANICS/CN	N/N-SW8330	CLP VOA	CLP SVOA	CLP PEST/PCB	TAL INORGANICS	N/N-SW8330	TAL CN	SOIL GRAIN SIZE, BULK DENSITY TOC	Field Remarks
6-16-RB009	7-11-94	0725	WATER	7						X[3]	X[3]		X	X	X		
12-RB008	7-11-94	0705	WATER	3						X[3]				X			
6-7-RB006	7-10-94	0820	WATER	2									X		X		
BGRR-RB005	7-9-94	1740	WATER	5							X[3]		X	X	X		

Relinquished By:	Date/Time	Received By:
Barbara J Cummings	7-11-94 1640	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By: RED COOLER

Comments:

9358334702 MPS

Date/Time	Shipper:	Airbill No.
7-11-94 1640	FED-EX	1396786241

Distribution: [illegible]inal Plus One Accompanies Shipment (White and Yellow): Copy to Coord[illegible] [illegible]r Field Files (Pink)

(7)

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FAX: (703) 642-6761

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1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP 3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: BJ CUMMINGS

Turnaround Time: or Date Needed By:

Preservative Used: HCL, HNO_3, NaOH

Type of Analysis: CLP VOA; CLP SVOA/PEST/PCB/PH; TAL INORGANICS/CN; N/N-SW8330; TOC GRAINSIZE, BULK DENSITY; CLP VOA; CLP SVOA/PH; CLP PEST/PCB; TAL INORGANICS; TAL CN; N/N-SW8330

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP VOA	CLP SVOA/PEST/PCB/PH	TAL INORGANICS/CN	N/N-SW8330	TOC GRAINSIZE, BULK DENSITY	CLP VOA	CLP SVOA/PH	CLP PEST/PCB	TAL INORGANICS	TAL CN	N/N-SW8330	Field Remarks
BGS51RR	7-9-94	1610	SOIL	3			X	X	X								
BGS44RR	7-9-94	1135	SOIL	3			X	X	X								
BGS41RR	7-9-94	0935	SOIL	3			X	X	X								
BGS50RR	7-9-94	1535	SOIL	3			X	X	X								
BGS44RRD	7-9-94	1135	SOIL	3			X	X	X								
6S23	7-11-94	0945	SOIL	6			HCL	X	HNO3			X					MS/MSD
6S23D	7-11-94	0945	SOIL	3			HCL	X	HNO3			X					
6S15	7-11-94	0910	SOIL	3				X	X			X					
6S24	7-11-94	1110	SOIL	3				X	X			X					
6S12	7-11-94	1040	SOIL	3				X	X			X					

HAD 7-17-94

Relinquished By:	Date/Time	Received By:
Barbara J Cummings	7-11-94 1705	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: 9358334711

Date/Time	Shipper:	Airbill No.
7-11-94 1705	FED-EX	1376786241

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(8)

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P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WANSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, A0P3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: BJ CUMMINGS

Turnaround Time: 12HP10-01 RAPID TURN ON CLP VOA
or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	CLP VOA	CLP SVOA/PH	CLP SVOA/PEST/PCB/PH	TAL INORGANICS/CN	NW-SW8330	CLP PEST/PCB	TAL INORGANICS	TOC (GRAIN SIZE BULK DENSITY)	TAL CN	CLP SVOA	Field Remarks
6-7-RB006	7-10-94	0820	WATER	1											X		
B6-RR-RB005	7-9-94	1740	WATER	1							X						
12HP10-01	7-11-94	1045	WATER	15			X12			X3							MS/MSD RAPID TURNAROUND
12-TB010	7-11-94	1045	WATER	1			X										
12-RB007	7-10-94	0915	WATER	5			X3							X	X3		
12-RB002	7-9-94	0640	WATER	2			X3										

Relinquished By: [signature]	Date/Time 7-11-94 1721	Received By:	Comments: 9348334727
Relinquished By:	Date/Time	Received By:	
Relinquished By:	Date/Time	Received for Laboratory By:	Date/Time 7-11-94 1721 / Shipper: FED-EX / Airbill No. 139678624 1

Distrit · Original Plus One Accompanies Shipment (White and Yellow): Copy to rdinator Field Files (Pink)

(9)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200
1 of 1 pages

Project Name or Number: WPNSTA Yorktown
Client: Baker Environmental, Inc.
Send Results to: Donald C. Shields
Address: 420 Rouses Road, ADP3
Caraopolis, PA 15143
Phone: 412/269-6000 FAX: 412/269-2002

Sampled By: BJ Cummings

Turnaround Time: or Date Needed By:

Preservative Used

Type of Analysis

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP VOA	CLP SVOA/PH	CLP SVOA/Pest/PCB/pH	TAL INORGANICS/CN	N/N-SW8330	CLP PEST/PCB	TAL INORGANICS TOC GRAIN SIZE, BULK DENSITY	TAL CN	CLP SVOA	Field Remarks
7S08	7-10-94	1040	SOIL	3	–		X		X	X					
7S13	7-10-94	0955	SOIL	3	–		X		X	X					
7S14	7-10-94	1255	SOIL	3	–		X	7-20-94	X	X					
BGS47RR	7-9-94	1415	SOIL	3	–		X	X	X	X					
7S10	7-10-94	1155	SOIL	3	–		X		X	X					
7S11	7-10-94	1020	SOIL	3	–		X		X	X					
12SB10-21M	7-11-94	0740	SOIL	4	–	X	X MCD	X	X	X					MS/MSD
12SB10-21	7-11-94	0748	SOIL	4	–	X		X	X	X					
7S12	7-10-94	1225	SOIL	3	–		X		X	X					

Relinquished By:	Date/Time	Received By:
Melissa Davidson	7-11-94 1739	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

9358334736

Date/Time	Shipper:	Airbill No.
7-11-94 1720	Fed-Ex	1396786241

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(12)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

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Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SEN-244
P. O. No. 252-6200

1 of 3 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, A0P3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: BJ CUMMINGS

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: CLP UOA	CLP SVOA/PH	CLP SVOA/PEST/PCB/PH	TAL INORGANICS/CN	N/N -SW8330	CLP PEST/PCB	TAL INORGANICS TOC GRAINSIZE, BULK DENSITY	TAL CN	CLP SVOA	Field Remarks
12HP06-01	7-9-94	1245	WATER	5			X			X						
BG552RR	7-9-94	1545	SOIL	1			X									
12SB10-10	7-10-94	1340	SOIL	1			X									
12SB07-12	7-10-94	0805	SOIL	1			X									
12SB06-20	7-9-94	1051	SOIL	1			X									
12SB07-02	7-10-94	0741	SOIL	1			X									
12SB07-01D	7-9-94	1620	SOIL	1			X									
12SB06-01	7-9-94	0740	SOIL	1			X									
12SB07-01	7-9-94	1620	SOIL	1			X									
BG546RR	7-9-94	1053	SOIL	1			X									
~~BG542RR~~ BG542RR MD	7-9-94	0950	SOIL	1			X									
BG544RRD	7-9-94	1135	SOIL	1			X									
BG546RR	7-9-94	1055	SOIL	1			X									MS/MSD
BG541RR	7-9-94	0935	SOIL	1			X									

	Date/Time		
Relinquished By:	7-11-94	1745	Received By:
Relinquished By:			Received By:
Relinquished By:			Received for Laboratory By:

Comments:

Date/Time	Shipper:	Airbill No.
7-11-94 1745	FED-EX	139678 6252

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

(13)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SEN-214
P. O. No. 252-6200

2 of 3 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC.
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: BJ CUMMINGS

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: CLP VOA	Field Remarks
BG550 RE	7-9-94	1535	soil	1			X	
BG544 RE	7-9-94	1135	Soil	1			X	
BG548 RE	7-9-94	1400	Soil	1			X	
BG549 RE	7-9-94	1430	Soil	1			X	
BG551 RE	7-9-94	1610	Soil	1			X	
BG543 RE	7-9-94	0930	Soil	1			X	
BG547 RE	7-9-94	1415	Soil	1			X	
BG545 RE	7-9-94	1130	Soil	1			X	
7SB03-05	7-11-94	1344	Soil	1			X	
7SB03-10	7-11-94	1417	Soil	1			X	
7SB03-01	7-11-94	1320	Soil	1			X	
12SB06-10	7-9-94	0911	Soil	1			X	
G521	7-10-94	1510	Soil	1			X	
G511	7-10-94	1440	Soil	1			X	

Relinquished By:	Date/Time	Received By:
[signature]	7-11-94 1745	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

Date/Time	Shipper:	Airbill No.
7-11-94 1745	FED-EX	1396786252

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

(TB)14

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SAN-214
P. O. No. 252-6200
3 of 3 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AGP 3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: BJ CUMMINGS

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: CLP VOA	Field Remarks
7510	7-10-94	1155	SOIL	1			X	
7512	7-10-94	1225	SOIL	1			X	
7514	7-10-94	1253	SOIL	1			X	
7509	7-10-94	1130	SOIL	1			X	
7511	7-10-94	1020	SOIL	1			X	
7508	7-10-94	1040	SOIL	1			X	
7513D	7-10-94	0955	SOIL	1			X	
7513	7-10-94	0955	SOIL	1			X	
12-TB-006	7-7-94		WATER	1			X	
6-7-RB006	7-10-94	0820	WATER	2			X	
6-7-TB007	7-10-94	0955	WATER	1			X	
BORRBOOS	7-7-94	1740	WATER	2			X	
12-TB008	7-10-94		WATER	1			X	
12SB10-01	7-10-94	1107	SOIL	1			X	

Relinquished By:	Date/Time 7-11-94 1745	Received By:	Comments:
Relinquished By:	Date/Time	Received By:	
Relinquished By:	Date/Time	Received for Laboratory By:	Date/Time 7-11-94 1745 / Shipper: FED-EX / Airbill No. 1396786252

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(15)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

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Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-93-SRN-21M (MED)

P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA Yorktown

Client: Baker Environmental, Inc.

Send Results to: Donald C. Shields

Address: 420 Rouser Road, AOP3
Coraopolis, PA 15143

Phone: 412/269-6000 FAX: 412/269-2002

Sampled By: BJ Cummings

Turnaround Time: or Date Needed By:

Preservative Used

Type of Analysis

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP VOA	CLP SVOA	CLP SVOA TPH PEST/PCB	TAL INORGANICS/CN	N/N-SW8330	CLP Pest/PCB	TAL Inorganics	TOC, grain size, bulk density	TAL CN	CLP SVOA	Field Remarks
125B07-027	7/10/94	0791	SOIL	2	—			X	X							
125B06-20	7/9/94	1051	SOIL	4	—			X	X	X		X				
BGS43RR	7/8/94	0930	SOIL	3	—			X	X	X						
BGS49RR	7/11/94	1430	SOIL	3	—			X	X	X						
BGS42RR	7/9/94	0950	SOIL	3	—			X	X	X						
6511	7/10/94	1440	SOIL	3	—		X	X (MED)	X	X						
7513D	7/10/94	0955	SOIL	3	—		X		X	X						

Relinquished By:	Date/Time	Received By:
M Davids	1835 7/11/94	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

077
935-8335-6866 mc

Date/Time: 7/11/94 1835 | Shipper: Fed-Ex | Airbill No.: 796786252

Distribution: Original Plus One Accompanies Shipment (White and Yellow); Copy to Coordinator Field Files (Pink)

(16)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
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Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SEM 214
P. O. No. 252-6200
1 of 1 pages

Project Name or Number: NPN STA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP3
CORAOPOLIS, PA 15143
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: BJ CUMMINGS

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	CLP SVOA/PH	CLP SVOC/PEST/PCB/PH	TAL INORGANICS/CN	N/N-SW8330	CLP PEST/PCB	TAL INORGANICS	TAL CN	CLP SVOC	Field Remarks
12RB007	7-10-94	0815	WATER	2					X		X				
12RB004	7-7-94	0640	WATER	1									X		
BGS52RR	7-9-94	1545	SOIL	3				X	X	X					
BGS46RR	7-9-94	1055	SOIL	~~3~~ 6				X	X	X					MS/MSD
~~BGS47RR~~															
BGS48RR	7-9-94	1400	SOIL	3				X	X	X					
GS21	7-10-94	1510	SOIL	3			X	X	X	X					
7509	7-10-94	1130	SOIL	3			X		X	X					

	Date/Time		
Relinquished By: [signature]	7-11-94	1825	Received By:
Relinquished By: [signature]			Received By:
Relinquished By:			Received for Laboratory By:

Comments: 935833506 1MPS

Date/Time	Shipper:	Airbill No.
7-11-94 1825	FED-EX	1396786252

Distribution: Original Plus One Accompanies Shipment (White and Yellow); Copy to Coordinator Field Files (Pink)

(26)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19001-93-SDW-214
P. O. No. 252-6200
1 of 1 pages

Project Name or Number: WANSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROSER RD, AOP 3
COCAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: Robert Siegfried
Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: CLP SVOC/PEST/PCB/PH	TAL INORGANICS/CN	N/N-SW8330	TOC-GRAIN SIZE	TAL INORGANICS/PH	TOC	TOC GRAIN SIZE, BULK DENSITY	Field Remarks
16SD06-01	7-19-94	1439	SOIL	8	—		X	X	X	X				MS/MSD
16SD06-01D	7-19-94	1439	SOIL	4	—		X	X	X	X				
BGSB05-01	7-19-94	1020	SOIL	2	—						X	X		SILT
BGSB05-02	7-19-94	1025	SOIL	2	—						X	X		SAND
BGSB05-10	7-19-94	1312	SOIL	1	—						X	X		CLAY
BGSB05-17	7-19-94	1423	SOIL	1	—							X		SIEVE + HYDROMETER (AQUIFER CHAR) 4440-9 7-23
16S19D	7-19-94	0935	SOIL	3	—		X	X	X					
16S17	7-19-94	0740	SOIL	3	—		X	X	X					

Relinquished By: Robert C. Siegfried — Date/Time: 7-19-94 1721 — Received By:
Relinquished By: — Date/Time: — Received By:
Relinquished By: — Date/Time: — Received for Laboratory By:

Comments: MPS 935833 4806

Date/Time: 7-19-94 1721 — Shipper: FED-EX — Airbill No.: 139646 7575

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

(27)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

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FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200
1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER ROAD, AOP 3
CORAOPOLIS, PA 15108
Phone: 912-269-6000 FAX: 412-269-2002

Sampled By: TARA BECKMAN

Turnaround Time: or Date Needed By:

Preservative Used: HNO_3

Type of Analysis: CLP SVOC/PEST/PCB/PH; N/N-SW8330; TAL INORGANICS/CN; TAL CN; TOTAL METALS; PEST/PCB; CLP SVOC

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP SVOC/PEST/PCB/PH	N/N-SW8330	TAL INORGANICS/CN	TAL CN	TOTAL METALS	PEST/PCB	CLP SVOC				Field Remarks
16S20	7-19-94	0835	SOIL	3	-	X	X	X								
12SB09-01	7-19-94	1130	SOIL	3	-	X	X	X								
12SB09-10	7-19-94	1352	SOIL	3	-	X	X	X								
BG-S14	7-19-94	1700	SOIL	1	-			X								
BG-S11	7-19-94	1620	SOIL	1	-			X								
BG-S10	7-19-94	1545	SOIL	1	-			X								
16S18	7-19-94	0800	SOIL	3	-	X	X	X								
16-RB014	7-19-94	1710	WATER	6	-		X		X	X	X	X 3				

Relinquished By:	Date/Time	Received By:
Tara L. Beck	7-19-94 1750	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: CN - NOT PRESERVED

MPS 9358334815

Date/Time	Shipper:	Airbill No.
7-19-94 1750	FED-EX	1396467575

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(28)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

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Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200

2 of 2 pages

Project Name or Number: WPNSTA Yorktown
Client: Baker Environmental, Inc
Send Results to: Donald C. Shields
Address: 420 Rouser Road AOP3
Coraopolis, PA 15108
Phone: 412/269-6000 FAX: 412/269-2002

Sampled By: Jodi Golden

Turnaround Time: or Date Needed By:

Preservative Used

Type of Analysis

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP VOA	TAL INORGANICS/CN	N/N-SW8330	CLP SVOC/PEST/PCB/pH	TAL CN	TOTAL INORGANICS HNO3	CLP PEST/PCB	CLP SVOC			Field Remarks
16SD06-01D	7-19-94	1441	SOIL	1	—	X										
16S20	7-19-94	0835	SOIL	1	—	X										
16S17	7-19-94	0740	SOIL	1	—	X										
16S18	7-19-94	0800	SOIL	1	—	X										
16S19	7-19-94	0815	SOIL	8	—	X 2	X 2	X 1	X 2							MS/MSD
16S19D	7-19-94	0935	SOIL	1	—	X				X 2 HD						
16 BG-RB015	7-19-94	1815	WATER	2	—					X	X					CN NOT PRESERVED
12-RB013	7-19-94	1700	WATER	6	—			X		X	X	X	X 2			CN IS PRESERVED

Relinquished By:	Date/Time	Received By:
Jodi Golden	7-19-94 1800	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: CN NOT PRESERVED

MPS 9358334824

Date/Time	Shipper:	Airbill No.
7-19-94 1800	Fed.-Ex.	1396467575

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(30)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

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FAX: (703) 642-6761

Quote No. 19100-43-SEN-214
P. O. No. 252-6200
1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, A0P3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: Robert Siegfried

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: N/N-SW 8330	TAL Inorganics/CN	TOC/Grain Size	TCLP SVOC/Pest/Pest/PH	TOC/Bulk Density/Grain Size	TAL Inorganics/CN/PH	Field Remarks
16SD09-01	7-20-94	1456	SOIL	4	G		X	X	X	X			
16SD09-02	7-20-94	1450	SOIL	4	G		X	X	X	X			
12SB08-23	7-20-94	1330	SOIL	1	G					X			CLAY - CANCEL ANALYSIS 7-23-94
12SB09-17	7-20-94	0842	SOIL	3	G		X	X		X			
BGSB05-11	7-19-94	1320	SOIL	1	G					X			SIEVE & HYDROMETER 7-23-94 COLUMBIA AQUIFER MATL.
BGS13	7-20-94	0808	SOIL	1	G						X		
BGS16	7-20-94	0950	SOIL	1	G						X		
BGS18D	7-20-94	1328	SOIL	1	G						X		
BGS19	7-20-94	1125	SOIL	1	G						X		
BGS18	7-20-94	1055	SOIL	1	G						X		
BGS12	7-20-94	0841	SOIL	1	G						X		
BGS15	7-20-94	0920	SOIL	1	G						X		
BGS17	7-20-94	1024	SOIL	1	G						X		

	Date/Time		
Relinquished By: Robert Siegfried	7/20/94	1739	Received By:
Relinquished By:			Received By:
Relinquished By:			Received for Laboratory By:

Comments:

Date/Time	Shipper:	Airbill No.
7-20-94 1740	FED-EX	1396786285

District: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

(31)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL
Send Results to: DONALD C. SHIEDS
Address: 420 ROUSER RD, AOP 3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: Robert Siegfried

Turnaround Time: or Date Needed By:

Preservative Used: NaOH, HNO_3, H_2SO_4, HNO_3

Type of Analysis: TAL CN, CLP SVOC, HARDNESS, CLP PEST/PCB, TOTAL METALS TAL INORGANICS, TOC, N/N-SW8330, DISS. METALS TAL INORGANICS

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	TAL CN	CLP SVOC	HARDNESS	CLP PEST/PCB	TOTAL METALS TAL INORGANICS	TOC	N/N-SW8330	DISS. METALS TAL INORGANICS			Field Remarks
16SW09	7-20-94	1440	WATER	8	—	X	X	X	X	X	X	X	X			
12-RB017	7-20-94	1720	WATER	1	—							X				
12HP09-02	7-20-94	1545	WATER	1	—							X				
12HP09-01	7-20-94	1020	WATER	1	—							X				
BG-RB016	7-20-94	1245	WATER	1	—					X						
HAD 16SW09DS	7-20-94	1440	WATER	1	—								X			

Relinquished By:	Date/Time	Received By:
[signature]	7-20-94 1755	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

MPS 935 8334 851

Date/Time	Shipper:	Airbill No.
7-20-94 1755	FED-EX	1396786285

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

(33)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SFN
P. O. No. 252-6200

214
1 of 2 pages

Project Name or Number: UPNSTA Yorktown
Client: Baker Environmental, Inc.
Send Results to: Donald C. Shields
Address: 420 Rouser Road, AOP3
Coraopolis, PA 15108
Phone: 412 269-6000 FAX: 412 269-2002

Sampled By: M. Davidson, T. Berkmen

Turnaround Time: or Date Needed By:

Preservative Used

Type of Analysis: (SOIL) pH; TAL Inorganics; grain size; TAL Inorganics CLP (Quoted)

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	(SOIL) pH	TAL Inorganics	grain size	TAL Inorganics CLP (Quoted)	Field Remarks
BGS28	7-21-94	1050	SOIL	1	—	X				
BGS20	7-21-94	0905	SOIL	2	—	X				MS/MSD
BGS20D	7-21-94	0905	SOIL	1	—	X				
BGS22	7-21-94	0955	SOIL	1	—	X				
BGS26	7-21-94	1320	SOIL	1	—	X				
BGS24	7-21-94	1420	SOIL	1	—	X				
12HP09-32	7-21-94	1037	SOIL	1	—		X			sieve & hydro
BGS21	7-21-94	0933	SOIL	1	—	X				
BG-RB019	7-21-94	1230	~~SOIL~~ WATER	1	—			X		
BGS24D	7-21-94	1420	SOIL	1	—	X				
BGS30	7-21-94	1207	SOIL	1	—	X				
BGS27	7-21-94	1030	SOIL	1	—	X				
BGS31	7-21-94	1518	SOIL	1	—	X				
BGS29	7-21-94	1150	SOIL	1	—	X				

	Date/Time		
Relinquished By: M Davids	7-21-94	1811	Received By:
Relinquished By:			Received By:
Relinquished By:			Received for Laboratory By:

Comments:

Date/Time	Shipper:	Airbill No.
7-21-94 1811	Fed-Ex	1396786366

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SEN-214
P. O. No. 252-6200

1 of 2 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER ROAD, AOP3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: M. Davidson, T. Beckman

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	(SOIL) pH	TAL inorganics/CN	grain size	TAL inorganics CN Quality	Field Remarks
BGSZS	7-21-94	1350	SOIL	1	—		X				
BGS23	7-21-94	1400	SOIL	1	—		X				

	Date/Time		
Relinquished By: M Davidson	7-21-94	1811	Received By:
Relinquished By:			Received By:
Relinquished By:			Received for Laboratory By:

Comments:

Date/Time	Shipper:	Airbill No.
7-21-94 1811	FED-EX	1396786366

Distribution: Original Plus One Accompanies Shipment (White and Yellow); Copy to Coordinator Field Files (Pink)

(47)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
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FAX: (703) 642-6761

Quote No. 191001-43-SDN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP 3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Preservative Used: HCL

Type of Analysis: CLP SVOC; TAL INORGANICS/CN/pH; TOC/GRAINSIZE; N/N-SW8330; TOTAL TAL INORGANICS; CLP VOA; CLP VOA

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP SVOC	TAL INORGANICS/CN/pH	TOC/GRAINSIZE	N/N-SW8330	TOTAL TAL INORGANICS	CLP VOA	CLP VOA				Field Remarks
6SD20-01	7-22-94	1232	SOIL	~~8~~ 10	G	X 3	X 3	X 3	X 3		X 3					MS/MSD
6SD20-02	7-22-94	1230	SOIL	5~~4~~	G	X	X	X	X		X					
6-RB022	7-22-94	1600	WATER	4~~2~~	—	X				X	~~X~~	X 2				LOW LEVEL
6SD21-01	7-22-94	1407	SOIL	1	G						X					
6SD21-02	7-22-94	1405	SOIL	1	G						X					
6SD25-01	7-22-94	1102	SOIL	1	G						X					
6SD25-02	7-22-94	1100	SOIL	1	G						X					
6SD20-01D	7-22-94	1232	SOIL	1	G						X					
6-TB023	7-22-94	—	WATER	1	G							X				LOW LEVEL
12-7-TB024	7-22-94	—	WATER	1	G							X				LOW LEVEL
12RB020	7-22-94	1025	WATER	3	G				X			X 2				LOW LEVEL
BG-RB021	7-22-94	1000	WATER	1	P					X						
BGS36	7-22-94	0838	SOIL	1	G		X									
BGS33	7-22-94	0802	SOIL	1	G		X									

Relinquished By:	Date/Time	Received By:
Heather A. DeBolt	7-22-94 1735	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: ~~MPS 935-8335-016~~ HAD

Date/Time	Shipper:	Airbill No.
7-22-94 1735	FED-EX	1396786300

Distrib[illegible] Original Plus One Accompanies Shipment (White and Yellow): Copy to [illegible]inator Field Files (Pink)

(45)

COMPLETED

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214

P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC.

Send Results to: DONALD C. SHIELDS

Address: [redacted] ROUSER RD, AOP #3

[redacted] CORAOPOLIS, PA 15108

Phone: 412-269-~~2038~~ 6000 FAX 412-269-[illegible]

Sampled By: H. DeBolt

Turnaround Time: or Date Needed By:

Preservative Used: HNO_3 | HNO_3 | H_2SO_4

Type of Analysis: DISSOLVED TAL INORGANICS | CLP PEST/PCBs | CLP SVOC | TDS/TSS | TAL SW | TOTAL TAL INORGANICS | N/N-SW8330 | TOC/HARDNESS

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	DISSOLVED TAL INORGANICS	CLP PEST/PCBs	CLP SVOC	TDS/TSS	TAL SW	TOTAL TAL INORGANICS	N/N-SW8330	TOC/HARDNESS			Field Remarks
FBRIGDS-01	7-24-94	1600	WATER	1	—	X										
FBATV-01	7-24-94	1610	WATER	8	—		X	X 3	X	X	X	X	X			
FBDT-01	7-24-94	1505	WATER	5				X 3	X		X	X				
FBDIDS-01	7-24-94	1505	WATER	1	—	X										

Relinquished By:	Date/Time	Received By:
Kent A DeBolt	7-25-94 1330	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

Date/Time	Shipper:	Airbill No.
7-25-94 1330	FEDERAL EXPRESS	1396786333

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SEN-214
P. O. No. 252-6200
1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP#3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: HEATHER DeBOCT

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used												Field Remarks
							HNO_3				NaOH							
						Type of Analysis: TOTAL TAL INORGANICS	CLP SOOC	N/N-SW8330	TALCN	CLP PEST/PCB	DISSOLVED TAL INORGANICS							
6-RB026	7-24-94	1110	WATER	5		X	X[3]	X	X									
FBLG-01	7-24-94	1445	WATER	5[4] 6		X	X[3]	X	X	X								
BG-RB02-01	7-25-94	0730	WATER	2		X			X									
FBLG-01	7-24-94	1445	WATER	1							X							
7-RB025	7-24-94	1845	WATER	2		X	X											
FBATVDS-01	7-24-94	1610	WATER	1							X							

Relinquished By:	Date/Time	Received By:
Heather A DeBoct	7-25-94 1350	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

NPS 9358336504

Date/Time	Shipper:	Airbill No.
7-25-94 1350	FEDEX EXPRESS	1396786333

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(5)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19100/-43-SEM-214
P. O. No. 252-6200
1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 FOLLIES RD, A&P #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: H. DeBOCT

Turnaround Time: or Date Needed By:

Preservative Used: NaOH, HNO_3, H_2SO_4

Type of Analysis: CLP SVOA; TAL CN; TOTAL TAL INORGANICS; N/A-SW8330; TDS/TSS; CLP PEST/PCB; TOC/HARDNESS

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP SVOA	TAL CN	TOTAL TAL INORGANICS	N/A-SW8330	TDS/TSS	CLP PEST/PCB	TOC/HARDNESS	Field Remarks
7-RB024	7-23-94	1725	WATER	3		X	X						
FBDI-01	7-24-94	1505	WATER	1			X						
7-RB025	7-24-94	1845	WATER	3		X	X		X				
BG-RB023	7-23-94	0836	WATER	1			X						
FB RIC-01	7-24-94	1600	WATER	8		X	X	X	X	X	X	X	

Relinquished By: Hent A. DeBoct — Date/Time: 7-24-94 1415 — Received By:

Relinquished By: — Date/Time: — Received By:

Relinquished By: — Date/Time: — Received for Laboratory By:

Comments: MPS 935833651 3

Date/Time: 7-24-94 1415 — Shipper: FED-EX — Airbill No.: 1396786333

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
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FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC.
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Preservative Used: H_2SO_4 | HNO_3 | NaOH

Type of Analysis

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	TOC/HARDNESS	N/N-SW8330	TOTAL TAL INORGANICS	TAL CN	CLP PEST/PCB	TDS/TSS					Field Remarks
7SW06-01	7-25-94	1145	WATER	3		X		X	X							
7HP07-01	7-23-94	1515	WATER	3			X									MS/MSD
FBDI-01	7-24-95	1505	WATER	2		X				X						
7-RB024	7-23-94	1725	WATER	2			X		X							
7SW07-01	7-25-94	1130	WATER	3		X	X		X							
BG-RB023	7-23-94	0836	WATER	1				X								
7HP06-01	7-24-94	1650	WATER	1			X									
7HP04-01D	7-23-94	1055	WATER	1			X									
FBLG-01	7-24-94	1445	WATER	2		X					X					
7HP04-01	7-23-94	1055	WATER	1			X									
7HP05-01	7-24-94	1150	WATER	1			X									

Relinquished By:	Date/Time	Received By:
[signature]	7-25-94 1445	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: CHANGE MPS WAS DESTROYED NAD 7-25-94 626
MPS 9358336 ~~522~~

Date/Time	Shipper:	Airbill No.
7-25-94 1445	FED-EX	1396786333

Distrib Original Plus One Accompanies Shipment (White and Yellow): Copy to dinator Field Files (Pink)

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SEW-214
P. O. No. 252-6200
1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP# 3
COROPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN
Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: CLP SVOC/PH	TOC/GRAIN SIZE	MNS & TAL INORGANICS/CN	N/N - SW8330	TAL INORGANICS/CN/PH	Field Remarks
7SD07-01	7-25-94	1218	SOIL	4			X	X	X	X		
GSD18-02	7-24-94	1250	SOIL	1			X					
7SD07-02	7-25-94	1215	SOIL	4			X	X	X	X		
7SB06-06	7-24-94	1503	SOIL	3			X		X	X		
BG540	7-23-94	0920	SOIL	1							X	
BG534	7-13-94	1025	SOIL	1							X	MS/MSD
BG538	7-13-94	0832	SOIL	1							X	
7SB07-01	7-23-94	1315	SOIL	3			X		X	X		
7SB07-01D	7-23-94	1315	SOIL	3			X		X	X		
7SB07-05	7-23-94	1345	SOIL	2			X			X		
7SB04-10	7-23-94	0930	SOIL	1						X		
7SB04-05	7-23-94	0827	SOIL	3			X		X	X		

Relinquished By:	Date/Time	Received By:
Heather A DeBoer	7-25-94 1650	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: MPS 9358336583

Date/Time	Shipper:	Airbill No.
7-25-94 1650	FED-EX	1396786333

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SEW-214
P. O. No. 252-6200
1 of 2 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, BOP #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: M.C. TAUBE

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: CLP SVOC/PH	N/N - SW8330	TAL INORGANICS/CN	TAL INORGANICS/CN/PH	TOC/GRAIN SIZE/BULK DENSITY	Field Remarks
7SB04-10	7-23-94	0930	SOIL				X	X				MS/MSD
7SB04-05	7-23-94	0827	SOIL				X	X	X			
7SB07-06	7-23-94	1357	SOIL				X	X	X			
7SB07-05	7-23-94	1345	SOIL						X			
7SB04-01D	7-23-94	0755	SOIL				X	X	X			
7SB06-05	7-24-94	1449	SOIL				X	X	X			
7SB04-01	7-23-94	0755	SOIL				X	X	X			
BGS39	7-23-94	0855	SOIL							X		
BGS35 (MD) BGS36	7-23-94	0945	SOIL							X		
BGS34	7-23-94	1025	SOIL							X		
7SB06-02 MD BGS39	7-23-94	0750	SOIL							X		
7SB04-09	7-23-94	0906	SOIL								X	SILT FRACTION
BGS37	7-23-94	0815	SOIL							X		
BGS34D	7-23-94	1025	SOIL							X		

Relinquished By: Kent A DeBolt — Date/Time: 7-25-94 1705 — Received By:
Relinquished By: — Date/Time: — Received By:
Relinquished By: — Date/Time: — Received for Laboratory By:

Comments: MPS 935 8336 592

Date/Time: 7-25-94 1705 — Shipper: FED-EX — Airbill No. 1396786333

Coordinator Field Files (Pink)

(59)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
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FAX: (703) 642-6761

Quote No. 19100-43-SRN-214
P. O. No. 252-6200

2 of 2 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP#3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: MG TAUBE

Turnaround Time: or Date Needed By:

Preservative Used

Type of Analysis: TAL INORGANICS/CN/PH; GRAIN SIZE (SIEVE + HYDROMETER)

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	TAL INORGANICS/CN/PH	GRAIN SIZE (SIEVE + HYDROMETER)									Field Remarks
BG539D	7-23-94	0855	SOIL			X										
7SB07-12	7-25-94	1117	SOIL				X									SIEVE + HYDRO (AQUIFER)

Relinquished By:	Date/Time	Received By:
Heat A DeBot	7-25-94 1705	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: MPS 9358336592

Date/Time	Shipper:	Airbill No.
7-25-94 1705	FED-EX	1396786333

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

Pg 5 of 5

PROJECT NO.	PROJECT NAME	INDUSTRIAL HYGIENE SAMPLE
19100443-SRN-214 252-6200	WPNSTA YORKTOWN (BAKER ENV DON SHIELDS 420 ROUSER RD AOP #3 CORAOPOLIS, PA 15108)	Y / N

SAMPLERS: (Signature) (Printed)

PARAMETERS

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	CLP VOA								REMARKS NOT ALL WATER VOCs ARE PRESERVED
6-TB028	7-24-94	—				1	X								
FBRIG-01	7-24-94	1600				4	X								LOW LEVEL
GSW19-01	7-24-94	1030				4	X								LOW LEVEL
7HP07-03	7-25-94	1700 ~~1500~~	HAD			2	X								RAPID TURN
FBATV-01	7-24-94	1610				4	X								LOW LEVEL
7RB025	7-24-94	1845				4	X								LOW LEVEL
7-TB027	7-24-94	—				1	X								
7-TB025	7-23-94	—				1	X								
FBDI-01	7-24-94	1505				4	X								LOW LEVEL
FBLG-01	7-24-94	1445				4	X								LOW LEVEL

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature] A DeBott	7-25-94 1530				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
			7-25-94 1530	SHIPPER FED EX AIRBILL # 1396786333 MPS 9358336601
(Printed)		(Printed)		

Distributi[illegible]iginal Plus One Accompanies Shipment (white and yellow); Copy to Coordinator [illegible] Files (pink).

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Versar

CHAIN OF CUSTODY RECORD

Pg 1 of 1

PROJECT NO.	PROJECT NAME	
191001-43-SEN-214 252-6200	WPAFB YORKTOWN	BAKER ENVIRONMENTAL, INC DONALD C. SHIELDS 420 ROUSER RD BDG #3 CORAOPOLIS, PA 15108

SAMPLERS: (Signature) AARON BOENHARDT (Printed)

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: TAL inorganics (ICP)	TOC / Grain size	H/N-SW8330	TCLP SVOC / pH	TOC / pH	TCLP Grain size / Bulk density	REMARKS
GSD15-01	7-26-94	1332			SOIL		X	X	X	X			
GSD15-02	7-26-94	1330			SOIL				X				
GSD16-01	7-26-94	1227			SOIL				X				
GSD16-02	7-26-94	1225			SOIL		X	X	X	X			
✓ BGSB06-05D	7-26-94	0935			SOIL		X			X			CLAY FRACTION (DUP)
✓ BGSB06-11	7-26-94	1040			SOIL		X			X			SILT FRACTION
✓ BGSB06-05	7-26-94	0735			SOIL		X			X			CLAY FRACTION
7SB02-01D	7-26-94	0830			SOIL		X		X	X			
7SB02-04	7-26-94	0857			SOIL		X		X	X			
7SB02-01	7-26-94	0832			SOIL		X		X	X			
7SB02-08	7-26-94	0958			SOIL		X		X	X			
7SB02-02	7-26-94	0919			SOIL						X		SAND FRACTION

(NOTE AFTER AMENDED FOR BELOW)

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Kristi A DeBolt (Printed)	7-26-94	(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
(Printed)		(Printed)		SHIPPED FED-EX AIRBILL # 139678634 MPS 935 9336662 (NO SAND FRACTION FOR SB06)

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink)

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CHAIN OF CUSTODY RECORD

P. 1 of 1

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SEN-214 252-6200	WPNSTA YORKTOWN	BAKER ENVIRONMENTAL, INC DONALD C. SHIELDS 420 ROUSER RD, AOP #3 CORAOPOLIS, PA 15108	Y / N

SAMPLERS: (Signature) M.G. TAUBE (Printed)

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	N/N-SW8330	CLP VOA	SIEVE + HYDROMETER TOC/GRAINSIZE	TOC/GRAINSIZE	TAL INORGANICS/CN	CLP SVOA/PH	SIEVE + HYDROMETER GRAINSIZE	REMARKS
														NOT ALL VOAs ARE PRESERVED
6-RB031	7-27-94	0755			WATER	3	X	X[3]						VOA - STANDARD CLP ANALYSIS
6-TB033	7-27-94	—			WATER	1		X						
6SD23-01	7-27-94	0932			SOIL	5	X	X		X	X	X		
6SD23-01D	7-27-94	0932			SOIL	4	X	X			X	X		
6SD23-02	7-27-94	0930			SOIL	5	X	X		X	X	X		
BGSB06-17	7-26-94	1341			SOIL	1			X					SIEVE + HYDROMETER (33.35')
6HP07-01	7-27-94	1110			WATER	3	X	X[3]						~~VOA~~ NAD 7-14 DAY RAPID TURN AROUND
6-TB032	7-27-94	—			WATER	1		X						
6SB07-05	7-27-94	0946			SOIL	4	X	X			X	X		
6SB07-01	7-27-94	0925			SOIL	4	X	X			X	X		
6SB07-07	7-27-94	1003			SOIL	4	X	X			X	X		
6SB07-08	7-27-94	1011			SOIL	1							X	SIEVE + HYDROMETER

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7-27-94 1400				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				SHIPPER FED-EX AIRBILL # 1396786311
(Printed)		(Printed)		NOT ALL VOAs ARE PRESERVED

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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Versar

CHAIN OF CUSTODY RECORD

PROJECT NO.: 19100-43-SCAP 714 / 252-6200
PROJECT NAME: NAPA STATE YORKTOWN
BAKER ENVIRONMENTAL, INC
DONALD C. SHIELDS
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108

SAMPLERS (Signature): David J Martin
(Printed): David J Martin

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: CLP SVOA (1)	TAL Inorganics (1)	MW-SW8 330	CLP VOA	TOC/Bulk density/grain size	TAL CN	TAL Inorganics Dissolved	TAL Inorganics sieve/hydrometer TOC	INDUSTRIAL HYGIENE SAMPLE Y / N	REMARKS
6-TB035	8/1/94	—			Water	1				X						
6-HP03-01	8/1/94	1000			water	3			X	X						VOAs not preserved Rapid turn
6-RB033	8/1/94	1445			water	9	X		X	X		X	X			
6SB03-01	8/1/94	0840			Soil	1	X	X	X	X						
6SB03-02	8/2/94	0856			Soil	1				X						
6SB03-03	8/2/94	0901			Soil	1				X						
6SB05-010	8/2/94	1320			Soil	1				X						
6SB05-01	8/2/94	1320			Soil	1				X						
6SB05-06	8/2/94	1412			Soil	1				X						
6SB05-08	8/2/94	1458			Soil (DJM Cancel analysis)	1				X						DJM - called lab 8/3/94 & 8/4/94
B6GWD6-31	8/1/94	1833			Soil	1								X		Sieve Hydrometer TOC

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/2/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
(Printed)		(Printed)		SHIPPED FED-EX AIRBILL # 139646785 5	

Distribution: Original accompanies Shipment; (white and yellow): Copy to Coordinator Field Files (pink)

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Versar

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WPNSTA Yorktown (Baker Environmental, Inc. Donald Shields 420 Rouser Rd., Airport #3 Coraopolis, PA 15108)	Y / N

SAMPLERS: (Signature) Tara Beck (Printed) Tara Beckman

PARAMETERS

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOA	Dest/PCB 8330	CN (w/ NaOH)	Total Metals (w/ HNO_3)	Dissolved Metals (w/ HNO_3)	TOC/Hardness (w/ H_2SO_4)	REMARKS
BGWPSW03-01	8-2-94	1300			Water	6	3 X	X	X	X	X			MS/MSD ☆
BGWPSW03DS-01	8-2-94	1300			Water	1						X		MS/MSD ☆
BGWPSW01-02	8-2-94	1155			Water	7	3 X	X	X	X	X		X	
BGWPSW01DS-02	8-2-94	1155			Water	1						X		
BGRB034	8-2-94	2030			Water	2	X			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/3/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Fed Ex air bill # 139646752
(Printed)		(Printed)		

White and yellow): Copy to Coordinator Field Files (pink).

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Ve[illegible]ar Laboratories INC.

CHAIN OF CUSTODY RECORD

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PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-48-SKN-214 252-6200	WPNSTA/Yorktown	Baker Environmental, Inc. Donald C. Shields 420 Rouser Rd. AOP#3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden

(Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	8330	Pest/PCB	CN (w/NaOH)	Tot/Hexavalent Cr (w/H2SO4)	Total metals (w/HNO3)	Dissolved metals (w/HNO3)		REMARKS
BGWPSW03-01D	8-2-94	1300			Water	2	X					X			
BGWPSW03-01	"	"			"	7	X	X	X	X	X	X			
BGWPSW03DS-01	"	"			"	1							X		
BGWPSW04-01	"	1600			"	5	X	X	X	X	X				
BGWPSW04DS-01	"	"			"	1							X		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/3/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill #1396 467542
(Printed)		(Printed)		MPS # 935 2336732

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001.43.SRN.214 252.6200	WPNSTA/Yorktown	Bahr Environmental, Inc. Donald Shields 420 Rouser Rd. AOP#3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	8330	Post/PCB	CN(w/NaOH)	Tot/Hardness (w/HNO3)	Total Metals (w/HNO3)	Dissolved Metals (w/HNO3)		REMARKS
BGWPSW03-02	8-2-94	1540			Water	3		X	X	X					
BGWPSW03DS-02	8-2-94	1540			Water	1							X		
BGWPSW03-01	8-2-94	1300			"	6	X	X	X	X		X			MSD
BGWPSW03DS-01	8-2-94	1300			"	1							X		MSD
BGWPSW03-01D	8-2-94	1300			"	4	X	X	X	X					Dupe
BGWPSW03DS-01D	8-2-94	1300			"	1							X		Dupe

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/3/94 1900				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Air bill # ~~9358336705~~ 1396467542 (TLB)
(Printed)		(Printed)		MPS # 9358336723

Distribut riginal Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Files (pink).

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CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001.43.SRV.214 252.6200	WPNSTA Yorktown	Baker Environmental, Inc. Donald Shields 420 Rouser Rd. AOP #3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	8330	Pest/PCB	Total Metals (w/HNO3)	CN (w/NaOH)	TOC/Hardness (w/H2SO4)	Dissolved Metals (w/HNO3)		REMARKS
BGWPSW02-02	8.2.94	1230			Water	4	2 X			X		X			
BGWPSW02-01	8.2.94	1215			Water	7	2 X	X	X	X	X	X			
BGWPSW02DS-01	8.2.94	1215			Water	1					TLB		X		
BGWPSW03-02	8.2.94	1540			Water	4	2 X			X		X			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/3/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				MPS # 935 83367 ~~[illegible]~~ 14 TLB Air bill # 1396467542
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink)

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		
141001.43.SRN-214 252-6200	WynSta Yorktown	Baker Environmental, Inc. Donald Shields 420 Rouser Rd. NCP #3 Coraopolis, PA 15108	

SAMPLERS: (Signature)	(Printed)
Tara Beck	Tara Beckman

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: SVOC	8330	Dest/PCB	Total Metals (w/HNO3)	CN (w/NaOH)	TOC/TOX (w/H2SO4)	Diss. Metals (w/HNO3)	INDUSTRIAL HYGIENE SAMPLE Y/N	REMARKS
BGRB034	8-2-94	2030			Water	4	X	X	X	X					
BGWPSW01-01	8-2-94	1140			Water	7	X	X	X	X	X	X			
BGWPSW01DS-01	8-2-94	1140			Water	1			X	X			X		
BGWPSW02-02	8-2-94	1230			Water	3	X	X	X		X	X			
BGWPSW02DS-02	8-2-94	1230			Water	1	TLB		X				X		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/3/94 1500				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
(Printed)		(Printed)		Airbill # 139646 7542 MPS # 935 2336 705

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Files (pink).

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Ver[illegible]r Laboratories INC.

CHAIN OF [illegible]STODY RECORD

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PROJECT NO.	PROJECT NAME	INDUSTRIAL HYGIENE SAMPLE
19001-43-SRN-214 252-6200	WPNSTA Yorktown Donald C. Shields Baker Environmental Inc 420 Rouser Road, ADP BLDG #3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden AMB; JAG; WJJ

(Printed) Jodi Golden

PARAMETERS

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	CLP VOA w/ HCL								REMARKS
															Faxed to D. Shields & Lab DJM 8/5/94
BGWPSW02-02	8-2-94	1230			Water	4	X								Low Level Analysis
BG-RB034	8-2-94	2030				4	X								
BGWPSW03-02	8-2-94	1540				4	X								
BG-TB038	8-3-94	—				1	X								
BG-RB035	8-3-94	1535				4	X								
BGWPSW01-02	8-2-94	1155				4	X								
BGWPSW02-01	8-2-94	1215				4	X								
BG-TB036	8-2-94	—				1	X								
BGWPSW03-01	8-2-94	1300				12	X								MS + MSD
BGWPSW03-01D	8-2-94	1300				4	X								
BGWPSW01-01	8-2-94	1140				4	X								
BGWPSW04-01	8-2-94	1600				4	X								Low Level Analysis

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8-3-94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				NPS # = 9358336757
(Printed)		(Printed)		Airbill # = 1396467542

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	INDUSTRIAL HYGIENE SAMPLE
191001-43-SPN-2M 252-6200	WPNSTA Yorktown ← Donald C. Shields Baker Environmental, Inc. 420 Rouser Road, AOP BLDG #3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden

(Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	CLP VOA w/HCL								REMARKS
															~~Faxed to D. Shields Hub 8/5/94~~
BGWPSD02-01	8-2-94	1642			Sediment	1	X								~~Dom 8/4/94~~ ~~Low level analysis~~
BGWPSD02-02	8-2-94	1600				1	X								
BGWPSD04-01	8-3-94	1252				1	X								Mistake
BGWPSD04-02	8-3-94	1250				1	X								ignore
BGWPSD01-01	8-2-94	1435				1	X								
BGWPSD01-02	8-2-94	1433				1	X								
BGWPSD03-01	8-2-94	1742				2	X								ms/msD
BGWPSD03-02	8-2-94	1740				1	X								
BGWPSD03-01D	8-2-94	1742				1	X								

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/3/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				NPS # = 9358336757 Airbill # = 1396467542
(Printed)		(Printed)		

Distributio ginal Plus One Accompanies Shipment (white and yellow); Copy to Coordinator F iles (pink).

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Versar

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001.43.SRN.214 252-6200	WPNSTA/Yorktown	Baker Environmental, Inc. Donald C. Shields 420 Rouser Rd. AOP # 3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) [signature] (Printed) William J. Jeffords JR

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	8330	Post/PCB	[illegible]	CN (w/NaOH)	Total metals (w/HNO3)	Dissolved metals	Metals	REMARKS
BGWPSW04-01	8-2-94	1600			Water	2	X					X			
BG-RB035	8-3-94	1535			Water	6	2 X	X	X		X	X			
GHP0501	8-3-94	0955			"	3		3 X							MS/MSD
GHP0502	8-3-94	1145			"	1		X							
BGWPSD01-01	8-2-94	1435			Soil	1								X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/3/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill # 1396467542
(Printed)		(Printed)		MPS # 9358336741

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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Versar

CHAIN OF CUSTODY RECORD

THIS PAGE DUPLICATES COC #83

PROJECT NO.	PROJECT NAME	
191001.43.SRN.214 252.6200	WPnSta/Yorktown	Baker Environmental Donald C. Shields 420 Rouser Rd. AOP#3 Coraopolis, PA 15108

SAMPLERS: (Signature) (Printed)

INDUSTRIAL HYGIENE SAMPLE: Y / N

PARAMETERS: SVOC, Pest/PCB ← OK

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	Pest/PCB							REMARKS
BGWPSD01-01	8.2.94	1435			Soil	1	X	X							

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/3/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				MPS # 935 833 6741
(Printed)		(Printed)		

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Versar

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SRM-214 252-6200	Upn Sta/Yorktown	Baker Environmental Donald C. Shields 420 Rouser Rd. AOP#3 Coraopolis, PA 15108

SAMPLERS: (Signature) Tara Beckman (Printed) Tara Beckman

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TOC/grain size	SV/Pest/PCB/PH	8330	Metals/CN					REMARKS
BGWPSD04-02	8-3-94	1250			Soil	4	X	X	X	X					
BGWPSD04-01	8-3-94	1252			"	4	X	X	X	X					
BGWPSD02-02	8-2-94	1640			"	2	X	X	~~X~~ TNT						
BGWPSD02-01	8-2-94	1642			"	4	X	X	X	X					
BGWPSD03-02	8-2-94	1740			"	4	X	X	X	X					
BGWPSD 01-02	8-2-94	1433			"	2	X			X					
BGWPSD01-01	8-2-94	1435			"	3	X	(X)	X						THIS ANALYSIS IS ALSO ON COC #82

INDUSTRIAL HYGIENE SAMPLE: Y / N

PARAMETERS

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/3/94 1500				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
(Printed)		(Printed)		Air bill # 139646754 2 MPS # 935833676 6	

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SRN-214 252-6200	Upper Sta/Northtown	Baker Environmental, Inc. Don Shields 420 Rouser Rd A OP#3 Coraopolis, PA 15108

SAMPLERS: (Signature) Tara Beck (Printed) Tara Beckman

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: Nitramines (EPA)	SVOA/pH	Metals/CN	8330	Grain Size & Hydrometer	Pest/PCB	SVOA/pest/PCB/pH	TOC/grain	REMARKS
GSB05-14	8-3-94	0823			Soil	3	X	X	X						
BGWPSD02-02	8-2-94	1640			"	2 (4)	~~X~~		X	X					
~~GSB05-24~~															
GSB05-24	8-3-94	1314			Soil	1					X				
BGWPSD01-02	8-2-94	1433			"	3		X		X		X			
BGWPSD03-01D	8-2-94	1742			"	3			X	X			X		
BGWPSD03-01	"	"			"	7			X (3)	X (2)			X (2)	X	MSD/MS

INDUSTRIAL HYGIENE SAMPLE: Y / N

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8-3-94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Air bill # 139646754Z MPS # 9358336775
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field files (pink)

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CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		PARAMETERS	INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-4200	WPNSTA Yorktown	Baker Environmental, Inc Donald C. Shields 420 Rouser Rd NOP#3 Coraopolis, PA 15108		Y / N

SAMPLERS: (Signature) Tara Beckman (Printed) Tara Beckman

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TOC & pH	Total Metals (CN)	Nitrogens	SVOA pH	CN (w/NaOH) Sieve & hydrocarbon again sieve & TOC	REMARKS
~~BGSB08-02~~ (TLB)	~~8.4.94~~	~~0914~~			~~Soil~~							~~Silt~~ 1
BGGW08A-01	8.4.94	1640			Soil	2	X	X				
BGSB08-02	11	1012			Soil	2	X	X				(TLB) MS/MSD (Sand)
~~BGSB08-02~~	11	~~0914~~			~~Soil~~ canceled No silt above H2O	2	X	X				(Silt)
BGGW08A-01 (MS/MSD)	11	1640			Soil	4	X[2]	X[2]				MS/MSD (Clay)
6RB037	8.4.94	0815			Water	5			X	X	X[2] X		
BGSB08-18	11	1155			Soil	1					X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J. Martin	8/9/94 1400				
(Printed) David J. Martin		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	**Date / Time**	**Received for Laboratory by: (Signature)**	**Date / Time**	**Remarks**	
				Air bill # 1396786322 MPS # 9358336802 (TLB) ~~Cot~~ (Cooler 1)	
(Printed)		(Printed)			

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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Pg 1 of ___

Versar

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-93-SRN-214 252-6200	Wpn Sta. Yorktown	Baker Environmental, Inc. Donald C. Shields 420 Rouser Rd. AOP# Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) Tara Beck (Printed) Tara Beckman

PARAMETERS

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	CN (w/NaOH)	Total metals (w/HNO3)	Nitramine	VOA	~~[illegible]~~ (TLB)	VOA (w/HCl)		REMARKS
BG-RB038	8.4.94	1710			Water	2	X	X						
6-RB036	8.3.94	1820			"	5			X	4 X	~~[illegible]~~ (TLB)			VOA low-level analysis
6HP0503	8.3.94	1720			"	1			X					
6SB0514	8.3.94	0823			Soil	1				X				
6RB037	8.4.94	0815			Water	4				4 X				Low-level analysis
6HP0501	8.3.94	0955			Water	6				6 X				MS/MSD unpreserved rapid turn-around
6HP0502	8.3.94	1145			"	2				3 X				Rapid turn around/no preserve
6HP0503	"	1720			"	2				2 X				Rapid turn around/no preservative
6TB037						1						X		Low-level analysis

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/4/94 1900				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill # 1396786322
(Printed)		(Printed)		~~[illegible]~~ Cooler 1

Versar

(87)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Environmental, Inc Donald C. Shields 420 Rouser Rd, AOP #3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	CN (NaOH)	SVOC	T. Metals (w/ HNO_3)	Toc/Hardness (H_2SO_4)	8330	Dissolved metals (w/ HNO_3)	Pest./PCB		REMARKS
BGPLSW01-01	8-4-94	0925			Water	7	X	X 2	X	X	X		X		
BGPLSW01DS-01	8-4-94	0925				1						X			
BGPLSW01-02	8-4-94	0935				7	X	X 2	X	X	X		X		
BGPLSW01DS-02	8-4-94	0935				1						X			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/5/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill # = 1396467564
(Printed)		(Printed)		Cooler 1

Shipment (white and yellow): Copy to Coordinator Field Files (pink)

Versar

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CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
91001-43-SEN-214 252-6200	WPNSTA Yorktown	Baker Environmental, Inc. Donald C. Shields 420 Rouser Rd, NOPH3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	CN (w/NaOH)	8330	Pest./PCB	TOC/Hardness (w/H_2SO_4)	Dissolved metal (w/HNO_3)	SVOC	Total Metals (w/HNO_3)		REMARKS
BGPLSW02-02	8-4-94	1010			Water	7	X	X	X	X		X 2	X		
BGPLSW02DS-02	8-4-94	1010				1					X				
BGPLSW02-01	8-4-94	1000				7	X	X	X	X		X 2	X		
BGPLSW02DS-01	8-4-94	1000				1					X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8-5-94 1900				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Air Bill # = 1396467564
(Printed)		(Printed)		MPS # = 9358336854
				Cooler #2

Versar

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CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Environmental, Inc. Donald L. Shields 420 Rousar Rd, AOPH3 Coraopolis, PA 15108

SAMPLERS: (Signature)	(Printed)
Jodi Golden	Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: Dissolved metal (w/ HNO3)	SVOC	Total metal (HNO3)	TOC / Hardness (w/ H2SO4)	Pest. / PCB	CN (w/ NaOH)	8330	INDUSTRIAL HYGIENE SAMPLE Y / N	REMARKS
BGPLSW03D-02	8-4-94	1050			Water	1	X	[redacted]							
BGPLSW03-02	8-4-94	1050				7		X[3]	X	X	X	X	X		
BGPLSW03-01	8-4-94	1040				7		X[3]	X	X	X	X	X		
BGPLSW03D-01	8-4-94	1040				1	X								

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/4/94 1900				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				AIRBILL # = 1396467564 MPS # = 9358336863 Cooler 3
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

Versar (90)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Environmental, Inc. Donald C. Shields 420 Rouser Rd, Aop#3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: Dissolved metals (w/HNO3)	SVOC	CN (w/NaOH)	8330	Total metals (w/HNO3)	TOC/Hardness (w/H2SO4)	Pest./PCB		REMARKS
BGPLSW04DS-02	8-4-94	1120			Water	1	X								
BGPLSW04-02	8-4-94	1120				7		X 2	X	X	X	X	X		
BGPLSW04-01	8-4-94	1110				7		X 2	X	X	X	X	X		
BGPLSW04DS-01	8-4-94	1110				1	X								

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J. Martin	8/5/94 1900				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				AIRBILL # = 1396467564 MPS # = Cooler #4
(Printed)		(Printed)		

Versar Laboratories INC.

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CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		
191001-43-SAN-214 232-6200	WPNSTA Yorktown	Baker Environmental, Inc. Donald C. Shields 420 Rouser Road Bldg 3 Coraopolis, PA 15108	

SAMPLERS: (Signature)	(Printed)
Jodi Golden	Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Tgts/Metals (w/ HNO3)	Pest/PCB	5 VOC	CN (NaOH)	8330	Dissolved metals (w/ HNO3)	TOC/Grain Size	Metals/CN	SVOC/Pest/PCB/PH	REMARKS
BGPLSW04-01D	8-4-94	1110			Water	6	1	1	2	1	1					
BGPLSW04D-01D	8-4-94	1110			"	1						1				
GHP06-01	8-5-94	0900			"	1					1					
BGPLSD04-01	8-4-94	1522			Soil	4					1		1	1	1	
BGPLSD04-02	8-4-94	1520			"	4					1		1	1	1	
											1		1	1	1	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Minta	8/5/94 1900				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				AIRBILL # = 139646 7564 MPS # = 935833 6881 Cooler #5
(Printed)		(Printed) Blue Cooler		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Environmental, Inc. Donald C. Shields 420 Rouser Rd, Ave #3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	Cyanide (NaOH)	Total Metal (w/HNO3)	Pest./PCB	8330	SVOC	Metals/CN		REMARKS
BG-RB039	8-5-94	1620			Water	6	2	1	1	1	1				
6-RB040	8-5-94	1710			"	5		1	1		1	2			
~~6SB04-06~~	~~8-5-94~~	~~1400~~			~~Soil~~						~~1~~	~~1~~	~~1~~		
6SB04-01	8-5-94	1215				6					2	2	2		MS/MSD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8-5-94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill # = 1396467564 MPS # = 935 8336 906 Cooler #7
(Printed)		(Printed)		

Distributi[illegible] [illegible]iginal Plus One Accompanies Shipment (white and yellow); Copy to Coordinator [illegible] Files (pink).

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Versar

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Environmental, Inc Donald C. Shields 420 Rouser Road, NoPH3 CORAOPOLIS, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	8330	TOC/Grain Size	Metals/CN	SV/Pest/PCB/PH					REMARKS
BGPLSD02-02	8-5-94	0935			Soil	4	1	1	1	1					Hot - Petroleum ODOR
BGPLSD01-01	8-5-94	1027				4	1	1	1	1					
BGPLSD01-02	8-5-94	1025				4	1	1	1	1					
BGPLSD02-01	8-5-94	0937				4	1	1	1	1					
BGPLSD03-02	8-5-94	0900				4	1	1	1	1					
BGPLSD03-01	8-5-94	0902				2	1		1						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8-5-94 1900				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				AIRBILL # = 1396467564 MPS # = 9358336897 Cooler #6
(Printed)		(Printed)		

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Versar

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		PARAMETERS	INDUSTRIAL HYGIENE SAMPLE
191001-43 SAN-214 252-6200	WPNSTA Yorktown	Baker Environmental, Inc Donald C. Shields 420 Rouser Road, AOPW3 Coraopolis, PA 15108		Y / N
SAMPLERS: (Signature) Jodi Golden	(Printed) Jodi Golden			

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Metals/CN	SVPH	8330	SV/Pest. PCB/PH	TOC/Grain Size	VOA (w/HCl)	VOA	REMARKS
65B04-06	8-5-94	1400			Soil	4	1	1	1				1	
BGPLSD04-01	8-4-94	1522				3	1		1	1				
BGPLSD03-01	8-4-94	0902				2				1	1			
BG-RB039	8-5-94	1620			Water	4						4		Low Level analysis
BG-TB042	8-5-94	—				1						1		"
BG-RB040	8-5-94	1710				4						4		"
BGPLSD01-02	8-5-94	1025			Soil	1						1		Hot- Petroleum odor
BGPLSD03-02	8-5-94	0900				1						1		
BGPLSD02-01	8-5-94	0937				1						1		Hot Petroleum odor
BGPLSD02-02	8-5-94	0935				1						1		"
BGPLSD03-01	8-5-94	0902				1						1		~~Hot Petroleum odor~~
BGPLSD01-01	8-5-94	1027				1						1		Hot Petroleum Odor

NOT PRESERVED

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8-5-94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
(Printed)		(Printed)			

Remarks: AIR BILL Number = 1396467564
MPS NUMBER = 935833915
Cooler #8

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator F... iles (pink)

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Page 2 of 2

Versar

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Environmental, Inc. Donald C. Shields 420 Rouser Rd, Ao#3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

PARAMETERS

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA	VOA (w/HCL)							REMARKS
GSB04-01	8-5-94	1215			Soil	2	2								ms/msD
BGPLSW01-02	8-4-94	0935			Water	4		4							Low level Analysis
BGPLSW02-01	8-4-94	1000				4		4							
BGPLSW04-02	8-4-94	1120				4		4							
BGPLSW03-02	8-4-94	1050				4		4							
BGPLSW01-01	8-4-94	0925				4		4							
BGPLSW03-01	8-4-94	1040				4		4							
BGPLSW04-01D	8-4-94	1110				4		4							
BGPLSW02-02	8-4-94	1010				4		4							
BGPLSW04-01	8-4-94	1110				4		4							

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8-5-94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				AIRBILL Number = 139 646 7564 MPS Number = 935 8336 915 Cooler #8
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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Versar

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Environmental, Inc Donald C. Shields 420 Boosor Rd, AGP #3 CORAOPOLIS, PA 15108	Y / N

SAMPLERS: *(Signature)* Jodi Golden (Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: Metals/CN	VOA	Vitamins	SVOC/PH					REMARKS
6SB06-05	8-4-94	1709			Soil	8	2	2	2	2					MS/MSD
6SB06-01	8-4-94	1630				4	1	1	1	1					
6SB06-01D	8-4-94	1630				4	1	1	1	1					
6SB06-13	8-4-94	1827				4	1	1	1	1					
BGPLSD04-01	8-4-94	1522				2		2							MS/MSD
BGPLSD04-01D	8-4-94	1522				1		1							
6HP06-01	8-5-94	0900			Water	2		2							unpreserved RAPID TURN
BGTB039	8-4-94	—			"	1		1							pres w/HCL
6TB041	8-5-94	—			"	1		1							pres. w/ HCL

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
David J Martin	8-5-94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
				AIRBILL # = 139646756 4 MPS # = 025
(Printed)		(Printed)		

Versar (96)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker. Don Shields 420 Rouser Rd, AOP # 3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) David J Martin

(Printed) David J Martin

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	8330	Pest/PCB	~~Dissolved Metal (w/ HNO3)~~	Total Metal (w/ HNO3)	CN (w/ NaOH)	~~TOC/Hardness (w/ H2SO4)~~		REMARKS
16-RB045	8-7-94	1930			Water	6	2	1	1		1	1			
B6-RB044	8-7-94	1220			Water	6	2	1	1		1	1			
16-RB043	8/6/94	1935			Water	2	1				1				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/8/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill # 1396467553 ~~MPS #~~
(Printed)		(Printed)		

Versar (97)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-45-3RN-214 252-6200	WPNSTA Yorktown	Baker-(Don Shields) 420 Rouser Rd, AOP#3 Coraopolis, Pa 15108

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	8330	PCB/Pest	Dissolved Metals (w/HNO3)	Total Metals (w/HNO3)	CN (w/NaOH)	TOC/Hardness (w/H2SO4)	REMARKS
16-RB043	8/6/94	1935			Water	4	1	1	1			1		
6-RB042	8/6/94	1845			Water	1		1						
B6-RB041	8/6/94	1830			Water	6	2	1	1		1	1		
B6CPSW01DS-01	8/6/94	1250			Water	1				1				
B6CPSW01-01	8/6/94	1250			Water	1			1					
B6CPSW03-01D	8/6/94	1715			Water	1	1							

INDUSTRIAL HYGIENE SAMPLE: Y / N

PARAMETERS

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin (Printed)	8/8/94 1900	(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Fed Ex Air bill # 139064675 53 MPS # 935833695 1
(Printed)		(Printed)			

Versar (98)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SRN-214 252-6200	WPNSTA YORKTOWN	Baker Env. (Don Shields) 420 Rouser Rd, AOP#3 Coraopolis, PA 15108

SAMPLERS: *(Signature)* Jodi Golden (Printed) Jodi Golden

INDUSTRIAL HYGIENE SAMPLE: Y / N

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: SVOC	8330	Pest/PCB	Dissolved Metals (w/HNO3)	Total Metals (w/HNO3)	CN (w/NaOH)	TOC / Hardness (w/H2SO4)	REMARKS
BGCPSW01-01	8/6/94	1250			water	6	2	1			1	1	1	
BGCPSW02DS-01	8/6/94	1520				1			1					
BGCPSW02-01	8/6/94	1520				7	2	1	1		1	1	1	
BBCPSW03-01	8/6/94	1715				2		(1)				1		

SHOULD BE PEST/PCB COC 994102 HAVE ENOUGH W/N - MISSING DUP PEST/PCB.

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
David J Martin	8/8/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
(Printed)		(Printed)		Airbill # 1396467553 MPS # 9358336967	

Versar 99

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SRN-214 252-6200	WINSTA YORTOWN	Baker ENV. (Don Shields) 420 Rouser Rd, AOP #3 Coraopolis Pa 15108

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

PARAMETERS

INDUSTRIAL HYGIENE SAMPLE: Y / N

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	8330	Pest/PCB	Dissolved metals w/HNO3	Total metals w/HNO3	CN w/NaOH	TOC/Hardness (w/H2SO4)	REMARKS
B6CPSW03DS-01	8/6/94	1715			Water	1			1					
B6CPSW03-01	8/6/94	1715				5	2	1		1		1		
B6CPSW03-01D	8/6/94	1715				5	1	1	1	1	1			Duplicate
B6CPSW04DS-01	8/7/94	0800				1		10Vm	1					
B6CPSW04-01	8/7/94	0800				3		1	1		1			
B6CPSW03DS-01D	8/6/94	1715				1			1					Duplicate

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/6/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
(Printed)		(Printed)		Airbill # 1396467553 MPS # 9358336976	

Versar 100

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		PARAMETERS	INDUSTRIAL HYGIENE SAMPLE
191001-43-SAN-214 252-6200	WPNSTA YORKTOWN	Baker Env (Don Shields) 420 Rouser Rd, AOP #3 Coraopolis, PA 15108		Y / N

SAMPLERS: *(Signature)* [signature] (Printed) Aaron Berghardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOA/Pest/PCB/pH	Metals/CN	TOC/Grain Size	8330	REMARKS
BG-CPSD03-01D	8-6-94	1810		X	Soil	3	1	1		1	
BG-CPSD02-01	8-6-94	1537		X	Soil	4	1	1	1	1	
BG-CPSD02-02	8-6-94	1535		X	Soil	4	1	1	1	1	
BG-CPSD03-02	8-6-94	1808		X	Soil	4	1	1	1	1	
BG-CPSD03-01	8-6-94	1810		X	Soil	7H	2	2	1	2	MS/MSD
BG-CPSD04-02	8-7-94	0820		X	Soil	4	1	1	1	1	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
David J Martin	8/8/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
				Air Bill # 1396967553
(Printed)		(Printed)		MPS # 9358336985

Comp to Coordinator Field Files (pink)

Versar (101)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SAN-214 252-6200	WPNSTA YORKTOWN	Baker Env (Dow Shields) 420 Rouser Rd, AOP #3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) _____ (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: SVOA/PCB/Pest/pH	metals/CN	TOC/grain size	8330	pH/SVOA	Sieve/Hydrometer/TOC	REMARKS
BGCPSD05-01	8-7-94	1017		X	Soil	4	1	1	1	1			
BGCPSD04-01	8-7-94	0822		X	Soil	4	1	1	1	1			
BGCPSD05-02	8-7-94	1015		X	Soil	4	1	1	1	1			
6SB04-13	8-6-94	0832		X	Soil	3		1		1	1		
BGGW08-10	8-6-94	1549		X	Soil	1	X (1-1/2)	X (1)			1		
16SB06-11	8-7-94	1635		X	Soil	3	1	1		1			
16SB06-01	8-7-94	1315		X	Soil	3	1	1		1			
16SB06-06	8-7-94	1521		X	Soil	3	1	1		1			
6HP04-01 (dam)	8-6-94	0945		X	water	1				1			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	9/8/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Air Bill # 1396467553 MPS# 9358336994
(Printed)		(Printed)		

Distribution: Original Blue One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (white)

Versar (102)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SEN-214 a52-6200	WPNSTA Yorktown	Baker Env. (Donald Shields) 420 Rouser Road, Ad# 3 Coraopolis, PA 15108

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

PARAMETERS

INDUSTRIAL HYGIENE SAMPLE: Y / N

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOC	Pest/PCB	Diss'd Metals w/ HNO3	Cn w/ NaOH	TOC (Hardness w/ H2SO4)	8330	Total metals HNO3	REMARKS
BGCPSW03-01	8/6/94	1715			Water	12	4	2		2		2	2	MS/MSD
BGCPSW03DS-01	8/6/94	1715			↓	2	~~4~~	2						MS/MSD
BGCPSW04-01	8/7/94	0800				2	1			1				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David S Martin	8/8/94 1900				
(Printed) David S Martin		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
(Printed)		(Printed)		Airbill # = 1396467553 • MPS 935 8337003	

Distribution: Original (White) and Duplicate (Yellow) Copy to Coordinator Field Files (Pink)

Versar ~~102~~ 103

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SAN-214 252-6200	WPNSTA Yorktown	Baker Env (Don Shields) 420 Rouser Rd, MOP#3 Coraopolis, PA 15108

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

INDUSTRIAL HYGIENE SAMPLE: Y / N

PARAMETERS

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOA/Pest/PCB/pH	8330	Metals/CN	TOC/Grain Size					REMARKS
16SB07-01	8-6-94	1443		X	Soil	3	1	1	1						
BGCPSD01-02	8-6-94	1320		X	Soil	4	1	1	1	1					
BGCPSD01-01	8-6-94	1322		X	Soil	4	1	1	1	1					
16SB07-09	8-6-94	1610		X	Soil	3	1	1	1						
16SB07-04	8-6-94	1521		X	Soil	3	1	1	1						
16SB08-10	8-8-94	1521		X	Soil	3	1	1	1						
16SB08-01	8-8-94	1355		X	Soil	3	1	1	1						
16SB08-06	8-8-94	1445		X	Soil	3	1	1	1						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jodi Golden	8-8-94 1900				
(Printed) Jodi Golden		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill # = 1396467553
(Printed)		(Printed)		MPS # = 9358337012

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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Versar (104A)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Env. (Don Shields) 420 Rouser Rd, AOP#3 Coraopolis, PA 15108

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

INDUSTRIAL HYGIENE SAMPLE: Y / N

PARAMETERS

FIELD SAMPLE NUMBER	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	CLP VOA								REMARKS
16SB08-06	8.8.94	1445		X	SOIL	1	1								
16SB08-10	8.8.94	1521		X	SOIL	1	1								
16SB08-01	8.8.94	1355		X	SOIL	1	1								
6SB04-13	8.6.94	0832		X	SOIL	1	1								
16SB06-01	8.7.94	1350		X	SOIL	1	1								
16SB06-06	8.7.94	1521		X	SOIL	1	1								
16SB07-01	8.6.94	1443		X	SOIL	1	1								
16SB07-04	8.6.94	1521		X	SOIL	1	1								
16SB07-09	8.6.94	1610		X	SOIL	1	1								
16SB06-01	8.7.94	1635		Y	SOIL	1	1								
BGCPSD04-01	8.7.94	0822		X	SOIL	1	1								
BGCPSD04-02	8.7.94	0820		X	SOIL	1	1								

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
MCDavidson	8.8.94 / 1830				
(Printed) M.C. Davidson		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill # = 1396467553
(Printed)		(Printed)		MPS # = 9358337046

Accompanies Shipment (white and yellow) Copy to Coordinator Field Files (pink)

P.2/4

Versar ~~106~~ MCD 1048

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SAN-214 252-6200	WPN STA Yorktown	Baker Env (Don Shields) 420 Rouser Rd. A0PH3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	CLP VOA	CLP VOA w/ HCl							REMARKS
BGCPSD05-01	8-7-94	1017		X	SOIL	1	1								
BGCPSD05-02	8-7-94	1015		X	SOIL	1	1								
BGCPSD01-01	8-6-94	1322 ~~1320~~ MCD		X	SOIL	1	1								
BGCPSD01-02	8-6-94	1320		X	SOIL	1	1								
BGCPSD02-01	8-6-94	1537		X	SOIL	1	1								
BGCPSD02-02	8-6-94	1535		X	SOIL	1	1								
BGCPSD03-01	8-6-94	1810		X	SOIL	2	2								ms/msd
BGCPSD03-01D	8-6-94	1810		X	SOIL	1	1								
BGCPSD03-02	8-6-94	1808		X	SOIL	1	1								
BGTCSW01-02	8-8-94	1045		X	water	4		4							low level
BGTCSW01-01	8-8-94	1030		X	water	4		4							low level
BG-TB048	8-8-94				water	1		1							low level

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
MCDavidson	8-8-94 1830				
(Printed) M.C. Davidson		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill no. 1396467553 MPS no. 9358337046
(Printed)		(Printed)		

Versar (104C)

p.3/4

CHAIN OF CUSTODY RECORD

PROJECT NO.: 191001-43-SRN-214 252-6200

PROJECT NAME: WPNSTA Yorktown

Baker Conv: (Don Shields) 420 Rouser Road Coraopolis, PA 15108

SAMPLERS: (Signature) Jodi Golden

(Printed) Jodi Golden

INDUSTRIAL HYGIENE SAMPLE: Y / N

PARAMETERS

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	CLP VOA w/HCl	CLP VOA							REMARKS
16-RB045	8.7.94	1930		X	water	4	4								low level
BGCPSW05-01	8.7.94	1000		X	water	4	4								low level
BG-RB044	8.7.94	1220		X	water	4	4								low level
BG-TB046	8.7.94				water	1	1								low level
BGCPSW04-01	8.7.94	0800		X	water	4	4								low level
6-RB042	8.6.94	1845		X	water	4	4								low level
B6-RB041	8.6.94	1830		X	water	4	4								low level
BGTCSW02-02	8.8.94	1120		X	water	4	4								"
BGTCSW02-01	8.8.94	1110		X	water	4	4								"
6HP04-01	8.6.94	0945		X	water	2		2							~~low level~~ MCD, no HCl, rapid turn
BGCPSW02-01	8.6.94	1520		X	water	4	4								low level
16-TB047	8.8.94			X	water	1	1								"

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
M C Davidson	8/8/94 1830				
(Printed) M.C. Davidson		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill # = 1396467553
(Printed)		(Printed)		MPS # = 9358337046

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

Versar (104D)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		PARAMETERS	INDUSTRIAL HYGIENE SAMPLE
191001-43-SEN-219 252-6200	NPNSTA Yorktown	Baker Env. (Don Shields) 420 Rouser Rd, Coraopolis, PA 15108		Y / N

SAMPLERS: (Signature) M Davidson (Printed) M.C. Davidson

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	CLP VOA w/HCl	REMARKS
16-TB045	8.7.94			1	water	1	1	low level
BGCPSW03.01	8.6.94	1715		1	water	~~4~~ 3	~~4~~ 3	" , MS/MSD
BGCPSW03.01D	8.6.94	1715		1	water	4	4	"
BGCPSW01.01	8.6.94	1215		1	water	4	4	"
16-RB043	8.6.94	1935		1	water	4	4	"
6-TB043	8.6.94			1	water	1	1	"
16-RB046	8.8.94	1825		1	water	4	4	"

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
M Davidson	8/8/94 1830				
(Printed) M.C. Davidson		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				Airbill # = 139467553	
(Printed)		(Printed)		MPS # = 9358337046	

Original Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink)

Versar (105)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SAN-214 252-6200	WPN STA Yorktown	Baker Env (Don Shields) 420 Rouser Rd, Aff #3 Lavnopolis, PA 15108	Y / N

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Pest/PCB	SVOA	TOC/Hardness w/ H_2SO_4	Total metals w/ HNO_3	Diss. metals w/ HNO_3	8330	CN w/ NaOH		REMARKS
BGTCSW02-01	8-8-94	1110		X	Water	78	1	2	1	1	~~1~~ AmB	1	1		
BGTCSW02-02	8-8-94	1120		X	Water	78	1	2	1	1	~~1~~ AmB	1	1		
BGTCSW02DS-01	8-8-94	1110		X	Water	1					1				
BGTCSW02DS-02	8-8-94	1120		X	Water	1					1				
BGCPSW05-01	8-7-94	1000		X	Water	2			1			1			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/8/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Air bill 1396467553
(Printed)		(Printed)		MPS # ~~9358337152~~ 9358337021 (DJM)

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink)

Versar ~~104~~ mo 106

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SAN-214 252-6200	WPN STA Yorktown	Baker Env (Don Shields) 420 Rouser Rd, AOPH3 Coraopolis, PA 15108

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

INDUSTRIAL HYGIENE SAMPLE: Y / N

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Pest/PCB	SVOA	TOC/Hardness w/H2SO4	Total metals w/HNO3	Diss metals w/HNO3	8330	CN w/NaOH		REMARKS
BGTCSW01-01	8-8-94	1030		X	Water	7	1	2	1	1		1	1		
BGTCSW01DS-01	8-8-94	1030		X	Water	1					1				
BGTCSW01DS-02	8-8-94	1045		X	Water	1					1				
BGTCSW01-02	8-8-94	1045		X	Water	7	1	2	1	1		1	1		
BGCPSW04-01	8-7-94	0800		X	Water	2		1		1					
BGCPSW05-01	8-7-94	1000		X	Water	2	1						1		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/8/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Air bill 1396467553 MPS 9358337037
(Printed)		(Printed)		

Versar (107)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Env (Don Shields) 420 Rouser Rd, AOP43 Coraopolis, PA 15108

INDUSTRIAL HYGIENE SAMPLE: Y / N

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Pest/PCB	SVOA	TOC/Hardness w/ H_2SO_4	Total metals w/ HNO_3	Diss. metals w/ HNO_3	8330	CN w/ NaOH	TOC/pH	Metals/cn	REMARKS
BG-CPSW05-01	8-7-94	1000		X	Water	4		2		1	1					☆ check - dissolved ID from lab
16-RB046	8-8-94	1825		X	Water	6	1	2		1		1	1			
BG-RB045	8-8-94	1840		X	Water	2				1			1			
BGSB04-09	8-8-94	1105		X	Soil (clay)	2								1	1	
~~BGSB08-09~~	~~8-8-94~~	~~1105~~														
BGSB04-07	8-8-94	1017		X	Soil (silt)	2								1	1	
BGSB04-01D	8-8-94	0903		X	Soil	2								1	1	
BGSB04-01	8-8-94	0903		X	Soil	2								1	1	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/8/94 1900				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Air bill 1396467553
(Printed)		(Printed)		MPS 9358337152

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator, Field Files (pink).

Versar (108)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SAN-214 252-6200	WPNSTA Yorktown	Baker Env (Don Shields) 420 Rouser Rd, AOP#3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Pest/PCB	SVOA	TOC/Hardness w/H2SO4	Total metals w/HNO3	Diss. metals w/HNO3	8330	CN w/NaOH		REMARKS
BG-RB048	8-10-94	1350		X	water	6	1	2		1		1	1		Store bought D1
BGTCSW03-01	8-9-94	0940		X	water	7	1	2	1	1		1	1		
BGTCSW03DS-01	8-9-94	0940		X	water	1					1				
BGTCSW03-02	8-9-94	0950		X	water	2				1		1			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/10/94				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill 1396786392
(Printed)		(Printed)		

Versar (109)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-252-214 252-6200	WPNSTA Yorktown	Baker Env (Don Shields) 420 Rouser Rd, AOPH3	Y / N

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Pest/PCB	SVOA	TOC/Hardness w/ H_2SO_4	Total metals w/ HNO_3	~~Diss metals~~ w/ HNO_3	8330	Cn/NaOH	Diss metals (no preservation)	REMARKS
BGTCSW03-02	8-9-94	0950		X	water	5	1	2	1				1		
BGTCSW03DS-02	8-9-94	0950		X	water	1								1	
BGTCSW04-01	8-9-94	1025		X	water	7	1	2	1	1		1	1		
BGTCSW04DS-01	8-9-94	1025		X	water	1								1	
BGTCSW05DS-01	8-10-94	1050		X	water	1								1	
BGTCSW05-01	8-10-94	1050		X	water	1 ~~2~~ Amb	1					~~1~~ Amb	~~1~~ Amb		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/10/94 1700				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				MPS-935 8337 055
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

Versar (110)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SRN-214 252-6200	WPNSTA Yorktown	Baker Env (Don Shines) 420 Rouser Rd, AOD #3 Coraopolis, PA 15108

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

INDUSTRIAL HYGIENE SAMPLE: Y / N

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Pest/PCB	SVOA	TOC/Hardness w/ H_2SO_4	Total metals w/ HNO_3	~~not preserved~~ Diss. metals	8330	CN w/ NaOH		REMARKS
BGTCSW05-01	8-10-94	1050		X	Water	6		2	1	1		1	1		
BGTCSW06-01	8-10-94	1130		X	water	7	1	2	1	1		1	1		
BGTCSW06DS-01	8-10-94	1130		X	water	1					1				
BG-RB-044	8-9-94	1950		X	water	2				1			1		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/10/94 1700				
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Air bill 1396786392
(Printed)		(Printed)		MPS - 9358337064

Versar (111)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SAN-214 252-6200	WPNSTA Yorktown	Baker Env (Don Shields) 420 Rouser Rd, Aoplis Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) [signature]

(Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOA/PCB/Pest/pH	Metals/CN	8330	TOC/Grain Size					REMARKS
BGTCSD01-01	8-9-94	1447		X	Soil	4	1	1	1	1					
BGTCSD01-02	8-9-94	1445		X	Soil	4	1	1	1	1					
BGTCSD02-01	8-9-94	1322		X	Soil	4	1	1	1	1					
BGTCSD02-02	8-9-94	1320		X	Soil	4	1	1	1	1					
BGTCSD03-01	8-9-94	1205		X	Soil	4	1	1	1	1					
BGTCSD03-02	8-9-94	1203		X	Soil	4	1	1	1	1					

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/10/94 1700				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill 1396786392
(Printed)		(Printed)		MPS 9358337073

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

Versar (112)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SAC-214 252-6200	WPN STA Yorktown	Baker Env (Don Shaw) 420 Rouse Rd, Acpt 3 Coraopolis PA 15108	Y / N

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOA/Pest/PCB/pH	8330	Metals/CN	TOC/Grain Size	TOC/Sieve/Hydrometer				REMARKS
BGTCSD03-01D	8-9-94	1205		X	Soil	3	1	1	1						Dupe
BGTCSD04-01	8-9-94	1052		X	Soil	4	1	1	1	1					
BGTCSD04-02	8-9-94	1050		X	Soil	4	1	1	1	1					
BGTCSD05-01	8-10-94	1107		X	Soil	4	1	1	1	1					
BGTCSD05-02	8-10-94	1105		X	Soil	4	1	1	1	1					
BGTCSD06-01	8-10-94	1142		X	Soil	4	1	1	1	1					
BGTCSD06-02	8-10-94	1140		X	Soil	4	1	1	1	1					
BGGW07-19	8-10-94	1210		X	Soil	1					1				Aquifer Characteristics Columbia

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David J Martin	8/10/94 1700				
(Printed) David J Martin		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Air bill 1396786392
(Printed)		(Printed)		MPS 935 8337082

Versar (113)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SAA-DM 252-6200	WPNSTA Yorktown	Baker Env (Chas Shields) 420 Rousse Rd Ald#3 Lovaglio MA 15108	Y / N

SAMPLERS: (Signature) _____ (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: TCL/pH	Metals TCL	VOA w/ HCL						REMARKS
BGSB07-16	8-9-94	1545		X	Soil	2	1	1							Sand
BGSB07-11	8-9-94	1457		X	Soil	2	1	1							Clay
BGSB07-04	8-9-94	1406		X	Soil	2	1	1							Silt
~~BGSB07-04D~~	~~8-9-94~~	~~1406~~		~~X~~	~~Soil~~	~~2~~	~~1~~	~~1~~							~~Silt~~ required dupe collected 7/26/94
BG-TB050	8-10-94	—		X	Water	1			1						Low Level Analysis
BG-RB048	8-10-94	1350		X	Water	4			4						Store bought DI water
BGTCSW04-01	8-9-94	1025		X	Water	4			4						
BGTB049	8-9-94	—		X	Water	1			1						
BGTCSW03-02	8-9-94	1050		X	Water	4			4						
BGTCSW03-01	8-9-94	0940		X	Water	4			4						
BGTCSW05-01	8-10-94	1050		X	Water	4			4						
BGTCSW06-01	8-10-94	1130		X	Water	4			4						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

2/2

Versar Laboratories INC. (114)

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SAN-214 252-6200	WPNSTA Yorktown	Baker Env (Don Shields) 420 Rouser Rd, AOPH3 Coraopolis, PA 15108	Y / N

SAMPLERS: (Signature) [signature] (Printed) Aaron Bernhardt

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA	PARAMETERS							REMARKS
BGTCSD05-01	8-10-94	1107		X	Soil	1	1								
BGTCSD05-02	8-10-94	1105				1	1								
BGTCSD03-02	8-9-94	1203				1	1								
BGTCSD06-01	8-10-94	1142				1	1								
BGTCSD04-01	8-9-94	1052				1	1								
BGTCSD04-02	8-9-94	1050				1	1								
BGTCSD01-01	8-9-94	1447				1	1								
BGTCSD01-02	8-9-94	1445				1	1								
BGTCSD02-01	8-9-94	1322				1	1								
BGTCSD02-02	8-9-94	1320				1	1								
BGTCSD03-01	8-9-94	1205				1	1								
BGTCSD03-01D	8-9-94	1203				1	1								
BGTCSD06-02	8-10-94	1140				1	1								

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
(Printed)		(Printed)		

Distributi... Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinato... Files (pink).

(118)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WANSTA YORKTOWN	BAKER ENV (DON SHIELDS) 420 ROUSER RD, AOP #3 CORAOPOLIS, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

PARAMETERS: TOC/GRAINSIZE; CLP SVOC/PEST/PCB/PH; N/N-8330; TAL INORGANICS/CN; SIEVE + HYDROMETER; TOC/GRAINSIZE; CLP VOA; CLP VOA; HCL

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TOC/GRAINSIZE	CLP SVOC/PEST/PCB/PH	N/N-8330	TAL INORGANICS/CN	SIEVE + HYDROMETER	TOC/GRAINSIZE	CLP VOA	CLP VOA	REMARKS
~~12SD11-01~~	~~8-15-94~~	~~1622~~			~~SOIL~~	3	X	X				X			CANCEL ANALYSIS HAD 8-23-94
~~12SD10-02~~	~~8-15-94~~	~~1455~~			~~SOIL~~		X	X	X	X		X			
~~12SD10-01~~	~~8-15-94~~	~~1457~~			~~SOIL~~		X	X	X	X		X			
BGGW04A-38	8-15-94	1519			SOIL	1					X				SIEVE + HYDROMETER AQUIFER CHAR. CORNWALLIS CAVE
~~12SD11-02~~	~~8-15-94~~	~~1620~~			~~SOIL~~	1						X			CANCEL ANALYSIS HAD 8-23-94
12-TB051	8-15-94	—			WATER	1							X		LOW LEVEL
~~12SW10-01~~	~~8-15-94~~	~~1445~~			~~WATER~~	4							X 4		~~LOW LEVEL~~ CANCEL ANALYSIS HAD 8-23-94
~~12SW11-01~~	~~8-15-94~~	~~1610~~			~~WATER~~	4							X 4		~~LOW LEVEL~~ CANCEL ANALYSIS HAD 8-23-94
12SW17-01	8-16-94	1150			WATER	4							X 4		LOW LEVEL
12-TB052	8-16-94	—			WATER	1							X		LOW LEVEL
~~12SW13-01~~	~~8-16-94~~	~~1345~~			~~WATER~~	4							X 4		~~LOW LEVEL~~ CANCEL ANALYSIS HAD 8-23-94
~~12SW14-01~~	~~8-16-94~~	~~1225~~			~~WATER~~	4							X 4		~~LOW LEVEL~~ CANCEL ANALYSIS

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
HEATHER DeBOLT	8/16/94 1700				
(Printed) Heather A DeBolt		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				FED EX AIRBILL #1396467516
(Printed)		(Printed)		VOAs ARE LOW LEVEL ANALYSIS FOR WATER

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

(123)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	
191001-43-SDW-214 252-6200	WANSTA YORKTOWN	BALCEEN (DON & HIELDS) 420 ROUSER RD, AOP #3 CORAOPOLIS, PA 15108

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TAL Inorganics (ICP)	N/N-8330	cPSVOA/pest/PCB/pp	TOC/Grainsize	Sieve + Hydrometer Grainsize				REMARKS
12SD12-01	8-17-94	0912			SOIL	4	X	X	X	X					PETROLEUM ODOR
12SD12-02	8-17-94	0910			SOIL	4	X	X	X	X					PETROLEUM ODOR
12SD09-01	8-17-94	1442			SOIL	7 (4)	X 3	X 3	X 3	X					MS/MSD
12SD09-01D	8-17-94	1442			SOIL	3	X	X	X						
12SD09-02	8-17-94	1440			SOIL	4	X	X	X	X					
~~12SD15-01~~	~~8-17-94~~	~~1042~~			~~SOIL~~	~~4~~	~~X~~	~~X~~	~~X~~	~~X~~					CANCEL ANALYSIS
~~12SD15-02~~	~~8-17-94~~	~~1040~~			~~SOIL~~	~~4~~	~~X~~	~~X~~	~~X~~	~~X~~					CANCEL ANALYSIS
BCGW04-21	8-16-94	1647			SOIL	1					X				SIEVE + HYDROMETER AQUIFER CHARACTERISTICS COLUMBIA AQUIFER

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Heather A DeBolt	8-17-94 1745				
(Printed) HEATHER A DeBOLT		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	**Date / Time**	**Received for Laboratory by: (Signature)**	**Date / Time**	**Remarks**	
				FED EX AIRBILL #139678645 MPS# 9297671546	
(Printed)		(Printed)			

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

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1 of 1

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME		INDUSTRIAL HYGIENE SAMPLE
191001-43-SRN-214 252-6200	WANSTA YORKTOWN	BAKER ENV (DON & HIELDS) 420 ROUSER RD, AOP #3 CORAOPOLIS, PA 15108	Y / N

SAMPLERS: (Signature) Jodi Golden (Printed) Jodi Golden

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	N/N-8330	TAL INORGANICS/CN	TOC/GRAINSIZE	CLP SVOC/PEST/PCB/PH	CLP PEST/PCB				REMARKS
12SD16-01	8-17-94	1155			SOIL	4	X	X	X	X					
12SD16-02	8-17-94	1153			SOIL	4	X	X	X	X					
BGS47RR	8-17-94	0900			SOIL	1					X				
6S19	8-17-94	1120			SOIL	6	X 2	X 2		X 2					MS/MSD
6S16	8-17-94	1106			SOIL	3	X	X		X					
6S18	8-17-94	1130			SOIL	3	X	X		X					
6S19D	8-17-94	1120			SOIL	3	X	X		X					
6S17	8-17-94	1055			SOIL	3	X	X		X					

NO PEST/PCB ANALYSIS NEEDED
CANCEL ANALYSIS
[illegible] 8-21-94

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Heather A DeBolt	8-17-94 1810				
(Printed) HEATHER A DeBOLT		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				FED EX AIRBILL # 1396786451 MPS # 9297671555
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

(129)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19001-43-SEN-24
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DON SHIELDS
Address: 420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	N/N-SW8330	CLP SVOC/PEST/PCB/PH	TAL INORGANICS/CN	TOC/GRAIN SIZE	CLP SVOC/PH	CLP PEST/PCB	Field Remarks
~~12SD14-01~~	~~8-18-94~~	~~0947~~	~~SOIL~~	~~4~~	~~G~~		X	X	X	X			~~CANCEL ANALYSIS 8-23-94~~
12SD17-02	8-18-94	0845	SOIL	4	G		X	X	X	X			
12SD17-01	8-18-94	0847	SOIL	4	G		X	X	X	X			
~~12SD14-02~~	~~8-18-94~~	~~0945~~	~~SOIL~~	~~4~~	~~G~~		X	X	X	X			~~CANCEL 4440 ANALYSIS 8-23-94~~
~~12SD14-01D~~	~~8-18-94~~	~~0947~~	~~SOIL~~	~~3~~ 3	~~G~~		X	X	X				
16SB09-01	8-18-94	0805	SOIL	3	G		X	X	X				
16SB09-01D	8-18-94	0805	SOIL	3	G		X	X	X				
16SB09-02	8-18-94	0835	SOIL	3	G		X	X	X				
FBMUD-01	8-18-94	0837	SOIL	4	G		X		X		X	X	

Relinquished By: [signature] Date/Time 8-18-94 1745 Received By:
Relinquished By: Date/Time Received By:
Relinquished By: Date/Time Received for Laboratory By: 8-18-94 1745

Comments: MPS # 929-7671616

Shipper: FED-EX
Airbill No. 139467520

(White and Yellow): Copy to coordinator Field Files (Pink)

130

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DON SHIELDS
Address: 420 ROUSER RD, AOP#3
CORAOPOLIS, PA, 15108
Phone: 412-269-6000 FAX: 412-268-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used: HCL	Type of Analysis: CLP VOA	CLP VOA							Field Remarks
16SB09-01D	8-18-94	0805	SOIL	1	G		X								
FBMUD-01	8-18-94	0837	SOIL	1	G		X								
16SB09-02	8-18-94	0835	SOIL	1	G		X								
16SB09-01	8-18-94	0805	SOIL	1	G		X								
12SD17-01	8-18-94	0847	SOIL	1	G		X								
~~12SD14-02~~	~~8-18-94~~	~~0945~~	~~SOIL~~	~~1~~	~~G~~		~~X~~								CANCEL HAD ANALYSIS 8-23-94
~~12SD14-01~~	~~8-18-94~~	~~0947~~	~~SOIL~~	~~1~~	~~G~~		~~X~~								
12SD17-02	8-18-94	0815	SOIL	1	G		X								
~~12SD13-02~~	~~8-18-94~~	~~1050~~	~~SOIL~~	~~1~~	~~G~~		~~X~~								CANCEL ANALYSIS HAD 8-23-94
~~12SD14-01D~~	~~8-18-94~~	~~0945~~	~~SOIL~~	~~1~~	~~G~~		~~X~~								
~~12SD13-01~~ HAD	8-18-94	1052	SOIL	1	G		X								
12-TB057	8-18-94	—	WATER	1	G			X							
12-RB052	8-18-94	1325	WATER	4	G			X							
16-RB053	8-18-94	1420	WATER	4	G			X							

Relinquished By:	Date/Time	Received By:	Comments:
Hank A DeBast	8-18-94 1800		
Relinquished By:	Date/Time	Received By:	
Relinquished By:	Date/Time	Received for Laboratory By:	Date/Time: 8-18-94 1800 / Shipper: FED-EX / Airbill No.: 139646752O

Distribution: Original Plus One Accompanies Shipment (White and Yellow); Copy to Coordinator Field Files (Pink)

(131)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19100/-43-SRN-14
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WANSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AGP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-262-6000 FAX: 412-262-2002

Sampled By: DDI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used		NaOH		HNO3	H2SO4		HNO3				
						Type of Analysis	TAL CN	CLP SUOA	Dissolved TAL Inorganics	TOC/Hardness	N/N-SW8330	Total TAL Inorganics	CLP Pest/PCB				Field Remarks
BGTNSW01-01	8-18-94	1545	WATER	7	—		X	3		X	X	X	X				
BGTNSW01DS-01	8-18-94	1545	WATER	1	—				X								
BGTNSW01-02	8-18-94	1555	WATER	7	—		X	3		X	X	X	X				
BGTNSW01DS-02	8-18-94	1555	WATER	1	—				X								
BGTNSW02-01	8-18-94	1625	WATER	2	—		X						X				

Relinquished By:	Date/Time	Received By:
Kenneth A. DeBolt	8-19-94 1635	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

WPS # 929767652

Date/Time	Shipper:	Airbill No.
8-19-94 1635	FED-EX	139678646 2

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to [illegible]dinator Field Files (Pink)

(132)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODY GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used		H_2SO_4	HNO_3	HNO_3	NaOH					Field Remarks
						Type of Analysis	NH3-8330	TOC/HARDNESS	CLP SVOA	DISSOLVED TAL INORGANICS	TOTAL TAL INORGANICS	TALCN	CLP PEST/PCB			
BGTNSW02-01	8-18-94	1625	WATER	5	-		X	X	X		X					
BGTNSW02DS-01	8-18-94	1625	WATER	1	-					X						
BGTNSW02-02	8-18-94	1635	WATER	7			X	X	X		X	X	X			
BGTNSW02DS-02	8-18-94	1635	WATER	1	-					X						
BGTNSW03-01	8-18-94	1705	WATER	4				X	X			X				

Relinquished By:	Date/Time	Received By:
Kenneth A. DeBord	8-19-94 1655	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

MPS # 9297671661

Date/Time	Shipper:	Airbill No.
8-19-94 1655	FED-EX	139678646 2

Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WANSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Preservative Used: HNO_3 | HNO_3 | NaOH

Type of Analysis

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	TOTAL TAL INORGANICS	CLP PEST/PCB	N/N-SW8330	DISSOLVED TAL INORGANICS	CLP SVOA	TAL CN	TOC/GRAINSIZE	TAL INORGANICS/CN	CLP SVOA/PEST/PCB/PH	Field Remarks
BG-TNSW03-01	8-18-94	1705	WATER	3	—	X	X	X							
BG-TNSW03DS-01	8-18-94	1705	WATER	1	—				X						
BG-RB053	8-19-94	1615	WATER	6	—	X	X	X		2 X	X				
~~BG-RB0~~ NAD															
BGTNSD0302	8-19-94	1020	SOIL	4	G			X				X	X	X	
BGTNSD03-01D	8-19-94	1022	SOIL	3	G			X					X	X	
BGTNSD03-01	8-19-94	1022	SOIL	3	G			X					X	X	MS/MSD

Relinquished By:	Date/Time	Received By:
[signature]	8-19-94 1715	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

MPS # 9297671677

Date/Time	Shipper:	Airbill No.
8-19-94 1715	FED-EX	1396786462

Distribution [illegible]ginal Plus One Accompanies Shipment (White and Yellow): Copy to C[illegible]nator Field Files (Pink)

(134)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	TOC/GRAINSIZE	CLP SVOC/PEST/PCB/PH	N/P-SW 8330	TAL INORGANICS/CN							Field Remarks
BGTNSD03-01	8-19-94	1022	SOIL	4	G		X	X	X	X							MS/MSD
BGTNSD02-02	8-19-94	1230	SOIL	4	G		X	X	X	X							
BGTNSD02-01	8-19-94	1232	SOIL	4	G		X	X	X	X							
BGTNSD01-02	8-19-94	1320	SOIL	4	G		X	X	X	X							
BGTNSD01-01	8-19-94	1322	SOIL	4	G		X	X	X	X							

Relinquished By:	Date/Time	Received By:	Comments:
Kent A DeBaun	8-19-94 1735		MPS #9297671686
Relinquished By:	Date/Time	Received By:	
Relinquished By:	Date/Time	Received for Laboratory By:	Date/Time: 8-19-94 1735

Shipper: FED-EX
Airbill No. 139678646 2

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

135

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19100/-43-SRN-24
P. O. No. 252-6200

1 of 2 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used: HCL	Type of Analysis: CLP VOA	CLP VOA	Field Remarks
BGTNSD01-01	8-19-94	1322	SOIL	1	G		X		
BGTNSD01-02	8-19-94	1320	SOIL	1	G		X		
BGTNSD02-01	8-19-94	1232	SOIL	1	G		X		
BGTNSD02-02	8-19-94	1230	SOIL	1	G		X		
BGTNSD03-01	8-19-94	1022	SOIL	2	G		X		MS/MSD
BGTNSD03-01D	8-19-94	1022	SOIL	1	G		X		
BGTNSD03-02	8-19-94	1020	SOIL	1	G		X		
BGTNSW02-02	8-18-94	1635	WATER	4	G			X	LOW LEVEL
BGTNSW02-01	8-18-94	1625	WATER	4	G			X	LOW LEVEL
BGTNSW01-02	8-18-94	1555	WATER	4	G			X	LOW LEVEL
BGTNSW01-01	8-18-94	1545	WATER	4	G			X	LOW LEVEL
12-TB058	8-18-94	—	WATER	1	G			X	LOW LEVEL
BGTNSW03-01	8-18-94	1705	WATER	4	G			X	LOW LEVEL
BG-PB053	8-19-94	1615	WATER	4	G			X	LOW LEVEL

Relinquished By:	Date/Time	Received By:
Heather A DeBat	8-19-94 1800	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: VOAs FOR WATER LOW LEVEL ANALYSIS

Date/Time	Shipper:	Airbill No.
8-19-94 1800	FED-EX	139786462

(White and Yellow): Copy to Coordinator Field Files (Pink)

(136)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19100-43-SRN-214
P. O. No. 252-6200

2 of 2 pages

Project Name or Number: WANSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: CLP VOA	TAL INORGANICS/CN	N/P - SW8330	CLP SVOC/PH	CLP VOA	Field Remarks
						HCL						
BG-TB059	8-19-94	—	WATER	1	G		X					LOW LEVEL
G-TB060	8-19-94	—	WATER	1	G		X					
GSB08-01	8-19-94	1336	SOIL	~~3~~ 4	G			X	X	X	X	
GSB08-02	8-19-94	1410	SOIL	~~3~~ 4	G			X	X	X	X	
GSB08-03	8-19-94	1435	SOIL	4	G			X	X	X	X	HOT SAMPLE HNu = 90

Relinquished By:	Date/Time	Received By:
Heather A. DeBoer	8-19-94 1800	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: VOAs FOR WATER LOW LEVEL ANALYSIS

Date/Time	Shipper:	Airbill No.
8-19-94 1800	FED-EX	139678646 2

(White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

137

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SEN-214

P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC

Send Results to: DONALD C. SHIELDS

Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108

Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	DISSOLVED TAL INORGANICS	CLP SVOC	TOC/HARDNESS	CLP PEST/PCB	TOTAL TAL INORGANICS	N/N-SW 8330	TAL CN				Field Remarks
Preservative Used							HNO_3		H_2SO_4		HNO_3					
BGTNSW04DS-01	8-20-94	1635	WATER	1	—	X										MS/MSD
BGTNSW04-01	8-20-94	1635	WATER	9			3 X	X	X	3 X	X	X				MS/MSD
BGTNSW04-01D	8-20-94	1635	WATER	6			2 X		X	X	X	X				
BGTNSW04DS-01D	8-20-94	1635	WATER	1		X										

Relinquished By:	Date/Time	Received By:
Heather A. DeBord	8-22-94 1615	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

MPS 9297671704

Date/Time	Shipper:	Airbill No.
8-22-94 1615	FED-EX	139 786436

Laboratory Field Files (Pink)

Versar Laboratories INC.

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

CHAIN OF CUSTODY RECORD

138

Quote No. 19001-43-SRNA

P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTN YORKTOWN

Client: BAKER ENVIRONMENTAL, INC

Send Results to: DONALD C. SHIELDS

Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108

Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used		HNO_3		NaOH		HNO_3					Field Remarks
						Type of Analysis	CLP PEST/PCB	DISSOLVED TAL INORGANICS	N/N 8330	TAL CN	CLP SUOC	TOTAL TCL INORGANICS					
BGTNSW04-01	8.20.94	1635	WATER	10	—		X		X	X	X	X					MS/MSD
BGTNSW04DS-01	8.20.94	1635	WATER	2	—			X									MS/MSD
12SW15DS-01A	8.21.94	1300	WATER	6	—		X	X	X	X	X	X					RESAMPLED CORRECT LOCATION
CAB NOT CALLED							SHOULD BE 12SW15-01A NOT 12SW15DS-01A										

Relinquished By:	Date/Time	Received By:
[signature]	8.22.94 1625	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

MPS 9297671713

Date/Time	Shipper:	Airbill No.
8.22.94 1625	FED-EX	139678643 6

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD 139

6850 Versar Center
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Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19104-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C SHIELDS
Address: 420 ROUSER RD, AGP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used										Field Remarks
						Type of Analysis	TDC/HARDNESS	CLP SVOC	TAL CN	NH3-SW8330	CLP PEST/PCB	TOTAL TAL INORGANICS	DISSOLVED TAL INORGANICS			
						Preservative Used	H_2SO_4		NaOH			HNO_3	HNO_3			
12SW15-01A	8-21-94	1300	WATER	2	-		X	X								RESAMPLED CORRECT LOCATION
BGTNSW05-01	8-20-94	1340	WATER	7			X	2 X	X	X	X	X				
BGTNSW05DS-01	8-20-94	1340	WATER	1	-								X			
BGTNSW06DS-01	8-20-94	1250	WATER	1	-				2nd				X			
BGTNSW06-01	8-20-94	1250	WATER	4				2 X	X	X		X				

Relinquished By:	Date/Time	Received By:
[signature]	8-22-94 1635	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

MPS 929767172

Date/Time	Shipper:	Airbill No.
8-22-94 1635	FED-EX	1396786436

(White and Yellow) Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

140

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Preservative Used: NaOH, H_2SO_4, HNO_3

Type of Analysis: TAL CN, CLP PEST/PCB, TOC/HARDNESS, N/N-8330, CLP SVOA, TOTAL TAL INORGANICS

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	TAL CN	CLP PEST/PCB	TOC/HARDNESS	N/N-8330	CLP SVOA	TOTAL TAL INORGANICS					Field Remarks
BGTNSW06-01	8-20-94	1250	WATER	3	~~2~~ 3	X	X	X								
~~BGTNSW06-9~~																
12-RB057	8-21-94	1725	WATER	6	—	X	X		X	~~X~~ 2	X					
BG-RB056	8-20-94	2020	WATER	6	—	X	X		X	~~X~~ 2	X					
6-RB054	8-19-94	1810	WATER	2	—	X				X						

Relinquished By:	Date/Time	Received By:
Heather A DeBolt	8-22-94 1645	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: MPS # 9297671731

Date/Time	Shipper:	Airbill No.
8-22-94 1645	FED-EX	1396786436

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

142

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Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19601-43-SEN-214

P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC

Send Results to: DONALD C. SHIELDS

Address: 420 ROUSER RD, NOP BLDG #3
CORAOPOLIS, PA 15108

Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used: HNO3	HNO3	NaOH	H2SO4	Type of Analysis: TOTAL TAL INORGANICS	CLP SUOA DISSOLVED TAL INORGANICS	N/N-SW8330	TAL CN	CLP PEST/PCB	TOC/HARDNESS	TOC/GRAIN SIZE	TAL INORGANICS/CN BACKGROUND ONLY	CLP SUOA/PEST/PCB/PH	Field Remarks
12SW20-01	8-22-94	1400	WATER	7	—					X	2X	X	X	X					NEW LOCATION
12SW20DS-01	8-22-94	1400	WATER	1	—						X								NEW LOCATION
12SW18-01	8-22-94	1230	WATER	6	—					X	X	X	X	X					NEW LOCATION
BGTNSD04-01	8-20-94	1712	SOIL	4	—							X			X	X	X		
BGTNSD04-02	8-20-94	1710	SOIL	4	—							X			X	X	X		

Relinquished By: Heather A DeBolt — Date/Time: 8-22-94 1715 — Received By:

Relinquished By: — Date/Time: — Received By:

Relinquished By: — Date/Time: — Received for Laboratory By:

Comments:

MPS 9297671756

Date/Time: 8-22-94 1715 — Shipper: FED-EX — Airbill No. 1396786436

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

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Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

CHAIN OF CUSTODY RECORD

143

Quote No. 19001-43-SRNAV

P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC

Send Results to: DONALD C. SHIELDS

Address: 420 ROUSER RD, 400 BLDG #3
CORAOPOLIS, PA 15108

Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	N/N-SW 8330	CLP SVOA/PEST/PCB/PH	TAL INORGANICS/CN	TOC/GRAIN SIZE	TOC/SIEVE+HYDROMETER	Field Remarks
BGTNSD04-01D	8-20-94	1712	SOIL			X	X	X			
BGTNSD06-01	8-20-94	1422	SOIL	4	-	X	X	X	X		
12SD15-01A	8-21-94	1317	SOIL	4	-	X	X	X	X		RESAMPLED CORRECT LOCATION
BGTNSD06-02	8-20-94	1420	SOIL	4	-	X	X	X	X		
BGTNSD05-02	8-20-94	1530	SOIL	4	-	X	X	X	X		
BGGW07A	8-20-94	1000	SOIL	1	-				X	CORNWALLIS CAVE.	SIEVE+HYDROMETER AQUIFER CHARACTERISTICS
BGTNSD05-01	8-20-94	1532	SOIL	4	-	X	X	X	X		
6SDCS01-02	8-17-94	1000	SOIL	2	-	X					<100,000 ppm MS/MSD
12SD15-02A	8-21-94	1315	SOIL	4	-	X	X	X	X		RESAMPLED CORRECT LOCATION
6SDCS01-02D	8-19-94	1000	SOIL	1	-	X					<100,000 ppm
6SDCS01-07	8-19-94	1033	SOIL	1	-	X					<10,000 ppm
6SDCS02-02	8-19-94	1040	SOIL	1	-	X					70.5 ppm
6SDCS03-02	8-19-94	1205	SOIL	1	-	X					* <10,000 ppm
6SDCS04-03	8-19-94	1230	SOIL	1	-	X					70.5 ppm
6SDCS05-02	8-19-94	1330	SOIL	1	-	X					71,000 ppm

	Date/Time		
Relinquished By:	8-22-94	1755	Received By:
Relinquished By:			Received By:
Relinquished By:			Received for Laboratory By:

Comments:

MPS 9297671765

Date/Time		Shipper:	Airbill No.
8-22-94	1755	FED-EX	1396786436

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

144

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200

1 of 3 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: VOAs FOR WATER ARE LOW LEVEL ANALYSIS
or
Date Needed By:

Preservative Used: HCL

Type of Analysis: CLP VOA; CLP VOA; ~~CLP VOA~~

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP VOA	CLP VOA	~~CLP VOA~~								Field Remarks
BGTNSD06-01	8-20-94	1422	SOIL	1	—	X										
BGTNSD06-02	8-20-94	1420	SOIL	1	—	X										
BGTNSD04-01	8-20-94	1712	SOIL	1	—	X										
BGTNSD04-01D	8-20-94	1712	SOIL	1	—	X										
BGTNSD04-02	8-20-94	1710	SOIL	1	—	X										
BGTNSD05-01	8-20-94	1532	SOIL	1	—	X										
BGTNSD05-02	8-20-94	1530	SOIL	1	—	X										
12SD15-01A	8-21-94	1317	SOIL	1	—	X										RESAMPLED CORRECT LOCATION
12SD15-02A	8-21-94	1315	SOIL	1	—	X										RESAMPLED CORRECT LOCATION
BGTNSW04-01	8-20-94	1635	WATER	12	—		X 12									MS/MSD LOW LEVEL
BGTNSW04-01D	8-20-94	1635	WATER	4	—		X 4									LOW LEVEL
12-TB062	8-21-94	—	WATER	1	—		X									LOW LEVEL
12SW18-01	8-22-94	1230	WATER	4	—		X 4									LOW LEVEL
12-TB066	8-22-94	—	WATER	1	—		X									LOW LEVEL

Relinquished By:	Date/Time	Received By:
[signature]	8-22-94 1745	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

Date/Time	Shipper:	Airbill No.
8-22-94 1745	FED-EX	13°786436

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

145

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SENAV
P. O. No. 252-6200

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: 6HP08-01+6HP08-01D or 12HP11-02
Date Needed By: RAPID TURNAROUND 7 TO 14 DAYS

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used: HCL	Type of Analysis: CLP VOA	CLP VOA	Field Remarks
12SW19-01	8-22-94	1315	WATER	4	—	X			LOW LEVEL
6HP08-01	8-19-94	1850	WATER	2	—		X		RAPID TURN
6HP08-01D	8-19-94	1850	WATER	2	—			X	RAPID TURN
6-TB061	8-19-94	—	WATER	1	—	X			(STANDARD) REGULAR ANALYSIS
BERB056	8-20-94	2020	WATER	4	—	X			LOW LEVEL
6-RB054	8-19-94	1810	WATER	4	—	X			LOW LEVEL
12SW20-01	8-22-94	1400	WATER	4	—	X			LOW LEVEL
12-RB055	8-20-94	1215	WATER	2	—	X			(STANDARD) REGULAR ANALYSIS
12HP11-02	8-21-94	1100	WATER	2	—		X		RAPID TURN
12SW15-01A	8-21-94	1300	WATER	4	—	X			LOW LEVEL RESAMPLE CORRECT LOCATION
12-RB057	8-21-94	1525	WATER	4	—	X			LOW LEVEL
12-TB064	8-21-94	—	WATER	1	—	X			LOW LEVEL
BETNSW05-01	8-20-94	1340	WATER	4	—	X			LOW LEVEL
BETNSW06-01	8-20-94	1250	WATER	4	—	X			LOW LEVEL

Comments: VOAS FOR WATER ANALYSIS ARE LOW LEVEL ANALYSIS UNLESS OTHERWISE MARKED.

	Date/Time		
Relinquished By: [signature]	8-22-94	1745	Received By:
Relinquished By:			Received By:
Relinquished By:			Received for Laboratory By:

Shipper: FED-EX
Airbill No. 1396786436

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

146

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19100143-SRN214
P. O. No. 252-6200

3 of 3 pages

Project Name or Number: WPNSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC

Send Results to: DONALD C. SHIELDS

Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108

Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: VOAS FOR WATER ANALYSIS
or
Date Needed By: LOW LEVEL ANALYSIS

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	Type of Analysis: CLP VOA	Field Remarks
BATB063	8-20-94	—	WATER	1	-	HCL	X	LOW LEVEL

Relinquished By: [signature]
Date/Time: 8-22-94 1745
Received By:

Relinquished By:
Date/Time:
Received By:

Date/Time:
Received for Laboratory By:

Comments:

Date/Time: 8-22-94 1745
Shipper: FED-EX
Airbill No. 137 786436

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

(147)

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-2Y

P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WANSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC.

Send Results to: DONALD C. SHIELDS

Address: 420 ROUSER RD, AGP BLDG #3

CORAOPOLIS, PA 15108

Phone: 412-269-6000 FAX: 412-269-7002

Sampled By: HEATHER DeBOLT

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used			H_2SO_4		HNO_3			H_2SO_4				Field Remarks
						Type of Analysis	NITRATE/NITRITE	N/N-SW8330	TOTAL TAL INORGANICS	CLP SVOC	TDS/TSS	TOC/HARDNESS	CLP PEST/PCB					
FBRIG-02	8-23-94	1115	WATER	8	—		X	X	X	X³	X	X	X					
FBDI-02	8-23-94	1415	WATER	8	—		X	X	X	X³	X	X	X					
FBLG-02	8-23-94	1515	WATER	2	—					X			X					

Relinquished By: Heather A DeBolt — Date/Time 8-23-94 1725 — Received By:

Relinquished By: — Date/Time — Received By:

Relinquished By: — Date/Time — Received for Laboratory By:

Comments: MPS 9297672955

Date/Time 8-23-94 1725 — Shipper: FED-EX — Airbill No. 1396786484

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

148

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 171001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: HEATHER DeBOLT

Turnaround Time: or Date Needed By:

Preservative Used: HNO_3 | H_2SO_4 | NaOH | H_2SO_4 | HNO_3

Type of Analysis

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	TOTAL TAL INORGANICS	CLP SUOA	TOC/HARDNESS	N/N-SW8330	TAL CN	NITRATE/NITRITE	TDS/TSS	CLP PEST/PCB	DISSOLVED TAL INORGANICS		Field Remarks
FBLG-02	8-23-94	1515	WATER	6	—	X	X 2	X	X	X						
FBATN-02	8-23-94	1715	WATER	8	—	X	X 2		X	X	X	X	X			
FBDIDS-02	8-23-94	1415	WATER	1	P									X		
FBDI-02	8-23-94	1415	WATER	1	P					X						
FBRIG-02	8-23-94	1115	WATER	1	P					X						
FBRIGDS-02	8-23-94	1115	WATER	1	P									X		

3

Relinquished By:	Date/Time	Received By:
Heather A. DeBolt	8-23-94 1805	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

MPS 9297672964

Date/Time	Shipper:	Airbill No.
8-23-94 1805	FED-EX	1396786484

Distributic ...iginal Plus One Accompanies Shipment (White and Yellow): Copy to ... ...linator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

149

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOPBLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: HEATHER DeBOLT

Turnaround Time: 12HP11-03 IS RAPID TURN 7 TO 14 DAYS FOR VOA ANALYSIS
or
Date Needed By:

Preservative Used: HCL | H_2SO_4 | HNO_3 | H_2SO_4

Type of Analysis: CLP VOA | CLP VOA | N/N-SW8330 | NITRATE/NITRITE | DISSOLVED TAL INORGANICS | TOC/HARDNESS

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP VOA	CLP VOA	N/N-SW8330	NITRATE/NITRITE	DISSOLVED TAL INORGANICS	TOC/HARDNESS					Field Remarks
FBATV-02	8-23-94	1715	WATER	~~4~~ 5	G	X 4					X					LOW LEVEL
FBRIG-02	8-23-94	1115	WATER	4	G	X 4										LOW LEVEL
12HP11-03	8-23-94	0915	WATER	~~2~~ 3	G		X 3	X								RAPID TURN
12-TB065	8-21-94	—	WATER	1	G	X										LOW LEVEL
FBDI-02	8-23-94	1415	WATER	4	G	X 4										LOW LEVEL
FBLG-02	8-23-94	1515	WATER	~~4~~ 5	G/P	X 4			X							LOW LEVEL
FB-TB067	8-23-94	—	WATER	1	G	X										LOW LEVEL
~~12T~~																
FBLGDS-02	8-23-94	1515	WATER	1	P					X						
FBATVDS-02	8-23-94	1715	WATER	1	P					X						

Relinquished By:	Date/Time	Received By:
Heather A DeBolt	8-23-94 1615	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

Date/Time	Shipper:	Airbill No.
8-23-94 1615	FED-EX	1396786484

Distribution: Original Plus One Accompanies Shipment (White and Yellow); Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

CHAIN OF CUSTODY RECORD

(150) #4

Quote No. 191001-43-SRN-214

P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC

Send Results to: DONALD C. SHIELDS

Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108

~~Phone:~~ 412-269-2002 ~~FAX:~~ 412-269-6000

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Preservative Used

Type of Analysis: CLP SVOC, CLP PEST/PCB

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP SVOC	CLP PEST/PCB	Field Remarks
BGWPSW01-01	8-23-94	0850	WATER	3	G	X 2	X	LAB RESAMPLE
BGWPSW01-02	8-23-94	0855	WATER	3	G	X 2	X	↕
BGWPSW02-02	8-23-94	0910	WATER	2	G	X 2		
BGWPSW02-01	8-23-94	0905	WATER	3	G	X 2	X	LAB RESAMPLE

HAD 8-24-94

Relinquished By:	Date/Time	Received By:
Keith A Debert	8-24-94 1430	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: MPS 9297672851

Date/Time	Shipper:	Airbill No.
8-24-94 1430	FED-EX	1396786440

Distributio[illegible] [illegible]ginal Plus One Accompanies Shipment (White and Yellow): Copy to C[illegible]inator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN-214
P. O. No. 252-6200

1 of 1 pages

151

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP BLDG #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Preservative Used

Type of Analysis: CLP PEST/PCB; CLP SVOC

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP PEST/PCB	CLP SVOC									Field Remarks
BGWPSW 02-02	8-23-94	0910	WATER	1	G	X	~~X~~ NAD									LAB RESAMPLE
BGWPSW 03-01	8-23-94	0920	WATER	9	G	~~X~~ 3	~~X~~ 6									MS/MSD ↕ NAD
BGWPSW 03-01	8-23-94	0920	WATER	3	G	X	~~X~~ 3									DUP LAB RESAMPLE

Relinquished By:	Date/Time	Received By:
Heat A DeBoer	8-24-94 1455	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: MPS 929 7672 867

Date/Time	Shipper:	Airbill No.
8-24-94 1455	FED-EX	1396786440

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

152

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19100f43-SRN-214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP#3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used			NaOH	HNO_3		HNO_3	H_2SO_4				Field Remarks
						Type of Analysis	CLP SVOC	CLP PEST/PCB	TAL CN	TOTAL TAL INORGANICS	N/N-SW 8330	DISSOLVED TAL INORGANICS	TOC/HARDNESS				
BGWPSW03-02	8-23-94	0925	WATER	2	G		X	~~X~~									LAB RESAMPLE 8-24-94
BGWPSW04-01	8-23-94	0930	WATER	3	G		X	X									LAB RESAMPLE 8-24-94
12SW21-01	8-24-94	0915	WATER	7	—		X	X	X	X	X		X				
12SW21DS-01	8-24-94	0915	WATER	1	P							X					
12-RB058	8-24-94	0720	WATER	4	—			X	X	X	X						

Relinquished By:	Date/Time	Received By:
Kent A DeBow	8-24-94 1510	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: MPS 929 7672 876

Date/Time	Shipper:	Airbill No.
8-24-94 1510	FED-EX	139786440

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to [illegible]dinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

153

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRN214
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Preservative Used

Type of Analysis

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP PEST/PCB	CLP SVOA									Field Remarks
BGWPSW03-02	8-23-94	0925	WATER	1	G	X										RESAMPLE
12-RB058	8-24-94	0720	WATER	2	G		X 2									
BGPLSW01-01	8-23-94	1600	WATER	3	G	X	X 2									RESAMPLE
BGPLSW01-01D	8-23-94	1600	WATER	3	G	X	X 2									RESAMPLE
BGPLSW01-02	8-23-94	1605	WATER	3	G	X	X 2									RESAMPLE

Relinquished By:	Date/Time	Received By:
[signature]	8-24-94 1520	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments:

MPS 9297672885

Date/Time	Shipper:	Airbill No.
8-24-94 1520	FED-EX	1396786440

... Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

CHAIN OF CUSTODY RECORD

154

Quote No. 19104-43-SRN-2/4

P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC

Send Results to: DONALD C. SHIELDS

Address: 420 ROUSER RD, AOP #3

CORAOPOLIS, PA 15108

Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	CLP SUOA	CLP PEST/PCB	Field Remarks
BGPLSW02-01	8-23-94	1510	WATER	3	G		X	X	RESAMPLE
BGPLSW02-02	8-23-94	1515	WATER	3	G		X	X	RESAMPLE
BGPLSW03-01	8-23-94	1500	WATER	3	G		X	X	RESAMPLE
BGPLSW03-02	8-23-94	1505	WATER	3	G		X	X	RESAMPLE
BGPLSW04-01	8-23-94	1450	WATER	2	G		X	X	RESAMPLE

Relinquished By:	Date/Time	Received By:
Kent A DeBaun	8-24-94 1525	
Relinquished By:	Date/Time	Received By:
Relinquished By:	Date/Time	Received for Laboratory By:

Comments: MPS 7297672894

Date/Time	Shipper:	Airbill No.
8-24-94 1525	FED-EX	1396786440

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

155

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 19100143-SRN219
P. O. No. 252-6200

1 of 1 pages

Project Name or Number: WPNSTA YORKTOWN
Client: BAKER ENVIRONMENTAL, INC
Send Results to: DONALD C. SHIELDS
Address: 420 ROUSER RD, APP #3
CORAOPOLIS PA 15108
Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	Preservative Used	CLP SOO1A	CLP PEST/PCB	CLP SVOA/PEST/PCB/PH	N/N-8330	TOC/GRAIN SIZE	TAL INORGANICS/CN	Field Remarks
BGPLSW04-01	8-23-94	1450	WATER	1	G		X						RESAMPLE
BGPLSW04-02	8-23-94	1455	WATER	3	G		X	X					RESAMPLE
12SD20-02	8-24-94	1225	SOIL	4	G				X	X	X	X	RESAMPLE CORRECT LOCATION
12SD20-01	8-24-94	1227	SOIL	4	G				X	X	X	X	
12SD19-02	8-24-94	1200	SOIL	4	G				X	X	X	X	
12SD19-01	8-24-94	1202	SOIL	4	G				X	X	X	X	
12SD18-01	8-24-94	1302	SOIL	4	G				X	X	X	X	
12SD18-02	8-24-94	1300	SOIL	4	G				X	X	X	X	RESAMPLE CORRECT LOCATION

	Date/Time		
Relinquished By: Kent A DeBoer	8-24-94	1545	Received By:
Relinquished By:			Received By:
Relinquished By:			Received for Laboratory By:

Comments: MPS 929672903

Date/Time: 8-24-94 1545
Shipper: FED-EX
Airbill No. 139678644O

Coordinator Field Files (Pink)

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

156

6850 Versar Center
Springfield, Virginia 22151
Telephone: (703) 750-3000
FAX: (703) 642-6761

Quote No. 191001-43-SRV-214

P. O. No. 252-6200

1 of 2 pages

Project Name or Number: WPNSTA YORKTOWN

Client: BAKER ENVIRONMENTAL, INC

Send Results to: DONALD C. SHIELDS

Address: 420 ROUSER RD, AOF #3

CORAOPOLIS, PA 15108

Phone: 412-269-6000 FAX: 412-269-2002

Sampled By: JODI GOLDEN

Turnaround Time: or Date Needed By:

Preservative Used: HCL

Type of Analysis: CLP VOA | TAL INORGANICS ICP | N/P-8330 | TOC/GRAINSIZE | CLP SVOA/PEST/PCB/HPAH | CLP VOA | DRO/GRO TPH MODIFIED 8015

Field Sample Number	Date	Time	Sample Type (Matrix)	Containers No.	Containers Type	CLP VOA	TAL INORGANICS ICP	N/P-8330	TOC/GRAINSIZE	CLP SVOA/PEST/PCB/HPAH	CLP VOA	DRO/GRO TPH MODIFIED 8015	Field Remarks
12*PRO~~55~~ 57	8-24-94	1315	WATER	4	G	X							LOW LEVEL
12SD21-02	8-24-94	0930	SOIL	4	G		X	X	X	X	X		RESAMPLE CORRECT LOCATION
12SD21-01	8-24-94	0932	SOIL	4	G		X	X	X	X	X		
12SD19-02	8-24-94	1200	SOIL	1	G						X		
12SD19-01	8-24-94	1202	SOIL	1	G						X		
12SD18-01	8-24-94	1302	SOIL	1	G						X		
12SD19-02	8-24-94	1300	SOIL	1	G						X		
12SD20-02	8-24-94	1225	SOIL	1	G						X		
12SD20-01	8-24-94	1227	SOIL	1	G						X		RESAMPLE CORRECT LOCATION
~~12SD~~ BGPLSD01-01	8-23-94	~~0825~~ 1612	SOIL	4-8oz	JARS							X	CAMP PEARY
BGPLSD01-01D	8-23-94	~~0825~~ 1612	SOIL	2-8oz	JARS							X	
BGPLSD01-02	8-23-94	1610	SOIL	2-8oz	JARS							X	
BGPLSD02-02	8-23-94	1520	SOIL	2-8oz	JARS							X	
BGPLSD02-01	8-23-94	1522	SOIL	1-16oz	JAR							X	CAMP PEARY

	Date/Time		
Relinquished By: Heat A DeBs	8-24-94	1610	Received By:
Relinquished By:			Received By:
Relinquished By:			Received for Laboratory By:

Comments:

Date/Time		Shipper:	Airbill No.
8-24-94	1610	FED-EX	1396786440

Distribution: Original Plus One Accompanies Shipment (White and Yellow): Copy to Coordinator Field Files (Pink)

INTERNATIONAL TECHNOLOGY CORPORATION

(163)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 390467
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] MGT/MCD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-8-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED EX # 1396603810
MPS # 929767180

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BG-RB063	WATER	9-8-94/0815	—	—	$NaOH$ — H_2SO_4	CN, GREEN CHEM (TDS/TSS) NUTRIENTS (NITRATE/NITRITE)		
〃	〃	〃	—	—	HNO_3 — —	TOTAL METALS (TAL INORGANICS) CLP PEST/PCB, CLP SVOA	FOR LAB USE ONLY	
16GW03-01	WATER	9-7-94/1901	—	—	—	N/N-SW8330		
16GW05-01	WATER	9-7-94/1935	—	—	—	N/N-SW8330	RESAMPLED FOR LAB	
~~MAB~~ 16GW04-01	WATER	9-7-94/1838	—	—	—	N/N-SW8330		
~~MAB~~ 16GW01-01 ~~16GW04-01~~	WATER	9-7-94/1845	—	—	—	N/N-~~MAB~~ SW8330	FOR LAB USE ONLY	
16GW01DS-01	WATER	9-7-94/1615	—	—	HNO_3	DISSOLVED TAL INORGANICS		
BG-RB063	WATER	9-8-94/0815	—	—	—	N/N-SW8330		

DCS will call lab 9-9-94

COPY

Special Instructions:[23] LOW LEVEL VOA ANALYSIS FOR ALL VOAs.

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heath A DeBolt	Date: 9-8-94 Time: 1730	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

(164)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 390464
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] MGT/MCD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TWEN

Samples Shipment Date[7] 9-8-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED EX #1396603810
MPS #9299671817

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP#3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Pre-servative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
16GW01-01	WATER	9-7-94/1615	—	—	— NaOH	CLP 300.0, CLP PEST/PCB GENERAL CHEM (TDS/TSS) CN		
1	1	1	—	—	H_2SO_4 HNO_3	NUTRIENTS (NITRATE/NITRITE) TOTAL TAL INORGANICS	FOR LAB USE ONLY	
16GW01-01D	WATER	9-7-94/1615	—	—	— — —	CLP 300.0, CLP PEST/PCB GENERAL CHEM (TDS/TSS) O/N-SW8330	RESAMPLED FOR LAB	
BG-RB063DS	WATER	9-8-94/0815	—		HNO_3	DISSOLVED TAL INORGANICS		
							FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heath A DeBolt	Date: 9-8-94 Time: 1745	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

(165)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 390465
Page 1 of 1

Project Name/No.[1] CTO-252
Sample Team Members[2] MCD/TLB
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-8-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE CAMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED EX #7396603810

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP#3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Pre-servative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
16GW01DS-01D	WATER	9-7-94/1615	—	—	HNO_3	DISSOLVED TAL INORGANICS		
16GW01-01D	WATER	9-7-94/1615	—	—	NaOH HNO_3 H_2SO_4	CN TOTAL TAL INORGANICS NUTRIENTS (NITRATE/NITRITE)	FOR LAB USE ONLY	
16GW01-01	WATER	9-7-94/1615	—	—	HCL	VOA CLP (3)		
16GW01-01D	WATER	9-7-94/1615	—	—	HCL	CLP VOA (3)		
BG-RB063	WATER	9-8-94/0915	—	—	HCL	CLP VOA (3)		
16-TB073	WATER	9-7-94/—	—	—	HCL	CLP VOA (2)	FOR LAB USE ONLY	

COPY

Special Instructions:[23] LOW LEVEL VOA ANALYSIS FOR ALL VOAs

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Janet A DeBolo	Date: 9-8-94 Time: 1757	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

166

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482307
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] MCB / TLB
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-8-94 AM
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GARBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FEDEX # 1396603821 / MPS # 9297671853

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD BOPT #3
CORAOPOLIS, PA 15108
412-267-6000

Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW01A-01	WATER	9-8-94/1820	—	—	H_2SO_4	GENERAL CHEM (TAS/TSS) NUTRIENTS (NITRATE/NITRITE) CLP PEST/PCB		
1	1	1			NaOH	CLP SVOA CN SW8330-N/N	FOR LAB USE ONLY	
BGGW01ADS-01	WATER	9-8-94/1820	—	—	HNO_3	DISSOLVED TAL INORGANICS		
BGGW01A-01	WATER	9-8-94/1820	—	—	HNO_3	TOTAL TAL INORGANICS		
16-RB067	WATER	9-9-94/1600	—	—	HNO_3 NaOH	CLP PEST/PCB, CLPSVOA TOTAL TAL INORGANICS CN	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Kent A. DeBolt	Date: 9-9-94 Time: 1705	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

(168)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482309
Page 1 of 2

Project Name/No.[1] CTO252
Sample Team Members[2] MCD/TLB
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-9-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED EX #139660382)

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, BOPP 3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

White: To accompany samples. Yellow: Field copy. *See back of form for special instructions.

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Pre-servative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
16GW08-01	WATER	9-9-94/1210	—	—	H_2SO_4 / $NaOH$	NUTRIENTS (NITRATE/NITRITE) CLP SVOA, CLP PEST/PCB CN TAL		
1	1	1	—	—	HCL	N/N-BW8330 CLP VOA (3)	FOR LAB USE ONLY	
16GW08DS-01	WATER	9-9-94/1210	—	—	HNO_3	DISSOLVED TAL INORGANICS		
6GW01A-28	SOIL	9-9-94/1512	G	—	—	TOC SITE 6 (AQUIFER CHAR)		
7GW01-15	SOIL	9-8-94/1728	G	—	—	TOC SITE 7 (AQUIFER CHAR)	FOR LAB USE ONLY	
16GW07-01	WATER	9-9-94/1340	G	—	HCL	CLP VOA (3)		
16-RB067	WATER	9-9-94/1600	G	—	HCL	CLP VOA (3)		
BGGW01A-01	WATER	9-8-94/1820	G	—	HCL	CLP VOA (3)		

COPY

Special Instructions:[23] LOW LEVEL VOA ANALYSIS FOR ALL VOA SAMPLES

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heath A DeBord	Date: 9-9-94 Time: 1745	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

169

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 482309

Page 2 of 2

Project Name BAKER/NAVSTA YORKTOWN Project No. CTO 252 Samples Shipment Date 9-9-94

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
16-TB075	WATER	9-9-94/-	G	—	HCL	CLP VOA (2)		
BG-TB074	WATER	9-8-94/-	G	—	HCL	CLP VOA (2)	FOR LAB USE ONLY	
BEEW01A-01	WATER	9-9-94/1735	P	—	—	TOTAL ALKALINITY CARBONATE AND BICARBONATE		
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

IT INTERNATIONAL TECHNOLOGY CORPORATION

(183)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 390539

Page 1 of 1

Project Name/No.[1] CTO 252

Sample Team Members[2] TCB / MCD

Profit Center No.[3]

Project Manager[4] DONALD C. SHIELDS

Purchase Order No.[6]

Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-20-94

Lab Destination[8] EXPORT, PA

Lab Contact[9] CARRIE GAMBER

Project Contact/Phone[12] 412-731-8806

Carrier/Waybill No.[13] FED-EX # 139603401
MPS 9297672002

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSSE RD, DOP#3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
126W04-01	WATER	9-20-94/1450	—	—	H_2SO_4 / HNO_3	GENERAL CHEM (TDS/TSS) NUTRIENTS (NITRATE/NITRITE) TOTAL TAL INORGANICS	FOR LAB USE ONLY	
1	1	1	—	—	$NaOH$	TAL CN CLP SVOA/MP CLP PEST/PCB NON-SW8330		
126W04DS-01	WATER	9-20-94/1450	—	—	HNO_3	DISSOLVED TAL INORGANICS		
BGGW02-01	WATER	9-20-94/0950	—	—	$NaOH$ / H_2SO_4	TAL CN GENERAL CHEM (TDS/TSS) NUTRIENTS (NITRATE/NITRITE)		
1	1	1	—	—	HNO_3	TOTAL TAL INORGANICS	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heather A DeBolt	Date: 20SEP94 Time: 1555	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

INTERNATIONAL TECHNOLOGY CORPORATION

(184)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 390540
Page 1 of 1

Project Name/No.[1] C70252
Sample Team Members[2] TUB/MCD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-20-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE CAMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED-EX #139660340 1
MPS 9299672011

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

Write: 10 accompany samples

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW02-01	WATER	9-20-94/0950	—	—	— / HNO_3 / —	CLP SVOC/CLP PEST/PCB DISSOLVED TAL INORGANICS N/N-SW8330	CHANGE SAMPLE NUMBER TO BGGW02DS-01 FOR DISSOLVED TAL INORGANIC ANALYSIS ONLY.	
12-RB071	WATER	9-19-94/1830	—	—	— / HNO_3 / —	N/N-SW8330 TOTAL TAL INORGANICS CLP SVOC/CLP PEST/PCB	FOR LAB USE ONLY	
1	1	1	—	—	$NaOH$	TALCN		
							FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Kent A DeBaun	Date: 9-20-94 Time: 1625	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

(186)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482317
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] TCB/CDB
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-20-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FEDEX # 1396603401
MPS # 929767 2036

Bill to:[5] BAKER ENVIRONMENTAL INC
420 ROUSER RD, AGP #3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
12522	SOIL	9-20-94/1405	G	—	—	CLP PEST/PCB, CLP SVOA TAL INORGANICS/CN N/N-SW8330 PH		
12517	SOIL	9-20-94/0800	G	—	—	CLP PEST/PCB, CLP SVOA TAL INORGANICS/CN N/N-SW8330 PH	FOR LAB USE ONLY	
12521	SOIL	9-20-94/1320	G	—	—	CLP PEST/PCB, CLP SVOA TAL INORGANICS/CN N/N-SW8330 PH		
12-BG-RB072	WATER	9-20-94/1620	—	—	NaOH H_2SO_4 HNO_3 —	GENERAL CHEM (TDS/TSS) TAL CN NUTRIENTS (NITRATE/NITRITE) TOTAL TAL INORGANICS N/N-SW 8330		
1	1	1	—	—			FOR LAB USE ONLY	
12-BG-RB072DS	WATER	9-20-94/1620	P	—	HNO_3	DISSOLVED TAL INORGANICS		

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heath A DeBolt	Date: 9-20-94 Time: 1725	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

187

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482318
Page 1 of 2

Project Name/No.[1] CTO252
Sample Team Members[2] TLB/CDB/MCD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-20-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAMBER
Project Contact/Phone[12] 412-231-8806
Carrier/Waybill No.[13] FED EX #1396603401

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP#3
CORAOPOLIS, PA 15108
412-268-6000

Report to:[10]

White: To accompany samples

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Pre-servative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
12-BG-RB072	WATER	9-20-94/1620	G	—	—	CLP PEST/PCB CLP SVOA		
12514	SOIL	9-19-94/1540	G	—	—	CLP VOA (3)	FOR LAB USE ONLY	
12520	SOIL	9-20-94/1110	G	—	—	CLP VOA (3)		
12518	SOIL	9-20-94/0920	G	—	—	CLP VOA (3)		
12515	SOIL	9-17-94/1555	G	—	—	CLP VOA (3)		
12521	SOIL	9-20-94/1330	G	—	—	CLP VOA (3)	FOR LAB USE ONLY	
12517	SOIL	9-20-94/0800	G	—	—	CLP VOA (3)		
12518D	SOIL	9-20-94/0920	G	—	—	CLP VOA (3)		

COPY

Special Instructions:[23] ALL VOAS PER WATER HAVE LOW LEVEL ANALYSIS MAD 9-21-94

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heather DeBo	Date: 9-20-94 Time: 1750	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/

INTERNATIONAL TECHNOLOGY CORPORATION

188

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No. 482318
Page 2 of 2

Project Name WPNSTA YORKTOWN Project No. CTO 252 Samples Shipment Date

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
12S19	SOIL	9-20-94/0850	G	—	—	CLP VOA (3)		
12S22	SOIL	9-20-94/1405	G	—	—	CLP VOA (3)	FOR LAB USE ONLY	
12S13	SOIL	9-19-94/1415	G	—	—	CLP VOA (3)		
*12S16	SOIL	9-19-94/1725	G	—	—	CLP VOA (3)	FOR LAB USE ONLY	
12-TB079	WATER	9-19-94/-	G	—	—	CLP VOA (2)		
12-BG-RB072	WATER	9-20-94/1620	G	—	—	CLP VOA (3)	FOR LAB USE ONLY	
12GW04-01	WATER	9-20-94/1450	G	—	—	CLP VOA (3)		
BG-12-TB080	WATER	9-20-94/-	G	—	—	CLP VOA (2)	FOR LAB USE ONLY	
12-RB071	WATER	9-19-94/1830	G	—	—	CLP VOA (3)		
BGGW02-01	WATER	9-20-94/0130	G	—	—	CLP VOA (3)	FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

189

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482319
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] TLB/MCD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-21-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GARBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED-EX #139660335 3
MPS 929767205 4

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Pre-servative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
12-RB073	WATER	9-21-94/1350	—	—	HNO_3	TOTAL TAL INORGANICS		
					$NaOH$	TAL CN		
					—	CLP SVOA, CLP PEST/PCB		
					—	TN-SW8330	FOR LAB USE ONLY	
BGGW02A-01	WATER	9-21-94/0940	—	—	—	GENERAL CHEM (TDS/TSS)		
					$NaOH$	TAL CN		
					HNO_3	TOTAL TAL INORGANICS		
					H_2SO_4	NUTRIENTS (NITRATE/NITRITE)		
					—	TN-SW8330		
					—	TOTAL ALKALINITY CARBONATE AND BICARBONATE		
BGGW02ADS-01	WATER	9-21-94/0940	—	—	HNO_3	DISSOLVED TAL INORGANICS	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heath A. Dabek	Date: 9-21-94 Time: 1710	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

*See back of form for special instructions

INTERNATIONAL TECHNOLOGY CORPORATION

190

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482320
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] TUB / MCD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-21-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED-EX # 1396603353
MPS # 9297672063

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP # 3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Pre-servative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BG-RB074	WATER	9-21-94 / 1630	—	—	H_2SO_4 HNO_3	GENERAL CHEM (TDS/TSS) NUTRIENTS (NITRATE/NITRITE) TOTAL TAL INORGANICS	FOR LAB USE ONLY	
I	I	I	—	—	NaOH —	TAL CN CLP SVOA / CLP PEST/PCB NH3-SW8330		
BG-RB074DS	WATER	9-21-94 / 1630	—	—	HNO_3	DISSOLVED TAL INORGANIC		
BGGW02A-01	WATER	9-21-94 / 0940	—	—	—	CLP SVOA / CLP PEST/PCB		
							FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heather DeBoer	Date: 9-21-94 Time: 1720	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

(192)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 482321

Page 2 of 2

Project Name @ WPNSTA YORKTOWN

Project No. CTO 252

Samples Shipment Date 9-21-94

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
12527	SOIL	9-21-94/1155	G	—	—	CLP VOA(3)		
12525	SOIL	9-21-94/0940	G	—	—	CLP VOA(3) MS/MSD	FOR LAB USE ONLY	
12523	SOIL	9-21-94/0825	G	—	—	CLP VOA(3)		
12525	SOIL	9-21-94/0940	G	—	—	CLP VOA(3)	FOR LAB USE ONLY	
12524	SOIL	9-21-94/0845	G	—	—	CLP VOA(3)		
12526	SOIL	9-21-94/1110	G	—	—	CLP VOA(3)	FOR LAB USE ONLY	
BGGW02A-01	WATER	9-21-94/0940	G	—	HCL	CLP VOA(3)		
BG-RB074	WATER	9-21-94/1230	G	—	HCL	CLP VOA(3)	FOR LAB USE ONLY	
BG-12-TB081	WATER	9-21-94/—	G	—	HCL	CLP VOA(2)		
12-RB073	WATER	9-21-94/1335	G	—	HCL	CLP VOA(3)	FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

197

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482330
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] MCD/JMS/TLB/CDB
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-23-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAMBER
Project Contact/Phone[12] (412) 731-8806
Carrier/Waybill No.[13] FED-X # 7966 3250

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
(412) 269-6000

Report to:[10]

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BG-RB076	water	9-23-94/ 1620	—	—	HNO_3	Total TAL Inorganics	MET CHED UPS 29SEP94 CHANGE SAMPLE ID TO BG-RB076DS	BG-RB076DS
			—	—	HNO_3	~~Total~~ Dissolved TAL Inorganics		
			—	—	NaOH	TAL CN	FOR LAB USE ONLY	
			—	—	—	CLP SVOA, Pest/PCB		
			—	—	—	N/N - SW8330		
			—	—	—	General chemistry		
—	—	—	—	—	H_2SO_4	Nutrients (nitrate/nitrite)		
12-RB075	water	9-23-94/ 1025	—	—	HNO_3	Total TAL Inorganics	FOR LAB USE ONLY	
—	—	—	—	—	NaOH	TAL CN		
					—	CLP SVOA, Pest/PCB		
					—	N/N - SW8330		

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☑ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Martha G. Tucker	Date: 9-23-94 Time: 1750	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

*See back of form for special instructions.

MCA 3/15/91

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482331
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] MCD / JMS
Profit Center No.[3]
Project Manager[4] Donald C. Shields
Purchase Order No.[6]
Required Report Date[11] 28 Day Turn

Samples Shipment Date[7] 9-23-94
Lab Destination[8] Export, PA
Lab Contact[9] Carrie Gamber
Project Contact/Phone[12] 412/731-8806
Carrier/Waybill No.[13] Fed Ex # 1396603250 MPS 929767215 1

Bill to:[5] Baker Environmental
420 Rouser Rd., AOP#3
Coraopolis, PA 15108
412-269-6000

Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW03-01	Water	9-23-94/1430	—	—	HNO_3	TAL total inorganics		
					HNO_3	TAL dissolved inorganics	NOTIFIED THE LAB 9-29-94 AND CHANGED SAMPLE ID TO BGGW03DS-01	BGGW03DS-01
					H_2SO_4	CLP SVOA, PCB/Pest		
						General chemistry nutrients (nitrite/nitrate) MN-SW8330	FOR LAB USE ONLY	
					NaOH	TAL CN		
BGGW03-01D	Water	9-23-94/1430	—	—	—	CLP SVOA Pest/PCB		
					—	MN-SW8330		
					—	General chemistry		
					NaOH	TAL CN		
					HNO_3	TAL Dissolved Inorganics	NOTIFIED THE LAB 9-29-94 AND CHANGED SAMPLE ID TO BGGW03DS-01D	BGGW03DS-01D
					HNO_3	TAL total inorganics	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☑ Archive 60 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation)	Date: 9-23-94 Time: 1825	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

White: to accompany samples Yellow: field copy

*See back of form for special instructions.

INTERNATIONAL TECHNOLOGY CORPORATION

(199)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482332

Page 1 of ____

Project Name/No.[1] CTO 25 / Samples Shipment Date[7] 9-23-94

Sample Team Members[2] MGT/BDB/MCD/JMS Lab Destination[8] EXPORT PA

Profit Center No.[3] Lab Contact[9] CARRIE GAMBER

Project Manager[4] DONALD C. SHIELDS Project Contact/Phone[12] (412) 731-8806

Purchase Order No.[6] Carrier/Waybill No.[13] FedX #139660325 0

MPS 929767216 7

Required Report Date[11] 28 DAY TURN

Bill to:[5] BAKER ENVIRONMENTAL, 420 ROSER RD. AOP#3, CORAOPOLIS, PA 15108 (412) 269-6000

Report to:[10]

White: To accompany samples Yellow: Field copy *See back of form for special instructions.

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW03-01D	Water	9-23-94/1430	—	—	H_2SO_4	nutrients (nitrite/nitrate) CLP SVOA		
BGGW03A-01	Water	9-23-94/1520	—	—	—	CLP SVOA / pest/PCB General chemistry NON-SW8330	FOR LAB USE ONLY	
					HNO$_3$	TAL inorganic (total)		
					HNO$_3$	dissolved TAL inorganics		
					H_2SO_4	nutrients (nitrite/nitrate)		
					NaOH	TAL CN		
12541	SOIL	9-23-94/1655	Glass	—	—	CLP SVOA, CLP Pest/PCB TAL Inorganics, TAL CN, NIN=SW8330, pH	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24] Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25] Return to Client ☐ Disposal by Lab ☑ Archive 6 (mos.)

Turnaround Time Required:[26] Normal ☑ Rush ☐

QC Level:[27] I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation)	Date: 9-23-94 Time: 1840	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/91

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 482333
Page 2 of 2

Project Name WPNSTA Yorktown

Project No. CTO 252

Samples Shipment Date 9-23-94

MPS # 9297672176
Fed X # 1396603250

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Pre-servative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
12S41	Soil	9-23-94 1655	G	—	—	CLP VOA (3)		
12S42	"	9-23-94 1635	G	—	—	"	MS/MSD	
12S42D	"	9-23-94 1635	G	—	—	"		
12-TB083	Water	9-23-94	G	—	HCl	CLP VOA (2)		
12-RB075	"	9-23-94 1020	G	—	HCl	CLP VOA (3)		
BGGW03-01D	"	9-23-94 1430	G	—	HCl	"		
BG-RB076	"	9-23-94 1620	G	—	HCl	"		
BGGW03A-01	"	9-23-94 1520	G	—	HCl	"		
BGGW03-01	"	9-23-94 1430	G	—	HCl	"		
BG-TB084	"	9-23-94	G	—	HCl	CLP VOA (2)		

FOR LAB USE ONLY

COPY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

202

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482322

Page 1 of 1

Project Name/No.[1] CTO 252 | Samples Shipment Date[7] 9-26-94 | Bill to:[5] BAKER ENVIRONMENTAL 420 ROUSER RD AOP#3 CORAOPOLIS, PA 15108 412-269-6000

Sample Team Members[2] TLB KJMS | Lab Destination[8] EXPORT, PA

Profit Center No.[3] | Lab Contact[9] CARRIE GAMBER

Project Manager[4] DONALD C SHIELDS | Project Contact/Phone[12] 412-731-8806 | Report to:[10]

Purchase Order No.[6] | Carrier/Waybill No.[13] FedEx 1396603600

Required Report Date[11] 28 DAY TURN

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
FBLG-03 FB-LG03mcd	water	9-26-94/ 0740	—	—	NaOH H_2SO_4	CLP SVOA, pest/PCB TAL CN Nutrients (nitrate/nitrite)	FOR LAB USE ONLY	
					HNO_3 HNO_3	NIN-SW8330 Hardness TAL total metals		
FBLGDS-03	water	9-26-94/ 0740	—	—	HNO_3	General chemistry TAL Dissolved metals		
FBD1-03	water	9-26-94/ 0810	—	—	—	CLP SVOA General chemistry NIN-SW8330		
1	1	1			NaOH	TAL CN	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24] Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25] Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26] Normal ☒ Rush ☐

QC Level:[27] I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) MC Davidson	Date: 9-26-94 Time: 1730	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/91

White: To accompany samples

Yellow: Field copy

*See back of form for special instructions.

INTERNATIONAL TECHNOLOGY CORPORATION

203

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482323
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] CDB, MCD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9.26.94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FedEX 1396603600
MPS 929 7672973

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, APT #3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
FBP1-03	Water	9-26-93/ 0815	—	—	HNO_3	CLP pest/PCB TAL total metals Hardness		
1	1	1			H_2SO_4	nutrients	FOR LAB USE ONLY	
FBDIDS-03	water	9-26-93/ 0815	—	—	HNO_3	TAL dissolved metals		
BGGW05-01	Water	9-26-93/ 1430	—	—	H_2SO_4	CLP SVOA, pest/PCB V/N-SW8330 nutrients (nitrate/nitrite)		
					NaOH HNO_3	TAL CN general chemistry TAL total metals		
BGGWO5DS-01	water	9-26-93/ 1430			HNO_3	TAL dissolved metals	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) MC Daniels	Date: 9-26-94 Time: 1715	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

White: To accompany samples. Yellow: Field copy.

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

~~203~~ 204

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482324
Page 1 of 1

Project Name/No. 1 CTO 252
Sample Team Members 2 CDB, MCD
Profit Center No. 3
Project Manager 4 DONALD C SHIELDS
Purchase Order No. 6
Required Report Date 11 28 DAY TURN

Samples Shipment Date 7 9-26-94
Lab Destination 8 EXPORT, PA
Lab Contact 9 CARRIE GAMBER
Project Contact/Phone 12 412-731-8806
Carrier/Waybill No. 13 [illegible]

Bill to: 5 BAKER ENVIRONMENTAL
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
412-269-6000

Report to: 10

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
BGGW05A-01	Water	9-26-94/ 1515	—	—	— HNO3	CLP SVOA, PEST/PCB N/N-SW8330 TAL total metals		
↓	↓				NaOH H2SO4	TAL CN general chemistry nutrients (nitrate/nitrite)		
BGGW05ADS-01	water	9-26-94/ 1515			HNO3	TAL dissolved metals		
BG-RB077	water	9-26-94/ 1630			— NaOH	CLP SVOA general chemistry TAL CN		
↓	↓	↓			HNO3	TAL total metals		

COPY

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions: 23

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required: 26
Normal ☒ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by 28 (Signature/Affiliation) MCDavidson	Date: 9-26-94 Time: 1739	1. Received by 28 (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: 29

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

205

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482325
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] CDB/TLB/JMS
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 9-26-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE AMBER
Project Contact/Phone[12] 412-231-8806
Carrier/Waybill No.[13] FedEx 139603600 MPS 929767291

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BG-RB077	Water	9-26-94/1630	—	—	H_2SO_4	CLP Pest/PCB nutrients (nitrate/nitrite)		
BG-RB077DS	Water	9-26-94/1630	—	—	HNO_3	Tal dissolved metals	FOR LAB USE ONLY	
BGGW07-01	Water	9-26-94/1625	—	—	H_2SO_4	CLP SVOA, pest/pcb nutrients general chemistry		
1	1	9-26-94	—	—	NaOH HNO_3	Tal CN TAL total metals CN-SW8330		
BGGW07A-01	Water	9-26-94/1650	—	—	HNO_3 NaOH	Tal total metals general chemistry Tal CN		
							FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24] Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25] Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26] Normal ☒ Rush ☐

QC Level:[27] I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) MC Davidson	Date: 9-26-94 Time: 1754	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

White: To accompany samples Yellow: Field copy *See back of form for special instructions.

MCA 3/15/93

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482336
Page 1 of 2

Project Name/No. 1 CTO 252
Sample Team Members 2 TLB/JMS/MCD/CDB
Profit Center No. 3
Project Manager 4 DONALD C. SHIELDS
Purchase Order No. 6
Required Report Date 11 28 DAY TURN

Samples Shipment Date 7 7-27-94
Lab Destination 8 EXPORT, PA
Lab Contact 9 CARRIE GAMBER
Project Contact/Phone 11 (412) 731-8806
Carrier/Waybill No. 13 FED-X #1396603655

Bill to: 5 BAKER ENVIRONMENTAL
420 ROUSER RD, AOP#3
CORAOPOLIS PA 15108
(412) 269-6000

Report to: 10

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
* A12-RB01	WATER	9-27-94 0820	G G G	— — —	— — —	CLP SVOA TPH CLP PEST/PCB		
* A12-RB01	WATER	9-27-94 0820	P P P	— —	HNO3 NaOH ~~HNO3~~	TAL INORGANICS TAL CN ~~[illegible]~~		
BGGW07A-01	WATER	9-26-94 1650	G G G	— — —	— — —	CLP SVOA CLP PEST/PCB N/N-SW8330		
* A12-RB01DS	WATER	9-27-94 0820	P	—	HNO3	DISSOLVED INORGANICS		
BGGW07DS-01	WATER	9-26-94 1625	P	—	HNO3	DISSOLVED INORGANICS		
BGGW07A-01	WATER	9-26-94 1650	P	—	H2SO4	NUTRIENTS		
BGGW07ADS-01	WATER	9-26-94 1650	P	—	HNO3	DISSOLVED INORGANICS		
FBLG-03	WATER	9-26-94 0740	G	—	HCL	CLP VOA		

FOR LAB USE ONLY

FOR LAB USE ONLY

COPY

Special Instructions: 23 ALL VOA ANALYSIS TO BE LOW LEVEL

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ Disposal by Lab ☑ Archive 6 (mos.)

Turnaround Time Required: 26
Normal ☑ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by (Signature/Affiliation) [signature]	Date: 9-27-94 Time: 1755	1. Received by 28 (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: 29
*CTO 256

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

(207)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 482336

Page 2 of 2

Project Name CTO 252 WPN STA YORKTOWN

Project No. CTO 252

Samples Shipment Date 9-27-94

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
BGGW07-01	WATER	9-26-94 1625	G	—	HCL	CLP VOA		
BGGW05A-01	WATER	9-26-94 1515	G	—	HCL	CLP VOA	FOR LAB USE ONLY	
BG-RB077	WATER	9-26-94 1630	G	—	HCL	CLP VOA		
BGGW05-01	WATER	9-26-94 1430	G	—	HCL	CLP VOA	FOR LAB USE ONLY	
FBDI-03	WATER	9-26-94 0815	G	—	HCL	CLP VOA		
BGGW07A-01	WATER	9-26-94 1650	G	—	HCL	CLP VOA	FOR LAB USE ONLY	
A12-RB01	WATER	9-27-94 0820	G	—	HCL	CLP VOA		
BG-FB-T3085	WATER	9-26-94	G	—	HCL	CLP VOA	FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

222

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482335

Page 1 of 1

Project Name/No.[1] CTO 252

Sample Team Members[2] MCD, MKL, MED, CDB, JMS, TLB

Profit Center No.[3]

Project Manager[4] DONALD C. SHIELDS

Purchase Order No.[6]

Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 10-6-94

Lab Destination[8] EXPORT, PA

Lab Contact[9] CARRIE GAMBER

Project Contact/Phone[12] 412-731-8806

Carrier/Waybill No.[13] FED EX # 1396603762
MPS # 927672255

Bill to:[5] BAKER ENVIRONMENTAL, INC
420 ROUSER RD, AOP #3
412-269-6000
CORAOPOLIS, PA 15108

Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW06-01	WATER	10-6-94/1420	—	*	— $NaOH$ HNO_3	CLP PEST/PCB, CLP SVOA TAL CN TOTAL TAL INORGANICS	FOR LAB USE ONLY	
"	"	"	—	—	— H_2SO_4	GENERAL CHEM (TDS/TSS) NUTRIENTS (NITRATE/NITRITE) NON-SW8330		
BGGW06DS-01	WATER	10-6-94/1420	—	—	HNO_3	DISSOLVED TAL INORGANICS		
BGGW06-01D	WATER	10-6-94/1420	—	—	— HNO_3 $NaOH$	CLP SVOA TOTAL TAL INORGANICS TAL CN		
							FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) [signature]	Date: 6 OCT 94 Time: 1645	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/91

White: To accompany samples Yellow: Field copy Seeback.df form for special instructions.

INTERNATIONAL TECHNOLOGY CORPORATION

223

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482371
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] MCD, MKI, MKD, CDB, JMS, TLB
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 10-6-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED EX #1396603762
MPS #9297672264

Bill to:[5] BAKER ENVIRONMENTAL INC.
420 ROUSER RD, AIRPORT
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW06-01D	WATER	10-6-94/1420	—	—	H_2SO_4	NUTRIENTS (NITRATE/NITRITE) GENERAL CHEM (TDS/TSS) CLP PEST/PCB		
1	1	1	—	—	—	NON-SW 8330	FOR LAB USE ONLY	
BGGW06DS-01D	WATER	10-6-94/1400	—	—	HNO_3	DISSOLVED TAL INORGANICS		
BGGW06A-01	WATER	10-6-94/1400	—	—	HNO_3 AND H	CLP SVOA, CLP PEST/PCB TOTAL TAL INORGANICS TAL CN		
1	1	1	—	—	H_2SO_4	GENERAL CHEM (TDS/TSS) NUTRIENTS (NITRATE/NITRITE)	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heather DeBoer	Date: 6 OCT 94 Time: 1659	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

(224)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482370
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] MCD, MEJ, CDB, TLB, JMS, MKD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 10-6-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE GAUSER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED EX # 1396603762
UPS # 929 7672 273

Bill to:[5] BAKER ENVIRONMENTAL INC
420 ROUSER RD, AOP#3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW06A-01	WATER	10-6-94/1400	—	—	—	N/N-SW8330	FOR LAB USE ONLY	
BGGW06ADS-01	WATER	10-6-94/1400	—	—	HNO_3	DISSOLVED TAL INORGANICS		
BGGW04-01	WATER	10-6-94/1200	—	—	H_2SO_4 / NaOH	NUTRIENTS (NITRATE/NITRITE), GEN. CHEM (TDS/TSS), TAL CN		
1	1	1	—	—	HNO_3 / —	TOTAL TAL INORGANICS, CLP SVOA, CLP PEST/PCB, N/N-SW8330		
BGGW04DS-01	WATER	10-6-94/1200	—	—	HNO_3	DISSOLVED TAL INORGANICS	FOR LAB USE ONLY	
BGGW08ADS-01	WATER	10-5-94/1700	—	—	HNO_3	DISSOLVED TAL INORGANICS		
BGGW08A-01	WATER	10-5-94/1700	—	—	—	N/N-SW8330		

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Hea A DeBot	Date: 6 OCT 94 Time: 1715	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

225

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482372
Page 1 of 1

Project Name/No.[1] CTO 252
Sample Team Members[2] MCD, MKI, CDB, TRB, JDS, MKD, ~~TRB~~ TMD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 10-6-94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE AMBER
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED EX # 1396603762
MPS # 9299672282

Bill to:[5] BAKER ENVIRONMENTAL INC
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW08A-01	WATER	10-5-94/1700	—	—	NaOH HNO3 —	TAL CN TOTAL TAL INORGANICS GENERAL CHEM (TDS/TSS)	FOR LAB USE ONLY	
1	1	1	—	—	H_2SO_4 —	NUTRIENTS (NITRATE/NITRITE) CL/SUOA, CLP PEST/PCB		
BGGW08-01	WATER	10-5-94/1530 1700 MD	—	—	NaOH HNO_3	AM-SW 8330 TAL CN TOTAL TAL INORGANICS		
BGGW08DS-01	WATER	10-5-94/1530 1700 MS	—	—	HNO_3	DISSOLVED TAL INORGANICS		
BGGW08-01	WATER	10-5-94/1530 1700 MSD	—	—	—	CLP PEST/PCB	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Mark DeBoo	Date: 6-OCT-94 Time: 1745	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/91

IT INTERNATIONAL TECHNOLOGY CORPORATION

(226)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482230
Page 1 of 1

Project Name/No.[1] CTO 252
Samples Shipment Date[7] 10-6-94
Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
412-269-6000
Sample Team Members[2] MCD, MKI, CDB, TCB, TMS, MKD
Lab Destination[8] EXPORT, PA
Profit Center No.[3]
Lab Contact[9] CARRIE GAMBER
Project Manager[4] DONALD C. SHIELDS
Project Contact/Phone[12] 412-731-8806
Report to:[10]
Purchase Order No.[6]
Carrier/Waybill No.[13] FED EX # 1396603762 HAD
MPS # 9297672 ~~280~~ 291
Required Report Date[11] 28 DAY TURN

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Pre-servative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW08-01	WATER	10-5-94/1530	—	—	— H_2SO_4	GEN CHEM (TDS/TSS) NUTRIENTS (NITRATE/NITRITE) CLP SOOA		
BGGW08-01	WATER	10-5-94/1530	—	—	HNO_3 NaOH H_2SO_4	TOTAL TAL INORGANICS TAL CN NUTRIENTS (NITRATE/NITITE)	MS/MSD	
↓	↓	↓	—	—	—	GENERAL CHEM (TDS/TSS) W/N-SW 8330 CLP SUOA, CLP PEST/PCB	MS/MSD	
BGGW08DS-01	WATER	10-5-94/1530	—		HNO_3	DISSOLVED TAL INORGANICS	MS/MSD	

COPY

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heat A DeBoer	Date: 6 OCT 96 Time: 1759	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

227

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482231
Page 1 of 1

Project Name/No.[1] CTO252
Sample Team Members[2] MCD, MKI, CDB, TLB, JTM, MKD
Profit Center No.[3]
Project Manager[4] DONALD C. SHIELDS
Purchase Order No.[6]
Required Report Date[11] 28 DAY TURN

Samples Shipment Date[7] 6 OCT 94
Lab Destination[8] EXPORT, PA
Lab Contact[9] CARRIE CAMBRA
Project Contact/Phone[12] 412-731-8806
Carrier/Waybill No.[13] FED EX #139603762
MPS #929767230 7

Bill to:[5] BAKER ENVIRONMENTAL, INC
420 ROUSER RD, AOP #3
CORAOPOLIS, PA 15108
412-269-6000

Report to:[10]

White: To accompany samples Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BG-RB078	WATER	10-6-94/0800	—	—	NaOH HNO3	TAL CN TOTAL TAL INORGANICS GEN CHEM CTDS/TSS		
1	1	1	—	—	H2SO4	NUTRIENTS (NITRATE/NITRITE) N/N-SW8330 C#SVOA, CLP PEST/PCB	FOR LAB USE ONLY	
BG-RB078DS	WATER	10-6-94/0800	—	—	HNO3	DISSOLVED TAL INORGANICS		
BGGW08-01	WATER	10-5-94/1530	—	—	—	N/N-SW8330	MS/MSD	
							FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heather A DeBaie	Date: 6 OCT 94 Time: 1815	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

*See back of form for special instructions.

MCA 3/15/91

IT INTERNATIONAL TECHNOLOGY CORPORATION

228

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document N 482373
Page 1 of 2

Project Name/No. 1 CTO 252
Sample Team Members 2 MCD, MKI, TCB, JMS, MKD, CDB
Profit Center No. 3
Project Manager 4 DONALD C. SHIELDS
Purchase Order No. 6
Required Report Date 11 28 DAY TURN

Samples Shipment Date 7 6 OCT 94
Lab Destination 8 EXPORT, PA
Lab Contact 9 CARRIE GAMBER
Project Contact/Phone 12 412-731-8806
Carrier/Waybill No. 13 FEDEX #1396603762

Bill to: 5 BAKER ENVIRONMENTAL, INC
420 ROUSER RD, AOP #3
CORAOPOLIS PA 15108
412-269-6000

Report to: 10

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
BGGW04A-01	WATER	10-6-94/1400	—	—	H_2SO_4 NaOH	NUTRIENTS (NITRATE/NITRITE) GEN CHEM (TDS/TSS) TAL CN		
⊥	⊥	⊥	—	—	HNO_3 —	TOTAL TAL INORGANICS CLP SVOA, CLP PEST/PCB NON-SW 8330		
BGGW04ADS-01	WATER	10-6-94/1400	—	—	HNO_3	DISSOLVED TAL INORGANICS		
BGGW08-01	WATER	10-5-94/1530	—	—	HCL	CLP VOA (3)	MS/MSD	
BGGW08-01	WATER	10-5-94/1530	—	—	HCL	CLP VOA (3)		
BGGW08A-01	WATER	10-5-94/1700	—	—	HCL	CLP VOA (3)		
~~BGGW~~ HD BG-RB078	WATER	10-6-94/0800	—	—	HCL	CLP VOA (3)		
BG-TB089	WATER	10-5-94/—	—	—	HCL	CLP VOA (2)		

COPY

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions: 23 LOW LEVEL ANALYSIS FOR ALL VOA WATER SAMPLES

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required: 26
Normal ☒ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by 28 (Signature/Affiliation) Heat A DeBoe	Date: 1820 Time: 6 OCT 94	1. Received by 28 (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: 29

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

229

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 482373
Page 2 of 2

Project Name WPNSTA YORKTOWN Project No. CTO 252 Samples Shipment Date 10-6-94

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
BG-TB090	WATER	10-6-94/—	—	—	HCL	CLP VOA (2)		
BGGW04-01	WATER	10-6-94/1200	—	—	HCL	CLP VOA (3)	FOR LAB USE ONLY	
BGGW04A-01	WATER	10-6-94/1400	—	—	HCL	CLP VOA (3)		
BGGW01-01	WATER	10-6-94/1630	—	—	HCL	CLP VOA (3)	FOR LAB USE ONLY	
BGGW06-01	WATER	10-6-94/1420	—	—	HCL	CLP VOA (3)		
BGGW06-01D	WATER	10-6-94/1420	—	—	HCL	CLP VOA (3)	FOR LAB USE ONLY	
BGGW06A-01	WATER	10-6-94/1460	—	—	HCL	CLP VOA (3)		
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

White: To accompany samples Yellow: Field copy *See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

232

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 482378

Page 1 of 1

Project Name/No.[1] CTO 252

Sample Team Members[2] MCD, MKL, TCB, TMS

Profit Center No.[3]

Project Manager[4] DONALD C. SHIELDS

Purchase Order No.[6]

Required Report Date[11] 28 DAY TAT

Samples Shipment Date[7] 10-7-94

Lab Destination[8] EXPORT, PA

Lab Contact[9] CARRIE CARKER

Project Contact/Phone[12] 412-731-8806

Carrier/Waybill No.[13] FED EX # 139660378 4
MPS # 929767242 2

Bill to:[5] BAKER ENVIRONMENTAL
420 ROUSER RD, ACP # 3
CORAOPOLIS PA 15108
412-269-6000

Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
BGGW01-01	WATER	10-6-94/1630	—	—	H_2SO_4 —	NUTRIENTS (NITRATE/NITRITE) GENERAL CHEM (TDS/TSS) CLP PEST/PCB, CLP SOOA	FOR LAB USE ONLY	
1	1	1	—	—	$NaOH$ HNO_3 H_2SO_4 —	TAL CN TOTAL TAL INORGANICS NON-SW 8330		
BGGW01DS-01	WATER	10-6-94/1630	—		HNO_3 H_2SO_4	DISSOLVED TAL INORGANICS NUTRIENTS (NITRATE/NITRITE) GENERAL CHEM (TSS/TDS)		
6-RB080	WATER	10-7-94/0930	—		—	CLP SOOA	FOR LAB USE ONLY	

COPY

Special Instructions:[23]

Possible Hazard Identification:[24] Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:[25] Return to Client ☐ Disposal by Lab ☒ Archive 6 (mos.)

Turnaround Time Required:[26] Normal ☒ Rush ☐

QC Level:[27] I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Heather A DeBaun	Date: 17-20 Time: 10-7-94	1. Received by[28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]

MCA 3/15/91

White: To accompany samples. Yellow: Field copy

*See back of form for special instructions.

Quanterra Environmental Services

No. 57560

CLIENT CODE 243

QUOTE / SAR NUMBER

Chain-of Custody Record

☐ 1) QUANTERRA, INC. EXPORT, PA
4101 SHUFFLE DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (216) 497-9396 FAX (216) 497-0772

☐ 2) QUANTERRA, INC.
450 WILLIAM PITT WAY
PITTSBURGH, PA 15238
PHONE (412) 826-5477 FAX (412) 826-5571

☐ 3) QUANTERRA, INC.
5910 BRECKENRIDGE PKWY, STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

PROJ. NO.: CTO 252

PROJECT NAME/LOCATION: WPNSTA YORKTOWN / BAKER ENV

SAMPLERS: (Signature)

BAKER ENV
420 ROUSER RD, ACP #3
CORAOPOLIS, PA 15108
412-269-6000
DONALD C. SHIELDS

STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION (Sample #)	NO. OF CONTAINERS	OLP SVOA	OLP Pest/PCB	N/N-SW8330	Total TAL Inorganics	Dissolved TAL Inorganics	TAL CN	General Chemistry	Nutrients	TPHC	REMARKS
	10/12	0950		✓	12GW06-01	2			1					1		
	10/12	0950		✓	12GW06DS-01	1					1					
	10/12	1030		✓	FBDI-04	8	1	1	1	1		1	1	1	1	
	10/12	0830		✓	6GW01A-01	1								1		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Tara Beck	10-12-94 1110				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				Fed Ex#1396603460 MPS # 9297672553	

Distribution Original Accompanies Shipment. Copy returned with Report

FORM 004

Quanterra Environmental Services

No. 576

CLIENT CODE 244

QUOTE / SAR NUMBER

Chain-of Custody Record

☐ 1) QUANTERRA, INC. (EXPORT, PA)
4101 SHUFFLE DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (216) 497-9396 FAX (216) 497-0772

☐ 2) QUANTERRA, INC.
450 WILLIAM PITT WAY
PITTSBURGH, PA 15238
PHONE (412) 826-5477 FAX (412) 826-5571

☐ 3) QUANTERRA, INC.
5910 BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

PROJ. NO.	PROJECT NAME/LOCATION
CTO 252	WPNSTA Yorktown / BAKER ENV

SAMPLERS: *(Signature)*

BAKER ENV
420 ROUSER RD, APP #3
COROPOLIS, PA 15108
412-269-6000

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PARAMETER: CLP SVOA	CLP Pest/PCB	N/N-SW8330	Total TAL Inorganics	Dissolved TAL Inorganics	TAL CN	General Chemistry	Nutrients	TPHC	REMARKS
	10/12	0830		✓	6GW01A-01	5	1		1	1		1	1			
	10/12	0830		✓	6GW01ADS-01	1					1					
	10/12	1030		✓	FBRIG-04	5		1	1			1	1	1		
	10/12	1030		✓	FBDIDS-04	1					1					

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Tara Beck	10-12-94 1120				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
				Fed-Ex # 139660340	
				MPS # 929-7072502	

Distribution: Original Accompanies Shipment. Copy returned with Report

FORM 004

Quanterra Environmental Services — No. 57608

CLIENT CODE: 245
QUOTE / SAR NUMBER:
Chain of Custody Record

1) QUANTERRA, INC.
4101 SHUFFLE DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (216) 497-9396 FAX (216) 497-0772

2) QUANTERRA, INC.
450 WILLIAM PITT WAY
PITTSBURGH, PA 15238
PHONE (412) 826-5477 FAX (412) 826-5571

3) QUANTERRA, INC.
5910 BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

PROJ. NO.: CTO252
PROJECT NAME/LOCATION: WPNSTA YORKTOWN / BAKER ENV.
SAMPLERS: (Signature)

BAKER ENV.
420 ROUSER RD. PARK
CORAOPOLIS PA 15108
412-269-6000

STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION	NO. OF CONTAINERS	PARAMETER: CLP SVOA	CLP PEST/PCB	N/N-SW8330	Total TAL	Dissolved TAL	TAL CN	General Chemistry	Nutrients	TPH C	REMARKS
	10/12	1115		✓	FBLG-04	8	1	1	1	1		1	1	1	1	
	10/12	1030		✓	FBRIG-04	1				1						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Tara Bell	10-12-94 1130				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				Fed Ex # 139660346 0 MPS # 9297672	

FORM 004 — Distribution: Original Accompanies Shipment; Copy returned with Repo

Quanterra Environmental Services No. 57(9

CLIENT CODE 246

QUOTE / SAR NUMBER

Chain-of Custody Record

☐ 1) QUANTERRA, INC.
4101 SHUFFLE DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (216) 497-9396 FAX (216) 497-0772

☐ 2) QUANTERRA, INC.
450 WILLIAM PITT WAY
PITTSBURGH, PA 15238
PHONE (412) 826-5477 FAX (412) 826-5571

☐ 3) QUANTERRA, INC.
5910 BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

PROJ. NO.: CTO 252

PROJECT NAME/LOCATION: WPNSTA YORKTOWN / BAKER ENV.

SAMPLERS: (Signature)

BAKER ENV.
420 ROUSER RD AOP #5
CORAOPOLIS, PA 15108
412-269-6000

STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION	NO. OF CONTAINERS	CLP VOA	CLP SVOA	CLP Pest/PCB	N/N-SW8330	Total TAL Inorganics	Dissolved TAL Inorganics	TAL CN	General Chemistry	Nutrients	TPHC	REMARKS
	10/12	1030		✓	FBRIG-04	1		1									
	10/12	1115		✓	FBLGDS-04	1						1					
	10/12	1030		✓	FBRIGDS-04	1						1					
	10/12	0950		✓	12 GW 06-01	3	3										VOA's low-level analysis
	10/12	1030		✓	FBRIG-04	3	3										"
	10/12	0800		✓	12-RB085	3	3										"
	10/12	1115		✓	FBLG-04	3	3										"
	10/12	1030		✓	FBDI-04	3	3										"
	10/12	0830		✓	6 GW 01A-01	3	3										"
	10/12	—		✓	6-12-TB095	2	2										VOA's are low-level analysis

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Tara Beck	10.12.94 1145				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				Fed Ex # 1396603460 MPS # 9297672587	

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FORM 004

Quanterra Environmental Services

No. 56690

(67)

CLIENT CODE _____
QUOTE / SAR NUMBER _____
Chain-of Custody Record

☐ 1) **QUANTERRA, INC.**
4101 SHUFFLE DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (216) 497-9396 FAX (216) 497-0772

☐ 2) **QUANTERRA, INC.**
450 WILLIAM PITT WAY
PITTSBURGH, PA 15238
PHONE (412) 826-5477 FAX (412) 826-5571

☐ 3) **QUANTERRA, INC.**
5910 BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

PROJ. NO.	PROJECT NAME/LOCATION
62470-228	WPNSTA - YORKTOWN

SAMPLERS: *(Signature)*

STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION	NO. OF CONTAINERS	PARAMETER: CLP VOLS.	SVOA	PEST	PCB	TAL INORG.	TOTAL METALS	CN	FULL TCLP	REACTIVITY	CORROSIVITY	IGNITABILITY	ph	REMARKS
A07RB	11/22	1130		/	A07RB-18	10	3	(3) X	(1) X	(1) X		(1) X	(1) X						
TB-24	11/22			/	IDW/SSA7TB-24	2	2												
	11/22	1025	/		GIDW-DS MS/MSD	5								X	X	X	X	X	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
James S Culp	11/22/94 1200				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
				28 DAY TURN	

Distribution Original Accompanies Shipment. Copy returned with Report.

FORM 004

(72)

Quanterra Environmental Services

CLIENT CODE _____
QUOTE / SAR NUMBER _____
Chain-of Custody Record

☐ 1) **QUANTERRA, INC.**
4101 SHUFFLE DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (216) 497-9396 FAX (216) 497-0772

☐ 2) **QUANTERRA, INC.**
450 WILLIAM PITT WAY
PITTSBURGH, PA 15238
PHONE (412) 826-5477 FAX (412) 826-5571

☐ 3) **QUANTERRA, INC.**
5910 BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

PROJ. NO.	PROJECT NAME/LOCATION
62470-252	WPNSTA - Yorktown

SAMPLERS: *(Signature)*

STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION	NO. OF CONTAINERS	PARAMETER: Total toxic organics	CYANIDE	TAL INORGANICS				REMARKS
	11/29/94	1030	X		IDW - Drums	6	4	1	1				
	11/29/94	1030	X		IDW - Drums	4	4						MSD
					total	10							

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
David J Martin	11/29/94 1900				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
					14 day Turn Any ? call 804-887-8257 Dave Martin

Distribution Original Accompanies Shipment. Copy returned with Report.

FORM 004

(73)

Quanterra Environmental Services

No. 56657

CLIENT CODE _____
QUOTE / SAR NUMBER _____
Chain-of Custody Record

☐ 1) **QUANTERRA, INC.**
4101 SHUFFLE DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (216) 497-9396 FAX (216) 497-0772

☒ 2) **QUANTERRA, INC.**
450 WILLIAM PITT WAY
PITTSBURGH, PA 15238
PHONE (412) 826-5477 FAX (412) 826-5571

☐ 3) **QUANTERRA, INC.**
5910 BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

PROJ. NO. 62170-252

PROJECT NAME/LOCATION: WPNSTA-Yorktown

SAMPLERS: *(Signature)*

STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION	NO. OF CONTAINERS	PARAMETER: Total toxic organics	PARAMETER: TAL Inorganics	PARAMETER: Cyanide	REMARKS
	11/21/94	1030	X		IDW-Drums	4	2	1	1	MSD
	11/21/94	1030	X		IDW-Drums	8	6	1	1	MS
					total	12				

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	14 Day Turn Any ? Call 804-887-8257

Distribution Original Accompanies Shipment. Copy returned with Report.

FORM 004

74 35

Quanterra Environmental Services

No. 566[illegible]1

CLIENT CODE _____
QUOTE / SAR NUMBER _____
Chain-of Custody Record

☐ 1) **QUANTERRA, INC.**
4101 SHUFFLE DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (216) 497-9396 FAX (216) 497-0772

☒ 2) **QUANTERRA, INC.**
450 WILLIAM PITT WAY
PITTSBURGH, PA 15238
PHONE (412) 826-5477 FAX (412) 826-5571

☐ 3) **QUANTERRA, INC.**
5910 BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

PROJ. NO. 62470-252 | PROJECT NAME/LOCATION: WPNSTA YORKTOWN

SAMPLERS: *(Signature)*

STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION	NO. OF CONTAINERS	PARAMETERS: VOA	CYANIDE	TAL INORGANICS				REMARKS
	29NOV94	1030	X		1DW-DRUMS (WATER)	2	2						
	29NOV94	1030	X		1DW-DRUMS	2	2						MS
	29NOV94	1030	X		1DW-DRUMS	2	2						MSD
	29NOV94	0915	X		12 1DW-T	2	2						
	29NOV94	0945	X		116 1DW-T	2	2						
	28NOV94	1630	X		6 1DW-T	2	2						
	28NOV94	1630	X		6 1DW-T	2	2						MS
	28NOV94	1630	X		6 1DW-T	2	2						MSD
	28NOV94	1615	X		7 1DW-T	2	2						
	28/29NOV94		X		1DWTB-25	2	2						
	29NOV94	0945	X		116 1DW-T	2	–	1	1				
	29NOV94	0915	X		12 1DW-T	2	–	1	1				
	28NOV94	1630	X		6 1DW-T	2	–	1	1				
	28NOV94	1630	X		6 1DW-T	2	–	1	1				MS
	28NOV94	1630	X		6 1DW-T	2	–	1	1				MSD

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Mairead Dease	29NOV94 1800				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
					14 DAY TURN ?- DAVE MARTIN (804) 887-8257

Distribution Original Accompanies Shipment. Copy returned with Report.

FORM 004

APPENDIX G
SAMPLING SUMMARY

CTO-0252
Background - Solids

		Analysis Requested														Analysis Received																	
													Eng. Par.														Eng. Par.							
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	DATE RECD	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
7/8/94	BGS01					x		x		x										x		x		x						8/5/94	27	3	9727	
7/8/94	BGS02					x		x		x										x		x		x						8/5/94	27	3	9727	
7/8/94	BGS03					x		x		x										x		x		x						8/5/94	27	3	9727	
7/8/94	BGS04					x		x		x										x		x		x						8/5/94	27	3	9727	
7/8/94	BGS05					x		x		x										x		x		x						8/5/94	27	3	9727	
7/8/94	BGS06					x		x		x										x		x		x						8/5/94	27	3	9727	
7/8/94	BGS07					x		x		x										x		x		x						8/5/94	27	3	9727	
7/8/94	BGS08					x		x		x										x		x		x						8/5/94	27	3	9727	
7/8/94	BGS09					x		x		x										x		x		x						8/5/94	27	3	9727	
7/11/94	BGS45RR	x														x														8/12/94	31	6	9734	
7/11/94	BGS45RR			x	x	x		x	x	x								x	x	x		x	x	x						8/31/94	50	7	9738	
7/11/94	BGS51RR	x														x														8/12/94	31	6	9734	
7/11/94	BGS51RR			x	x	x		x	x	x								x	x	x		x	x	x						8/31/94	50	7	9738	
7/11/94	BGS44RR	x														x														8/8/94	27	5	9733	
7/11/94	BGS44RR			x	x	x		x	x	x								x	x	x		x	x	x						8/31/94	50	7	9738	
7/11/94	BGS41RR	x														x														8/8/94	27	5	9733	
7/11/94	BGS41RR			x	x	x		x	x	x								x	x	x		x	x	x						8/31/94	50	7	9738	
7/11/94	BGS40RR			x	x	x		x	x	x								x	x	x		x	x	x						8/31/94	50	11	9744	
7/11/94	BGS44RRD	x														x														8/8/94	27	5	9733	
7/11/94	BGS44RRD			x	x	x		x	x	x								x	x	x		x	x	x						8/31/94	50	7	9738	
7/11/94	BGS47RR	x		x		x		x	x	x						x														8/12/94	31	6	9734	
7/11/94	BGS47RR																	x		x		x	x	x						8/24/94	43	8	9739	
7/11/94	BGS52RR	x		x	x	x		x	x	x						x														8/8/94	27	5	9733	
7/11/94	BGS52RR																	x	x	x		x	x	x						8/24/94	43	8	9739	
7/11/94	BGS46RR	x		x	x	x		x	x	x						x														8/8/94	27	5	9733	MS/MSD
7/11/94	BGS46RR																	x	x	x		x	x	x						8/24/94	43	8	9739	
7/11/94	BGS42RR	x		x	x	x		x	x	x						x														8/8/94	27	5	9733	
7/11/94	BGS42RR																	x	x	x		x	x	x						8/31/94	50	11	9744	
7/11/94	BGS50RR	x														x														8/8/94	27	5	9733	

CTO-0252
Background - Solids

		Analysis Requested														Analysis Received																	
													Eng. Par.														Eng. Par.							
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
7/11/94	BGS48RR	x		x	x	x		x	x	x						x														8/8/94	27	5	9733	
7/11/94	BGS48RR																	x	x	x		x	x	x						8/24/94	43	8	9739	
7/11/94	BGS49RR	x		x	x	x		x	x	x						x														8/8/94	27	5	9733	
7/11/94	BGS49RR																	x	x	x		x	x	x						8/31/94	50	11	9744	
7/11/94	BGS43RR	x		x	x	x		x	x	x						x														8/12/94	31	6	9734	
7/11/94	BGS43RR																	x	x	x		x	x	x						8/31/94	50	11	9744	
7/19/94	BGSB0501					x		x		x					x					x		x		x					x	9/14/94	55	18	9770	Silt
7/19/94	BGSB0502					x		x		x					x					x		x		x					x	9/14/94	55	18	9770	Sand
7/19/94	BGSB0510					x		x		x					x					x		x		x						9/14/94	55	18	9770	Clay; TOC results lost
7/19/94	BGSB0517												x	x	x												x	x	x	9/14/94	55	18	9770	Aquifer Char.
7/19/94	BGS14					x		x												x		x								9/14/94	55	18	9770	
7/19/94	BGS11					x		x												x		x								9/14/94	55	18	9770	
7/19/94	BGS10					x		x												x		x								9/14/94	55	18	9770	
7/20/94	BGSB0511												x	x	x												x	x	x	11/17/94	117	20	9779	Columbia Aquifer matl.
7/20/94	BGS13					x		x		x										x		x		x						9/14/94	54	20	9779	
7/20/94	BGS16					x		x		x										x		x		x						9/14/94	54	20	9779	
7/20/94	BGS18D					x		x		x										x		x		x						9/14/94	54	20	9779	
7/20/94	BGS19					x		x		x										x		x		x						9/14/94	54	20	9779	
7/20/94	BGS18					x		x		x										x		x		x						9/14/94	54	20	9779	
7/20/94	BGS12					x		x		x										x		x		x						9/14/94	54	20	9779	
7/20/94	BGS15					x		x		x										x		x		x						9/14/94	54	20	9779	
7/20/94	BGS17					x		x		x										x		x		x						9/14/94	54	20	9779	
7/21/94	BGS28					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS20					x		x		x										x		x		x						9/14/94	53	28	9789	MS/MSD
7/21/94	BGS20D					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS22					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS26					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS24					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS21					x		x		x										x		x		x						9/14/94	53	28	9789	

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Background - Solids

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													Eng. Par.														Eng. Par.						
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	DATE RECD	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
7/21/94	BGS24D					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS30					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS27					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS31					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS29					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS25					x		x		x										x		x		x						9/14/94	53	28	9789	
7/21/94	BGS23					x		x		x										x		x		x						9/14/94	53	28	9789	
7/22/94	BGS36					x		x		x										x		x		x						9/14/94	52	29	9791	
7/22/94	BGS33					x		x		x										x		x		x						9/14/94	52	29	9791	
7/25/94	BGS40					x		x		x										x		x		x						9/23/94	58	32	9821	
7/25/94	BGS34					x		x		x										x		x		x						9/23/94	58	32	9821	
7/25/94	BGS32					x		x		x																					#####			
7/25/94	BGS38					x		x		x										x		x		x						9/23/94	58	32	9821	
7/25/94	BGS39					x		x		x										x		x		x						9/23/94	58	32	9821	
7/25/94	BGS35					x		x		x										x		x		x						9/23/94	58	32	9821	
7/25/94	BGS37					x		x		x										x		x		x						9/23/94	58	32	9821	
7/25/94	BGS34D					x		x		x										x		x		x						9/23/94	58	32	9821	
7/25/94	BGS39D					x		x		x										x		x		x						9/23/94	58	32	9821	
7/26/94	BGSB0611					x		x		x					x					x		x		x					x	9/29/94	63	33	9823	Clay fraction
7/26/94	BGSB0611																										x	x		11/17/94	111			
7/26/94	BGSB0605					x		x		x					x					x		x		x					x	9/29/94	63	33	9823	Silt fraction
7/26/94	BGSB0605																										x	x		11/17/94	111			
7/26/94	BGSB0605D					x		x		x					x					x		x		x					x	9/29/94	63	33	9823	Clay fraction
7/26/94	BGSB0605D																										x	x		11/17/94	111			
7/27/94	BGSB0617												x		x												x		x	9/23/94	56	34	9824	Sieve & hydrometer
8/3/94	BGWPSD0201	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/13/94	70	37	9837	
8/3/94	BGWPSD0202	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/13/94	70	37	9837	
8/3/94	BGWPSD0401	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/13/94	70	37	9837	
8/3/94	BGWPSD0402	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/13/94	70	37	9837	

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Background - Solids

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DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/3/94	BGWPSD0101	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/13/94	70	37	9837	
8/3/94	BGWPSD0102	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/13/94	70	37	9837	
8/3/94	BGWPSD0301	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/13/94	70	37	9837	MS/MSD
8/3/94	BGWPSD0302	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/13/94	70	37	9837	
8/3/94	BGWPSD0301D	x		x	x	x		x	x	x						x		x	x	x		x	x	x						10/13/94	70	37	9837	
8/3/94	BGSB0807					x		x		x					x					x		x		x					x	10/13/94	70	42	9845	Sand
8/3/94	BGSB0802					x		x		x					x					x		x		x					x	10/13/94	70	42	9845	Silt
8/3/94	BGSB0818												x		x												x		x	9/29/94	56	42	9845	Sieve & hydrometer
8/5/94	BGPLSD0401	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/17/94	72	44	9848	MS/MSD
8/5/94	BGPLSD0402	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/17/94	72	44	9848	
8/5/94	BGPLSD0202	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/17/94	72	44	9848	Hot petroleum odor
8/5/94	BGPLSD0101	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/17/94	72	44	9848	Hot petroleum odor
8/5/94	BGPLSD0102	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/17/94	72	44	9848	Hot petroleum odor
8/5/94	BGPLSD0201	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/17/94	72	44	9848	Hot petroleum odor
8/5/94	BGPLSD0302	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/17/94	72	44	9848	
8/5/94	BGPLSD0301	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/17/94	72	44	9848	
8/5/94	BGPLSD0401D	x		x	x	x		x	x	x						x		x	x	x		x	x	x						10/17/94	72	44	9848	
8/8/94	BGCPSD0301D	x		x	x	x		x		x						x		x	x	x		x		x						10/25/94	77	45	9857	
8/8/94	BGCPSD0301D								x														x							10/5/94	57			
8/8/94	BGCPSD0201	x		x	x	x		x	x	x			x		x	x		x	x	x		x		x			x		x	10/25/94	77	45	9857	
8/8/94	BGCPSD0201																						x							10/5/94	57			
8/8/94	BGCPSD0202	x		x	x	x		x	x	x			x		x	x		x	x	x		x		x			x		x	10/25/94	77	45	9857	
8/8/94	BGCPSD0202																						x							10/5/94	57			
8/8/94	BGCPSD0302	x		x	x	x		x	x	x			x		x	x		x	x	x		x		x			x		x	10/25/94	77	45	9857	
8/8/94	BGCPSD0302																						x							10/5/94	57			
8/8/94	BGCPSD0301	x		x	x	x		x	x	x			x		x	x		x	x	x		x		x			x		x	10/25/94	77	45	9857	MS/MSD
8/8/94	BGCPSD0301																						x							10/5/94	57			
8/8/94	BGCPSD0402	x		x	x	x		x	x	x			x		x	x		x	x	x		x		x			x		x	10/25/94	77	45	9857	
8/8/94	BGCPSD0402																						x							10/5/94	57			

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8/8/94	BGCPSD0501	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/25/94	77	45	9857	
8/8/94	BGCPSD0401	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/25/94	77	45	9857	
8/8/94	BGCPSD0502	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/25/94	77	45	9857	
8/8/94	BGCPSD0101	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/25/94	77	45	9857	
8/8/94	BGCPSD0102	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	10/25/94	77	45	9857	
8/8/94	BGSB0409					x		x		x					x					x		x		x					x	10/25/94	77	45	9857	
8/8/94	BGSB0407					x		x		x					x					x		x		x					x	10/25/94	77	45	9857	
8/8/94	BGSB0401D					x		x		x					x					x		x		x					x	10/25/94	77	45	9857	
8/8/94	BGSB0401					x		x		x					x					x		x		x					x	10/25/94	77	45	9857	
8/10/94	BGTCSD0101	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0102	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0201	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0202	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0301	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0302	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0301D	x		x	x	x		x	x	x						x		x	x	x		x	x	x						11/11/94	91	49	9865	
8/10/94	BGTCSD0401	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0402	x		x	x	x		x	x	x			x		x	x		x		x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0402																		x											10/17/94	67	49	9865	supplemental report
8/10/94	BGTCSD0501	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0502	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0601	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGTCSD0602	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	91	49	9865	
8/10/94	BGSB0716					x		x		x					x					x		x					x		x	11/11/94	91	49	9865	sand; no pH results
8/10/94	BGSB0711					x		x		x					x					x		x					x		x	11/11/94	91	49	9865	clay; no pH results
8/10/94	BGSB0704					x		x		x					x					x		x					x		x	11/11/94	91	49	9865	silt; no pH results
8/17/94	BGS47RR				x														x											10/17/94	60			
8/19/94	BGTNSD0302	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	82	55	9875	
8/19/94	BGTNSD0301D	x		x	x	x		x	x	x						x		x	x	x		x	x	x						11/11/94	82	55	9875	

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DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	pH	HARDNESS	DRO/GRO TPH	GRAIN SIZE	BULK DENSITY	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/19/94	BGTNSD0301	x		x	x	x		x	x	x			x		x				x											10/17/94	58			MS/MSD
8/19/94	BGTNSD0301															x		x		x		x	x	x			x		x	11/11/94	82	55	9875	
8/19/94	BGTNSD0202	x		x	x	x		x	x	x			x		x				x											10/17/94	58			
8/19/94	BGTNSD0202															x		x		x		x	x	x			x		x	11/11/94	82	55	9875	
8/19/94	BGTNSD0201	x		x	x	x		x	x	x			x		x				x											10/17/94	58			
8/19/94	BGTNSD0201															x		x		x		x	x	x			x		x	11/11/94	82	55	9875	
8/19/94	BGTNSD0102	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	82	55	9875	
8/19/94	BGTNSD0101	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/11/94	82	55	9875	
8/22/94	BGTNSD0401	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/15/94	83	61	9883	
8/22/94	BGTNSD0402	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/15/94	83	61	9883	
8/22/94	BGTNSD0401D	x		x	x	x		x	x	x						x		x	x	x		x	x	x						11/15/94	83	61	9883	
8/22/94	BGTNSD0601	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/15/94	83	61	9883	
8/22/94	BGTNSD0602	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/15/94	83	61	9883	
8/22/94	BGTNSD0502	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/15/94	83	61	9883	
8/22/94	BGTNSD0501	x		x	x	x		x	x	x			x		x	x		x	x	x		x	x	x			x		x	11/15/94	83	61	9883	
8/24/94	BGPLSD0101											x														x				9/29/94	35	64	9886	
8/24/94	BGPLSD0101D											x														x				9/29/94	35	64	9886	
8/24/94	BGPLSD0102											x														x				9/29/94	35	64	9886	
8/24/94	BGPLSD0202											x														x				9/29/94	35	64	9886	
8/24/94	BGPLAS0201											x														x				9/29/94	35	64	9886	
																															0			
																															0			
																															0			
COUNT		69	0	69	69	129	0	129	69	126	0	5	54	2	69	69	0	69	69	128	0	128	69	122	1	5	60	5	68		790			

CTO-0252
Background - Aqueous

		Analysis Requested																				Analysis Received																											
																	Eng. Par.																			Eng. Par.															
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
7/8/94	BGTB003		x																				x																			8/5/94	27	3	9727	
7/8/94	BGRB003					x		x																		x		x															8/5/94	27	3	9727	
7/11/94	BGRRRB005	x		x	x	x		x	x															x	x	x		x	x														8/31/94	50	10	9743	
7/11/94	BGRRRB005																					x																					8/12/94	31	6	9734	
7/20/94	BGRB016					x		x																		x		x															9/14/94	54	22	9782	
7/21/94	BGRB019					x		x																		x		x															9/14/94	53	28	9789	
7/22/94	BGRB021					x																				x																	9/14/94	52	29	9791	
7/25/94	BGRB027					x		x																		x		x															9/14/94	49	25	9804	
7/25/94	BGRB023					x		x																		x		x															9/19/94	54	31	9813	
8/2/94	BGGW0631															x					x															x					x	9/29/94	57	36	9829	Sieve Hydrometer
8/3/94	BGWPSW0102		x			x		x	x			x									x					x		x	x		x									x	10/5/94	62	39	9842	
8/3/94	BGWPSW0102																						x																			10/10/94	67	38	9838	
8/3/94	BGWPSW01DS02						x																				x															10/5/94	62	39	9842	
8/3/94	BGRB034		x			x		x	x																	x		x	x													9/29/94	56	39	9842	
8/3/94	BGRB034																						x																			10/10/94	67	38	9838	
8/3/94	BGWPSW0401		x			x		x	x			x									x					x		x	x		x									x	10/5/94	62	39	9842	
8/3/94	BGWPSW0401																						x																			10/10/94	67	38	9838	
8/3/94	BGWPSW04DS01						x																				x															10/5/94	62	39	9842	
8/3/94	BGWPSW03DS02						x																				x															10/5/94	62	39	9842	
8/3/94	BGWPSW0301		x			x		x	x			x									x					x		x	x		x									x	9/29/94	56	39	9842	MS/MSD
8/3/94	BGWPSW0301																						x																			10/10/94	67	38	9838	
8/3/94	BGWPSW03DS01						x																				x															10/5/94	62	39	9842	MS/MSD
8/3/94	BGWPSW0301D		x			x		x	x																	x		x	x													10/5/94	62	39	9842	
8/3/94	BGWPSW0301D																						x																			10/10/94	67	38	9838	
8/3/94	BGWPSW03DS01D						x																				x															10/5/94	62	39	9842	
8/3/94	BGWPSW0202		x			x		x	x			x									x					x		x	x		x									x	10/5/94	62	39	9842	
8/3/94	BGWPSW0202																						x																			10/10/94	67	38	9838	

CTO-0252
Background - Aqueous

		Analysis Requested																	Analysis Received																									
															Eng. Par.																Eng. Par.													
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE	GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE	GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/3/94	BGWPSW0201		x			x		x	x			x							x					x		x	x			x							x	10/5/94	62	39	9842	
8/3/94	BGWPSW0201																				x																	10/10/94	67	38	9838	
8/3/94	BGWPSW02DS01						x																		x													10/5/94	62	39	9842	
8/3/94	BGWPSW0302		x			x		x	x			x							x					x		x	x			x							x	10/5/94	62	39	9842	
8/3/94	BGWPSW0302																				x																	10/10/94	67	38	9838	
8/3/94	BGWPSW0101		x			x		x	x			x							x					x		x	x			x							x	10/5/94	62	39	9842	
8/3/94	BGWPSW0101																				x																	10/10/94	67	38	9838	
8/3/94	BGWPSW01DS01						x																		x													10/5/94	62	39	9842	
8/3/94	BGWPSW02DS02						x																		x													10/5/94	62	39	9842	
8/3/94	BGTB038		x																		x																	10/10/94	67	38	9838	
8/3/94	BGRB035		x			x		x	x																x		x	x										10/5/94	62	39	9842	
8/3/94	BGRB035																				x																	10/10/94	67	38	9838	
8/3/94	BGTB036		x																		x																	10/10/94	67	38	9838	
8/3/94	BGGW08A01D					x		x			x								x					x		x				x							x	10/13/94	70	42	9845	
8/3/94	BGGW08A01					x		x			x								x					x		x				x							x	10/13/94	70	42	9845	MS/MSD, Clay
8/3/94	BGRB038					x		x																	x		x											10/13/94	70	42	9845	
8/5/94	BGPLSW0101		x			x		x	x			x							x		x	x	x	x		x	x			x							x	10/17/94	72	41	9847	
8/5/94	BGPLSW01DS01						x																		x													10/5/94	60	41	9847	
8/5/94	BGPLSW0102		x			x		x	x			x							x		x	x	x	x		x	x			x							x	10/17/94	72	41	9847	
8/5/94	BGPLSW01DS02						x																		x													10/5/94	60	41	9847	
8/5/94	BGPLSW0202		x			x		x	x			x							x		x	x	x	x		x	x			x							x	10/17/94	72	41	9847	
8/5/94	BGPLSW02DS02						x																		x													10/5/94	60	41	9847	
8/5/94	BGPLSW0201		x			x		x	x			x							x		x	x	x	x		x	x			x							x	10/17/94	72	41	9847	
8/5/94	BGPLSW02DS01						x																		x													10/5/94	60	41	9847	
8/5/94	BGPLSW03DS02						x																		x													10/5/94	60	41	9847	
8/5/94	BGPLSW0302		x			x		x	x			x							x		x	x	x	x		x	x			x							x	10/17/94	72	41	9847	
8/5/94	BGPLSW0301		x			x		x	x			x							x		x	x	x	x		x	x			x							x	10/17/94	72	41	9847	

CTO-0252
Background - Aqueous

		Analysis Requested																			Analysis Received																							
																Eng. Par.																			Eng. Par.									
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/5/94	BGPLSW03DS01						x																			x														10/5/94	60	41	9847	
8/5/94	BGPLSW04DS02						x																			x														10/5/94	60	41	9847	
8/5/94	BGPLSW0402		x			x		x	x			x								x		x	x	x	x		x	x			x								x	10/17/94	72	41	9847	
8/5/94	BGPLSW0401		x			x		x	x			x								x		x	x	x	x		x	x			x								x	10/17/94	72	41	9847	
8/5/94	BGPLSW04DS01						x																			x														10/5/94	60	41	9847	
8/5/94	BGPLSW0401D		x			x		x	x													x	x	x	x		x	x												10/17/94	72	41	9847	
8/5/94	BGPLSW04DS01D						x																			x														10/5/94	60	41	9847	
8/5/94	BGRB039		x	x	x	x		x	x													x	x	x	x		x	x												10/17/94	72	41	9847	
8/5/94	BGTB039	x																				x																		10/13/94	68			
8/5/94	BGTB042		x																			x																		10/13/94	68	41	9847	
8/8/94	BGRB044		x	x	x	x		x	x													x	x	x	x		x	x												10/20/94	72	46	9858	
8/8/94	BGRB041		x	x	x	x		x	x													x	x	x	x		x	x												10/20/94	72	46	9858	
8/8/94	BGCPSW01DS01						x																			x														10/20/94	72	46	9858	
8/8/94	BGCPSW0101		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	10/20/94	72	46	9858	
8/8/94	BGCPSW02DS01						x																			x														10/20/94	72	46	9858	
8/8/94	BGCPSW0201		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	10/20/94	72	46	9858	
8/8/94	BGCPSW0301		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	10/20/94	72	46	9858	MS/MSD
8/8/94	BGCPSW03DS01						x																			x														10/20/94	72	46	9858	MS/MSD
8/8/94	BGCPSW0301D		x	x	x	x		x	x													x	x	x	x		x	x												10/20/94	72	46	9858	
8/8/94	BGCPSW04DS01						x																			x														10/20/94	72	46	9858	
8/8/94	BGCPSW0401		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	10/20/94	72	46	9858	
8/8/94	BGCPSW03DS01D						x																			x														10/20/94	72	46	9858	
8/8/94	BGGW0810															x				x															x				x	9/29/94	51	45	9857	hydrometer
8/8/94	BGTCSW0102		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	10/20/94	72	46	9858	
8/8/94	BGTCSW01DS02						x																			x														10/20/94	72	46	9858	
8/8/94	BGTCSW0101		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	10/20/94	72	46	9858	
8/8/94	BGTCSW01DS01						x																			x														10/20/94	72	46	9858	

CTO-0252

Background - Aqueous

		Analysis Requested																			Analysis Received																										
																Eng. Par.																				Eng. Par.														
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/8/94	BGTB048		x																			x																			10/20/94	72	46	9858	
8/8/94	BGCPSW0501		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	10/20/94	72	46	9858	
8/8/94	BGCPSW05DS01						x																			x																10/20/94	72	46	9858	
8/8/94	BGTB044		x																			x																			10/20/94	72	46	9858	
8/8/94	BGTB046		x																			x																			10/20/94	72	46	9858	
8/8/94	BGTCSW0202		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	10/20/94	72	46	9858	
8/8/94	BGTCSW0201		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	10/20/94	72	46	9858	
8/8/94	BGTCSW02DS01						x																			x															10/20/94	72	46	9858	
8/8/94	BGTCSW02DS02						x																			x															10/20/94	72	46	9858	
8/8/94	BGRB045					x		x																		x		x												10/20/94	72	46	9858	
8/10/94	BGRB048		x	x	x	x		x	x																x				x											9/19/94	39			
8/10/94	BGRB048																				x		x		x		x													10/20/94	70	48	9864	
8/10/94	BGTCSW0301		x	x	x	x		x	x			x								x				x				x			x								x	9/19/94	39			
8/10/94	BGTCSW0301																				x		x		x		x													10/20/94	70	48	9864	
8/10/94	BGTCSW03DS01						x																			x															10/17/94	67	48	9864	
8/10/94	BGTCSW0302		x	x	x	x		x	x			x								x				x				x			x								x	9/19/94	39			
8/10/94	BGTCSW0302																				x		x		x		x													10/20/94	70	48	9864	
8/10/94	BGTCSW03DS02						x																			x															10/17/94	67	48	9864	
8/10/94	BGTCSW0401		x	x	x	x		x	x			x								x				x				x			x								x	9/19/94	39			
8/10/94	BGTCSW0401																				x		x		x		x													10/20/94	70	48	9864	
8/10/94	BGTCSW04DS01						x																			x															10/17/94	67	48	9864	
8/10/94	BGTCSW05DS01						x																			x															10/17/94	67	48	9864	
8/10/94	BGTCSW0501		x	x	x	x		x	x			x								x				x				x			x								x	9/19/94	39			
8/10/94	BGTCSW0501																				x		x		x		x													10/20/94	70	48	9864	
8/10/94	BGTCSW0601		x	x	x	x		x	x			x								x				x				x			x								x	9/19/94	39			
8/10/94	BGTCSW0601																				x		x		x		x													10/20/94	70	48	9864	
8/10/94	BGTCSW06DS01						x																			x															10/17/94	67	48	9864	

CTO-0252
Background - Aqueous

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																Eng. Par.																				Eng. Par.													
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/10/94	BGRB047					x		x																		x		x														10/17/94	67	48	9864	
8/10/94	BGGW0719															x				x																x				x	9/29/94	49	49	9865	sieve & hydrometer
8/10/94	BGTB050		x																		x																					10/20/94	70	48	9864	
8/10/94	BGTB049		x																		x																					10/20/94	70	48	9864	
8/17/94	BGGW04A38															x				x																x				x	11/11/94	84	51	9867	
8/17/94	BGGW0421															x				x																x				x	11/11/94	84	53	9871	sieve & hydrometer, aquifer charac.
8/19/94	BGTNSW0101		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	11/11/94	82	56	9876	TOC results lost
8/19/94	BGTNSW01DS01						x																			x															11/11/94	82	56	9876	
8/19/94	BGTNSW0102		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	11/11/94	82	56	9876	TOC results lost
8/19/94	BGTNSW01DS02						x																			x															11/11/94	82	56	9876	
8/19/94	BGTNSW0201		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	11/11/94	82	56	9876	TOC results lost
8/19/94	BGTNSW02DS01						x																			x															11/11/94	82	56	9876	
8/19/94	BGTNSW0202		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	11/11/94	82	56	9876	TOC results lost
8/19/94	BGTNSW02DS02						x																			x															11/11/94	82	56	9876	
8/19/94	BGTNSW0301		x	x	x	x		x	x			x								x		x	x	x	x		x	x			x								x	11/11/94	82	56	9876	TOC results lost
8/19/94	BGTNSW03DS01						x																			x															11/11/94	82	56	9876	
8/19/94	BGRB053		x	x	x	x		x	x													x	x	x	x		x	x													11/11/94	82	56	9876	
8/19/94	BGTB059		x																			x																			10/20/94	61	56	9876	
8/22/94	BGTNSW04DS01						x																			x															11/11/94	79	58	9879	MS/MSD
8/22/94	BGTNSW0401		x	x	x	x		x	x			x								x				x				x													10/3/94	41			MS/MSD; TOC results lost
8/22/94	BGTNSW0401																					x	x		x		x	x													11/11/94	79	58	9879	
8/22/94	BGTNSW0401D		x	x	x	x		x	x															x																	10/3/94	41			
8/22/94	BGTNSW0401D																					x	x		x		x	x													11/11/94	79	58	9879	
8/22/94	BGTNSW04DS01D						x																			x															11/11/94	79	58	9879	
8/22/94	BGTNSW0501		x	x	x	x		x	x			x								x				x				x													10/3/94	41			TOC results lost
8/22/94	BGTNSW0501																					x	x			x		x	x												11/11/94	79	58	9879	
8/22/94	BGTNSW05DS01						x																			x															11/11/94	79	58	9879	

CTO-0252
Background - Aqueous

		Analysis Requested																				Analysis Received																									
																Eng. Par.																				Eng. Par.													
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/22/94	BGTNSW06DS01						x																			x																11/11/94	79	58	9879	
8/22/94	BGTNSW0601		x	x	x	x		x	x			x									x			x							x										10/3/94	41			TOC results lost
8/22/94	BGTNSW0601																					x	x		x		x	x														11/11/94	79	58	9879	
8/22/94	BGRB056		x	x	x	x		x	x															x																		10/3/94	41			
8/22/94	BGRB056																					x	x		x		x	x														11/11/94	79	58	9879	
8/22/94	BGGW07A															x				x															x					x	11/11/94	79	61	9883	sieve & hydrometer; aquifer charac.
8/22/94	BGTB063		x																			x																			10/27/94	65	58	9879	
8/24/94	BGWPSW0101			x	x																			x	x																10/27/94	63	62	9884	Lab resample
8/24/94	BGWPSW0102			x	x																			x																	10/27/94	63	62	9884	Lab resample; Pest broken
8/24/94	BGWPSW0202			x	x																			x	x																10/27/94	63	62	9884	Lab resample
8/24/94	BGWPSW0201			x	x																			x	x																10/27/94	63	62	9884	Lab resample
8/24/94	BGWPSW0301			x	x																			x																	10/27/94	63	62	9884	MS/MSD; Lab resample; Pest broken
8/24/94	BGWPSW0301D			x	x																			x	x																10/27/94	63	62	9884	Lab resample
8/24/94	BGWPSW0302			x	x																			x																	10/27/94	63	62	9884	Lab resample; Pest broken
8/24/94	BGWPSW0401			x	x																			x	x																10/27/94	63	62	9884	Lab resample
8/24/94	BGPLSW0101																							x	x																10/27/94	63	62	9884	Lab resample
8/24/94	BGPLSW0101D			x	x																			x	x																10/27/94	63	62	9884	Lab resample
8/24/94	BGPLSW0102																							x	x																10/27/94	63	62	9884	
8/24/94	BGPLSW0201																							x	x																10/27/94	63	62	9884	
8/24/94	BGPLSW0202																							x	x																10/27/94	63	62	9884	
8/24/94	BGPLSW0301																							x	x																10/27/94	63	62	9884	
8/24/94	BGPLSW0302																							x	x																10/27/94	63	62	9884	
8/24/94	BGPLSW0401																							x	x																10/27/94	63	62	9884	
8/24/94	BGPLSW0402																							x	x																10/27/94	63	62	9884	
9/8/94	BGRB063																											x	x												10/12/94	34	BD031		
9/8/94	BGRB063	x		x	x	x		x	x	x								x	x			x		x	x	x															10/12/94	34	BD030		
9/8/94	BGRB063DS						x																				x														10/12/94	34	BD030F		

CTO-0252
Background - Aqueous

		Analysis Requested																			Analysis Received																											
																Eng. Par.																	Eng. Par.																	
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
9/9/94	BGGW01A01																												x				x	x					x	x		10/12/94	33	BD031		
9/9/94	BGGW01A01	x		x	x	x		x	x	x			x	x					x	x	x		x	x	x							x	x								10/12/94	33	BD030		
9/9/94	BGGW01ADS01						x																				x																10/12/94	33	BF030F		
9/9/94	BGTB074	x																			x																						10/12/94	33	BD030		
9/20/94	BGGW0201		x	x	x	x		x	x	x									x	x		x	x	x	x			x														10/19/94	29	BD033		
9/20/94	BGGW02DS01						x																			x																	10/19/94	29	BD033F		
9/20/94	BGGW0201																												x											x	x		10/19/94	29	BD034		
9/20/94	BGGW0201																												x														11/9/94	49	BD034		
9/20/94	12BGRB072		x	x	x	x		x	x	x									x	x		x	x	x	x			x														10/19/94	29	BD033		
9/20/94	12BGRB072DS						x																				x																10/19/94	29	BD033F		
9/20/94	12BGRB072																													x										x	x		10/19/94	29	BD034		
9/20/94	12BGRB072																												x														11/9/94	49	BD034		
9/20/94	BG12TB080		x																			x																					10/19/94	29	BD033		
9/20/94	BG12TB081		x																			x																					10/19/94	29	BD033		
9/21/94	BGGW02A01		x	x	x	x		x	x	x			x	x					x	x		x	x	x	x			x	x			x	x					x	x		10/31/94	40	BD041/042		
9/21/94	BGGW02ADS01						x																			x																	10/31/94	40	BD041F		
9/21/94	BGRB074		x	x	x	x		x	x	x									x	x		x	x	x	x			x	x	x									x	x		10/31/94	40	BD041/042		
9/21/94	BGRB074DS						x																			x																	10/31/94	40	BD041F		
9/23/94	BGRB076		x	x	x	x		x	x	x									x	x		x	x	x	x			x	x	x									x	x		10/31/94	38	BD041/042		
9/23/94	BGRB076DS						x																			x																	10/31/94	38	BD041F		
9/23/94	BGGW0301		x	x	x	x		x	x	x									x	x		x	x	x	x			x	x	x									x	x		10/31/94	38	BD041/042		
9/23/94	BGGW03DS01						x																			x																	10/31/94	38	BD041F		
9/23/94	BGGW0301D		x	x	x	x		x	x	x									x	x		x	x	x	x			x	x	x									x	x		10/31/94	38	BD041/042		
9/23/94	BGGW03DS01D						x																			x																	10/31/94	38	BD041F		
9/23/94	BGGW03A01		x	x	x	x		x	x	x									x	x		x	x	x	x			x	x	x													10/31/94	38	BD041/042		
9/23/94	BGGW03ADS01						x																			x															x	x		10/31/94	38	BD041F		
9/23/94	BGTB084		x																			x																					10/31/94	38	BD041		

CTO-0252
Background - Aqueous

		Analysis Requested																			Analysis Received																							
															Eng. Par.																			Eng. Par.										
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
9/26/94	BGGW0501		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		10/31/94	35	BD041/042		
9/26/94	BGGW05DS01						x																			x														10/31/94	35	BD041F		
9/26/94	BGGW05A01		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		10/31/94	35	BD041/042		
9/26/94	BGGW05ADS01						x																			x														10/31/94	35	BD041F		
9/26/94	BGRB077		x	x	x	x		x		x								x	x			x	x	x	x		x		x								x	x		10/31/94	35	BD041/042		
9/26/94	BGRB077DS						x																			x														10/31/94	35	BD041F		
9/26/94	BGGW0701		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		10/31/94	35	BD041/042		
9/26/94	BGGW07A01		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		10/31/94	35	BD041/042		
9/27/94	BGGW07DS01						x																			x														10/31/94	34	BD041F		
9/27/94	BGGW07ADS01						x																			x														10/31/94	34	BD041F		
9/27/94	BGFBTB085		x																			x																		10/31/94	34	BD045		
10/6/94	BGGW0601		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		11/9/94	33	BD052/053		
10/6/94	BGGW06DS01						x																			x														11/9/94	33	BD052F		
10/6/94	BGGW0601D		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		11/9/94	33	BD052/053		
10/6/94	BGGW06DS01D						x																			x														11/9/94	33	BD052F		
10/6/94	BGGW06A01		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		11/9/94	33	BD052/053		
10/6/94	BGGW06ADS01						x																			x														11/9/94	33	BD052F		
10/6/94	BGGW0401		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		11/9/94	33	BD052/053		
10/6/94	BGGW04DS01						x																			x														11/9/94	33	BD052F		
10/6/94	BGGW08ADS01						x																			x														11/9/94	33	BD052F		
10/6/94	BGGW08A01		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		11/9/94	33	BD052/053		
10/6/94	BGGW0801		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		10/31/94	25	BD041/042		MS/MSD
10/6/94	BGGW08DS01						x																			x														10/31/94	25	BD041F		MS/MSD
10/6/94	BGRB078		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		11/9/94	33	BD052/053		
10/6/94	BGRB078DS						x																			x														11/9/94	33	BD052F		
10/6/94	BGGW04A01		x	x	x	x		x	x	x								x	x			x	x	x	x		x	x	x								x	x		11/9/94	33	BD052/053		
10/6/94	BGGW04ADS01						x																			x														11/9/94	33	BD052F		

CTO-0252
Background - Aqueous

		Analysis Requested																			Analysis Received																										
																Eng. Par.																Eng. Par.																
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TOTAL ALKALINIATY	CARBONATE/BICARBONATE		GRAIN SIZE	BULK DENSITY	TDS	TSS	TOC	DATE RECD	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/6/94	BGTB089		x																			x																			11/9/94	33	BD052		
10/6/94	BGTB090		x																			x																			11/9/94	33	BD052		
10/7/94	BGGW0101		x	x	x	x		x	x	x								x	x			x	x	x	x	x													x	x		11/9/94	32	BD052/053		
10/7/94	BGGW01DS01						x																				x															11/9/94	32	BD052F		
																																										0			
7/19/94	BGRB015					x		x																		x		x															9/14/94	55	19		
																																										0			
COUNT		5	88	64	64	86	65	85	73	24	2	37	2	2	0	6	0	24	24	45	12	81	81	78	86	65	85	73	24	2	37	2	2	0	6	0	24	24	37					

CTO-0252
FIELD BLANKS

		Analysis Requested																Analysis Received																		
															Eng. Par.																Eng. Par.						
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TPH		TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TPH		TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	CONTROL NUMBER	SDG NO.	COMMENTS
7/25/94	FBRGDS01						x																x										9/19/94	54	9813	31	
7/25/94	FBATV01		x	x	x	x		x	x			x			x	x	x		x	x	x	x		x	x			x			x	x	x	9/29/94	64	9813	31	
7/25/94	FBDI01		x	x	x	x		x	x			x			x	x	x		x	x	x	x		x	x			x			x	x	x	9/29/94	64	9813	31	
7/25/94	FBIDS01						x																x											9/19/94	54	9813	31	
7/25/94	FBLG01		x	x	x	x		x	x			x			x	x	x			x	x	x		x										9/21/94	56	9804	25	
7/25/94	FBLG01																		x						x			x			x	x	x	9/29/94	64	9813	31	
7/25/94	FBLGDS01						x																x											9/14/94	49	9804	25	
7/25/94	FBATVDS01						x																x											9/14/94	49	9804	25	
7/25/94	FBRIG01		x	x	x	x		x	x			x			x	x	x		x	x	x	x		x	x			x			x	x	x	9/29/94	64	9813	31	
8/18/94	FBMUD01	x		x	x	x		x	x		x							x		x	x	x		x	x		x							11/11/94	83	9873	54	
8/23/94	FBRIG02		x	x	x	x		x	x	x		x			x	x	x				x													10/3/94	40			
8/23/94	FBRIG02																		x	x		x		x	x	x		x			x	x	x	11/15/94	82	9882	60	
8/23/94	FBDI02		x	x	x	x		x	x	x		x			x	x	x				x													10/3/94	40			
8/23/94	FBDI02																		x	x		x		x	x	x		x			x	x	x	11/17/94	84	9882	60	
8/23/94	FBLG02		x	x	x	x		x	x	x		x			x	x	x				x													10/3/94	40			
8/23/94	FBLG02																		x	x		x		x	x	x		x			x	x	x	11/17/94	84	9882	60	CN rec after 1-11-95
8/23/94	FBATV02		x	x	x	x		x	x	x		x			x	x	x				x													10/3/94	40			
8/23/94	FBATV02																		x	x		x		x	x	x		x			x	x	x	11/17/94	84	9882	60	
8/23/94	FBDIDS02						x																x											11/15/94	82	9882	60	
8/23/94	FBRIGDS02						x																x											11/15/94	82	9882	60	
8/23/94	FBTB067		x																x															10/27/94	64	9882	60	
8/23/94	FBLGDS02						x																x											11/15/94	82	9882	60	
8/23/94	FBATVDS02						x																x											11/15/94	82	9882	60	
9/25/94	FBLG03		x	x	x	x		x	x	x		x			x	x			x	x	x	x		x	x	x		x			x	x		10/31/94	36		BD041/042	
9/25/94	FBLGDS03						x																x											10/31/94	36		BD041F	
9/25/94	FBDI03		x	x	x	x		x	x	x		x			x	x			x	x	x	x		x	x	x		x			x	x		10/31/94	36		BD041/042	
9/25/94	FBDIDS03						x																x											10/31/94	36		BD041F	
9/28/94	FBRIG3		x	x	x	x		x	x	x		x			x	x			x	x	x	x		x	x	x		x			x	x		10/31/94	33		BD045/046	
9/28/94	FBTB087		x																x															10/31/94	33		BD045	

CTO-0252
FIELD BLANKS

		Analysis Requested																Analysis Received																	
																Eng. Par.																Eng. Par.					
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TPH		TDS	TSS	TOC	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRATE/NITRITE	pH	HARDNESS	TPH		TDS	TSS	TOC	DATE REC'D	TURNAROUND TIME	CONTROL NUMBER	SDG NO.	COMMENTS
9/28/94	FBRIGDS3						x																x										10/31/94	33		BD045F	
10/12/94	FBDI04		x	x	x	x		x	x	x			x		x	x			x	x	x	x		x	x	x			x		x	x		11/16/94	34		BD054/055	
10/12/94	FBRIG04		x	x	x	x		x	x	x					x	x			x	x	x	x		x	x	x					x	x		11/16/94	34		BD054/055	
10/12/94	FBDIDS04						x																x											11/16/94	34		BD054F	
10/12/94	FBLG04		x	x	x	x		x	x	x			x		x	x			x	x	x	x		x	x	x			x		x	x		11/16/94	34		BD054/055	
10/12/94	FBLGDS04						x																x											11/16/94	34		BD054F	
10/12/94	FBRIGDS04						x																x											11/16/94	34		BD054F	
																																			0			
COUNT		1	16	15	15	15	14	15	15	10	1	11	2	0	14	14	8	1	16	15	15	15	14	15	15	10	1	11	2	0	14	14	8					

CTO-0252
BACKGROUND - SOLIDS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/23/94	BGS01					x		x								x		x				9/1/94	8	3	9727	
8/23/94	BGS02					x		x								x		x				9/1/94	8	3	9727	
8/23/94	BGS03					x		x								x		x				9/1/94	8	3	9727	
8/23/94	BGS04					x		x								x		x				9/1/94	8	3	9727	
8/23/94	BGS05					x		x								x		x				9/1/94	8	3	9727	
8/23/94	BGS06					x		x								x		x				9/1/94	8	3	9727	
8/23/94	BGS07					x		x								x		x				9/1/94	8	3	9727	
8/23/94	BGS08					x		x								x		x				9/1/94	8	3	9727	
8/23/94	BGS09					x		x								x		x				9/1/94	8	3	9727	
8/23/94	BGS41RR	x										x										9/1/94	8	5	9733	
8/31/94	BGS41RR			x	x	x		x	x					x	x	x		x	x			9/21/94	21	7	9738	
8/23/94	BGS42RR	x										x										9/1/94	8	5	9733	
9/2/94	BGS42RR			x	x	x		x	x					x	x	x		x	x			9/21/94	19	11	9744	
8/23/94	BGS44RR	x										x										9/1/94	8	5	9733	
8/31/94	BGS44RR			x	x	x		x	x					x	x	x		x	x			9/21/94	21	7	9738	
8/23/94	BGS44RRD	x										x										9/1/94	8	5	9733	
8/31/94	BGS44RRD			x	x	x		x	x					x	x	x		x	x			9/21/94	21	7	9738	
8/23/94	BGS46RR	x										x										9/1/94	8	5	9733	
8/25/94	BGS46RR				x	x		x	x					x	x	x		x	x			9/21/94	26	8	9739	
10/31/94	BGS46RR			x										x								11/11/94	11	8	9739RE	Recleaned
8/23/94	BGS47RR	x										x										8/30/94	7	6	9734	
8/25/94	BGS47RR			x		x		x	x					x		x		x	x			9/20/94	25	8	9739	
10/17/94	BGS47RR				x										x							11/1/94	14			
8/25/94	BGS48RR			x	x	x		x	x					x		x		x	x			9/20/94	25	8	9739	
8/23/94	BGS48RR	x										x			x							9/1/94	8	5	9733	
8/23/94	BGS49RR	x										x										9/1/94	8	5	9733	
9/2/94	BGS49RR			x	x	x		x	x					x	x	x		x	x			9/21/94	19	11	9744	

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		Analysis Requested										Analysis Received														
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/23/94	BGS50RR	x										x										9/1/94	8	5	9733	
8/23/94	BGS52RR	x										x										9/1/94	8	5	9733	
8/25/94	BGS52RR			x	x	x		x	x					x	x	x		x	x			9/21/94	26	8	9739	
8/23/94	BGS43RR	x										x										8/30/94	7	6	9734	
9/2/94	BGS43RR			x	x	x		x	x					x	x	x		x	x			9/21/94	19	11	9744	
8/23/94	BGS45RR	x										x										8/30/94	7	6	9734	
8/31/94	BGS45RR			x	x	x		x	x					x	x	x		x	x			9/21/94	21	7	9738	
8/23/94	BGS51RR	x										x										8/30/94	7	6	9734	
8/31/94	BGS51RR			x	x	x		x	x					x	x	x		x	x			9/21/94	21	7	9738	
9/2/94	BGS40RR			x	x	x		x	x					x	x	x		x	x			9/21/94	19	11	9744	
9/7/94	BGS12					x		x								x		x				10/10/94	33	20	9779	
9/7/94	BGS13					x		x								x		x				10/10/94	33	20	9779	
9/7/94	BGS15					x		x								x		x				10/10/94	33	20	9779	
9/7/94	BGS16					x		x								x		x				10/10/94	33	20	9779	
9/7/94	BGS17					x		x								x		x				10/10/94	33	20	9779	
9/7/94	BGS18					x		x								x		x				10/10/94	33	20	9779	
9/7/94	BGS18D					x		x								x		x				10/10/94	33	20	9779	
9/7/94	BGS19					x		x								x		x				10/10/94	33	20	9779	
9/16/94	BGSB0501					x		x								x		x				10/6/94	20	18	9770	
9/16/94	BGSB0502					x		x								x		x				10/6/94	20	18	9770	
9/16/94	BGSB0510					x		x								x		x				10/6/94	20	18	9770	
9/16/94	BGS10					x		x								x		x				10/6/94	20	18	9770	
9/16/94	BGS11					x		x								x		x				10/6/94	20	18	9770	
9/16/94	BGS14					x		x								x		x				10/6/94	20	18	9770	
9/16/94	BGS18					x		x								x		x				10/6/94	20	18	9770	
9/16/94	BGS20					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS20D					x		x								x		x				10/6/94	20	28	9789	

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DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
9/16/94	BGS21					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS22					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS23					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS24					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS24D					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS25					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS26					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS27					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS28					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS29					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS30					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS31					x		x								x		x				10/6/94	20	28	9789	
9/16/94	BGS33					x		x								x		x				10/6/94	20	29	9791	
9/16/94	BGS36					x		x								x		x				10/6/94	20	29	9791	
9/19/94	BGWPSD0402				x										x							9/29/94	10	37	9837	
10/13/94	BGWPSD0402	x		x		x		x	x			x		x		x		x	x			10/31/94	18	37	9837	
9/19/94	BGWPSD0401				x										x							9/29/94	10	37	9837	
10/13/94	BGWPSD0401	x		x		x		x	x			x		x		x		x	x			10/31/94	18	37	9837	
9/19/94	BGWPSD0202				x										x							9/29/94	10	37	9837	
10/13/94	BGWPSD0202	x		x		x		x	x			x		x		x		x	x			10/31/94	18	37	9837	
9/19/94	BGWPSD0201				x										x							9/29/94	10	37	9837	
10/13/94	BGWPSD0201	x		x		x		x	x			x		x		x		x	x			10/31/94	18	37	9837	
9/19/94	BGWPSD0302				x										x							9/29/94	10	37	9837	
10/13/94	BGWPSD0302	x		x		x		x	x			x		x		x		x	x			10/31/94	18	37	9837	
9/19/94	BGWPSD0101				x										x							9/29/94	10	37	9837	
10/13/94	BGWPSD0101	x		x		x		x	x			x		x		x		x	x			10/31/94	18	37	9837	
9/19/94	BGWPSD0301D				x										x							9/29/94	10	37	9837	

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DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/13/94	BGWPSD0301D	x		x		x		x	x			x		x		x		x	x			10/31/94	18	37	9837	
9/19/94	BGWPSD0301				x										x							9/29/94	10	37	9837	
10/13/94	BGWPSD0301	x		x		x		x	x			x		x		x		x	x			10/31/94	18	37	9837	
9/19/94	BGWPSD0102				x										x							9/29/94	10	37	9837	
10/13/94	BGWPSD0102	x		x		x		x	x			x		x		x		x	x			10/31/94	18	37	9837	
9/23/94	BGS34					x		x								x		x				10/10/94	17	32	9821	
9/23/94	BGS34D					x		x								x		x				10/10/94	17	32	9821	
	BGS36					x		x								x		x				10/10/94	####	32	9821	also in batch # 29/9791
9/23/94	BGS37					x		x								x		x				10/10/94	17	32	9821	
9/23/94	BGS38					x		x								x		x				10/10/94	17	32	9821	
9/23/94	BGS39					x		x								x		x				10/10/94	17	32	9821	
9/23/94	BGS39D					x		x								x		x				10/10/94	17	32	9821	
9/23/94	BGS40					x		x								x		x				10/10/94	17	32	9821	
9/29/94	BGSB0605					x		x								x		x				10/14/94	15	33	9823	
9/29/94	BGSB0605D					x		x								x		x				10/14/94	15	33	9823	
9/29/94	BGSB0611					x		x								x		x				10/14/94	15	33	9823	
9/29/94	BGCPSD0501				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0501								x										x			10/20/94	15			
10/20/94	BGCPSD0501	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0401				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0401								x										x			10/20/94	15			
10/20/94	BGCPSD0401	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0502				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0502								x										x			10/20/94	15			
10/20/94	BGCPSD0502	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0102				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0102								x										x			10/20/94	15			

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DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/20/94	BGCPSD0102	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0101				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0101								x										x			10/20/94	15			
10/20/94	BGCPSD0101	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0301D				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0301D								x										x			10/20/94	15			
10/20/94	BGCPSD0301D	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0201				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0201								x										x			10/20/94	15			
10/20/94	BGCPSD0201	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0202				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0202								x										x			10/20/94	15			
10/20/94	BGCPSD0202	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0302				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0302								x										x			10/20/94	15			
10/20/94	BGCPSD0302	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0301				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0301								x										x			10/20/94	15			
10/20/94	BGCPSD0301	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
9/29/94	BGCPSD0402				x										x							10/24/94	25	45	9857	
10/5/94	BGCPSD0402								x										x			10/20/94	15			
10/20/94	BGCPSD0402	x		x		x		x				x		x		x		x				11/10/94	20	45	9857	
10/3/94	BGTCSD0301D				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0301D	x		x								x		x								11/10/94	16	49	9865	
9/29/94	BGTCSD0401				x										x							10/24/94	25	49	9865	
10/3/94	BGTCSD0401								x										x			10/14/94	11	49	9865	
10/24/94	BGTCSD0401	x		x								x		x								11/10/94	16	49	9865	

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DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
11/11/94	BGTCSD0401					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0501				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0501	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0501					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0502				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0502	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0502					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0601				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0601	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0601					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0602				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0602	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0602					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0101				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0101	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0101					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0102				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0102	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0102					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0201				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0201	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0201					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0202				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0202	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0202					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0301				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0301	x		x								x		x								11/10/94	16	49	9865	

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DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
11/11/94	BGTCSD0301					x		x								x		x				11/28/94	17	49	9865	
11/11/94	BGTCSD0301D					x		x								x		x				11/28/94	17	49	9865	
10/3/94	BGTCSD0302				x				x						x				x			10/24/94	21	49	9865	
10/24/94	BGTCSD0302	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0302					x		x								x		x				11/28/94	17	49	9865	
9/29/94	BGPLSD0101									x										x		1/23/95	114	64	9886	
10/5/94	BGPLSD0101				x				x						x				x			10/20/94	15			
10/10/94	BGPLSD0101					x		x								x		x				10/24/94	14	44	9848	
10/17/94	BGPLSD0101	x		x								x		x								11/1/94	14	44	9848	SVOA is MS/MSD
9/29/94	BGPLSD0101D									x										x		1/23/95	114	64	9886	
9/29/94	BGPLSD0102									x										x		1/23/95	114	64	9886	
10/5/94	BGPLSD0102				x				x						x	x		x	x			10/24/94	19			
10/10/94	BGPLSD0102					x		x															####	44	9848	
10/17/94	BGPLSD0102	x		x								x		x								11/1/94	14	44	9848	
9/29/94	BGPLSD0202									x										x		1/23/95	114	64	9886	
10/5/94	BGPLSD0202				x				x						x				x			10/20/94	15			
10/10/94	BGPLSD0202					x		x								x		x				10/24/94	14	44	9848	
10/17/94	BGPLSD0202	x		x								x		x								11/1/94	14	44	9848	
9/29/94	BGPLSD0201									x										x		1/23/95	114	64	9886	
10/5/94	BGPLSD0201				x				x						x				x			10/24/94	19			
10/10/94	BGPLSD0201					x		x								x		x				10/24/94	14	44	9848	
10/17/94	BGPLSD0201	x		x								x		x								11/11/94	24	44	9848	
10/3/94	BGTCSD0402								x										x				####	49	9865	
10/17/94	BGTCSD0402				x										x							10/24/94	7	49	9865	supplemental report
10/24/94	BGTCSD0402	x		x								x		x								11/10/94	16	49	9865	
11/11/94	BGTCSD0402					x		x								x		x				11/28/94	17	49	9865	
10/5/94	BGPLSD0401				x				x						x				x			10/20/94	15			

CTO-0252
BACKGROUND - SOLIDS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/10/94	BGPLSD0401					x		x								x		x				10/24/94	14	44	9848	
10/17/94	BGPLSD0401	x		x								x		x								11/1/94	14	44	9848	
10/5/94	BGPLSD0402				x				x						x				x			10/20/94	15			
10/10/94	BGPLSD0402					x		x								x		x				10/24/94	14	44	9848	
10/17/94	BGPLSD0402	x		x								x		x								11/1/94	14	44	9848	
10/5/94	BGPLSD0401D				x				x						x				x			10/20/94	15			
10/10/94	BGPLSD0401D					x		x								x		x				10/24/94	14	44	9848	
10/17/94	BGPLSD0401D	x		x								x		x								11/1/94	14	44	9848	
10/5/94	BGPLSD0302				x				x						x							10/20/94	15			
10/10/94	BGPLSD0302					x		x								x		x	x			10/24/94	14	44	9848	
10/17/94	BGPLSD0302	x		x								x		x								11/1/94	14	44	9848	
10/5/94	BGPLSD0301				x				x						x							10/24/94	19			
10/10/94	BGPLSD0301					x		x								x		x	x			10/24/94	14	44	9848	
10/17/94	BGPLSD0301	x		x								x		x								11/1/94	14	44	9848	
10/13/94	BGSD0802					x		x								x		x					####	42	9845	
10/13/94	BGSD0807					x		x								x		x					####	42	9845	
10/17/94	BGTNSD0301				x										x							11/1/94	14			
10/31/94	BGTNSD0301	x		x					x			x		x					x			11/11/94	11	55	9875	
11/11/94	BGTNSD0301					x		x								x		x				11/28/94	17	55	9875	
10/17/94	BGTNSD0202				x										x							11/1/94	14			
10/31/94	BGTNSD0202	x		x					x			x		x					x			11/11/94	11	55	9875	
11/11/94	BGTNSD0202					x		x								x		x				11/28/94	17	55	9875	
10/17/94	BGTNSD0201				x										x							11/1/94	14			
10/31/94	BGTNSD0201	x		x					x			x		x					x			11/11/94	11	55	9875	
11/11/94	BGTNSD0201					x		x								x		x				11/28/94	17	55	9875	
10/17/94	BGTNSD0101				x										x							11/1/94	14			
10/31/94	BGTNSD0101	x		x					x			x		x					x			11/11/94	11	55	9875	

CTO-0252
BACKGROUND - SOLIDS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
11/11/94	BGTNSD0101					x		x								x		x				11/28/94	17	55	9875	
10/17/94	BGTNSD0102				x										x							11/1/94	14			
10/31/94	BGTNSD0102	x		x					x			x		x					x			11/11/94	11	55	9875	
11/11/94	BGTNSD0102					x		x								x		x				11/28/94	17	55	9875	
10/17/94	BGTNSD0302				x										x							11/1/94	14			
10/31/94	BGTNSD0302	x		x					x			x		x					x			11/11/94	11	55	9875	
11/11/94	BGTNSD0302					x		x								x		x				11/28/94	17	55	9875	
10/17/94	BGTNSD0301D				x										x							11/1/94	14			
10/31/94	BGTNSD0301D	x		x					x			x		x					x			11/11/94	11	55	9875	
11/11/94	BGTNSD0301D					x		x								x		x				11/28/94	17	55	9875	
10/17/94	BGTNSD0401				x										x							11/1/94	14			
10/27/94	BGTNSD0401	x		x					x			x		x					x			11/11/94	14	61	9883	
11/17/94	BGTNSD0401					x		x								x		x				12/5/94	18	61	9883	
10/17/94	BGTNSD0402				x										x							11/1/94	14			
10/24/94	BGTNSD0402	x		x					x			x		x					x			11/11/94	17	61	9883	
11/17/94	BGTNSD0402					x		x								x		x				12/5/94	18	61	9883	
10/17/94	BGTNSD0401D				x										x							11/1/94	14			
10/27/94	BGTNSD0401D	x		x					x			x		x					x			11/11/94	14	61	9883	
11/17/94	BGTNSD0401D					x		x								x		x				12/5/94	18	61	9883	
10/17/94	BGTNSD0601				x										x							11/1/94	14			
10/24/94	BGTNSD0601	x		x					x			x		x					x			11/11/94	17	61	9883	
11/17/94	BGTNSD0601					x		x								x		x				12/5/94	18	61	9883	
10/17/94	BGTNSD0602				x										x							11/1/94	14			
10/24/94	BGTNSD0602	x		x					x			x		x					x			11/11/94	17	61	9883	
11/17/94	BGTNSD0602					x		x								x		x				12/5/94	18	61	9883	
10/17/94	BGTNSD0501				x										x							11/1/94	14			
10/27/94	BGTNSD0501	x		x					x			x		x					x			11/11/94	14	61	9883	

CTO-0252
BACKGROUND - SOLIDS
VALIDATION

		Analysis Requested										Analysis Received													
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	DRO/GRO TPH		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
11/17/94	BGTNSD0501					x		x								x		x				12/5/94	18	61	9883	
10/17/94	BGTNSD0502				x										x							11/1/94	14			
10/27/94	BGTNSD0502	x		x					x			x		x					x			11/11/94	14	61	9883	
11/17/94	BGTNSD0502					x		x								x		x				12/5/94	18	61	9883	
10/25/94	BGSB0401					x		x								x		x				11/10/94	15	45	9857	
10/25/94	BGSB0401D					x		x								x		x				11/10/94	15	45	9857	
10/25/94	BGSB0407					x		x								x		x				11/10/94	15	45	9857	
10/25/94	BGSB0409					x		x								x		x				11/10/94	15	45	9857	
11/11/94	BGSB0704					x		x								x		x				11/28/94	17	49	9865	
11/11/94	BGSB0711					x		x								x		x				11/28/94	17	49	9865	
11/11/94	BGSB0716					x		x								x		x				11/28/94	17	49	9865	
																							0			
																							0			
																							0			
COUNT		69	0	69	69	129	0	129	69	5	0	69	0	70	69	129	0	129	69	5	0		539			

CTO-0252
BACKGROUND - AQUEOUS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
8/23/94	BGTB003		x										x									9/1/94	8	3	9727	
8/23/94	BGRB003					x		x								x						9/1/94	8	3	9727	
8/23/94	BGRRRB005			x	x	x		x	x					x	x	x		x	x			9/21/94	28	10	9743	
8/23/94	BGRRRB005	x										x										8/30/94	7	6	9734	
9/22/94	BGPLSW0402														x							10/10/94	18	41	9847	
10/13/94	BGPLSW0402		x			x		x				x		x		x		x				11/1/94	18	41	9847	
9/22/94	BGPLSW0401														x							10/10/94	18	41	9847	
10/13/94	BGPLSW0401		x			x		x				x		x		x		x				11/1/94	18	41	9847	
9/22/94	BGPLSW0401D														x							10/10/94	18	41	9847	
10/13/94	BGPLSW0401D		x			x		x				x		x		x		x				11/1/94	18	41	9847	
9/22/94	BGPLSW0302														x							10/10/94	18	41	9847	
10/13/94	BGPLSW0302		x			x		x				x		x		x		x				11/1/94	18	41	9847	
9/22/94	BGPLSW0301														x							10/10/94	18	41	9847	
10/13/94	BGPLSW0301		x			x		x				x		x		x		x				11/1/94	18	41	9847	
9/22/94	BGPLSW0101														x							10/10/94	18	41	9847	
10/13/94	BGPLSW0101		x			x		x				x		x		x		x				11/1/94	18	41	9847	
9/22/94	BGPLSW0102														x							10/10/94	18	41	9847	
10/13/94	BGPLSW0102		x			x		x				x		x		x		x				11/1/94	18	41	9847	
9/22/94	BGPLSW0202														x							10/10/94	18	41	9847	
10/13/94	BGPLSW0202		x			x		x				x		x		x		x				11/1/94	18	41	9847	
9/22/94	BGPLSW0201														x							10/10/94	18	41	9847	
10/13/94	BGPLSW0201		x			x		x				x		x		x		x				11/1/94	18	41	9847	
9/22/94	BGRB039														x							10/10/94	18	41	9847	
10/13/94	BGRB039		x									x		x								11/1/94	18	41	9847	
9/16/94	BGRB015					x		x								x		x				10/6/94	20	19	9771	
9/16/94	BGRB016					x		x								x		x				10/6/94	20	22	9782	
9/16/94	BGRB019					x		x								x		x				10/6/94	20	28	9789	

CTO-0252
BACKGROUND - AQUEOUS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
9/16/94	BGRB021					x		x								x		x				10/6/94	20	29	9791	
9/19/94	BGRB023					x		x								x		x				10/6/94	17	31	9813	
9/21/94	BGRB027					x		x								x		x				10/6/94	15	25	9804	
9/19/94	BGTCSW0401				x				x						x				x			10/6/94	17			
10/20/94	BGTCSW0401	x		x		x		x				x		x		x		x				11/1/94	11	48	9864	
9/19/94	BGRB048				x				x						x				x			10/6/94	17			
10/20/94	BGRB048	x		x		x		x				x		x		x		x				11/1/94	11	48	9864	
9/19/94	BGTCSW0301				x				x						x				x			10/6/94	17			
10/20/94	BGTCSW0301	x		x		x		x				x		x		x		x				11/1/94	11	48	9864	
9/19/94	BGTCSW0302				x				x						x				x			10/6/94	17			
10/20/94	BGTCSW0302	x		x		x		x				x		x		x		x				11/1/94	11	48	9864	
9/19/94	BGTCSW0501				x				x						x				x			10/6/94	17			
10/20/94	BGTCSW0501	x		x		x		x				x		x		x		x				11/1/94	11	48	9864	
9/19/94	BGTCSW0601				x				x						x				x			10/6/94	17			
10/20/94	BGTCSW0601	x		x		x		x				x		x		x		x				2/15/95	115	48	9864	
9/19/94	BGRB041				x				x						x				x			10/6/94	17			
10/20/94	BGRB041		x	x		x		x				x		x		x		x					#####	46	9858	
9/19/94	BGPSW0301								x										x			10/6/94	17			
9/19/94	BGPSW0301D								x										x			10/6/94	17			
9/19/94	BGPSW0401								x										x			10/6/94	17			
9/19/94	BGRB044				x				x						x				x			10/6/94	17			
10/20/94	BGRB044		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGTCSW0201				x				x						x				x			10/6/94	17			
10/20/94	BGTCSW0201		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGTCSW0202				x				x						x				x			10/6/94	17			
10/20/94	BGTCSW0202		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGCPSW0501				x				x						x				x			10/6/94	17			

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BACKGROUND - AQUEOUS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/20/94	BGCPSW0501		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGTCSW0101				x				x						x				x			10/6/94	17			
10/20/94	BGTCSW0101		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGTCSW0102				x				x						x				x			10/6/94	17			
10/20/94	BGTCSW0102		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGCPSW0101				x				x						x				x			10/6/94	17			
10/20/94	BGCPSW0101		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGCPSW0201				x				x						x				x			10/6/94	17			
10/20/94	BGCPSW0201		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGCPSW0401				x										x							10/3/94	14			
10/20/94	BGCPSW0401		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGCPSW0301				x										x							10/3/94	14			
10/20/94	BGCPSW0301		x	x		x		x					x	x		x		x					#####	46	9858	
9/19/94	BGCPSW0301D				x										x								#####			
10/20/94	BGCPSW0301D		x	x		x		x					x	x		x		x				10/20/94	0	46	9858	
9/23/94	BGTNSW0301				x				x						x				x			10/10/94	17			
10/24/94	BGTNSW0301		x	x									x	x								11/10/94	16	56	9876	
11/11/94	BGTNSW0301					x		x								x		x				11/28/94	17	56	9876	
11/11/94	BGTNSW03DS01						x										x					11/28/94	17	56	9876	
9/23/94	BGRB053				x										x							10/10/94	17			
10/10/94	BGRB053								x										x			10/31/94	21			
10/24/94	BGRB053		x	x									x	x								11/10/94	16	56	9876	
11/11/94	BGRB053					x		x								x		x				11/28/94	17	56	9876	
9/23/94	BGTNSW0202				x										x							10/10/94	17			
10/10/94	BGTNSW0202								x										x			10/31/94	21			
10/24/94	BGTNSW0202		x	x									x	x								11/10/94	16	56	9876	
11/11/94	BGTNSW0202					x		x								x		x				11/28/94	17	56	9876	

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BACKGROUND - AQUEOUS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
11/11/94	BGTNSW02DS02						x										x					11/28/94	17	56	9876	
9/23/94	BGTNSW0101				x										x							10/10/94	17			
10/10/94	BGTNSW0101								x										x			10/31/94	21			
10/24/94	BGTNSW0101		x	x									x	x								11/10/94	16	56	9876	
11/11/94	BGTNSW0101					x		x								x		x				11/28/94	17	56	9876	
11/11/94	BGTNSW01DS01						x										x					11/28/94	17	56	9876	
9/23/94	BGTNSW0102				x										x							10/10/94	17			
10/10/94	BGTNSW0102								x										x			10/31/94	21			
10/24/94	BGTNSW0102		x	x									x	x								11/10/94	16	56	9876	
11/11/94	BGTNSW0102					x		x								x		x				11/28/94	17	56	9876	
11/11/94	BGTNSW01DS02						x										x					11/28/94	17	56	9876	
9/23/94	BGTNSW0201				x										x							10/10/94	17			
10/10/94	BGTNSW0201								x										x			10/31/94	21			
10/24/94	BGTNSW0201		x	x									x	x								11/10/94	16	56	9876	
11/11/94	BGTNSW0201					x		x								x		x				11/28/94	17	56	9876	
11/11/94	BGTNSW02DS01						x										x					11/28/94	17	56	9876	
9/29/94	BGWPSW0201				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGWPSW0201			x										x								11/11/94	14	62	9884	
10/5/94	BGWPSW0201					x		x								x		x				10/20/94	15	39	9842	
10/10/94	BGWPSW0201		x										x									10/31/94	21	38	9838	
10/5/94	BGWPSW0301					x		x	x							x		x	x			10/20/94	15	39	9842	
10/10/94	BGWPSW0301		x										x									10/31/94	21	38	9838	
10/27/94	BGWPSW0301			x										x								11/11/94	14	62	9884	
9/29/94	BGWPSW0401				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGWPSW0401			x										x								11/11/94	14	62	9884	
10/5/94	BGWPSW0401					x		x								x		x				10/20/94	15	39	9842	
10/10/94	BGWPSW0401		x										x									10/31/94	21	38	9838	

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BACKGROUND - AQUEOUS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/5/94	BGRB035					x		x	x							x		x	x			10/20/94	15	39	9842	
10/10/94	BGRB035		x										x									10/31/94	21	38	9838	
10/5/94	BGWPSW0102					x		x	x							x		x	x			10/20/94	15	39	9842	
10/10/94	BGWPSW0102		x										x									10/31/94	21	38	9838	
10/27/94	BGWPSW0102			x										x								11/11/94	14	62	9884	
10/5/94	BGRB034					x		x	x							x		x	x			10/20/94	15	39	9842	
10/10/94	BGRB034		x										x									10/31/94	21	38	9838	
9/29/94	BGWPSW0101				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGWPSW0101			x										x								11/11/94	14	62	9884	
10/5/94	BGWPSW0101					x		x								x		x				10/20/94	15	39	9842	
10/10/94	BGWPSW0101		x										x									10/31/94	21	38	9838	
9/29/94	BGWPSW0202				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGWPSW0202			x										x								11/11/94	14	62	9884	
10/5/94	BGWPSW0202					x		x								x		x				10/20/94	15	39	9842	
10/10/94	BGWPSW0202		x										x									10/31/94	21	38	9838	
10/5/94	BGWPSW0302					x		x	x							x		x	x			10/20/94	15	39	9842	
10/10/94	BGWPSW0302		x										x									10/31/94	21	38	9838	
10/27/94	BGWPSW0302			x										x								11/11/94	14	62	9884	
9/29/94	BGWPSW0301D				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGWPSW0301D			x										x								11/11/94	14	62	9884	
10/5/94	BGWPSW0301D					x		x								x		x					#####	39	9842	
10/10/94	BGWPSW0301D		x										x									10/31/94	21	38	9838	
9/29/94	BGPLSW0402				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGPLSW0402			x										x								11/11/94	14	62	9884	
9/29/94	BGPLSW0401				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGPLSW0401			x										x								11/11/94	14	62	9884	
9/29/94	BGPLSW0401D								x										x			10/14/94	15			

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		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
9/29/94	BGPLSW0302				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGPLSW0302			x										x								11/11/94	14	62	9884	
9/29/94	BGPLSW0301				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGPLSW0301			x										x								11/11/94	14	62	9884	
9/29/94	BGPLSW0101				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGPLSW0101			x										x								11/11/94	14	62	9884	
9/29/94	BGPLSW0102				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGPLSW0102			x										x								11/11/94	14	62	9884	
9/29/94	BGPLSW0202				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGPLSW0202			x										x								11/11/94	14	62	9884	
9/29/94	BGPLSW0201				x				x						x				x			10/14/94	15	62	9884	
10/27/94	BGPLSW0201			x										x								11/11/94	14	62	9884	
10/5/94	BGRB039					x		x	x							x		x	x			10/20/94	15			
9/29/94	BGPLSW0101D				x										x							10/14/94	15	62	9884	
10/27/94	BGPLSW0101D			x										x								11/11/94	14	62	9884	
10/3/94	BGTNSW0401				x										x							10/14/94	11			MS/MSD
10/27/94	BGTNSW0401		x	x					x				x	x					x			11/11/94	14	58	9879	MS/MSD
11/11/94	BGTNSW0401					x		x								x		x				11/28/94	17	58	9879	MS/MSD
11/11/94	BGTNSW04DS01						x										x					11/28/94	17	58	9879	MS/MSD
10/3/94	BGTNSW0401D				x										x							10/14/94	11			
10/27/94	BGTNSW0401D		x	x					x				x	x					x			11/11/94	14	58	9879	
11/11/94	BGTNSW0401D					x		x								x		x				11/28/94	17	58	9879	
11/11/94	BGTNSW04DS01D						x										x					11/28/94	17	58	9879	
10/3/94	BGTNSW0501				x										x							10/14/94	11			
10/27/94	BGTNSW0501		x	x					x				x	x					x			11/11/94	14	58	9879	
11/11/94	BGTNSW0501					x		x								x		x				11/28/94	17	58	9879	
11/11/94	BGTNSW05DS01						x										x					11/28/94	17	58	9879	

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VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/3/94	BGTNSW0601				x										x							10/14/94	11			
10/27/94	BGTNSW0601		x	x					x				x	x					x			11/11/94	14	58	9879	
11/11/94	BGTNSW0601					x		x								x		x				11/28/94	17	58	9879	
11/11/94	BGTNSW06DS01						x										x					11/28/94	17	58	9879	
10/3/94	BGRB056				x										x							10/14/94	11			
10/27/94	BGRB056		x	x					x				x	x					x			11/11/94	14	58	9879	
11/11/94	BGRB056					x		x								x		x				11/28/94	17	58	9879	
10/5/94	BGWPSW01DS01						x										x					10/20/94	15	39	9842	
10/5/94	BGWPSW01DS02						x										x					10/20/94	15	39	9842	
10/5/94	BGWPSW02DS01						x										x					10/20/94	15	39	9842	
10/5/94	BGWPSW02DS02						x										x					10/20/94	15	39	9842	
10/5/94	BGWPSW03DS02						x										x					10/20/94	15	39	9842	
10/5/94	BGWPSW04DS01						x										x					10/20/94	15	39	9842	
10/5/94	BGWPSW03DS01D						x										x					10/20/94	15	39	9842	
10/5/94	BGWPSW03DS01						x										x					10/20/94	15	39	9842	
10/5/94	BGPLSW01DS01						x										x					10/20/94	15	41	9847	
10/5/94	BGPLSW01DS02						x										x					10/20/94	15	41	9847	
10/5/94	BGPLSW02DS01						x										x					10/20/94	15	41	9847	
10/5/94	BGPLSW02DS02						x										x					10/20/94	15	41	9847	
10/5/94	BGPLSW03DS01						x										x					10/20/94	15	41	9847	
10/5/94	BGPLSW03DS02						x										x					10/20/94	15	41	9847	
10/5/94	BGPLSW04DS01						x										x					10/20/94	15	41	9847	
10/5/94	BGPLSW04DS01D						x										x					10/20/94	15	41	9847	
10/5/94	BGPLSW04DS02						x										x					10/20/94	15	41	9847	
10/10/94	BGTB036		x										x									10/31/94	21	38	9838	
10/10/94	BGTB038		x										x									10/31/94	21	38	9838	
10/12/94	BGTB074	x										x										10/31/94	19	BD030		

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		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/12/94	BGRB063	x		x	x	x		x				x		x	x	x		x				10/31/94	19	BD030		
10/12/94	BGRB063								x	x									x	x		11/15/94	33	BD031		
10/12/94	BGRB063DS						x										x					10/31/94	19	BD030F		
10/12/94	BGGW01A01	x		x	x	x		x				x		x	x	x		x				10/31/94	19	BD030		
10/12/94	BGGW01A01								x	x									x	x		11/15/94	33	BD031		
10/12/94	BGGW01ADS01						x										x					10/31/94	19	BD030F		
9/29/94	BGRB040								x										x			10/14/94	15	41	9847	
10/13/94	BGRB040		x			x		x				x		x		x		x				11/1/94	18	41	9847	
10/13/94	BGTB039		x									x										11/1/94	18	41	9847	
10/13/94	BGTB042		x									x										11/1/94	18	41	9847	
10/13/94	BGRB038					x		x								x		x				11/1/94	18	42	9845	
10/13/94	BGGW0801					x		x								x		x				11/1/94	18	42	9845	
10/13/94	BGGW08A01D					x		x								x		x				11/1/94	18	42	9845	
10/13/94	BGSB0802					x		x								x		x				11/1/94	18	42	9845	
10/13/94	BGSB0807					x		x								x		x				11/1/94	18	42	9845	
10/17/94	BGRB047					x		x								x		x				11/1/94	14	48	9864	
10/17/94	BGTCSW03DS01						x										x					11/1/94	14	48	9864	
10/17/94	BGTCSW03DS02						x										x					11/1/94	14	48	9864	
10/17/94	BGTCSW04DS01						x										x					11/1/94	14	48	9864	
10/17/94	BGTCSW05DS01						x										x					11/1/94	14	48	9864	
10/17/94	BGTCSW06DS01						x										x					11/1/94	14	48	9864	
10/19/94	12BGRB072		x	x	x	x		x				x		x	x	x		x				11/3/94	14	BD033		
10/19/94	12BGRB072								x	x									x	x		11/28/94	39	BD034		
10/19/94	12BGRB072DS						x										x					11/3/94	14	BD033F		
10/19/94	BGGW0201		x	x	x	x		x					x	x	x	x		x				11/3/94	14	BD033		
10/19/94	BGGW0201								x	x									x	x		11/28/94	39	BD034		
10/19/94	BGGW02DS01						x										x					11/3/94	14	BD033F		

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		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/19/94	BG12TB080		x									x										11/3/94	14	BD033		
10/19/94	BG12TB081		x									x										11/3/94	14	BD033		
10/20/94	BGTB044		x									x											#####	46	9858	
10/20/94	BGTB046		x									x											#####	46	9858	
10/20/94	BGTB048		x									x											#####	46	9858	
10/20/94	BGTCSW01DS01						x										x						#####	46	9858	
10/20/94	BGTCSW01DS02						x										x						#####	46	9858	
10/20/94	BGTCSW02DS01						x										x						#####	46	9858	
10/20/94	BGTCSW02DS02						x										x						#####	46	9858	
10/20/94	BGCPSW01DS01						x										x						#####	46	9858	
10/20/94	BGCPSW02DS01						x										x						#####	46	9858	
10/20/94	BGCPSW03DS01						x										x						#####	46	9858	
10/20/94	BGCPSW03DS01D						x										x						#####	46	9858	
10/20/94	BGCPSW04DS01						x										x						#####	46	9858	
10/20/94	BGCPSW05DS01						x										x						#####	46	9858	
10/20/94	BGTB049	x										x											#####	48	9864	
10/20/94	BGTB050	x										x											#####	48	9864	
10/20/94	BGTB059		x										x										#####	56	9876	
10/27/94	BGTB063		x										x									11/11/94	14	58	9879	
10/31/94	BGRB074		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGGW02A01		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGTB084		x									x										11/15/94	15	BD041		
10/31/94	BGGW0301D		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGGW03A01		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGGW0301		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGRB076		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGGW07A01		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		

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VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
10/31/94	BGGW0501		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGGW05A01		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGRB077		x	x	x	x		x				x		x	x	x		x				11/15/94	15	BD041/042		
10/31/94	BGGW0701		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGGW0801		x	x	x	x		x	x	x		x		x	x	x		x	x	x		11/15/94	15	BD041/042		
10/31/94	BGRB074DS						x										x					11/15/94	15	BD041F		
10/31/94	BGGW02ADS01						x										x					11/15/94	15	BD041F		
10/31/94	BGGW03DS01D						x										x					11/15/94	15	BD041F		
10/31/94	BGGW03ADS01						x										x					11/15/94	15	BD041F		
10/31/94	BGGW03DS01						x										x					11/15/94	15	BD041F		
10/31/94	BGRB076DS						x										x					11/15/94	15	BD041F		
10/31/94	BGGW05DS01						x										x					11/15/94	15	BD041F		
10/31/94	BGGW05ADS01						x										x					11/15/94	15	BD041F		
10/31/94	BGRB077DS						x										x					11/15/94	15	BD041F		
10/31/94	BGGW07DS01						x										x					11/15/94	15	BD041F		
10/31/94	BGGW07ADS01						x										x					11/15/94	15	BD041F		
10/31/94	BGGW08DS01						x										x					11/15/94	15	BD041F		
10/31/94	BGFBTB085		x										x									11/15/94	15	BD045		
11/9/94	BGGW08A01		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/28/94	19	BD052/053		
11/9/94	BGGW08ADS01						x										x					11/28/94	19	BD052F		
11/9/94	BGRB078		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/28/94	19	BD052/053		
11/9/94	BGRB078DS						x										x					11/28/94	19	BD052F		
11/9/94	BGGW0401		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/28/94	19	BD052/053		
11/9/94	BGGW04DS01						x										x					11/28/94	19	BD052F		
11/9/94	BGGW04A01		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/28/94	19	BD052/053		
11/9/94	BGGW04ADS01						x										x					11/28/94	19	BD052F		
11/9/94	BGGW0101		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/28/94	19	BD052/053		

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VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
11/9/94	BGGW01DS01						x										x					11/28/94	19	BD052F		
11/9/94	BGGW0601		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/28/94	19	BD052/053		
11/9/94	BGGW06DS01						x										x					11/28/94	19	BD052F		
11/9/94	BGGW0601D		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/28/94	19	BD052/053		
11/9/94	BGGW06DS01D						x										x					11/28/94	19	BD052F		
11/9/94	BGGW06A01		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/28/94	19	BD052/053		
11/9/94	BGGW06ADS01						x										x					11/28/94	19	BD052F		
11/9/94	BGTB089		x										x									11/28/94	19	BD052		
11/9/94	BGTB090		x										x									11/28/94	19	BD052		
																							0			
COUNT		12	82	71	68	88	65	88	74	23	0	45	49	82	78	88	65	87	74	23	0					

CTO-0252
FIELD BLANKS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
9/16/94	FBATVDS01						x										x					10/6/94	20	25	9804	
9/16/94	FBLGDS01						x										x					10/6/94	20	25	9804	FBLFBDS01
9/21/94	FBLG01			x	x	x		x	x					x	x	x		x	x			10/6/94	15	25	9804	
9/29/94	FBLG01		x										x									10/14/94	15	31	9813	
9/16/94	FBLG01				x										x							10/6/94	20	25	9804	
9/21/94	FBLG01			x										x								10/6/94	15	25	9804	
9/16/94	FBRIG01				x				x						x				x			10/6/94	20	31	9813	
9/23/94	FBRIG01			x		x		x						x		x		x				10/10/94	17	31	9813	
9/29/94	FBRIG01		x										x									10/14/94	15	31	9813	
9/16/94	FBATV01				x				x						x				x			10/6/94	20	31	9813	
9/23/94	FBATV01			x		x		x						x		x		x				10/10/94	17	31	9813	
9/29/94	FBATV01		x										x									10/17/94	18	31	9813	
9/16/94	FBDI01				x				x						x				x			10/6/94	20	31	9813	
9/23/94	FBDI01			x		x		x						x		x		x				10/10/94	17	31	9813	
9/29/94	FBDI01		x										x									10/14/94	15	31	9813	
9/19/94	FBDIDS01						x										x						#####	31	9813	
9/19/94	FBRIGDS01						x										x						#####	31	9813	
10/3/94	FBRIG02				x										x							10/14/94	11			
10/27/94	FBRIG02		x	x					x				x	x					x			11/11/94	14	60	9882	
11/17/94	FBRIG02					x		x								x		x				12/5/94	18	60	9882	
11/17/94	FBRIGDS02						x										x					12/5/94	18	60	9882	
10/3/94	FBDI02				x										x							10/14/94	11			
10/27/94	FBDI02		x	x					x				x	x					x			11/11/94	14	60	9882	
11/17/94	FBDI02					x		x								x		x				12/5/94	18	60	9882	
11/17/94	FBDIDS02						x										x					12/5/94	18	60	9882	
10/3/94	FBLG02				x										x							10/14/94	11			
10/27/94	FBLG02		x	x					x				x	x					x			11/11/94	14	60	9882	

CTO-0252
FIELD BLANKS
VALIDATION

		Analysis Requested										Analysis Received														
DATE SHIPPED	SAMPLE ID	TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		TCL VOA	TCL VOA - LOW LEVEL	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	CYANIDE	N/N	NITRITE/NITRATE		DATE REC'D	TURNAROUND TIME	SDG NO.	CONTROL NO.	COMMENTS
11/17/94	FBLG02					x										x						12/5/94	18	60	9882	
11/17/94	FBLGDS02						x										x					12/5/94	18	60	9882	
10/3/94	FBATV02				x										x							10/14/94	11			
10/27/94	FBATV02		x	x					x				x	x					x			11/11/94	14	60	9882	
11/17/94	FBATV02					x		x								x		x				12/5/94	18	60	9882	
11/17/94	FBATVDS02						x										x					12/5/94	18	60	9882	
10/24/94	FBMUD01	x		x	x				x			x		x	x				x			11/10/94	16	54	9873	
10/31/94	FBMUD01					x		x								x		x				11/10/94	10	54	9873	
10/27/94	FBTB067		x										x									11/11/94	14	60	9882	
10/31/94	FBLG03		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/15/94	15		BD041/042	
10/31/94	FBDI03		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/15/94	15		BD041/042	
10/31/94	FBLGDS03						x										x					11/15/94	15		BD041F	
10/31/94	FBDIDS03						x										x					11/15/94	15		BD041F	
10/31/94	FBTB087		x										x									11/15/94	15		BD045	
10/31/94	FBRIG3		x	x	x	x		x	x	x			x	x	x	x		x	x	x		11/15/94	15		BD045/046	
10/31/94	FBRIG3DS						x										x					11/15/94	15		BD045F	
11/16/94	FBLG04		x	x	x	x		x	x	x			x	x	x	x		x	x	x		12/5/94	19		BD054/055	
11/16/94	FBLGDS04						x										x					12/5/94	19		BD054F	
11/16/94	FBDI04		x	x	x	x		x	x	x			x	x	x	x		x	x	x		12/5/94	19		BD054/055	
11/16/94	FBDIDS04						x										x					12/5/94	19		BD054F	
11/16/94	FBRIG04		x	x	x	x		x	x	x			x	x	x	x		x	x	x		12/5/94	19		BD054/055	
11/16/94	FBRIGDS04						x										x					12/5/94	19		BD054F	
																							0			
COUNT		1	16	16	16	15	14	14	15	6	0	1	16	16	16	15	14	14	15	6	0					

APPENDIX H
QUALITY ASSURANCE/QUALITY CONTROL SUMMARY (ORGANICS AND INORGANICS)

DATA QUALIFIER DEFINITIONS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

ORGANIC

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

UL = Not detected. Quantitation limit is probably higher.

INORGANIC

U = The analyte was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J = The associated value is an estimated quantity.

R = The data are unusable; the analyte may or may not be present.

UJ = The analyte was analyzed for, but was not detected. The associated detection limit is an estimate and may be inaccurate or imprecise.

K = The analyte is present. The reported value may be biased high. The actual value is expected to be lower than reported.

L = The analyte is present. The reported values may be biased low. The actual value is expected to be higher than reported.

UL = The analyte was not detected, and the reported quantitation limit is probably higher than reported.

MISCELLANEOUS

NA = Not analyzed by lab.

FIELD QA/QC SAMPLES
TRIP BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	12-BG-TB003	BG-TB036	BG-TB038	BG-TB039	BG-TB042	BG-TB044
Date sampled	07/08/94	08/02/94	08/03/94	08/04/94	08/05/94	08/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	10 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	10 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	10 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	10 U	2 U	2 U	0.7 J	2 UJ	1.3 B
Acetone	10 U	5 R	5 R	5 R	5 R	6.1 J
Carbon disulfide	10 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
Chloroform	10 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	10 U	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	10 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	10 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	10 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	10 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	10 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Benzene	10 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	10 U	1 U	1 U	1 U	1 U	1 U
Bromoform	10 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	10 U	5 R	5 R	5 R	5 R	5 R
2-Hexanone	10 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	10 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Toluene	10 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	10 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	10 U	1 U	1 U	1 U	1 U	1 U
Styrene	10 U	1 U	1 U	1 U	1 U	1 U
M/P xylenes	10 U	1 U	1 U	1 U	1 U	1 U

FIELD QA/QC SAMPLES
TRIP BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	12-BG-TB003	BG-TB036	BG-TB038	BG-TB039	BG-TB042	BG-TB044
Date sampled	07/08/94	08/02/94	08/03/94	08/04/94	08/05/94	08/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
O xylene	10 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	NA	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	NA	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropa	NA	1 R	1 R	1 R	1 R	1 R
1,2-Dibromoethane	NA	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	NA	1 U	1 U	1 U	1 U	1 U

FIELD QA/QC SAMPLES
TRIP BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-TB046	BG-TB048	BG-TB049	BG-TB050	BG-TB059	BG-TB063
Date sampled	08/07/94	08/08/94	08/09/94	08/10/94	08/19/94	08/20/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	10 U	10 U	0.5 J	1.9
Bromomethane	1 U	1 UJ	10 U	10 U	1 U	1 U
Vinyl chloride	1 U	1 UJ	10 U	10 U	1 U	1 U
Chloroethane	1 U	1 UJ	10 U	10 U	1 U	1 U
Methylene chloride	2 U	2 U	8 J	11	1 B	2 U
Acetone	5 R	5 R	6 J	7 J	6.1 J	5 R
Carbon disulfide	1 U	1 UJ	10 U	10 U	1 U	1 U
1,1-Dichloroethene	1 U	1 UJ	10 U	10 U	1 U	1 U
1,1-Dichloroethane	1 U	1 UJ	10 U	10 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 UJ	10 U	10 U	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 UJ	10 U	10 U	1 U	1 U
Chloroform	1 U	1 UJ	10 U	10 U	1 U	1 U
1,2-Dichloroethane	1 U	1 UJ	10 U	10 U	1 U	1 U
2-Butanone	5 R	5 UJ	10 U	10 U	5 R	5 R
1,1,1-Trichloroethane	1 U	1 UJ	10 U	10 U	1 U	1 U
Carbon tetrachloride	1 U	1 UJ	10 U	10 U	1 U	1 U
Bromodichloromethane	1 U	1 UJ	10 U	10 U	1 U	1 U
1,2-Dichloropropane	1 U	1 UJ	10 U	10 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 UJ	10 U	10 U	1 U	1 U
Trichloroethene	1 U	1 UJ	10 U	10 U	1 U	1 U
Dibromochloromethane	1 U	1 UJ	10 U	10 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 UJ	10 U	10 U	1 U	1 U
Benzene	1 U	1 UJ	10 U	10 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 UJ	10 U	10 U	1 U	1 U
Bromoform	1 U	1 UJ	10 U	10 U	1 U	1 U
4-Methyl-2-pentanone	5 R	5 UJ	10 U	10 U	5 R	5 R
2-Hexanone	5 U	5 UJ	10 U	10 U	5 U	5 U
Tetrachloroethene	1 U	1 UJ	10 U	10 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 UJ	10 U	10 U	1 U	1 U
Toluene	1 U	0.7 J	10 U	10 U	1 U	0.5 J
Chlorobenzene	1 U	1 UJ	10 U	10 U	1 U	1 U
Ethylbenzene	1 U	1 UJ	10 U	10 U	1 U	1 U
Styrene	1 U	1 UJ	10 U	10 U	1 U	1 U
M/P xylenes	1 U	1 UJ	10 U	10 U	1 U	1 U

FIELD QA/QC SAMPLES
TRIP BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-TB046	BG-TB048	BG-TB049	BG-TB050	BG-TB059	BG-TB063
Date sampled	08/07/94	08/08/94	08/09/94	08/10/94	08/19/94	08/20/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
O xylene	1 U	1 UJ	10 U	10 U	1 U	1 U
Total Xylenes	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1 U	1 U	NA	NA	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	NA	NA	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	NA	NA	1 U	1 U
1,2-Dibromo-3-chloropropa	1 R	1 R	NA	NA	1 R	1 R
1,2-Dibromoethane	1 U	1 U	NA	NA	1 U	1 U
Bromochloromethane	1 U	1 U	NA	NA	1 U	1 U

FIELD QA/QC SAMPLES
TRIP BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FB-TB067	BG-TB074	BG-12-TB080	BG-12-TB081	BG-TB084	BG-FB-TB085
Date sampled	08/23/94	09/08/94	09/20/94	09/21/94	09/23/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2 U	2 U	2 U	2 U	2 U	2 U
Acetone	5 R	5 R	5 J	6 J	6 J	8 J
Carbon disulfide	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	5 R	5 R
2-Butanone	5 R	5 R	5 R	5 R	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	5 U	5 U
4-Methyl-2-pentanone	5 R	5 U	5 U	5 U	5 R	5 R
2-Hexanone	5 U	5 R	5 R	5 R	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U
M/P xylenes	1 U	NA	NA	NA	1 U	1 U

FIELD QA/QC SAMPLES
TRIP BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FB-TB067	BG-TB074	BG-12-TB080	BG-12-TB081	BG-TB084	BG-FB-TB085
Date sampled	08/23/94	09/08/94	09/20/94	09/21/94	09/23/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
O xylene	1 U	NA	NA	NA	1 U	1 U
Total Xylenes	NA	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropa	1 U	1 R	1 R	1 R	1 R	1 R
1,2-Dibromoethane	NA	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U

FIELD QA/QC SAMPLES
TRIP BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FB-TB087	BG-TB089	BG-TB090	6-12-TB095
Date sampled	09/28/94	10/05/94	10/06/94	10/12/94
Units	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U
Methylene chloride	2 U	2 U	0.6 J	0.8 J
Acetone	6 J	6 J	7 J	5 R
Carbon disulfide	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U
2-Hexanone	5 R	5 R	5 R	5 R
Tetrachloroethene	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U
M/P xylenes	NA	NA	NA	NA

FIELD QA/QC SAMPLES
TRIP BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FB-TB087	BG-TB089	BG-TB090	6-12-TB095
Date sampled	09/28/94	10/05/94	10/06/94	10/12/94
Units	UG/L	UG/L	UG/L	UG/L
O xylene	NA	NA	NA	NA
Total Xylenes	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropa	1 R	1 R	1 R	1 R
1,2-Dibromoethane	1 U	1 U	1 U	1 U
Bromochloromethane	NA	1 U	1 U	NA

FIELD QA/QC SAMPLES
RINSATE BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGRR-RB005	BG-RB034	BG-RB035	BG-RB039	BG-RB041	BG-RB044
Date sampled	07/09/94	08/02/94	08/03/94	08/05/94	08/06/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	10 U	1 U	1 U	0.5 J	0.5 J	1 U
Bromomethane	10 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	10 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	10 U	2 U	2 U	2 UJ	2 U	2 U
Acetone	10 U	5 R	5 R	5 R	5 R	5 R
Carbon disulfide	10 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
Chloroform	10 U	1 U	1 U	5.5	6.8	5.1
1,2-Dichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	10 U	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	10 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	10 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	10 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	10 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	10 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Benzene	10 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	10 U	1 U	1 U	1 U	1 U	1 U
Bromoform	10 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	10 U	5 R	5 R	5 R	5 R	5 R
2-Hexanone	10 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	10 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Toluene	10 U	0.5 J	0.5 J	1 U	1 U	1 U
Chlorobenzene	10 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	10 U	1 U	1 U	1 U	1 U	1 U
Styrene	10 U	1 U	1 U	1 U	1 U	1 U
M/P xylenes	10 U	1 U	1 U	1 U	1 U	1 U
O xylene	10 U	1 U	1 U	1 U	1 U	1 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGRR-RB005	BG-RB034	BG-RB035	BG-RB039	BG-RB041	BG-RB044
Date sampled	07/09/94	08/02/94	08/03/94	08/05/94	08/06/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Total Xylenes	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	1 U	1 U	1 U	1 U	1 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB048	BG-RB053	BG-RB056	BG-RB063	12-BGRB072	BG-RB074
Date sampled	08/10/94	08/18/94	08/20/94	09/08/94	09/20/94	09/21/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	10 U	0.6 J	1.7	1 U	1 U	1 U
Bromomethane	10 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	10 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	10	1 B	1.2 B	15	7	9
Acetone	17	8.2 J	49 BJ	5 R	5 R	5 R
Carbon disulfide	10 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
Chloroform	10 U	1.3	5.9	2	1 U	1
1,2-Dichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	10 U	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	10 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	10 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	10 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	10 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	10 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	10 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Benzene	10 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	10 U	1 U	1 U	1 U	1 U	1 U
Bromoform	10 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	10 U	5 R	5 R	5 U	5 U	5 U
2-Hexanone	10 U	5 U	5 U	5 R	5 R	5 R
Tetrachloroethene	10 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	10 U	1 U	1 U	1 U	1 U	1 U
Toluene	10 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	10 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	10 U	1 U	1 U	1 U	1 U	1 U
Styrene	10 U	1 U	1 U	1 U	1 U	1 U
M/P xylenes	10 U	1 U	1 U	NA	NA	NA
O xylene	10 U	1 U	1 U	NA	NA	NA

FIELD QA/QC SAMPLES
RINSATE BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB048	BG-RB053	BG-RB056	BG-RB063	12-BGRB072	BG-RB074
Date sampled	08/10/94	08/18/94	08/20/94	09/08/94	09/20/94	09/21/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Total Xylenes	NA	NA	NA	1 U	1 U	1 U
Bromochloromethane	NA	1 U	1 U	1 U	1 U	1 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB076	BG-RB077	BG-RB078
Date sampled	09/23/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U
Methylene chloride	4	3	4
Acetone	4 J	9 J	5 R
Carbon disulfide	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 U	1 U
Chloroform	1 U	1 U	0.7 J
1,2-Dichloroethane	1 U	0.6 J	1 U
2-Butanone	5 R	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U
Benzene	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U
4-Methyl-2-pentanone	5 U	5 U	5 U
2-Hexanone	5 R	5 R	5 R
Tetrachloroethene	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U
Toluene	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U
Styrene	1 U	1 U	1 U
M/P xylenes	NA	NA	NA
O xylene	NA	NA	NA

FIELD QA/QC SAMPLES
RINSATE BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB076	BG-RB077	BG-RB078
Date sampled	09/23/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L
Total Xylenes	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGRR-RB005	BG-RB039	BG-RB041	BG-RB044	BG-RB048	BG-RB053
Date sampled	07/09/94	08/05/94	08/06/94	08/07/94	08/10/94	08/18/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	24 U	24 U	24 U	24 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	24 U	24 U	24 U	24 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	24 U	24 U	24 U	24 U	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	24 U	24 U	24 U	24 U	25 U	25 U
4-Nitrophenol	24 U	24 U	24 U	24 U	25 U	25 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGRR-RB005	BG-RB039	BG-RB041	BG-RB044	BG-RB048	BG-RB053
Date sampled	07/09/94	08/05/94	08/06/94	08/07/94	08/10/94	08/18/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	24 U	24 U	24 U	24 U	25 U	25 U
4,6-Dinitro-2-methylphenol	24 U	24 U	24 U	24 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	24 U	24 U	24 U	24 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB056	BG-RB063	12BG-RB072	BG-RB074	BG-RB076	BG-RB077
Date sampled	08/20/94	09/08/94	09/20/94	09/21/94	09/23/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 UJ	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 R	25 R	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 UJ	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 UJ	25 U	25 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB056	BG-RB063	12BG-RB072	BG-RB074	BG-RB076	BG-RB077
Date sampled	08/20/94	09/08/94	09/20/94	09/21/94	09/23/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	2 J	3 J	4 J	7 J	4 J
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	5 B	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	2 J	10 U	1 J	10 U	1 J
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 UJ	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 UJ	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 UJ	10 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB078
Date sampled	10/06/94
Units	UG/L
Phenol	10 U
Bis(2-chloroethyl)ether	10 U
2-Chlorophenol	10 U
1,3-Dichlorobenzene	10 U
1,4-Dichlorobenzene	10 U
1,2-Dichlorobenzene	10 U
2-Methylphenol	10 U
2,2'-Oxybis(1-chloropropane)	10 U
4-Methylphenol	10 U
N-Nitroso-di-n-propylamine	10 U
Hexachloroethane	10 U
Nitrobenzene	10 U
Isophorone	10 U
2-Nitrophenol	10 U
2,4-Dimethylphenol	10 U
Bis(2-chloroethoxy)methane	10 U
2,4-Dichlorophenol	10 U
1,2,4-Trichlorobenzene	10 U
Naphthalene	10 U
4-Chloroaniline	10 U
Hexachlorobutadiene	10 U
4-Chloro-3-methylphenol	10 U
2-Methylnaphthalene	10 U
Hexachlorocyclopentadiene	10 U
2,4,6-Trichlorophenol	10 U
2,4,5-Trichlorophenol	25 U
2-Chloronaphthalene	10 U
2-Nitroaniline	25 U
Dimethylphthalate	10 U
Acenaphthylene	10 U
2,6-Dinitrotoluene	10 U
3-Nitroaniline	25 U
Acenaphthene	10 U
2,4-Dinitrophenol	25 U
4-Nitrophenol	25 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB078
Date sampled	10/06/94
Units	UG/L
Dibenzofuran	10 U
2,4-Dinitrotoluene	10 U
Diethylphthalate	10 U
4-Chlorophenyl-phenylether	10 U
Fluorene	10 U
4-Nitroaniline	25 U
4,6-Dinitro-2-methylphenol	25 U
N-Nitrosodiphenylamine	10 U
4-Bromophenyl-phenylether	10 U
Hexachlorobenzene	10 U
Pentachlorophenol	25 U
Phenanthrene	10 U
Anthracene	10 U
Carbazole	10 U
di-n-Butylphthalate	4 J
Fluoranthene	10 U
Pyrene	10 U
Butylbenzylphthalate	10 U
3,3'-Dichlorobenzidine	10 U
Benzo(a)anthracene	10 U
Chrysene	10 U
Bis(2-ethylhexyl)phthalate	10 U
di-n-Octylphthalate	10 U
Benzo(b)fluoranthene	10 U
Benzo(k)fluoranthene	10 U
Benzo(a)pyrene	10 U
Indeno(1,2,3-cd)pyrene	10 U
Dibenz(a,h)anthracene	10 U
Benzo(g,h,i)perylene	10 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGRR-RB005	BG-RB039	BG-RB041	BG-RB044	BG-RB048	BG-RB053
Date sampled	07/09/94	08/05/94	08/06/94	08/07/94	08/10/94	08/19/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
beta-BHC	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
delta-BHC	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
gamma-BHC (Lindane)	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
Heptachlor	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
Aldrin	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
Heptachlor Epoxide	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
Endosulfan I	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
Dieldrin	0.098 U	0.096 UJ	0.096 U	0.096 U	0.1 U	0.096 U
4,4'-DDE	0.098 U	0.096 UJ	0.096 U	0.096 U	0.1 U	0.096 U
Endrin	0.098 U	0.096 UJ	0.096 U	0.096 U	0.1 U	0.096 U
Endosulfan II	0.098 U	0.096 UJ	0.096 U	0.096 U	0.1 U	0.096 U
4,4'-DDD	0.098 U	0.096 UJ	0.096 U	0.096 U	0.1 U	0.096 U
Endosulfan Sulfate	0.098 U	0.096 UJ	0.096 U	0.096 U	0.1 U	0.096 U
4,4'-DDT	0.098 U	0.096 UJ	0.096 U	0.096 U	0.1 U	0.096 U
Methoxychlor	0.49 U	0.48 UJ	0.48 U	0.48 U	0.5 U	0.48 U
Endrin Ketone	0.098 U	0.096 UJ	0.096 U	0.096 U	0.1 U	0.096 U
Endrin Aldehyde	0.098 U	0.096 UJ	0.096 U	0.096 U	0.1 U	0.096 U
alpha-Chlordane	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
gamma-Chlordane	0.049 U	0.048 UJ	0.048 U	0.048 U	0.05 U	0.048 U
Toxaphene	4.9 U	4.8 UJ	4.8 U	4.8 U	5 U	4.8 U
Aroclor-1016	0.98 U	0.96 UJ	0.96 U	0.96 U	1 U	0.96 U
Aroclor-1221	2 U	1.9 UJ	1.9 U	1.9 U	2 U	1.90 U
Aroclor-1232	0.98 U	0.96 UJ	0.96 U	0.96 U	1 U	0.96 U
Aroclor-1242	0.98 U	0.96 UJ	0.96 U	0.96 U	1 U	0.96 U
Aroclor-1248	0.98 U	0.96 UJ	0.96 U	0.96 U	1 U	0.96 U
Aroclor-1254	0.98 U	0.96 UJ	0.96 U	0.96 U	1 U	0.96 U
Aroclor-1260	0.98 U	0.96 UJ	0.96 U	0.96 U	1 U	0.96 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB056	BG-RB063	12BG-RB072	BG-RB074	BG-RB076	BG-RB077
Date sampled	08/20/94	09/08/94	09/20/94	09/21/94	09/23/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
beta-BHC	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
delta-BHC	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Heptachlor	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Aldrin	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Heptachlor Epoxide	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Endosulfan I	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Dieldrin	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
4,4'-DDE	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Endrin	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Endosulfan II	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
4,4'-DDD	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Endosulfan Sulfate	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
4,4'-DDT	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Methoxychlor	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 UJ
Endrin Ketone	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Endrin Aldehyde	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
alpha-Chlordane	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
gamma-Chlordane	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Toxaphene	5 U	5 U	5 UJ	5 U	5 U	5 UJ
Aroclor-1016	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor-1221	2 U	2 U	2 UJ	2 U	2 U	2 UJ
Aroclor-1232	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor-1242	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor-1248	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor-1254	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor-1260	1 U	1 U	1 UJ	1 U	1 U	1 UJ

FIELD QA/QC SAMPLES
RINSATE BLANKS
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB078
Date sampled	10/06/94
Units	UG/L
alpha-BHC	0.05 U
beta-BHC	0.05 U
delta-BHC	0.05 U
gamma-BHC (Lindane)	0.05 U
Heptachlor	0.05 U
Aldrin	0.05 U
Heptachlor Epoxide	0.05 U
Endosulfan I	0.05 U
Dieldrin	0.1 U
4,4'-DDE	0.1 U
Endrin	0.1 U
Endosulfan II	0.1 U
4,4'-DDD	0.1 U
Endosulfan Sulfate	0.1 U
4,4'-DDT	0.1 U
Methoxychlor	0.5 U
Endrin Ketone	0.1 U
Endrin Aldehyde	0.1 U
alpha-Chlordane	0.05 U
gamma-Chlordane	0.05 U
Toxaphene	5 U
Aroclor-1016	1 U
Aroclor-1221	2 U
Aroclor-1232	1 U
Aroclor-1242	1 U
Aroclor-1248	1 U
Aroclor-1254	1 U
Aroclor-1260	1 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGRR-RB005	BG-RB034	BG-RB035	BG-RB039	BG-RB041	BG-RB044
Date sampled	07/09/94	08/02/94	08/03/94	08/05/94	08/06/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 U	0.61 U	0.61 U	0.61 U	0.61 UJ	0.61 UJ
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 U	0.66 U	0.66 U	0.66 U	0.66 UJ	0.66 UJ
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Tertyl	1 U	1 U	1 U	1 U	1 U	1 U
Nitrobenzene	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dintitrotoluene(Isomeric Mixture)	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
2-Nitrotoluene	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
4-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U
3-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB048	BG-RB053	BG-RB056	BG-RB063	12-BG-RB072	BG-RB074
Date sampled	08/10/94	08/19/94	08/20/94	09/08/94	09/20/94	09/21/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 U	0.61 U	0.61 UJ	0.61 U	0.61 U	0.61 U
RDX	0.59 UJ	0.59 UJ	0.59 UJ	0.59 U	0.59 U	0.87 U
1,3,5-Trinitrobenzene	0.66 J	0.66 U	0.66 UJ	0.66 U	0.66 U	0.66 U
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 UJ	1.1 U	1.1 U	1.1 U
Tertyl	1 U	1 U	1 UJ	1.0 U	1.0 U	1.0 U
Nitrobenzene	0.73 U	0.73 U	0.73 UJ	0.73 U	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 UJ	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 UJ	1.0 U	1.0 U	1.0 U
2-Amino-Dinitrotoluene	1 U	1 U	1 UJ	NA	NA	NA
2,6-Dinitrotoluene	1 U	1 U	1 UJ	1.0 U	1.0 U	1.0 U
2,4-Dinitrotoluene	1 U	1 U	1 UJ	1.0 U	1.0 U	1.0 U
Dintitrotoluene(Isomeric Mixture)	1.5 U	1.5 U	1.5 UJ	NA	NA	NA
2-Nitrotoluene	0.75 U	0.75 U	0.75 UJ	0.75 U	0.75 U	0.75 U
4-Nitrotoluene	0.91 U	0.91 U	0.91 UJ	NA	NA	NA
3-Nitrotoluene	0.91 U	0.91 U	0.91 UJ	0.91 U	0.91 U	0.91 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOW
YORKTOWN, VIRGINIA

Sample ID	BG-RB076	BG-RB078
Date sampled	09/23/94	10/06/94
Units	UG/L	UG/L
HMX	0.61 U	0.61 U
RDX	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 U	0.66 U
1,3-Dinitrobenzene	1.1 U	1.1 U
Tertyl	1.0 U	1.0 U
Nitrobenzene	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluene	1.0 U	1.0 U
2-Amino-Dinitrotoluene	NA	NA
2,6-Dinitrotoluene	1.0 U	1.0 U
2,4-Dinitrotoluene	1.0 U	1.0 U
Dintitrotoluene(Isomeric Mixture)	NA	NA
2-Nitrotoluene	0.75 U	0.75 U
4-Nitrotoluene	NA	NA
3-Nitrotoluene	0.91 U	0.91 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB003	BGRR-RB005	BG-RB015	BG-RB016	BG-RB019	BG-RB021
Date sampled	07/08/94	07/09/94	07/19/94	07/20/94	07/21/94	07/22/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	18 U	18 U	18 U	18 U	18 U	24.3 J
Antimony	37 U	37 U	37 U	37 U	37 U	37 R
Arsenic	1 U	1 U	1 U	1 U	1 U	1 U
Barium	2 U	2 U	2 U	2 U	2 U	2 U
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	30.7 J	24.9 J	47.5 J	37.1 J	28.1 J	25 J
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 U	4 U	4 U
Copper	5 U	5 U	5 U	5 U	5 U	5 U
Iron	7.6 J	4.9 J	12 J	8 J	3.5 J	17.4 J
Lead	1 U	4.2	1 U	1 U	1 U	1 U
Magnesium	47 U	47 U	47 U	47 U	47 U	47 U
Manganese	1 U	1 U	1 U	1 U	1 U	1.2 J
Mercury	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	16 U	16 U	16 U	16 U	16 U	16 U
Potassium	1570 U	1570 U	1570 U	1570 U	1570 U	1570 U
Selenium	1 U	2 L	1 U	1 U	1 U	1 U
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	45 U	77.9 J	45.3 J	45 U	45 U	45 U
Thallium	1 U	1 U	1 U	1 UL	1 U	1 U
Vanadium	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	3 U	3 U	5.6 K	3 U	3 U	6.3 J
Cyanide	10 U	10 U	10 U	NA	10 U	NA

FIELD QA/QC SAMPLES
RINSATE BLANKS
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB023	BG-RB027	BG-RB034	BG-RB035	BG-RB038	BG-RB039
Date sampled	07/23/94	07/26/94	08/02/94	08/02/94	08/04/94	08/05/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	18 U	18 U	18 U	18 U	18 U	28.2 J
Antimony	37 U	37 UL	37 UL	37 UL	37 UL	37 U
Arsenic	1 UL	1 UL	1 U	1 U	1 U	1 U
Barium	2 U	2 U	2 U	2 U	2 U	2 U
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	51.4 J	37.9 J	16.4 J	17.6 J	25 J	27.7 J
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 J	4 U	4.2 J
Copper	5 U	5 U	5 U	5 U	5 U	5 U
Iron	45.3 J	7.1 J	3 J	3.6 J	7.7 J	4.3 J
Lead	1 U	1 U	1 U	1 U	1 U	1 U
Magnesium	47 U	47 U	47 U	47 U	47 U	52 J
Manganese	1 J	1 U	1 U	1 U	1 U	1 U
Mercury	0.1 U	0.1 U	0.1 UL	0.1 UL	0.1 U	0.1 U
Nickel	16 U	16 U	16 U	16 U	16 U	16 U
Potassium	1570 U	1570 U	1570 U	1570 U	1570 U	1570 U
Selenium	1 U	1 U	1 U	1 U	1 U	1 U
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	489 J	45 U	45 U	45 U	45 U	45 U
Thallium	1 U	1 U	1 U	1 U	1 U	1 U
Vanadium	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	3 U	3 U	3 U	3 U	3 U	3 U
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB041	BG-RB044	BG-RB045	BG-RB047	BG-RB048	BG-RB053
Date sampled	08/06/94	08/07/94	08/08/94	08/09/94	08/10/94	08/19/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	19.5 J	18 U	26.2 J	18 U	18 U	18 U
Antimony	37 UL	37 UL	37 UL	37 U	37 U	37 UL
Arsenic	1 U	1 U	1 U	1 U	1 U	1 UL
Barium	2 U	2 U	2 U	2 U	2 U	2 U
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	24.2 J	19.7 J	47.4 J	45.5 J	17.7 J	27 J
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	5.3 J	5.3 J	4 U
Copper	5 U	5 U	5 U	5 U	5 U	5 U
Iron	6.6 J	3.6 J	6.4 J	5.8 J	3.5 J	8.7 J
Lead	3.1	1 U	1 U	1 UL	1 UL	1 UL
Magnesium	47 U	47 U	47 U	59.6 J	47 U	47 U
Manganese	1 U	1 U	1 U	1 U	1 U	1 U
Mercury	0.1 U	0.1 U	0.1 U	0.1 UL	0.1 UL	0.1 U
Nickel	16 U	16 U	16 U	16 U	16 U	16 U
Potassium	1570 U	1570 U	1570 U	1570 U	1570 U	1570 U
Selenium	1 UL	1 U	1 U	1 UL	1 UL	1 U
Silver	4 U	4 U	4 U	4 R	4 R	4 U
Sodium	45 U	45 U	59.6 J	272 J	45 U	45 U
Thallium	1 U	1 U	1 U	1 R	1 R	1 R
Vanadium	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	4 J	4 J	4.9 J	3 U	3 U	3 U
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB056	BG-RB063	12-BGRB072	BG-RB074	BG-RB076	BG-RB077
Date sampled	08/20/94	09/08/94	09/20/94	09/21/94	09/23/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	18 U	11.5 U	11.5 U	11.5 U	11.5 U	11.5 U
Antimony	37 UL	12.4 U	12.4 UL	12.4 U	12.4 UL	12.4 U
Arsenic	1 U	2.6 UL	2.6 U	2.6 UL	2.6 U	2.6 UL
Barium	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Beryllium	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	5 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Calcium	46 J	81.8 J	40 J	30.6 J	17.2 J	88.9 J
Chromium	3 U	1.5 U	1.5 U	1.5 UL	1.5 UL	1.5 UL
Cobalt	4 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Copper	5 U	1.1 U	1.8 J	1.1 U	1.1 J	1.1 U
Iron	25.8 J	2 J	3.8 J	1.9 U	2 J	2.2 J
Lead	1 UL	1.5 U	1.5 UL	1.5 UL	1.5 UL	1.5 UL
Magnesium	47 U	13.5 U	14.5 J	13.5 U	13.5 U	13.5 U
Manganese	1 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Mercury	0.1 UL	0.2 UL	0.2 U	0.2 UL	0.2 UL	0.2 UL
Nickel	16 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Potassium	1570 U	391 U	404 J	391 U	391 U	391 U
Selenium	1 UL	3.7 J	2.5 J	2.4 U	2.4 U	2.4 U
Silver	4 U	1.7 U	1.7 UL	1.7 U	1.7 U	1.7 U
Sodium	45 U	42 J	54.9 J	20.4 J	15.9 J	19.9 J
Thallium	1 UL	5.7 U	5.7 UL	5.7 U	5.7 U	5.7 U
Vanadium	4 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Zinc	3 U	5.1 J	4.9 J	3.3 J	4.4 J	14.7 J
Cyanide	10 U	5 R	5 U	5 U	5 U	5 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB078
Date sampled	10/06/94
Units	UG/L
Aluminum	11.5 UL
Antimony	12.4 U
Arsenic	2.3 U
Barium	0.5 U
Beryllium	0.2 U
Cadmium	2.3 U
Calcium	24 J
Chromium	1.5 UL
Cobalt	2.1 U
Copper	1.1 U
Iron	13.2 J
Lead	1.5 UL
Magnesium	13.5 U
Manganese	0.6 U
Mercury	0.2 U
Nickel	5.2 U
Potassium	391 U
Selenium	2.4 UL
Silver	1.7 U
Sodium	9.7 U
Thallium	5.7 U
Vanadium	1.8 U
Zinc	3.9 J
Cyanide	5 U

FIELD QA/QC SAMPLES
RINSATE BLANKS
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BG-RB063DS	12-BGRB072DS	BG-RB074DS	BG-RB076DS	BG-RB077DS	BG-RB078DS
Date sampled	09/08/94	09/20/94	09/21/94	09/23/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	11.5 U	32.6 J	11.5 U	11.5 U	11.5 U	11.5 U
Antimony	12.4 U	13.8 J	12.4 UL	12.4 UL	12.4 UL	14.8 J
Arsenic	2.6 UL	2.6 U	2.6 U	2.6 U	2.6 U	2.3 UL
Barium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Beryllium	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Calcium	66.1 J	73.6 J	61.6 J	60.3 J	51.1 J	41.4 J
Chromium	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Cobalt	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Copper	1.1 U	1.2 J	1.1 U	1.3 J	1.1 U	1.1 U
Iron	9.2 J	9.2 J	1.9 U	1.9 U	1.9 U	1.9 U
Lead	1.5 U	1.5 U	1.5 UL	1.5 UL	1.5 UL	1.4 UL
Magnesium	25.7 J	18.7 J	14.2 J	19.2 J	13.5 U	13.5 U
Manganese	0.98 J	1.3 J	1.9 J	1.2 J	1.2 J	0.9 J
Mercury	0.2 UL	0.2 U	0.2 UL	0.2 UL	0.2 UL	0.2 U
Nickel	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Potassium	391 U	391 U	391 U	396 J	391 U	391 U
Selenium	2.4 U	3 J	2.4 U	2.4 U	2.4 U	4.6 K
Silver	1.7 UL	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Sodium	64	57.4 J	42.9 J	51.6 J	75.7 J	52.7 J
Thallium	5.7 U	5.7 U	5.7 U	5.7 U	5.7 U	4 U
Vanadium	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Zinc	4.7 J	7 J	3.6 J	4.7 J	4.4 J	1.7 J

RINSATE BLANK ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGRB063	12-BGRB072	BGRB074	BGRB076	BGRB077	BGRB078
	Date Sampled:	9/8/94	9/20/94	9/21/94	9/23/94	9/26/94	10/6/94
	Units:						
Nitrate/Nitrite	MG/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
TDS	MG/L	10 U	11	24	20	10 U	10 U
TSS	MG/L	4 U	4 U	4 U	4 U	4 U	8

FIELD QA/QC SAMPLES
FIELD BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBLG-01	FBLG-02	FBLG-03	FBLG-04	FBDI-01	FBDI-02
Date sampled	07/24/94	08/23/94	09/26/94	10/12/94	07/24/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	10 U	0.8 J	1 U	1 U	10 U	0.8 J
Bromomethane	10 U	1 U	1 U	1 U	10 U	1 U
Vinyl chloride	10 U	1 U	1 U	1 U	10 U	1 U
Chloroethane	10 U	1 U	1 U	1 U	10 U	1 U
Methylene chloride	10 U	2 U	6	4 B	70	2 U
Acetone	10 U	6.2 BJ	5 R	5 R	29 U	13 BJ
Carbon disulfide	10 U	1 U	1 U	1 U	10 U	1 U
1,1-Dichloroethene	10 U	1 U	1 U	1 U	10 U	1 U
1,1-Dichloroethane	10 U	1 U	1 U	1 U	10 U	1 U
Trans-1,2-dichloroethene	10 U	1 U	1 U	1 U	10 U	1 U
Cis-1,2-dichloroethene	10 U	1 U	1 U	1 U	10 U	1 U
Chloroform	10 U	6.2	1 U	4 B	10 U	1 U
1,2-Dichloroethane	10 U	1 U	1 U	1 U	10 U	1 U
2-Butanone	10 U	5 R	5 R	5 R	10 U	5 R
1,1,1-Trichloroethane	10 U	1 U	1 U	1 U	10 U	1 U
Carbon tetrachloride	10 U	1 U	1 U	1 U	10 U	1 U
Bromodichloromethane	10 U	1 U	1 U	1 U	10 U	1 U
1,2-Dichloropropane	10 U	1 U	1 U	1 U	10 U	1 U
cis-1,3-Dichloropropene	10 U	1 U	1 U	1 U	10 U	1 U
Trichloroethene	10 U	1 U	1 U	1 U	10 U	1 U
Dibromochloromethane	10 U	1 U	1 U	1 U	10 U	1 U
1,1,2-Trichloroethane	10 U	1 U	1 U	1 U	10 U	1 U
Benzene	10 U	1 U	1 U	1 U	10 U	1 U
Trans-1,3-dichloropropene	10 U	1 U	1 U	1 U	10 U	1 U
Bromoform	10 U	1 U	1 U	1 U	10 U	1 U
4-Methyl-2-pentanone	10 U	5 R	5 U	5 U	10 U	5 R
2-Hexanone	10 U	5 U	5 R	5 R	10 U	5 U
Tetrachloroethene	10 U	1 U	1 U	1 U	10 U	1 U
1,1,2,2-Tetrachloroethane	10 U	1 U	1 U	1 U	10 U	1 U
Toluene	10 U	1 U	1 U	1 U	10 U	1 U
Chlorobenzene	10 U	1 U	1 U	1 U	10 U	1 U
Ethylbenzene	10 U	1 U	1 U	1 U	10 U	1 U
Styrene	10 U	1 U	1 U	1 U	10 U	1 U
M/P xylenes	10 U	1 U	NA	NA	10 U	1 U
O xylene	10 U	1 U	NA	NA	10 U	1 U
Total Xylenes	NA	NA	1 U	1 U	NA	NA
Bromochloromethane	NA	1 U	1 U	1 U	NA	1 U

FIELD QA/QC SAMPLES
FIELD BLANKS
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBDI-03	FBDI-04	FBATV-02	FBRIG-01	FBRIG-02	FBMUD-01
Date sampled	09/26/94	10/12/94	08/23/94	07/24/94	08/23/94	08/18/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/KG
Chloromethane	1 U	1 U	0.7 J	10 U	1.2	91 U
Bromomethane	1 U	1 U	1 U	10 U	1 U	91 U
Vinyl chloride	1 U	1 U	1 U	10 U	1 U	91 U
Chloroethane	1 U	1 U	1 U	10 U	1 U	91 U
Methylene chloride	2 U	0.5 B	2 U	10 U	0.5 B	49 BJ
Acetone	8 J	9 BJ	9 BJ	10 U	7.3 BJ	630 BJ
Carbon disulfide	1 U	1 U	1 U	10 U	1 U	91 U
1,1-Dichloroethene	1 U	1 U	1 U	10 U	1 U	91 U
1,1-Dichloroethane	1 U	1 U	1 U	10 U	1 U	91 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	10 U	1 U	91 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	10 U	1 U	91 U
Chloroform	1 U	1 U	58	48	13	230 J
1,2-Dichloroethane	1 U	1 U	1 U	10 U	1 U	91 U
2-Butanone	5 R	5 R	5 R	10 U	5 R	91 U
1,1,1-Trichloroethane	1 U	1 U	1 U	4 J	1 U	91 U
Carbon tetrachloride	1 U	1 U	1 U	10 U	1 U	91 U
Bromodichloromethane	1 U	1 U	16	9 J	3.7	44 J
1,2-Dichloropropane	1 U	1 U	1 U	10 U	1 U	91 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	10 U	1 U	91 U
Trichloroethene	1 U	1 U	1 U	24	2.2	91 U
Dibromochloromethane	1 U	1 U	2	10 U	0.8 J	91 U
1,1,2-Trichloroethane	1 U	1 U	1 U	10 U	1 U	91 U
Benzene	1 U	1 U	1 U	10 U	1 U	91 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	10 U	1 U	91 U
Bromoform	1 U	1 U	1 U	10 U	1 U	91 U
4-Methyl-2-pentanone	5 U	5 U	5 R	10 U	5 R	91 U
2-Hexanone	5 R	5 R	5 U	10 U	5 U	91 U
Tetrachloroethene	1 U	1 U	1 U	210 J	22	91 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	10 U	1 U	91 U
Toluene	1 U	1 U	1 U	3 J	1 U	91 U
Chlorobenzene	1 U	1 U	1 U	10 U	1 U	91 U
Ethylbenzene	1 U	1 U	1 U	10 U	1 U	91 U
Styrene	1 U	1 U	1 U	10 U	1 U	91 U
M/P xylenes	NA	NA	1 U	5 J	0.5 J	91 U
O xylene	NA	NA	1 U	10 U	1 U	91 U
Total Xylenes	1 U	1 U	NA	NA	NA	NA
Bromochloromethane	1 U	1 U	1 U	NA	1 U	NA

FIELD QA/QC SAMPLES
FIELD BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBLG-01	FBLG-02	FBLG-03	FBLG-04	FBDI-01	FBDI-02
Date sampled	07/24/94	08/23/94	09/26/94	10/12/94	07/24/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U

FIELD QA/QC SAMPLES
FIELD BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBLG-01	FBLG-02	FBLG-03	FBLG-04	FBDI-01	FBDI-02
Date sampled	07/24/94	08/23/94	09/26/94	10/12/94	07/24/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	4 J	7 J	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	4 J	10 U	10 U	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U

FIELD QA/QC SAMPLES
FIELD BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBDI-03	FBDI-04	FBATV-02	FBRIG-01	FBRIG-02	FBMUD-01
Date sampled	09/26/94	10/12/94	08/23/94	07/24/94	08/23/94	08/18/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/KG
Phenol	10 U	10 U	10 U	10 U	10 U	2700 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	2700 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	2700 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	2700 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	2700 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	2700 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	2700 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	2700 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	2700 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	2700 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	2700 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	2700 U
Isophorone	10 U	10 U	10 U	10 U	10 U	2700 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	2700 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	2700 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	2700 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	2700 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	35	18	2700 U
Naphthalene	10 U	10 U	10 U	30	18	2700 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	2700 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	2700 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	2700 U
2-Methylnaphthalene	10 U	10 U	10 U	6 J	3 J	2700 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	2700 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	2700 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	6600 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	2700 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	6600 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	2700 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	2700 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	2700 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	6600 U
Acenaphthene	10 U	10 U	10 U	4 J	10 U	2700 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	6600 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	6600 UJ

FIELD QA/QC SAMPLES
FIELD BLANKS
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBDI-03	FBDI-04	FBATV-02	FBRIG-01	FBRIG-02	FBMUD-01
Date sampled	09/26/94	10/12/94	08/23/94	07/24/94	08/23/94	08/18/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/KG
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	2700 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	2700 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	2700 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	2700 U
Fluorene	10 U	10 U	10 U	10 U	10 U	2700 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	6600 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	6600 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	2700 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	2700 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	2700 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	6600 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	2700 U
Anthracene	10 U	10 U	10 U	10 U	10 U	2700 U
Carbazole	10 U	10 U	10 U	10 U	10 U	2700 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U	2700 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	2700 U
Pyrene	10 U	10 U	10 U	10 U	10 U	2700 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	2700 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	2700 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	2700 U
Chrysene	10 U	10 U	10 U	10 U	10 U	2700 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	2700 U
di-n-Octylphthalate	10 UJ	10 U	10 U	10 U	10 U	2700 U
Benzo(b)fluoranthene	10 UJ	10 U	10 U	10 U	10 U	2700 U
Benzo(k)fluoranthene	10 UJ	10 U	10 U	10 U	10 U	2700 U
Benzo(a)pyrene	10 UJ	10 U	10 U	10 U	10 U	2700 U
Indeno(1,2,3-cd)pyrene	10 UJ	10 U	10 U	10 U	10 U	2700 U
Dibenz(a,h)anthracene	10 UJ	10 U	10 U	10 U	10 U	2700 U
Benzo(g,h,i)perylene	10 UJ	10 U	10 U	10 U	10 U	2700 U

FIELD QA/QC SAMPLES
FIELD BLANKS
PESTICIDE/PCB COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBLG-01	FBLG-02	FBLG-03	FBLG-04	FBDI-01	FBDI-02
Date sampled	07/24/94	08/23/94	09/26/94	10/12/94	07/24/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor Epoxide	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan II	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan Sulfate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methoxychlor	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Endrin Ketone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin Aldehyde	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
alpha-Chlordane	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene	5 U	5 U	5 U	5 U	5 U	5 U
Aroclor-1016	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1221	2 U	2 U	2 U	2 U	2 U	2 U
Aroclor-1232	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1242	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1248	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1254	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1260	1 U	1 U	1 U	1 U	1 U	1 U

FIELD QA/QC SAMPLES
FIELD BLANKS
PESTICIDE/PCB COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBDI-03	FBDI-04	FBATV-02	FBRIG-01	FBRIG-02	FBMUD-01
Date sampled	09/26/94	10/12/94	08/23/94	07/24/94	08/23/94	08/18/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/KG
alpha-BHC	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
beta-BHC	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
delta-BHC	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
gamma-BHC (Lindane)	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
Heptachlor	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
Aldrin	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
Heptachlor Epoxide	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
Endosulfan I	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
Dieldrin	0.1 U	0.1 UJ	0.1 U	0.1 UL	0.1 UJ	27 U
4,4'-DDE	0.1 U	0.1 UJ	0.1 U	0.1 UL	0.1 UJ	27 U
Endrin	0.1 U	0.1 UJ	0.1 U	0.1 UL	0.1 UJ	27 U
Endosulfan II	0.1 U	0.1 UJ	0.1 U	0.1 UL	0.1 UJ	27 U
4,4'-DDD	0.1 U	0.1 UJ	0.1 U	0.1 UL	0.1 UJ	27 U
Endosulfan Sulfate	0.1 U	0.1 UJ	0.1 U	0.1 UL	0.1 UJ	27 U
4,4'-DDT	0.1 U	0.1 UJ	0.1 U	0.1 UL	0.1 UJ	27 U
Methoxychlor	0.5 U	0.5 UJ	0.5 U	0.5 UL	0.5 UJ	140 U
Endrin Ketone	0.1 U	0.1 UJ	0.1 U	0.1 UL	0.1 UJ	27 U
Endrin Aldehyde	0.1 U	0.1 UJ	0.1 U	0.1 UL	0.1 UJ	27 U
alpha-Chlordane	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
gamma-Chlordane	0.05 U	0.05 UJ	0.05 U	0.05 UL	0.05 UJ	14 U
Toxaphene	5 U	5 UJ	5 U	5 UL	5 UJ	1400 U
Aroclor-1016	1 U	1 UJ	1 U	1 UL	1 UJ	270 U
Aroclor-1221	2 U	2 UJ	2 U	2 UL	2 UJ	540 U
Aroclor-1232	1 U	1 UJ	1 U	1 UL	1 UJ	270 U
Aroclor-1242	1 U	1 UJ	1 U	1 UL	1 UJ	270 U
Aroclor-1248	1 U	1 UJ	1 U	1 UL	1 UJ	270 U
Aroclor-1254	1 U	1 UJ	1 U	1 UL	1 UJ	270 U
Aroclor-1260	1 U	1 UJ	1 U	1 UL	1 UJ	270 U

FIELD QA/QC SAMPLES
FIELD BLANKS
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBLG-01	FBLG-02	FBLG-03	FBLG-04	FBDI-01	FBDI-02
Date sampled	07/24/94	08/23/94	09/26/94	10/12/94	07/24/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 UJ	0.61 UJ	1 U	0.61 U	0.61 UJ	0.61 R
RDX	0.59 U	0.59 UJ	0.96	0.73	0.59 UJ	25 J
1,3,5-Trinitrobenzene	0.66 U	0.66 UJ	0.66 U	0.66 U	0.66 U	0.66 R
1,3-Dinitrobenzene	1.1 U	1.1 UJ	1.1 U	1.1 U	1.1 UJ	1.1 R
Tertyl	1 U	1 UJ	2 U	1 U	1 U	1 R
Nitrobenzene	0.73 U	0.73 UJ	0.73 U	0.73 U	0.73 U	0.73 R
2,4,6-Trinitrotoluene	0.62 U	0.62 UJ	0.62 U	0.62 U	0.62 U	0.62 R
4-Amino-2,6-Dinitrotoluene	1 U	1 UJ	1 U	1 U	1 U	1 R
2-Amino-Dinitrotoluene	1 U	1 UJ	NA	NA	1 U	1 R
2,6-Dinitrotoluene	1 U	1 UJ	1 U	1 U	1 U	1 R
2,4-Dinitrotoluene	1 U	1 UJ	1 U	1 U	1 U	1 R
DNT (Isomeric Mixture)	1.5 U	1.5 UJ	NA	NA	1.5 U	1.5 R
2-Nitrotoluene	0.75 U	0.75 UJ	0.75 U	0.75 U	0.75 U	0.75 R
4-Nitrotoluene	0.91 U	0.91 UJ	NA	NA	0.91 U	0.91 R
3-Nitrotoluene	0.91 U	0.91 UJ	0.91 U	0.91 U	0.91 U	0.91 R

FIELD QA/QC SAMPLES
FIELD BLANKS
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBDI-03	FBDI-04	FBATV-02	FBRIG-01	FBRIG-02	FBMUD-01
Date sampled	09/26/94	10/12/94	08/23/94	07/24/94	08/23/94	08/18/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	MG/KG
HMX	0.61 U	3.9	0.61 UJ	0.61 UJ	0.61 UJ	0.5 U
RDX	0.59 U	18	0.59 UJ	0.59 U	0.59 UJ	0.59 U
1,3,5-Trinitrobenzene	0.66 U	13	0.66 UJ	0.66 U	0.66 UJ	0.56 U
1,3-Dinitrobenzene	1.1 U	6.9	1.1 UJ	1.1 UJ	1.1 UJ	0.42 U
Tertyl	1 U	1 U	1 UJ	1 U	1 UJ	1.2 U
Nitrobenzene	0.73 U	0.73 U	0.73 UJ	0.73 U	0.73 UJ	0.58 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 UJ	0.62 UJ	0.62 UJ	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 UJ	1 U	1 UJ	1 U
2-Amino-Dinitrotoluene	NA	NA	1 UJ	1 U	1 UJ	1 U
2,6-Dinitrotoluene	1 U	1 U	1 UJ	1 U	1 UJ	1 U
2,4-Dinitrotoluene	1 U	1 U	1 UJ	1 U	1 UJ	1 U
DNT (Isomeric Mixture)	NA	NA	1.5 UJ	1.5 U	1.5 UJ	0.82 U
2-Nitrotoluene	0.75 U	0.75 U	0.75 UJ	0.75 U	0.75 UJ	0.45 U
4-Nitrotoluene	NA	NA	0.91 UJ	0.91 U	0.91 UJ	0.69 U
3-Nitrotoluene	0.91 U	0.91 U	0.91 UJ	0.91 U	0.91 UJ	1.2 U

FIELD QA/QC SAMPLES
FIELD BLANKS
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBLG-01	FBLG-02	FBLG-03	FBLG-04	FBDI-01	FBDI-02
Date sampled	07/24/94	08/23/94	09/26/94	10/12/94	07/24/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	18 U	24.3 J	11.5 U	11 UL	18 U	26.2 J
Antimony	37 UL	37 UL	12.4 U	12.2 U	37 U	37 UL
Arsenic	1 UL	1 U	2.6 UL	2.3 U	1 UL	1 U
Barium	2 U	2 U	0.5 U	1 U	2 U	2 U
Beryllium	1 U	1 U	0.2 U	1 U	1 U	1 U
Cadmium	5 U	5 UL	2.3 U	1.5 U	5 U	5 UL
Calcium	24.2 J	14 J	5.6 U	13 J	53.9 J	32.7 J
Chromium	3 U	3 U	1.5 UL	1.8 U	3 U	3 U
Cobalt	4 U	4 U	2.1 U	1.9 U	4 U	4 U
Copper	5 U	5 U	1.1 U	1.4 U	5 U	5 U
Iron	5 J	20 J	1.9 U	4.9 J	5.1 J	20.9 J
Lead	1 U	1 UL	1.5 UL	1.4 U	1 U	1 UL
Magnesium	47 U	47 U	13.5 U	11.1 U	47 U	47 U
Manganese	1 U	1 U	0.6 U	1 U	1 U	1 U
Mercury	0.1 U	0.1 U	0.2 UL	0.2 UL	0.1 U	0.1 U
Nickel	16 U	16 U	5.2 U	4.3 U	16 U	16 U
Potassium	1570 U	1570 U	391 U	388 J	1570 U	1570 U
Selenium	1 U	5 U	2.4 U	2.6 U	1 U	1 U
Silver	4 U	4 U	1.7 U	2 UL	4 U	4 U
Sodium	45 U	45 U	9.7 J	17.4 J	173 J	59.5 J
Thallium	1 U	1 UL	5.7 U	4 UL	1 U	1 UL
Vanadium	4 U	4 U	1.8 U	1.4 U	4 U	4 U
Zinc	3 U	3 UL	5.2 J	4 J	3 U	3 UL
Cyanide	10 U	10 U	5 U	5 U	10 U	10 U

FIELD QA/QC SAMPLES
FIELD BLANKS
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBDI-03	FBDI-04	FBATV-02	FBRIG-01	FBRIG-02	FBMUD-01
Date sampled	09/26/94	10/12/94	08/23/94	07/24/94	08/23/94	08/18/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	MG/KG
Aluminum	11.5 U	11 UL	144 J	23100	347	18800
Antimony	12.4 U	12.2 U	37 UL	37 U	39.7 L	66.6 UL
Arsenic	2.6 UL	2.3 U	1 U	3 L	1 U	2.5 J
Barium	0.5 U	1 U	20 J	124 J	25.2 J	157 J
Beryllium	0.2 U	1 U	1 U	2 J	1 U	2.2 J
Cadmium	2.3 U	1.5 U	5 UL	5 U	5.5 L	9 U
Calcium	5.6 U	11.8 J	27800	40600	25700 J	7780 L
Chromium	1.5 UL	1.8 U	3 J	10.5	4.6 J	6.8 J
Cobalt	2.1 U	1.9 U	4 U	4 U	4 U	7.2 U
Copper	1.1 U	1.4 U	6.7 J	23.7 J	46.1	9 U
Iron	1.9 U	8.4 J	520 J	16900	13900 J	9320
Lead	1.5 UL	1.4 U	1 UL	63	1.8 L	35.8
Magnesium	13.5 U	11.1 U	1340 J	6790	1400 J	4620 L
Manganese	0.6 U	1 U	17.7 J	223	78.1 J	489
Mercury	0.2 UL	0.2 UL	0.1 U	0.1 U	0.1 U	0.45 R
Nickel	5.2 U	4.3 U	16 U	16 U	16 U	28.8 U
Potassium	391 U	381 U	1570 U	4480 J	1880 J	2830 U
Selenium	2.4 U	2.6 U	1 U	1.8 L	1 U	1.8 UL
Silver	1.7 U	2 UL	4 U	4 U	4 U	7.2 U
Sodium	16.5 J	9.2 U	6250 J	28200	6260 J	13300
Thallium	5.7 U	4 UL	1 UL	1 UL	1 UL	1.8 UL
Vanadium	1.8 U	1.4 U	4 U	8.2 J	4 U	7.2 U
Zinc	4.5 J	3.8 J	120	257	442	60.1 J
Cyanide	5 U	5 U	10 U	10 U	10 U	4.5 UJ

FIELD QA/QC SAMPLES
FIELD BLANKS
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBLGDS-01	FBLGDS-02	FBLGDS-03	FBLGDS-04	FBDIDS-01	FBDIDS-02
Date sampled	07/24/94	08/23/94	09/26/94	10/12/94	07/24/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	39.1 J	18 U	19.5 J	11 U	26.6 J	18 U
Antimony	37 UL	37 UL	12.4 UL	15 J	37 U	37 UL
Arsenic	1 U	1 U	2.6 U	2.3 U	1 UL	1 U
Barium	2 U	2 U	0.5 U	1 U	2 U	2 U
Beryllium	1 U	1 U	0.2 U	1 U	1 U	1 U
Cadmium	5 U	5 UL	2.3 U	1.5 UL	5 U	5 UL
Calcium	410 J	10.1 J	34.6 J	40.8 J	456 J	25.6 J
Chromium	3 U	3 U	1.5 U	1.8 U	3 U	3 U
Cobalt	4 U	4 U	2.1 U	1.9 U	4 U	4 U
Copper	5 U	5 U	1.1 U	1.4 U	5 U	5 U
Iron	30.9 J	3 U	1.9 U	2.7 J	33.7 J	3 U
Lead	1 U	1 UL	1.5 UL	1.4 U	1 U	1 UL
Magnesium	81.1 J	47 U	13.5 U	11.1 U	62.1 J	47 U
Manganese	3.4 J	1 U	1.2 J	1 U	3.8 J	1 U
Mercury	0.1 U	NA	0.2 UL	0.2 UL	0.1 U	NA
Nickel	16 U	16 U	5.2 U	4.3 U	16 U	16 U
Potassium	1570 U	1570 U	391 U	381 U	1570 U	1570 U
Selenium	1 U	1 U	2.4 U	2.6 UL	1 U	1 U
Silver	4 U	4 U	1.7 U	2 U	4 U	4 U
Sodium	865 J	137 J	32.1 J	65.6 J	908 J	91.9 J
Thallium	1 U	1 UL	5.7 U	4 UL	1 U	1 UL
Vanadium	4 U	4 U	1.8 U	1.4 U	4 U	4 U
Zinc	19 J	3 UL	4.3 J	4.3 J	16.6 J	3 UL

FIELD QA/QC SAMPLES
FIELD BLANKS
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	FBDIDS-03	FBDIDS-04	FBATVDS-02	FBRIGDS-01	FBRIGDS-02
Date sampled	09/26/94	10/12/94	08/23/94	07/24/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	11.5 U	11 U	18 U	94.8 J	18 U
Antimony	12.4 UL	12.2 U	37 UL	37 U	37 UL
Arsenic	2.6 U	2.3 U	1 U	1 UL	1 U
Barium	0.5 U	1 U	11.7 J	18.3 J	19 J
Beryllium	0.2 U	1 U	1 U	1 U	1 U
Cadmium	2.3 U	1.5 UL	5 UL	5 U	5 UL
Calcium	45.2 J	48.5 J	27800 J	22400	29600 J
Chromium	1.5 U	1.8 U	3 U	3.3 J	3 U
Cobalt	2.1 U	1.9 U	4 U	4 U	4 U
Copper	1.1 U	1.4 U	6.1 J	9.7 J	12.5 J
Iron	1.9 U	13.9 J	3 U	56.6 J	3.2 J
Lead	1.5 UL	1.4 U	1 UL	1 U	1 UL
Magnesium	13.5 U	11.1 U	1370 J	1950 J	1420 J
Manganese	1.1 J	1 U	35 J	7.7 J	11.2 J
Mercury	0.2 UL	0.2 UL	NA	0.1 U	NA
Nickel	5.2 U	4.3 U	16 U	16 U	16 U
Potassium	391 U	381 U	1570 U	1950 J	1570 U
Selenium	2.4 U	2.6 UL	1 U	1 U	1 U
Silver	1.7 U	2 U	4 U	4 U	4 U
Sodium	49.8 J	55.2 J	6980 J	17500	6790 J
Thallium	5.7 U	4 UL	1 UL	5 UL	1 UL
Vanadium	1.8 U	1.4 U	4 U	4 U	4 U
Zinc	5 J	8 J	3 UL	37.2	3 UL

FIELD BLANK ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	FBMUD-01	FBATV-02	FBRIG-01	FBRIG-02	FBD1-01	FBD1-02	FBD1-03	FBD1-04	FBLG-01	FBLG-02	FBLG-03	FBLG-04
	Date Sampled:	8/18/94	8/23/94	7/25/94	8/23/94	7/25/94	8/23/94	9/25/94	10/12/94	7/25/94	8/23/94	9/25/94	10/12/94
	Units:												
pH		9.32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate/Nitrite	MG/L	NA	1 U	NA	1 U	NA	1 U	0.06	0.06	NA	1 U	0.02 U	0.02 U
Hardness	MG/L	NA	5 U	260	86	1 U	5 U	0.1 U	NA	1 U	80	0.1 U	NA
TPH	MG/L	NA	NA	NA	NA	NA	NA	NA	0.2 U	NA	NA	NA	0.2 U
TDS	MG/L	NA	10 U	227	910	89	130	10 U	10 U	66	130	10 U	10 U
TSS	MG/L	NA	5 U	149	5 U	5	5 U	4 U	4 U	4 U	35	4 U	10
TOC	MG/L	NA	1 U	5.37	1 U	0.67	1 U	NA	NA	0.5 U	1 U	NA	NA

APPENDIX I
DATA AND FREQUENCY SUMMARY AND ENGINEERING PARAMETERS

Appendix I Table of Contents

I.1 Data and Frequency Summary
I.2 Engineering Parameters

APPENDIX I.1
DATA AND FREQUENCY SUMMARY

TABLE 1
DATA QUALIFIER DEFINITIONS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

ORGANIC

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

UL = Not detected. Quantitation limit is probably higher.

INORGANIC

U = The analyte was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J = The associated value is an estimated quantity.

R = The data are unusable; the analyte may or may not be present.

UJ = The analyte was analyzed for, but was not detected. The associated detection limit is an estimate and may be inaccurate or imprecise.

K = The analyte is present. The reported value may be biased high. The actual value is expected to be lower than reported.

L = The analyte is present. The reported values may be biased low. The actual value is expected to be higher than reported.

UL = The analyte was not detected, and the reported quantitation limit is probably higher than reported.

MISCELLANEOUS

NA = Not analyzed by lab.

TABLE 2
FREQUENCY OF DETECTION SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS01	BGS02	BGS03	BGS04	BGS05	BGS06
Date sampled	07/08/94	07/08/94	07/08/94	07/08/94	07/08/94	07/08/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	1960.0	4590	6320	8550	4530	3210
Antimony	8.4 UL	8.3 UL	8.8 UL	8.9 UL	8.7 UL	9.2 L
Arsenic	1.9 J	1.2 J	1.5 J	3.4	3.6	2 J
Barium	12.7 J	22 J	53.1	62	24.8 J	19.1 J
Beryllium	0.2 U	0.23 J	0.51 J	0.52 J	0.28 J	0.23 J
Cadmium	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.1 U
Calcium	268.0 J	215 J	937 J	7820	1420	388 J
Chromium	4.3	5.5	5.4	13.6	9.4	5.3
Cobalt	0.9 U	1.6 J	1.5 J	4.2 J	1.2 J	2.3 J
Copper	1.1 U	1.7 J	1.5 J	24.4	2 J	1.1 U
Iron	3310.0	4160	4670	12400	7090	4910
Lead	6.9	6.4	15.3	22.7	9.9	9.8
Magnesium	175.0 J	236 J	290 J	1060 J	475 J	262 J
Manganese	8.3	65.8	491	298	73.4	85.9
Mercury	0.1 U	0.05 U	0.06 U	0.06 U	0.06 U	0.05 U
Nickel	3.6 U	4.5 J	4.9 J	9 J	4.8 J	5.6 J
Potassium	355.0 U	353 U	372 U	828 J	531 J	354 U
Selenium	0.4 J	0.32 J	0.46 J	0.27 J	0.24 U	0.32 J
Silver	0.9 U	0.9 U	0.95 U	0.96 U	0.94 U	0.9 U
Sodium	43.2 J	32.3 J	40.1 J	115 J	40.6 J	22.7 J
Thallium	0.2 U	0.22 U	0.24 U	0.24 U	0.24 U	0.23 U
Vanadium	7.4 J	10.8 J	10.7 J	19.3	15.3	10.1 J
Zinc	5.7	8.6	13	37.5	14.9	9.8
Cyanide	0.6 U	0.56 U	0.59 U	0.6 U	0.59 U	0.55 U

TABLE 2
FREQUENCY OF DETECTION SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS07	BGS08	BGS09	BGS10	BGS11	BGS12
Date sampled	07/08/94	07/08/94	07/08/94	07/19/94	07/19/94	07/20/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	6030	6530	4960	4980	4370	3940
Antimony	8.5 UL	9.4 UL	8.4 UL	8.6 UL	9.5 UL	8.6 UL
Arsenic	5.8	1.4 J	1.5 J	1.2 J	2.9	0.46 L
Barium	17.8 J	20 J	20.4 J	31.5 J	35 J	5.1 J
Beryllium	0.4 J	0.25 U	0.31 J	0.42 J	0.32 J	0.23 U
Cadmium	1.1 U	1.3 U	1.1 U	1.2 U	1.3 U	1.2 U
Calcium	259 J	269 J	110 J	204 J	1610 J	39.4 J
Chromium	11.8	6.9	5.1	6.8	9.8	4.3
Cobalt	2.2 J	1.1 J	1.6 J	6 J	2.5 J	1.1 J
Copper	2.4 J	2 J	1.1 U	1.2 UL	3.7 J	1.2 U
Iron	11100	5670	3690	3580	7010	3150
Lead	43.1	14.7	12	14.3 J	14.2 J	7.6
Magnesium	489 J	329 J	319 J	297 J	487 J	159 J
Manganese	29.9	40	26.5	169 J	191 J	7.6 L
Mercury	0.05 U	0.06 U	0.05 U	0.06 U	0.06 U	0.06 UL
Nickel	6.2 J	7 J	4.2 J	6.6 J	4.1 U	3.7 U
Potassium	360 U	398 U	355 U	367 U	515 J	367 U
Selenium	0.32 J	0.55 L	0.38 L	0.23 U	0.27 J	0.23 U
Silver	0.92 U	1 U	0.9 U	1 J	1 U	0.93 U
Sodium	37.8 J	45.4 J	34 J	46.7 J	34.7 J	13.9 J
Thallium	0.23 U	0.25 U	0.23 U	0.23 U	0.26 U	0.23 U
Vanadium	20.4	14.8	10.1 J	11.2 J	15	11 J
Zinc	18	13.4	10.9	17.2	18.6	5.1 Z
Cyanide	0.57 U	0.63 U	0.56 U	0.58 U	0.64 U	0.58 U

TABLE 2
FREQUENCY OF DETECTION SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS13	BGS14	BGS15	BGS16	BGS17	BGS18
Date sampled	07/20/94	07/19/94	07/20/94	07/19/94	07/20/94	07/20/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	2540	4530	6180	4630	7500	5630
Antimony	8.5 UL	9.2 UL	9.3 UL	8.7 UL	9.4 UL	9.3 UL
Arsenic	0.65 L	0.84 J	0.75 L	0.53 L	2.5 L	1.6 L
Barium	4.2 J	24.4 J	20.2 J	15.1 J	28.1 J	34.3 J
Beryllium	0.23 U	0.25 U	0.42 J	0.23 U	0.6 J	0.51 J
Cadmium	1.1 U	1.2 J	1.3 U	1.2 U	1.3 U	1.3 U
Calcium	67.3 J	696 J	229 J	346 J	447 J	727 J
Chromium	3.2	5.4	5.7	5.1	9.7	8.7
Cobalt	0.91 U	2 J	3.6 J	1.6 J	4.6 J	6.2 J
Copper	1.1 U	2.5 J	1.6 J	1.7 J	1.9 J	1.9 J
Iron	1440	4400	5260	3550	9210	7960
Lead	8.4	14.2 J	11.3	8.7	14.3	12.7
Magnesium	61.5 J	233 J	229 J	245 J	416 J	372 J
Manganese	10.3 L	118 J	45.2 L	39.2 L	92.3 L	254 L
Mercury	0.06 UL	0.06 U	0.06 UL	0.06 UL	0.06 UL	0.06 UL
Nickel	3.7 U	6 J	4 U	3.8 U	7.7 K	4 U
Potassium	359 U	390 U	396 U	368 U	399 U	535 J
Selenium	0.23 U	0.25 U	0.25 U	0.24 U	0.26 U	0.25 U
Silver	0.91 U	0.99 U	1 U	0.94 U	1 U	1 U
Sodium	40.1 J	31.9 J	24 J	32.1 J	25 J	26.1 J
Thallium	0.23 U	0.25 U	0.25 U	0.24 U	0.26 U	0.25 U
Vanadium	7.6 J	11 J	12.7	10.8 J	20.2	17.3
Zinc	3.2 KJ	11.3	11.7	8.4	17.2	15.6
Cyanide	0.57 U	0.61 U	0.63 U	0.6 U	0.64 U	0.63 U

TABLE 2
FREQUENCY OF DETECTION SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS18D	BGS19	BGS20	BGS20D	BGS21	BGS22
Date sampled	07/20/94	07/20/94	07/21/94	07/21/94	07/21/94	07/21/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	5780	5760	13000	12900	15600	10600
Antimony	9.4 UL	9 UL	10.3 UL	10.4 UL	8.9 UL	9.3 UL
Arsenic	2.5 L	4.2	2.9	2.6 J	63.9	1.8 J
Barium	35.1 J	17.4 J	76.6	75.7	19.5 J	57.0
Beryllium	0.59 J	0.42 J	0.64 J	0.63 J	0.24 U	0.57 J
Cadmium	1.3 U	1.2 U	1.4 U	1.4 U	1.2 U	1.3 U
Calcium	670 J	908 J	2730	2940	97.0 J	1330
Chromium	8.3	13.4	14.3	13.7	13.1	9.7
Cobalt	6.7 J	4.9 J	4.1 J	4.0 J	1.6 J	3.0 J
Copper	2 J	2.3 J	3.9 J	3.9 J	2.7 J	3.4 J
Iron	7510	17200	11200	10600	6820	6780
Lead	13.3	12.9	16.7 L	14.8 L	13.9 L	25.3 L
Magnesium	385 J	492 J	803 J	818 J	456 J	586 J
Manganese	273 L	97.7 L	332	340	9.5	157
Mercury	0.06 UL	0.06 UL	0.06 UL	0.07 UL	0.06 UL	0.06 UL
Nickel	4.8 K	6.2 K	6.4 J	11.9	7.2 J	6.5 J
Potassium	400 U	429 J	725 J	442 U	377 U	519 J
Selenium	0.25 U	0.24 U	0.43 J	0.43 J	0.44 J	0.39 J
Silver	1 U	0.98 U	1.1 U	1.1 U	2.1 J	1.0 U
Sodium	24.4 J	17.4 J	21.2 J	26.4 J	51.0 J	32.2 J
Thallium	0.25 U	0.24 U	0.28 U	0.28 U	0.24 U	0.25 U
Vanadium	16.4	20.8	27.8	26.9	25.4	20.4
Zinc	16.3	17.9	25.5	25.2	8.5	22.7
Cyanide	0.64 U	0.61 U	0.70 U	0.70 U	0.58 U	0.62 U

TABLE 2
FREQUENCY OF DETECTION SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS23	BGS24	BGS24D	BGS25	BGS26	BGS27
Date sampled	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	3110	4380	4440	5010	5810	12000
Antimony	8.5 UL	8.9 UL	8.9 UL	8.3 UL	8.7 UL	10.6 UL
Arsenic	1.1 J	1.3 J	1.5 J	1.4 J	1.1 J	2.7 J
Barium	10.8 J	20.9 J	22.9 J	32.4 J	19 J	23.5 J
Beryllium	0.23 U	0.28 J	0.33 J	0.38 J	0.24 U	0.32 J
Cadmium	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.4 U
Calcium	133 J	469 J	575 J	148 J	105 J	346 J
Chromium	3.4	4.3	5.4	6.1	5.3	14.1
Cobalt	1.0 J	1.2 J	2.7 J	3.5 J	1.0 J	1.9 J
Copper	1.1 U	1.5 J	1.4 J	1.3 J	1.9 J	3.7 J
Iron	2160	3270	3940	6490	3820	19900
Lead	10 L	12.6 L	11.3 L	11.8 L	10.4 L	14.5 L
Magnesium	181 J	287 J	303 J	290 J	320 J	401 J
Manganese	19.0	84.7	87.6	72.9	15.5	28.7
Mercury	0.05 UL	0.06 UL	0.06 UL	0.05 UL	0.06 UL	0.07 UL
Nickel	5.7 J	5.1 J	5.4 J	5.7 J	5.4 J	4.6 J
Potassium	359 U	377 U	377 U	353 U	370 U	449 U
Selenium	0.23 U	0.3 J	0.3 J	0.22 U	0.30 J	0.36 J
Silver	0.91 U	0.96 U	0.96 U	0.90 U	0.94 U	1.1 U
Sodium	22.7 J	15.8 J	18.6 J	29.6 J	43.0 J	33.0 J
Thallium	0.23 U	0.24 U	0.24 U	0.22 U	0.24 U	0.29 U
Vanadium	8.7 J	9.8 J	10.0 J	10.7 J	12.5	29.8
Zinc	5.7	11.0	12.1	11.0	8.2	15.5
Cyanide	0.57 U	0.6 U	0.59 U	0.56 U	0.59 U	0.71 U

TABLE 2
FREQUENCY OF DETECTION SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS28	BGS29	BGS30	BGS31	BGS33	BGS34
Date sampled	07/21/94	07/21/94	07/21/94	07/21/94	07/22/94	07/23/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	19200	4410	9210	4500	8440	4790
Antimony	9.2 UL	8.5 UL	8.6 UL	8.7 UL	8.3 R	8.7 UL
Arsenic	2.9	1.2 J	2.4	1.1 J	1.4 J	3.7
Barium	80.2	15.5 J	15.8 J	23.7 J	30.2 J	25 J
Beryllium	0.63 J	0.23 U	0.23 U	0.30 J	0.37 J	0.42 J
Cadmium	1.2 U	1.1 U	1.5	1.2 U	1.1 U	1.2 UL
Calcium	854 J	168 J	347 J	1120 J	596 J	1720
Chromium	17.5	4.5	9.6	4.7	8.8	10
Cobalt	3.5 J	1.4 J	1.7 J	1.8 J	2.5 J	2.6 J
Copper	5.3 J	1.1 U	2.0 J	1.2 J	2.4 J	2.6 J
Iron	13000	3400	7830	3150	7410	7060
Lead	38.7 L	8.8 L	13 L	7.3 L	9.3	7.3 L
Magnesium	1070 J	257 J	394 J	324 J	493 J	840 J
Manganese	126	28.6	13.0	72.8	89.3	105
Mercury	0.06 UL	0.06 UL	0.06 UL	0.06 UL	0.05 U	0.06 UL
Nickel	10.7	5.1 J	5.5 J	5.1 J	8.8 K	3.7 U
Potassium	457 J	360 U	416 J	371 U	350 U	738 J
Selenium	0.31 J	0.23 U	0.36 J	0.24 U	0.22 UL	0.23 UL
Silver	1.00 U	0.92 U	0.92 U	0.94 U	0.89 U	0.94 U
Sodium	37.3 J	18.7 J	35.7 J	32.7 J	36.2 J	46.7 J
Thallium	0.25 U	0.23 U	0.23 U	0.24 U	0.22 U	0.23 U
Vanadium	34.7	9.8 J	21.2	8.9 J	17.1	12.2
Zinc	48.4	16	12.9	9.7	12.8 J	18.2
Cyanide	0.61 U	0.57 U	0.58 U	0.59 U	0.55 U	0.59 U

TABLE 2
FREQUENCY OF DETECTION SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS34D	BGS35	BGS36	BGS37	BGS38	BGS39
Date sampled	07/23/94	07/23/94	07/22/94	07/23/94	07/23/94	07/23/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	8330	12000	2850	6250	6880	4660
Antimony	8.8 UL	11 L	8.1 R	8.4 UL	8.6 UL	8 UL
Arsenic	4.1	2.1 K	0.68 J	1.6 K	1.7 K	0.83 K
Barium	30 J	47.9 J	11.8 J	34 J	76.3	18.4 J
Beryllium	0.49 J	0.55 J	0.22 U	0.56 J	0.93 J	0.3 J
Cadmium	1.2 UL	1.2 UL	1.3 K	1.1 UL	1.2 UL	1.1 UL
Calcium	1740	800 J	135 J	432 J	1430	285 J
Chromium	18.3	10.9	2.6	7.9	7	5.1
Cobalt	3.4 J	3.6 J	1.1 J	2.3 J	4 J	2.7 J
Copper	4.2 J	3.7 J	1.1 U	3.3 J	5 J	1.6 J
Iron	12500	6310	1910	5190	6300	2700
Lead	7.4 L	16.5 L	16.5	8.7 L	9.9 L	6.8 L
Magnesium	1610	914 J	161 J	482 J	594 J	307 J
Manganese	70.6	206	20.3	252	413	54.9
Mercury	0.05 UL	0.06 UL	0.05 U	0.05 UL	0.06 UL	0.05 UL
Nickel	8.6 J	6.9 J	5.5 K	7.5 J	5.9 J	5.2 J
Potassium	1640 J	724 J	345 U	358 U	593 J	338 U
Selenium	0.24 UL	0.4 L	0.22 UL	0.27 L	0.23 UL	0.26 L
Silver	0.95 U	0.96 U	0.88 U	0.91 U	0.93 U	0.86 U
Sodium	63.4 J	84.3 J	50 J	37.6 J	52 J	69.3 J
Thallium	0.24 U	0.25 U	0.22 U	0.23 U	0.23 U	0.22 U
Vanadium	18.9	21.2	6.1 J	14.4	12	8.7 J
Zinc	24.1	21.3	5.9 J	15.5	23.8	12.1
Cyanide	0.59 U	0.62 U	0.55 U	0.56 U	0.58 U	0.54 U

TABLE 2
FREQUENCY OF DETECTION SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS39D	BGS40
Date sampled	07/23/94	07/23/94
Depth	0-6"	0-6"
Units	MG/KG	MG/KG
Aluminum	4130	3640
Antimony	8.3 UL	8.1 UL
Arsenic	0.81 J	1.2 K
Barium	17 J	18.5 J
Beryllium	0.27 J	0.22 U
Cadmium	1.1 UL	1.1 UL
Calcium	233 J	467 J
Chromium	5.4	5.2
Cobalt	1.8 J	1 J
Copper	1.5 J	1.7 J
Iron	2660	3510
Lead	8.6	7.7 L
Magnesium	280 J	347 J
Manganese	36.1	48
Mercury	0.05 UL	0.06 UL
Nickel	3.8 J	4.3 J
Potassium	611 J	398 J
Selenium	0.27 L	0.22 UL
Silver	0.9 U	0.88 U
Sodium	35 J	68.7 J
Thallium	0.22 U	0.22 U
Vanadium	9.4 J	8.8 J
Zinc	11.5	9.8
Cyanide	0.56 U	0.55 U

TABLE 2
FREQUENCY OF DETECTION SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	1960	19200	BGS28	44/44
Antimony	8 UL	10.6 UL	9.2 L	11 L	BGS35	2/42
Arsenic	NA	NA	0.46 L	63.9	BGS21	44/44
Barium	NA	NA	4.2 J	80.2	BGS28	44/44
Beryllium	0.22 U	0.25 U	0.23 J	0.93 J	BGS38	31/44
Cadmium	1.1 U	1.4 U	1.2 J	1.5	BGS30	3/44
Calcium	NA	NA	39.4 J	7820	BGS04	44/44
Chromium	NA	NA	2.6	18.3	BGS34D	44/44
Cobalt	0.9 U	0.91 U	1 J	6.7 J	BGS18D	42/44
Copper	1.1 U	1.2 UL	1.2 J	24.4	BGS04	35/44
Iron	NA	NA	1440	19900	BGS27	44/44
Lead	NA	NA	6.4	43.1	BGS07	44/44
Magnesium	NA	NA	61.5 J	1610	BGS34D	44/44
Manganese	NA	NA	7.6 L	491	BGS03	44/44
Mercury	0.05 UL	0.07 UL	ND	ND		0/44
Nickel	3.6 U	4.1 U	3.8 J	11.9	BGS20D	36/44
Potassium	338 U	449 U	398 J	1640 J	BGS34D	15/44
Selenium	0.22 U	0.26 U	0.26 L	0.55 L	BGS08	23/44
Silver	0.86 U	1.1 U	1 J	2.1 J	BGS21	2/44
Sodium	NA	NA	13.9 J	115 J	BGS04	44/44
Thallium	0.22 U	0.29 U	ND	ND		0/44
Vanadium	NA	NA	6.1 J	34.7	BGS28	44/44
Zinc	NA	NA	3.2 KJ	48.4	BGS28	44/44
Cyanide	0.54 U	0.71 U	ND	ND		0/44

TABLE 2
STATISTICAL SUMMARY
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	6560.45	3637.74	7483.98	8.67	0.49	7539.46
Antimony	4.71	1.27	5.04	1.53	0.19	4.94
Arsenic	3.33	9.41	5.72	0.57	0.81	3.24
Barium	29.66	19.46	34.60	3.20	0.63	36.77
Beryllium	0.35	0.20	0.40	-1.25	0.66	0.44
Cadmium	0.65	0.20	0.70	-0.46	0.22	0.69
Calcium	837.04	1269.04	1159.21	6.11	1.10	1306.55
Chromium	8.06	3.93	9.06	1.98	0.48	9.30
Cobalt	2.57	1.53	2.96	0.76	0.63	3.22
Copper	2.61	3.59	3.52	0.60	0.79	3.24
Iron	6481.36	4024.03	7502.95	8.61	0.59	7791.69
Lead	13.19	7.32	15.05	2.48	0.42	14.74
Magnesium	443.85	295.83	518.95	5.92	0.60	534.13
Manganese	115.88	118.23	145.89	4.22	1.12	203.06
Mercury	0.03	0.00	0.03	-3.55	0.09	0.03
Nickel	5.45	2.33	6.04	1.59	0.51	6.48
Potassium	342.47	280.16	413.59	5.63	0.60	399.01
Selenium	0.24	0.13	0.27	-1.58	0.56	0.29
Silver	0.52	0.26	0.59	-0.69	0.25	0.55
Sodium	38.38	19.01	43.20	3.55	0.44	43.58
Thallium	0.12	0.01	0.12	-2.12	0.07	0.12
Vanadium	14.96	6.67	16.66	2.62	0.42	16.89
Zinc	15.04	8.37	17.16	2.58	0.52	17.76
Cyanide	0.30	0.02	0.30	-1.21	0.07	0.30

TABLE 3
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 1
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS01	BGS04	BGS31	BGS35	BGS40
Date sampled	07/08/94	07/08/94	07/21/94	07/23/94	07/23/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	1960.0	8550	4500	12000	3640
Antimony	8.4 UL	8.9 UL	8.7 UL	11 L	8.1 UL
Arsenic	1.9 J	3.4	1.1 J	2.1 K	1.2 K
Barium	12.7 J	62	23.7 J	47.9 J	18.5 J
Beryllium	0.2 U	0.52 J	0.30 J	0.55 J	0.22 U
Cadmium	1.1 U	1.2 U	1.2 U	1.2 UL	1.1 UL
Calcium	268.0 J	7820	1120 J	800 J	467 J
Chromium	4.3	13.6	4.7	10.9	5.2
Cobalt	0.9 U	4.2 J	1.8 J	3.6 J	1 J
Copper	1.1 U	24.4	1.2 J	3.7 J	1.7 J
Iron	3310.0	12400	3150	6310	3510
Lead	6.9	22.7	7.3 L	16.5 L	7.7 L
Magnesium	175.0 J	1060 J	324 J	914 J	347 J
Manganese	8.3	298	72.8	206	48
Mercury	0.1 U	0.06 U	0.06 UL	0.06 UL	0.06 UL
Nickel	3.6 U	9 J	5.1 J	6.9 J	4.3 J
Potassium	355.0 U	828 J	371 U	724 J	398 J
Selenium	0.4 J	0.27 J	0.24 U	0.4 L	0.22 UL
Silver	0.9 U	0.96 U	0.94 U	0.96 U	0.88 U
Sodium	43.2 J	115 J	32.7 J	84.3 J	68.7 J
Thallium	0.2 U	0.24 U	0.24 U	0.25 U	0.22 U
Vanadium	7.4 J	19.3	8.9 J	21.2	8.8 J
Zinc	5.7	37.5	9.7	21.3	9.8
Cyanide	0.6 U	0.6 U	0.59 U	0.62 U	0.55 U

TABLE 3
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 1
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	1960	12000	BGS35	5/5
Antimony	8.1 UL	8.9 UL	11 L	11 L	BGS35	1/5
Arsenic	NA	NA	1.1 J	3.4	BGS04	5/5
Barium	NA	NA	12.7 J	62	BGS04	5/5
Beryllium	0.22 U	0.23 U	0.3 J	0.55 J	BGS35	3/5
Cadmium	1.1 UL	1.2 U	ND	ND		0/5
Calcium	NA	NA	268 J	7820	BGS04	5/5
Chromium	NA	NA	4.3	13.6	BGS04	5/5
Cobalt	0.9 U	0.9 U	1 J	4.2 J	BGS04	4/5
Copper	1.1 U	1.1 U	1.2 J	24.4	BGS04	4/5
Iron	NA	NA	3150	12400	BGS04	5/5
Lead	NA	NA	6.9	22.7	BGS04	5/5
Magnesium	NA	NA	175 J	1060 J	BGS04	5/5
Manganese	NA	NA	8.3	298	BGS04	5/5
Mercury	0.06 UL	0.06 U	ND	ND		0/5
Nickel	3.6 U	3.6 U	4.3 J	9 J	BGS04	4/5
Potassium	355 U	371 U	398 J	828 J	BGS04	3/5
Selenium	0.22 UL	0.24 U	0.27 J	0.4 L	BGS35	3/5
Silver	0.88 U	0.96 U	ND	ND		0/5
Sodium	NA	NA	32.7 J	115 J	BGS04	5/5
Thallium	0.22 U	0.25 U	ND	ND		0/5
Vanadium	NA	NA	7.4 J	21.2	BGS35	5/5
Zinc	NA	NA	5.7	37.5	BGS04	5/5
Cyanide	0.55 U	0.62 U	ND	ND		0/5

TABLE 3
STATISTICAL SUMMARY
SOIL ASSOCIATION 1
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	6130.00	4079.19	10019.34	8.53	0.71	27844.87
Antimony	5.61	3.02	8.49	1.64	0.43	10.56
Arsenic	1.94	0.92	2.82	0.58	0.46	3.88
Barium	32.96	21.05	53.03	3.32	0.66	115.75
Beryllium	0.32	0.21	0.52	-1.37	0.79	1.71
Cadmium	0.58	0.03	0.61	-0.55	0.05	0.61
Calcium	2095.00	3216.81	5162.10	6.88	1.28	215497.99
Chromium	7.74	4.24	11.78	1.93	0.53	18.93
Cobalt	2.21	1.63	3.76	0.50	0.93	24.53
Copper	6.31	10.18	16.02	0.92	1.44	1211.58
Iron	5736.00	3945.45	9497.83	8.50	0.59	15376.16
Lead	12.22	7.09	18.98	2.38	0.55	30.80
Magnesium	564.00	395.13	940.74	6.12	0.76	2821.15
Manganese	126.62	121.19	242.17	4.26	1.41	28970.05
Mercury	0.03	0.00	0.03	-3.51	0.00	0.03
Nickel	5.42	2.71	8.01	1.56	0.61	17.67
Potassium	462.60	301.70	750.26	5.94	0.73	2166.94
Selenium	0.26	0.14	0.39	-1.50	0.62	0.84
Silver	0.46	0.02	0.48	-0.77	0.04	0.48
Sodium	68.78	32.91	100.16	4.13	0.51	162.91
Thallium	0.12	0.01	0.12	-2.14	0.05	0.12
Vanadium	13.12	6.57	19.38	2.48	0.49	27.70
Zinc	16.80	12.96	29.15	2.60	0.74	79.84
Cyanide	0.29	0.01	0.31	-1.23	0.05	0.31

TABLE 4
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 2
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS05	BGS18	BGS18D	BGS19	BGS33	BGS34
Date sampled	07/08/94	07/20/94	07/20/94	07/20/94	07/22/94	07/23/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	4530	5630	5780	5760	8440	4790
Antimony	8.7 UL	9.3 UL	9.4 UL	9 UL	8.3 R	8.7 UL
Arsenic	3.6	1.6 L	2.5 L	4.2	1.4 J	3.7
Barium	24.8 J	34.3 J	35.1 J	17.4 J	30.2 J	25 J
Beryllium	0.28 J	0.51 J	0.59 J	0.42 J	0.37 J	0.42 J
Cadmium	1.2 U	1.3 U	1.3 U	1.2 U	1.1 U	1.2 UL
Calcium	1420	727 J	670 J	908 J	596 J	1720
Chromium	9.4	8.7	8.3	13.4	8.8	10
Cobalt	1.2 J	6.2 J	6.7 J	4.9 J	2.5 J	2.6 J
Copper	2 J	1.9 J	2 J	2.3 J	2.4 J	2.6 J
Iron	7090	7960	7510	17200	7410	7060
Lead	9.9	12.7	13.3	12.9	9.3	7.3 L
Magnesium	475 J	372 J	385 J	492 J	493 J	840 J
Manganese	73.4	254 L	273 L	97.7 L	89.3	105
Mercury	0.06 U	0.06 UL	0.06 UL	0.06 UL	0.05 U	0.06 UL
Nickel	4.8 J	4 U	4.8 K	6.2 K	8.8 K	3.7 U
Potassium	531 J	535 J	400 U	429 J	350 U	738 J
Selenium	0.24 U	0.25 U	0.25 U	0.24 U	0.22 UL	0.23 UL
Silver	0.94 U	1 U	1 U	0.98 U	0.89 U	0.94 U
Sodium	40.6 J	26.1 J	24.4 J	17.4 J	36.2 J	46.7 J
Thallium	0.24 U	0.25 U	0.25 U	0.24 U	0.22 U	0.23 U
Vanadium	15.3	17.3	16.4	20.8	17.1	12.2
Zinc	14.9	15.6	16.3	17.9	12.8 J	18.2
Cyanide	0.59 U	0.63 U	0.64 U	0.61 U	0.55 U	0.59 U

TABLE 4
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 2
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS34D	BGS36	BGS37	BGS38	BGS39	BGS39D
Date sampled	07/23/94	07/22/94	07/23/94	07/23/94	07/23/94	07/23/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	8330	2850	6250	6880	4660	4130
Antimony	8.8 UL	8.1 R	8.4 UL	8.6 UL	8 UL	8.3 UL
Arsenic	4.1	0.68 J	1.6 K	1.7 K	0.83 K	0.81 J
Barium	30 J	11.8 J	34 J	76.3	18.4 J	17 J
Beryllium	0.49 J	0.22 U	0.56 J	0.93 J	0.3 J	0.27 J
Cadmium	1.2 UL	1.3 K	1.1 UL	1.2 UL	1.1 UL	1.1 UL
Calcium	1740	135 J	432 J	1430	285 J	233 J
Chromium	18.3	2.6	7.9	7	5.1	5.4
Cobalt	3.4 J	1.1 J	2.3 J	4 J	2.7 J	1.8 J
Copper	4.2 J	1.1 U	3.3 J	5 J	1.6 J	1.5 J
Iron	12500	1910	5190	6300	2700	2660
Lead	7.4 L	16.5	8.7 L	9.9 L	6.8 L	8.6
Magnesium	1610	161 J	482 J	594 J	307 J	280 J
Manganese	70.6	20.3	252	413	54.9	36.1
Mercury	0.05 UL	0.05 U	0.05 UL	0.06 UL	0.05 UL	0.05 UL
Nickel	8.6 J	5.5 K	7.5 J	5.9 J	5.2 J	3.8 J
Potassium	1640 J	345 U	358 U	593 J	338 U	611 J
Selenium	0.24 UL	0.22 UL	0.27 L	0.23 UL	0.26 L	0.27 L
Silver	0.95 U	0.88 U	0.91 U	0.93 U	0.86 U	0.9 U
Sodium	63.4 J	50 J	37.6 J	52 J	69.3 J	35 J
Thallium	0.24 U	0.22 U	0.23 U	0.23 U	0.22 U	0.22 U
Vanadium	18.9	6.1 J	14.4	12	8.7 J	9.4 J
Zinc	24.1	5.9 J	15.5	23.8	12.1	11.5
Cyanide	0.59 U	0.55 U	0.56 U	0.58 U	0.54 U	0.56 U

TABLE 4
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 2
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	2850	8440	BGS33	12/12
Antimony	8 UL	9.4 UL	ND	ND		0/10
Arsenic	NA	NA	0.68 J	4.2	BGS19	12/12
Barium	NA	NA	11.8 J	76.3	BGS38	12/12
Beryllium	0.22 U	0.22 U	0.27 J	0.93 J	BGS38	11/12
Cadmium	1.1 UL	1.3 U	1.3 K	1.3 K	BGS36	1/12
Calcium	NA	NA	135 J	1740	BGS34D	12/12
Chromium	NA	NA	2.6	18.3	BGS34D	12/12
Cobalt	NA	NA	1.1 J	6.7 J	BGS18D	12/12
Copper	1.1 U	1.1 U	1.5 J	5 J	BGS38	11/12
Iron	NA	NA	1910	17200	BGS19	12/12
Lead	NA	NA	6.8 L	16.5	BGS36	12/12
Magnesium	NA	NA	161 J	1610	BGS34D	12/12
Manganese	NA	NA	20.3	413	BGS38	12/12
Mercury	0.05 UL	0.06 U	ND	ND		0/12
Nickel	3.7 U	4 U	3.8 J	8.8 K	BGS33	10/12
Potassium	338 U	400 U	429 J	1640 J	BGS34D	7/12
Selenium	0.22 UL	0.25 U	0.26 L	0.27 L	BGS39D	3/12
Silver	0.86 U	1 U	ND	ND		0/12
Sodium	NA	NA	17.4 J	69.3 J	BGS39	12/12
Thallium	0.22 U	0.25 U	ND	ND		0/12
Vanadium	NA	NA	6.1 J	20.8	BGS19	12/12
Zinc	NA	NA	5.9 J	24.1	BGS34D	12/12
Cyanide	0.54 U	0.64 U	ND	ND		0/12

TABLE 4
STATISTICAL SUMMARY
SOIL ASSOCIATION 2
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	5669.17	1651.14	6525.22	8.60	0.31	6869.55
Antimony	4.36	0.22	4.49	1.47	0.05	4.49
Arsenic	2.23	1.34	2.92	0.61	0.66	3.71
Barium	29.53	16.64	38.15	3.27	0.48	40.30
Beryllium	0.44	0.21	0.55	-0.94	0.53	0.65
Cadmium	0.65	0.21	0.76	-0.46	0.24	0.74
Calcium	858.00	580.81	1159.13	6.48	0.83	1845.33
Chromium	8.74	4.06	10.85	2.07	0.49	12.25
Cobalt	3.28	1.83	4.23	1.04	0.58	4.99
Copper	2.45	1.22	3.08	0.77	0.56	3.72
Iron	7124.17	4290.22	9348.48	8.70	0.64	11720.17
Lead	10.28	2.96	11.81	2.29	0.28	12.09
Magnesium	540.92	377.51	736.64	6.13	0.57	800.48
Manganese	144.94	122.35	208.38	4.63	0.90	323.66
Mercury	0.03	0.00	0.03	-3.60	0.10	0.03
Nickel	5.41	2.23	6.57	1.59	0.50	7.83
Potassium	497.71	415.59	713.18	5.95	0.75	898.91
Selenium	0.15	0.07	0.19	-1.94	0.37	0.19
Silver	0.47	0.02	0.48	-0.77	0.05	0.48
Sodium	41.56	15.55	49.62	3.66	0.40	54.56
Thallium	0.12	0.01	0.12	-2.15	0.05	0.12
Vanadium	14.05	4.44	16.35	2.59	0.36	17.74
Zinc	15.72	5.08	18.35	2.70	0.37	19.99
Cyanide	0.29	0.02	0.30	-1.23	0.05	0.30

TABLE 5
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 3
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS02	BGS06	BGS07	BGS09	BGS20	BGS20D
Date sampled	07/08/94	07/08/94	07/08/94	07/08/94	07/21/94	07/21/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	4590	3210	6030	4960	13000	12900
Antimony	8.3 UL	9.2 L	8.5 UL	8.4 UL	10.3 UL	10.4 UL
Arsenic	1.2 J	2 J	5.8	1.5 J	2.9	2.6 J
Barium	22 J	19.1 J	17.8 J	20.4 J	76.6	75.7
Beryllium	0.23 J	0.23 J	0.4 J	0.31 J	0.64 J	0.63 J
Cadmium	1.1 U	1.1 U	1.1 U	1.1 U	1.4 U	1.4 U
Calcium	215 J	388 J	259 J	110 J	2730	2940
Chromium	5.5	5.3	11.8	5.1	14.3	13.7
Cobalt	1.6 J	2.3 J	2.2 J	1.6 J	4.1 J	4.0 J
Copper	1.7 J	1.1 U	2.4 J	1.1 U	3.9 J	3.9 J
Iron	4160	4910	11100	3690	11200	10600
Lead	6.4	9.8	43.1	12	16.7 L	14.8 L
Magnesium	236 J	262 J	489 J	319 J	803 J	818 J
Manganese	65.8	85.9	29.9	26.5	332	340
Mercury	0.05 U	0.05 U	0.05 U	0.05 U	0.06 UL	0.07 UL
Nickel	4.5 J	5.6 J	6.2 J	4.2 J	6.4 J	11.9
Potassium	353 U	354 U	360 U	355 U	725 J	442 U
Selenium	0.32 J	0.32 J	0.32 J	0.38 L	0.43 J	0.43 J
Silver	0.9 U	0.9 U	0.92 U	0.9 U	1.1 U	1.1 U
Sodium	32.3 J	22.7 J	37.8 J	34 J	21.2 J	26.4 J
Thallium	0.22 U	0.23 U	0.23 U	0.23 U	0.28 U	0.28 U
Vanadium	10.8 J	10.1 J	20.4	10.1 J	27.8	26.9
Zinc	8.6	9.8	18	10.9	25.5	25.2
Cyanide	0.56 U	0.55 U	0.57 U	0.56 U	0.70 U	0.70 U

TABLE 5
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 3
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS21	BGS22	BGS23	BGS24	BGS24D	BGS25
Date sampled	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	15600	10600	3110	4380	4440	5010
Antimony	8.9 UL	9.3 UL	8.5 UL	8.9 UL	8.9 UL	8.3 UL
Arsenic	63.9	1.8 J	1.1 J	1.3 J	1.5 J	1.4 J
Barium	19.5 J	57.0	10.8 J	20.9 J	22.9 J	32.4 J
Beryllium	0.24 U	0.57 J	0.23 U	0.28 J	0.33 J	0.38 J
Cadmium	1.2 U	1.3 U	1.1 U	1.2 U	1.2 U	1.1 U
Calcium	97.0 J	1330	133 J	469 J	575 J	148 J
Chromium	13.1	9.7	3.4	4.3	5.4	6.1
Cobalt	1.6 J	3.0 J	1.0 J	1.2 J	2.7 J	3.5 J
Copper	2.7 J	3.4 J	1.1 U	1.5 J	1.4 J	1.3 J
Iron	6820	6780	2160	3270	3940	6490
Lead	13.9 L	25.3 L	10 L	12.6 L	11.3 L	11.8 L
Magnesium	456 J	586 J	181 J	287 J	303 J	290 J
Manganese	9.5	157	19.0	84.7	87.6	72.9
Mercury	0.06 UL	0.06 UL	0.05 UL	0.06 UL	0.06 UL	0.05 UL
Nickel	7.2 J	6.5 J	5.7 J	5.1 J	5.4 J	5.7 J
Potassium	377 U	519 J	359 U	377 U	377 U	353 U
Selenium	0.44 J	0.39 J	0.23 U	0.3 J	0.3 J	0.22 U
Silver	2.1 J	1.0 U	0.91 U	0.96 U	0.96 U	0.90 U
Sodium	51.0 J	32.2 J	22.7 J	15.8 J	18.6 J	29.6 J
Thallium	0.24 U	0.25 U	0.23 U	0.24 U	0.24 U	0.22 U
Vanadium	25.4	20.4	8.7 J	9.8 J	10.0 J	10.7 J
Zinc	8.5	22.7	5.7	11.0	12.1	11.0
Cyanide	0.58 U	0.62 U	0.57 U	0.6 U	0.59 U	0.56 U

TABLE 5
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 3
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS29	
Date sampled	07/21/94	
Depth	0-6"	
Units	MG/KG	
Aluminum	4410	
Antimony	8.5	UL
Arsenic	1.2	J
Barium	15.5	J
Beryllium	0.23	U
Cadmium	1.1	U
Calcium	168	J
Chromium	4.5	
Cobalt	1.4	J
Copper	1.1	U
Iron	3400	
Lead	8.8	L
Magnesium	257	J
Manganese	28.6	
Mercury	0.06	UL
Nickel	5.1	J
Potassium	360	U
Selenium	0.23	U
Silver	0.92	U
Sodium	18.7	J
Thallium	0.23	U
Vanadium	9.8	J
Zinc	16	
Cyanide	0.57	U

TABLE 5
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 3
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	3110	15600	BGS21	13/13
Antimony	8.3 UL	10.4 UL	9.2 L	9.2 L	BGS06	1/13
Arsenic	NA	NA	1.1 J	63.9	BGS21	13/13
Barium	NA	NA	10.8 J	76.6	BGS20	13/13
Beryllium	0.23 U	0.24 U	0.23 J	0.64 J	BGS20	10/13
Cadmium	1.1 U	1.4 U	ND	ND		0/13
Calcium	NA	NA	97 J	2940	BGS20D	13/13
Chromium	NA	NA	3.4	14.3	BGS20	13/13
Cobalt	NA	NA	1 J	4.1 J	BGS20	13/13
Copper	1.1 U	1.1 U	1.3 J	3.9 J	BGS20D	9/13
Iron	NA	NA	2160	11200	BGS20	13/13
Lead	NA	NA	6.4	43.1	BGS07	13/13
Magnesium	NA	NA	181 J	818 J	BGS20D	13/13
Manganese	NA	NA	9.5	340	BGS20D	13/13
Mercury	0.05 UL	0.07 UL	ND	ND		0/13
Nickel	NA	NA	4.2 J	11.9	BGS20D	13/13
Potassium	353 U	442 U	519 J	725 J	BGS20	2/13
Selenium	0.22 U	0.23 U	0.3 J	0.44 J	BGS21	10/13
Silver	0.9 U	1.1 U	2.1 J	2.1 J	BGS21	1/13
Sodium	NA	NA	15.8 J	51 J	BGS21	13/13
Thallium	0.22 U	0.28 U	ND	ND		0/13
Vanadium	NA	NA	8.7 J	27.8	BGS20	13/13
Zinc	NA	NA	5.7	25.5	BGS20	13/13
Cyanide	0.55 U	0.7 U	ND	ND		0/13

TABLE 5
STATISTICAL SUMMARY
SOIL ASSOCIATION 3
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	7095.38	4302.18	9221.68	8.72	0.55	10167.11
Antimony	4.83	1.36	5.50	1.55	0.21	5.43
Arsenic	6.78	17.21	15.29	0.85	1.09	12.17
Barium	31.58	22.75	42.83	3.26	0.61	47.79
Beryllium	0.33	0.18	0.43	-1.25	0.61	0.52
Cadmium	0.59	0.06	0.62	-0.53	0.09	0.62
Calcium	735.54	988.94	1224.31	5.91	1.17	2219.80
Chromium	7.86	4.03	9.85	1.94	0.50	10.95
Cobalt	2.32	1.06	2.85	0.75	0.46	3.11
Copper	1.88	1.27	2.50	0.38	0.77	3.46
Iron	6040.00	3146.72	7595.23	8.58	0.52	8566.84
Lead	15.12	9.59	19.85	2.59	0.48	20.10
Magnesium	406.69	211.62	511.28	5.90	0.48	545.20
Manganese	103.03	110.76	157.77	4.14	1.07	307.28
Mercury	0.03	0.00	0.03	-3.58	0.11	0.03
Nickel	6.12	1.92	7.07	1.78	0.26	7.04
Potassium	252.12	169.87	336.07	5.40	0.46	326.86
Selenium	0.31	0.12	0.36	-1.29	0.52	0.44
Silver	0.60	0.45	0.83	-0.63	0.42	0.75
Sodium	27.92	9.70	32.72	3.28	0.33	33.94
Thallium	0.12	0.01	0.12	-2.12	0.08	0.12
Vanadium	15.45	7.48	19.15	2.64	0.45	20.47
Zinc	14.23	6.64	17.51	2.56	0.46	19.02
Cyanide	0.30	0.03	0.31	-1.22	0.08	0.31

TABLE 6
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 4
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS03	BGS08	BGS10	BGS11	BGS14	BGS15
Date sampled	07/08/94	07/08/94	07/19/94	07/19/94	07/19/94	07/20/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	6320	6530	4980	4370	4530	6180
Antimony	8.8 UL	9.4 UL	8.6 UL	9.5 UL	9.2 UL	9.3 UL
Arsenic	1.5 J	1.4 J	1.2 J	2.9	0.84 J	0.75 L
Barium	53.1	20 J	31.5 J	35 J	24.4 J	20.2 J
Beryllium	0.51 J	0.25 U	0.42 J	0.32 J	0.25 U	0.42 J
Cadmium	1.2 U	1.3 U	1.2 U	1.3 U	1.2 J	1.3 U
Calcium	937 J	269 J	204 J	1610 J	696 J	229 J
Chromium	5.4	6.9	6.8	9.8	5.4	5.7
Cobalt	1.5 J	1.1 J	6 J	2.5 J	2 J	3.6 J
Copper	1.5 J	2 J	1.2 UL	3.7 J	2.5 J	1.6 J
Iron	4670	5670	3580	7010	4400	5260
Lead	15.3	14.7	14.3 J	14.2 J	14.2 J	11.3
Magnesium	290 J	329 J	297 J	487 J	233 J	229 J
Manganese	491	40	169 J	191 J	118 J	45.2 L
Mercury	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 UL
Nickel	4.9 J	7 J	6.6 J	4.1 U	6 J	4 U
Potassium	372 U	398 U	367 U	515 J	390 U	396 U
Selenium	0.46 J	0.55 L	0.23 U	0.27 J	0.25 U	0.25 U
Silver	0.95 U	1 U	1 J	1 U	0.99 U	1 U
Sodium	40.1 J	45.4 J	46.7 J	34.7 J	31.9 J	24 J
Thallium	0.24 U	0.25 U	0.23 U	0.26 U	0.25 U	0.25 U
Vanadium	10.7 J	14.8	11.2 J	15	11 J	12.7
Zinc	13	13.4	17.2	18.6	11.3	11.7
Cyanide	0.59 U	0.63 U	0.58 U	0.64 U	0.61 U	0.63 U

TABLE 6
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 4
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS21	BGS26	BGS27	BGS28	BGS29	BGS30
Date sampled	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	15600	5810	12000	19200	4410	9210
Antimony	8.9 UL	8.7 UL	10.6 UL	9.2 UL	8.5 UL	8.6 UL
Arsenic	63.9	1.1 J	2.7 J	2.9	1.2 J	2.4
Barium	19.5 J	19 J	23.5 J	80.2	15.5 J	15.8 J
Beryllium	0.24 U	0.24 U	0.32 J	0.63 J	0.23 U	0.23 U
Cadmium	1.2 U	1.2 U	1.4 U	1.2 U	1.1 U	1.5
Calcium	97.0 J	105 J	346 J	854 J	168 J	347 J
Chromium	13.1	5.3	14.1	17.5	4.5	9.6
Cobalt	1.6 J	1.0 J	1.9 J	3.5 J	1.4 J	1.7 J
Copper	2.7 J	1.9 J	3.7 J	5.3 J	1.1 U	2.0 J
Iron	6820	3820	19900	13000	3400	7830
Lead	13.9 L	10.4 L	14.5 L	38.7 L	8.8 L	13 L
Magnesium	456 J	320 J	401 J	1070 J	257 J	394 J
Manganese	9.5	15.5	28.7	126	28.6	13.0
Mercury	0.06 UL	0.06 UL	0.07 UL	0.06 UL	0.06 UL	0.06 UL
Nickel	7.2 J	5.4 J	4.6 J	10.7	5.1 J	5.5 J
Potassium	377 U	370 U	449 U	457 J	360 U	416 J
Selenium	0.44 J	0.30 J	0.36 J	0.31 J	0.23 U	0.36 J
Silver	2.1 J	0.94 U	1.1 U	1.00 U	0.92 U	0.92 U
Sodium	51.0 J	43.0 J	33.0 J	37.3 J	18.7 J	35.7 J
Thallium	0.24 U	0.24 U	0.29 U	0.25 U	0.23 U	0.23 U
Vanadium	25.4	12.5	29.8	34.7	9.8 J	21.2
Zinc	8.5	8.2	15.5	48.4	16	12.9
Cyanide	0.58 U	0.59 U	0.71 U	0.61 U	0.57 U	0.58 U

TABLE 6
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 4
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	4370	19200	BGS28	12/12
Antimony	8.5 UL	10.6 UL	ND	ND		0/12
Arsenic	NA	NA	0.75 L	63.9	BGS21	12/12
Barium	NA	NA	15.5 J	80.2	BGS28	12/12
Beryllium	0.23 U	0.25 U	0.32 J	0.63 J	BGS28	6/12
Cadmium	1.1 U	1.4 U	1.2 J	1.5	BGS30	2/12
Calcium	NA	NA	97 J	1610 J	BGS11	12/12
Chromium	NA	NA	4.5	17.5	BGS28	12/12
Cobalt	NA	NA	1 J	6 J	BGS10	12/12
Copper	1.1 U	1.2 UL	1.5 J	5.3 J	BGS28	10/12
Iron	NA	NA	3400	19900	BGS27	12/12
Lead	NA	NA	8.8 L	38.7 L	BGS28	12/12
Magnesium	NA	NA	229 J	1070 J	BGS28	12/12
Manganese	NA	NA	9.5	491	BGS03	12/12
Mercury	0.06 U	0.07 UL	ND	ND		0/12
Nickel	4 U	4.1 U	4.6 J	10.7	BGS28	10/12
Potassium	360 U	449 U	416 J	515 J	BGS11	3/12
Selenium	0.23 U	0.25 U	0.27 J	0.55 L	BGS08	8/12
Silver	0.92 U	1.1 U	1 J	2.1 J	BGS21	2/12
Sodium	NA	NA	18.7 J	51 J	BGS21	12/12
Thallium	0.23 U	0.29 U	ND	ND		0/12
Vanadium	NA	NA	9.8 J	34.7	BGS28	12/12
Zinc	NA	NA	8.2	48.4	BGS28	12/12
Cyanide	0.57 U	0.71 U	ND	ND		0/12

TABLE 6
STATISTICAL SUMMARY
SOIL ASSOCIATION 4
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	8261.67	4863.23	10783.06	8.89	0.51	11663.52
Antimony	4.55	0.29	4.70	1.51	0.06	4.71
Arsenic	6.90	17.97	16.22	0.74	1.17	13.89
Barium	29.81	19.05	39.69	3.26	0.50	40.79
Beryllium	0.28	0.18	0.37	-1.49	0.68	0.47
Cadmium	0.74	0.29	0.89	-0.35	0.31	0.89
Calcium	488.50	454.81	724.30	5.83	0.89	1052.29
Chromium	8.68	4.21	10.86	2.06	0.45	11.64
Cobalt	2.32	1.43	3.06	0.70	0.53	3.32
Copper	2.34	1.37	3.05	0.67	0.68	4.02
Iron	7113.33	4812.21	9608.28	8.72	0.53	10149.98
Lead	15.28	7.64	19.23	2.65	0.36	18.83
Magnesium	396.92	227.89	515.07	5.88	0.42	516.58
Manganese	106.29	136.89	177.26	4.00	1.23	406.80
Mercury	0.03	0.00	0.03	-3.49	0.04	0.03
Nickel	5.59	2.32	6.79	1.63	0.49	7.82
Potassium	260.63	124.20	325.02	5.48	0.40	336.56
Selenium	0.29	0.15	0.37	-1.37	0.59	0.45
Silver	0.67	0.47	0.91	-0.53	0.45	0.87
Sodium	36.79	9.34	41.63	3.57	0.29	43.74
Thallium	0.12	0.01	0.13	-2.09	0.07	0.13
Vanadium	17.40	8.38	21.74	2.76	0.43	23.06
Zinc	16.23	10.62	21.73	2.67	0.46	21.50
Cyanide	0.30	0.02	0.32	-1.19	0.06	0.32

TABLE 7
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 5
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS12	BGS13	BGS16	BGS17
Date sampled	07/20/94	07/20/94	07/19/94	07/20/94
Depth	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	3940	2540	4630	7500
Antimony	8.6 UL	8.5 UL	8.7 UL	9.4 UL
Arsenic	0.46 L	0.65 L	0.53 L	2.5 L
Barium	5.1 J	4.2 J	15.1 J	28.1 J
Beryllium	0.23 U	0.23 U	0.23 U	0.6 J
Cadmium	1.2 U	1.1 U	1.2 U	1.3 U
Calcium	39.4 J	67.3 J	346 J	447 J
Chromium	4.3	3.2	5.1	9.7
Cobalt	1.1 J	0.91 U	1.6 J	4.6 J
Copper	1.2 U	1.1 U	1.7 J	1.9 J
Iron	3150	1440	3550	9210
Lead	7.6	8.4	8.7	14.3
Magnesium	159 J	61.5 J	245 J	416 J
Manganese	7.6 L	10.3 L	39.2 L	92.3 L
Mercury	0.06 UL	0.06 UL	0.06 UL	0.06 UL
Nickel	3.7 U	3.7 U	3.8 U	7.7 K
Potassium	367 U	359 U	368 U	399 U
Selenium	0.23 U	0.23 U	0.24 U	0.26 U
Silver	0.93 U	0.91 U	0.94 U	1 U
Sodium	13.9 J	40.1 J	32.1 J	25 J
Thallium	0.23 U	0.23 U	0.24 U	0.26 U
Vanadium	11 J	7.6 J	10.8 J	20.2
Zinc	5.1 Z	3.2 KJ	8.4	17.2
Cyanide	0.58 U	0.57 U	0.6 U	0.64 U

TABLE 7
FREQUENCY OF DETECTION SUMMARY
SOIL ASSOCIATION 5
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	2540	7500	BGS17	4/4
Antimony	8.5 UL	9.4 UL	ND	ND		0/4
Arsenic	NA	NA	0.46 L	2.5 L	BGS17	4/4
Barium	NA	NA	4.2 J	28.1 J	BGS17	4/4
Beryllium	0.23 U	0.23 U	0.6 J	0.6 J	BGS17	1/4
Cadmium	1.1 U	1.3 U	ND	ND		0/4
Calcium	NA	NA	39.4 J	447 J	BGS17	4/4
Chromium	NA	NA	3.2	9.7	BGS17	4/4
Cobalt	0.91 U	0.91 U	1.1 J	4.6 J	BGS17	3/4
Copper	1.1 U	1.2 U	1.7 J	1.9 J	BGS17	2/4
Iron	NA	NA	1440	9210	BGS17	4/4
Lead	NA	NA	7.6	14.3	BGS17	4/4
Magnesium	NA	NA	61.5 J	416 J	BGS17	4/4
Manganese	NA	NA	7.6 L	92.3 L	BGS17	4/4
Mercury	0.06 UL	0.06 UL	ND	ND		0/4
Nickel	3.7 U	3.8 U	7.7 K	7.7 K	BGS17	1/4
Potassium	359 U	399 U	ND	ND		0/4
Selenium	0.23 U	0.26 U	ND	ND		0/4
Silver	0.91 U	1 U	ND	ND		0/4
Sodium	NA	NA	13.9 J	40.1 J	BGS13	4/4
Thallium	0.23 U	0.26 U	ND	ND		0/4
Vanadium	NA	NA	7.6 J	20.2	BGS17	4/4
Zinc	NA	NA	3.2 KJ	17.2	BGS17	4/4
Cyanide	0.57 U	0.64 U	ND	ND		0/4

TABLE 7
STATISTICAL SUMMARY
SOIL ASSOCIATION 5
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	4652.50	2087.99	7109.02	8.37	0.45	16139.13
Antimony	4.40	0.20	4.64	1.48	0.05	4.69
Arsenic	1.04	0.98	2.19	-0.23	0.78	27.86
Barium	13.13	11.14	26.23	2.28	0.90	1573.24
Beryllium	0.24	0.24	0.52	-1.75	0.83	11.69
Cadmium	0.60	0.04	0.65	-0.51	0.07	0.66
Calcium	224.93	202.68	463.38	4.96	1.20	661560.45
Chromium	5.58	2.86	8.94	1.63	0.47	20.47
Cobalt	1.94	1.84	4.10	0.33	0.96	314.49
Copper	1.19	0.71	2.03	0.02	0.66	14.49
Iron	4337.50	3374.76	8307.91	8.16	0.76	112356.51
Lead	9.75	3.07	13.36	2.24	0.28	16.72
Magnesium	220.38	150.43	397.35	5.18	0.81	10897.98
Manganese	37.35	39.33	83.62	3.14	1.17	84415.53
Mercury	0.03	0.00	0.03	-3.51	0.00	0.03
Nickel	3.33	2.92	6.76	0.98	0.71	66.30
Potassium	186.63	8.82	197.00	5.23	0.05	199.02
Selenium	0.12	0.01	0.13	-2.12	0.06	0.13
Silver	0.47	0.02	0.50	-0.75	0.04	0.50
Sodium	27.78	11.12	40.86	3.25	0.46	99.67
Thallium	0.12	0.01	0.13	-2.12	0.06	0.13
Vanadium	12.40	5.43	18.79	2.45	0.41	38.16
Zinc	8.48	6.20	15.77	1.94	0.72	183.41
Cyanide	0.30	0.02	0.32	-1.21	0.05	0.32

TABLE 8
FREQUENCY OF DETECTION SUMMARY
SUBSURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGSB04-01	BGSB04-01D	BGSB04-07	BGSB04-09	BGSB05-01	BGSB05-02
Date sampled	08/08/94	08/08/94	08/08/94	08/08/94	07/19/94	07/19/94
Depth	1-3'	1-3'	13-15'	17-19'	1-3'	3-5'
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	6270 J	6560 J	9270 J	14600 J	6840	14500
Antimony	8.1 R	8.1 R	8.5 L	10.5 R	8.9 UL	8.7 UL
Arsenic	1.1 L	0.7 L	11.2 L	26.2 L	1.2 L	6.5
Barium	39.4 J	42.1 J	16.9 J	22.7 J	47.8 J	15.2 J
Beryllium	0.57 J	0.49 J	0.57 J	1.5	0.52 J	0.48 J
Cadmium	1.1 U	1.1 U	1.1 U	1.4 U	1.2 U	1.2 U
Calcium	363 J	353 J	949 J	14000 J	378 J	182 J
Chromium	5.4	6	22.9	33.5	7.5	33.2
Cobalt	2.9 J	3.1 J	5.1 J	13.7 J	2.2 J	1.9 J
Copper	2 J	2.2 J	4.3 J	9	2.4 J	8 J
Iron	3810 J	4030 J	26100 J	51100 J	6130	33200
Lead	5.6 L	3.6 L	6.8 L	13.9 L	13.7 J	9.1 J
Magnesium	466 J	512 J	960 J	2870	462 J	791 J
Manganese	284 J	254 J	94.5 J	353 J	85.6 J	17.7 J
Mercury	0.05 UL	0.05 UL	0.06 UL	0.07 UL	0.06 U	0.06 U
Nickel	6.2 K	6.7 K	8.3 K	24.1	3.8 U	7.5 J
Potassium	344 U	399 J	1210	2300	392 J	1320
Selenium	0.26 L	0.22 UL	0.28 L	0.55 L	0.38 J	0.75 L
Silver	0.88 U	0.87 U	0.92 U	1.1 U	1.1 J	2.1 J
Sodium	101 J	117 J	81.4 J	213 J	58.5 J	40.1 J
Thallium	0.22 U	0.22 U	0.23 U	0.28 U	0.24 U	0.24 U
Vanadium	7.8 J	8.6 J	35.5	54.4	12.9	35
Zinc	14.3	12.6	26.7	55.1	11.1	17.9
Cyanide	0.54 U	0.54 U	0.58 U	0.7 U	0.59 U	0.59 U

TABLE 8
FREQUENCY OF DETECTION SUMMARY
SUBSURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGSB05-10	BGSB06-05	BGSB06-05D	BGSB06-11	BGSB07-04	BGSB07-11
Date sampled	07/19/94	07/26/94	07/26/94	07/26/94	08/09/94	08/09/94
Depth	19-21 '	9-11 '	9-11 '	21-23 '	7-9 '	21-23 '
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	6940	18100	28200	17400	7010	4700
Antimony	9.2 UL	9.6 UL	9.5 UL	9.2 UL	8.9 UL	31.3 L
Arsenic	10.5	10.3	2.2 J	2.2 J	1.2 J	42.7
Barium	13.4 J	43.8 J	66.9	26.7 J	10.6 J	49.5 J
Beryllium	0.3 J	0.3 J	0.44 J	0.69 J	0.24 U	9.8
Cadmium	1.2 U	1.3 U	1.3 U	1.2 U	1.2 UL	1.5 UL
Calcium	174 J	44.1 J	53.4 J	133 J	28.9 J	20400
Chromium	14.3	14.8	22.8	29.1	9.6	17.4
Cobalt	1.1 J	1 U	1.7 J	4.2 J	0.96 U	156
Copper	3.2 J	8.1	15	7	2.8 J	8
Iron	8730	11800	21700	31500	7400	
Lead	7.8 J	25.5 L	24.6 L	22.6 L	5.1	11.5
Magnesium	729 J	446 J	704 J	1580	136 J	1890
Manganese	5.6 J	11.1	15.3	78.3	3.5 J	2940
Mercury	0.06 U	0.06 U	0.06 U	0.06 U	0.05 U	0.08 U
Nickel	5 J	5 J	10.5	15	3.8 U	145
Potassium	1570	1480	1540	2560	532 J	1790
Selenium	0.32 J	0.44 J	0.26 UL	0.48 J	0.57 L	0.35 L
Silver	1.5 J	1 U	1 U	1.1 J	0.96 U	2.4 J
Sodium	91.6 J	42.1 J	56.2 J	39.9 J	10.8 U	98.4 J
Thallium	0.25 U	0.26 U	0.44 K	0.25 U	0.24 U	0.31 U
Vanadium	17.5	44.3	44.9	55	16	1.2 U
Zinc	7.2	12.3	19.6	39.5	3.6 J	330
Cyanide	0.62 U	0.65 U	0.65 U	0.62 U	0.6 K	0.76 U

TABLE 8
FREQUENCY OF DETECTION SUMMARY
SUBSURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGSB07-16	BGSB08-07	BGGW08A-01	BGGW08A-01D
Date sampled	08/09/94	08/04/94	08/04/94	08/04/94
Depth	31-33'	13-15'	1-3'	1-3'
Units	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	2710	10900	4550	4580
Antimony	9.5 UL	9.6 UL	8.4 UL	8.2 UL
Arsenic	13.8	3.4	0.36 J	0.23 J
Barium	36.5 J	25.7 J	20.2 J	21 J
Beryllium	0.41 J	0.33 K	0.23 UL	0.22 UL
Cadmium	1.3 UL	1.3 U	1.1 U	1.1 U
Calcium	233000	91.2 J	165 J	168 J
Chromium	24.5	28.6 L	5.4 L	5.2 L
Cobalt	2.4 J	1 U	0.91 U	0.97 J
Copper	3.2 J	12 J	5 J	3.5 J
Iron	20100	22700	3850	3820
Lead	4.2	9.1	18.3	17.6
Magnesium	2010	309 J	229 J	221 J
Manganese	68.9	6.4	23	20.5
Mercury	0.06 U	0.06 UL	0.05 UL	0.06 UL
Nickel	4.2 J	4.4 K	3.6 U	4.5 K
Potassium	1730	1260 J	356 U	350 U
Selenium	0.26 UL	0.26 UL	0.23 UL	0.23 UL
Silver	1 U	1 U	0.91 U	0.89 U
Sodium	2180	76.9 J	22 J	17.2 J
Thallium	2.6 UL	0.26 U	0.23 U	0.23 U
Vanadium	15.4 K	70.3 L	9.5 L	9.2 L
Zinc	25.5	9.5	10.5	7.9
Cyanide	0.64 U	0.65 U	0.56 U	0.56 U

TABLE 8
FREQUENCY OF DETECTION SUMMARY
SUBSURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	2710	28200	BGSB06-05D	16/16
Antimony	8.2 UL	9.6 UL	8.5 L	31.3 L	BGSB07-11	2/13
Arsenic	NA	NA	0.23 J	42.7	BGSB07-11	16/16
Barium	NA	NA	10.6 J	66.9	BGSB06-05D	16/16
Beryllium	0.22 UL	0.24 U	0.3 J	9.8	BGSB07-11	13/16
Cadmium	1.1 U	1.5 UL	ND	ND		0/16
Calcium	NA	NA	28.9 J	233000	BGSB07-16	16/16
Chromium	NA	NA	5.2 L	33.5	BGSB04-09	16/16
Cobalt	0.91 U	1 U	0.97 J	156	BGSB07-11	12/16
Copper	NA	NA	2 J	15	BGSB06-05D	16/16
Iron	NA	NA	0	51100 J	BGSB04-09	16/16
Lead	NA	NA	3.6 L	25.5 L	BGSB06-05	16/16
Magnesium	NA	NA	136 J	2870	BGSB04-09	16/16
Manganese	NA	NA	3.5 J	2940	BGSB07-11	16/16
Mercury	0.05 UL	0.08 U	ND	ND		0/16
Nickel	3.6 U	3.8 U	4.2 J	145	BGSB07-11	13/16
Potassium	344 U	356 U	392 J	2560	BGSB06-11	13/16
Selenium	0.22 UL	0.26 UL	0.26 L	0.75 L	BGSB05-02	10/16
Silver	0.87 U	1.1 U	1.1 J	2.4 J	BGSB07-11	5/16
Sodium	10.8 U	10.8 U	17.2 J	2180	BGSB07-16	15/16
Thallium	0.22 U	2.6 UL	0.44 K	0.44 K	BGSB06-05D	1/16
Vanadium	1.2 U	1.2 U	7.8 J	70.3 L	BGSB08-07	15/16
Zinc	NA	NA	3.6 J	330	BGSB07-11	16/16
Cyanide	0.54 U	0.76 U	0.6 K	0.6 K	BGSB07-04	1/16

TABLE 8
STATISTICAL SUMMARY
SUBSURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	10195.63	6772.98	13163.88	9.04	0.63	14673.48
Antimony	6.90	7.42	10.56	1.71	0.55	9.18
Arsenic	8.36	11.52	13.41	1.19	1.54	46.92
Barium	31.15	15.93	38.13	3.31	0.53	42.12
Beryllium	1.05	2.36	2.08	-0.79	1.07	1.82
Cadmium	0.61	0.06	0.64	-0.49	0.09	0.64
Calcium	16905.16	57925.27	42290.91	6.09	2.47	226749.41
Chromium	17.51	10.40	22.07	2.66	0.70	27.75
Cobalt	12.33	38.45	29.18	0.81	1.49	24.26
Copper	5.98	3.82	7.66	1.60	0.63	8.69
Iron	17064.67	14083.98	23468.49	9.39	0.91	35244.98
Lead	12.44	7.35	15.66	2.34	0.64	18.24
Magnesium	894.69	783.98	1238.27	6.45	0.87	1595.44
Manganese	266.34	721.45	582.51	3.85	1.81	1687.15
Mercury	0.03	0.00	0.03	-3.52	0.12	0.03
Nickel	15.75	34.93	31.06	1.91	1.08	27.60
Potassium	1163.00	770.64	1500.73	6.73	0.95	2483.43
Selenium	0.32	0.20	0.41	-1.34	0.67	0.48
Silver	0.84	0.63	1.12	-0.37	0.60	1.14
Sodium	202.54	529.67	434.67	4.19	1.28	446.86
Thallium	0.22	0.30	0.35	-1.87	0.66	0.28
Vanadium	27.31	21.19	36.59	2.88	1.17	86.12
Zinc	37.71	79.07	72.36	2.87	1.03	65.38
Cyanide	0.33	0.08	0.36	-1.14	0.19	0.36

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS41RR	BGS42RR	BGS43RR	BGS44RR	BGS44RRD	BGS45RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	12 U	11 U	12 U	12 U	12 U	11 U
Bromomethane	12 U	11 U	12 U	12 U	12 U	11 U
Vinyl chloride	12 U	11 U	12 U	12 U	12 U	11 U
Chloroethane	12 U	11 U	12 U	12 U	12 U	11 U
Methylene chloride	12 U	7 J	12 U	12 U	12 U	11 U
Acetone	12 U	8 J	13	12 U	12 U	11 U
Carbon disulfide	12 U	11 U	12 U	12 U	12 U	11 U
1,1-Dichloroethene	12 U	11 U	12 U	12 U	12 U	11 U
1,1-Dichloroethane	12 U	11 U	12 U	12 U	12 U	11 U
Trans-1,2-dichloroethene	12 U	11 U	12 U	12 U	12 U	11 U
Cis-1,2-dichloroethene	12 U	11 U	12 U	12 U	12 U	11 U
Chloroform	12 U	11 U	12 U	12 U	12 U	11 U
1,2-Dichloroethane	12 U	11 U	12 U	12 U	12 U	11 U
2-Butanone	12 U	11 U	12 U	12 U	12 U	11 U
1,1,1-Trichloroethane	12 U	11 U	12 U	12 U	12 U	11 U
Carbon tetrachloride	12 U	11 U	12 U	12 U	12 U	11 U
Bromodichloromethane	12 U	11 U	12 U	12 U	12 U	11 U
1,2-Dichloropropane	12 U	11 U	12 U	12 U	12 U	11 U
cis-1,3-Dichloropropene	12 U	11 U	12 U	12 U	12 U	11 U
Trichloroethene	12 U	11 U	12 U	12 U	12 U	11 U
Dibromochloromethane	12 U	11 U	12 U	12 U	12 U	11 U
1,1,2-Trichloroethane	12 U	11 U	12 U	12 U	12 U	11 U
Benzene	12 U	11 U	12 U	12 U	12 U	11 U
Trans-1,3-dichloropropene	12 U	11 U	12 U	12 U	12 U	11 U
Bromoform	12 U	11 U	12 U	12 U	12 U	11 U
4-Methyl-2-pentanone	12 U	11 U	12 UJ	12 U	12 U	11 U
2-Hexanone	12 U	11 U	12 UJ	12 U	12 U	11 U
Tetrachloroethene	12 U	11 U	12 UJ	12 U	12 U	11 U
1,1,2,2-Tetrachloroethane	12 U	11 U	12 UJ	12 U	12 U	11 U
Toluene	12 U	11 U	12 UJ	12 U	12 U	11 U
Chlorobenzene	12 U	11 U	12 UJ	12 U	12 U	11 U
Ethylbenzene	12 U	11 U	12 UJ	12 U	12 U	11 U
Styrene	12 U	11 U	12 UJ	12 U	12 U	11 U
M/P xylenes	12 U	11 U	12 UJ	12 U	12 U	11 U
O xylene	12 U	11 U	12 UJ	12 U	12 U	11 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS46RR	BGS47RR	BGS48RR	BGS49RR	BGS50RR	BGS51RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	12 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	12 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	12 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	12 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	9 J	10 U	10 U	10 U	10 U	10 U
Acetone	12 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	12 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	12 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	12 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	12 U	10 U	10 U	10 U	10 U	10 U
Cis-1,2-dichloroethene	12 U	10 U	10 U	10 U	10 U	10 U
Chloroform	12 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	12 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	12 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	12 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	12 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	12 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	12 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	12 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	12 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	12 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	12 U	10 U	10 U	10 U	10 U	10 U
Benzene	12 U	10 U	10 U	10 U	10 U	10 U
Trans-1,3-dichloropropene	12 U	10 U	10 U	10 U	10 U	10 U
Bromoform	12 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	12 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	12 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	12 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	12 U	10 U	10 U	10 U	10 U	10 U
Toluene	12 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	12 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	12 U	10 U	10 U	10 U	10 U	10 U
Styrene	12 U	10 U	10 U	10 U	10 U	10 U
M/P xylenes	12 U	10 U	10 U	10 U	10 U	10 U
O xylene	12 U	10 U	10 U	10 U	10 U	10 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS52RR
Date sampled	07/09/94
Depth	0-6"
Units	UG/KG
Chloromethane	11 U
Bromomethane	11 U
Vinyl chloride	11 U
Chloroethane	11 U
Methylene chloride	11 U
Acetone	11 U
Carbon disulfide	11 U
1,1-Dichloroethene	11 U
1,1-Dichloroethane	11 U
Trans-1,2-dichloroethene	11 U
Cis-1,2-dichloroethene	11 U
Chloroform	11 U
1,2-Dichloroethane	11 U
2-Butanone	11 U
1,1,1-Trichloroethane	11 U
Carbon tetrachloride	11 U
Bromodichloromethane	11 U
1,2-Dichloropropane	11 U
cis-1,3-Dichloropropene	11 U
Trichloroethene	11 U
Dibromochloromethane	11 U
1,1,2-Trichloroethane	11 U
Benzene	11 U
Trans-1,3-dichloropropene	11 U
Bromoform	11 U
4-Methyl-2-pentanone	11 U
2-Hexanone	11 U
Tetrachloroethene	11 U
1,1,2,2-Tetrachloroethane	11 U
Toluene	11 U
Chlorobenzene	11 U
Ethylbenzene	11 U
Styrene	11 U
M/P xylenes	11 U
O xylene	11 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	10 U	12 U	ND	ND		0/13
Bromomethane	10 U	12 U	ND	ND		0/13
Vinyl chloride	10 U	12 U	ND	ND		0/13
Chloroethane	10 U	12 U	ND	ND		0/13
Methylene chloride	10 U	12 U	7 J	9 J	BGS46RR	2/13
Acetone	10 U	12 U	8 J	13	BGS43RR	2/13
Carbon disulfide	10 U	12 U	ND	ND		0/13
1,1-Dichloroethene	10 U	12 U	ND	ND		0/13
1,1-Dichloroethane	10 U	12 U	ND	ND		0/13
Trans-1,2-dichloroethene	10 U	12 U	ND	ND		0/13
Cis-1,2-dichloroethene	10 U	12 U	ND	ND		0/13
Chloroform	10 U	12 U	ND	ND		0/13
1,2-Dichloroethane	10 U	12 U	ND	ND		0/13
2-Butanone	10 U	12 U	ND	ND		0/13
1,1,1-Trichloroethane	10 U	12 U	ND	ND		0/13
Carbon tetrachloride	10 U	12 U	ND	ND		0/13
Bromodichloromethane	10 U	12 U	ND	ND		0/13
1,2-Dichloropropane	10 U	12 U	ND	ND		0/13
cis-1,3-Dichloropropene	10 U	12 U	ND	ND		0/13
Trichloroethene	10 U	12 U	ND	ND		0/13
Dibromochloromethane	10 U	12 U	ND	ND		0/13
1,1,2-Trichloroethane	10 U	12 U	ND	ND		0/13
Benzene	10 U	12 U	ND	ND		0/13
Trans-1,3-dichloropropene	10 U	12 U	ND	ND		0/13
Bromoform	10 U	12 U	ND	ND		0/13
4-Methyl-2-pentanone	10 U	12 U	ND	ND		0/13
2-Hexanone	10 U	12 U	ND	ND		0/13
Tetrachloroethene	10 U	12 U	ND	ND		0/13
1,1,2,2-Tetrachloroethane	10 U	12 U	ND	ND		0/13
Toluene	10 U	12 U	ND	ND		0/13
Chlorobenzene	10 U	12 U	ND	ND		0/13
Ethylbenzene	10 U	12 U	ND	ND		0/13
Styrene	10 U	12 U	ND	ND		0/13
M/P xylenes	10 U	12 U	ND	ND		0/13
O xylene	10 U	12 U	ND	ND		0/13

TABLE 9
STATISTICAL SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	5.50	0.46	5.73	1.70	0.08	5.74
Bromomethane	5.50	0.46	5.73	1.70	0.08	5.74
Vinyl chloride	5.50	0.46	5.73	1.70	0.08	5.74
Chloroethane	5.50	0.46	5.73	1.70	0.08	5.74
Methylene chloride	5.85	1.13	6.40	1.75	0.17	6.40
Acetone	6.23	2.19	7.32	1.79	0.27	7.20
Carbon disulfide	5.50	0.46	5.73	1.70	0.08	5.74
1,1-Dichloroethene	5.50	0.46	5.73	1.70	0.08	5.74
1,1-Dichloroethane	5.50	0.46	5.73	1.70	0.08	5.74
Trans-1,2-dichloroethene	5.50	0.46	5.73	1.70	0.08	5.74
Cis-1,2-dichloroethene	5.50	0.46	5.73	1.70	0.08	5.74
Chloroform	5.50	0.46	5.73	1.70	0.08	5.74
1,2-Dichloroethane	5.50	0.46	5.73	1.70	0.08	5.74
2-Butanone	5.50	0.46	5.73	1.70	0.08	5.74
1,1,1-Trichloroethane	5.50	0.46	5.73	1.70	0.08	5.74
Carbon tetrachloride	5.50	0.46	5.73	1.70	0.08	5.74
Bromodichloromethane	5.50	0.46	5.73	1.70	0.08	5.74
1,2-Dichloropropane	5.50	0.46	5.73	1.70	0.08	5.74
cis-1,3-Dichloropropene	5.50	0.46	5.73	1.70	0.08	5.74
Trichloroethene	5.50	0.46	5.73	1.70	0.08	5.74
Dibromochloromethane	5.50	0.46	5.73	1.70	0.08	5.74
1,1,2-Trichloroethane	5.50	0.46	5.73	1.70	0.08	5.74
Benzene	5.50	0.46	5.73	1.70	0.08	5.74
Trans-1,3-dichloropropene	5.50	0.46	5.73	1.70	0.08	5.74
Bromoform	5.50	0.46	5.73	1.70	0.08	5.74
4-Methyl-2-pentanone	5.50	0.46	5.73	1.70	0.08	5.74
2-Hexanone	5.50	0.46	5.73	1.70	0.08	5.74
Tetrachloroethene	5.50	0.46	5.73	1.70	0.08	5.74
1,1,2,2-Tetrachloroethane	5.50	0.46	5.73	1.70	0.08	5.74
Toluene	5.50	0.46	5.73	1.70	0.08	5.74
Chlorobenzene	5.50	0.46	5.73	1.70	0.08	5.74
Ethylbenzene	5.50	0.46	5.73	1.70	0.08	5.74
Styrene	5.50	0.46	5.73	1.70	0.08	5.74
M/P xylenes	5.50	0.46	5.73	1.70	0.08	5.74
O xylene	5.50	0.46	5.73	1.70	0.08	5.74

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS41RR	BGS42RR	BGS43RR	BGS44RR	BGS44RRD	BGS45RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	390 U	370 U	400 U	380 U	380 U	370 U
Bis(2-chloroethyl)ether	390 U	370 U	400 U	380 U	380 U	370 U
2-Chlorophenol	390 U	370 U	400 U	380 U	380 U	370 U
1,3-Dichlorobenzene	390 U	370 U	400 U	380 U	380 U	370 U
1,4-Dichlorobenzene	390 U	370 U	400 U	380 U	380 U	370 U
1,2-Dichlorobenzene	390 U	370 U	400 U	380 U	380 U	370 U
2-Methylphenol	390 U	370 U	400 U	380 U	380 U	370 U
2,2'-Oxybis(1-chloropropane)	390 U	370 U	400 U	380 U	380 U	370 U
4-Methylphenol	390 U	370 U	400 U	380 U	380 U	370 U
N-Nitroso-di-n-propylamine	390 U	370 U	400 U	380 U	380 U	370 U
Hexachloroethane	390 U	370 U	400 U	380 U	380 U	370 U
Nitrobenzene	390 U	370 U	400 U	380 U	380 U	370 U
Isophorone	390 U	370 U	400 U	380 U	380 U	370 U
2-Nitrophenol	390 U	370 U	400 U	380 U	380 U	370 U
2,4-Dimethylphenol	390 U	370 U	400 U	380 U	380 U	370 U
Bis(2-chloroethoxy)methane	390 U	370 U	400 U	380 U	380 U	370 U
2,4-Dichlorophenol	390 U	370 U	400 U	380 U	380 U	370 U
1,2,4-Trichlorobenzene	390 U	370 U	400 U	380 U	380 U	370 U
Naphthalene	390 U	370 U	400 U	380 U	380 U	370 U
4-Chloroaniline	390 U	370 U	400 U	380 U	380 U	370 U
Hexachlorobutadiene	390 U	370 U	400 U	380 U	380 U	370 U
4-Chloro-3-methylphenol	390 U	370 U	400 U	380 U	380 U	370 U
2-Methylnaphthalene	390 U	370 U	400 U	380 U	380 U	370 U
Hexachlorocyclopentadie	390 U	370 U	400 U	380 U	380 U	370 U
2,4,6-Trichlorophenol	390 U	370 U	400 U	380 U	380 U	370 U
2,4,5-Trichlorophenol	940 U	890 U	960 U	920 U	920 U	900 U
2-Chloronaphthalene	390 U	370 U	400 U	380 U	380 U	370 U
2-Nitroaniline	940 U	890 U	960 U	920 U	920 U	900 U
Dimethylphthalate	390 U	370 U	400 U	380 U	380 U	370 U
Acenaphthylene	390 U	370 U	400 U	380 U	380 U	370 U
2,6-Dinitrotoluene	390 U	370 U	400 U	380 U	380 U	370 U
3-Nitroaniline	940 U	890 U	960 U	920 U	920 U	900 U
Acenaphthene	390 U	370 U	400 U	380 U	380 U	370 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS41RR	BGS42RR	BGS43RR	BGS44RR	BGS44RRD	BGS45RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
2,4-Dinitrophenol	940 U	890 U	960 U	920 U	920 U	900 U
4-Nitrophenol	940 U	890 U	960 U	920 U	920 U	900 U
Dibenzofuran	390 U	370 U	400 U	380 U	380 U	370 U
2,4-Dinitrotoluene	390 U	370 U	400 U	380 U	380 U	370 U
Diethylphthalate	390 U	370 U	400 U	380 U	380 U	370 U
4-Chlorophenyl-phenylether	390 U	370 U	400 U	380 U	380 U	370 U
Fluorene	390 U	370 U	400 U	380 U	380 U	370 U
4-Nitroaniline	940 U	890 U	960 U	920 U	920 U	900 U
4,6-Dinitro-2-methylphenol	940 U	890 U	960 U	920 U	920 U	900 U
N-Nitrosodiphenylamine	390 U	370 U	400 U	380 U	380 U	370 U
4-Bromophenyl-phenylether	390 U	370 U	400 U	380 U	380 U	370 U
Hexachlorobenzene	390 U	370 U	400 U	380 U	380 U	370 U
Pentachlorophenol	940 U	890 U	960 U	920 U	920 U	900 U
Phenanthrene	390 U	370 U	400 U	380 U	380 U	370 U
Anthracene	390 U	370 U	400 U	380 U	380 U	370 U
Carbazole	390 U	370 U	400 U	380 U	380 U	370 U
di-n-Butylphthalate	390 U	370 UJ	400 UJ	380 U	380 U	370 U
Fluoranthene	120 J	430	220 J	380 U	380 U	370 U
Pyrene	390 U	320 J	190 J	380 U	380 U	370 U
Butylbenzylphthalate	390 U	370 U	400 U	380 U	380 U	370 U
3,3'-Dichlorobenzidine	390 U	370 U	400 U	380 U	380 U	370 U
Benzo(a)anthracene	390 U	240 J	120 J	380 U	380 U	370 U
Chrysene	390 U	270 J	220 J	380 U	380 U	370 U
Bis(2-ethylhexyl)phthalate	390 U	370 U	400 U	380 U	380 U	370 U
di-n-Octylphthalate	390 U	370 UJ	400 UJ	380 U	380 U	370 U
Benzo(b)fluoranthene	390 U	500	450	380 U	380 U	370 U
Benzo(k)fluoranthene	390 U	130 J	120 J	380 U	380 U	370 U
Benzo(a)pyrene	390 U	180 J	140 J	380 U	380 U	370 U
Indeno(1,2,3-cd)pyrene	390 U	160 J	400 U	380 U	380 U	370 U
Dibenz(a,h)anthracene	390 U	370 U	400 U	380 U	380 U	370 U
Benzo(g,h,i)perylene	390 U	370 U	400 U	380 U	380 U	370 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS46RR	BGS47RR	BGS48RR	BGS49RR	BGS50RR	BGS51RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	410 U	340 U	6700 U	340 U	340 U	350 U
Bis(2-chloroethyl)ether	410 U	340 U	6700 U	340 U	340 U	350 U
2-Chlorophenol	410 U	340 U	6700 U	340 U	340 U	350 U
1,3-Dichlorobenzene	410 U	340 U	6700 U	340 U	340 U	350 U
1,4-Dichlorobenzene	410 U	340 U	6700 U	340 U	340 U	350 U
1,2-Dichlorobenzene	410 U	340 U	6700 U	340 U	340 U	350 U
2-Methylphenol	410 U	340 U	6700 U	340 U	340 U	350 U
2,2'-Oxybis(1-chloropropane)	410 U	340 U	6700 U	340 U	340 U	350 U
4-Methylphenol	410 U	340 U	6700 U	340 U	340 U	350 U
N-Nitroso-di-n-propylamine	410 U	340 U	6700 U	340 U	340 U	350 U
Hexachloroethane	410 U	340 U	6700 U	340 U	340 U	350 U
Nitrobenzene	410 U	340 U	6700 U	340 U	340 U	350 U
Isophorone	410 U	340 U	6700 U	340 U	340 U	350 U
2-Nitrophenol	410 U	340 U	6700 U	340 U	340 U	350 U
2,4-Dimethylphenol	410 U	340 U	6700 U	340 U	340 U	350 U
Bis(2-chloroethoxy)methane	410 U	340 U	6700 U	340 U	340 U	350 U
2,4-Dichlorophenol	410 U	340 U	6700 U	340 U	340 U	350 U
1,2,4-Trichlorobenzene	410 U	340 U	6700 U	340 U	340 U	350 U
Naphthalene	410 U	340 U	6700 U	340 U	340 U	350 U
4-Chloroaniline	410 U	340 U	6700 U	340 U	340 U	350 U
Hexachlorobutadiene	410 U	340 U	6700 U	340 U	340 U	350 U
4-Chloro-3-methylphenol	410 U	340 U	6700 U	340 U	340 U	350 U
2-Methylnaphthalene	410 U	340 U	6700 U	340 U	340 U	350 U
Hexachlorocyclopentadie	410 U	340 UJ	6700 U	340 U	340 U	350 U
2,4,6-Trichlorophenol	410 U	340 UJ	6700 U	340 U	340 U	350 U
2,4,5-Trichlorophenol	1000 U	820 UJ	16000 U	820 U	830 U	840 U
2-Chloronaphthalene	410 U	340 UJ	6700 U	340 U	340 U	350 U
2-Nitroaniline	1000 U	820 UJ	16000 U	820 U	830 U	840 U
Dimethylphthalate	410 U	340 UJ	6700 U	340 U	340 U	350 U
Acenaphthylene	410 U	340 UJ	6700 U	340 U	340 U	350 U
2,6-Dinitrotoluene	410 U	340 UJ	6700 U	340 U	340 U	350 U
3-Nitroaniline	1000 U	820 UJ	16000 U	820 U	830 U	840 U
Acenaphthene	410 U	340 UJ	6700 U	340 U	340 U	350 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS46RR	BGS47RR	BGS48RR	BGS49RR	BGS50RR	BGS51RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
2,4-Dinitrophenol	1000 U	820 UJ	16000 U	820 U	830 U	840 U
4-Nitrophenol	1000 U	820 UJ	16000 U	820 U	830 U	840 U
Dibenzofuran	410 U	340 UJ	6700 U	340 U	340 U	350 U
2,4-Dinitrotoluene	410 U	340 UJ	6700 U	340 U	340 U	350 U
Diethylphthalate	410 U	340 UJ	6700 U	340 U	340 U	350 U
4-Chlorophenyl-phenylether	410 U	340 UJ	6700 U	340 U	340 U	350 U
Fluorene	410 U	340 UJ	6700 U	340 U	340 U	350 U
4-Nitroaniline	1000 U	820 UJ	16000 U	820 U	830 U	840 U
4,6-Dinitro-2-methylphenol	1000 U	820 U	16000 U	820 U	830 U	840 U
N-Nitrosodiphenylamine	410 U	340 U	6700 U	340 U	340 U	350 U
4-Bromophenyl-phenylether	410 U	340 U	6700 U	340 U	340 U	350 U
Hexachlorobenzene	410 U	340 U	6700 U	340 U	340 U	350 U
Pentachlorophenol	1000 U	820 U	16000 U	820 U	830 U	840 U
Phenanthrene	410 U	340 U	6700 U	340 U	340 U	350 U
Anthracene	410 U	340 U	6700 U	340 U	340 U	350 U
Carbazole	410 U	340 U	6700 U	340 U	340 U	350 U
di-n-Butylphthalate	410 U	340 U	6700 U	340 UJ	340 UJ	350 U
Fluoranthene	410 U	340 U	6700 U	340 U	200 J	350 U
Pyrene	410 U	340 U	6700 U	340 U	160 J	350 U
Butylbenzylphthalate	410 U	340 U	6700 U	340 U	340 U	350 U
3,3'-Dichlorobenzidine	410 U	340 U	6700 U	340 U	340 U	350 U
Benzo(a)anthracene	410 U	340 U	6700 U	340 U	340 U	350 U
Chrysene	410 U	340 U	6700 U	340 U	150 J	350 U
Bis(2-ethylhexyl)phthalate	410 U	340 U	6700 U	340 U	340 U	350 U
di-n-Octylphthalate	410 UJ	340 U	6700 UJ	340 UJ	340 UJ	350 U
Benzo(b)fluoranthene	410 UJ	340 U	6700 UJ	340 U	230 J	350 U
Benzo(k)fluoranthene	410 UJ	340 U	6700 UJ	340 U	340 U	350 U
Benzo(a)pyrene	410 UJ	340 U	6700 UJ	340 U	340 U	350 U
Indeno(1,2,3-cd)pyrene	410 UJ	340 U	6700 UJ	340 U	340 U	350 U
Dibenz(a,h)anthracene	410 UJ	340 U	6700 UJ	340 U	340 U	350 U
Benzo(g,h,i)perylene	410 UJ	340 U	6700 UJ	340 U	340 U	350 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS52RR
Date sampled	07/09/94
Depth	0-6"
Units	UG/KG
Phenol	360 U
Bis(2-chloroethyl)ether	360 U
2-Chlorophenol	360 U
1,3-Dichlorobenzene	360 U
1,4-Dichlorobenzene	360 U
1,2-Dichlorobenzene	360 U
2-Methylphenol	360 U
2,2'-Oxybis(1-chloropropane)	360 U
4-Methylphenol	360 U
N-Nitroso-di-n-propylamine	360 U
Hexachloroethane	360 U
Nitrobenzene	360 U
Isophorone	360 U
2-Nitrophenol	360 U
2,4-Dimethylphenol	360 U
Bis(2-chloroethoxy)methane	360 U
2,4-Dichlorophenol	360 U
1,2,4-Trichlorobenzene	360 U
Naphthalene	360 U
4-Chloroaniline	360 U
Hexachlorobutadiene	360 U
4-Chloro-3-methylphenol	360 U
2-Methylnaphthalene	360 U
Hexachlorocyclopentadie	360 U
2,4,6-Trichlorophenol	360 U
2,4,5-Trichlorophenol	870 U
2-Chloronaphthalene	360 U
2-Nitroaniline	870 U
Dimethylphthalate	360 U
Acenaphthylene	360 U
2,6-Dinitrotoluene	360 U
3-Nitroaniline	870 U
Acenaphthene	360 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS52RR
Date sampled	07/09/94
Depth	0-6"
Units	UG/KG
2,4-Dinitrophenol	870 U
4-Nitrophenol	870 U
Dibenzofuran	360 U
2,4-Dinitrotoluene	360 U
Diethylphthalate	360 U
4-Chlorophenyl-phenylether	360 U
Fluorene	360 U
4-Nitroaniline	870 U
4,6-Dinitro-2-methylphenol	870 U
N-Nitrosodiphenylamine	360 U
4-Bromophenyl-phenylether	360 U
Hexachlorobenzene	360 U
Pentachlorophenol	870 U
Phenanthrene	360 U
Anthracene	360 U
Carbazole	360 U
di-n-Butylphthalate	360 U
Fluoranthene	360 U
Pyrene	360 U
Butylbenzylphthalate	360 U
3,3'-Dichlorobenzidine	360 U
Benzo(a)anthracene	360 U
Chrysene	360 U
Bis(2-ethylhexyl)phthalate	360 U
di-n-Octylphthalate	360 UJ
Benzo(b)fluoranthene	360 UJ
Benzo(k)fluoranthene	360 UJ
Benzo(a)pyrene	360 UJ
Indeno(1,2,3-cd)pyrene	360 UJ
Dibenz(a,h)anthracene	360 UJ
Benzo(g,h,i)perylene	360 UJ

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	340 U	6700 U	ND	ND		0/13
Bis(2-chloroethyl)ether	340 U	6700 U	ND	ND		0/13
2-Chlorophenol	340 U	6700 U	ND	ND		0/13
1,3-Dichlorobenzene	340 U	6700 U	ND	ND		0/13
1,4-Dichlorobenzene	340 U	6700 U	ND	ND		0/13
1,2-Dichlorobenzene	340 U	6700 U	ND	ND		0/13
2-Methylphenol	340 U	6700 U	ND	ND		0/13
2,2'-Oxybis(1-chloropropane)	340 U	6700 U	ND	ND		0/13
4-Methylphenol	340 U	6700 U	ND	ND		0/13
N-Nitroso-di-n-propylamine	340 U	6700 U	ND	ND		0/13
Hexachloroethane	340 U	6700 U	ND	ND		0/13
Nitrobenzene	340 U	6700 U	ND	ND		0/13
Isophorone	340 U	6700 U	ND	ND		0/13
2-Nitrophenol	340 U	6700 U	ND	ND		0/13
2,4-Dimethylphenol	340 U	6700 U	ND	ND		0/13
Bis(2-chloroethoxy)methane	340 U	6700 U	ND	ND		0/13
2,4-Dichlorophenol	340 U	6700 U	ND	ND		0/13
1,2,4-Trichlorobenzene	340 U	6700 U	ND	ND		0/13
Naphthalene	340 U	6700 U	ND	ND		0/13
4-Chloroaniline	340 U	6700 U	ND	ND		0/13
Hexachlorobutadiene	340 U	6700 U	ND	ND		0/13
4-Chloro-3-methylphenol	340 U	6700 U	ND	ND		0/13
2-Methylnaphthalene	340 U	6700 U	ND	ND		0/13
Hexachlorocyclopentadie	340 UJ	6700 U	ND	ND		0/13
2,4,6-Trichlorophenol	340 UJ	6700 U	ND	ND		0/13
2,4,5-Trichlorophenol	820 UJ	16000 U	ND	ND		0/13
2-Chloronaphthalene	340 UJ	6700 U	ND	ND		0/13
2-Nitroaniline	820 UJ	16000 U	ND	ND		0/13
Dimethylphthalate	340 UJ	6700 U	ND	ND		0/13
Acenaphthylene	340 UJ	6700 U	ND	ND		0/13
2,6-Dinitrotoluene	340 UJ	6700 U	ND	ND		0/13
3-Nitroaniline	820 UJ	16000 U	ND	ND		0/13
Acenaphthene	340 UJ	6700 U	ND	ND		0/13

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
2,4-Dinitrophenol	820 UJ	16000 U	ND	ND		0/13
4-Nitrophenol	820 UJ	16000 U	ND	ND		0/13
Dibenzofuran	340 UJ	6700 U	ND	ND		0/13
2,4-Dinitrotoluene	340 UJ	6700 U	ND	ND		0/13
Diethylphthalate	340 UJ	6700 U	ND	ND		0/13
4-Chlorophenyl-phenylether	340 UJ	6700 U	ND	ND		0/13
Fluorene	340 UJ	6700 U	ND	ND		0/13
4-Nitroaniline	820 UJ	16000 U	ND	ND		0/13
4,6-Dinitro-2-methylphenol	820 U	16000 U	ND	ND		0/13
N-Nitrosodiphenylamine	340 U	6700 U	ND	ND		0/13
4-Bromophenyl-phenylether	340 U	6700 U	ND	ND		0/13
Hexachlorobenzene	340 U	6700 U	ND	ND		0/13
Pentachlorophenol	820 U	16000 U	ND	ND		0/13
Phenanthrene	340 U	6700 U	ND	ND		0/13
Anthracene	340 U	6700 U	ND	ND		0/13
Carbazole	340 U	6700 U	ND	ND		0/13
di-n-Butylphthalate	340 U	6700 U	ND	ND		0/13
Fluoranthene	340 U	6700 U	120 J	430	BGS42RR	4/13
Pyrene	340 U	6700 U	160 J	320 J	BGS42RR	3/13
Butylbenzylphthalate	340 U	6700 U	ND	ND		0/13
3,3'-Dichlorobenzidine	340 U	6700 U	ND	ND		0/13
Benzo(a)anthracene	340 U	6700 U	120 J	240 J	BGS42RR	2/13
Chrysene	340 U	6700 U	150 J	270 J	BGS42RR	3/13
Bis(2-ethylhexyl)phthalate	340 U	6700 U	ND	ND		0/13
di-n-Octylphthalate	340 U	6700 UJ	ND	ND		0/13
Benzo(b)fluoranthene	340 U	6700 UJ	230 J	500	BGS42RR	3/13
Benzo(k)fluoranthene	340 U	6700 UJ	120 J	130 J	BGS42RR	2/13
Benzo(a)pyrene	340 U	6700 UJ	140 J	180 J	BGS42RR	2/13
Indeno(1,2,3-cd)pyrene	340 U	6700 UJ	160 J	160 J	BGS42RR	1/13
Dibenz(a,h)anthracene	340 U	6700 UJ	ND	ND		0/13
Benzo(g,h,i)perylene	340 U	6700 UJ	ND	ND		0/13

TABLE 9
STATISTICAL SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	428.08	878.00	862.02	5.44	0.81	596.42
Bis(2-chloroethyl)ether	428.08	878.00	862.02	5.44	0.81	596.42
2-Chlorophenol	428.08	878.00	862.02	5.44	0.81	596.42
1,3-Dichlorobenzene	428.08	878.00	862.02	5.44	0.81	596.42
1,4-Dichlorobenzene	428.08	878.00	862.02	5.44	0.81	596.42
1,2-Dichlorobenzene	428.08	878.00	862.02	5.44	0.81	596.42
2-Methylphenol	428.08	878.00	862.02	5.44	0.81	596.42
2,2'-Oxybis(1-chloropropane)	428.08	878.00	862.02	5.44	0.81	596.42
4-Methylphenol	428.08	878.00	862.02	5.44	0.81	596.42
N-Nitroso-di-n-propylamine	428.08	878.00	862.02	5.44	0.81	596.42
Hexachloroethane	428.08	878.00	862.02	5.44	0.81	596.42
Nitrobenzene	428.08	878.00	862.02	5.44	0.81	596.42
Isophorone	428.08	878.00	862.02	5.44	0.81	596.42
2-Nitrophenol	428.08	878.00	862.02	5.44	0.81	596.42
2,4-Dimethylphenol	428.08	878.00	862.02	5.44	0.81	596.42
Bis(2-chloroethoxy)methane	428.08	878.00	862.02	5.44	0.81	596.42
2,4-Dichlorophenol	428.08	878.00	862.02	5.44	0.81	596.42
1,2,4-Trichlorobenzene	428.08	878.00	862.02	5.44	0.81	596.42
Naphthalene	428.08	878.00	862.02	5.44	0.81	596.42
4-Chloroaniline	428.08	878.00	862.02	5.44	0.81	596.42
Hexachlorobutadiene	428.08	878.00	862.02	5.44	0.81	596.42
4-Chloro-3-methylphenol	428.08	878.00	862.02	5.44	0.81	596.42
2-Methylnaphthalene	428.08	878.00	862.02	5.44	0.81	596.42
Hexachlorocyclopentadie	428.08	878.00	862.02	5.44	0.81	596.42
2,4,6-Trichlorophenol	428.08	878.00	862.02	5.44	0.81	596.42
2,4,5-Trichlorophenol	1027.31	2095.22	2062.84	6.32	0.80	1432.89
2-Chloronaphthalene	428.08	878.00	862.02	5.44	0.81	596.42
2-Nitroaniline	1027.31	2095.22	2062.84	6.32	0.80	1432.89
Dimethylphthalate	428.08	878.00	862.02	5.44	0.81	596.42
Acenaphthylene	428.08	878.00	862.02	5.44	0.81	596.42
2,6-Dinitrotoluene	428.08	878.00	862.02	5.44	0.81	596.42
3-Nitroaniline	1027.31	2095.22	2062.84	6.32	0.80	1432.89
Acenaphthene	428.08	878.00	862.02	5.44	0.81	596.42

TABLE 9
STATISTICAL SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
2,4-Dinitrophenol	1027.31	2095.22	2062.84	6.32	0.80	1432.89
4-Nitrophenol	1027.31	2095.22	2062.84	6.32	0.80	1432.89
Dibenzofuran	428.08	878.00	862.02	5.44	0.81	596.42
2,4-Dinitrotoluene	428.08	878.00	862.02	5.44	0.81	596.42
Diethylphthalate	428.08	878.00	862.02	5.44	0.81	596.42
4-Chlorophenyl-phenylether	428.08	878.00	862.02	5.44	0.81	596.42
Fluorene	428.08	878.00	862.02	5.44	0.81	596.42
4-Nitroaniline	1027.31	2095.22	2062.84	6.32	0.80	1432.89
4,6-Dinitro-2-methylphenol	1027.31	2095.22	2062.84	6.32	0.80	1432.89
N-Nitrosodiphenylamine	428.08	878.00	862.02	5.44	0.81	596.42
4-Bromophenyl-phenylether	428.08	878.00	862.02	5.44	0.81	596.42
Hexachlorobenzene	428.08	878.00	862.02	5.44	0.81	596.42
Pentachlorophenol	1027.31	2095.22	2062.84	6.32	0.80	1432.89
Phenanthrene	428.08	878.00	862.02	5.44	0.81	596.42
Anthracene	428.08	878.00	862.02	5.44	0.81	596.42
Carbazole	428.08	878.00	862.02	5.44	0.81	596.42
di-n-Butylphthalate	428.08	878.00	862.02	5.44	0.81	596.42
Fluoranthene	445.00	875.84	877.87	5.49	0.84	657.55
Pyrene	436.92	876.17	869.96	5.47	0.81	621.98
Butylbenzylphthalate	428.08	878.00	862.02	5.44	0.81	596.42
3,3'-Dichlorobenzidine	428.08	878.00	862.02	5.44	0.81	596.42
Benzo(a)anthracene	426.15	878.91	860.54	5.42	0.82	602.11
Chrysene	434.62	876.45	867.79	5.47	0.81	614.71
Bis(2-ethylhexyl)phthalate	428.08	878.00	862.02	5.44	0.81	596.42
di-n-Octylphthalate	428.08	878.00	862.02	5.44	0.81	596.42
Benzo(b)fluoranthene	476.15	870.24	906.26	5.60	0.83	733.27
Benzo(k)fluoranthene	417.69	881.38	853.30	5.37	0.84	587.13
Benzo(a)pyrene	423.08	879.57	857.80	5.41	0.82	589.97
Indeno(1,2,3-cd)pyrene	426.15	878.61	860.39	5.43	0.81	593.81
Dibenz(a,h)anthracene	428.08	878.00	862.02	5.44	0.81	596.42
Benzo(g,h,i)perylene	428.08	878.00	862.02	5.44	0.81	596.42

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS41RR	BGS42RR	BGS43RR	BGS44RR	BGS44RRD	BGS45RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
beta-BHC	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
delta-BHC	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
gamma-BHC (Lindane)	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
Heptachlor	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
Aldrin	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
Heptachlor Epoxide	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
Endosulfan I	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
Dieldrin	3.6 U	3.7 U	4 U	3.8 U	3.6 U	3.7 UL
4,4'-DDE	3.6 U	3.7 U	4 U	3.8 U	3.6 U	3.7 UL
Endrin	3.6 U	3.7 U	4 U	3.8 U	3.6 U	3.7 UL
Endosulfan II	3.6 U	3.7 U	4 U	3.8 U	3.6 U	3.7 UL
4,4'-DDD	3.6 U	3.7 U	4 U	3.8 U	3.6 U	3.7 UL
Endosulfan Sulfate	3.6 U	3.7 U	4 U	3.8 U	3.6 U	3.7 UL
4,4'-DDT	3.6 U	3.7 U	4 U	3.8 U	3.6 U	3.7 UL
Methoxychlor	18 U	19 U	20 U	19 U	18 U	19 UL
Endrin Ketone	3.6 U	3.7 U	4 U	3.8 U	3.6 U	3.7 UL
Endrin Aldehyde	3.6 U	3.7 U	4 U	3.8 U	3.6 U	3.7 UL
alpha-Chlordane	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
gamma-Chlordane	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 UL
Toxaphene	180 U	190 U	200 U	190 U	180 U	190 UL
Aroclor-1016	36 U	37 U	40 U	38 U	36 U	37 UL
Aroclor-1221	72 U	74 U	80 U	77 U	72 U	75 UL
Aroclor-1232	36 U	37 U	40 U	38 U	36 U	37 UL
Aroclor-1242	36 U	37 U	40 U	38 U	36 U	37 UL
Aroclor-1248	36 U	37 U	40 U	38 U	36 U	37 UL
Aroclor-1254	36 U	37 U	40 U	38 U	36 U	37 UL
Aroclor-1260	36 U	37 U	40 U	38 U	36 U	37 UL

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS46RR	BGS47RR	BGS48RR	BGS49RR	BGS50RR	BGS51RR
Date sampled	07/09/94	08/17/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
beta-BHC	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
delta-BHC	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
gamma-BHC (Lindane)	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
Heptachlor	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
Aldrin	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
Heptachlor Epoxide	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
Endosulfan I	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
Dieldrin	4.2 U	3.7 UJ	3.5 U	3.4 U	3.5 U	3.5 U
4,4'-DDE	4.2 U	3.7 UJ	3.5 U	3.4 U	3.5 U	3.5 U
Endrin	4.2 U	3.7 UJ	3.5 U	3.4 U	3.5 U	3.5 U
Endosulfan II	4.2 U	3.7 UJ	3.5 U	3.4 U	3.5 U	3.5 U
4,4'-DDD	4.2 U	3.7 UJ	3.5 U	3.4 U	3.5 U	3.5 U
Endosulfan Sulfate	4.2 U	3.7 UJ	3.5 U	3.4 U	3.5 U	3.5 U
4,4'-DDT	4.2 U	3.7 UJ	3.5 U	3.4 U	3.5 U	3.5 U
Methoxychlor	21 U	18 UJ	18 U	17 U	17 U	17 U
Endrin Ketone	4.2 U	3.7 UJ	3.5 U	3.4 U	3.5 U	3.5 U
Endrin Aldehyde	4.2 U	3.7 UJ	3.5 U	3.4 U	3.5 U	3.5 U
alpha-Chlordane	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
gamma-Chlordane	2.1 U	1.8 UJ	1.8 U	1.7 U	1.7 U	1.7 U
Toxaphene	210 U	180 UJ	180 U	170 U	170 U	170 U
Aroclor-1016	42 U	37 UJ	35 U	34 U	35 U	35 U
Aroclor-1221	83 U	74 UJ	71 U	68 U	69 U	70 U
Aroclor-1232	42 U	37 UJ	35 U	34 U	35 U	35 U
Aroclor-1242	42 U	37 UJ	35 U	34 U	35 U	35 U
Aroclor-1248	42 U	37 UJ	35 U	34 U	35 U	35 U
Aroclor-1254	42 U	37 UJ	35 U	34 U	35 U	35 U
Aroclor-1260	42 U	37 UJ	35 U	34 U	35 U	35 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS52RR
Date sampled	07/09/94
Depth	0-6"
Units	UG/KG
alpha-BHC	1.8 U
beta-BHC	1.8 U
delta-BHC	1.8 U
gamma-BHC (Lindane)	1.8 U
Heptachlor	1.8 U
Aldrin	1.8 U
Heptachlor Epoxide	1.8 U
Endosulfan I	1.8 U
Dieldrin	3.6 U
4,4'-DDE	3.6 U
Endrin	3.6 U
Endosulfan II	3.6 U
4,4'-DDD	3.6 U
Endosulfan Sulfate	3.6 U
4,4'-DDT	3.6 U
Methoxychlor	18 U
Endrin Ketone	3.6 U
Endrin Aldehyde	3.6 U
alpha-Chlordane	1.8 U
gamma-Chlordane	1.8 U
Toxaphene	180 U
Aroclor-1016	36 U
Aroclor-1221	72 U
Aroclor-1232	36 U
Aroclor-1242	36 U
Aroclor-1248	36 U
Aroclor-1254	36 U
Aroclor-1260	36 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	1.7 U	2.1 U	ND	ND		0/13
beta-BHC	1.7 U	2.1 U	ND	ND		0/13
delta-BHC	1.7 U	2.1 U	ND	ND		0/13
gamma-BHC (Lindane)	1.7 U	2.1 U	ND	ND		0/13
Heptachlor	1.7 U	2.1 U	ND	ND		0/13
Aldrin	1.7 U	2.1 U	ND	ND		0/13
Heptachlor Epoxide	1.7 U	2.1 U	ND	ND		0/13
Endosulfan I	1.7 U	2.1 U	ND	ND		0/13
Dieldrin	3.4 U	4.2 U	ND	ND		0/13
4,4'-DDE	3.4 U	4.2 U	ND	ND		0/13
Endrin	3.4 U	4.2 U	ND	ND		0/13
Endosulfan II	3.4 U	4.2 U	ND	ND		0/13
4,4'-DDD	3.4 U	4.2 U	ND	ND		0/13
Endosulfan Sulfate	3.4 U	4.2 U	ND	ND		0/13
4,4'-DDT	3.4 U	4.2 U	ND	ND		0/13
Methoxychlor	17 U	21 U	ND	ND		0/13
Endrin Ketone	3.4 U	4.2 U	ND	ND		0/13
Endrin Aldehyde	3.4 U	4.2 U	ND	ND		0/13
alpha-Chlordane	1.7 U	2.1 U	ND	ND		0/13
gamma-Chlordane	1.7 U	2.1 U	ND	ND		0/13
Toxaphene	170 U	210 U	ND	ND		0/13
Aroclor-1016	34 U	42 U	ND	ND		0/13
Aroclor-1221	68 U	83 U	ND	ND		0/13
Aroclor-1232	34 U	42 U	ND	ND		0/13
Aroclor-1242	34 U	42 U	ND	ND		0/13
Aroclor-1248	34 U	42 U	ND	ND		0/13
Aroclor-1254	34 U	42 U	ND	ND		0/13
Aroclor-1260	34 U	42 U	ND	ND		0/13

TABLE 9
STATISTICAL SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	0.92	0.06	0.95	-0.09	0.06	0.95
beta-BHC	0.92	0.06	0.95	-0.09	0.06	0.95
delta-BHC	0.92	0.06	0.95	-0.09	0.06	0.95
gamma-BHC (Lindane)	0.92	0.06	0.95	-0.09	0.06	0.95
Heptachlor	0.92	0.06	0.95	-0.09	0.06	0.95
Aldrin	0.92	0.06	0.95	-0.09	0.06	0.95
Heptachlor Epoxide	0.92	0.06	0.95	-0.09	0.06	0.95
Endosulfan I	0.92	0.06	0.95	-0.09	0.06	0.95
Dieldrin	1.84	0.11	1.89	0.61	0.06	1.89
4,4'-DDE	1.84	0.11	1.89	0.61	0.06	1.89
Endrin	1.84	0.11	1.89	0.61	0.06	1.89
Endosulfan II	1.84	0.11	1.89	0.61	0.06	1.89
4,4'-DDD	1.84	0.11	1.89	0.61	0.06	1.89
Endosulfan Sulfate	1.84	0.11	1.89	0.61	0.06	1.89
4,4'-DDT	1.84	0.11	1.89	0.61	0.06	1.89
Methoxychlor	9.19	0.60	9.49	2.22	0.06	9.50
Endrin Ketone	1.84	0.11	1.89	0.61	0.06	1.89
Endrin Aldehyde	1.84	0.11	1.89	0.61	0.06	1.89
alpha-Chlordane	0.92	0.06	0.95	-0.09	0.06	0.95
gamma-Chlordane	0.92	0.06	0.95	-0.09	0.06	0.95
Toxaphene	91.92	5.96	94.87	4.52	0.06	94.97
Aroclor-1016	18.38	1.10	18.93	2.91	0.06	18.94
Aroclor-1221	36.81	2.16	37.87	3.60	0.06	37.90
Aroclor-1232	18.38	1.10	18.93	2.91	0.06	18.94
Aroclor-1242	18.38	1.10	18.93	2.91	0.06	18.94
Aroclor-1248	18.38	1.10	18.93	2.91	0.06	18.94
Aroclor-1254	18.38	1.10	18.93	2.91	0.06	18.94
Aroclor-1260	18.38	1.10	18.93	2.91	0.06	18.94

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS41RR	BGS42RR	BGS43RR	BGS44RR	BGS44RRD	BGS45RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS46RR	BGS47RR	BGS48RR	BGS49RR	BGS50RR	BGS51RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	1.0 J	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	1.3 J	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS52RR
Date sampled	07/09/94
Depth	0-6"
Units	MG/KG
HMX	0.5 U
RDX	0.59 U
1,3,5-Trinitrobenzene	0.56 U
1,3-Dinitrobenzene	0.42 U
Tetryl	1.2 U
Nitrobenzene	0.58 U
2,4,6-Trinitrotoluene	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U
2-Amino-Dinitrotoluene	1 U
2,6-Dinitrotoluene	1 U
2,4-Dinitrotoluene	1 U
Dinitrotoluene (isomeric mixture)	0.82 U
2-Nitrotoluene	0.45 U
4-Nitrotoluene	0.69 U
3-Nitrotoluene	1.2 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.5 U	0.5 U	ND	ND		0/13
RDX	0.59 U	0.59 U	ND	ND		0/13
1,3,5-Trinitrobenzene	0.56 U	0.56 U	1 J	1 J	BGS50RR	1/13
1,3-Dinitrobenzene	0.42 U	0.42 U	ND	ND		0/13
Tetryl	1.2 U	1.2 U	ND	ND		0/13
Nitrobenzene	0.58 U	0.58 U	ND	ND		0/13
2,4,6-Trinitrotoluene	0.44 U	0.44 U	ND	ND		0/13
4-Amino-2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/13
2-Amino-Dinitrotoluene	1 U	1 U	ND	ND		0/13
2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/13
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/13
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	1.3 J	1.3 J	BGS50RR	1/13
2-Nitrotoluene	0.45 U	0.45 U	ND	ND		0/13
4-Nitrotoluene	0.69 U	0.69 U	ND	ND		0/13
3-Nitrotoluene	1.2 U	1.2 U	ND	ND		0/13

TABLE 9
STATISTICAL SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.25	0.00	0.25	-1.39	0.00	0.25
RDX	0.30	0.00	0.30	-1.22	0.00	0.30
1,3,5-Trinitrobenzene	0.34	0.20	0.43	-1.18	0.35	0.40
1,3-Dinitrobenzene	0.21	0.00	0.21	-1.56	0.00	0.21
Tetryl	0.60	0.00	0.60	-0.51	0.00	0.60
Nitrobenzene	0.29	0.00	0.29	-1.24	0.00	0.29
2,4,6-Trinitrotoluene	0.22	0.00	0.22	-1.51	0.00	0.22
4-Amino-2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2-Amino-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
Dinitrotoluene (isomeric mixture)	0.48	0.25	0.60	-0.80	0.32	0.57
2-Nitrotoluene	0.23	0.00	0.23	-1.49	0.00	0.23
4-Nitrotoluene	0.35	0.00	0.35	-1.06	0.00	0.35
3-Nitrotoluene	0.60	0.00	0.60	-0.51	0.00	0.60

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS41RR	BGS42RR	BGS43RR	BGS44RR	BGS44RRD	BGS45RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	6990	2840	6920	16600	20300	15000
Antimony	8.5 R	8.3 UL	8.5 UL	8.7 R	10.7 R	8.4 R
Arsenic	3.5 L	6.5	9	3.4 L	3 L	3.4 L
Barium	36.7 J	15.3 J	18.1 J	16.5 J	20.6 J	18.2 J
Beryllium	0.29 J	0.22 U	0.23 U	0.42 J	0.38 J	0.45 J
Cadmium	1.2 U	1.1 U	1.1 U	1.2 U	1.4 U	1.1 U
Calcium	754 J	138 J	90.7 J	405 J	572 J	1630
Chromium	10.4	5.6	13.5	26	25.1	23.2
Cobalt	2.5 J	1.8 J	1.4 J	3 J	2.1 J	2 J
Copper	3.6 J	1.2 J	3.5 J	5.4 J	5.2 J	4.3 J
Iron	5740	2070	4230	42700	36200	30400
Lead	8.5	8.6 L	16.7 L	8.4	9.4	7.5
Magnesium	442 J	175 J	307 J	852 J	1060 J	1180
Manganese	161	95.9	22.9	52.1	42.2	34.6
Mercury	0.05 U	0.05 U	0.05 U	0.06 U	0.07 U	0.06 U
Nickel	4.2 J	3.6 U	3.7 U	10.7	7.2 J	5.8 J
Potassium	559 J	353 U	387 J	1390	1320 J	1090 J
Selenium	0.23 UL	0.22 U	0.23 L	0.61 L	0.48 L	0.43 L
Silver	0.92 U	0.9 U	0.92 U	1.8 J	1.3 J	1 J
Sodium	41.8 J	68.6 J	20.8 J	41.5 J	75.6 J	32.8 J
Thallium	0.23 U	0.22 U	0.22 U	0.23 U	0.29 U	0.23 U
Vanadium	19.3	11 J	31.3	46.7	49.5	44.6
Zinc	19.5	6.5	9.2	17	20.1	18.6
Cyanide	0.57 UL	0.56 R	0.56 R	0.58 UL	0.71 UL	0.56 UL

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS46RR	BGS47RR	BGS48RR	BGS49RR	BGS50RR	BGS51RR
Date sampled	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94	07/09/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	24100	5490	2690	4590	16000	6110
Antimony	9.2 UL	7.6 UL	7.5 UL	7.6 UL	7.9 UL	7.6 R
Arsenic	6	3.7	1.2 J	1.5 J	14.8	1 L
Barium	21.7 J	20.9 J	17.3 J	10.6 J	36.6 J	15.7 J
Beryllium	0.55 J	0.21 U	0.2 U	0.21 U	0.37 J	0.2 U
Cadmium	1.2 U	1 U	1 U	1 U	1.1 U	1 U
Calcium	859 J	4320	385 J	241 J	1430	489 J
Chromium	33.5	6.7	3.5	4.9	14.5	6.2 J
Cobalt	2.9 J	1.7 J	0.88 J	1.7 J	2.8 J	0.82 U
Copper	6.1 J	7.3	1.5 J	2.3 J	2.3 J	1.4 J
Iron	46400	4850	2260	4250	9660	4210
Lead	11.1	4.7	2.1	2.3 L	6.1 L	3
Magnesium	1140 J	2700	398 J	285 J	1310	454 J
Manganese	28.5	46.9	28.8	24.7	32.9	8.7
Mercury	0.06 U	0.05 U	0.05 J	0.05 U	0.05 U	0.05 U
Nickel	12.5	5.4 J	3.2 U	3.3 U	3.4 U	3.3 U
Potassium	1360	641 J	318 U	322 U	334 U	321 U
Selenium	0.53 L	0.23 L	0.2 UL	0.21 U	0.21 L	0.2 UL
Silver	1 U	0.82 U	0.81 U	0.82 U	0.85 U	0.82 U
Sodium	55.8 J	82.2 J	96.6 J	12 J	13.4 J	28.6 J
Thallium	0.24 UL	0.2 UL	0.2 UL	0.21 U	0.21 U	0.2 U
Vanadium	64.7	9.8 J	5.2 J	8.1 J	26.2	9.5 J
Zinc	19.7	14.4	5.2	6	11.4	4.9
Cyanide	0.6 U	0.51 U	0.49 U	0.51 R	0.52 R	0.5 UL

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGS52RR
Date sampled	07/09/94
Depth	0-6"
Units	MG/KG
Aluminum	18100
Antimony	8 UL
Arsenic	3.5
Barium	39.6 J
Beryllium	0.28 J
Cadmium	1.1 U
Calcium	500 J
Chromium	16.6
Cobalt	2.5 J
Copper	3.6 J
Iron	11600
Lead	7.7
Magnesium	977 J
Manganese	13.9
Mercury	0.05 U
Nickel	6.7 J
Potassium	555 J
Selenium	0.22 UL
Silver	0.87 U
Sodium	98.2 J
Thallium	0.22 UL
Vanadium	27.6
Zinc	11.2
Cyanide	0.55 U

TABLE 9
FREQUENCY OF DETECTION SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	2690	24100	BGS46RR	13/13
Antimony	7.5 UL	9.2 UL	ND	ND		0/8
Arsenic	NA	NA	1 L	14.8	BGS50RR	13/13
Barium	NA	NA	10.6 J	39.6 J	BGS52RR	13/13
Beryllium	0.2 U	0.23 U	0.28 J	0.55 J	BGS46RR	7/13
Cadmium	1 U	1.4 U	ND	ND		0/13
Calcium	NA	NA	90.7 J	4320	BGS47RR	13/13
Chromium	NA	NA	3.5	33.5	BGS46RR	13/13
Cobalt	0.82 U	0.82 U	0.88 J	3 J	BGS44RR	12/13
Copper	NA	NA	1.2 J	7.3	BGS47RR	13/13
Iron	NA	NA	2070	46400	BGS46RR	13/13
Lead	NA	NA	2.1	16.7 L	BGS43RR	13/13
Magnesium	NA	NA	175 J	2700	BGS47RR	13/13
Manganese	NA	NA	8.7	161	BGS41RR	13/13
Mercury	0.05 U	0.07 U	0.05 J	0.05 J	BGS48RR	1/13
Nickel	3.2 U	3.7 U	4.2 J	12.5	BGS46RR	7/13
Potassium	318 U	353 U	387 J	1390	BGS44RR	8/13
Selenium	0.2 UL	0.23 UL	0.21 L	0.61 L	BGS44RR	7/13
Silver	0.81 U	1 U	1 J	1.8 J	BGS44RR	3/13
Sodium	NA	NA	12 J	98.2 J	BGS52RR	13/13
Thallium	0.2 U	0.29 U	ND	ND		0/13
Vanadium	NA	NA	5.2 J	64.7	BGS46RR	13/13
Zinc	NA	NA	4.9	20.1	BGS44RRD	13/13
Cyanide	0.49 U	0.71 UL	ND	ND		0/9

TABLE 9
STATISTICAL SUMMARY
ANTHROPOGENIC STUDY (RAILROAD)
SURFACE SOIL
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	11210.00	7325.90	14830.74	9.09	0.76	20408.11
Antimony	4.04	0.29	4.23	1.39	0.07	4.24
Arsenic	4.65	3.78	6.52	1.27	0.77	8.39
Barium	22.14	9.30	26.74	3.02	0.39	27.79
Beryllium	0.26	0.16	0.34	-1.56	0.69	0.43
Cadmium	0.56	0.06	0.59	-0.59	0.10	0.59
Calcium	908.75	1123.57	1464.06	6.31	1.03	2506.48
Chromium	14.59	9.68	19.38	2.45	0.73	25.94
Cobalt	1.98	0.78	2.36	0.57	0.56	2.96
Copper	3.67	1.93	4.62	1.15	0.59	5.52
Iron	15736.15	16681.13	23980.60	9.10	1.12	48664.30
Lead	7.39	3.98	9.36	1.84	0.62	11.74
Magnesium	867.69	675.80	1201.70	6.50	0.77	1576.24
Manganese	45.62	40.90	65.84	3.54	0.75	79.54
Mercury	0.03	0.01	0.03	-3.57	0.20	0.03
Nickel	4.83	3.68	6.65	1.30	0.78	8.81
Potassium	625.08	495.81	870.13	6.09	0.90	1397.14
Selenium	0.26	0.19	0.35	-1.59	0.71	0.44
Silver	0.65	0.44	0.87	-0.57	0.51	0.89
Sodium	51.38	30.37	66.39	3.74	0.71	90.98
Thallium	0.11	0.01	0.12	-2.20	0.10	0.12
Vanadium	27.19	19.14	36.65	3.03	0.82	54.27
Zinc	12.59	5.93	15.53	2.41	0.54	18.22
Cyanide	0.28	0.03	0.30	-1.27	0.11	0.30

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01-01	BGGW02-01	BGGW03A-01	BGGW04-01	BGGW05A-01	BGGW06A-01
Date sampled	10/06/94	09/20/94	09/23/94	10/06/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2 U	2 U	2 U	1 U	2 U	0.7 J
Acetone	5 R	5 R	5 R	5 R	5 R	15 J
Carbon disulfide	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Trans 1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Cis 1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	2 U	1
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	5 R	5 U	5 U	5 U	5 U	5 U
2-Hexanone	1 U	5 R	5 R	5 R	5 R	5 R
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	0.8 J
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	1 U	1 U	1 U	1 U	1 U	1 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW07A-01	BGGW08A-01
Date sampled	09/26/94	10/05/94
Units	UG/L	UG/L
Chloromethane	1 U	1 U
Bromomethane	1 U	1 U
Vinyl chloride	1 U	1 U
Chloroethane	1 U	1 U
Methylene chloride	2 U	0.7 J
Acetone	5 R	5 R
Carbon disulfide	1 U	1 U
1,1-Dichloroethene	1 U	1 U
1,1-Dichloroethane	1 U	1 U
Trans 1,2-Dichloroethene	1 U	1 U
Cis 1,2-Dichloroethene	1 U	1 U
Chloroform	1 U	1 U
1,2-Dichloroethane	1 U	1 U
Bromochloromethane	1 U	1 U
2-Butanone	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U
Carbon Tetrachloride	1 U	1 U
Bromodichloromethane	1 U	1 U
1,2-Dichloropropane	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U
Trichloroethene	1 U	1 U
Dibromochloromethane	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U
Benzene	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U
Bromoform	1 U	1 U
4-Methyl-2-pentanone	5 U	5 U
2-Hexanone	5 R	5 R
Tetrachloroethene	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U
Toluene	1 U	1 U
Chlorobenzene	1 U	1 U
Ethylbenzene	1 U	1 U
Styrene	1 U	1 U
Total Xylenes	1 U	1 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	1 U	1 U	ND	ND		0/8
Bromomethane	1 U	1 U	ND	ND		0/8
Vinyl chloride	1 U	1 U	ND	ND		0/8
Chloroethane	1 U	1 U	ND	ND		0/8
Methylene chloride	1 U	2 U	0.7 J	0.7 J	BGGW08A-01	2/8
Acetone	NA	NA	15 J	15 J	BGGW06A-01	1/1
Carbon disulfide	1 U	1 U	ND	ND		0/8
1,1-Dichloroethene	1 U	1 U	ND	ND		0/8
1,1-Dichloroethane	1 U	1 U	ND	ND		0/8
Trans 1,2-Dichloroethene	1 U	1 U	ND	ND		0/8
Cis 1,2-Dichloroethene	1 U	1 U	ND	ND		0/8
Chloroform	1 U	2 U	1	1	BGGW06A-01	1/8
1,2-Dichloroethane	1 U	1 U	ND	ND		0/8
Bromochloromethane	1 U	1 U	ND	ND		0/8
2-Butanone	NA	NA	ND	ND		0/0
1,1,1-Trichloroethane	1 U	1 U	ND	ND		0/8
Carbon Tetrachloride	1 U	1 U	ND	ND		0/8
Bromodichloromethane	1 U	1 U	ND	ND		0/8
1,2-Dichloropropane	1 U	1 U	ND	ND		0/8
cis-1,3-Dichloropropene	1 U	1 U	ND	ND		0/8
Trichloroethene	1 U	1 U	ND	ND		0/8
Dibromochloromethane	1 U	1 U	ND	ND		0/8
1,1,2-Trichloroethane	1 U	1 U	ND	ND		0/8
Benzene	1 U	1 U	ND	ND		0/8
trans-1,3-Dichloropropene	1 U	1 U	ND	ND		0/8
Bromoform	1 U	1 U	ND	ND		0/8
4-Methyl-2-pentanone	5 U	5 U	ND	ND		0/7
2-Hexanone	1 U	1 U	ND	ND		0/1
Tetrachloroethene	1 U	1 U	0.8 J	0.8 J	BGGW06A-01	1/8
1,1,2,2-Tetrachloroethane	1 U	1 U	ND	ND		0/8
Toluene	1 U	1 U	ND	ND		0/8
Chlorobenzene	1 U	1 U	ND	ND		0/8
Ethylbenzene	1 U	1 U	ND	ND		0/8
Styrene	1 U	1 U	ND	ND		0/8
Total Xylenes	1 U	1 U	ND	ND		0/8

TABLE 10A
STATISTICAL SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
Bromomethane	0.50	0.00	0.50	-0.69	0.00	0.50
Vinyl chloride	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Methylene chloride	0.86	0.20	1.00	-0.18	0.26	1.07
Acetone	15.00	ERR		2.71	ERR	NA
Carbon disulfide	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Trans 1,2-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Cis 1,2-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroform	0.63	0.23	0.78	-0.52	0.32	0.82
1,2-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Bromochloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
2-Butanone						
1,1,1-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Carbon Tetrachloride	0.50	0.00	0.50	-0.69	0.00	0.50
Bromodichloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,2-Dichloropropane	0.50	0.00	0.50	-0.69	0.00	0.50
cis-1,3-Dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Trichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Dibromochloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,1,2-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Benzene	0.50	0.00	0.50	-0.69	0.00	0.50
trans-1,3-Dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Bromoform	0.50	0.00	0.50	-0.69	0.00	0.50
4-Methyl-2-pentanone	2.50	0.00	2.50	0.92	0.00	2.50
2-Hexanone	0.50	ERR		-0.69	ERR	NA
Tetrachloroethene	0.54	0.11	0.61	-0.63	0.17	0.61
1,1,2,2-Tetrachloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Toluene	0.50	0.00	0.50	-0.69	0.00	0.50
Chlorobenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Ethylbenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Styrene	0.50	0.00	0.50	-0.69	0.00	0.50
Total Xylenes	0.50	0.00	0.50	-0.69	0.00	0.50

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01-01	BGGW02-01	BGGW03A-01	BGGW04-01	BGGW05A-01	BGGW06A-01
Date sampled	10/06/94	09/20/94	09/23/94	10/06/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	1 J
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 R	25 U	25 U	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 UJ	25 U	25 U	25 U	25 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01-01	BGGW02-01	BGGW03A-01	BGGW04-01	BGGW05A-01	BGGW06A-01
Date sampled	10/06/94	09/20/94	09/23/94	10/06/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	23 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	1 J	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	120 B	10 U	10 U	4 B	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 UJ	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 UJ	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 UJ	10 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW07A-01	BGGW08A-01
Date sampled	09/26/94	10/05/94
Units	UG/L	UG/L
Phenol	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U
2-Chlorophenol	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U
2-Methylphenol	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U
4-Methylphenol	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U
Hexachloroethane	10 U	10 U
Nitrobenzene	10 U	10 U
Isophorone	10 U	10 U
2-Nitrophenol	10 U	10 U
2,4-Dimethylphenol	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U
2,4-Dichlorophenol	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U
Naphthalene	10 U	10 U
4-Chloroaniline	10 U	10 U
Hexachlorobutadiene	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U
2-Methylnaphthalene	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U
2-Chloronaphthalene	10 U	10 U
2-Nitroaniline	25 U	25 U
Dimethylphthalate	10 U	10 U
Acenaphthylene	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U
3-Nitroaniline	25 U	25 U
Acenaphthene	10 U	10 U
2,4-Dinitrophenol	25 U	25 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW07A-01	BGGW08A-01
Date sampled	09/26/94	10/05/94
Units	UG/L	UG/L
4-Nitrophenol	25 U	25 U
Dibenzofuran	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U
Diethylphthalate	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U
Fluorene	10 U	10 U
4-Nitroaniline	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U
Hexachlorobenzene	10 U	10 U
Pentachlorophenol	25 U	25 U
Phenanthrene	10 U	10 U
Anthracene	10 U	10 U
Carbazole	10 U	10 U
di-n-Butylphthalate	10 U	10 U
Fluoranthene	10 U	10 U
Pyrene	10 U	10 U
Butylbenzylphthalate	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U
Benzo(a)anthracene	10 U	10 U
Chrysene	10 U	10 U
Bis(2-ethylhexyl)phthalate	3 B	10 U
di-n-Octylphthalate	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U
Benzo(a)pyrene	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	10 U	10 U	1 J	1 J	BGGW06A-01	1/8
Bis(2-chloroethyl)ether	10 U	10 U	ND	ND		0/8
2-Chlorophenol	10 U	10 U	ND	ND		0/8
1,3-Dichlorobenzene	10 U	10 U	ND	ND		0/8
1,4-Dichlorobenzene	10 U	10 U	ND	ND		0/8
1,2-Dichlorobenzene	10 U	10 U	ND	ND		0/8
2-Methylphenol	10 U	10 U	ND	ND		0/8
2,2'-Oxybis(1-chloropropane)	10 U	10 U	ND	ND		0/8
4-Methylphenol	10 U	10 U	ND	ND		0/8
N-Nitroso-di-n-propylamine	10 U	10 U	ND	ND		0/8
Hexachloroethane	10 U	10 U	ND	ND		0/8
Nitrobenzene	10 U	10 U	ND	ND		0/8
Isophorone	10 U	10 U	ND	ND		0/8
2-Nitrophenol	10 U	10 U	ND	ND		0/8
2,4-Dimethylphenol	10 U	10 U	ND	ND		0/8
Bis(2-chloroethoxy)methane	10 U	10 U	ND	ND		0/8
2,4-Dichlorophenol	10 U	10 U	ND	ND		0/8
1,2,4-Trichlorobenzene	10 U	10 U	ND	ND		0/8
Naphthalene	10 U	10 U	ND	ND		0/8
4-Chloroaniline	10 U	10 U	ND	ND		0/8
Hexachlorobutadiene	10 U	10 U	ND	ND		0/8
4-Chloro-3-methylphenol	10 U	10 U	ND	ND		0/8
2-Methylnaphthalene	10 U	10 U	ND	ND		0/8
Hexachlorocyclopentadie	10 U	10 U	ND	ND		0/8
2,4,6-Trichlorophenol	10 U	10 U	ND	ND		0/8
2,4,5-Trichlorophenol	25 U	25 U	ND	ND		0/8
2-Chloronaphthalene	10 U	10 U	ND	ND		0/8
2-Nitroaniline	25 U	25 U	ND	ND		0/8
Dimethylphthalate	10 U	10 U	ND	ND		0/8
Acenaphthylene	10 U	10 U	ND	ND		0/8
2,6-Dinitrotoluene	10 U	10 U	ND	ND		0/8
3-Nitroaniline	25 U	25 U	ND	ND		0/7
Acenaphthene	10 U	10 U	ND	ND		0/8
2,4-Dinitrophenol	25 U	25 U	ND	ND		0/8

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
4-Nitrophenol	25 U	25 U	ND	ND		0/8
Dibenzofuran	10 U	10 U	ND	ND		0/8
2,4-Dinitrotoluene	10 U	10 U	ND	ND		0/8
Diethylphthalate	10 U	10 U	ND	ND		0/8
4-Chlorophenyl-phenylether	10 U	10 U	ND	ND		0/8
Fluorene	10 U	10 U	ND	ND		0/8
4-Nitroaniline	25 U	25 U	ND	ND		0/8
4,6-Dinitro-2-methylphenol	23 U	25 U	ND	ND		0/8
N-Nitrosodiphenylamine	10 U	10 U	ND	ND		0/8
4-Bromophenyl-phenylether	10 U	10 U	ND	ND		0/8
Hexachlorobenzene	10 U	10 U	ND	ND		0/8
Pentachlorophenol	25 U	25 U	ND	ND		0/8
Phenanthrene	10 U	10 U	1 J	1 J	BGGW05A-01	1/8
Anthracene	10 U	10 U	ND	ND		0/8
Carbazole	10 U	10 U	ND	ND		0/8
di-n-Butylphthalate	10 U	10 U	ND	ND		0/8
Fluoranthene	10 U	10 U	ND	ND		0/8
Pyrene	10 U	10 U	ND	ND		0/8
Butylbenzylphthalate	10 U	10 U	ND	ND		0/8
3,3'-Dichlorobenzidine	10 U	10 U	ND	ND		0/8
Benzo(a)anthracene	10 U	10 U	ND	ND		0/8
Chrysene	10 U	10 U	ND	ND		0/8
Bis(2-ethylhexyl)phthalate	3 B	120 B	ND	ND		0/8
di-n-Octylphthalate	10 U	10 U	ND	ND		0/8
Benzo(b)fluoranthene	10 U	10 U	ND	ND		0/8
Benzo(k)fluoranthene	10 U	10 U	ND	ND		0/8
Benzo(a)pyrene	10 U	10 U	ND	ND		0/8
Indeno(1,2,3-cd)pyrene	10 U	10 U	ND	ND		0/8
Dibenz(a,h)anthracene	10 U	10 U	ND	ND		0/8
Benzo(g,h,i)perylene	10 U	10 U	ND	ND		0/8

TABLE 10A
STATISTICAL SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	4.50	1.41	5.45	1.41	0.57	8.36
Bis(2-chloroethyl)ether	5.00	0.00	5.00	1.61	0.00	5.00
2-Chlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,3-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,4-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,2-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2,2'-Oxybis(1-chloropropane)	5.00	0.00	5.00	1.61	0.00	5.00
4-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
N-Nitroso-di-n-propylamine	5.00	0.00	5.00	1.61	0.00	5.00
Hexachloroethane	5.00	0.00	5.00	1.61	0.00	5.00
Nitrobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Isophorone	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitrophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dimethylphenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethoxy)methane	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,2,4-Trichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Naphthalene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloroaniline	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobutadiene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloro-3-methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylnaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorocyclopentadie	5.00	0.00	5.00	1.61	0.00	5.00
2,4,6-Trichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4,5-Trichlorophenol	12.50	0.00	12.50	2.53	0.00	12.50
2-Chloronaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitroaniline	12.50	0.00	12.50	2.53	0.00	12.50
Dimethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Acenaphthylene	5.00	0.00	5.00	1.61	0.00	5.00
2,6-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
3-Nitroaniline	12.50	0.00	12.50	2.53	0.00	12.50
Acenaphthene	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrophenol	12.50	0.00	12.50	2.53	0.00	12.50

TABLE 10A
STATISTICAL SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
4-Nitrophenol	12.50	0.00	12.50	2.53	0.00	12.50
Dibenzofuran	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
Diethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
4-Chlorophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Fluorene	5.00	0.00	5.00	1.61	0.00	5.00
4-Nitroaniline	12.50	0.00	12.50	2.53	0.00	12.50
4,6-Dinitro-2-methylphenol	12.38	0.35	12.61	2.52	0.03	12.63
N-Nitrosodiphenylamine	5.00	0.00	5.00	1.61	0.00	5.00
4-Bromophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Pentachlorophenol	12.50	0.00	12.50	2.53	0.00	12.50
Phenanthrene	4.50	1.41	5.45	1.41	0.57	8.36
Anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Carbazole	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Butylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Butylbenzylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
3,3'-Dichlorobenzidine	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Chrysene	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-ethylhexyl)phthalate	11.06	19.83	24.35	1.66	1.10	53.90
di-n-Octylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(b)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(k)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Indeno(1,2,3-cd)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Dibenz(a,h)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(g,h,i)perylene	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01-01	BGGW02-01	BGGW03A-01	BGGW04-01	BGGW05A-01	BGGW06A-01
Date sampled	10/06/94	09/20/94	09/23/94	10/06/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
beta-BHC	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
delta-BHC	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
gamma-BHC (Lindane)	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Heptachlor	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Aldrin	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Heptachlor Epoxide	0.05 UJ	0.05 U	0.023 J	0.05 UJ	0.05 UJ	0.05 UJ
Endosulfan I	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Dieldrin	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDE	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Endrin	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Endosulfan II	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDD	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Endosulfan Sulfate	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDT	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Methoxychlor	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
Endrin Ketone	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Endrin Aldehyde	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
alpha-Chlordane	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
gamma-Chlordane	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Toxaphene	5 UJ	5 U	5 U	5 UJ	5 UJ	5 UJ
Aroclor-1016	1 UJ	1 U	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1221	2 UJ	2 U	2 U	2 UJ	2 UJ	2 UJ
Aroclor-1232	1 UJ	1 U	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1242	1 UJ	1 U	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1248	1 UJ	1 U	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1254	1 UJ	1 U	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1260	1 UJ	1 U	1 U	1 UJ	1 UJ	1 UJ

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW07A-01	BGGW08A-01
Date sampled	09/26/94	10/05/94
Units	UG/L	UG/L
alpha-BHC	0.05 U	0.05 UJ
beta-BHC	0.05 U	0.05 UJ
delta-BHC	0.05 U	0.05 UJ
gamma-BHC (Lindane)	0.05 U	0.05 UJ
Heptachlor	0.05 U	0.05 UJ
Aldrin	0.05 U	0.05 UJ
Heptachlor Epoxide	0.05 U	0.05 UJ
Endosulfan I	0.05 U	0.05 UJ
Dieldrin	0.1 U	0.1 UJ
4,4'-DDE	0.1 U	0.1 UJ
Endrin	0.1 U	0.1 UJ
Endosulfan II	0.1 U	0.1 UJ
4,4'-DDD	0.1 U	0.1 UJ
Endosulfan Sulfate	0.1 U	0.1 UJ
4,4'-DDT	0.1 U	0.1 UJ
Methoxychlor	0.5 U	0.5 UJ
Endrin Ketone	0.1 U	0.1 UJ
Endrin Aldehyde	0.1 U	0.1 UJ
alpha-Chlordane	0.05 U	0.05 UJ
gamma-Chlordane	0.05 U	0.05 UJ
Toxaphene	5 U	5 UJ
Aroclor-1016	1 U	1 UJ
Aroclor-1221	2 U	2 UJ
Aroclor-1232	1 U	1 UJ
Aroclor-1242	1 U	1 UJ
Aroclor-1248	1 U	1 UJ
Aroclor-1254	1 U	1 UJ
Aroclor-1260	1 U	1 UJ

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	0.05 UJ	0.05 UJ	ND	ND		0/8
beta-BHC	0.05 UJ	0.05 UJ	ND	ND		0/8
delta-BHC	0.05 UJ	0.05 UJ	ND	ND		0/8
gamma-BHC (Lindane)	0.05 UJ	0.05 UJ	ND	ND		0/8
Heptachlor	0.05 UJ	0.05 UJ	ND	ND		0/8
Aldrin	0.05 UJ	0.05 UJ	ND	ND		0/8
Heptachlor Epoxide	0.05 UJ	0.05 UJ	0.023 J	0.023 J	BGGW03A-01	1/8
Endosulfan I	0.05 UJ	0.05 UJ	ND	ND		0/8
Dieldrin	0.1 UJ	0.1 UJ	ND	ND		0/8
4,4'-DDE	0.1 UJ	0.1 UJ	ND	ND		0/8
Endrin	0.1 UJ	0.1 UJ	ND	ND		0/8
Endosulfan II	0.1 UJ	0.1 UJ	ND	ND		0/8
4,4'-DDD	0.1 UJ	0.1 UJ	ND	ND		0/8
Endosulfan Sulfate	0.1 UJ	0.1 UJ	ND	ND		0/8
4,4'-DDT	0.1 UJ	0.1 UJ	ND	ND		0/8
Methoxychlor	0.5 UJ	0.5 UJ	ND	ND		0/8
Endrin Ketone	0.1 UJ	0.1 UJ	ND	ND		0/8
Endrin Aldehyde	0.1 UJ	0.1 UJ	ND	ND		0/8
alpha-Chlordane	0.05 UJ	0.05 UJ	ND	ND		0/8
gamma-Chlordane	0.05 UJ	0.05 UJ	ND	ND		0/8
Toxaphene	5 UJ	5 UJ	ND	ND		0/8
Aroclor-1016	1 UJ	1 UJ	ND	ND		0/8
Aroclor-1221	2 UJ	2 UJ	ND	ND		0/8
Aroclor-1232	1 UJ	1 UJ	ND	ND		0/8
Aroclor-1242	1 UJ	1 UJ	ND	ND		0/8
Aroclor-1248	1 UJ	1 UJ	ND	ND		0/8
Aroclor-1254	1 UJ	1 UJ	ND	ND		0/8
Aroclor-1260	1 UJ	1 UJ	ND	ND		0/8

TABLE 10A
STATISTICAL SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
beta-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
delta-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
gamma-BHC (Lindane)	0.03	0.00	0.03	-3.69	0.00	0.02
Heptachlor	0.03	0.00	0.03	-3.69	0.00	0.02
Aldrin	0.03	0.00	0.03	-3.69	0.00	0.02
Heptachlor Epoxide	0.02	0.00	0.03	-3.70	0.03	0.03
Endosulfan I	0.03	0.00	0.03	-3.69	0.00	0.02
Dieldrin	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDE	0.05	0.00	0.05	-3.00	0.00	0.05
Endrin	0.05	0.00	0.05	-3.00	0.00	0.05
Endosulfan II	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDD	0.05	0.00	0.05	-3.00	0.00	0.05
Endosulfan Sulfate	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDT	0.05	0.00	0.05	-3.00	0.00	0.05
Methoxychlor	0.25	0.00	0.25	-1.39	0.00	0.25
Endrin Ketone	0.05	0.00	0.05	-3.00	0.00	0.05
Endrin Aldehyde	0.05	0.00	0.05	-3.00	0.00	0.05
alpha-Chlordane	0.03	0.00	0.03	-3.69	0.00	0.02
gamma-Chlordane	0.03	0.00	0.03	-3.69	0.00	0.02
Toxaphene	2.50	0.00	2.50	0.92	0.00	2.50
Aroclor-1016	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1221	1.00	0.00	1.00	0.00	0.00	1.00
Aroclor-1232	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1242	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1248	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1254	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1260	0.50	0.00	0.50	-0.69	0.00	0.50

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01-01	BGGW02-01	BGGW03A-01	BGGW04-01	BGGW05A-01	BGGW06A-01
Date sampled	10/06/94	09/20/94	09/23/94	10/06/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Tertyl	1 U	1 U	1 U	1 U	2.2 U	1 U
Nitrobenzene	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Nitrotoluene	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
3-Nitrotoluene	0.91 U	6 U	0.91 U	0.91 U	0.91 U	0.91 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW07A-01	BGGW08A-01
Date sampled	09/26/94	10/05/94
Units	UG/L	UG/L
HMX	0.61 U	0.61 U
RDX	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 U	0.66 U
1,3-Dinitrobenzene	1.1 U	1.1 U
Tertyl	3.7 U	1 U
Nitrobenzene	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U
2-Nitrotoluene	0.75 U	0.75 U
3-Nitrotoluene	0.91 U	0.91 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.61 U	0.61 U	ND	ND		0/8
RDX	0.59 U	0.59 U	ND	ND		0/8
1,3,5-Trinitrobenzene	0.66 U	0.66 U	ND	ND		0/8
1,3-Dinitrobenzene	1.1 U	1.1 U	ND	ND		0/8
Tertyl	1 U	3.7 U	ND	ND		0/8
Nitrobenzene	0.73 U	0.73 U	ND	ND		0/8
2,4,6-Trinitrotoluene	0.62 U	0.62 U	ND	ND		0/8
4-Amino-2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/8
2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/8
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/8
2-Nitrotoluene	0.75 U	0.75 U	ND	ND		0/8
3-Nitrotoluene	0.91 U	6 U	ND	ND		0/8

TABLE 10A
STATISTICAL SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.31	0.00	0.31	-1.19	0.00	0.31
RDX	0.30	0.00	0.30	-1.22	0.00	0.30
1,3,5-Trinitrobenzene	0.33	0.00	0.33	-1.11	0.00	0.33
1,3-Dinitrobenzene	0.55	0.00	0.55	-0.60	0.00	0.55
Tertyl	0.74	0.49	1.07	-0.43	0.50	1.21
Nitrobenzene	0.37	0.00	0.37	-1.01	0.00	0.37
2,4,6-Trinitrotoluene	0.31	0.00	0.31	-1.17	0.00	0.31
4-Amino-2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2-Nitrotoluene	0.38	0.00	0.38	-0.98	0.00	0.38
3-Nitrotoluene	0.77	0.90	1.38	-0.55	0.67	1.45

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01-01	BGGW02-01	BGGW03A-01	BGGW04-01	BGGW05A-01	BGGW06A-01
Date sampled	10/06/94	09/20/94	09/23/94	10/06/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	8750 L	176 J	44.9 J	416 J	2090	3630 L
Antimony	12.4 U	12.4 UL	12.4 U	12.4 U	12.4 U	12.4 U
Arsenic	12	2.6 U	2.6 UL	6.8 J	2.6 UL	5 J
Barium	78.7 J	36.4 J	66.6 J	58.8 J	31.5 J	20.4 J
Beryllium	0.55 J	0.2 U	0.2 U	0.2 U	0.2 U	0.22 J
Cadmium	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Calcium	442000	91900	85200	116000	77700	48300
Chromium	32.7 L	2.4 J	1.5 UL	1.5 UL	8.2 L	7.2 L
Cobalt	7.1 J	2.1 U	2.1 U	2.1 U	2.5 J	2.1 U
Copper	8.9 J	1.1 U	1.4 J	1.3 J	5.2 J	4.4 J
Iron	19800	483	767	950	5550	6370
Lead	4.8 L	1.5 UL	1.5 UL	1.5 UL	1.5 UL	1.5 UL
Magnesium	4640 J	1550 J	2020 J	9770	1410 J	720 J
Manganese	189	8.5 J	24.6	58.6	41.4	24.1
Mercury	0.2 U	0.2 U	0.2 UL	0.2 U	0.2 UL	0.2 U
Nickel	7.9 J	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Potassium	4240 J	1430 J	1240 J	3630 J	1640 J	1780 J
Selenium	2.4 UL	2.4 U	2.4 U	2.4 UL	2.4 U	2.4 UL
Silver	1.7 U	1.7 UL	1.7 U	1.7 U	1.7 U	1.7 U
Sodium	5990	3760 J	8330	6870	4930 J	6980
Thallium	5.7 U	5.7 UL	5.7 U	5.7 U	5.7 U	5.7 U
Vanadium	29.5 J	2.9 J	1.8 U	3.9 J	13 J	18 J
Zinc	49 J	5.9 J	9.7 J	7 J	19.2 J	19.7 J
Cyanide	5 U	5 U	5 U	5 U	5 U	5 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW07A-01	BGGW08A-01
Date sampled	09/26/94	10/05/94
Units	UG/L	UG/L
Aluminum	388	14600 L
Antimony	12.4 U	16.4 K
Arsenic	2.6 UL	36.4
Barium	65.7 J	97.5 J
Beryllium	0.2 U	1.5 J
Cadmium	2.3 U	2.3 U
Calcium	111000	530000
Chromium	1.5 UL	49.6
Cobalt	2.1 U	22.4 J
Copper	2.2 J	14.6 J
Iron	2110	48200
Lead	1.5 UL	12.8
Magnesium	2740 J	7950
Manganese	36.1	413
Mercury	0.2 UL	0.2 U
Nickel	5.2 U	27.6 J
Potassium	17000	4960 J
Selenium	2.4 U	2.4 UL
Silver	1.7 U	1.7 U
Sodium	27200	9260
Thallium	5.7 U	5.7 U
Vanadium	3.7 J	66.6
Zinc	10.2 J	99.1 J
Cyanide	5 U	5 U

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	44.9 J	14600 L	BGGW08A-01	8/8
Antimony	12.4 U	12.4 U	16.4 K	16.4 K	BGGW08A-01	1/8
Arsenic	2.6 U	2.6 U	5 J	36.4	BGGW08A-01	4/8
Barium	NA	NA	20.4 J	97.5 J	BGGW08A-01	8/8
Beryllium	0.2 U	0.2 U	0.22 J	1.5 J	BGGW08A-01	3/8
Cadmium	2.3 U	2.3 U	ND	ND		0/8
Calcium	NA	NA	48300	530000	BGGW08A-01	8/8
Chromium	1.5 UL	1.5 UL	2.4 J	49.6	BGGW08A-01	5/8
Cobalt	2.1 U	2.1 U	2.5 J	22.4 J	BGGW08A-01	3/8
Copper	1.1 U	1.1 U	1.3 J	14.6 J	BGGW08A-01	7/8
Iron	NA	NA	483	48200	BGGW08A-01	8/8
Lead	1.5 UL	1.5 UL	4.8 L	12.8	BGGW08A-01	2/8
Magnesium	NA	NA	720 J	9770	BGGW04-01	8/8
Manganese	NA	NA	8.5 J	413	BGGW08A-01	8/8
Mercury	0.2 U	0.2 U	ND	ND		0/8
Nickel	5.2 U	5.2 U	7.9 J	27.6 J	BGGW08A-01	2/8
Potassium	NA	NA	1240 J	17000	BGGW07A-01	8/8
Selenium	2.4 UL	2.4 UL	ND	ND		0/8
Silver	1.7 U	1.7 U	ND	ND		0/8
Sodium	NA	NA	3760 J	27200	BGGW07A-01	8/8
Thallium	5.7 U	5.7 U	ND	ND		0/8
Vanadium	1.8 U	1.8 U	2.9 J	66.6	BGGW08A-01	7/8
Zinc	NA	NA	5.9 J	99.1 J	BGGW08A-01	8/8
Cyanide	5 U	5 U	ND	ND		0/8

TABLE 10A
STATISTICAL SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	3761.86	5270.01	7292.68	6.93	2.01	2889575.58
Antimony	7.48	3.61	9.89	1.95	0.34	9.91
Arsenic	8.18	12.03	16.23	1.33	1.28	89.77
Barium	59.45	27.77	78.05	3.97	0.55	105.36
Beryllium	0.35	0.49	0.68	-1.65	1.03	1.66
Cadmium	1.15	0.00	1.15	0.14	0.00	1.15
Calcium	187762.50	186730.43	312868.84	11.79	0.85	534736.18
Chromium	12.79	18.31	25.06	1.44	1.70	642.56
Cobalt	4.66	7.47	9.66	0.78	1.17	26.90
Copper	4.82	4.81	8.04	1.10	1.09	30.59
Iron	10528.75	16501.08	21584.20	8.17	1.63	416980.07
Lead	2.76	4.30	5.64	0.30	1.12	14.61
Magnesium	3850.00	3340.27	6087.93	7.91	0.90	13498.02
Manganese	99.41	138.84	192.43	3.90	1.23	723.86
Mercury	0.10	0.00	0.10	-2.30	0.00	0.10
Nickel	6.39	8.77	12.26	1.39	0.87	17.07
Potassium	4490.00	5249.70	8007.22	8.01	0.88	12969.68
Selenium	1.20	0.00	1.20	0.18	0.00	1.20
Silver	0.85	0.00	0.85	-0.16	0.00	0.85
Sodium	9165.00	7495.13	14186.61	8.94	0.59	16035.03
Thallium	2.85	0.00	2.85	1.05	0.00	2.85
Vanadium	17.31	22.17	32.16	2.08	1.41	293.09
Zinc	27.48	32.12	48.99	2.84	0.98	101.80
Cyanide	2.50	0.00	2.50	0.92	0.00	2.50

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01DS-01	BGGW02DS-01	BGGW03ADS-01	BGGW04DS-01	BGGW05ADS-01	BGGW06ADS-01
Date sampled	10/06/94	09/20/94	09/23/94	10/06/94	09/26/94	10/06/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	11.5 U	11.5 U	11.5 U	11.5 U	12.9 J	212
Antimony	12.4 U	12.4 U	12.4 UL	20.6 J	12.4 UL	21.1 J
Arsenic	2.3 UL	2.6 U	2.6 U	5.5 L	2.6 U	2.3 UL
Barium	31.4 J	35.4 J	66.4 J	55.2 J	21.4 J	5.9 J
Beryllium	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Calcium	100000	90900	86100	116000	63800	25200
Chromium	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Cobalt	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Copper	1.5 J	1.6 J	1.1 U	1.1 J	1.3 J	1.9 J
Iron	3.8 J	15.8 J	347	6.6 J	1.9 U	8.9 J
Lead	1.4 UL	1.5 U	1.5 UL	1.4 UL	1.5 UL	1.4 UL
Magnesium	1220 J	1490 J	2070 J	9810	968 J	70.2 J
Manganese	7.9 J	0.6 U	24.2	54.4	2.4 J	0.6 U
Mercury	0.2 U	0.2 U	0.2 UL	0.2 U	0.2 UL	0.2 U
Nickel	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Potassium	1400 J	1090 J	1600 J	3580 J	1200 J	1110 J
Selenium	2.6 U	2.4 U	2.4 U	2.6 U	2.4 U	3.3 K
Silver	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Sodium	4210 J	3780 J	8250	6640	4960 J	6880
Thallium	4 U	5.7 U	5.7 U	4 U	5.7 U	4 U
Vanadium	2.4 J	1.8 J	1.8 U	2.6 J	3.9 J	10.2 J
Zinc	3 J	4.4 J	10 J	4.7 J	4.8 J	5 J

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	GGW07ADS-01	BGGW08ADS-01
Date sampled	09/26/94	10/05/94
Units	UG/L	UG/L
Aluminum	11.5 U	11.5 U
Antimony	12.4 UL	12.4 U
Arsenic	2.6 U	3 L
Barium	73.4 J	31.2 J
Beryllium	0.2 U	0.2 U
Cadmium	2.3 U	2.3 U
Calcium	94100	76700
Chromium	1.5 U	1.5 U
Cobalt	2.1 U	2.1 U
Copper	1.5 J	1.1 U
Iron	1.9 U	2.8 J
Lead	1.5 UL	1.4 UL
Magnesium	2490 J	1580 J
Manganese	27.6	34.3
Mercury	0.2 UL	0.2 U
Nickel	5.2 U	5.2 U
Potassium	17900	1190 J
Selenium	2.4 U	2.6 U
Silver	1.7 U	1.7 U
Sodium	27800	7140
Thallium	5.7 U	4 U
Vanadium	2.7 J	1.8 U
Zinc	5.8 J	5.6 J

TABLE 10A
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	11.5 U	11.5 U	12.9 J	212	BGGW06ADS-01	2/8
Antimony	12.4 U	12.4 U	20.6 J	21.1 J	BGGW06ADS-01	2/8
Arsenic	2.3 UL	2.6 U	3 L	5.5 L	BGGW04DS-01	2/8
Barium	NA	NA	5.9 J	73.4 J	BGGW07ADS-01	8/8
Beryllium	0.2 U	0.2 U	ND	ND		0/8
Cadmium	2.3 U	2.3 U	ND	ND		0/8
Calcium	NA	NA	25200	116000	BGGW04DS-01	8/8
Chromium	1.5 U	1.5 U	ND	ND		0/8
Cobalt	2.1 U	2.1 U	ND	ND		0/8
Copper	1.1 U	1.1 U	1.1 J	1.9 J	BGGW06ADS-01	6/8
Iron	1.9 U	1.9 U	2.8 J	347	BGGW03ADS-01	6/8
Lead	1.4 UL	1.5 U	ND	ND		0/8
Magnesium	NA	NA	70.2 J	9810	BGGW04DS-01	8/8
Manganese	0.6 U	0.6 U	2.4 J	54.4	BGGW04DS-01	6/8
Mercury	0.2 U	0.2 U	ND	ND		0/8
Nickel	5.2 U	5.2 U	ND	ND		0/8
Potassium	NA	NA	1090 J	17900	BGGW07ADS-01	8/8
Selenium	2.4 U	2.6 U	3.3 K	3.3 K	BGGW06ADS-01	1/8
Silver	1.7 U	1.7 U	ND	ND		0/8
Sodium	NA	NA	3780 J	27800	BGGW07ADS-01	8/8
Thallium	4 U	5.7 U	ND	ND		0/8
Vanadium	1.8 U	1.8 U	1.8 J	10.2 J	BGGW06ADS-01	6/8
Zinc	NA	NA	3 J	10 J	BGGW03ADS-01	8/8

TABLE 10A
STATISTICAL SUMMARY
GROUNDWATER - CORNWALLIS CAVE AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	32.43	72.60	81.07	2.30	1.27	227.91
Antimony	9.86	6.78	14.41	2.13	0.56	16.96
Arsenic	2.00	1.54	3.03	0.52	0.57	3.44
Barium	40.04	23.07	55.49	3.47	0.81	120.18
Beryllium	0.10	0.00	0.10	-2.30	0.00	0.10
Cadmium	1.15	0.00	1.15	0.14	0.00	1.15
Calcium	81600.00	27533.67	100047.11	11.23	0.48	130067.15
Chromium	0.75	0.00	0.75	-0.29	0.00	0.75
Cobalt	1.05	0.00	1.05	0.05	0.00	1.05
Copper	1.25	0.49	1.58	0.14	0.48	1.98
Iron	48.35	120.77	129.27	1.87	1.89	3526.02
Lead	0.73	0.03	0.74	-0.32	0.04	0.74
Magnesium	2462.28	3055.80	4509.61	7.19	1.38	43884.92
Manganese	18.93	19.59	32.05	1.82	2.11	27393.76
Mercury	0.10	0.00	0.10	-2.30	0.00	0.10
Nickel	2.60	0.00	2.60	0.96	0.00	2.60
Potassium	3633.75	5823.47	7535.38	7.60	0.97	11462.33
Selenium	1.50	0.73	1.99	0.34	0.35	2.00
Silver	0.85	0.00	0.85	-0.16	0.00	0.85
Sodium	8707.50	7868.16	13979.04	8.86	0.62	16318.14
Thallium	2.43	0.45	2.73	0.87	0.19	2.80
Vanadium	3.18	3.01	5.19	0.86	0.79	7.91
Zinc	5.41	2.04	6.78	1.64	0.34	7.20

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01A-01	BGGW02A-01	BGGW04A-01
Date sampled	09/08/94	09/21/94	10/06/94
Units	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U
Methylene chloride	2 U	2 U	1 U
Acetone	5 R	5 R	5 R
Carbon disulfide	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U
Trans 1,2-Dichloroethene	1 U	1 U	1 U
Cis 1,2-Dichloroethene	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U
Benzene	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U
4-Methyl-2-pentanone	5 U	5 U	5 U
2-Hexanone	5 R	5 R	5 R
Tetrachloroethene	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U
Toluene	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U
Styrene	1 U	1 U	1 U
Total Xylenes	1 U	1 U	1 U

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	1 U	1 U	ND	ND		0/3
Bromomethane	1 U	1 U	ND	ND		0/3
Vinyl chloride	1 U	1 U	ND	ND		0/3
Chloroethane	1 U	1 U	ND	ND		0/3
Methylene chloride	1 U	2 U	ND	ND		0/3
Acetone	NA	NA	ND	ND		0/0
Carbon disulfide	1 U	1 U	ND	ND		0/3
1,1-Dichloroethene	1 U	1 U	ND	ND		0/3
1,1-Dichloroethane	1 U	1 U	ND	ND		0/3
Trans 1,2-Dichloroethene	1 U	1 U	ND	ND		0/3
Cis 1,2-Dichloroethene	1 U	1 U	ND	ND		0/3
Chloroform	1 U	1 U	ND	ND		0/3
1,2-Dichloroethane	1 U	1 U	ND	ND		0/3
Bromochloromethane	1 U	1 U	ND	ND		0/3
2-Butanone	NA	NA	ND	ND		0/0
1,1,1-Trichloroethane	1 U	1 U	ND	ND		0/3
Carbon Tetrachloride	1 U	1 U	ND	ND		0/3
Bromodichloromethane	1 U	1 U	ND	ND		0/3
1,2-Dichloropropane	1 U	1 U	ND	ND		0/3
cis-1,3-Dichloropropene	1 U	1 U	ND	ND		0/3
Trichloroethene	1 U	1 U	ND	ND		0/3
Dibromochloromethane	1 U	1 U	ND	ND		0/3
1,1,2-Trichloroethane	1 U	1 U	ND	ND		0/3
Benzene	1 U	1 U	ND	ND		0/3
trans-1,3-Dichloropropene	1 U	1 U	ND	ND		0/3
Bromoform	1 U	1 U	ND	ND		0/3
4-Methyl-2-pentanone	5 U	5 U	ND	ND		0/3
2-Hexanone	NA	NA	ND	ND		0/0
Tetrachloroethene	1 U	1 U	ND	ND		0/3
1,1,2,2-Tetrachloroethane	1 U	1 U	ND	ND		0/3
Toluene	1 U	1 U	ND	ND		0/3
Chlorobenzene	1 U	1 U	ND	ND		0/3
Ethylbenzene	1 U	1 U	ND	ND		0/3
Styrene	1 U	1 U	ND	ND		0/3
Total Xylenes	1 U	1 U	ND	ND		0/3

TABLE 10B
STATISTICAL SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
Bromomethane	0.50	0.00	0.50	-0.69	0.00	0.50
Vinyl chloride	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Methylene chloride	0.83	0.29	1.32	-0.23	0.40	5.40
Acetone						
Carbon disulfide	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Trans 1,2-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Cis 1,2-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroform	0.50	0.00	0.50	-0.69	0.00	0.50
1,2-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Bromochloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
2-Butanone						
1,1,1-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Carbon Tetrachloride	0.50	0.00	0.50	-0.69	0.00	0.50
Bromodichloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,2-Dichloropropane	0.50	0.00	0.50	-0.69	0.00	0.50
cis-1,3-Dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Trichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Dibromochloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,1,2-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Benzene	0.50	0.00	0.50	-0.69	0.00	0.50
trans-1,3-Dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Bromoform	0.50	0.00	0.50	-0.69	0.00	0.50
4-Methyl-2-pentanone	2.50	0.00	2.50	0.92	0.00	2.50
2-Hexanone						
Tetrachloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
1,1,2,2-Tetrachloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Toluene	0.50	0.00	0.50	-0.69	0.00	0.50
Chlorobenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Ethylbenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Styrene	0.50	0.00	0.50	-0.69	0.00	0.50
Total Xylenes	0.50	0.00	0.50	-0.69	0.00	0.50

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01A-01	BGGW02A-01	BGGW04A-01
Date sampled	09/08/94	09/21/94	10/06/94
Units	UG/L	UG/L	UG/L
Phenol	10 U	10 U	1 J
Bis(2-chloroethyl)ether	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U
3-Nitroaniline	25 U	25 R	25 U
Acenaphthene	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 UJ	25 U

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01A-01	BGGW02A-01	BGGW04A-01
Date sampled	09/08/94	09/21/94	10/06/94
Units	UG/L	UG/L	UG/L
4-Nitrophenol	25 U	25 U	25 U
Dibenzofuran	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U
di-n-Octylphthalate	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	10 U	10 U	1 J	1 J	BGGW04A-01	1/3
Bis(2-chloroethyl)ether	10 U	10 U	ND	ND		0/3
2-Chlorophenol	10 U	10 U	ND	ND		0/3
1,3-Dichlorobenzene	10 U	10 U	ND	ND		0/3
1,4-Dichlorobenzene	10 U	10 U	ND	ND		0/3
1,2-Dichlorobenzene	10 U	10 U	ND	ND		0/3
2-Methylphenol	10 U	10 U	ND	ND		0/3
2,2'-Oxybis(1-chloropropane)	10 U	10 U	ND	ND		0/3
4-Methylphenol	10 U	10 U	ND	ND		0/3
N-Nitroso-di-n-propylamine	10 U	10 U	ND	ND		0/3
Hexachloroethane	10 U	10 U	ND	ND		0/3
Nitrobenzene	10 U	10 U	ND	ND		0/3
Isophorone	10 U	10 U	ND	ND		0/3
2-Nitrophenol	10 U	10 U	ND	ND		0/3
2,4-Dimethylphenol	10 U	10 U	ND	ND		0/3
Bis(2-chloroethoxy)methane	10 U	10 U	ND	ND		0/3
2,4-Dichlorophenol	10 U	10 U	ND	ND		0/3
1,2,4-Trichlorobenzene	10 U	10 U	ND	ND		0/3
Naphthalene	10 U	10 U	ND	ND		0/3
4-Chloroaniline	10 U	10 U	ND	ND		0/3
Hexachlorobutadiene	10 U	10 U	ND	ND		0/3
4-Chloro-3-methylphenol	10 U	10 U	ND	ND		0/3
2-Methylnaphthalene	10 U	10 U	ND	ND		0/3
Hexachlorocyclopentadie	10 U	10 U	ND	ND		0/3
2,4,6-Trichlorophenol	10 U	10 U	ND	ND		0/3
2,4,5-Trichlorophenol	25 U	25 U	ND	ND		0/3
2-Chloronaphthalene	10 U	10 U	ND	ND		0/3
2-Nitroaniline	25 U	25 U	ND	ND		0/3
Dimethylphthalate	10 U	10 U	ND	ND		0/3
Acenaphthylene	10 U	10 U	ND	ND		0/3
2,6-Dinitrotoluene	10 U	10 U	ND	ND		0/3
3-Nitroaniline	25 U	25 U	ND	ND		0/2
Acenaphthene	10 U	10 U	ND	ND		0/3
2,4-Dinitrophenol	25 U	25 U	ND	ND		0/3

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
4-Nitrophenol	25 U	25 U	ND	ND		0/3
Dibenzofuran	10 U	10 U	ND	ND		0/3
2,4-Dinitrotoluene	10 U	10 U	ND	ND		0/3
Diethylphthalate	10 U	10 U	ND	ND		0/3
4-Chlorophenyl-phenylether	10 U	10 U	ND	ND		0/3
Fluorene	10 U	10 U	ND	ND		0/3
4-Nitroaniline	25 U	25 U	ND	ND		0/3
4,6-Dinitro-2-methylphenol	25 U	25 U	ND	ND		0/3
N-Nitrosodiphenylamine	10 U	10 U	ND	ND		0/3
4-Bromophenyl-phenylether	10 U	10 U	ND	ND		0/3
Hexachlorobenzene	10 U	10 U	ND	ND		0/3
Pentachlorophenol	25 U	25 U	ND	ND		0/3
Phenanthrene	10 U	10 U	ND	ND		0/3
Anthracene	10 U	10 U	ND	ND		0/3
Carbazole	10 U	10 U	ND	ND		0/3
di-n-Butylphthalate	10 U	10 U	ND	ND		0/3
Fluoranthene	10 U	10 U	ND	ND		0/3
Pyrene	10 U	10 U	ND	ND		0/3
Butylbenzylphthalate	10 U	10 U	ND	ND		0/3
3,3'-Dichlorobenzidine	10 U	10 U	ND	ND		0/3
Benzo(a)anthracene	10 U	10 U	ND	ND		0/3
Chrysene	10 U	10 U	ND	ND		0/3
Bis(2-ethylhexyl)phthalate	10 U	10 U	ND	ND		0/3
di-n-Octylphthalate	10 U	10 U	ND	ND		0/3
Benzo(b)fluoranthene	10 U	10 U	ND	ND		0/3
Benzo(k)fluoranthene	10 U	10 U	ND	ND		0/3
Benzo(a)pyrene	10 U	10 U	ND	ND		0/3
Indeno(1,2,3-cd)pyrene	10 U	10 U	ND	ND		0/3
Dibenz(a,h)anthracene	10 U	10 U	ND	ND		0/3
Benzo(g,h,i)perylene	10 U	10 U	ND	ND		0/3

TABLE 10B
STATISTICAL SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	3.67	2.31	7.56	1.07	0.93	23841.42
Bis(2-chloroethyl)ether	5.00	0.00	5.00	1.61	0.00	5.00
2-Chlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,3-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,4-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,2-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2,2'-Oxybis(1-chloropropane)	5.00	0.00	5.00	1.61	0.00	5.00
4-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
N-Nitroso-di-n-propylamine	5.00	0.00	5.00	1.61	0.00	5.00
Hexachloroethane	5.00	0.00	5.00	1.61	0.00	5.00
Nitrobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Isophorone	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitrophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dimethylphenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethoxy)methane	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,2,4-Trichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Naphthalene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloroaniline	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobutadiene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloro-3-methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylnaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorocyclopentadie	5.00	0.00	5.00	1.61	0.00	5.00
2,4,6-Trichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4,5-Trichlorophenol	12.50	0.00	12.50	2.53	0.00	12.50
2-Chloronaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitroaniline	12.50	0.00	12.50	2.53	0.00	12.50
Dimethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Acenaphthylene	5.00	0.00	5.00	1.61	0.00	5.00
2,6-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
3-Nitroaniline	12.50	0.00	12.50	2.53	0.00	NA
Acenaphthene	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrophenol	12.50	0.00	12.50	2.53	0.00	12.50

TABLE 10B
STATISTICAL SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
4-Nitrophenol	12.50	0.00	12.50	2.53	0.00	12.50
Dibenzofuran	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
Diethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
4-Chlorophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Fluorene	5.00	0.00	5.00	1.61	0.00	5.00
4-Nitroaniline	12.50	0.00	12.50	2.53	0.00	12.50
4,6-Dinitro-2-methylphenol	12.50	0.00	12.50	2.53	0.00	12.50
N-Nitrosodiphenylamine	5.00	0.00	5.00	1.61	0.00	5.00
4-Bromophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Pentachlorophenol	12.50	0.00	12.50	2.53	0.00	12.50
Phenanthrene	5.00	0.00	5.00	1.61	0.00	5.00
Anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Carbazole	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Butylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Butylbenzylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
3,3'-Dichlorobenzidine	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Chrysene	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-ethylhexyl)phthalate	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Octylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(b)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(k)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Indeno(1,2,3-cd)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Dibenz(a,h)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(g,h,i)perylene	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01A-01	BGGW02A-01	BGGW04A-01
Date sampled	09/08/94	09/21/94	10/06/94
Units	UG/L	UG/L	UG/L
alpha-BHC	0.05 U	0.05 U	0.05 UJ
beta-BHC	0.05 U	0.05 U	0.05 UJ
delta-BHC	0.05 U	0.05 U	0.05 UJ
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 UJ
Heptachlor	0.05 U	0.05 U	0.05 UJ
Aldrin	0.05 U	0.05 U	0.05 UJ
Heptachlor Epoxide	0.05 U	0.05 U	0.05 UJ
Endosulfan I	0.05 U	0.05 U	0.05 UJ
Dieldrin	0.1 U	0.1 U	0.1 UJ
4,4'-DDE	0.1 U	0.1 U	0.1 UJ
Endrin	0.1 U	0.1 U	0.1 UJ
Endosulfan II	0.1 U	0.1 U	0.1 UJ
4,4'-DDD	0.1 U	0.1 U	0.1 UJ
Endosulfan Sulfate	0.1 U	0.1 U	0.1 UJ
4,4'-DDT	0.1 U	0.1 U	0.1 UJ
Methoxychlor	0.5 U	0.5 U	0.5 UJ
Endrin Ketone	0.1 U	0.1 U	0.1 UJ
Endrin Aldehyde	0.1 U	0.1 U	0.1 UJ
alpha-Chlordane	0.05 U	0.05 U	0.05 UJ
gamma-Chlordane	0.05 U	0.05 U	0.05 UJ
Toxaphene	5 U	5 U	5 UJ
Aroclor-1016	1 U	1 U	1 UJ
Aroclor-1221	2 U	2 U	2 UJ
Aroclor-1232	1 U	1 U	1 UJ
Aroclor-1242	1 U	1 U	1 UJ
Aroclor-1248	1 U	1 U	1 UJ
Aroclor-1254	1 U	1 U	1 UJ
Aroclor-1260	1 U	1 U	1 UJ

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	0.05 U	0.05 U	ND	ND		0/3
beta-BHC	0.05 U	0.05 U	ND	ND		0/3
delta-BHC	0.05 U	0.05 U	ND	ND		0/3
gamma-BHC (Lindane)	0.05 U	0.05 U	ND	ND		0/3
Heptachlor	0.05 U	0.05 U	ND	ND		0/3
Aldrin	0.05 U	0.05 U	ND	ND		0/3
Heptachlor Epoxide	0.05 U	0.05 U	ND	ND		0/3
Endosulfan I	0.05 U	0.05 U	ND	ND		0/3
Dieldrin	0.1 U	0.1 U	ND	ND		0/3
4,4'-DDE	0.1 U	0.1 U	ND	ND		0/3
Endrin	0.1 U	0.1 U	ND	ND		0/3
Endosulfan II	0.1 U	0.1 U	ND	ND		0/3
4,4'-DDD	0.1 U	0.1 U	ND	ND		0/3
Endosulfan Sulfate	0.1 U	0.1 U	ND	ND		0/3
4,4'-DDT	0.1 U	0.1 U	ND	ND		0/3
Methoxychlor	0.5 U	0.5 U	ND	ND		0/3
Endrin Ketone	0.1 U	0.1 U	ND	ND		0/3
Endrin Aldehyde	0.1 U	0.1 U	ND	ND		0/3
alpha-Chlordane	0.05 U	0.05 U	ND	ND		0/3
gamma-Chlordane	0.05 U	0.05 U	ND	ND		0/3
Toxaphene	5 U	5 U	ND	ND		0/3
Aroclor-1016	1 U	1 U	ND	ND		0/3
Aroclor-1221	2 U	2 U	ND	ND		0/3
Aroclor-1232	1 U	1 U	ND	ND		0/3
Aroclor-1242	1 U	1 U	ND	ND		0/3
Aroclor-1248	1 U	1 U	ND	ND		0/3
Aroclor-1254	1 U	1 U	ND	ND		0/3
Aroclor-1260	1 U	1 U	ND	ND		0/3

TABLE 10B
STATISTICAL SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
beta-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
delta-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
gamma-BHC (Lindane)	0.03	0.00	0.03	-3.69	0.00	0.02
Heptachlor	0.03	0.00	0.03	-3.69	0.00	0.02
Aldrin	0.03	0.00	0.03	-3.69	0.00	0.02
Heptachlor Epoxide	0.03	0.00	0.03	-3.69	0.00	0.02
Endosulfan I	0.03	0.00	0.03	-3.69	0.00	0.02
Dieldrin	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDE	0.05	0.00	0.05	-3.00	0.00	0.05
Endrin	0.05	0.00	0.05	-3.00	0.00	0.05
Endosulfan II	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDD	0.05	0.00	0.05	-3.00	0.00	0.05
Endosulfan Sulfate	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDT	0.05	0.00	0.05	-3.00	0.00	0.05
Methoxychlor	0.25	0.00	0.25	-1.39	0.00	0.25
Endrin Ketone	0.05	0.00	0.05	-3.00	0.00	0.05
Endrin Aldehyde	0.05	0.00	0.05	-3.00	0.00	0.05
alpha-Chlordane	0.03	0.00	0.03	-3.69	0.00	0.02
gamma-Chlordane	0.03	0.00	0.03	-3.69	0.00	0.02
Toxaphene	2.50	0.00	2.50	0.92	0.00	2.50
Aroclor-1016	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1221	1.00	0.00	1.00	0.00	0.00	1.00
Aroclor-1232	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1242	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1248	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1254	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1260	0.50	0.00	0.50	-0.69	0.00	0.50

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01A-01	BGGW02A-01	BGGW04A-01
Date sampled	09/08/94	09/21/94	10/06/94
Units	UG/L	UG/L	UG/L
HMX	0.61 U	0.61 U	0.61 U
RDX	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 U	0.66 U	0.66 U
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 U
Tertyl	1 U	1 U	1 U
Nitrobenzene	0.73 U	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U
2-Nitrotoluene	0.75 U	0.75 U	0.75 U
3-Nitrotoluene	0.91 U	6 U	0.91 U

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.61 U	0.61 U	ND	ND		0/3
RDX	0.59 U	0.59 U	ND	ND		0/3
1,3,5-Trinitrobenzene	0.66 U	0.66 U	ND	ND		0/3
1,3-Dinitrobenzene	1.1 U	1.1 U	ND	ND		0/3
Tertyl	1 U	1 U	ND	ND		0/3
Nitrobenzene	0.73 U	0.73 U	ND	ND		0/3
2,4,6-Trinitrotoluene	0.62 U	0.62 U	ND	ND		0/3
4-Amino-2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/3
2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/3
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/3
2-Nitrotoluene	0.75 U	0.75 U	ND	ND		0/3
3-Nitrotoluene	0.91 U	6 U	ND	ND		0/3

TABLE 10B
STATISTICAL SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.31	0.00	0.31	-1.19	0.00	0.31
RDX	0.30	0.00	0.30	-1.22	0.00	0.30
1,3,5-Trinitrobenzene	0.33	0.00	0.33	-1.11	0.00	0.33
1,3-Dinitrobenzene	0.55	0.00	0.55	-0.60	0.00	0.55
Tertyl	0.50	0.00	0.50	-0.69	0.00	0.50
Nitrobenzene	0.37	0.00	0.37	-1.01	0.00	0.37
2,4,6-Trinitrotoluene	0.31	0.00	0.31	-1.17	0.00	0.31
4-Amino-2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2-Nitrotoluene	0.38	0.00	0.38	-0.98	0.00	0.38
3-Nitrotoluene	1.30	1.47	3.78	-0.16	1.09	445950.22

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01A-01	BGGW02A-01	BGGW04A-01
Date sampled	09/08/94	09/21/94	10/06/94
Units	UG/L	UG/L	UG/L
Aluminum	459	1160	519 L
Antimony	12.4 U	12.4 U	12.4 U
Arsenic	2.6 UL	2.6 UL	3.5 J
Barium	43.6 J	22 J	13 J
Beryllium	0.2 U	0.2 U	0.2 U
Cadmium	2.3 U	2.3 U	2.3 U
Calcium	48700	37800	67100
Chromium	1.6 J	4.7 L	1.5 UL
Cobalt	2.1 U	2.1 U	2.1 U
Copper	3.9 J	4.5 J	2 J
Iron	653	2350	954
Lead	1.5 U	1.5 UL	1.5 UL
Magnesium	1070 J	996 J	3350 J
Manganese	4.5 J	12.7 J	18.4
Mercury	0.2 UL	0.2 UL	0.2 U
Nickel	5.2 U	5.2 U	5.2 U
Potassium	3440 J	5510	2410 J
Selenium	2.9 J	2.4 U	2.4 UL
Silver	1.7 U	1.7 U	1.7 U
Sodium	6850	8300	7410
Thallium	5.7 U	5.7 U	5.7 U
Vanadium	7.1 J	7.5 J	3.4 J
Zinc	14.9 J	13.3 J	10.7 J
Cyanide	5 R	5 U	5 U

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	459	1160	BGGW02A-01	3/3
Antimony	12.4 U	12.4 U	ND	ND		0/3
Arsenic	2.6 UL	2.6 UL	3.5 J	3.5 J	BGGW04A-01	1/3
Barium	NA	NA	13 J	43.6 J	BGGW01A-01	3/3
Beryllium	0.2 U	0.2 U	ND	ND		0/3
Cadmium	2.3 U	2.3 U	ND	ND		0/3
Calcium	NA	NA	37800	67100	BGGW04A-01	3/3
Chromium	1.5 UL	1.5 UL	1.6 J	4.7 L	BGGW02A-01	2/3
Cobalt	2.1 U	2.1 U	ND	ND		0/3
Copper	NA	NA	2 J	4.5 J	BGGW02A-01	3/3
Iron	NA	NA	653	2350	BGGW02A-01	3/3
Lead	1.5 U	1.5 U	ND	ND		0/3
Magnesium	NA	NA	996 J	3350 J	BGGW04A-01	3/3
Manganese	NA	NA	4.5 J	18.4	BGGW04A-01	3/3
Mercury	0.2 UL	0.2 UL	ND	ND		0/3
Nickel	5.2 U	5.2 U	ND	ND		0/3
Potassium	NA	NA	2410 J	5510	BGGW02A-01	3/3
Selenium	2.4 U	2.4 U	2.9 J	2.9 J	BGGW01A-01	1/3
Silver	1.7 U	1.7 U	ND	ND		0/3
Sodium	NA	NA	6850	8300	BGGW02A-01	3/3
Thallium	5.7 U	5.7 U	ND	ND		0/3
Vanadium	NA	NA	3.4 J	7.5 J	BGGW02A-01	3/3
Zinc	NA	NA	10.7 J	14.9 J	BGGW01A-01	3/3
Cyanide	5 U	5 U	ND	ND		0/2

TABLE 10B
STATISTICAL SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	712.67	388.56	1367.73	6.48	0.50	11917.27
Antimony	6.20	0.00	6.20	1.82	0.00	6.20
Arsenic	2.03	1.27	4.17	0.59	0.57	50.03
Barium	26.20	15.73	52.71	3.14	0.61	1395.08
Beryllium	0.10	0.00	0.10	-2.30	0.00	0.10
Cadmium	1.15	0.00	1.15	0.14	0.00	1.15
Calcium	51200.00	14809.12	76166.14	10.82	0.29	119702.38
Chromium	2.35	2.08	5.86	0.58	0.92	13524.44
Cobalt	1.05	0.00	1.05	0.05	0.00	1.05
Copper	3.47	1.31	5.67	1.19	0.43	26.25
Iron	1319.00	905.47	2845.49	7.03	0.66	98057.21
Lead	0.75	0.00	0.75	-0.29	0.00	0.75
Magnesium	1805.33	1338.23	4061.41	7.33	0.68	155184.15
Manganese	11.87	6.99	23.65	2.32	0.73	2891.12
Mercury	0.10	0.00	0.10	-2.30	0.00	0.10
Nickel	2.60	0.00	2.60	0.96	0.00	2.60
Potassium	3786.67	1578.81	6448.32	8.18	0.41	26179.54
Selenium	1.77	0.98	3.42	0.48	0.51	30.53
Silver	0.85	0.00	0.85	-0.16	0.00	0.85
Sodium	7520.00	731.23	8752.76	8.92	0.10	9086.67
Thallium	2.85	0.00	2.85	1.05	0.00	2.85
Vanadium	6.00	2.26	9.81	1.73	0.44	47.44
Zinc	12.97	2.12	16.54	2.55	0.17	19.28
Cyanide	2.50	0.00	2.50	0.92	0.00	NA

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW01ADS-01	BGGW02ADS-01	BGGW04ADS-01
Date sampled	09/08/94	09/21/94	10/06/94
Units	UG/L	UG/L	UG/L
Aluminum	146 J	63.6 J	14.2 J
Antimony	12.4 U	12.4 UL	18.5 J
Arsenic	2.6 UL	2.6 U	2.3 UL
Barium	30.9 J	15.3 J	12 J
Beryllium	0.2 U	0.2 U	0.2 U
Cadmium	2.3 U	2.3 U	2.3 U
Calcium	27500	24600	69800
Chromium	1.5 U	1.5 U	1.5 U
Cobalt	2.1 U	2.1 U	2.1 U
Copper	4 J	1.3 J	1.1 U
Iron	2.4 J	1.9 U	5.8 J
Lead	1.5 U	1.5 UL	1.4 UL
Magnesium	893 J	550 J	3410 J
Manganese	0.6 U	1.1 J	12.2 J
Mercury	0.2 UL	0.2 UL	0.2 U
Nickel	5.2 U	5.2 U	5.2 U
Potassium	3530 J	5680	2560 J
Selenium	2.4 U	3.9 K	2.6 U
Silver	1.7 UL	1.7 U	1.7 U
Sodium	6930	8570	7790
Thallium	5.7 U	5.7 U	4 U
Vanadium	6.3 J	3.3 J	2.8 J
Zinc	5.1 J	5.9 J	2.9 J

TABLE 10B
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	14.2 J	146 J	BGGW01ADS-01	3/3
Antimony	12.4 U	12.4 U	18.5 J	18.5 J	BGGW04ADS-01	1/3
Arsenic	2.3 UL	2.6 UL	ND	ND		0/3
Barium	NA	NA	12 J	30.9 J	BGGW01ADS-01	3/3
Beryllium	0.2 U	0.2 U	ND	ND		0/3
Cadmium	2.3 U	2.3 U	ND	ND		0/3
Calcium	NA	NA	24600	69800	BGGW04ADS-01	3/3
Chromium	1.5 U	1.5 U	ND	ND		0/3
Cobalt	2.1 U	2.1 U	ND	ND		0/3
Copper	1.1 U	1.1 U	1.3 J	4 J	BGGW01ADS-01	2/3
Iron	1.9 U	1.9 U	2.4 J	5.8 J	BGGW04ADS-01	2/3
Lead	1.4 UL	1.5 U	ND	ND		0/3
Magnesium	NA	NA	550 J	3410 J	BGGW04ADS-01	3/3
Manganese	0.6 U	0.6 U	1.1 J	12.2 J	BGGW04ADS-01	2/3
Mercury	0.2 UL	0.2 UL	ND	ND		0/3
Nickel	5.2 U	5.2 U	ND	ND		0/3
Potassium	NA	NA	2560 J	5680	BGGW02ADS-01	3/3
Selenium	2.4 U	2.6 U	3.9 K	3.9 K	BGGW02ADS-01	1/3
Silver	1.7 UL	1.7 UL	ND	ND		0/3
Sodium	NA	NA	6930	8570	BGGW02ADS-01	3/3
Thallium	4 U	5.7 U	ND	ND		0/3
Vanadium	NA	NA	2.8 J	6.3 J	BGGW01ADS-01	3/3
Zinc	NA	NA	2.9 J	5.9 J	BGGW02ADS-01	3/3

TABLE 10B
STATISTICAL SUMMARY
GROUNDWATER - YORKTOWN-EASTOVER AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	74.60	66.58	186.85	3.93	1.18	85574550.36
Antimony	10.30	7.10	22.27	2.19	0.63	638.07
Arsenic	1.25	0.09	1.40	0.22	0.07	1.44
Barium	19.40	10.10	36.42	2.88	0.49	192.05
Beryllium	0.10	0.00	0.10	-2.30	0.00	0.10
Cadmium	1.15	0.00	1.15	0.14	0.00	1.15
Calcium	40633.33	25300.66	83286.77	10.50	0.57	1005044.33
Chromium	0.75	0.00	0.75	-0.29	0.00	0.75
Cobalt	1.05	0.00	1.05	0.05	0.00	1.05
Copper	1.95	1.81	5.01	0.35	0.99	22622.80
Iron	3.05	2.49	7.25	0.86	0.90	15031.70
Lead	0.73	0.03	0.78	-0.31	0.04	0.79
Magnesium	1617.67	1561.65	4250.40	7.08	0.95	11379199.69
Manganese	4.53	6.65	15.75	0.46	1.88	1.15E+16
Mercury	0.10	0.00	0.10	-2.30	0.00	0.10
Nickel	2.60	0.00	2.60	0.96	0.00	2.60
Potassium	3923.33	1596.76	6615.25	8.22	0.40	25395.91
Selenium	2.13	1.53	4.71	0.60	0.66	158.54
Silver	0.85	0.00	0.85	-0.16	0.00	0.85
Sodium	7763.33	820.33	9146.29	8.95	0.11	9966.07
Thallium	2.57	0.49	3.39	0.93	0.20	4.68
Vanadium	4.13	1.89	7.32	1.35	0.43	30.43
Zinc	4.63	1.55	7.25	1.49	0.38	19.00

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW03-01	BGGW03-01D	BGGW05-01	BGGW06-01	BGGW06-01D	BGGW07-01
Date sampled	09/23/94	09/23/94	09/26/94	10/06/94	10/06/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2 U	2 U	2 U	0.5 U	2 U	2 U
Acetone	5 R	5 R	5 R	5 R	5 R	5 R
Carbon disulfide	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Trans 1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Cis 1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	6	5	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 R	5 R	5 R	5 R	5 R	5 R
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	1 U	1 U	1 U	1 U	1 U	1 U

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW08-01
Date sampled	10/05/94
Units	UG/L
Chloromethane	1 U
Bromomethane	1 U
Vinyl chloride	1 U
Chloroethane	1 U
Methylene chloride	2 U
Acetone	5 R
Carbon disulfide	1 U
1,1-Dichloroethene	1 U
1,1-Dichloroethane	1 U
Trans 1,2-Dichloroethene	1 U
Cis 1,2-Dichloroethene	1 U
Chloroform	2 U
1,2-Dichloroethane	1 U
Bromochloromethane	1 U
2-Butanone	5 R
1,1,1-Trichloroethane	1 U
Carbon Tetrachloride	1 U
Bromodichloromethane	1 U
1,2-Dichloropropane	1 U
cis-1,3-Dichloropropene	1 U
Trichloroethene	1 U
Dibromochloromethane	1 U
1,1,2-Trichloroethane	1 U
Benzene	1 U
trans-1,3-Dichloropropene	1 U
Bromoform	1 U
4-Methyl-2-pentanone	5 U
2-Hexanone	5 R
Tetrachloroethene	1 U
1,1,2,2-Tetrachloroethane	1 U
Toluene	1 U
Chlorobenzene	1 U
Ethylbenzene	1 U
Styrene	1 U
Total Xylenes	1 U

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	1 U	1 U	ND	ND		0/7
Bromomethane	1 U	1 U	ND	ND		0/7
Vinyl chloride	1 U	1 U	ND	ND		0/7
Chloroethane	1 U	1 U	ND	ND		0/7
Methylene chloride	0.5 U	2 U	ND	ND		0/7
Acetone	NA	NA	ND	ND		0/0
Carbon disulfide	1 U	1 U	ND	ND		0/7
1,1-Dichloroethene	1 U	1 U	ND	ND		0/7
1,1-Dichloroethane	1 U	1 U	ND	ND		0/7
Trans 1,2-Dichloroethene	1 U	1 U	ND	ND		0/7
Cis 1,2-Dichloroethene	1 U	1 U	ND	ND		0/7
Chloroform	1 U	2 U	5	6	BGGW06-01	2/7
1,2-Dichloroethane	1 U	1 U	ND	ND		0/7
Bromochloromethane	1 U	1 U	ND	ND		0/7
2-Butanone	NA	NA	ND	ND		0/0
1,1,1-Trichloroethane	1 U	1 U	ND	ND		0/7
Carbon Tetrachloride	1 U	1 U	ND	ND		0/7
Bromodichloromethane	1 U	1 U	ND	ND		0/7
1,2-Dichloropropane	1 U	1 U	ND	ND		0/7
cis-1,3-Dichloropropene	1 U	1 U	ND	ND		0/7
Trichloroethene	1 U	1 U	ND	ND		0/7
Dibromochloromethane	1 U	1 U	ND	ND		0/7
1,1,2-Trichloroethane	1 U	1 U	ND	ND		0/7
Benzene	1 U	1 U	ND	ND		0/7
trans-1,3-Dichloropropene	1 U	1 U	ND	ND		0/7
Bromoform	1 U	1 U	ND	ND		0/7
4-Methyl-2-pentanone	5 U	5 U	ND	ND		0/7
2-Hexanone	NA	NA	ND	ND		0/0
Tetrachloroethene	1 U	1 U	ND	ND		0/7
1,1,2,2-Tetrachloroethane	1 U	1 U	ND	ND		0/7
Toluene	1 U	1 U	ND	ND		0/7
Chlorobenzene	1 U	1 U	ND	ND		0/7
Ethylbenzene	1 U	1 U	ND	ND		0/7
Styrene	1 U	1 U	ND	ND		0/7
Total Xylenes	1 U	1 U	ND	ND		0/7

TABLE 10C
STATISTICAL SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
Bromomethane	0.50	0.00	0.50	-0.69	0.00	0.50
Vinyl chloride	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Methylene chloride	0.89	0.28	1.10	-0.20	0.52	1.67
Acetone						
Carbon disulfide	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Trans 1,2-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Cis 1,2-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroform	2.00	2.42	3.77	0.09	1.13	15.98
1,2-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Bromochloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
2-Butanone						
1,1,1-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Carbon Tetrachloride	0.50	0.00	0.50	-0.69	0.00	0.50
Bromodichloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,2-Dichloropropane	0.50	0.00	0.50	-0.69	0.00	0.50
cis-1,3-Dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Trichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Dibromochloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,1,2-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Benzene	0.50	0.00	0.50	-0.69	0.00	0.50
trans-1,3-Dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Bromoform	0.50	0.00	0.50	-0.69	0.00	0.50
4-Methyl-2-pentanone	2.50	0.00	2.50	0.92	0.00	2.50
2-Hexanone						
Tetrachloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
1,1,2,2-Tetrachloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Toluene	0.50	0.00	0.50	-0.69	0.00	0.50
Chlorobenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Ethylbenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Styrene	0.50	0.00	0.50	-0.69	0.00	0.50
Total Xylenes	0.50	0.00	0.50	-0.69	0.00	0.50

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW03-01	BGGW03-01D	BGGW05-01	BGGW06-01	BGGW06-01D	BGGW07-01
Date sampled	09/23/94	09/23/94	09/26/94	10/06/94	10/06/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U	10 UJ	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 UJ	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 UJ	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 UJ	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 UJ	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 UJ	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 UJ	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 UJ	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 UJ	25 U	25 U	25 U
Acenaphthene	10 U	10 U	10 UJ	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 UJ	25 U	25 U	25 U

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW03-01	BGGW03-01D	BGGW05-01	BGGW06-01	BGGW06-01D	BGGW07-01
Date sampled	09/23/94	09/23/94	09/26/94	10/06/94	10/06/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
4-Nitrophenol	25 U	25 U	25 UJ	25 U	25 U	25 U
Dibenzofuran	10 U	10 U	10 UJ	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 UJ	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 UJ	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 UJ	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	7 B	10 U	10 U	1 B
di-n-Octylphthalate	10 R	10 R	10 R	10 U	10 U	10 UJ
Benzo(b)fluoranthene	10 R	10 R	10 R	10 U	10 U	10 UJ
Benzo(k)fluoranthene	10 R	10 R	10 R	10 U	10 U	10 UJ
Benzo(a)pyrene	10 R	10 R	10 R	10 U	10 U	10 UJ
Indeno(1,2,3-cd)pyrene	10 R	10 R	10 R	10 U	10 U	10 UJ
Dibenz(a,h)anthracene	10 R	10 R	10 R	10 U	10 U	10 UJ
Benzo(g,h,i)perylene	10 R	10 R	10 R	10 U	10 U	10 UJ

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW08-01
Date sampled	10/05/94
Units	UG/L
Phenol	10 U
Bis(2-chloroethyl)ether	10 U
2-Chlorophenol	10 U
1,3-Dichlorobenzene	10 U
1,4-Dichlorobenzene	10 U
1,2-Dichlorobenzene	10 U
2-Methylphenol	10 U
2,2'-Oxybis(1-chloropropane)	10 U
4-Methylphenol	10 U
N-Nitroso-di-n-propylamine	10 U
Hexachloroethane	10 U
Nitrobenzene	10 U
Isophorone	10 U
2-Nitrophenol	10 U
2,4-Dimethylphenol	10 U
Bis(2-chloroethoxy)methane	10 U
2,4-Dichlorophenol	10 U
1,2,4-Trichlorobenzene	10 U
Naphthalene	10 U
4-Chloroaniline	10 U
Hexachlorobutadiene	10 U
4-Chloro-3-methylphenol	10 U
2-Methylnaphthalene	10 U
Hexachlorocyclopentadie	10 U
2,4,6-Trichlorophenol	10 U
2,4,5-Trichlorophenol	25 U
2-Chloronaphthalene	10 U
2-Nitroaniline	25 U
Dimethylphthalate	10 U
Acenaphthylene	10 U
2,6-Dinitrotoluene	10 U
3-Nitroaniline	25 U
Acenaphthene	10 U
2,4-Dinitrophenol	25 U

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW08-01
Date sampled	10/05/94
Units	UG/L
4-Nitrophenol	25 U
Dibenzofuran	10 U
2,4-Dinitrotoluene	10 U
Diethylphthalate	10 U
4-Chlorophenyl-phenylether	10 U
Fluorene	10 U
4-Nitroaniline	25 U
4,6-Dinitro-2-methylphenol	25 U
N-Nitrosodiphenylamine	10 U
4-Bromophenyl-phenylether	10 U
Hexachlorobenzene	10 U
Pentachlorophenol	25 U
Phenanthrene	10 U
Anthracene	10 U
Carbazole	10 U
di-n-Butylphthalate	10 U
Fluoranthene	10 U
Pyrene	10 U
Butylbenzylphthalate	10 U
3,3'-Dichlorobenzidine	10 U
Benzo(a)anthracene	10 U
Chrysene	10 U
Bis(2-ethylhexyl)phthalate	10 U
di-n-Octylphthalate	10 U
Benzo(b)fluoranthene	10 U
Benzo(k)fluoranthene	10 U
Benzo(a)pyrene	10 U
Indeno(1,2,3-cd)pyrene	10 U
Dibenz(a,h)anthracene	10 U
Benzo(g,h,i)perylene	10 U

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	10 U	10 U	ND	ND		0/7
Bis(2-chloroethyl)ether	10 U	10 U	ND	ND		0/7
2-Chlorophenol	10 U	10 U	ND	ND		0/7
1,3-Dichlorobenzene	10 U	10 U	ND	ND		0/7
1,4-Dichlorobenzene	10 U	10 U	ND	ND		0/7
1,2-Dichlorobenzene	10 U	10 U	ND	ND		0/7
2-Methylphenol	10 U	10 U	ND	ND		0/7
2,2'-Oxybis(1-chloropropane)	10 U	10 U	ND	ND		0/7
4-Methylphenol	10 U	10 U	ND	ND		0/7
N-Nitroso-di-n-propylamine	10 U	10 U	ND	ND		0/7
Hexachloroethane	10 U	10 U	ND	ND		0/7
Nitrobenzene	10 U	10 U	ND	ND		0/7
Isophorone	10 U	10 U	ND	ND		0/7
2-Nitrophenol	10 U	10 U	ND	ND		0/7
2,4-Dimethylphenol	10 U	10 U	ND	ND		0/7
Bis(2-chloroethoxy)methane	10 U	10 U	ND	ND		0/7
2,4-Dichlorophenol	10 U	10 U	ND	ND		0/7
1,2,4-Trichlorobenzene	10 U	10 U	ND	ND		0/7
Naphthalene	10 U	10 U	ND	ND		0/7
4-Chloroaniline	10 U	10 U	ND	ND		0/7
Hexachlorobutadiene	10 U	10 U	ND	ND		0/7
4-Chloro-3-methylphenol	10 U	10 U	ND	ND		0/7
2-Methylnaphthalene	10 U	10 U	ND	ND		0/7
Hexachlorocyclopentadie	10 U	10 U	ND	ND		0/7
2,4,6-Trichlorophenol	10 U	10 U	ND	ND		0/7
2,4,5-Trichlorophenol	25 U	25 U	ND	ND		0/7
2-Chloronaphthalene	10 U	10 U	ND	ND		0/7
2-Nitroaniline	25 U	25 U	ND	ND		0/7
Dimethylphthalate	10 U	10 U	ND	ND		0/7
Acenaphthylene	10 U	10 U	ND	ND		0/7
2,6-Dinitrotoluene	10 U	10 U	ND	ND		0/7
3-Nitroaniline	25 U	25 U	ND	ND		0/7
Acenaphthene	10 U	10 U	ND	ND		0/7
2,4-Dinitrophenol	25 U	25 U	ND	ND		0/7

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
4-Nitrophenol	25 U	25 U	ND	ND		0/7
Dibenzofuran	10 U	10 U	ND	ND		0/7
2,4-Dinitrotoluene	10 U	10 U	ND	ND		0/7
Diethylphthalate	10 U	10 U	ND	ND		0/7
4-Chlorophenyl-phenylether	10 U	10 U	ND	ND		0/7
Fluorene	10 U	10 U	ND	ND		0/7
4-Nitroaniline	25 U	25 U	ND	ND		0/7
4,6-Dinitro-2-methylphenol	25 U	25 U	ND	ND		0/7
N-Nitrosodiphenylamine	10 U	10 U	ND	ND		0/7
4-Bromophenyl-phenylether	10 U	10 U	ND	ND		0/7
Hexachlorobenzene	10 U	10 U	ND	ND		0/7
Pentachlorophenol	25 U	25 U	ND	ND		0/7
Phenanthrene	10 U	10 U	ND	ND		0/7
Anthracene	10 U	10 U	ND	ND		0/7
Carbazole	10 U	10 U	ND	ND		0/7
di-n-Butylphthalate	10 U	10 U	ND	ND		0/7
Fluoranthene	10 U	10 U	ND	ND		0/7
Pyrene	10 U	10 U	ND	ND		0/7
Butylbenzylphthalate	10 U	10 U	ND	ND		0/7
3,3'-Dichlorobenzidine	10 U	10 U	ND	ND		0/7
Benzo(a)anthracene	10 U	10 U	ND	ND		0/7
Chrysene	10 U	10 U	ND	ND		0/7
Bis(2-ethylhexyl)phthalate	1 B	10 U	ND	ND		0/7
di-n-Octylphthalate	10 U	10 U	ND	ND		0/4
Benzo(b)fluoranthene	10 U	10 U	ND	ND		0/4
Benzo(k)fluoranthene	10 U	10 U	ND	ND		0/4
Benzo(a)pyrene	10 U	10 U	ND	ND		0/4
Indeno(1,2,3-cd)pyrene	10 U	10 U	ND	ND		0/4
Dibenz(a,h)anthracene	10 U	10 U	ND	ND		0/4
Benzo(g,h,i)perylene	10 U	10 U	ND	ND		0/4

TABLE 10C
STATISTICAL SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethyl)ether	5.00	0.00	5.00	1.61	0.00	5.00
2-Chlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,3-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,4-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,2-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2,2'-Oxybis(1-chloropropane)	5.00	0.00	5.00	1.61	0.00	5.00
4-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
N-Nitroso-di-n-propylamine	5.00	0.00	5.00	1.61	0.00	5.00
Hexachloroethane	5.00	0.00	5.00	1.61	0.00	5.00
Nitrobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Isophorone	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitrophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dimethylphenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethoxy)methane	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,2,4-Trichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Naphthalene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloroaniline	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobutadiene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloro-3-methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylnaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorocyclopentadie	5.00	0.00	5.00	1.61	0.00	5.00
2,4,6-Trichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4,5-Trichlorophenol	12.50	0.00	12.50	2.53	0.00	12.50
2-Chloronaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitroaniline	12.50	0.00	12.50	2.53	0.00	12.50
Dimethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Acenaphthylene	5.00	0.00	5.00	1.61	0.00	5.00
2,6-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
3-Nitroaniline	12.50	0.00	12.50	2.53	0.00	12.50
Acenaphthene	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrophenol	12.50	0.00	12.50	2.53	0.00	12.50

TABLE 10C
STATISTICAL SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
4-Nitrophenol	12.50	0.00	12.50	2.53	0.00	12.50
Dibenzofuran	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
Diethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
4-Chlorophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Fluorene	5.00	0.00	5.00	1.61	0.00	5.00
4-Nitroaniline	12.50	0.00	12.50	2.53	0.00	12.50
4,6-Dinitro-2-methylphenol	12.50	0.00	12.50	2.53	0.00	12.50
N-Nitrosodiphenylamine	5.00	0.00	5.00	1.61	0.00	5.00
4-Bromophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Pentachlorophenol	12.50	0.00	12.50	2.53	0.00	12.50
Phenanthrene	5.00	0.00	5.00	1.61	0.00	5.00
Anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Carbazole	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Butylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Butylbenzylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
3,3'-Dichlorobenzidine	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Chrysene	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-ethylhexyl)phthalate	4.14	1.70	5.39	1.23	0.86	16.38
di-n-Octylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(b)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(k)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Indeno(1,2,3-cd)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Dibenz(a,h)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(g,h,i)perylene	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW03-01	BGGW03-01D	BGGW05-01	BGGW06-01	BGGW06-01D	BGGW07-01
Date sampled	09/23/94	09/23/94	09/26/94	10/06/94	10/06/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
beta-BHC	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
delta-BHC	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.016 J
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Heptachlor	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aldrin	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Heptachlor Epoxide	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Endosulfan I	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Dieldrin	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDE	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Endrin	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Endosulfan II	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDD	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Endosulfan Sulfate	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDT	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Methoxychlor	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Endrin Ketone	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Endrin Aldehyde	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
alpha-Chlordane	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
gamma-Chlordane	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Toxaphene	5 U	5 U	5 UJ	5 UJ	5 UJ	5 UJ
Aroclor-1016	1 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor-1221	2 U	2 U	2 UJ	2 UJ	2 UJ	2 UJ
Aroclor-1232	1 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor-1242	1 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor-1248	1 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor-1254	1 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor-1260	1 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW08-01
Date sampled	10/05/94
Units	UG/L
alpha-BHC	0.05 UJ
beta-BHC	0.05 UJ
delta-BHC	0.05 UJ
gamma-BHC (Lindane)	0.05 UJ
Heptachlor	0.05 UJ
Aldrin	0.05 UJ
Heptachlor Epoxide	0.025 J
Endosulfan I	0.05 UJ
Dieldrin	0.1 UJ
4,4'-DDE	0.1 UJ
Endrin	0.1 UJ
Endosulfan II	0.1 UJ
4,4'-DDD	0.1 UJ
Endosulfan Sulfate	0.1 UJ
4,4'-DDT	0.1 UJ
Methoxychlor	0.5 UJ
Endrin Ketone	0.1 UJ
Endrin Aldehyde	0.1 UJ
alpha-Chlordane	0.05 UJ
gamma-Chlordane	0.05 UJ
Toxaphene	5 UJ
Aroclor-1016	1 UJ
Aroclor-1221	2 UJ
Aroclor-1232	1 UJ
Aroclor-1242	1 UJ
Aroclor-1248	1 UJ
Aroclor-1254	1 UJ
Aroclor-1260	1 UJ

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	0.05 U	0.05 U	ND	ND		0/7
beta-BHC	0.05 U	0.05 U	ND	ND		0/7
delta-BHC	0.05 U	0.05 U	0.016 J	0.016 J	BGGW07-01	1/7
gamma-BHC (Lindane)	0.05 U	0.05 U	ND	ND		0/7
Heptachlor	0.05 U	0.05 U	ND	ND		0/7
Aldrin	0.05 U	0.05 U	ND	ND		0/7
Heptachlor Epoxide	0.05 U	0.05 U	0.025 J	0.025 J	BGGW08-01	1/7
Endosulfan I	0.05 U	0.05 U	ND	ND		0/7
Dieldrin	0.1 U	0.1 U	ND	ND		0/7
4,4'-DDE	0.1 U	0.1 U	ND	ND		0/7
Endrin	0.1 U	0.1 U	ND	ND		0/7
Endosulfan II	0.1 U	0.1 U	ND	ND		0/7
4,4'-DDD	0.1 U	0.1 U	ND	ND		0/7
Endosulfan Sulfate	0.1 U	0.1 U	ND	ND		0/7
4,4'-DDT	0.1 U	0.1 U	ND	ND		0/7
Methoxychlor	0.5 U	0.5 U	ND	ND		0/7
Endrin Ketone	0.1 U	0.1 U	ND	ND		0/7
Endrin Aldehyde	0.1 U	0.1 U	ND	ND		0/7
alpha-Chlordane	0.05 U	0.05 U	ND	ND		0/7
gamma-Chlordane	0.05 U	0.05 U	ND	ND		0/7
Toxaphene	5 U	5 U	ND	ND		0/7
Aroclor-1016	1 U	1 U	ND	ND		0/7
Aroclor-1221	2 U	2 U	ND	ND		0/7
Aroclor-1232	1 U	1 U	ND	ND		0/7
Aroclor-1242	1 U	1 U	ND	ND		0/7
Aroclor-1248	1 U	1 U	ND	ND		0/7
Aroclor-1254	1 U	1 U	ND	ND		0/7
Aroclor-1260	1 U	1 U	ND	ND		0/7

TABLE 10C
STATISTICAL SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
beta-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
delta-BHC	0.02	0.00	0.03	-3.75	0.17	0.03
gamma-BHC (Lindane)	0.03	0.00	0.03	-3.69	0.00	0.02
Heptachlor	0.03	0.00	0.03	-3.69	0.00	0.02
Aldrin	0.03	0.00	0.03	-3.69	0.00	0.02
Heptachlor Epoxide	0.03	0.00	0.03	-3.69	0.00	0.02
Endosulfan I	0.03	0.00	0.03	-3.69	0.00	0.02
Dieldrin	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDE	0.05	0.00	0.05	-3.00	0.00	0.05
Endrin	0.05	0.00	0.05	-3.00	0.00	0.05
Endosulfan II	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDD	0.05	0.00	0.05	-3.00	0.00	0.05
Endosulfan Sulfate	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDT	0.05	0.00	0.05	-3.00	0.00	0.05
Methoxychlor	0.25	0.00	0.25	-1.39	0.00	0.25
Endrin Ketone	0.05	0.00	0.05	-3.00	0.00	0.05
Endrin Aldehyde	0.05	0.00	0.05	-3.00	0.00	0.05
alpha-Chlordane	0.03	0.00	0.03	-3.69	0.00	0.02
gamma-Chlordane	0.03	0.00	0.03	-3.69	0.00	0.02
Toxaphene	2.50	0.00	2.50	0.92	0.00	2.50
Aroclor-1016	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1221	1.00	0.00	1.00	0.00	0.00	1.00
Aroclor-1232	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1242	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1248	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1254	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1260	0.50	0.00	0.50	-0.69	0.00	0.50

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW03-01	BGGW03-01D	BGGW05-01	BGGW06-01	BGGW06-01D	BGGW07-01
Date sampled	09/23/94	09/23/94	09/26/94	10/06/94	10/06/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Tertyl	1 U	1 U	2.8 U	1 U	1 U	3.7 U
Nitrobenzene	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Nitrotoluene	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
3-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW08-01
Date sampled	10/05/94
Units	UG/L
HMX	1.1 U
RDX	0.78 U
1,3,5-Trinitrobenzene	0.73 U
1,3-Dinitrobenzene	1.3 U
Tertyl	1.2 U
Nitrobenzene	0.98 U
2,4,6-Trinitrotoluene	0.95 U
4-Amino-2,6-Dinitrotoluene	1 U
2,6-Dinitrotoluene	1.3 U
2,4-Dinitrotoluene	1 U
2-Nitrotoluene	1 U
3-Nitrotoluene	0.93 U

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.61 U	1.1 U	ND	ND		0/7
RDX	0.59 U	0.78 U	ND	ND		0/7
1,3,5-Trinitrobenzene	0.66 U	0.73 U	ND	ND		0/7
1,3-Dinitrobenzene	1.1 U	1.3 U	ND	ND		0/7
Tertyl	1 U	3.7 U	ND	ND		0/7
Nitrobenzene	0.73 U	0.98 U	ND	ND		0/7
2,4,6-Trinitrotoluene	0.62 U	0.95 U	ND	ND		0/7
4-Amino-2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/7
2,6-Dinitrotoluene	1 U	1.3 U	ND	ND		0/7
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/7
2-Nitrotoluene	0.75 U	1 U	ND	ND		0/7
3-Nitrotoluene	0.91 U	0.93 U	ND	ND		0/7

TABLE 10C
STATISTICAL SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.34	0.09	0.41	-1.10	0.22	0.41
RDX	0.31	0.04	0.33	-1.18	0.11	0.34
1,3,5-Trinitrobenzene	0.34	0.01	0.34	-1.09	0.04	0.35
1,3-Dinitrobenzene	0.56	0.04	0.59	-0.57	0.06	0.59
Tertyl	0.84	0.56	1.24	-0.33	0.56	1.55
Nitrobenzene	0.38	0.05	0.42	-0.97	0.11	0.42
2,4,6-Trinitrotoluene	0.33	0.06	0.38	-1.11	0.16	0.38
4-Amino-2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.52	0.06	0.56	-0.66	0.10	0.56
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2-Nitrotoluene	0.39	0.05	0.43	-0.94	0.11	0.43
3-Nitrotoluene	0.46	0.00	0.46	-0.78	0.01	0.46

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW03-01	BGGW03-01D	BGGW05-01	BGGW06-01	BGGW06-01D	BGGW07-01
Date sampled	09/23/94	09/23/94	09/26/94	10/06/94	10/06/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	884	2020	3170	1820 L	2610 L	3080
Antimony	12.4 U	12.4 U	12.4 U	12.4 U	12.4 U	12.4 U
Arsenic	2.6 UL	2.6 UL	2.6 UL	2.3 U	2.3 U	5.2 L
Barium	22.2 J	25.4 J	39.2 J	25.7 J	26.7 J	53 J
Beryllium	0.2 U	0.2 U	0.25 K	0.25 J	0.27 J	0.33 K
Cadmium	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Calcium	768 J	782 J	11400	5070	4990 J	155000
Chromium	2.6 L	3.2 L	4.2 L	5 L	6.5 L	12.8 L
Cobalt	2.1 U	2.1 U	5 J	3.3 J	3.1 J	3.8 J
Copper	3.4 J	3.3 J	4.2 J	2.7 J	2 J	3.9 J
Iron	2050	3980	5370	3660	4180	11600
Lead	1.5 UL	1.8 L	1.5 UL	1.5 UL	1.5 UL	1.9 L
Magnesium	489 J	534 J	840 J	614 J	687 J	3400 J
Manganese	8.8 J	12.2 J	45.8	32.1	32.5	105
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 U	0.2 U	0.2 UL
Nickel	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Potassium	788 J	557 J	1250 J	1030 J	1120 J	1710 J
Selenium	2.4 U	2.4 U	2.4 U	2.4 UL	2.4 UL	2.4 U
Silver	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Sodium	4200 J	3990 J	3670 J	4380 J	4310 J	7110
Thallium	5.7 U	5.7 U	5.7 U	5.7 U	5.7 U	5.7 U
Vanadium	3.4 J	4 J	6.8 J	5.9 J	7.7 J	16 J
Zinc	12.7 J	15.1 J	16.6 J	20.6 J	19.5 J	30.2 J
Cyanide	5 U	5 U	5 U	5 U	5 U	5 U

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW08-01	
Date sampled	10/05/94	
Units	UG/L	
Aluminum	2220	
Antimony	12.4	U
Arsenic	2.6	UL
Barium	27.4	J
Beryllium	0.38	K
Cadmium	2.3	U
Calcium	1740	J
Chromium	3.3	L
Cobalt	4.2	J
Copper	4.7	J
Iron	7510	
Lead	2.5	L
Magnesium	661	J
Manganese	48.3	
Mercury	0.2	UL
Nickel	5.2	U
Potassium	776	J
Selenium	2.4	U
Silver	1.7	U
Sodium	6360	
Thallium	5.7	U
Vanadium	7	J
Zinc	22.6	J
Cyanide	5	U

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	884	3170	BGGW05-01	7/7
Antimony	12.4 U	12.4 U	ND	ND		0/7
Arsenic	2.3 U	2.6 UL	5.2 L	5.2 L	BGGW07-01	1/7
Barium	NA	NA	22.2 J	53 J	BGGW07-01	7/7
Beryllium	0.2 U	0.2 U	0.25 K	0.38 K	BGGW08-01	5/7
Cadmium	2.3 U	2.3 U	ND	ND		0/7
Calcium	NA	NA	768 J	155000	BGGW07-01	7/7
Chromium	NA	NA	2.6 L	12.8 L	BGGW07-01	7/7
Cobalt	2.1 U	2.1 U	3.1 J	5 J	BGGW05-01	5/7
Copper	NA	NA	2 J	4.7 J	BGGW08-01	7/7
Iron	NA	NA	2050	11600	BGGW07-01	7/7
Lead	1.5 UL	1.5 UL	1.8 L	2.5 L	BGGW08-01	3/7
Magnesium	NA	NA	489 J	3400 J	BGGW07-01	7/7
Manganese	NA	NA	8.8 J	105	BGGW07-01	7/7
Mercury	0.2 UL	0.2 UL	ND	ND		0/7
Nickel	5.2 U	5.2 U	ND	ND		0/7
Potassium	NA	NA	557 J	1710 J	BGGW07-01	7/7
Selenium	2.4 U	2.4 U	ND	ND		0/7
Silver	1.7 U	1.7 U	ND	ND		0/7
Sodium	NA	NA	3670 J	7110	BGGW07-01	7/7
Thallium	5.7 U	5.7 U	ND	ND		0/7
Vanadium	NA	NA	3.4 J	16 J	BGGW07-01	7/7
Zinc	NA	NA	12.7 J	30.2 J	BGGW07-01	7/7
Cyanide	5 U	5 U	ND	ND		0/7

TABLE 10C
STATISTICAL SUMMARY
GROUNDWATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	2257.71	792.58	2839.78	7.65	0.44	3588.55
Antimony	6.20	0.00	6.20	1.82	0.00	6.20
Arsenic	1.81	1.49	2.91	0.43	0.54	3.20
Barium	31.37	10.94	39.41	3.40	0.31	41.82
Beryllium	0.24	0.11	0.32	-1.54	0.54	0.45
Cadmium	1.15	0.00	1.15	0.14	0.00	1.15
Calcium	25678.57	57146.11	67645.82	8.44	1.85	4170177.66
Chromium	5.37	3.53	7.96	1.54	0.54	9.72
Cobalt	3.07	1.51	4.18	0.97	0.65	7.05
Copper	3.46	0.91	4.13	1.21	0.29	4.48
Iron	5478.57	3178.17	7812.57	8.48	0.55	10239.62
Lead	1.31	0.74	1.86	0.14	0.55	2.43
Magnesium	1032.14	1050.28	1803.45	6.68	0.66	2181.52
Manganese	40.67	32.12	64.26	3.43	0.85	143.36
Mercury	0.10	0.00	0.10	-2.30	0.00	0.10
Nickel	2.60	0.00	2.60	0.96	0.00	2.60
Potassium	1033.00	379.83	1311.94	6.88	0.37	1469.64
Selenium	1.20	0.00	1.20	0.18	0.00	1.20
Silver	0.85	0.00	0.85	-0.16	0.00	0.85
Sodium	4860.00	1319.97	5829.37	8.46	0.25	6056.19
Thallium	2.85	0.00	2.85	1.05	0.00	2.85
Vanadium	7.26	4.17	10.32	1.87	0.50	12.68
Zinc	19.61	5.76	23.85	2.94	0.28	25.23
Cyanide	2.50	0.00	2.50	0.92	0.00	2.50

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW03DS-01	BGGW03DS-01D	BGGW05DS-01	BGGW06DS-01	BGGW06DS-01D	BGGW07DS-01
Date sampled	09/23/94	09/23/94	09/26/94	10/06/94	10/06/94	09/26/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	11.5 U	11.5 U	11.5 U	11.5 U	11.5 U	11.5 U
Antimony	12.4 UL	12.4 UL	12.4 UL	17.4 J	16.7 J	12.4 UL
Arsenic	2.6 U	2.6 U	2.6 U	2.3 UL	2.3 UL	2.6 U
Barium	13 J	14 J	23.3 J	16.4 J	15.3 J	37.2 J
Beryllium	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Calcium	664 J	611 J	11500	5770	4740 J	129000
Chromium	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Cobalt	2.1 U	2.1 U	3.2 J	2.1 U	2.1 U	2.1 U
Copper	2.1 J	2.3 J	1.1 U	1.1 U	1.1 U	1.9 J
Iron	6.4 J	2.6 J	7.9 J	6 J	17.7 J	5 J
Lead	1.5 UL	1.5 UL	1.5 UL	1.4 UL	1.4 UL	1.5 UL
Magnesium	366 J	389 J	580 J	462 J	426 J	2520 J
Manganese	5.9 J	6 J	23.6	11.3 J	10.2 J	50.4
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 U	0.2 U	0.2 UL
Nickel	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Potassium	430 J	441 J	1050 J	706 J	739 J	1270 J
Selenium	2.4 U	2.4 U	2.4 U	2.6 U	2.6 U	2.4 U
Silver	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Sodium	3780 J	3810 J	3690 J	4010 J	3930 J	6720
Thallium	5.7 U	5.7 U	5.7 U	4 U	4 U	5.7 U
Vanadium	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2.7 J
Zinc	8 J	8 J	6.6 J	7.3 J	6.4 J	15.6 J

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGGW08DS-01
Date sampled	10/05/94
Units	UG/L
Aluminum	20.9 J
Antimony	12.4 UL
Arsenic	2.6 U
Barium	14.7 J
Beryllium	0.2 U
Cadmium	2.3 U
Calcium	1900 J
Chromium	1.5 U
Cobalt	4.6 J
Copper	1.5 J
Iron	7.6 J
Lead	1.5 UL
Magnesium	424 J
Manganese	40.6
Mercury	0.2 UL
Nickel	5.2 U
Potassium	679 J
Selenium	2.4 U
Silver	1.7 U
Sodium	6440
Thallium	5.7 U
Vanadium	1.8 U
Zinc	11.6 J

TABLE 10C
FREQUENCY OF DETECTION SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	11.5 U	11.5 U	20.9 J	20.9 J	BGGW08DS-01	1/7
Antimony	12.4 UL	12.4 UL	16.7 J	17.4 J	BGGW06DS-01	2/7
Arsenic	2.3 UL	2.6 U	ND	ND		0/7
Barium	NA	NA	13 J	37.2 J	BGGW07DS-01	7/7
Beryllium	0.2 U	0.2 U	ND	ND		0/7
Cadmium	2.3 U	2.3 U	ND	ND		0/7
Calcium	NA	NA	611 J	129000	BGGW07DS-01	7/7
Chromium	1.5 U	1.5 U	ND	ND		0/7
Cobalt	2.1 U	2.1 U	3.2 J	4.6 J	BGGW08DS-01	2/7
Copper	1.1 U	1.1 U	1.5 J	2.3 J	BGGW03DS-01D	4/7
Iron	NA	NA	2.6 J	17.7 J	BGGW06DS-01D	7/7
Lead	1.4 UL	1.5 UL	ND	ND		0/7
Magnesium	NA	NA	366 J	2520 J	BGGW07DS-01	7/7
Manganese	NA	NA	5.9 J	50.4	BGGW07DS-01	7/7
Mercury	0.2 UL	0.2 UL	ND	ND		0/7
Nickel	5.2 U	5.2 U	ND	ND		0/7
Potassium	NA	NA	430 J	1270 J	BGGW07DS-01	7/7
Selenium	2.4 U	2.6 U	ND	ND		0/7
Silver	1.7 U	1.7 U	ND	ND		0/7
Sodium	NA	NA	3690 J	6720	BGGW07DS-01	7/7
Thallium	4 U	5.7 U	ND	ND		0/7
Vanadium	1.8 U	1.8 U	2.7 J	2.7 J	BGGW07DS-01	1/7
Zinc	NA	NA	6.4 J	15.6 J	BGGW07DS-01	7/7

TABLE 10C
STATISTICAL SUMMARY
GROUNDWATER - COLUMBIA AQUIFER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	7.91	5.73	12.12	1.93	0.49	12.72
Antimony	9.30	5.30	13.19	2.11	0.49	15.37
Arsenic	1.26	0.07	1.31	0.23	0.06	1.32
Barium	19.13	8.66	25.49	2.88	0.37	27.15
Beryllium	0.10	0.00	0.10	-2.30	0.00	0.10
Cadmium	1.15	0.00	1.15	0.14	0.00	1.15
Calcium	22026.43	47323.87	56780.36	8.39	1.85	4014772.28
Chromium	0.75	0.00	0.75	-0.29	0.00	0.75
Cobalt	1.86	1.45	2.93	0.42	0.64	3.99
Copper	1.35	0.79	1.93	0.12	0.68	3.19
Iron	7.60	4.79	11.12	1.88	0.57	14.51
Lead	0.74	0.02	0.75	-0.31	0.03	0.76
Magnesium	738.14	788.75	1317.39	6.33	0.68	1578.52
Manganese	21.14	17.88	34.28	2.73	0.88	76.30
Mercury	0.10	0.00	0.10	-2.30	0.00	0.10
Nickel	2.60	0.00	2.60	0.96	0.00	2.60
Potassium	759.29	306.80	984.60	6.56	0.40	1152.24
Selenium	1.23	0.05	1.26	0.21	0.04	1.27
Silver	0.85	0.00	0.85	-0.16	0.00	0.85
Sodium	4625.71	1341.45	5610.86	8.41	0.26	5833.59
Thallium	2.61	0.41	2.91	0.95	0.17	3.01
Vanadium	1.16	0.68	1.66	0.05	0.42	1.74
Zinc	9.07	3.36	11.54	2.16	0.33	12.34

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW01-01	BGWPSW01-02	BGWPSW02-01	BGWPSW02-02	BGWPSW03-01	BGWPSW03-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2 U	2 U	2 U	2 U	2 U	2 U
Acetone	5 R	5.9 J	5 R	7 J	5.4 J	9.6 J
Carbon disulfide	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	5 R	5 R	5 R	5 R	5 R	5 R
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1.3 U	1 U	1.2 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U
M/P xylenes	1 U	1 U	1 U	1 U	1 U	1 U
O xylene	1 U	1 U	1 U	1 U	1 U	1 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW03-02	BGWPSW04-01	BGPLSW03-01	BGPLSW03-02	BGPLSW04-01	BGPLSW04-01D
Date sampled	08/02/94	08/02/94	08/04/94	08/04/94	08/04/94	08/04/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2 U	2 U	2 UJ	2 UJ	2 UJ	2 UJ
Acetone	5.8 J	5 R	5.6 R	5 R	5 R	5 R
Carbon disulfide	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	5 R	5 R	5 R	5 R	5 R	5 R
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U
M/P xylenes	1 U	1 U	1 U	1 U	1 U	1 U
O xylene	1 U	1 U	1 U	1 U	1 U	1 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSW04-02	
Date sampled	08/04/94	
Units	UG/L	
Chloromethane	1.7	U
Bromomethane	1	U
Vinyl chloride	1	U
Chloroethane	1	U
Methylene chloride	2	UJ
Acetone	5	R
Carbon disulfide	1	U
1,1-Dichloroethene	1	U
1,1-Dichloroethane	1	U
Trans-1,2-dichloroethene	1	U
Cis-1,2-dichloroethene	1	U
Chloroform	1	U
1,2-Dichloroethane	1	U
2-Butanone	5	U
1,1,1-Trichloroethane	1	U
Carbon tetrachloride	1	U
Bromodichloromethane	1	U
1,2-Dichloropropane	1	U
cis-1,3-Dichloropropene	1	U
Trichloroethene	0.5	J
Dibromochloromethane	1	U
1,1,2-Trichloroethane	1	U
Benzene	1	U
Trans-1,3-dichloropropene	1	U
Bromoform	1	U
4-Methyl-2-pentanone	5	R
2-Hexanone	5	U
Tetrachloroethene	1	U
1,1,2,2-Tetrachloroethane	1	U
Toluene	1	U
Chlorobenzene	1	U
Ethylbenzene	1	U
Styrene	1	U
M/P xylenes	1	U
O xylene	1	U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	1 U	1.7 U	ND	ND		0/5
Bromomethane	1 U	1 U	ND	ND		0/5
Vinyl chloride	1 U	1 U	ND	ND		0/5
Chloroethane	1 U	1 U	ND	ND		0/5
Methylene chloride	2 UJ	2 UJ	ND	ND		0/5
Acetone	NA	NA	ND	ND		0/0
Carbon disulfide	1 U	1 U	ND	ND		0/5
1,1-Dichloroethene	1 U	1 U	ND	ND		0/5
1,1-Dichloroethane	1 U	1 U	ND	ND		0/5
Trans-1,2-dichloroethene	1 U	1 U	ND	ND		0/5
Cis-1,2-dichloroethene	1 U	1 U	ND	ND		0/5
Chloroform	1 U	1 U	ND	ND		0/5
1,2-Dichloroethane	1 U	1 U	ND	ND		0/5
2-Butanone	5 U	5 U	ND	ND		0/1
1,1,1-Trichloroethane	1 U	1 U	ND	ND		0/5
Carbon tetrachloride	1 U	1 U	ND	ND		0/5
Bromodichloromethane	1 U	1 U	ND	ND		0/5
1,2-Dichloropropane	1 U	1 U	ND	ND		0/5
cis-1,3-Dichloropropene	1 U	1 U	ND	ND		0/5
Trichloroethene	1 U	1 U	0.5 J	0.5 J	BGPLSW04-02	1/5
Dibromochloromethane	1 U	1 U	ND	ND		0/5
1,1,2-Trichloroethane	1 U	1 U	ND	ND		0/5
Benzene	1 U	1 U	ND	ND		0/5
Trans-1,3-dichloropropene	1 U	1 U	ND	ND		0/5
Bromoform	1 U	1 U	ND	ND		0/5
4-Methyl-2-pentanone	NA	NA	ND	ND		0/0
2-Hexanone	5 U	5 U	ND	ND		0/5
Tetrachloroethene	1 U	1 U	ND	ND		0/5
1,1,2,2-Tetrachloroethane	1 U	1 U	ND	ND		0/5
Toluene	1 U	1 U	ND	ND		0/5
Chlorobenzene	1 U	1 U	ND	ND		0/5
Ethylbenzene	1 U	1 U	ND	ND		0/5
Styrene	1 U	1 U	ND	ND		0/5
M/P xylenes	1 U	1 U	ND	ND		0/5
O xylene	1 U	1 U	ND	ND		0/5

TABLE 11
STATISTICAL SUMMARY
FRESHWATER PONDS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	0.57	0.16	0.72	-0.59	0.24	0.76
Bromomethane	0.50	0.00	0.50	-0.69	0.00	0.50
Vinyl chloride	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Methylene chloride	1.00	0.00	1.00	0.00	0.00	1.00
Acetone						
Carbon disulfide	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Trans-1,2-dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Cis-1,2-dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroform	0.50	0.00	0.50	-0.69	0.00	0.50
1,2-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
2-Butanone	2.50	ERR		0.92	ERR	NA
1,1,1-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Carbon tetrachloride	0.50	0.00	0.50	-0.69	0.00	0.50
Bromodichloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,2-Dichloropropane	0.50	0.00	0.50	-0.69	0.00	0.50
cis-1,3-Dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Trichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Dibromochloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,1,2-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Benzene	0.50	0.00	0.50	-0.69	0.00	0.50
Trans-1,3-dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Bromoform	0.50	0.00	0.50	-0.69	0.00	0.50
4-Methyl-2-pentanone						
2-Hexanone	2.50	0.00	2.50	0.92	0.00	2.50
Tetrachloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
1,1,2,2-Tetrachloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Toluene	0.50	0.00	0.50	-0.69	0.00	0.50
Chlorobenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Ethylbenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Styrene	0.50	0.00	0.50	-0.69	0.00	0.50
M/P xylenes	0.50	0.00	0.50	-0.69	0.00	0.50
O xylene	0.50	0.00	0.50	-0.69	0.00	0.50

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW01-01	BGWPSW01-02	BGWPSW02-01	BGWPSW02-02	BGWPSW03-01	BGWPSW03-01D
Date sampled	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW01-01	BGWPSW01-02	BGWPSW02-01	BGWPSW02-02	BGWPSW03-01	BGWPSW03-01D
Date sampled	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW03-02	BGWPSW04-01	BGPLSW03-01	BGPLSW03-02	BGPLSW04-01	BGPLSW04-02
Date sampled	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	24 U	24 U	24 U	24 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	24 U	24 U	24 U	24 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	24 U	24 U	24 U	24 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW03-02	BGWPSW04-01	BGPLSW03-01	BGPLSW03-02	BGPLSW04-01	BGPLSW04-02
Date sampled	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
2,4-Dinitrophenol	25 U	25 U	24 U	24 U	24 U	24 U
4-Nitrophenol	25 U	25 U	24 U	24 U	24 U	24 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	24 U	24 U	24 U	24 U
4,6-Dinitro-2-methylphenol	25 U	25 U	24 U	24 U	24 U	24 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	24 U	24 U	24 U	24 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 UJ	10 UJ

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	10 U	10 U	ND	ND		0/12
Bis(2-chloroethyl)ether	10 U	10 U	ND	ND		0/12
2-Chlorophenol	10 U	10 U	ND	ND		0/12
1,3-Dichlorobenzene	10 U	10 U	ND	ND		0/12
1,4-Dichlorobenzene	10 U	10 U	ND	ND		0/12
1,2-Dichlorobenzene	10 U	10 U	ND	ND		0/12
2-Methylphenol	10 U	10 U	ND	ND		0/12
2,2'-Oxybis(1-chloropropane)	10 U	10 U	ND	ND		0/12
4-Methylphenol	10 U	10 U	ND	ND		0/12
N-Nitroso-di-n-propylamine	10 U	10 U	ND	ND		0/12
Hexachloroethane	10 U	10 U	ND	ND		0/12
Nitrobenzene	10 U	10 U	ND	ND		0/12
Isophorone	10 U	10 U	ND	ND		0/12
2-Nitrophenol	10 U	10 U	ND	ND		0/12
2,4-Dimethylphenol	10 U	10 U	ND	ND		0/12
Bis(2-chloroethoxy)methane	10 U	10 U	ND	ND		0/12
2,4-Dichlorophenol	10 U	10 U	ND	ND		0/12
1,2,4-Trichlorobenzene	10 U	10 U	ND	ND		0/12
Naphthalene	10 U	10 U	ND	ND		0/12
4-Chloroaniline	10 U	10 U	ND	ND		0/12
Hexachlorobutadiene	10 U	10 U	ND	ND		0/12
4-Chloro-3-methylphenol	10 U	10 U	ND	ND		0/12
2-Methylnaphthalene	10 U	10 U	ND	ND		0/12
Hexachlorocyclopentadie	10 U	10 U	ND	ND		0/12
2,4,6-Trichlorophenol	10 U	10 U	ND	ND		0/12
2,4,5-Trichlorophenol	24 U	25 U	ND	ND		0/12
2-Chloronaphthalene	10 U	10 U	ND	ND		0/12
2-Nitroaniline	24 U	25 U	ND	ND		0/12
Dimethylphthalate	10 U	10 U	ND	ND		0/12
Acenaphthylene	10 U	10 U	ND	ND		0/12
2,6-Dinitrotoluene	10 U	10 U	ND	ND		0/12
3-Nitroaniline	24 U	25 U	ND	ND		0/12
Acenaphthene	10 U	10 U	ND	ND		0/12

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
2,4-Dinitrophenol	24 U	25 U	ND	ND		0/12
4-Nitrophenol	24 U	25 U	ND	ND		0/12
Dibenzofuran	10 U	10 U	ND	ND		0/12
2,4-Dinitrotoluene	10 U	10 U	ND	ND		0/12
Diethylphthalate	10 U	10 U	ND	ND		0/12
4-Chlorophenyl-phenylether	10 U	10 U	ND	ND		0/12
Fluorene	10 U	10 U	ND	ND		0/12
4-Nitroaniline	24 U	25 U	ND	ND		0/12
4,6-Dinitro-2-methylphenol	24 U	25 U	ND	ND		0/12
N-Nitrosodiphenylamine	10 U	10 U	ND	ND		0/12
4-Bromophenyl-phenylether	10 U	10 U	ND	ND		0/12
Hexachlorobenzene	10 U	10 U	ND	ND		0/12
Pentachlorophenol	24 U	25 U	ND	ND		0/12
Phenanthrene	10 U	10 U	ND	ND		0/12
Anthracene	10 U	10 U	ND	ND		0/12
Carbazole	10 U	10 U	ND	ND		0/12
di-n-Butylphthalate	10 U	10 U	ND	ND		0/12
Fluoranthene	10 U	10 U	ND	ND		0/12
Pyrene	10 U	10 U	ND	ND		0/12
Butylbenzylphthalate	10 U	10 U	ND	ND		0/12
3,3'-Dichlorobenzidine	10 U	10 U	ND	ND		0/12
Benzo(a)anthracene	10 U	10 U	ND	ND		0/12
Chrysene	10 U	10 U	ND	ND		0/12
Bis(2-ethylhexyl)phthalate	10 U	10 U	ND	ND		0/12
di-n-Octylphthalate	10 U	10 U	ND	ND		0/12
Benzo(b)fluoranthene	10 U	10 U	ND	ND		0/12
Benzo(k)fluoranthene	10 U	10 U	ND	ND		0/12
Benzo(a)pyrene	10 U	10 U	ND	ND		0/12
Indeno(1,2,3-cd)pyrene	10 U	10 U	ND	ND		0/12
Dibenz(a,h)anthracene	10 U	10 U	ND	ND		0/12
Benzo(g,h,i)perylene	10 U	10 U	ND	ND		0/12

TABLE 11
STATISTICAL SUMMARY
FRESHWATER PONDS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethyl)ether	5.00	0.00	5.00	1.61	0.00	5.00
2-Chlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,3-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,4-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,2-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2,2'-Oxybis(1-chloropropane)	5.00	0.00	5.00	1.61	0.00	5.00
4-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
N-Nitroso-di-n-propylamine	5.00	0.00	5.00	1.61	0.00	5.00
Hexachloroethane	5.00	0.00	5.00	1.61	0.00	5.00
Nitrobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Isophorone	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitrophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dimethylphenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethoxy)methane	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,2,4-Trichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Naphthalene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloroaniline	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobutadiene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloro-3-methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylnaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorocyclopentadie	5.00	0.00	5.00	1.61	0.00	5.00
2,4,6-Trichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4,5-Trichlorophenol	12.33	0.25	12.46	2.51	0.02	12.47
2-Chloronaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitroaniline	12.33	0.25	12.46	2.51	0.02	12.47
Dimethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Acenaphthylene	5.00	0.00	5.00	1.61	0.00	5.00
2,6-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
3-Nitroaniline	12.33	0.25	12.46	2.51	0.02	12.47
Acenaphthene	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 11
STATISTICAL SUMMARY
FRESHWATER PONDS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
2,4-Dinitrophenol	12.33	0.25	12.46	2.51	0.02	12.47
4-Nitrophenol	12.33	0.25	12.46	2.51	0.02	12.47
Dibenzofuran	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
Diethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
4-Chlorophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Fluorene	5.00	0.00	5.00	1.61	0.00	5.00
4-Nitroaniline	12.33	0.25	12.46	2.51	0.02	12.47
4,6-Dinitro-2-methylphenol	12.33	0.25	12.46	2.51	0.02	12.47
N-Nitrosodiphenylamine	5.00	0.00	5.00	1.61	0.00	5.00
4-Bromophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Pentachlorophenol	12.33	0.25	12.46	2.51	0.02	12.47
Phenanthrene	5.00	0.00	5.00	1.61	0.00	5.00
Anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Carbazole	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Butylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Butylbenzylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
3,3'-Dichlorobenzidine	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Chrysene	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-ethylhexyl)phthalate	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Octylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(b)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(k)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Indeno(1,2,3-cd)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Dibenz(a,h)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(g,h,i)perylene	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW01-01	BGWPSW01-02	BGWPSW02-01	BGWPSW02-02	BGWPSW03-01	BGWPSW03-01D
Date sampled	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
beta-BHC	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
delta-BHC	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
gamma-BHC (Lindane)	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
Heptachlor	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
Aldrin	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
Heptachlor Epoxide	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
Endosulfan I	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
Dieldrin	0.10 UL	NA	0.10 U	0.10 UL	NA	0.10 UL
4,4'-DDE	0.10 UL	NA	0.10 U	0.10 UL	NA	0.10 UL
Endrin	0.10 UL	NA	0.10 U	0.10 UL	NA	0.10 UL
Endosulfan II	0.10 UL	NA	0.10 U	0.10 UL	NA	0.10 UL
4,4'-DDD	0.10 UL	NA	0.10 U	0.10 UL	NA	0.10 UL
Endosulfan Sulfate	0.10 UL	NA	0.10 U	0.10 UL	NA	0.10 UL
4,4'-DDT	0.10 UL	NA	0.10 U	0.10 UL	NA	0.10 UL
Methoxychlor	0.50 UL	NA	0.50 U	0.50 UL	NA	0.50 UL
Endrin Ketone	0.10 UL	NA	0.10 U	0.10 UL	NA	0.10 UL
Endrin Aldehyde	0.10 UL	NA	0.10 U	0.10 UL	NA	0.10 UL
alpha-Chlordane	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
gamma-Chlordane	0.050 UL	NA	0.050 U	0.050 UL	NA	0.050 UL
Toxaphene	5.0 UL	NA	5.0 U	5.0 UL	NA	5.0 UL
Aroclor-1016	1.0 UL	NA	1.0 U	1.0 UL	NA	1.0 UL
Aroclor-1221	2.0 UL	NA	2.0 U	2.0 UL	NA	2.0 UL
Aroclor-1232	1.0 UL	NA	1.0 U	1.0 UL	NA	1.0 UL
Aroclor-1242	1.0 UL	NA	1.0 U	1.0 UL	NA	1.0 UL
Aroclor-1248	1.0 UL	NA	1.0 U	1.0 UL	NA	1.0 UL
Aroclor-1254	1.0 UL	NA	1.0 U	1.0 UL	NA	1.0 UL
Aroclor-1260	1.0 UL	NA	1.0 U	1.0 UL	NA	1.0 UL

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW03-02	BGWPSW04-01	BGPLSW03-01	BGPLSW03-02	BGPLSW04-01	BGPLSW04-02
Date sampled	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94	08/23/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
beta-BHC	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
delta-BHC	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
gamma-BHC (Lindane)	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
Heptachlor	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
Aldrin	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
Heptachlor Epoxide	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
Endosulfan I	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
Dieldrin	NA	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 U
4,4'-DDE	NA	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 U
Endrin	NA	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 U
Endosulfan II	NA	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 U
4,4'-DDD	NA	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 U
Endosulfan Sulfate	NA	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 U
4,4'-DDT	NA	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 U
Methoxychlor	NA	0.50 UJ	0.50 UJ	0.50 U	0.50 UJ	0.50 U
Endrin Ketone	NA	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 U
Endrin Aldehyde	NA	0.10 UJ	0.10 UJ	0.10 U	0.10 UJ	0.10 U
alpha-Chlordane	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
gamma-Chlordane	NA	0.050 UJ	0.050 UJ	0.050 U	0.050 UJ	0.050 U
Toxaphene	NA	5.0 UJ	5.0 UJ	5.0 U	5.0 UJ	5.0 U
Aroclor-1016	NA	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 U
Aroclor-1221	NA	2.0 UJ	2.0 UJ	2.0 U	2.0 UJ	2.0 U
Aroclor-1232	NA	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 U
Aroclor-1242	NA	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 U
Aroclor-1248	NA	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 U
Aroclor-1254	NA	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 U
Aroclor-1260	NA	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	0.05 UL	0.05 UL	ND	ND		0/9
beta-BHC	0.05 UL	0.05 UL	ND	ND		0/9
delta-BHC	0.05 UL	0.05 UL	ND	ND		0/9
gamma-BHC (Lindane)	0.05 UL	0.05 UL	ND	ND		0/9
Heptachlor	0.05 UL	0.05 UL	ND	ND		0/9
Aldrin	0.05 UL	0.05 UL	ND	ND		0/9
Heptachlor Epoxide	0.05 UL	0.05 UL	ND	ND		0/9
Endosulfan I	0.05 UL	0.05 UL	ND	ND		0/9
Dieldrin	0.1 UL	0.1 UL	ND	ND		0/9
4,4'-DDE	0.1 UL	0.1 UL	ND	ND		0/9
Endrin	0.1 UL	0.1 UL	ND	ND		0/9
Endosulfan II	0.1 UL	0.1 UL	ND	ND		0/9
4,4'-DDD	0.1 UL	0.1 UL	ND	ND		0/9
Endosulfan Sulfate	0.1 UL	0.1 UL	ND	ND		0/9
4,4'-DDT	0.1 UL	0.1 UL	ND	ND		0/9
Methoxychlor	0.5 UL	0.5 UL	ND	ND		0/9
Endrin Ketone	0.1 UL	0.1 UL	ND	ND		0/9
Endrin Aldehyde	0.1 UL	0.1 UL	ND	ND		0/9
alpha-Chlordane	0.05 UL	0.05 UL	ND	ND		0/9
gamma-Chlordane	0.05 UL	0.05 UL	ND	ND		0/9
Toxaphene	5 UL	5 UL	ND	ND		0/9
Aroclor-1016	1 UL	1 UL	ND	ND		0/9
Aroclor-1221	2 UL	2 UL	ND	ND		0/9
Aroclor-1232	1 UL	1 UL	ND	ND		0/9
Aroclor-1242	1 UL	1 UL	ND	ND		0/9
Aroclor-1248	1 UL	1 UL	ND	ND		0/9
Aroclor-1254	1 UL	1 UL	ND	ND		0/9
Aroclor-1260	1 UL	1 UL	ND	ND		0/9

TABLE 11
STATISTICAL SUMMARY
FRESHWATER PONDS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
beta-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
delta-BHC	0.03	0.00	0.03	-3.69	0.00	0.02
gamma-BHC (Lindane)	0.03	0.00	0.03	-3.69	0.00	0.02
Heptachlor	0.03	0.00	0.03	-3.69	0.00	0.02
Aldrin	0.03	0.00	0.03	-3.69	0.00	0.02
Heptachlor Epoxide	0.03	0.00	0.03	-3.69	0.00	0.02
Endosulfan I	0.03	0.00	0.03	-3.69	0.00	0.02
Dieldrin	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDE	0.05	0.00	0.05	-3.00	0.00	0.05
Endrin	0.05	0.00	0.05	-3.00	0.00	0.05
Endosulfan II	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDD	0.05	0.00	0.05	-3.00	0.00	0.05
Endosulfan Sulfate	0.05	0.00	0.05	-3.00	0.00	0.05
4,4'-DDT	0.05	0.00	0.05	-3.00	0.00	0.05
Methoxychlor	0.25	0.00	0.25	-1.39	0.00	0.25
Endrin Ketone	0.05	0.00	0.05	-3.00	0.00	0.05
Endrin Aldehyde	0.05	0.00	0.05	-3.00	0.00	0.05
alpha-Chlordane	0.03	0.00	0.03	-3.69	0.00	0.02
gamma-Chlordane	0.03	0.00	0.03	-3.69	0.00	0.02
Toxaphene	2.50	0.00	2.50	0.92	0.00	2.50
Aroclor-1016	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1221	1.00	0.00	1.00	0.00	0.00	1.00
Aroclor-1232	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1242	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1248	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1254	0.50	0.00	0.50	-0.69	0.00	0.50
Aroclor-1260	0.50	0.00	0.50	-0.69	0.00	0.50

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW01-01	BGWPSW01-02	BGWPSW02-01	BGWPSW02-02	BGWPSW03-01	BGWPSW03-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 U	1.1 U	1.1 UJ	1.1 U
Tertyl	1 U	1 U	1 U	1 U	1 U	1 U
Nitrobenzene	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluen	1 U	1 U	1 U	1 U	1 U	1 U
2-Am-DNT	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
DNT (isomeric mixture)	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
2-Nitrotoluene	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
4-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U
3-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW03-02	BGWPSW04-01	BGPLSW03-01	BGPLSW03-02	BGPLSW04-01	BGPLSW04-01D
Date sampled	08/02/94	08/02/94	08/04/94	08/04/94	08/04/94	08/04/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Tertyl	1 U	1 U	1 U	1 U	1 U	1 U
Nitrobenzene	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluen	1 U	1 U	1 U	1 U	1 U	1 U
2-Am-DNT	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
DNT (isomeric mixture)	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
2-Nitrotoluene	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
4-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U
3-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSW04-02
Date sampled	08/04/94
Units	UG/L
HMX	0.61 U
RDX	0.59 U
1,3,5-Trinitrobenzene	0.66 U
1,3-Dinitrobenzene	1.1 U
Tertyl	1 U
Nitrobenzene	0.73 U
2,4,6-Trinitrotoluene	0.62 U
4-Amino-2,6-Dinitrotoluen	1 U
2-Am-DNT	1 U
2,6-Dinitrotoluene	1 U
2,4-Dinitrotoluene	1 U
DNT (isomeric mixture)	1.5 U
2-Nitrotoluene	0.75 U
4-Nitrotoluene	0.91 U
3-Nitrotoluene	0.91 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.61 U	0.61 U	ND	ND		0/13
RDX	0.59 U	0.59 U	ND	ND		0/13
1,3,5-Trinitrobenzene	0.66 U	0.66 U	ND	ND		0/13
1,3-Dinitrobenzene	1.1 U	1.1 U	ND	ND		0/13
Tertyl	1 U	1 U	ND	ND		0/13
Nitrobenzene	0.73 U	0.73 U	ND	ND		0/13
2,4,6-Trinitrotoluene	0.62 U	0.62 U	ND	ND		0/13
4-Amino-2,6-Dinitrotoluen	1 U	1 U	ND	ND		0/13
2-Am-DNT	1 U	1 U	ND	ND		0/13
2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/13
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/13
DNT (isomeric mixture)	1.5 U	1.5 U	ND	ND		0/13
2-Nitrotoluene	0.75 U	0.75 U	ND	ND		0/13
4-Nitrotoluene	0.91 U	0.91 U	ND	ND		0/13
3-Nitrotoluene	0.91 U	0.91 U	ND	ND		0/13

TABLE 11
STATISTICAL SUMMARY
FRESHWATER PONDS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.31	0.00	0.31	-1.19	0.00	0.31
RDX	0.30	0.00	0.30	-1.22	0.00	0.30
1,3,5-Trinitrobenzene	0.33	0.00	0.33	-1.11	0.00	0.33
1,3-Dinitrobenzene	0.55	0.00	0.55	-0.60	0.00	0.55
Tertyl	0.50	0.00	0.50	-0.69	0.00	0.50
Nitrobenzene	0.37	0.00	0.37	-1.01	0.00	0.37
2,4,6-Trinitrotoluene	0.31	0.00	0.31	-1.17	0.00	0.31
4-Amino-2,6-Dinitrotoluen	0.50	0.00	0.50	-0.69	0.00	0.50
2-Am-DNT	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
DNT (isomeric mixture)	0.75	0.00	0.75	-0.29	0.00	0.75
2-Nitrotoluene	0.38	0.00	0.38	-0.98	0.00	0.38
4-Nitrotoluene	0.46	0.00	0.46	-0.79	0.00	0.46
3-Nitrotoluene	0.46	0.00	0.46	-0.79	0.00	0.46

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW01-01	BGWPSW01-02	BGWPSW02-01	BGWPSW02-02	BGWPSW03-01	BGWPSW03-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	21.5 J	50 J	22.5 J	28.8 J	18 U	18 U
Antimony	37 UL	37 UL	37 UL	37 UL	37 UL	37 UL
Arsenic	1 U	5.2 J	1 U	6.1 J	1.8 J	1 U
Barium	22.5 J	27.9 J	21.7 J	21.7 J	21.4 J	21.6 J
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	26300	30400	26300	30100	25500	26100
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 U	4 U	4 U
Copper	5 U	5 U	5 U	5 U	5 U	5 U
Iron	782	17300	686	15400	705	702
Lead	1 U	1 U	1 U	1 U	1 U	1 U
Magnesium	1150 J	1360 J	1130 J	1310 J	1130 J	1140 J
Manganese	48.3	425	43.1	408	37.8	38.4
Mercury	0.1 UL	0.1 UL	0.1 UL	0.1 UL	0.1 UL	0.1 UL
Nickel	16 U	16 U	16 U	16 U	16 U	16 U
Potassium	1570 U	1570 U	1570 U	1570 U	1570 U	1570 U
Selenium	1 U	1 UL	1 U	1 U	1 U	1 K
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	3560 J	4250 J	3670 J	4080 J	3690 J	3690 J
Thallium	1 UL	1 UL	1 UL	1 UL	1 UL	1 UL
Vanadium	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	3.4 J	3 U	3 U	4.3 J	3.4 J	3 U
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW03-02	BGWPSW04-01	BGPLSW03-01	BGPLSW03-02	BGPLSW04-01	BGPLSW04-01D
Date sampled	08/02/94	08/02/94	08/04/94	08/04/94	08/04/94	08/04/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	54.6 J	18 U	102 J	611	123 J	142 J
Antimony	37 UL	37 UL	37 U	37 U	37 U	37 U
Arsenic	2.3 J	1 U	1 U	2.1 J	1 U	1.1 J
Barium	49.8 J	21.6 J	4.7 J	134 J	5.4 J	5.6 J
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	26900	26500	10100	9740	10200	10500
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	6.9 J	4.8 J	4.8 J	4.2 J
Copper	5 U	5 U	5 U	5 U	5 U	5 U
Iron	6730	639	878	2660	888	914
Lead	1 U	1 U	1 U	1 U	1 U	1 U
Magnesium	1180 J	1150 J	1620 J	1560 J	1580 J	1600 J
Manganese	255	33.9	37.8	139	43.1	45.1
Mercury	0.1 UL	0.1 UL	0.1 U	0.1 U	0.1 U	0.12 J
Nickel	16 U	16 U	16 U	16 U	16 U	19.6 K
Potassium	1570 U	1570 U	1570 U	1570 U	1570 U	1570 U
Selenium	1 U	1 U	1 U	1 U	1 U	1 U
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	3770 J	3610 J	4590 J	4090 J	4440 J	4620 J
Thallium	1 UL	1 UL	1 UL	1 UL	1 UL	1 UL
Vanadium	4 U	4 U	4 U	5.9 J	4 U	4 U
Zinc	4.3 J	3.4 J	3.4 J	3.4 J	5.6 J	3.4 J
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSW04-02	
Date sampled	08/04/94	
Units	UG/L	
Aluminum	149	J
Antimony	37	U
Arsenic	1.2	J
Barium	14.4	J
Beryllium	1	U
Cadmium	5.7	K
Calcium	11400	
Chromium	3	U
Cobalt	4	U
Copper	5	U
Iron	1050	
Lead	1	U
Magnesium	1600	J
Manganese	49.8	
Mercury	0.1	U
Nickel	16	U
Potassium	1570	U
Selenium	1	U
Silver	4	U
Sodium	4970	J
Thallium	1	UL
Vanadium	4	U
Zinc	5.6	J
Cyanide	10	U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	18 U	18 U	21.5 J	611	BGPLSW03-02	10/13
Antimony	37 UL	37 UL	ND	ND		0/13
Arsenic	1 U	1 U	1.1 J	6.1 J	BGWPSW02-02	7/13
Barium	NA	NA	4.7 J	134 J	BGPLSW03-02	13/13
Beryllium	1 U	1 U	ND	ND		0/13
Cadmium	5 U	5 U	5.7 K	5.7 K	BGPLSW04-02	1/13
Calcium	NA	NA	9740	30400	BGWPSW01-02	13/13
Chromium	3 U	3 U	ND	ND		0/13
Cobalt	4 U	4 U	4.2 J	6.9 J	BGPLSW03-01	4/13
Copper	5 U	5 U	ND	ND		0/13
Iron	NA	NA	639	17300	BGWPSW01-02	13/13
Lead	1 U	1 U	ND	ND		0/13
Magnesium	NA	NA	1130 J	1620 J	BGPLSW03-01	13/13
Manganese	NA	NA	33.9	425	BGWPSW01-02	13/13
Mercury	0.1 UL	0.1 UL	0.12 J	0.12 J	BGPLSW04-01D	1/13
Nickel	16 U	16 U	19.6 K	19.6 K	BGPLSW04-01D	1/13
Potassium	1570 U	1570 U	ND	ND		0/13
Selenium	1 U	1 U	1 K	1 K	BGWPSW03-01D	1/13
Silver	4 U	4 U	ND	ND		0/13
Sodium	NA	NA	3560 J	4970 J	BGPLSW04-02	13/13
Thallium	1 UL	1 UL	ND	ND		0/13
Vanadium	4 U	4 U	5.9 J	5.9 J	BGPLSW03-02	1/13
Zinc	3 U	3 U	3.4 J	5.6 J	BGPLSW04-02	10/13
Cyanide	10 U	10 U	ND	ND		0/13

TABLE 11
STATISTICAL SUMMARY
FRESHWATER PONDS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	102.42	161.34	182.16	3.84	1.30	448.63
Antimony	18.50	0.00	18.50	2.92	0.00	18.50
Arsenic	1.75	1.86	2.67	0.13	0.93	3.76
Barium	28.64	33.77	45.33	2.94	0.92	61.52
Beryllium	0.50	0.00	0.50	-0.69	0.00	0.50
Cadmium	2.75	0.89	3.18	0.98	0.23	3.10
Calcium	20772.31	8672.96	25058.81	9.84	0.49	28629.90
Chromium	1.50	0.00	1.50	0.41	0.00	1.50
Cobalt	2.98	1.64	3.79	0.98	0.46	3.93
Copper	2.50	0.00	2.50	0.92	0.00	2.50
Iron	3794.92	5827.93	6675.31	7.40	1.22	10960.64
Lead	0.50	0.00	0.50	-0.69	0.00	0.50
Magnesium	1346.92	213.36	1452.37	7.19	0.16	1464.96
Manganese	123.41	144.19	194.67	4.32	0.96	260.85
Mercury	0.06	0.02	0.06	-2.93	0.24	0.06
Nickel	8.89	3.22	10.48	2.15	0.25	10.14
Potassium	785.00	0.00	785.00	6.67	0.00	785.00
Selenium	0.54	0.14	0.61	-0.64	0.19	0.59
Silver	2.00	0.00	2.00	0.69	0.00	2.00
Sodium	4079.23	462.07	4307.60	8.31	0.11	4327.52
Thallium	0.50	0.00	0.50	-0.69	0.00	0.50
Vanadium	2.30	1.08	2.83	0.78	0.30	2.71
Zinc	3.44	1.36	4.11	1.15	0.46	4.64
Cyanide	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW01DS-01	BGWPSW01DS-02	BGWPSW02DS-01	BGWPSW02DS-02	BGWPSW03DS-01	BGWPSW03DS-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	18 U	18 U	18 U	18 U	18 U	18 U
Antimony	37 UL	37 UL	37 UL	37 UL	37 UL	37 U
Arsenic	1 U	1 U	1 U	1.1 J	1 U	1 UL
Barium	19.5 J	16.8 J	20 J	15.6 J	19.2 J	19.1 J
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	27700	31200	27700	30600	26800	27100
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 U	4 U	4 U
Copper	5 U	5 U	11.6 J	5 U	5 U	5 U
Iron	58.2 J	233	49.8 J	935	59.2 J	51.1 J
Lead	1 U	1 U	1 U	1 U	1 U	1 U
Magnesium	1170 J	1340 J	1200 J	1320 J	1160 J	1180 J
Manganese	1 U	375	1 J	412	1 U	1 U
Mercury	NA	NA	NA	NA	NA	NA
Nickel	16 U	16 U	16 U	16 U	16 U	16 U
Potassium	1570 U	1570 U	1570 U	1570 U	1570 U	1570 U
Selenium	1 U	1 U	1 U	1 U	1 U	1 U
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	3770 J	4140 J	3840 J	4050 J	3680 J	3700 J
Thallium	1 U	1 UL	1 UL	1 UL	1 U	1 U
Vanadium	4 U	4 U	4 U	4 U	4 U	4 UL
Zinc	3 U	3 U	3 U	3 U	3 U	3 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSW03DS-02	BGWPSW04DS-01	BGPLSW03DS-01	BGPLSW03DS-02	BGPLSW04DS-01	BGPLSW04DS-01D
Date sampled	08/02/94	08/02/94	08/04/94	08/04/94	08/04/94	08/04/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	18 U	18 U	18 U	18 U	18 U	18 U
Antimony	37 UL	37 UL	37 U	37 U	37 U	37 U
Arsenic	1 U	1 U	1 U	1 U	1 J	1 U
Barium	12 J	17.8 J	3.5 J	2 U	2.3 J	2 U
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5.4 K	5 U	5 U	5 U
Calcium	28500	27800	10500	10000	11100	11000
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4.2 J	4.2 J	5.3 J	5.3 J
Copper	5 U	5 U	11.6 J	14.2 J	13.1 J	12.5 J
Iron	2520	41.6 J	244	317	268	255
Lead	1 U	1 U	1 U	1 U	1 U	1 U
Magnesium	1230 J	1210 J	1670 J	1610 J	1710 J	1690 J
Manganese	278	1 U	2.7 J	11.6 J	3.4 J	2.7 J
Mercury	NA	NA	NA	NA	NA	NA
Nickel	16 U	16 U	16 U	16 U	16 U	16 U
Potassium	1570 U	1570 U	1570 U	1570 U	1570 U	1570 U
Selenium	1 L	1 U	1 U	1 U	1 U	1 U
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	3760 J	3890 J	4890 J	4360 J	4890 J	4900 J
Thallium	1 U	1 UL	1 UL	1 UL	1 UL	1 UL
Vanadium	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	3 U	3 U	3.4 J	3.4 J	5.6 J	3 U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSW04DS-02	
Date sampled	08/04/94	
Units	UG/L	
Aluminum	24.5	J
Antimony	37	U
Arsenic	1	U
Barium	2	U
Beryllium	1	U
Cadmium	5	U
Calcium	11700	
Chromium	3	U
Cobalt	4	U
Copper	12.1	J
Iron	328	
Lead	1	U
Magnesium	1760	J
Manganese	3.1	J
Mercury	NA	
Nickel	16	U
Potassium	1570	U
Selenium	1	U
Silver	4	U
Sodium	5040	
Thallium	1	UL
Vanadium	4	U
Zinc	3	U

TABLE 11
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	18 U	18 U	24.5 J	24.5 J	BGPLSW04DS-02	1/13
Antimony	37 UL	37 UL	ND	ND		0/13
Arsenic	1 U	1 U	1 J	1.1 J	BGWPSW02DS-02	2/13
Barium	2 U	2 U	2.3 J	20 J	BGWPSW02DS-01	10/13
Beryllium	1 U	1 U	ND	ND		0/13
Cadmium	5 U	5 U	5.4 K	5.4 K	BGPLSW03DS-01	1/13
Calcium	NA	NA	10000	31200	BGWPSW01DS-02	13/13
Chromium	3 U	3 U	ND	ND		0/13
Cobalt	4 U	4 U	4.2 J	5.3 J	BGPLSW04DS-01D	4/13
Copper	5 U	5 U	11.6 J	14.2 J	BGPLSW03DS-02	6/13
Iron	NA	NA	41.6 J	2520	BGWPSW03DS-02	13/13
Lead	1 U	1 U	ND	ND		0/13
Magnesium	NA	NA	1160 J	1760 J	BGPLSW04DS-02	13/13
Manganese	1 U	1 U	1 J	412	BGWPSW02DS-02	9/13
Mercury	NA	NA	ND	ND		0/0
Nickel	16 U	16 U	ND	ND		0/13
Potassium	1570 U	1570 U	ND	ND		0/13
Selenium	1 U	1 U	1 L	1 L	BGWPSW03DS-02	1/13
Silver	4 U	4 U	ND	ND		0/13
Sodium	NA	NA	3680 J	5040	BGPLSW04DS-02	13/13
Thallium	1 U	1 U	ND	ND		0/13
Vanadium	4 U	4 U	ND	ND		0/13
Zinc	3 U	3 U	3.4 J	5.6 J	BGPLSW04DS-01	3/13

TABLE 11
STATISTICAL SUMMARY
FRESHWATER PONDS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	10.19	4.30	12.32	2.27	0.28	11.78
Antimony	18.50	0.00	18.50	2.92	0.00	18.50
Arsenic	0.58	0.21	0.69	-0.58	0.28	0.68
Barium	11.45	8.25	15.53	1.91	1.28	63.45
Beryllium	0.50	0.00	0.50	-0.69	0.00	0.50
Cadmium	2.72	0.80	3.12	0.98	0.21	3.05
Calcium	21669.23	8987.25	26111.07	9.88	0.49	29832.09
Chromium	1.50	0.00	1.50	0.41	0.00	1.50
Cobalt	2.85	1.36	3.52	0.96	0.42	3.67
Copper	7.12	5.24	9.71	1.66	0.84	14.25
Iron	412.30	676.21	746.51	5.23	1.25	1344.15
Lead	0.50	0.00	0.50	-0.69	0.00	0.50
Magnesium	1403.85	241.61	1523.26	7.23	0.17	1536.10
Manganese	83.96	157.10	161.61	1.66	2.58	26620.96
Mercury						
Nickel	8.00	0.00	8.00	2.08	0.00	8.00
Potassium	785.00	0.00	785.00	6.67	0.00	785.00
Selenium	0.54	0.14	0.61	-0.64	0.19	0.59
Silver	2.00	0.00	2.00	0.69	0.00	2.00
Sodium	4223.85	525.73	4483.68	8.34	0.12	4506.51
Thallium	0.50	0.00	0.50	-0.69	0.00	0.50
Vanadium	2.00	0.00	2.00	0.69	0.00	2.00
Zinc	2.11	1.27	2.73	0.63	0.45	2.74
Cyanide						

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSW01-01	BGCPSW02-01	BGCPSW03-01	BGCPSW03-01D	BGCPSW04-01	BGCPSW05-01
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/07/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U	1 J	1 U	1 UJ
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 UJ
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 UJ
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 UJ
Methylene chloride	0.6 B	2 U	2 U	0.7 B	2 U	2 UJ
Acetone	5 R	5 R	5 R	5 R	5 R	5 R
Carbon disulfide	1 U	1 U	1 U	1 U	1 U	1 UJ
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 UJ
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 UJ
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 UJ
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 UJ
Chloroform	1 U	1 U	1 U	1 U	1 U	1 UJ
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 UJ
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 UJ
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 UJ
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 UJ
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 UJ
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 UJ
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 UJ
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 UJ
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 UJ
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 UJ
Benzene	1 U	1 U	1 U	1 U	1 U	1 UJ
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 UJ
Bromoform	1 U	1 U	1 U	1 U	1 U	1 UJ
4-Methyl-2-pentanone	5 R	5 R	5 R	5 R	5 R	5 UJ
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 UJ
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 UJ
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 UJ
Toluene	1 U	1 U	1 U	1 U	1 U	1 UJ
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 UJ
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 UJ
Styrene	1 U	1 U	1 U	1 U	1 U	1 UJ
M/P xylenes	1 U	1 U	1 U	1 U	1 U	1 UJ
O xylene	1 U	1 U	1 U	1 U	1 U	1 UJ

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW06-01	
Date sampled	08/20/94	
Units	UG/L	
Chloromethane	1	U
Bromomethane	1	U
Vinyl chloride	1	U
Chloroethane	1	U
Methylene chloride	2	U
Acetone	6.5	BJ
Carbon disulfide	1	U
1,1-Dichloroethene	1	U
1,1-Dichloroethane	1	U
Trans-1,2-dichloroethene	1	U
Cis-1,2-dichloroethene	1	U
Chloroform	1	U
1,2-Dichloroethane	1	U
2-Butanone	5	R
1,1,1-Trichloroethane	1	U
Carbon tetrachloride	1	U
Bromodichloromethane	1	U
1,2-Dichloropropane	1	U
cis-1,3-Dichloropropene	1	U
Trichloroethene	1	U
Dibromochloromethane	1	U
1,1,2-Trichloroethane	1	U
Benzene	1	U
Trans-1,3-dichloropropene	1	U
Bromoform	1	U
4-Methyl-2-pentanone	5	R
2-Hexanone	5	U
Tetrachloroethene	1	U
1,1,2,2-Tetrachloroethane	1	U
Toluene	1	U
Chlorobenzene	1	U
Ethylbenzene	1	U
Styrene	1	U
M/P xylenes	1	U
O xylene	1	U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	1 U	1 U	1 J	1 J	BGCPSW03-01D	1/7
Bromomethane	1 U	1 U	ND	ND		0/7
Vinyl chloride	1 U	1 U	ND	ND		0/7
Chloroethane	1 U	1 U	ND	ND		0/7
Methylene chloride	0.6 B	2 U	ND	ND		0/7
Acetone	6.5 BJ	6.5 BJ	ND	ND		0/1
Carbon disulfide	1 U	1 U	ND	ND		0/7
1,1-Dichloroethene	1 U	1 U	ND	ND		0/7
1,1-Dichloroethane	1 U	1 U	ND	ND		0/7
Trans-1,2-dichloroethene	1 U	1 U	ND	ND		0/7
Cis-1,2-dichloroethene	1 U	1 U	ND	ND		0/7
Chloroform	1 U	1 U	ND	ND		0/7
1,2-Dichloroethane	1 U	1 U	ND	ND		0/7
2-Butanone	5 UJ	5 UJ	ND	ND		0/1
1,1,1-Trichloroethane	1 U	1 U	ND	ND		0/7
Carbon tetrachloride	1 U	1 U	ND	ND		0/7
Bromodichloromethane	1 U	1 U	ND	ND		0/7
1,2-Dichloropropane	1 U	1 U	ND	ND		0/7
cis-1,3-Dichloropropene	1 U	1 U	ND	ND		0/7
Trichloroethene	1 U	1 U	ND	ND		0/7
Dibromochloromethane	1 U	1 U	ND	ND		0/7
1,1,2-Trichloroethane	1 U	1 U	ND	ND		0/7
Benzene	1 U	1 U	ND	ND		0/7
Trans-1,3-dichloropropene	1 U	1 U	ND	ND		0/7
Bromoform	1 U	1 U	ND	ND		0/7
4-Methyl-2-pentanone	5 UJ	5 UJ	ND	ND		0/1
2-Hexanone	5 U	5 U	ND	ND		0/7
Tetrachloroethene	1 U	1 U	ND	ND		0/7
1,1,2,2-Tetrachloroethane	1 U	1 U	ND	ND		0/7
Toluene	1 U	1 U	ND	ND		0/7
Chlorobenzene	1 U	1 U	ND	ND		0/7
Ethylbenzene	1 U	1 U	ND	ND		0/7
Styrene	1 U	1 U	ND	ND		0/7
M/P xylenes	1 U	1 U	ND	ND		0/7
O xylene	1 U	1 U	ND	ND		0/7

TABLE 12
STATISTICAL SUMMARY
FRESHWATER STREAMS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	0.57	0.19	0.71	-0.59	0.26	0.72
Bromomethane	0.50	0.00	0.50	-0.69	0.00	0.50
Vinyl chloride	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Methylene chloride	0.81	0.33	1.05	-0.32	0.55	1.54
Acetone	3.25	ERR		1.18	ERR	NA
Carbon disulfide	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
1,1-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Trans-1,2-dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Cis-1,2-dichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Chloroform	0.50	0.00	0.50	-0.69	0.00	0.50
1,2-Dichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
2-Butanone	2.50	ERR		0.92	ERR	NA
1,1,1-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Carbon tetrachloride	0.50	0.00	0.50	-0.69	0.00	0.50
Bromodichloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,2-Dichloropropane	0.50	0.00	0.50	-0.69	0.00	0.50
cis-1,3-Dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Trichloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
Dibromochloromethane	0.50	0.00	0.50	-0.69	0.00	0.50
1,1,2-Trichloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Benzene	0.50	0.00	0.50	-0.69	0.00	0.50
Trans-1,3-dichloropropene	0.50	0.00	0.50	-0.69	0.00	0.50
Bromoform	0.50	0.00	0.50	-0.69	0.00	0.50
4-Methyl-2-pentanone	2.50	ERR		0.92	ERR	NA
2-Hexanone	2.50	0.00	2.50	0.92	0.00	2.50
Tetrachloroethene	0.50	0.00	0.50	-0.69	0.00	0.50
1,1,2,2-Tetrachloroethane	0.50	0.00	0.50	-0.69	0.00	0.50
Toluene	0.50	0.00	0.50	-0.69	0.00	0.50
Chlorobenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Ethylbenzene	0.50	0.00	0.50	-0.69	0.00	0.50
Styrene	0.50	0.00	0.50	-0.69	0.00	0.50
M/P xylenes	0.50	0.00	0.50	-0.69	0.00	0.50
O xylene	0.50	0.00	0.50	-0.69	0.00	0.50

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSW01-01	BGCPSW02-01	BGCPSW03-01	BGCPSW03-01D	BGCPSW04-01	BGCPSW05-01
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/07/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	24 U	24 U	24 U	24 U	24 U	24 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	24 U	24 U	24 U	24 U	24 U	24 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	24 U	24 U	24 U	24 U	24 U	24 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSW01-01	BGCPSW02-01	BGCPSW03-01	BGCPSW03-01D	BGCPSW04-01	BGCPSW05-01
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/07/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
2,4-Dinitrophenol	24 U	24 U	24 U	24 U	24 U	24 U
4-Nitrophenol	24 U	24 U	24 U	24 U	24 U	24 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	24 U	24 U	24 U	24 U	24 U	24 U
4,6-Dinitro-2-methylphenol	24 U	24 U	24 U	24 U	24 U	24 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	24 U	24 U	24 U	24 U	24 U	24 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW06-01
Date sampled	08/20/94
Units	UG/L
Phenol	10 U
Bis(2-chloroethyl)ether	10 U
2-Chlorophenol	10 U
1,3-Dichlorobenzene	10 U
1,4-Dichlorobenzene	10 U
1,2-Dichlorobenzene	10 U
2-Methylphenol	10 U
2,2'-Oxybis(1-chloropropane)	10 U
4-Methylphenol	10 U
N-Nitroso-di-n-propylamine	10 U
Hexachloroethane	10 U
Nitrobenzene	10 U
Isophorone	10 U
2-Nitrophenol	10 U
2,4-Dimethylphenol	10 U
Bis(2-chloroethoxy)methane	10 U
2,4-Dichlorophenol	10 U
1,2,4-Trichlorobenzene	10 U
Naphthalene	10 U
4-Chloroaniline	10 U
Hexachlorobutadiene	10 U
4-Chloro-3-methylphenol	10 U
2-Methylnaphthalene	10 U
Hexachlorocyclopentadie	10 U
2,4,6-Trichlorophenol	10 U
2,4,5-Trichlorophenol	25 U
2-Chloronaphthalene	10 U
2-Nitroaniline	25 U
Dimethylphthalate	10 U
Acenaphthylene	10 U
2,6-Dinitrotoluene	10 U
3-Nitroaniline	25 U
Acenaphthene	10 U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW06-01
Date sampled	08/20/94
Units	UG/L
2,4-Dinitrophenol	25 U
4-Nitrophenol	25 U
Dibenzofuran	10 U
2,4-Dinitrotoluene	10 U
Diethylphthalate	10 U
4-Chlorophenyl-phenylether	10 U
Fluorene	10 U
4-Nitroaniline	25 U
4,6-Dinitro-2-methylphenol	25 U
N-Nitrosodiphenylamine	10 U
4-Bromophenyl-phenylether	10 U
Hexachlorobenzene	10 U
Pentachlorophenol	25 U
Phenanthrene	10 U
Anthracene	10 U
Carbazole	10 U
di-n-Butylphthalate	10 U
Fluoranthene	10 U
Pyrene	10 U
Butylbenzylphthalate	10 U
3,3'-Dichlorobenzidine	10 U
Benzo(a)anthracene	10 U
Chrysene	10 U
Bis(2-ethylhexyl)phthalate	10 U
di-n-Octylphthalate	10 U
Benzo(b)fluoranthene	10 U
Benzo(k)fluoranthene	10 U
Benzo(a)pyrene	10 U
Indeno(1,2,3-cd)pyrene	10 U
Dibenz(a,h)anthracene	10 U
Benzo(g,h,i)perylene	10 U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	10 U	10 U	ND	ND		0/7
Bis(2-chloroethyl)ether	10 U	10 U	ND	ND		0/7
2-Chlorophenol	10 U	10 U	ND	ND		0/7
1,3-Dichlorobenzene	10 U	10 U	ND	ND		0/7
1,4-Dichlorobenzene	10 U	10 U	ND	ND		0/7
1,2-Dichlorobenzene	10 U	10 U	ND	ND		0/7
2-Methylphenol	10 U	10 U	ND	ND		0/7
2,2'-Oxybis(1-chloropropane)	10 U	10 U	ND	ND		0/7
4-Methylphenol	10 U	10 U	ND	ND		0/7
N-Nitroso-di-n-propylamine	10 U	10 U	ND	ND		0/7
Hexachloroethane	10 U	10 U	ND	ND		0/7
Nitrobenzene	10 U	10 U	ND	ND		0/7
Isophorone	10 U	10 U	ND	ND		0/7
2-Nitrophenol	10 U	10 U	ND	ND		0/7
2,4-Dimethylphenol	10 U	10 U	ND	ND		0/7
Bis(2-chloroethoxy)methane	10 U	10 U	ND	ND		0/7
2,4-Dichlorophenol	10 U	10 U	ND	ND		0/7
1,2,4-Trichlorobenzene	10 U	10 U	ND	ND		0/7
Naphthalene	10 U	10 U	ND	ND		0/7
4-Chloroaniline	10 U	10 U	ND	ND		0/7
Hexachlorobutadiene	10 U	10 U	ND	ND		0/7
4-Chloro-3-methylphenol	10 U	10 U	ND	ND		0/7
2-Methylnaphthalene	10 U	10 U	ND	ND		0/7
Hexachlorocyclopentadie	10 U	10 U	ND	ND		0/7
2,4,6-Trichlorophenol	10 U	10 U	ND	ND		0/7
2,4,5-Trichlorophenol	24 U	25 U	ND	ND		0/7
2-Chloronaphthalene	10 U	10 U	ND	ND		0/7
2-Nitroaniline	24 U	25 U	ND	ND		0/7
Dimethylphthalate	10 U	10 U	ND	ND		0/7
Acenaphthylene	10 U	10 U	ND	ND		0/7
2,6-Dinitrotoluene	10 U	10 U	ND	ND		0/7
3-Nitroaniline	24 U	25 U	ND	ND		0/7
Acenaphthene	10 U	10 U	ND	ND		0/7

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
2,4-Dinitrophenol	24 U	25 U	ND	ND		0/7
4-Nitrophenol	24 U	25 U	ND	ND		0/7
Dibenzofuran	10 U	10 U	ND	ND		0/7
2,4-Dinitrotoluene	10 U	10 U	ND	ND		0/7
Diethylphthalate	10 U	10 U	ND	ND		0/7
4-Chlorophenyl-phenylether	10 U	10 U	ND	ND		0/7
Fluorene	10 U	10 U	ND	ND		0/7
4-Nitroaniline	24 U	25 U	ND	ND		0/7
4,6-Dinitro-2-methylphenol	24 U	25 U	ND	ND		0/7
N-Nitrosodiphenylamine	10 U	10 U	ND	ND		0/7
4-Bromophenyl-phenylether	10 U	10 U	ND	ND		0/7
Hexachlorobenzene	10 U	10 U	ND	ND		0/7
Pentachlorophenol	24 U	25 U	ND	ND		0/7
Phenanthrene	10 U	10 U	ND	ND		0/7
Anthracene	10 U	10 U	ND	ND		0/7
Carbazole	10 U	10 U	ND	ND		0/7
di-n-Butylphthalate	10 U	10 U	ND	ND		0/7
Fluoranthene	10 U	10 U	ND	ND		0/7
Pyrene	10 U	10 U	ND	ND		0/7
Butylbenzylphthalate	10 U	10 U	ND	ND		0/7
3,3'-Dichlorobenzidine	10 U	10 U	ND	ND		0/7
Benzo(a)anthracene	10 U	10 U	ND	ND		0/7
Chrysene	10 U	10 U	ND	ND		0/7
Bis(2-ethylhexyl)phthalate	10 U	10 U	ND	ND		0/7
di-n-Octylphthalate	10 U	10 U	ND	ND		0/7
Benzo(b)fluoranthene	10 U	10 U	ND	ND		0/7
Benzo(k)fluoranthene	10 U	10 U	ND	ND		0/7
Benzo(a)pyrene	10 U	10 U	ND	ND		0/7
Indeno(1,2,3-cd)pyrene	10 U	10 U	ND	ND		0/7
Dibenz(a,h)anthracene	10 U	10 U	ND	ND		0/7
Benzo(g,h,i)perylene	10 U	10 U	ND	ND		0/7

TABLE 12
STATISTICAL SUMMARY
FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethyl)ether	5.00	0.00	5.00	1.61	0.00	5.00
2-Chlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,3-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,4-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,2-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2,2'-Oxybis(1-chloropropane)	5.00	0.00	5.00	1.61	0.00	5.00
4-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
N-Nitroso-di-n-propylamine	5.00	0.00	5.00	1.61	0.00	5.00
Hexachloroethane	5.00	0.00	5.00	1.61	0.00	5.00
Nitrobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Isophorone	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitrophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dimethylphenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethoxy)methane	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,2,4-Trichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Naphthalene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloroaniline	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobutadiene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloro-3-methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylnaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorocyclopentadie	5.00	0.00	5.00	1.61	0.00	5.00
2,4,6-Trichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4,5-Trichlorophenol	12.07	0.19	12.21	2.49	0.02	12.22
2-Chloronaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitroaniline	12.07	0.19	12.21	2.49	0.02	12.22
Dimethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Acenaphthylene	5.00	0.00	5.00	1.61	0.00	5.00
2,6-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
3-Nitroaniline	12.07	0.19	12.21	2.49	0.02	12.22
Acenaphthene	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 12
STATISTICAL SUMMARY
FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
2,4-Dinitrophenol	12.07	0.19	12.21	2.49	0.02	12.22
4-Nitrophenol	12.07	0.19	12.21	2.49	0.02	12.22
Dibenzofuran	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
Diethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
4-Chlorophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Fluorene	5.00	0.00	5.00	1.61	0.00	5.00
4-Nitroaniline	12.07	0.19	12.21	2.49	0.02	12.22
4,6-Dinitro-2-methylphenol	12.07	0.19	12.21	2.49	0.02	12.22
N-Nitrosodiphenylamine	5.00	0.00	5.00	1.61	0.00	5.00
4-Bromophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Pentachlorophenol	12.07	0.19	12.21	2.49	0.02	12.22
Phenanthrene	5.00	0.00	5.00	1.61	0.00	5.00
Anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Carbazole	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Butylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Butylbenzylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
3,3'-Dichlorobenzidine	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Chrysene	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-ethylhexyl)phthalate	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Octylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(b)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(k)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Indeno(1,2,3-cd)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Dibenz(a,h)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(g,h,i)perylene	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSW01-01	BGCPSW02-01	BGCPSW03-01	BGCPSW03-01D	BGCPSW04-01	BGCPSW05-01
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/07/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
beta-BHC	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
delta-BHC	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
gamma-BHC (Lindane)	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
Heptachlor	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
Aldrin	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
Heptachlor Epoxide	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
Endosulfan I	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
Dieldrin	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
4,4'-DDE	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
Endrin	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
Endosulfan II	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
4,4'-DDD	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
Endosulfan Sulfate	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
4,4'-DDT	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
Methoxychlor	0.48 U	0.480 U	0.480 U	0.480 U	0.480 U	0.480 U
Endrin Ketone	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
Endrin Aldehyde	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
alpha-Chlordane	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
gamma-Chlordane	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
Toxaphene	4.80 U	4.800 U	4.800 U	4.800 U	4.800 U	4.800 U
Aroclor-1016	0.96 U	0.960 U	0.960 U	0.960 U	0.960 U	0.960 U
Aroclor-1221	1.90 U	1.900 U	1.900 U	1.900 U	1.900 U	1.900 U
Aroclor-1232	0.96 U	0.960 U	0.960 U	0.960 U	0.960 U	0.960 U
Aroclor-1242	0.96 U	0.960 U	0.960 U	0.960 U	0.960 U	0.960 U
Aroclor-1248	0.96 U	0.960 U	0.960 U	0.960 U	0.960 U	0.960 U
Aroclor-1254	0.96 U	0.960 U	0.960 U	0.960 U	0.960 U	0.960 U
Aroclor-1260	0.96 U	0.960 U	0.960 U	0.960 U	0.960 U	0.960 U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW06-01	
Date sampled	08/20/94	
Units	UG/L	
alpha-BHC	0.050	U
beta-BHC	0.050	U
delta-BHC	0.050	U
gamma-BHC (Lindane)	0.050	U
Heptachlor	0.050	U
Aldrin	0.050	U
Heptachlor Epoxide	0.050	U
Endosulfan I	0.050	U
Dieldrin	0.10	U
4,4'-DDE	0.10	U
Endrin	0.10	U
Endosulfan II	0.10	U
4,4'-DDD	0.10	U
Endosulfan Sulfate	0.10	U
4,4'-DDT	0.10	U
Methoxychlor	0.50	U
Endrin Ketone	0.10	U
Endrin Aldehyde	0.10	U
alpha-Chlordane	0.050	U
gamma-Chlordane	0.050	U
Toxaphene	5.0	U
Aroclor-1016	1.0	U
Aroclor-1221	2.0	U
Aroclor-1232	1.0	U
Aroclor-1242	1.0	U
Aroclor-1248	1.0	U
Aroclor-1254	1.0	U
Aroclor-1260	1.0	U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	0.048 U	0.05 U	ND	ND		0/7
beta-BHC	0.048 U	0.05 U	ND	ND		0/7
delta-BHC	0.048 U	0.05 U	ND	ND		0/7
gamma-BHC (Lindane)	0.048 U	0.05 U	ND	ND		0/7
Heptachlor	0.048 U	0.05 U	ND	ND		0/7
Aldrin	0.048 U	0.05 U	ND	ND		0/7
Heptachlor Epoxide	0.048 U	0.05 U	ND	ND		0/7
Endosulfan I	0.048 U	0.05 U	ND	ND		0/7
Dieldrin	0.096 U	0.1 U	ND	ND		0/7
4,4'-DDE	0.096 U	0.1 U	ND	ND		0/7
Endrin	0.096 U	0.1 U	ND	ND		0/7
Endosulfan II	0.096 U	0.1 U	ND	ND		0/7
4,4'-DDD	0.096 U	0.1 U	ND	ND		0/7
Endosulfan Sulfate	0.096 U	0.1 U	ND	ND		0/7
4,4'-DDT	0.096 U	0.1 U	ND	ND		0/7
Methoxychlor	0.48 U	0.5 U	ND	ND		0/7
Endrin Ketone	0.096 U	0.1 U	ND	ND		0/7
Endrin Aldehyde	0.096 U	0.1 U	ND	ND		0/7
alpha-Chlordane	0.048 U	0.05 U	ND	ND		0/7
gamma-Chlordane	0.048 U	0.05 U	ND	ND		0/7
Toxaphene	4.8 U	5 U	ND	ND		0/7
Aroclor-1016	0.96 U	1 U	ND	ND		0/7
Aroclor-1221	1.9 U	2 U	ND	ND		0/7
Aroclor-1232	0.96 U	1 U	ND	ND		0/7
Aroclor-1242	0.96 U	1 U	ND	ND		0/7
Aroclor-1248	0.96 U	1 U	ND	ND		0/7
Aroclor-1254	0.96 U	1 U	ND	ND		0/7
Aroclor-1260	0.96 U	1 U	ND	ND		0/7

TABLE 12
STATISTICAL SUMMARY
FRESHWATER STREAMS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	0.02	0.00	0.02	-3.72	0.02	0.02
beta-BHC	0.02	0.00	0.02	-3.72	0.02	0.02
delta-BHC	0.02	0.00	0.02	-3.72	0.02	0.02
gamma-BHC (Lindane)	0.02	0.00	0.02	-3.72	0.02	0.02
Heptachlor	0.02	0.00	0.02	-3.72	0.02	0.02
Aldrin	0.02	0.00	0.02	-3.72	0.02	0.02
Heptachlor Epoxide	0.02	0.00	0.02	-3.72	0.02	0.02
Endosulfan I	0.02	0.00	0.02	-3.72	0.02	0.02
Dieldrin	0.05	0.00	0.05	-3.03	0.02	0.05
4,4'-DDE	0.05	0.00	0.05	-3.03	0.02	0.05
Endrin	0.05	0.00	0.05	-3.03	0.02	0.05
Endosulfan II	0.05	0.00	0.05	-3.03	0.02	0.05
4,4'-DDD	0.05	0.00	0.05	-3.03	0.02	0.05
Endosulfan Sulfate	0.05	0.00	0.05	-3.03	0.02	0.05
4,4'-DDT	0.05	0.00	0.05	-3.03	0.02	0.05
Methoxychlor	0.24	0.00	0.24	-1.42	0.02	0.24
Endrin Ketone	0.05	0.00	0.05	-3.03	0.02	0.05
Endrin Aldehyde	0.05	0.00	0.05	-3.03	0.02	0.05
alpha-Chlordane	0.02	0.00	0.02	-3.72	0.02	0.02
gamma-Chlordane	0.02	0.00	0.02	-3.72	0.02	0.02
Toxaphene	2.41	0.04	2.44	0.88	0.02	2.44
Aroclor-1016	0.48	0.01	0.49	-0.73	0.02	0.49
Aroclor-1221	0.96	0.02	0.97	-0.04	0.02	0.97
Aroclor-1232	0.48	0.01	0.49	-0.73	0.02	0.49
Aroclor-1242	0.48	0.01	0.49	-0.73	0.02	0.49
Aroclor-1248	0.48	0.01	0.49	-0.73	0.02	0.49
Aroclor-1254	0.48	0.01	0.49	-0.73	0.02	0.49
Aroclor-1260	0.48	0.01	0.49	-0.73	0.02	0.49

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSW01-01	BGCPSW02-01	BGCPSW03-01	BGCPSW03-01D	BGCPSW04-01	BGCPSW05-01
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/07/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 UJ	0.61 UJ	0.61 UJ	0.61 UJ	0.61 UJ	0.61 UJ
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 UJ	0.66 UJ	0.66 UJ	0.66 UJ	0.66 UJ	0.66 UJ
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 UJ	1.1 U	1.1 U	1.1 U
Tertyl	1 U	1 U	1 U	1 U	1 U	1 U
Nitrobenzene	0.73 U	0.73 U	0.73 UJ	0.73 U	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluen	1 U	1 U	1 U	1 U	1 U	1 U
2-Am-DNT	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
DNT (isomeric mixture)	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
2-Nitrotoluene	0.75 U	0.75 U	0.75 UJ	0.75 U	0.75 U	0.75 U
4-Nitrotoluene	0.91 U	0.91 U	0.91 UJ	0.91 U	0.91 U	0.91 U
3-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW06-01
Date sampled	08/20/94
Units	UG/L
HMX	0.61 UJ
RDX	0.59 UJ
1,3,5-Trinitrobenzene	0.66 UJ
1,3-Dinitrobenzene	1.1 UJ
Tertyl	1 UJ
Nitrobenzene	0.73 UJ
2,4,6-Trinitrotoluene	0.62 UJ
4-Amino-2,6-Dinitrotoluen	1 UJ
2-Am-DNT	1 UJ
2,6-Dinitrotoluene	1 UJ
2,4-Dinitrotoluene	1 UJ
DNT (isomeric mixture)	1.5 UJ
2-Nitrotoluene	0.75 UJ
4-Nitrotoluene	0.91 UJ
3-Nitrotoluene	0.91 UJ

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.61 UJ	0.61 UJ	ND	ND		0/7
RDX	0.59 U	0.59 U	ND	ND		0/7
1,3,5-Trinitrobenzene	0.66 UJ	0.66 UJ	ND	ND		0/7
1,3-Dinitrobenzene	1.1 U	1.1 U	ND	ND		0/7
Tertyl	1 U	1 U	ND	ND		0/7
Nitrobenzene	0.73 U	0.73 U	ND	ND		0/7
2,4,6-Trinitrotoluene	0.62 U	0.62 U	ND	ND		0/7
4-Amino-2,6-Dinitrotoluen	1 U	1 U	ND	ND		0/7
2-Am-DNT	1 U	1 U	ND	ND		0/7
2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/7
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/7
DNT (isomeric mixture)	1.5 U	1.5 U	ND	ND		0/7
2-Nitrotoluene	0.75 U	0.75 U	ND	ND		0/7
4-Nitrotoluene	0.91 U	0.91 U	ND	ND		0/7
3-Nitrotoluene	0.91 U	0.91 U	ND	ND		0/7

TABLE 12
STATISTICAL SUMMARY
FRESHWATER STREAMS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.31	0.00	0.31	-1.19	0.00	0.31
RDX	0.30	0.00	0.30	-1.22	0.00	0.30
1,3,5-Trinitrobenzene	0.33	0.00	0.33	-1.11	0.00	0.33
1,3-Dinitrobenzene	0.55	0.00	0.55	-0.60	0.00	0.55
Tertyl	0.50	0.00	0.50	-0.69	0.00	0.50
Nitrobenzene	0.37	0.00	0.37	-1.01	0.00	0.37
2,4,6-Trinitrotoluene	0.31	0.00	0.31	-1.17	0.00	0.31
4-Amino-2,6-Dinitrotoluen	0.50	0.00	0.50	-0.69	0.00	0.50
2-Am-DNT	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
DNT (isomeric mixture)	0.75	0.00	0.75	-0.29	0.00	0.75
2-Nitrotoluene	0.38	0.00	0.38	-0.98	0.00	0.38
4-Nitrotoluene	0.46	0.00	0.46	-0.79	0.00	0.46
3-Nitrotoluene	0.46	0.00	0.46	-0.79	0.00	0.46

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSW01-01	BGCPSW02-01	BGCPSW03-01	BGCPSW03-01D	BGCPSW04-01	BGCPSW05-01
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/07/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	444	629	1030	1050	613	150 J
Antimony	37 UL	45.7 L	37.2 L	37 UL	37 UL	41.5 L
Arsenic	1 U	1 U	1 U	1 U	1 U	1 U
Barium	30.4 J	31 J	41.3 J	41.5 J	32.2 J	35.5 J
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	75700	55400	30400	31100	62500	97300
Chromium	3 U	9.8 J	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 U	4 U	4 U
Copper	5 U	5 U	5 U	5 U	5 J	5 U
Iron	900	1030	882	918	630	677
Lead	15.9	1.6 J	2.3 J	2.1 J	1 U	1 U
Magnesium	2460 J	1380 J	1620 J	1630 J	1460 J	2280 J
Manganese	68.6	28.2	25.6	26.4	15.4	24.1
Mercury	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	16 U	16 U	16 U	16 U	16 U	16 U
Potassium	2700 J	1740 J	3210 J	3030 J	2340 J	2280 J
Selenium	1 UL	1 UL	1 UL	1 UL	1 U	1 U
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	6770	5570	9200	9390	5230	7830
Thallium	1 UL	1 U	1 U	1 UL	1 U	1 UL
Vanadium	4 U	4 U	4.5 J	4 U	4 U	4 U
Zinc	11.9 J	11.9 J	12.8 J	15.8 J	11.9 J	59.3
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW06-01	
Date sampled	08/20/94	
Units	UG/L	
Aluminum	94.4	J
Antimony	37	UL
Arsenic	1	U
Barium	38.5	J
Beryllium	1	U
Cadmium	5	U
Calcium	13000	J
Chromium	3	U
Cobalt	4	U
Copper	5	U
Iron	2500	J
Lead	1	UL
Magnesium	2340	J
Manganese	85.9	J
Mercury	0.1	U
Nickel	16	U
Potassium	1570	U
Selenium	1	UL
Silver	4	U
Sodium	8100	J
Thallium	1	UL
Vanadium	4	U
Zinc	3	U
Cyanide	10	U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	94.4 J	1050	BGCPSW03-01D	7/7
Antimony	37 UL	37 UL	37.2 L	45.7 L	BGCPSW02-01	3/7
Arsenic	1 U	1 U	ND	ND		0/7
Barium	NA	NA	30.4 J	41.5 J	BGCPSW03-01D	7/7
Beryllium	1 U	1 U	ND	ND		0/7
Cadmium	5 U	5 U	ND	ND		0/7
Calcium	NA	NA	13000 J	97300	BGCPSW05-01	7/7
Chromium	3 U	3 U	9.8 J	9.8 J	BGCPSW02-01	1/7
Cobalt	4 U	4 U	ND	ND		0/7
Copper	5 U	5 U	5 J	5 J	BGCPSW04-01	1/7
Iron	NA	NA	630	2500 J	BGTNSW06-01	7/7
Lead	1 U	1 U	1.6 J	15.9	BGCPSW01-01	4/7
Magnesium	NA	NA	1380 J	2460 J	BGCPSW01-01	7/7
Manganese	NA	NA	15.4	85.9 J	BGTNSW06-01	7/7
Mercury	0.1 U	0.1 U	ND	ND		0/7
Nickel	16 U	16 U	ND	ND		0/7
Potassium	1570 U	1570 U	1740 J	3210 J	BGCPSW03-01	6/7
Selenium	1 UL	1 UL	ND	ND		0/7
Silver	4 U	4 U	ND	ND		0/7
Sodium	NA	NA	5230	9390	BGCPSW03-01D	7/7
Thallium	1 UL	1 UL	ND	ND		0/7
Vanadium	4 U	4 U	4.5 J	4.5 J	BGCPSW03-01	1/7
Zinc	3 U	3 U	11.9 J	59.3	BGCPSW05-01	6/7
Cyanide	10 U	10 U	ND	ND		0/7

TABLE 12
STATISTICAL SUMMARY
FRESHWATER STREAMS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	572.91	379.86	851.87	6.06	0.93	2713.56
Antimony	28.34	12.52	37.54	3.26	0.43	44.37
Arsenic	0.50	0.00	0.50	-0.69	0.00	0.50
Barium	35.77	4.75	39.26	3.57	0.13	39.90
Beryllium	0.50	0.00	0.50	-0.69	0.00	0.50
Cadmium	2.50	0.00	2.50	0.92	0.00	2.50
Calcium	52200.00	29324.85	73735.73	10.69	0.69	125814.22
Chromium	2.69	3.14	4.99	0.67	0.71	6.29
Cobalt	2.00	0.00	2.00	0.69	0.00	2.00
Copper	2.86	0.94	3.55	1.02	0.26	3.59
Iron	1076.71	643.12	1549.01	6.88	0.45	1694.14
Lead	3.34	5.59	7.45	0.39	1.26	46.66
Magnesium	1881.43	459.07	2218.56	7.51	0.24	2333.22
Manganese	39.17	26.80	58.85	3.49	0.61	82.40
Mercury	0.05	0.00	0.05	-3.00	0.00	0.05
Nickel	8.00	0.00	8.00	2.08	0.00	8.00
Potassium	2297.86	829.84	2907.28	7.66	0.48	3869.69
Selenium	0.50	0.00	0.50	-0.69	0.00	0.50
Silver	2.00	0.00	2.00	0.69	0.00	2.00
Sodium	7441.43	1649.13	8652.52	8.89	0.23	9140.84
Thallium	0.50	0.00	0.50	-0.69	0.00	0.50
Vanadium	2.36	0.94	3.05	0.81	0.31	3.13
Zinc	17.87	18.80	31.68	2.46	1.08	146.28
Cyanide	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSW01DS-01	BGCPSW02DS-01	BGCPSW03DS-01	BGCPSW03DS-01D	BGCPSW04DS-01	BGCPSW05DS-01
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/07/94	08/07/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	18 U	68.4 J	109 J	125 J	45.4 J	30.1 J
Antimony	58.7 L	37 UL	37 UL	40.1 L	37 UL	37 UL
Arsenic	1 U	1 U	1 U	1 U	4.7 J	1 U
Barium	29.4 J	30.2 J	37.2 J	38.8 J	30 J	35.6 J
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	83400	59100	32700	33400	66400	104000
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 U	4 U	4 U
Copper	10 J	12.7 J	10.4 J	5 U	11.1 J	12.7 J
Iron	59.7 J	308	305	319	77.4 J	6.1 J
Lead	1 U	1 UL	1 U	1 UL	1 U	1 U
Magnesium	2680 J	1480 J	1720 J	1730 J	1530 J	2430 J
Manganese	56.3	24	25.4	26	13.2 J	18.6
Mercury	NA	NA	NA	NA	NA	NA
Nickel	16 U	16 U	16 U	16 U	16 U	19.4 J
Potassium	1940 J	1590 J	2190 J	2560 J	1570 U	2010 J
Selenium	1 UL	1 U	1 U	1 U	1 U	1 UL
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	7500	5560	9750	9860	5430	8280
Thallium	1 UL	1 UL	1 UL	1 UL	1 UL	1 UL
Vanadium	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	4 J	7.9 J	3 U	3 U	4 J	4.9 J

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW06DS-01	
Date sampled	08/20/94	
Units	UG/L	
Aluminum	34.5	J
Antimony	37	U
Arsenic	1	U
Barium	36.1	J
Beryllium	1	U
Cadmium	5	UL
Calcium	13400	J
Chromium	3	U
Cobalt	4	U
Copper	5	U
Iron	1140	J
Lead	1	UL
Magnesium	2390	J
Manganese	81.1	J
Mercury	NA	
Nickel	16	U
Potassium	1570	U
Selenium	1	U
Silver	4	U
Sodium	8310	J
Thallium	1	UL
Vanadium	4	U
Zinc	3	U

TABLE 12
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	18 U	18 U	30.1 J	125 J	BGCPSW03DS-01D	6/7
Antimony	37 UL	37 UL	40.1 L	58.7 L	BGCPSW01DS-01	2/7
Arsenic	1 U	1 U	4.7 J	4.7 J	BGCPSW04DS-01	1/7
Barium	NA	NA	29.4 J	38.8 J	BGCPSW03DS-01D	7/7
Beryllium	1 U	1 U	ND	ND		0/7
Cadmium	5 U	5 U	ND	ND		0/7
Calcium	NA	NA	13400 J	104000	BGCPSW05DS-01	7/7
Chromium	3 U	3 U	ND	ND		0/7
Cobalt	4 U	4 U	ND	ND		0/7
Copper	5 U	5 U	10 J	12.7 J	BGCPSW05DS-01	5/7
Iron	NA	NA	6.1 J	1140 J	BGTNSW06DS-01	7/7
Lead	1 U	1 U	ND	ND		0/7
Magnesium	NA	NA	1480 J	2680 J	BGCPSW01DS-01	7/7
Manganese	NA	NA	13.2 J	81.1 J	BGTNSW06DS-01	7/7
Mercury	NA	NA	ND	ND		0/0
Nickel	16 U	16 U	19.4 J	19.4 J	BGCPSW05DS-01	1/7
Potassium	1570 U	1570 U	1590 J	2560 J	BGCPSW03DS-01D	5/7
Selenium	1 UL	1 UL	ND	ND		0/7
Silver	4 U	4 U	ND	ND		0/7
Sodium	NA	NA	5430	9860	BGCPSW03DS-01D	7/7
Thallium	1 UL	1 UL	ND	ND		0/7
Vanadium	4 U	4 U	ND	ND		0/7
Zinc	3 U	3 U	4 J	7.9 J	BGCPSW02DS-01	4/7

TABLE 12
STATISTICAL SUMMARY
FRESHWATER STREAMS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	60.20	42.92	91.72	3.81	0.90	237.15
Antimony	27.33	16.01	39.08	3.19	0.48	44.53
Arsenic	1.10	1.59	2.27	-0.37	0.85	3.22
Barium	33.90	3.91	36.77	3.52	0.12	37.31
Beryllium	0.50	0.00	0.50	-0.69	0.00	0.50
Cadmium	2.50	0.00	2.50	0.92	0.00	2.50
Calcium	56057.14	31730.42	79359.49	10.76	0.70	148088.23
Chromium	1.50	0.00	1.50	0.41	0.00	1.50
Cobalt	2.00	0.00	2.00	0.69	0.00	2.00
Copper	8.84	4.45	12.11	2.00	0.74	25.22
Iron	316.46	386.83	600.54	4.93	1.69	35646.59
Lead	0.50	0.00	0.50	-0.69	0.00	0.50
Magnesium	1994.29	490.20	2354.28	7.57	0.24	2473.43
Manganese	34.94	24.55	52.97	3.37	0.63	74.92
Mercury						
Nickel	9.63	4.31	12.79	2.21	0.33	13.12
Potassium	1694.29	685.53	2197.73	7.35	0.49	2841.97
Selenium	0.50	0.00	0.50	-0.69	0.00	0.50
Silver	2.00	0.00	2.00	0.69	0.00	2.00
Sodium	7812.86	1791.64	9128.61	8.94	0.24	9702.01
Thallium	0.50	0.00	0.50	-0.69	0.00	0.50
Vanadium	2.00	0.00	2.00	0.69	0.00	2.00
Zinc	3.61	2.37	5.36	1.09	0.68	8.43

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW01-01	BGTNSW01-02	BGTNSW02-01	BGTNSW02-02	BGTNSW03-01	BGTNSW04-01
Date sampled	08/18/94	08/18/94	08/18/94	08/18/94	08/18/94	08/20/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U	0.5 J	0.8 J	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	0.7 B	2 U	2 U	2 U	0.6 B	2 U
Acetone	5.7 R	5 R	5.4 R	5 R	8.5 R	20 J
Carbon disulfide	1 U	1 U	1 U	1 U	1 U	1.2
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	5 R	5 R	5 R	5 R	5 R	5 R
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U
M/P xylenes	1 U	1 U	1 U	1 U	1 U	1 U
O xylene	1 U	1 U	1 U	1 U	1 U	1 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW04-01D	BGTNSW05-01	BGTCSW01-01	BGTCSW01-02	BGTCSW02-01	BGTCSW02-02
Date sampled	08/20/94	08/20/94	08/08/94	08/08/94	08/08/94	08/08/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	1 U	1 U	1 U	1 UJ	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 UJ	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 UJ	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 UJ	1 U	1 U
Methylene chloride	1.1 B	2 U	0.5 B	2 UJ	2 U	2 U
Acetone	20 BJ	12 BJ	5 R	5 R	5 R	5 R
Carbon disulfide	1.3	1 U	1 U	1 UJ	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 UJ	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 UJ	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 UJ	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 UJ	1 U	1 U
Chloroform	1 U	1 U	1 U	1 UJ	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 UJ	1 U	1 U
2-Butanone	5 R	5 R	5 U	5 UJ	5 R	5 R
1,1,1-Trichloroethane	1 U	1 U	1 U	1 UJ	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 UJ	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 UJ	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 UJ	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 UJ	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 UJ	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 UJ	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 UJ	1 U	1 U
Benzene	1 U	1 U	1 U	1 UJ	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 UJ	1 U	1 U
Bromoform	1 U	1 U	1 U	1 UJ	1 U	1 U
4-Methyl-2-pentanone	5 R	5 R	5 U	5 UJ	5 R	5 R
2-Hexanone	5 U	5 U	5 U	5 UJ	5 U	5 U
Tetrachloroethene	1 U	1 U	1 U	1 UJ	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 UJ	1 U	1 U
Toluene	1 U	1 U	1 U	1 UJ	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 UJ	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 UJ	1 U	1 U
Styrene	1 U	1 U	1 U	1 UJ	1 U	1 U
M/P xylenes	1 U	1 U	1 U	1 UJ	1 U	1 U
O xylene	1 U	1 U	1 U	1 UJ	1 U	1 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSW03-01	BGTCSW03-02	BGTCSW04-01	BGTCSW05-01	BGTCSW06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L
Chloromethane	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U
Methylene chloride	10 U	15 U	10 U	10 U	10 U
Acetone	10 U	16 U	10 U	10 U	10 U
Carbon disulfide	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	10 U	10 U	10 U	10 U	10 U
Cis-1,2-dichloroethene	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U
Trans-1,3-dichloropropene	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	8 J	24
Chlorobenzene	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U
M/P xylenes	10 U	10 U	10 U	7 J	14
O xylene	10 U	10 U	10 U	10 U	7 J

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	1 U	10 U	0.5 J	0.8 J	BGTNSW03-01	2/17
Bromomethane	1 U	10 U	ND	ND		0/17
Vinyl chloride	1 U	10 U	ND	ND		0/17
Chloroethane	1 U	10 U	ND	ND		0/17
Methylene chloride	0.5 B	15 U	ND	ND		0/17
Acetone	10 U	20 BJ	20 J	20 J	BGTNSW04-01D	1/8
Carbon disulfide	1 U	10 U	1.2	1.3	BGTNSW04-01D	2/17
1,1-Dichloroethene	1 U	10 U	ND	ND		0/17
1,1-Dichloroethane	1 U	10 U	ND	ND		0/17
Trans-1,2-dichloroethene	1 U	10 U	ND	ND		0/17
Cis-1,2-dichloroethene	1 U	10 U	ND	ND		0/17
Chloroform	1 U	10 U	ND	ND		0/17
1,2-Dichloroethane	1 U	10 U	ND	ND		0/17
2-Butanone	5 U	10 U	ND	ND		0/7
1,1,1-Trichloroethane	1 U	10 U	ND	ND		0/17
Carbon tetrachloride	1 U	10 U	ND	ND		0/17
Bromodichloromethane	1 U	10 U	ND	ND		0/17
1,2-Dichloropropane	1 U	10 U	ND	ND		0/17
cis-1,3-Dichloropropene	1 U	10 U	ND	ND		0/17
Trichloroethene	1 U	10 U	ND	ND		0/17
Dibromochloromethane	1 U	10 U	ND	ND		0/17
1,1,2-Trichloroethane	1 U	10 U	ND	ND		0/17
Benzene	1 U	10 U	ND	ND		0/17
Trans-1,3-dichloropropene	1 U	10 U	ND	ND		0/17
Bromoform	1 U	10 U	ND	ND		0/17
4-Methyl-2-pentanone	5 U	10 U	ND	ND		0/7
2-Hexanone	5 U	10 U	ND	ND		0/17
Tetrachloroethene	1 U	10 U	ND	ND		0/17
1,1,2,2-Tetrachloroethane	1 U	10 U	ND	ND		0/17
Toluene	1 U	10 U	8 J	24	BGTCSW06-01	2/17
Chlorobenzene	1 U	10 U	ND	ND		0/17
Ethylbenzene	1 U	10 U	ND	ND		0/17
Styrene	1 U	10 U	ND	ND		0/17
M/P xylenes	1 U	10 U	7 J	14	BGTCSW06-01	2/17
O xylene	1 U	10 U	7 J	7 J	BGTCSW06-01	1/17

TABLE 13
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	1.84	2.10	2.73	0.01	1.07	3.72
Bromomethane	1.82	2.11	2.72	-0.02	1.08	3.70
Vinyl chloride	1.82	2.11	2.72	-0.02	1.08	3.70
Chloroethane	1.82	2.11	2.72	-0.02	1.08	3.70
Methylene chloride	2.17	2.30	3.15	0.25	1.07	4.70
Acetone	8.00	5.18	11.47	1.95	0.50	12.44
Carbon disulfide	1.91	2.07	2.79	0.09	1.05	3.92
1,1-Dichloroethene	1.82	2.11	2.72	-0.02	1.08	3.70
1,1-Dichloroethane	1.82	2.11	2.72	-0.02	1.08	3.70
Trans-1,2-dichloroethene	1.82	2.11	2.72	-0.02	1.08	3.70
Cis-1,2-dichloroethene	1.82	2.11	2.72	-0.02	1.08	3.70
Chloroform	1.82	2.11	2.72	-0.02	1.08	3.70
1,2-Dichloroethane	1.82	2.11	2.72	-0.02	1.08	3.70
2-Butanone	4.29	1.22	5.18	1.41	0.34	5.95
1,1,1-Trichloroethane	1.82	2.11	2.72	-0.02	1.08	3.70
Carbon tetrachloride	1.82	2.11	2.72	-0.02	1.08	3.70
Bromodichloromethane	1.82	2.11	2.72	-0.02	1.08	3.70
1,2-Dichloropropane	1.82	2.11	2.72	-0.02	1.08	3.70
cis-1,3-Dichloropropene	1.82	2.11	2.72	-0.02	1.08	3.70
Trichloroethene	1.82	2.11	2.72	-0.02	1.08	3.70
Dibromochloromethane	1.82	2.11	2.72	-0.02	1.08	3.70
1,1,2-Trichloroethane	1.82	2.11	2.72	-0.02	1.08	3.70
Benzene	1.82	2.11	2.72	-0.02	1.08	3.70
Trans-1,3-dichloropropene	1.82	2.11	2.72	-0.02	1.08	3.70
Bromoform	1.82	2.11	2.72	-0.02	1.08	3.70
4-Methyl-2-pentanone	4.29	1.22	5.18	1.41	0.34	5.95
2-Hexanone	3.24	1.17	3.73	1.12	0.33	3.76
Tetrachloroethene	1.82	2.11	2.72	-0.02	1.08	3.70
1,1,2,2-Tetrachloroethane	1.82	2.11	2.72	-0.02	1.08	3.70
Toluene	3.12	5.88	5.61	0.10	1.32	7.28
Chlorobenzene	1.82	2.11	2.72	-0.02	1.08	3.70
Ethylbenzene	1.82	2.11	2.72	-0.02	1.08	3.70
Styrene	1.82	2.11	2.72	-0.02	1.08	3.70
M/P xylenes	2.47	3.70	4.04	0.06	1.23	5.28
O xylene	1.94	2.34	2.93	0.00	1.12	4.01

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW01-01	BGTNSW01-02	BGTNSW02-01	BGTNSW02-02	BGTNSW03-01	BGTNSW04-01
Date sampled	08/18/94	08/18/94	08/18/94	08/18/94	08/18/94	08/20/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 UJ
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	24 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	24 U	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	24 U	25 U	25 U	25 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW01-01	BGTNSW01-02	BGTNSW02-01	BGTNSW02-02	BGTNSW03-01	BGTNSW04-01
Date sampled	08/18/94	08/18/94	08/18/94	08/18/94	08/18/94	08/20/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	24 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	24 U	25 U	25 U	25 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	24 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	24 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	24 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW04-01D	BGTNSW05-01	BGTCSW01-01	BGTCSW01-02	BGTCSW02-01	BGTCSW02-02
Date sampled	08/20/94	08/20/94	08/08/94	08/08/94	08/08/94	08/08/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	24 U	24 U	24 U	24 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	24 U	24 U	24 U	24 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	24 U	24 U	24 U	24 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW04-01D	BGTNSW05-01	BGTCSW01-01	BGTCSW01-02	BGTCSW02-01	BGTCSW02-02
Date sampled	08/20/94	08/20/94	08/08/94	08/08/94	08/08/94	08/08/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	24 U	24 U	24 U	24 U
4-Nitrophenol	25 U	25 U	24 U	24 U	24 U	24 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	24 U	24 U	24 U	24 U
4,6-Dinitro-2-methylphenol	25 U	25 U	24 U	24 U	24 U	24 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	24 U	24 U	24 U	24 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSW03-01	BGTCSW03-02	BGTCSW04-01	BGTCSW05-01	BGTCSW06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L
Phenol	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadie	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSW03-01	BGTCSW03-02	BGTCSW04-01	BGTCSW05-01	BGTCSW06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L
Acenaphthene	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	10 U	10 U	ND	ND		0/17
Bis(2-chloroethyl)ether	10 U	10 U	ND	ND		0/17
2-Chlorophenol	10 U	10 U	ND	ND		0/17
1,3-Dichlorobenzene	10 U	10 U	ND	ND		0/17
1,4-Dichlorobenzene	10 U	10 U	ND	ND		0/17
1,2-Dichlorobenzene	10 U	10 U	ND	ND		0/17
2-Methylphenol	10 U	10 U	ND	ND		0/17
2,2'-Oxybis(1-chloropropane)	10 U	10 U	ND	ND		0/17
4-Methylphenol	10 U	10 U	ND	ND		0/17
N-Nitroso-di-n-propylamine	10 U	10 U	ND	ND		0/17
Hexachloroethane	10 U	10 U	ND	ND		0/17
Nitrobenzene	10 U	10 U	ND	ND		0/17
Isophorone	10 U	10 U	ND	ND		0/17
2-Nitrophenol	10 U	10 U	ND	ND		0/17
2,4-Dimethylphenol	10 U	10 U	ND	ND		0/17
Bis(2-chloroethoxy)methane	10 U	10 U	ND	ND		0/17
2,4-Dichlorophenol	10 U	10 U	ND	ND		0/17
1,2,4-Trichlorobenzene	10 U	10 U	ND	ND		0/17
Naphthalene	10 U	10 U	ND	ND		0/17
4-Chloroaniline	10 U	10 U	ND	ND		0/17
Hexachlorobutadiene	10 U	10 U	ND	ND		0/17
4-Chloro-3-methylphenol	10 U	10 U	ND	ND		0/17
2-Methylnaphthalene	10 U	10 U	ND	ND		0/17
Hexachlorocyclopentadie	10 U	10 U	ND	ND		0/17
2,4,6-Trichlorophenol	10 U	10 U	ND	ND		0/17
2,4,5-Trichlorophenol	24 U	25 U	ND	ND		0/17
2-Chloronaphthalene	10 U	10 U	ND	ND		0/17
2-Nitroaniline	24 U	25 U	ND	ND		0/17
Dimethylphthalate	10 U	10 U	ND	ND		0/17
Acenaphthylene	10 U	10 U	ND	ND		0/17
2,6-Dinitrotoluene	10 U	10 U	ND	ND		0/17
3-Nitroaniline	24 U	25 U	ND	ND		0/17

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Acenaphthene	10 U	10 U	ND	ND		0/17
2,4-Dinitrophenol	24 U	25 U	ND	ND		0/17
4-Nitrophenol	24 U	25 U	ND	ND		0/17
Dibenzofuran	10 U	10 U	ND	ND		0/17
2,4-Dinitrotoluene	10 U	10 U	ND	ND		0/17
Diethylphthalate	10 U	10 U	ND	ND		0/17
4-Chlorophenyl-phenylether	10 U	10 U	ND	ND		0/17
Fluorene	10 U	10 U	ND	ND		0/17
4-Nitroaniline	24 U	25 U	ND	ND		0/17
4,6-Dinitro-2-methylphenol	24 U	25 U	ND	ND		0/17
N-Nitrosodiphenylamine	10 U	10 U	ND	ND		0/17
4-Bromophenyl-phenylether	10 U	10 U	ND	ND		0/17
Hexachlorobenzene	10 U	10 U	ND	ND		0/17
Pentachlorophenol	24 U	25 U	ND	ND		0/17
Phenanthrene	10 U	10 U	ND	ND		0/17
Anthracene	10 U	10 U	ND	ND		0/17
Carbazole	10 U	10 U	ND	ND		0/17
di-n-Butylphthalate	10 U	10 U	ND	ND		0/17
Fluoranthene	10 U	10 U	ND	ND		0/17
Pyrene	10 U	10 U	ND	ND		0/17
Butylbenzylphthalate	10 U	10 U	ND	ND		0/17
3,3'-Dichlorobenzidine	10 U	10 U	ND	ND		0/17
Benzo(a)anthracene	10 U	10 U	ND	ND		0/17
Chrysene	10 U	10 U	ND	ND		0/17
Bis(2-ethylhexyl)phthalate	10 U	10 U	ND	ND		0/17
di-n-Octylphthalate	10 U	10 U	ND	ND		0/17
Benzo(b)fluoranthene	10 U	10 U	ND	ND		0/17
Benzo(k)fluoranthene	10 U	10 U	ND	ND		0/17
Benzo(a)pyrene	10 U	10 U	ND	ND		0/17
Indeno(1,2,3-cd)pyrene	10 U	10 U	ND	ND		0/17
Dibenz(a,h)anthracene	10 U	10 U	ND	ND		0/17
Benzo(g,h,i)perylene	10 U	10 U	ND	ND		0/17

TABLE 13
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethyl)ether	5.00	0.00	5.00	1.61	0.00	5.00
2-Chlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,3-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,4-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
1,2-Dichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2,2'-Oxybis(1-chloropropane)	5.00	0.00	5.00	1.61	0.00	5.00
4-Methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
N-Nitroso-di-n-propylamine	5.00	0.00	5.00	1.61	0.00	5.00
Hexachloroethane	5.00	0.00	5.00	1.61	0.00	5.00
Nitrobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Isophorone	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitrophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dimethylphenol	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-chloroethoxy)methane	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
1,2,4-Trichlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Naphthalene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloroaniline	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobutadiene	5.00	0.00	5.00	1.61	0.00	5.00
4-Chloro-3-methylphenol	5.00	0.00	5.00	1.61	0.00	5.00
2-Methylnaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorocyclopentadie	5.00	0.00	5.00	1.61	0.00	5.00
2,4,6-Trichlorophenol	5.00	0.00	5.00	1.61	0.00	5.00
2,4,5-Trichlorophenol	12.35	0.23	12.45	2.51	0.02	12.45
2-Chloronaphthalene	5.00	0.00	5.00	1.61	0.00	5.00
2-Nitroaniline	12.35	0.23	12.45	2.51	0.02	12.45
Dimethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Acenaphthylene	5.00	0.00	5.00	1.61	0.00	5.00
2,6-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
3-Nitroaniline	12.35	0.23	12.45	2.51	0.02	12.45

TABLE 13
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Acenaphthene	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrophenol	12.35	0.23	12.45	2.51	0.02	12.45
4-Nitrophenol	12.35	0.23	12.45	2.51	0.02	12.45
Dibenzofuran	5.00	0.00	5.00	1.61	0.00	5.00
2,4-Dinitrotoluene	5.00	0.00	5.00	1.61	0.00	5.00
Diethylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
4-Chlorophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Fluorene	5.00	0.00	5.00	1.61	0.00	5.00
4-Nitroaniline	12.35	0.23	12.45	2.51	0.02	12.45
4,6-Dinitro-2-methylphenol	12.35	0.23	12.45	2.51	0.02	12.45
N-Nitrosodiphenylamine	5.00	0.00	5.00	1.61	0.00	5.00
4-Bromophenyl-phenylether	5.00	0.00	5.00	1.61	0.00	5.00
Hexachlorobenzene	5.00	0.00	5.00	1.61	0.00	5.00
Pentachlorophenol	12.35	0.23	12.45	2.51	0.02	12.45
Phenanthrene	5.00	0.00	5.00	1.61	0.00	5.00
Anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Carbazole	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Butylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Butylbenzylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
3,3'-Dichlorobenzidine	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Chrysene	5.00	0.00	5.00	1.61	0.00	5.00
Bis(2-ethylhexyl)phthalate	5.00	0.00	5.00	1.61	0.00	5.00
di-n-Octylphthalate	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(b)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(k)fluoranthene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(a)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Indeno(1,2,3-cd)pyrene	5.00	0.00	5.00	1.61	0.00	5.00
Dibenz(a,h)anthracene	5.00	0.00	5.00	1.61	0.00	5.00
Benzo(g,h,i)perylene	5.00	0.00	5.00	1.61	0.00	5.00

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW01-01	BGTNSW01-02	BGTNSW02-01	BGTNSW02-02	BGTNSW03-01	BGTNSW04-01
Date sampled	08/18/94	08/18/94	08/18/94	08/18/94	08/18/94	08/20/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.048 U	0.048 UL	0.048 UL	0.048 U	0.048 UL	0.050 UL
beta-BHC	0.048 U	0.048 UL	0.048 UL	0.048 U	0.048 UL	0.050 UL
delta-BHC	0.048 U	0.048 UL	0.048 UL	0.048 U	0.048 UL	0.050 UL
gamma-BHC (Lindane)	0.048 U	0.048 UL	0.048 UL	0.048 U	0.048 UL	0.050 UL
Heptachlor	0.048 U	0.048 UL	0.048 UL	0.048 U	0.048 UL	0.050 UL
Aldrin	0.048 U	0.048 UL	0.048 UL	0.048 U	0.048 UL	0.050 UL
Heptachlor Epoxide	0.054 J	0.058 L	0.048 UL	0.048 U	0.048 UL	0.050 UL
Endosulfan I	0.048 U	0.048 UL	0.048 UL	0.048 U	0.048 UL	0.050 UL
Dieldrin	0.096 U	0.096 UL	0.096 UL	0.096 U	0.096 UL	0.10 UL
4,4'-DDE	0.096 U	0.096 UL	0.096 UL	0.096 U	0.096 UL	0.10 UL
Endrin	0.096 U	0.096 UL	0.096 UL	0.096 U	0.096 UL	0.10 UL
Endosulfan II	0.096 U	0.096 UL	0.096 UL	0.096 U	0.096 UL	0.10 UL
4,4'-DDD	0.096 U	0.096 UL	0.096 UL	0.096 U	0.096 UL	0.10 UL
Endosulfan Sulfate	0.096 U	0.096 UL	0.096 UL	0.096 U	0.096 UL	0.10 UL
4,4'-DDT	0.096 U	0.096 UL	0.096 UL	0.096 U	0.096 UL	0.10 UL
Methoxychlor	0.48 U	0.48 UL	0.48 UL	0.48 U	0.48 UL	0.50 UL
Endrin Ketone	0.096 U	0.096 UL	0.096 UL	0.096 U	0.096 UL	0.10 UL
Endrin Aldehyde	0.096 U	0.096 UL	0.096 UL	0.096 U	0.096 UL	0.10 UL
alpha-Chlordane	0.048 U	0.048 UL	0.048 UL	0.048 U	0.048 UL	0.050 UL
gamma-Chlordane	0.048 U	0.048 UL	0.048 UL	0.048 U	0.048 UL	0.050 UL
Toxaphene	4.8 U	4.8 UL	4.8 UL	4.8 U	4.8 UL	5.0 UL
Aroclor-1016	0.96 U	0.96 UL	0.96 UL	0.96 U	0.96 UL	1.0 UL
Aroclor-1221	1.90 U	1.90 UL	1.90 UL	1.90 U	1.90 UL	2.0 UL
Aroclor-1232	0.96 U	0.96 UL	0.96 UL	0.96 U	0.96 UL	1.0 UL
Aroclor-1242	0.96 U	0.96 UL	0.96 UL	0.96 U	0.96 UL	1.0 UL
Aroclor-1248	0.96 U	0.96 UL	0.96 UL	0.96 U	0.96 UL	1.0 UL
Aroclor-1254	0.96 U	0.96 UL	0.96 UL	0.96 U	0.96 UL	1.0 UL
Aroclor-1260	0.96 U	0.96 UL	0.96 UL	0.96 U	0.96 UL	1.0 UL

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW04-01D	BGTNSW05-01	BGTCSW01-01	BGTCSW01-02	BGTCSW02-01	BGTCSW02-02
Date sampled	08/20/94	08/20/94	08/08/94	08/08/94	08/08/94	08/08/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
beta-BHC	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
delta-BHC	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
gamma-BHC (Lindane)	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
Heptachlor	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
Aldrin	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
Heptachlor Epoxide	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
Endosulfan I	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
Dieldrin	0.10 UL	0.10 UJ	0.096 U	0.096 U	0.096 U	0.096 U
4,4'-DDE	0.10 UL	0.10 UJ	0.096 U	0.096 U	0.096 U	0.096 U
Endrin	0.10 UL	0.10 UJ	0.096 U	0.096 U	0.096 U	0.096 U
Endosulfan II	0.10 UL	0.10 UJ	0.096 U	0.096 U	0.096 U	0.096 U
4,4'-DDD	0.10 UL	0.10 UJ	0.096 U	0.096 U	0.096 U	0.096 U
Endosulfan Sulfate	0.10 UL	0.10 UJ	0.096 U	0.096 U	0.096 U	0.096 U
4,4'-DDT	0.10 UL	0.10 UJ	0.096 U	0.096 U	0.096 U	0.096 U
Methoxychlor	0.50 UL	0.50 UJ	0.48 U	0.48 U	0.48 U	0.48 U
Endrin Ketone	0.10 UL	0.10 UJ	0.096 U	0.096 U	0.096 U	0.096 U
Endrin Aldehyde	0.10 UL	0.10 UJ	0.096 U	0.096 U	0.096 U	0.096 U
alpha-Chlordane	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
gamma-Chlordane	0.050 UL	0.050 UJ	0.048 U	0.048 U	0.048 U	0.048 U
Toxaphene	5.0 UL	5.0 UJ	4.8 U	4.8 U	4.80 U	4.80 U
Aroclor-1016	1.0 UL	1.0 UJ	0.96 U	0.96 U	0.96 U	0.96 U
Aroclor-1221	2.0 UL	2.0 UJ	1.9 U	1.9 U	1.90 U	1.90 U
Aroclor-1232	1.0 UL	1.0 UJ	0.96 U	0.96 U	0.96 U	0.96 U
Aroclor-1242	1.0 UL	1.0 UJ	0.96 U	0.96 U	0.96 U	0.96 U
Aroclor-1248	1.0 UL	1.0 UJ	0.96 U	0.96 U	0.96 U	0.96 U
Aroclor-1254	1.0 UL	1.0 UJ	0.96 U	0.96 U	0.96 U	0.96 U
Aroclor-1260	1.0 UL	1.0 UJ	0.96 U	0.96 U	0.96 U	0.96 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSW03-01	BGTCSW03-02	BGTCSW04-01	BGTCSW05-01	BGTCSW06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L
alpha-BHC	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
beta-BHC	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
delta-BHC	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
gamma-BHC (Lindane)	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Heptachlor	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Aldrin	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Heptachlor Epoxide	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Endosulfan I	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Dieldrin	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
4,4'-DDE	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Endrin	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Endosulfan II	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
4,4'-DDD	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Endosulfan Sulfate	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
4,4'-DDT	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Methoxychlor	0.5 U	0.5 UJ	0.5 UL	0.5 UL	0.5 UL
Endrin Ketone	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Endrin Aldehyde	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
alpha-Chlordane	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
gamma-Chlordane	0.1 U	0.1 UJ	0.1 UL	0.1 UL	0.1 UL
Toxaphene	5.0 U	5.0 UJ	5.0 UL	5.0 UL	5 UL
Aroclor-1016	1.0 U	1.0 UJ	1.0 UL	1.0 UL	1 UL
Aroclor-1221	2.0 U	2.0 UJ	2.0 UL	2.0 UL	2 UL
Aroclor-1232	1.0 U	1.0 UJ	1.0 UL	1.0 UL	1 UL
Aroclor-1242	1.0 U	1.0 UJ	1.0 UL	1.0 UL	1 UL
Aroclor-1248	1.0 U	1.0 UJ	1.0 UL	1.0 UL	1 UL
Aroclor-1254	1.0 U	1.0 UJ	1.0 UL	1.0 UL	1 UL
Aroclor-1260	1.0 U	1.0 UJ	1.0 UL	1.0 UL	1 UL

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	0.048 U	0.1 UL	ND	ND		0/17
beta-BHC	0.048 U	0.1 UL	ND	ND		0/17
delta-BHC	0.048 U	0.1 UL	ND	ND		0/17
gamma-BHC (Lindane)	0.048 U	0.1 UL	ND	ND		0/17
Heptachlor	0.048 U	0.1 UL	ND	ND		0/17
Aldrin	0.048 U	0.1 UL	ND	ND		0/17
Heptachlor Epoxide	0.048 UL	0.1 UL	0.054 J	0.058 L	BGTNSW01-02	2/17
Endosulfan I	0.048 U	0.1 UL	ND	ND		0/17
Dieldrin	0.096 U	0.1 UL	ND	ND		0/17
4,4'-DDE	0.096 U	0.1 UL	ND	ND		0/17
Endrin	0.096 U	0.1 UL	ND	ND		0/17
Endosulfan II	0.096 U	0.1 UL	ND	ND		0/17
4,4'-DDD	0.096 U	0.1 UL	ND	ND		0/17
Endosulfan Sulfate	0.096 U	0.1 UL	ND	ND		0/17
4,4'-DDT	0.096 U	0.1 UL	ND	ND		0/17
Methoxychlor	0.48 U	0.5 UL	ND	ND		0/17
Endrin Ketone	0.096 U	0.1 UL	ND	ND		0/17
Endrin Aldehyde	0.096 U	0.1 UL	ND	ND		0/17
alpha-Chlordane	0.048 U	0.1 UL	ND	ND		0/17
gamma-Chlordane	0.048 U	0.1 UL	ND	ND		0/17
Toxaphene	4.8 U	5 UL	ND	ND		0/17
Aroclor-1016	0.96 U	1 UL	ND	ND		0/17
Aroclor-1221	1.9 U	2 UL	ND	ND		0/17
Aroclor-1232	0.96 U	1 UL	ND	ND		0/17
Aroclor-1242	0.96 U	1 UL	ND	ND		0/17
Aroclor-1248	0.96 U	1 UL	ND	ND		0/17
Aroclor-1254	0.96 U	1 UL	ND	ND		0/17
Aroclor-1260	0.96 U	1 UL	ND	ND		0/17

TABLE 13
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	0.03	0.01	0.03	-3.67	0.17	0.03
beta-BHC	0.03	0.01	0.03	-3.67	0.17	0.03
delta-BHC	0.03	0.01	0.03	-3.67	0.17	0.03
gamma-BHC (Lindane)	0.03	0.01	0.03	-3.67	0.17	0.03
Heptachlor	0.03	0.01	0.03	-3.67	0.17	0.03
Aldrin	0.03	0.01	0.03	-3.67	0.17	0.03
Heptachlor Epoxide	0.03	0.01	0.03	-3.57	0.31	0.03
Endosulfan I	0.03	0.01	0.03	-3.67	0.17	0.03
Dieldrin	0.05	0.00	0.05	-3.02	0.02	0.05
4,4'-DDE	0.05	0.00	0.05	-3.02	0.02	0.05
Endrin	0.05	0.00	0.05	-3.02	0.02	0.05
Endosulfan II	0.05	0.00	0.05	-3.02	0.02	0.05
4,4'-DDD	0.05	0.00	0.05	-3.02	0.02	0.05
Endosulfan Sulfate	0.05	0.00	0.05	-3.02	0.02	0.05
4,4'-DDT	0.05	0.00	0.05	-3.02	0.02	0.05
Methoxychlor	0.24	0.01	0.25	-1.41	0.02	0.25
Endrin Ketone	0.05	0.00	0.05	-3.02	0.02	0.05
Endrin Aldehyde	0.05	0.00	0.05	-3.02	0.02	0.05
alpha-Chlordane	0.03	0.01	0.03	-3.67	0.17	0.03
gamma-Chlordane	0.03	0.01	0.03	-3.67	0.17	0.03
Toxaphene	2.45	0.05	2.47	0.89	0.02	2.47
Aroclor-1016	0.49	0.01	0.49	-0.71	0.02	0.49
Aroclor-1221	0.97	0.03	0.98	-0.03	0.03	0.98
Aroclor-1232	0.49	0.01	0.49	-0.71	0.02	0.49
Aroclor-1242	0.49	0.01	0.49	-0.71	0.02	0.49
Aroclor-1248	0.49	0.01	0.49	-0.71	0.02	0.49
Aroclor-1254	0.49	0.01	0.49	-0.71	0.02	0.49
Aroclor-1260	0.49	0.01	0.49	-0.71	0.02	0.49

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW01-01	BGTNSW01-02	BGTNSW02-01	BGTNSW02-02	BGTNSW03-01	BGTNSW04-01
Date sampled	08/18/94	08/18/94	08/18/94	08/18/94	08/18/94	08/20/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 U	0.61 U	0.61 UJ	0.61 U	0.61 UJ	0.61 UJ
RDX	0.59 UJ	0.59 UJ	0.59 UJ	0.59 UJ	0.59 UJ	0.59 UJ
1,3,5-Trinitrobenzene	0.66 U	0.66 U	0.66 UJ	0.66 U	0.66 UJ	0.66 UJ
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 UJ	1.1 U	1.1 UJ	1.1 UJ
Tertyl	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ
Nitrobenzene	0.73 U	0.73 U	0.73 UJ	0.73 U	0.73 UJ	0.73 UJ
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 UJ	0.62 U	0.62 UJ	0.62 UJ
4-Amino-2,6-Dinitrotoluen	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ
2-Am-DNT	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ
2,6-Dinitrotoluene	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ
2,4-Dinitrotoluene	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ
DNT (isomeric mixture)	1.5 U	1.5 U	1.5 UJ	1.5 U	1.5 UJ	1.5 UJ
2-Nitrotoluene	0.75 U	0.75 U	0.75 UJ	0.75 U	0.75 UJ	0.75 UJ
4-Nitrotoluene	0.91 U	0.91 U	0.91 UJ	0.91 U	0.91 UJ	0.91 UJ
3-Nitrotoluene	0.91 U	0.91 U	0.91 UJ	0.91 U	0.91 UJ	0.91 UJ

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW04-01D	BGTNSW05-01	BGTCSW01-01	BGTCSW01-02	BGTCSW02-01	BGTCSW02-02
Date sampled	08/20/94	08/20/94	08/08/94	08/08/94	08/08/94	08/08/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 UJ	0.61 UJ	0.61 UJ	0.61 UJ	0.61 UJ	0.61 UJ
RDX	0.59 UJ	0.59 UJ	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 UJ	0.66 UJ	0.66 UJ	0.66 UJ	0.66 UJ	0.66 UJ
1,3-Dinitrobenzene	1.1 UJ	1.1 UJ	1.1 U	1.1 U	1.1 U	1.1 U
Tertyl	1 UJ	1 UJ	1 U	1 U	1 U	1 U
Nitrobenzene	0.73 UJ	0.73 UJ	0.73 U	0.73 U	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 UJ	0.62 UJ	0.62 U	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluen	1 UJ	1 UJ	1 U	1 U	1 U	1 U
2-Am-DNT	1 UJ	1 UJ	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 UJ	1 UJ	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 UJ	1 UJ	1 U	1 U	1 U	1 U
DNT (isomeric mixture)	1.5 UJ	1.5 UJ	1.5 U	1.5 U	1.5 U	1.5 U
2-Nitrotoluene	0.75 UJ	0.75 UJ	0.75 U	0.75 U	0.75 U	0.75 U
4-Nitrotoluene	0.91 UJ	0.91 UJ	0.91 U	0.91 U	0.91 U	0.91 U
3-Nitrotoluene	0.91 UJ	0.91 UJ	0.91 U	0.91 U	0.91 U	0.91 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSW03-01	BGTCSW03-02	BGTCSW04-01	BGTCSW05-01	BGTCSW06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L
HMX	0.61 UJ	0.61 UJ	0.61 UJ	0.61 UJ	0.61 UJ
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.66 UJ	0.66 UJ	0.66 UJ	0.66 UJ	0.66 UJ
1,3-Dinitrobenzene	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Tertyl	1 U	1 U	1 U	1 U	1 U
Nitrobenzene	0.73 U	0.73 U	0.73 UJ	0.73 U	0.73 U
2,4,6-Trinitrotoluene	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
4-Amino-2,6-Dinitrotoluen	1 U	1 U	1 U	1 U	1 U
2-Am-DNT	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U
DNT (Isomeric mixture)	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
2-Nitrotoluene	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
4-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U
3-Nitrotoluene	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.61 U	0.61 U	ND	ND		0/17
RDX	0.59 UJ	0.59 UJ	ND	ND		0/17
1,3,5-Trinitrobenzene	0.66 U	0.66 U	ND	ND		0/17
1,3-Dinitrobenzene	1.1 U	1.1 U	ND	ND		0/17
Tertyl	1 U	1 U	ND	ND		0/17
Nitrobenzene	0.73 U	0.73 U	ND	ND		0/17
2,4,6-Trinitrotoluene	0.62 U	0.62 U	ND	ND		0/17
4-Amino-2,6-Dinitrotoluen	1 U	1 U	ND	ND		0/17
2-Am-DNT	1 U	1 U	ND	ND		0/17
2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/17
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/17
DNT (isomeric mixture)	1.5 U	1.5 U	ND	ND		0/17
2-Nitrotoluene	0.75 U	0.75 U	ND	ND		0/17
4-Nitrotoluene	0.91 U	0.91 U	ND	ND		0/17
3-Nitrotoluene	0.91 U	0.91 U	ND	ND		0/17

TABLE 13
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.31	0.00	0.31	-1.19	0.00	0.31
RDX	0.30	0.00	0.30	-1.22	0.00	0.29
1,3,5-Trinitrobenzene	0.33	0.00	0.33	-1.11	0.00	0.33
1,3-Dinitrobenzene	0.55	0.00	0.55	-0.60	0.00	0.55
Tertyl	0.50	0.00	0.50	-0.69	0.00	0.50
Nitrobenzene	0.37	0.00	0.37	-1.01	0.00	0.37
2,4,6-Trinitrotoluene	0.31	0.00	0.31	-1.17	0.00	0.31
4-Amino-2,6-Dinitrotoluen	0.50	0.00	0.50	-0.69	0.00	0.50
2-Am-DNT	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
DNT (isomeric mixture)	0.75	0.00	0.75	-0.29	0.00	0.75
2-Nitrotoluene	0.38	0.00	0.38	-0.98	0.00	0.38
4-Nitrotoluene	0.46	0.00	0.46	-0.79	0.00	0.46
3-Nitrotoluene	0.46	0.00	0.46	-0.79	0.00	0.46

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW01-01	BGTNSW01-02	BGTNSW02-01	BGTNSW02-02	BGTNSW03-01	BGTNSW04-01
Date sampled	08/18/94	08/18/94	08/18/94	08/18/94	08/18/94	08/20/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	563	797	171 J	598	326	825
Antimony	37 UL	37 UL	37 UL	37 UL	37 UL	37 UL
Arsenic	3.5 L	2.1 L	2 L	1.9 L	2 L	2.7 J
Barium	26.8 J	27.8 J	29.3 J	29.8 J	39 J	49.1 J
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	6.7 K	5 U	5 U	7.8 UL	5 U	5 U
Calcium	191000 J	198000 J	178000 J	184000 J	163000 J	77800 J
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 U	4 U	4 U
Copper	5 U	5 U	5 U	5 U	5 U	5 U
Iron	662 J	923 J	289 J	756 J	485 J	1720 J
Lead	1 UL	1 UL	1 UL	1 UL	1 UL	5 UL
Magnesium	634000 J	656000 J	580000 J	604000 J	522000 J	206000
Manganese	33.1	35.2	40.1	40.5	45.2	125 J
Mercury	0.1 UL	0.1 UL	0.1 UL	0.1 UL	0.1 UL	0.1 U
Nickel	35.9 K	26 J	19.8 K	38.4 K	55.5 K	20.4 J
Potassium	213000 J	220000 J	193000 J	202000 J	174000 J	75100
Selenium	1 U	1 UL	10 UL	1 UL	1 U	1 U
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	5650000 J	5760000 J	5120000 J	5390000 J	4840000 J	1890000 J
Thallium	10 R	10 R	10 R	10 R	10 R	5 UL
Vanadium	4 U	4 U	4 U	4 U	4 U	11.1 J
Zinc	3 U	3 U	3 U	3 U	3 U	3 U
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW04-01D	BGTNSW05-01	BGTCSW01-01	BGTCSW01-02	BGTCSW02-01	BGTCSW02-02
Date sampled	08/20/94	08/20/94	08/08/94	08/08/94	08/08/94	08/08/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	782	362	3250	3340	5600	4870
Antimony	37 UL	37 UL	37 UL	37 UL	37 UL	37 UL
Arsenic	1.4 J	1 U	1 UL	1 UL	1.2 L	1.3 L
Barium	49.9 J	47.7 J	41.3 J	40.5 J	45.4 J	43.7 J
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5.1 K
Calcium	79700 J	29200 J	129000	136000	131000	132000
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 U	4 U	4 U
Copper	5 U	5 U	5 U	5 U	5.8 J	5 U
Iron	1670 J	2330 J	3910	4440	6500	5910
Lead	1 UL	1 UL	5.4 L	1 U	1 U	5.3 L
Magnesium	210000	51000	403000	428000	410000	413000
Manganese	127 J	209 J	205	259	309	291
Mercury	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	16 U	16 U	49.3	26.2 J	29.2 J	16 U
Potassium	77100	18300	128000	135000	129000	130000
Selenium	1.8 L	1 UL	1 U	1 U	1 U	1 U
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	2080000 J	439000 J	3670000	3920000	4440000	4660000
Thallium	1 UL	1 UL	5 UL	5 UL	5 UL	5 UL
Vanadium	14.4 J	4 U	7.9 J	8.1 J	11.8 J	10.4 J
Zinc	3 U	3 U	13.8 J	11.9 J	19.8 J	18.8 J
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSW03-01	BGTCSW03-02	BGTCSW04-01	BGTCSW05-01	BGTCSW06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	2500	4630	1310	1370	1500
Antimony	37 U	37 U	37 U	37 U	37 U
Arsenic	1.8 L	1.8 L	2 J	2.3 J	2.6 J
Barium	40.1 J	46.2 J	30.6 J	26.7 J	26.6 J
Beryllium	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	6.5 K	5 U	5 U
Calcium	83600	109000	56900	44800	45600
Chromium	3 U	3 U	3 U	3 U	3 U
Cobalt	5.3 J	8.5 J	6.4 J	4 U	5.3 J
Copper	5.6 J	6.7 J	6.2 J	5 U	5 U
Iron	3910 J	6650	3420 J	4280 J	4390
Lead	2 L	3.5 L	1.2 L	1.4 L	1.2 L
Magnesium	196000	303000	80300	23000	24000
Manganese	351	379	310	317	318
Mercury	0.1 UL	0.1 UL	0.1 UL	0.1 UL	0.1 UL
Nickel	16 U	35.8 K	16 U	16 U	16 U
Potassium	64600	100000	27000	8950	8210
Selenium	1 UL	1 UL	1 UL	1 UL	1 UL
Silver	4 R	4 R	4 R	4 R	4 R
Sodium	1480000	45 U	650000	180000	189000
Thallium	10 R	10 R	10 R	10 R	10 R
Vanadium	7.7 J	13.6 J	8.2 J	8.6 J	5 J
Zinc	7.9 J	20.2	9 J	9 J	12.4 J
Cyanide	16.9	10 U	10 U	10 U	10 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	171 J	5600	BGTCSW02-01	17/17
Antimony	37 UL	37 UL	ND	ND		0/17
Arsenic	1 U	1 U	1.2 L	3.5 L	BGTNSW01-01	14/17
Barium	NA	NA	26.6 J	49.9 J	BGTNSW04-01D	17/17
Beryllium	1 U	1 U	ND	ND		0/17
Cadmium	5 U	7.8 UL	5.1 K	6.7 K	BGTNSW01-01	3/17
Calcium	NA	NA	29200 J	198000 J	BGTNSW01-02	17/17
Chromium	3 U	3 U	ND	ND		0/17
Cobalt	4 U	4 U	5.3 J	8.5 J	BGTCSW03-02	4/17
Copper	5 U	5 U	5.6 J	6.7 J	BGTCSW03-02	4/17
Iron	NA	NA	289 J	6650	BGTCSW03-02	17/17
Lead	1 UL	5 UL	1.2 L	5.4 L	BGTCSW01-01	7/17
Magnesium	NA	NA	23000	656000 J	BGTNSW01-02	17/17
Manganese	NA	NA	33.1	379	BGTCSW03-02	17/17
Mercury	0.1 UL	0.1 UL	ND	ND		0/17
Nickel	16 U	16 U	19.8 K	55.5 K	BGTNSW03-01	10/17
Potassium	NA	NA	8210	220000 J	BGTNSW01-02	17/17
Selenium	1 U	10 UL	1.8 L	1.8 L	BGTNSW04-01D	1/17
Silver	4 U	4 U	ND	ND		0/12
Sodium	45 U	45 U	180000	5760000 J	BGTNSW01-02	16/17
Thallium	1 UL	5 UL	ND	ND		0/7
Vanadium	4 U	4 U	5 J	14.4 J	BGTNSW04-01D	11/17
Zinc	3 U	3 U	7.9 J	20.2	BGTCSW03-02	9/17
Cyanide	10 U	10 U	16.9	16.9	BGTCSW03-01	1/17

TABLE 13
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	1929.06	1766.56	2677.14	7.11	1.04	4287.03
Antimony	18.50	0.00	18.50	2.92	0.00	18.50
Arsenic	1.77	0.82	2.12	0.43	0.60	2.49
Barium	37.68	8.73	41.37	3.60	0.24	42.05
Beryllium	0.50	0.00	0.50	-0.69	0.00	0.50
Cadmium	3.22	1.45	3.83	1.10	0.36	3.77
Calcium	115800.00	55341.93	139235.49	11.52	0.58	159882.21
Chromium	1.50	0.00	1.50	0.41	0.00	1.50
Cobalt	3.03	2.02	3.89	0.96	0.51	3.84
Copper	3.34	1.58	4.01	1.12	0.39	3.98
Iron	3073.24	2147.28	3982.54	7.68	0.98	6369.38
Lead	1.59	1.66	2.29	0.04	0.90	2.70
Magnesium	337841.18	220347.15	431150.97	12.34	1.11	912614.82
Manganese	199.65	127.29	253.56	4.98	0.94	396.62
Mercury	0.05	0.00	0.05	-3.00	0.00	0.05
Nickel	23.09	15.74	29.75	2.89	0.75	36.01
Potassium	111956.47	72514.96	142664.18	11.26	1.08	288942.21
Selenium	0.84	1.12	1.31	-0.48	0.62	1.04
Silver	2.00	0.00	2.00	0.69	0.00	2.00
Sodium	2962236.62	2174519.54	3883074.32	13.84	3.00	9885029633.44
Thallium	1.93	0.98	2.65	0.46	0.79	5.91
Vanadium	6.99	4.40	8.85	1.69	0.80	11.52
Zinc	7.93	7.13	10.95	1.54	1.14	19.41
Cyanide	5.70	2.89	6.92	1.68	0.30	6.41

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW01DS-01	BGTNSW01DS-02	BGTNSW02DS-01	BGTNSW02DS-02	BGTNSW03DS-01	BGTNSW04DS-01
Date sampled	08/18/94	08/18/94	08/18/94	08/18/94	08/18/94	08/20/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	18 U	18 U	18 U	18 U	18 U	18 U
Antimony	37 UL	37 UL	37 UL	37 UL	37 UL	37 U
Arsenic	10 UL	10 UL	13 L	10 UL	10 UL	1.2 J
Barium	22.8 J	23 J	28.7 J	24.8 J	38.5 J	48.3 J
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 UL
Calcium	207000 J	206000 J	193000 J	202000 J	180000 J	84000 J
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 U	4 U	4 U
Copper	17.8 J	19 J	17.3 J	15.6 J	17.1 J	8.4 J
Iron	4.6 J	4.3 J	5.2 J	4.1 J	3 J	32.8 J
Lead	10 UL	10 UL	10 UL	10 UL	10 UL	1 UL
Magnesium	676000 J	670000 J	617000 J	650000 J	567000 J	220000
Manganese	3.6 J	3.9 J	4.5 J	2.2 J	12.4 J	115 J
Mercury	NA	NA	NA	NA	NA	NA
Nickel	40.2 K	27.9 J	36.5 K	25.7 K	51.6 K	16 U
Potassium	226000 J	225000 J	205000 J	216000 J	188000 J	79000
Selenium	1 U	1 U	1 UL	1 UL	1 UL	1 U
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	5990000 J	6100000 J	5340000 J	5670000 J	4830000 J	1980000 J
Thallium	10 R	10 R	10 R	10 R	10 R	1 UL
Vanadium	4 U	4 U	4 U	4 U	4 U	7.2 J
Zinc	3 U	3 U	3 U	3 U	3 U	3 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSW04DS-01D	BGTNSW05DS-01	BGTCSW01DS-01	BGTCSW01DS-02	BGTCSW02DS-01	BGTCSW02DS-02
Date sampled	08/20/94	08/20/94	08/08/94	08/08/94	08/08/94	08/08/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	21.4 J	45.5 J	18 U	18 U	18 U	18 U
Antimony	37 U	37 U	37 UL	37 UL	37 UL	37 UL
Arsenic	1 U	1 U	1 UL	1 UL	1 UL	1 UL
Barium	48.5 J	45.6 J	34.8 J	33 J	33.7 J	33.7 J
Beryllium	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	5 UL	5 UL	5 U	5 U	5 U	5.3
Calcium	83700 J	29400 J	141000	144000	142000	144000
Chromium	3 U	3 U	3 U	3 U	3 U	3 U
Cobalt	4 U	4 U	4 U	4 U	4 U	4 U
Copper	18.9 J	5 U	21.6 J	20 J	18.4 J	18.6 J
Iron	39.2 J	887 J	5.5 J	3 U	4.8 J	3.2 J
Lead	5 UL	1 UL	1 U	1 UL	1 UL	1 UL
Magnesium	218000	50700	436000	452000	445000	447000
Manganese	116 J	205 J	2 J	2 J	2.2 J	2 J
Mercury	NA	NA	NA	NA	NA	NA
Nickel	16 U	16 U	16 U	47.7	18.2 J	30.1 J
Potassium	79300	18600	136000	142000	139000	140000
Selenium	1 U	1 U	2.1 L	1 L	1 UL	2 UL
Silver	4 U	4 U	4 U	4 U	4 U	4 U
Sodium	2040000 J	433000 J	3800000	3710000	3850000	3930000
Thallium	1 UL	1 UL	10 UL	5 UL	10 UL	10 UL
Vanadium	8.6 J	4 U	4 U	4 U	4 U	4 U
Zinc	3 U	3 U	3 U	3 U	3 U	3 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSW03DS-01	BGTCSW03DS-02	BGTCSW04DS-01	BGTCSW05DS-01	BGTCSW06DS-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94
Units	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	27.8 J	18 U	22.5 J	18 U	25.7 J
Antimony	37 U	37 U	37 U	37 U	40.2 J
Arsenic	1 U	1 U	1 U	1 U	1 U
Barium	34.3 J	35.2 J	25.7 J	19.5 J	17 J
Beryllium	1 U	1 U	1 U	1 U	1 U
Cadmium	5 U	5 U	5 U	5 U	5 U
Calcium	92200	116000	62900	51000	47100
Chromium	3 U	3 U	3 U	3 U	3 U
Cobalt	5.3 J	4.2 J	7.4 J	4 U	7.4 J
Copper	18.9 J	17.1 J	12.3 J	11.9 J	9.8 J
Iron	83.2 J	17.1 J	244 J	483 J	436 J
Lead	1 UL	2 UL	1 UL	1 UL	1 UL
Magnesium	223000	307000	89000	27800	25200
Manganese	278	225	290	278	249
Mercury	NA	NA	NA	NA	NA
Nickel	16 U	35.3 K	16 U	16 U	16 U
Potassium	71900	101000	29600	9600	8810
Selenium	1 UL	10 UL	1 UL	1 UL	1 UL
Silver	4 R	4 R	4 R	4 R	4 R
Sodium	1570000	45 U	691000	220000	198000
Thallium	10 R	10 R	10 R	10 R	10 R
Vanadium	4 U	4 U	4 U	4 U	4 U
Zinc	4.5 J	3 U	4.5 J	3 U	3 U

TABLE 13
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	18 U	18 U	21.4 J	45.5 J	BGTNSW05DS-01	5/17
Antimony	37 UL	37 UL	40.2 J	40.2 J	BGTCSW06DS-01	1/17
Arsenic	1 U	10 UL	1.2 J	13 L	BGTNSW02DS-01	2/17
Barium	NA	NA	17 J	48.5 J	BGTNSW04DS-01D	17/17
Beryllium	1 U	1 U	ND	ND		0/17
Cadmium	5 U	5 U	5.3	5.3	BGTCSW02DS-02	1/17
Calcium	NA	NA	29400 J	207000 J	BGTNSW01DS-01	17/17
Chromium	3 U	3 U	ND	ND		0/17
Cobalt	4 U	4 U	4.2 J	7.4 J	BGTCSW06DS-01	4/17
Copper	5 U	5 U	8.4 J	21.6 J	BGTCSW01DS-01	16/17
Iron	3 U	3 U	3 J	887 J	BGTNSW05DS-01	16/17
Lead	1 UL	10 UL	ND	ND		0/17
Magnesium	NA	NA	25200	676000 J	BGTNSW01DS-01	17/17
Manganese	NA	NA	2 J	290	BGTCSW04DS-01	17/17
Mercury	NA	NA	NA	NA		0/0
Nickel	16 U	16 U	18.2 J	51.6 K	BGTNSW03DS-01	9/17
Potassium	NA	NA	8810	226000 J	BGTNSW01DS-01	17/17
Selenium	1 U	10 UL	1 L	2.1 L	BGTCSW01DS-01	2/17
Silver	4 U	4 U	ND	ND		0/12
Sodium	45 U	45 U	198000	6100000 J	BGTNSW01DS-02	16/17
Thallium	1 UL	10 UL	ND	ND		0/7
Vanadium	4 U	4 U	7.2 J	8.6 J	BGTNSW04DS-01D	2/17
Zinc	3 U	3 U	4.5 J	4.5 J	BGTCSW04DS-01	2/17

TABLE 13
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SURFACE WATER
DISSOLVED INORGANICS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	14.76	10.42	19.17	2.53	0.55	19.07
Antimony	19.78	5.26	22.01	2.96	0.19	21.39
Arsenic	2.34	3.36	3.76	0.09	1.18	4.89
Barium	32.18	9.50	36.21	3.43	0.31	37.25
Beryllium	0.50	0.00	0.50	-0.69	0.00	0.50
Cadmium	2.66	0.68	2.95	0.96	0.18	2.88
Calcium	125017.65	59798.47	150340.34	11.60	0.59	173723.65
Chromium	1.50	0.00	1.50	0.41	0.00	1.50
Cobalt	2.96	1.91	3.77	0.95	0.49	3.68
Copper	15.60	5.00	17.72	2.66	0.52	21.23
Iron	132.85	247.44	237.64	3.00	2.08	1895.23
Lead	1.97	2.07	2.85	0.12	1.07	4.16
Magnesium	360041.18	233303.09	458837.38	12.41	1.10	958862.03
Manganese	105.34	120.31	156.29	3.12	2.21	3293.19
Mercury						
Nickel	22.19	15.71	28.84	2.83	0.77	34.90
Potassium	118518.24	76569.93	150943.09	11.31	1.08	305024.75
Selenium	0.92	1.13	1.40	-0.39	0.65	1.18
Silver	2.00	0.00	2.00	0.69	0.00	2.00
Sodium	2961883.68	2203940.23	3895180.08	13.86	2.99	5206837647.58
Thallium	2.71	2.25	4.37	0.52	1.16	27.25
Vanadium	2.69	1.97	3.53	0.85	0.46	3.25
Zinc	1.85	1.00	2.27	0.53	0.36	2.16

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD01-01	BGWPSD01-02	BGWPSD02-01	BGWPSD02-02	BGWPSD03-01	BGWPSD03-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	53 U	36 U	67 U	31 U	62 U	45 U
Bromomethane	53 U	36 U	67 U	31 U	62 U	45 U
Vinyl chloride	53 U	36 U	67 U	31 U	62 U	45 U
Chloroethane	53 U	36 U	67 U	31 U	62 U	45 U
Methylene chloride	53 U	36 U	67 U	31 U	69	41 J
Acetone	1800 J	410	1500 J	630	670	710
Carbon disulfide	53 U	36 U	67 U	31 U	62 U	45 U
1,1-Dichloroethene	53 U	36 U	67 U	31 U	62 U	45 U
1,1-Dichloroethane	53 U	36 U	67 U	31 U	62 U	45 U
Trans-1,2-dichloroethene	53 U	36 U	67 U	31 U	62 U	45 U
Cis-1,2-dichloroethene	53 U	36 U	67 U	31 U	62 U	45 U
Chloroform	53 U	36 U	67 U	31 U	62 U	45 U
1,2-Dichloroethane	53 U	36 U	67 U	31 U	62 U	45 U
2-Butanone	390 J	95	320	160	150	140
1,1,1-Trichloroethane	53 U	36 U	67 U	31 U	62 U	45 U
Carbon tetrachloride	53 U	36 U	67 U	31 U	62 U	45 U
Bromodichloromethane	53 U	36 U	67 U	31 U	62 U	45 U
1,2-Dichloropropane	53 U	36 U	67 U	31 U	62 U	45 U
cis-1,3-Dichloropropene	53 U	36 U	67 U	31 U	62 U	45 U
Trichloroethene	53 U	36 U	67 U	31 U	62 U	45 U
Dibromochloromethane	53 U	36 U	67 U	31 U	62 U	45 U
1,1,2-Trichloroethane	53 U	36 U	67 U	31 U	62 U	45 U
Benzene	53 U	36 U	67 U	31 U	62 U	45 U
Trans-1,3-dichloropropene	53 U	36 U	67 U	31 U	62 U	45 U
Bromoform	53 U	36 U	67 U	31 U	62 U	45 U
4-Methyl-2-pentanone	53 U	36 U	67 U	31 UJ	62 U	45 U
2-Hexanone	53 U	36 U	67 U	31 UJ	62 U	45 U
Tetrachloroethene	53 U	36 U	67 U	31 UJ	62 U	45 U
1,1,2,2-Tetrachloroethane	53 U	36 U	67 U	31 UJ	62 U	45 U
Toluene	53 U	36 U	67 U	31 UJ	62 U	45 U
Chlorobenzene	53 U	36 U	67 U	31 UJ	62 U	45 U
Ethylbenzene	53 U	36 U	67 U	31 UJ	62 U	45 U
Styrene	53 U	36 U	67 U	31 UJ	62 U	45 U
M/P xylenes	53 U	36 U	67 U	31 UJ	62 U	45 U
O xylene	53 U	36 U	67 U	31 UJ	62 U	45 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD03-02	BGWPSD04-01	BGWPSD04-02	BGPLSD03-01	BGPLSD03-02	BGPLSD04-01
Date sampled	08/02/94	08/03/94	08/03/94	08/05/94	08/05/94	08/04/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	24 U	62 U	16 U	83 U	43 U	150 J
Bromomethane	24 U	62 U	16 U	83 U	43 U	77 U
Vinyl chloride	24 U	62 U	16 U	83 U	43 U	77 U
Chloroethane	24 U	62 U	16 U	83 U	43 U	77 U
Methylene chloride	39	62 U	16 U	83 U	75 J	77 U
Acetone	270	1100	110	510	790 J	500 J
Carbon disulfide	24 U	62 U	16 U	83 U	43 U	77 U
1,1-Dichloroethene	24 U	62 U	16 U	83 U	43 U	77 U
1,1-Dichloroethane	24 U	62 U	16 U	83 U	43 U	77 U
Trans-1,2-dichloroethene	24 U	62 U	16 U	83 U	43 U	77 U
Cis-1,2-dichloroethene	24 U	62 U	16 U	83 U	43 U	77 U
Chloroform	24 U	62 U	16 U	83 U	43 U	77 U
1,2-Dichloroethane	24 U	62 U	16 U	83 U	43 U	77 U
2-Butanone	68	240	22	95	99 J	74 J
1,1,1-Trichloroethane	24 U	62 U	16 U	83 U	43 U	77 U
Carbon tetrachloride	24 U	62 U	16 U	83 U	43 U	77 U
Bromodichloromethane	24 U	62 U	16 U	83 U	43 U	77 U
1,2-Dichloropropane	24 U	62 U	16 U	83 U	43 U	77 U
cis-1,3-Dichloropropene	24 U	62 U	16 U	83 U	43 U	77 U
Trichloroethene	24 U	62 U	16 U	83 U	43 U	77 U
Dibromochloromethane	24 U	62 U	16 U	83 U	43 U	77 U
1,1,2-Trichloroethane	24 U	62 U	16 U	83 U	43 U	77 U
Benzene	24 U	62 U	16 U	83 U	43 U	77 U
Trans-1,3-dichloropropene	24 U	62 U	16 U	83 U	43 U	77 U
Bromoform	24 U	62 U	16 U	83 U	43 U	77 U
4-Methyl-2-pentanone	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ
2-Hexanone	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ
Tetrachloroethene	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ
1,1,2,2-Tetrachloroethane	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ
Toluene	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ
Chlorobenzene	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ
Ethylbenzene	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ
Styrene	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ
M/P xylenes	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ
O xylene	24 UJ	62 U	16 U	83 U	43 UJ	77 UJ

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSD04-01D	BGPLSD04-02
Date sampled	08/04/94	08/04/94
Depth	0-4"	4-8"
Units	UG/KG	UG/KG
Chloromethane	52 J	25 U
Bromomethane	59 U	25 U
Vinyl chloride	59 U	25 U
Chloroethane	59 U	25 U
Methylene chloride	59 U	25 U
Acetone	150 J	170 J
Carbon disulfide	59 U	25 U
1,1-Dichloroethene	59 U	25 U
1,1-Dichloroethane	59 U	25 U
Trans-1,2-dichloroethene	59 U	25 U
Cis-1,2-dichloroethene	59 U	25 U
Chloroform	59 U	25 U
1,2-Dichloroethane	59 U	25 U
2-Butanone	59 U	23 J
1,1,1-Trichloroethane	59 U	25 U
Carbon tetrachloride	59 U	25 U
Bromodichloromethane	59 U	25 U
1,2-Dichloropropane	59 U	25 U
cis-1,3-Dichloropropene	59 U	25 U
Trichloroethene	59 U	25 U
Dibromochloromethane	59 U	25 U
1,1,2-Trichloroethane	59 U	25 U
Benzene	59 U	25 U
Trans-1,3-dichloropropene	59 U	25 U
Bromoform	59 U	25 U
4-Methyl-2-pentanone	59 U	25 UJ
2-Hexanone	59 U	25 UJ
Tetrachloroethene	59 U	25 UJ
1,1,2,2-Tetrachloroethane	59 U	25 UJ
Toluene	59 U	25 UJ
Chlorobenzene	59 U	25 UJ
Ethylbenzene	59 U	25 UJ
Styrene	59 U	25 UJ
M/P xylenes	59 U	25 UJ
O xylene	59 U	25 UJ

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	16 U	83 U	52 J	150 J	BGPLSD04-01	2/14
Bromomethane	16 U	83 U	ND	ND		0/14
Vinyl chloride	16 U	83 U	ND	ND		0/14
Chloroethane	16 U	83 U	ND	ND		0/14
Methylene chloride	16 U	83 U	39	75 J	BGPLSD03-02	4/14
Acetone	NA	NA	110	1800 J	BGWPSD01-01	14/14
Carbon disulfide	16 U	83 U	ND	ND		0/14
1,1-Dichloroethene	16 U	83 U	ND	ND		0/14
1,1-Dichloroethane	16 U	83 U	ND	ND		0/14
Trans-1,2-dichloroethene	16 U	83 U	ND	ND		0/14
Cis-1,2-dichloroethene	16 U	83 U	ND	ND		0/14
Chloroform	16 U	83 U	ND	ND		0/14
1,2-Dichloroethane	16 U	83 U	ND	ND		0/14
2-Butanone	59 U	59 U	22	390 J	BGWPSD01-01	13/14
1,1,1-Trichloroethane	16 U	83 U	ND	ND		0/14
Carbon tetrachloride	16 U	83 U	ND	ND		0/14
Bromodichloromethane	16 U	83 U	ND	ND		0/14
1,2-Dichloropropane	16 U	83 U	ND	ND		0/14
cis-1,3-Dichloropropene	16 U	83 U	ND	ND		0/14
Trichloroethene	16 U	83 U	ND	ND		0/14
Dibromochloromethane	16 U	83 U	ND	ND		0/14
1,1,2-Trichloroethane	16 U	83 U	ND	ND		0/14
Benzene	16 U	83 U	ND	ND		0/14
Trans-1,3-dichloropropene	16 U	83 U	ND	ND		0/14
Bromoform	16 U	83 U	ND	ND		0/14
4-Methyl-2-pentanone	16 U	83 U	ND	ND		0/14
2-Hexanone	16 U	83 U	ND	ND		0/14
Tetrachloroethene	16 U	83 U	ND	ND		0/14
1,1,2,2-Tetrachloroethane	16 U	83 U	ND	ND		0/14
Toluene	16 U	83 U	ND	ND		0/14
Chlorobenzene	16 U	83 U	ND	ND		0/14
Ethylbenzene	16 U	83 U	ND	ND		0/14
Styrene	16 U	83 U	ND	ND		0/14
M/P xylenes	16 U	83 U	ND	ND		0/14
O xylene	16 U	83 U	ND	ND		0/14

TABLE 14
STATISTICAL SUMMARY
FRESHWATER PONDS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	33.96	35.54	50.79	3.23	0.73	54.45
Bromomethane	24.39	10.33	29.28	3.09	0.49	33.08
Vinyl chloride	24.39	10.33	29.28	3.09	0.49	33.08
Chloroethane	24.39	10.33	29.28	3.09	0.49	33.08
Methylene chloride	34.18	19.37	43.35	3.37	0.63	52.99
Acetone	665.71	502.62	903.61	6.21	0.84	1315.87
Carbon disulfide	24.39	10.33	29.28	3.09	0.49	33.08
1,1-Dichloroethene	24.39	10.33	29.28	3.09	0.49	33.08
1,1-Dichloroethane	24.39	10.33	29.28	3.09	0.49	33.08
Trans-1,2-dichloroethene	24.39	10.33	29.28	3.09	0.49	33.08
Cis-1,2-dichloroethene	24.39	10.33	29.28	3.09	0.49	33.08
Chloroform	24.39	10.33	29.28	3.09	0.49	33.08
1,2-Dichloroethane	24.39	10.33	29.28	3.09	0.49	33.08
2-Butanone	136.11	111.04	188.66	4.58	0.90	295.79
1,1,1-Trichloroethane	24.39	10.33	29.28	3.09	0.49	33.08
Carbon tetrachloride	24.39	10.33	29.28	3.09	0.49	33.08
Bromodichloromethane	24.39	10.33	29.28	3.09	0.49	33.08
1,2-Dichloropropane	24.39	10.33	29.28	3.09	0.49	33.08
cis-1,3-Dichloropropene	24.39	10.33	29.28	3.09	0.49	33.08
Trichloroethene	24.39	10.33	29.28	3.09	0.49	33.08
Dibromochloromethane	24.39	10.33	29.28	3.09	0.49	33.08
1,1,2-Trichloroethane	24.39	10.33	29.28	3.09	0.49	33.08
Benzene	24.39	10.33	29.28	3.09	0.49	33.08
Trans-1,3-dichloropropene	24.39	10.33	29.28	3.09	0.49	33.08
Bromoform	24.39	10.33	29.28	3.09	0.49	33.08
4-Methyl-2-pentanone	24.39	10.33	29.28	3.09	0.49	33.08
2-Hexanone	24.39	10.33	29.28	3.09	0.49	33.08
Tetrachloroethene	24.39	10.33	29.28	3.09	0.49	33.08
1,1,2,2-Tetrachloroethane	24.39	10.33	29.28	3.09	0.49	33.08
Toluene	24.39	10.33	29.28	3.09	0.49	33.08
Chlorobenzene	24.39	10.33	29.28	3.09	0.49	33.08
Ethylbenzene	24.39	10.33	29.28	3.09	0.49	33.08
Styrene	24.39	10.33	29.28	3.09	0.49	33.08
M/P xylenes	24.39	10.33	29.28	3.09	0.49	33.08
O xylene	24.39	10.33	29.28	3.09	0.49	33.08

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD01-01	BGWPSD01-02	BGWPSD02-01	BGWPSD02-02	BGWPSD03-01	BGWPSD03-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Bis(2-chloroethyl)ether	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2-Chlorophenol	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
1,3-Dichlorobenzene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
1,4-Dichlorobenzene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
1,2-Dichlorobenzene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2-Methylphenol	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2,2'-Oxybis(1-chloropropane)	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
4-Methylphenol	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
N-Nitroso-di-n-propylamine	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Hexachloroethane	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Nitrobenzene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Isophorone	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2-Nitrophenol	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2,4-Dimethylphenol	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Bis(2-chloroethoxy)methane	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2,4-Dichlorophenol	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
1,2,4-Trichlorobenzene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Naphthalene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
4-Chloroaniline	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Hexachlorobutadiene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
4-Chloro-3-methylphenol	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2-Methylnaphthalene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Hexachlorocyclopentadie	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2,4,6-Trichlorophenol	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2,4,5-Trichlorophenol	3500 U	3000 U	4900 U	2500 U	4000 U	2900 U
2-Chloronaphthalene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2-Nitroaniline	3500 U	3000 U	4900 U	2500 U	4000 U	2900 U
Dimethylphthalate	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Acenaphthylene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2,6-Dinitrotoluene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
3-Nitroaniline	3500 U	3000 U	4900 U	2500 U	4000 U	2900 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD01-01	BGWPSD01-02	BGWPSD02-01	BGWPSD02-02	BGWPSD03-01	BGWPSD03-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Acenaphthene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2,4-Dinitrophenol	3500 U	3000 U	4900 U	2500 U	4000 U	2900 U
4-Nitrophenol	3500 U	3000 U	4900 U	2500 U	4000 U	2900 U
Dibenzofuran	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
2,4-Dinitrotoluene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Diethylphthalate	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
4-Chlorophenyl-phenylether	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Fluorene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
4-Nitroaniline	3500 U	3000 U	4900 U	2500 U	4000 U	2900 U
4,6-Dinitro-2-methylphenol	3500 U	3000 U	4900 U	2500 U	4000 U	2900 U
N-Nitrosodiphenylamine	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
4-Bromophenyl-phenylether	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Hexachlorobenzene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Pentachlorophenol	3500 U	3000 U	4900 U	2500 U	4000 U	2900 U
Phenanthrene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Anthracene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Carbazole	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
di-n-Butylphthalate	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Fluoranthene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Pyrene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Butylbenzylphthalate	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
3,3'-Dichlorobenzidine	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Benzo(a)anthracene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Chrysene	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
Bis(2-ethylhexyl)phthalate	1400 U	1200 U	2000 U	1000 U	1600 U	1200 U
di-n-Octylphthalate	1400 UJ	1200 UJ	2000 UJ	1000 U	1600 UJ	1200 UJ
Benzo(b)fluoranthene	1400 UJ	1200 UJ	2000 UJ	1000 U	1600 UJ	1200 UJ
Benzo(k)fluoranthene	1400 UJ	1200 UJ	2000 UJ	1000 U	1600 UJ	1200 UJ
Benzo(a)pyrene	1400 UJ	1200 UJ	2000 UJ	1000 U	1600 UJ	1200 UJ
Indeno(1,2,3-cd)pyrene	1400 UJ	1200 UJ	2000 UJ	1000 U	1600 UJ	1200 UJ
Dibenz(a,h)anthracene	1400 UJ	1200 UJ	2000 UJ	1000 U	1600 UJ	1200 UJ
Benzo(g,h,i)perylene	1400 UJ	1200 UJ	2000 UJ	1000 U	1600 UJ	1200 UJ

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD03-02	BGWPSD04-01	BGWPSD04-02	BGPLSD03-01	BGPLSD03-02	BGPLSD04-01
Date sampled	08/02/94	08/03/94	08/03/94	08/05/94	08/05/94	08/04/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	860 U	470 U	560 U	3700 U	1600 U	2500 U
Bis(2-chloroethyl)ether	860 U	470 U	560 U	3700 U	1600 U	2500 U
2-Chlorophenol	860 U	470 U	560 U	3700 U	1600 U	2500 U
1,3-Dichlorobenzene	860 U	470 U	560 U	3700 U	1600 U	2500 U
1,4-Dichlorobenzene	860 U	470 U	560 U	3700 U	1600 U	2500 U
1,2-Dichlorobenzene	860 U	470 U	560 U	3700 U	1600 U	2500 U
2-Methylphenol	860 U	470 U	560 U	3700 U	1600 U	2500 U
2,2'-Oxybis(1-chloropropane)	860 U	470 U	560 U	3700 U	1600 U	2500 U
4-Methylphenol	860 U	470 U	560 U	3700 U	1600 U	2500 U
N-Nitroso-di-n-propylamine	860 U	470 U	560 U	3700 U	1600 U	2500 U
Hexachloroethane	860 U	470 U	560 U	3700 U	1600 U	2500 U
Nitrobenzene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Isophorone	860 U	470 U	560 U	3700 U	1600 U	2500 U
2-Nitrophenol	860 U	470 U	560 U	3700 U	1600 U	2500 U
2,4-Dimethylphenol	860 U	470 U	560 U	3700 U	1600 U	2500 U
Bis(2-chloroethoxy)methane	860 U	470 U	560 U	3700 U	1600 U	2500 U
2,4-Dichlorophenol	860 U	470 U	560 U	3700 U	1600 U	2500 U
1,2,4-Trichlorobenzene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Naphthalene	860 U	470 U	560 U	3700 U	1600 U	2500 U
4-Chloroaniline	860 U	470 U	560 U	3700 U	1600 U	2500 U
Hexachlorobutadiene	860 U	470 U	560 U	3700 U	1600 U	2500 U
4-Chloro-3-methylphenol	860 U	470 U	560 U	3700 U	1600 U	2500 U
2-Methylnaphthalene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Hexachlorocyclopentadie	860 U	470 U	560 U	3700 U	1600 U	2500 U
2,4,6-Trichlorophenol	860 U	470 U	560 U	3700 U	1600 U	2500 U
2,4,5-Trichlorophenol	2100 U	1100 U	1400 U	8900 U	3800 U	6100 U
2-Chloronaphthalene	860 U	470 U	560 U	3700 U	1600 U	2500 U
2-Nitroaniline	2100 U	1100 U	1400 U	8900 U	3800 U	6100 U
Dimethylphthalate	860 U	470 U	560 U	3700 U	1600 U	2500 U
Acenaphthylene	860 U	470 U	560 U	3700 U	1600 U	2500 U
2,6-Dinitrotoluene	860 U	470 U	560 U	3700 U	1600 U	2500 U
3-Nitroaniline	2100 U	1100 U	1400 U	8900 U	3800 U	6100 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD03-02	BGWPSD04-01	BGWPSD04-02	BGPLSD03-01	BGPLSD03-02	BGPLSD04-01
Date sampled	08/02/94	08/03/94	08/03/94	08/05/94	08/05/94	08/04/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Acenaphthene	860 U	470 U	560 U	3700 U	1600 U	2500 U
2,4-Dinitrophenol	2100 U	1100 U	1400 U	8900 U	3800 U	6100 U
4-Nitrophenol	2100 U	1100 U	1400 U	8900 U	3800 U	6100 U
Dibenzofuran	860 U	470 U	560 U	3700 U	1600 U	2500 U
2,4-Dinitrotoluene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Diethylphthalate	860 U	470 U	560 U	3700 U	1600 U	2500 U
4-Chlorophenyl-phenylether	860 U	470 U	560 U	3700 U	1600 U	2500 U
Fluorene	860 U	470 U	560 U	3700 U	1600 U	2500 U
4-Nitroaniline	2100 U	1100 U	1400 U	8900 U	3800 U	6100 U
4,6-Dinitro-2-methylphenol	2100 U	1100 U	1400 U	8900 U	3800 U	6100 U
N-Nitrosodiphenylamine	860 U	470 U	560 U	3700 U	1600 U	2500 U
4-Bromophenyl-phenylether	860 U	470 U	560 U	3700 U	1600 U	2500 U
Hexachlorobenzene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Pentachlorophenol	2100 U	1100 U	1400 U	8900 U	3800 U	6100 U
Phenanthrene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Anthracene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Carbazole	860 U	470 U	560 U	3700 U	1600 U	2500 U
di-n-Butylphthalate	860 U	470 U	560 U	3700 U	1600 U	2500 U
Fluoranthene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Pyrene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Butylbenzylphthalate	860 U	470 U	560 U	3700 U	1600 U	2500 U
3,3'-Dichlorobenzidine	860 U	470 U	560 U	3700 U	1600 U	2500 U
Benzo(a)anthracene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Chrysene	860 U	470 U	560 U	3700 U	1600 U	2500 U
Bis(2-ethylhexyl)phthalate	860 U	470 U	560 U	3700 U	1600 U	2500 U
di-n-Octylphthalate	860 UJ	470 UJ	560 U	3700 U	1600 U	2500 U
Benzo(b)fluoranthene	860 UJ	470 UJ	560 U	3700 U	1600 U	2500 U
Benzo(k)fluoranthene	860 UJ	470 UJ	560 U	3700 U	1600 U	2500 U
Benzo(a)pyrene	860 UJ	470 UJ	560 U	3700 U	1600 U	2500 U
Indeno(1,2,3-cd)pyrene	860 UJ	470 UJ	560 U	3700 U	1600 U	2500 U
Dibenz(a,h)anthracene	860 UJ	470 UJ	560 U	3700 U	1600 U	2500 U
Benzo(g,h,i)perylene	860 UJ	470 UJ	560 U	3700 U	1600 U	2500 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSD04-01D	BGPLSD04-02
Date sampled	08/04/94	08/04/94
Depth	0-4"	4-8"
Units	UG/KG	UG/KG
Phenol	2200 U	1500 U
Bis(2-chloroethyl)ether	2200 U	1500 U
2-Chlorophenol	2200 U	1500 U
1,3-Dichlorobenzene	2200 U	1500 U
1,4-Dichlorobenzene	2200 U	1500 U
1,2-Dichlorobenzene	2200 U	1500 U
2-Methylphenol	2200 U	1500 U
2,2'-Oxybis(1-chloropropane)	2200 U	1500 U
4-Methylphenol	2200 U	1500 U
N-Nitroso-di-n-propylamine	2200 U	1500 U
Hexachloroethane	2200 U	1500 U
Nitrobenzene	2200 U	1500 U
Isophorone	2200 U	1500 U
2-Nitrophenol	2200 U	1500 U
2,4-Dimethylphenol	2200 U	1500 U
Bis(2-chloroethoxy)methane	2200 U	1500 U
2,4-Dichlorophenol	2200 U	1500 U
1,2,4-Trichlorobenzene	2200 U	1500 U
Naphthalene	2200 U	1500 U
4-Chloroaniline	2200 U	1500 U
Hexachlorobutadiene	2200 U	1500 U
4-Chloro-3-methylphenol	2200 U	1500 U
2-Methylnaphthalene	2200 U	1500 U
Hexachlorocyclopentadie	2200 U	1500 U
2,4,6-Trichlorophenol	2200 U	1500 U
2,4,5-Trichlorophenol	5300 U	3600 U
2-Chloronaphthalene	2200 U	1500 U
2-Nitroaniline	5300 U	3600 U
Dimethylphthalate	2200 U	1500 U
Acenaphthylene	2200 U	1500 U
2,6-Dinitrotoluene	2200 U	1500 U
3-Nitroaniline	5300 U	3600 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSD04-01D	BGPLSD04-02
Date sampled	08/04/94	08/04/94
Depth	0-4"	4-8"
Units	UG/KG	UG/KG
Acenaphthene	2200 U	1500 U
2,4-Dinitrophenol	5300 U	3600 U
4-Nitrophenol	5300 U	3600 U
Dibenzofuran	2200 U	1500 U
2,4-Dinitrotoluene	2200 U	1500 U
Diethylphthalate	2200 U	1500 U
4-Chlorophenyl-phenylether	2200 U	1500 U
Fluorene	2200 U	1500 U
4-Nitroaniline	5300 U	3600 U
4,6-Dinitro-2-methylphenol	5300 U	3600 U
N-Nitrosodiphenylamine	2200 U	1500 U
4-Bromophenyl-phenylether	2200 U	1500 U
Hexachlorobenzene	2200 U	1500 U
Pentachlorophenol	5300 U	3600 U
Phenanthrene	2200 U	1500 U
Anthracene	2200 U	1500 U
Carbazole	2200 U	1500 U
di-n-Butylphthalate	2200 U	1500 U
Fluoranthene	2200 U	1500 U
Pyrene	2200 U	1500 U
Butylbenzylphthalate	2200 U	1500 U
3,3'-Dichlorobenzidine	2200 U	1500 U
Benzo(a)anthracene	2200 U	1500 U
Chrysene	2200 U	1500 U
Bis(2-ethylhexyl)phthalate	870 J	450 J
di-n-Octylphthalate	2200 U	1500 U
Benzo(b)fluoranthene	2200 U	1500 U
Benzo(k)fluoranthene	2200 U	1500 U
Benzo(a)pyrene	2200 U	1500 U
Indeno(1,2,3-cd)pyrene	2200 U	1500 U
Dibenz(a,h)anthracene	2200 U	1500 U
Benzo(g,h,i)perylene	2200 U	1500 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	470 U	3700 U	ND	ND		0/14
Bis(2-chloroethyl)ether	470 U	3700 U	ND	ND		0/14
2-Chlorophenol	470 U	3700 U	ND	ND		0/14
1,3-Dichlorobenzene	470 U	3700 U	ND	ND		0/14
1,4-Dichlorobenzene	470 U	3700 U	ND	ND		0/14
1,2-Dichlorobenzene	470 U	3700 U	ND	ND		0/14
2-Methylphenol	470 U	3700 U	ND	ND		0/14
2,2'-Oxybis(1-chloropropane)	470 U	3700 U	ND	ND		0/14
4-Methylphenol	470 U	3700 U	ND	ND		0/14
N-Nitroso-di-n-propylamine	470 U	3700 U	ND	ND		0/14
Hexachloroethane	470 U	3700 U	ND	ND		0/14
Nitrobenzene	470 U	3700 U	ND	ND		0/14
Isophorone	470 U	3700 U	ND	ND		0/14
2-Nitrophenol	470 U	3700 U	ND	ND		0/14
2,4-Dimethylphenol	470 U	3700 U	ND	ND		0/14
Bis(2-chloroethoxy)methane	470 U	3700 U	ND	ND		0/14
2,4-Dichlorophenol	470 U	3700 U	ND	ND		0/14
1,2,4-Trichlorobenzene	470 U	3700 U	ND	ND		0/14
Naphthalene	470 U	3700 U	ND	ND		0/14
4-Chloroaniline	470 U	3700 U	ND	ND		0/14
Hexachlorobutadiene	470 U	3700 U	ND	ND		0/14
4-Chloro-3-methylphenol	470 U	3700 U	ND	ND		0/14
2-Methylnaphthalene	470 U	3700 U	ND	ND		0/14
Hexachlorocyclopentadie	470 U	3700 U	ND	ND		0/14
2,4,6-Trichlorophenol	470 U	3700 U	ND	ND		0/14
2,4,5-Trichlorophenol	1100 U	8900 U	ND	ND		0/14
2-Chloronaphthalene	470 U	3700 U	ND	ND		0/14
2-Nitroaniline	1100 U	8900 U	ND	ND		0/14
Dimethylphthalate	470 U	3700 U	ND	ND		0/14
Acenaphthylene	470 U	3700 U	ND	ND		0/14
2,6-Dinitrotoluene	470 U	3700 U	ND	ND		0/14
3-Nitroaniline	1100 U	8900 U	ND	ND		0/14

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Acenaphthene	470 U	3700 U	ND	ND		0/14
2,4-Dinitrophenol	1100 U	8900 U	ND	ND		0/14
4-Nitrophenol	1100 U	8900 U	ND	ND		0/14
Dibenzofuran	470 U	3700 U	ND	ND		0/14
2,4-Dinitrotoluene	470 U	3700 U	ND	ND		0/14
Diethylphthalate	470 U	3700 U	ND	ND		0/14
4-Chlorophenyl-phenylether	470 U	3700 U	ND	ND		0/14
Fluorene	470 U	3700 U	ND	ND		0/14
4-Nitroaniline	1100 U	8900 U	ND	ND		0/14
4,6-Dinitro-2-methylphenol	1100 U	8900 U	ND	ND		0/14
N-Nitrosodiphenylamine	470 U	3700 U	ND	ND		0/14
4-Bromophenyl-phenylether	470 U	3700 U	ND	ND		0/14
Hexachlorobenzene	470 U	3700 U	ND	ND		0/14
Pentachlorophenol	1100 U	8900 U	ND	ND		0/14
Phenanthrene	470 U	3700 U	ND	ND		0/14
Anthracene	470 U	3700 U	ND	ND		0/14
Carbazole	470 U	3700 U	ND	ND		0/14
di-n-Butylphthalate	470 U	3700 U	ND	ND		0/14
Fluoranthene	470 U	3700 U	ND	ND		0/14
Pyrene	470 U	3700 U	ND	ND		0/14
Butylbenzylphthalate	470 U	3700 U	ND	ND		0/14
3,3'-Dichlorobenzidine	470 U	3700 U	ND	ND		0/14
Benzo(a)anthracene	470 U	3700 U	ND	ND		0/14
Chrysene	470 U	3700 U	ND	ND		0/14
Bis(2-ethylhexyl)phthalate	470 U	3700 U	450 J	870 J	BGPLSD04-01D	2/14
di-n-Octylphthalate	470 UJ	3700 U	ND	ND		0/14
Benzo(b)fluoranthene	470 UJ	3700 U	ND	ND		0/14
Benzo(k)fluoranthene	470 UJ	3700 U	ND	ND		0/14
Benzo(a)pyrene	470 UJ	3700 U	ND	ND		0/14
Indeno(1,2,3-cd)pyrene	470 UJ	3700 U	ND	ND		0/14
Dibenz(a,h)anthracene	470 UJ	3700 U	ND	ND		0/14
Benzo(g,h,i)perylene	470 UJ	3700 U	ND	ND		0/14

TABLE 14
STATISTICAL SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	778.21	424.03	978.91	6.52	0.56	1117.53
Bis(2-chloroethyl)ether	778.21	424.03	978.91	6.52	0.56	1117.53
2-Chlorophenol	778.21	424.03	978.91	6.52	0.56	1117.53
1,3-Dichlorobenzene	778.21	424.03	978.91	6.52	0.56	1117.53
1,4-Dichlorobenzene	778.21	424.03	978.91	6.52	0.56	1117.53
1,2-Dichlorobenzene	778.21	424.03	978.91	6.52	0.56	1117.53
2-Methylphenol	778.21	424.03	978.91	6.52	0.56	1117.53
2,2'-Oxybis(1-chloropropane)	778.21	424.03	978.91	6.52	0.56	1117.53
4-Methylphenol	778.21	424.03	978.91	6.52	0.56	1117.53
N-Nitroso-di-n-propylamine	778.21	424.03	978.91	6.52	0.56	1117.53
Hexachloroethane	778.21	424.03	978.91	6.52	0.56	1117.53
Nitrobenzene	778.21	424.03	978.91	6.52	0.56	1117.53
Isophorone	778.21	424.03	978.91	6.52	0.56	1117.53
2-Nitrophenol	778.21	424.03	978.91	6.52	0.56	1117.53
2,4-Dimethylphenol	778.21	424.03	978.91	6.52	0.56	1117.53
Bis(2-chloroethoxy)methane	778.21	424.03	978.91	6.52	0.56	1117.53
2,4-Dichlorophenol	778.21	424.03	978.91	6.52	0.56	1117.53
1,2,4-Trichlorobenzene	778.21	424.03	978.91	6.52	0.56	1117.53
Naphthalene	778.21	424.03	978.91	6.52	0.56	1117.53
4-Chloroaniline	778.21	424.03	978.91	6.52	0.56	1117.53
Hexachlorobutadiene	778.21	424.03	978.91	6.52	0.56	1117.53
4-Chloro-3-methylphenol	778.21	424.03	978.91	6.52	0.56	1117.53
2-Methylnaphthalene	778.21	424.03	978.91	6.52	0.56	1117.53
Hexachlorocyclopentadie	778.21	424.03	978.91	6.52	0.56	1117.53
2,4,6-Trichlorophenol	778.21	424.03	978.91	6.52	0.56	1117.53
2,4,5-Trichlorophenol	1896.43	1019.14	2378.81	7.41	0.56	2725.87
2-Chloronaphthalene	778.21	424.03	978.91	6.52	0.56	1117.53
2-Nitroaniline	1896.43	1019.14	2378.81	7.41	0.56	2725.87
Dimethylphthalate	778.21	424.03	978.91	6.52	0.56	1117.53
Acenaphthylene	778.21	424.03	978.91	6.52	0.56	1117.53
2,6-Dinitrotoluene	778.21	424.03	978.91	6.52	0.56	1117.53
3-Nitroaniline	1896.43	1019.14	2378.81	7.41	0.56	2725.87

TABLE 14
STATISTICAL SUMMARY
FRESHWATER PONDS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Acenaphthene	778.21	424.03	978.91	6.52	0.56	1117.53
2,4-Dinitrophenol	1896.43	1019.14	2378.81	7.41	0.56	2725.87
4-Nitrophenol	1896.43	1019.14	2378.81	7.41	0.56	2725.87
Dibenzofuran	778.21	424.03	978.91	6.52	0.56	1117.53
2,4-Dinitrotoluene	778.21	424.03	978.91	6.52	0.56	1117.53
Diethylphthalate	778.21	424.03	978.91	6.52	0.56	1117.53
4-Chlorophenyl-phenylether	778.21	424.03	978.91	6.52	0.56	1117.53
Fluorene	778.21	424.03	978.91	6.52	0.56	1117.53
4-Nitroaniline	1896.43	1019.14	2378.81	7.41	0.56	2725.87
4,6-Dinitro-2-methylphenol	1896.43	1019.14	2378.81	7.41	0.56	2725.87
N-Nitrosodiphenylamine	778.21	424.03	978.91	6.52	0.56	1117.53
4-Bromophenyl-phenylether	778.21	424.03	978.91	6.52	0.56	1117.53
Hexachlorobenzene	778.21	424.03	978.91	6.52	0.56	1117.53
Pentachlorophenol	1896.43	1019.14	2378.81	7.41	0.56	2725.87
Phenanthrene	778.21	424.03	978.91	6.52	0.56	1117.53
Anthracene	778.21	424.03	978.91	6.52	0.56	1117.53
Carbazole	778.21	424.03	978.91	6.52	0.56	1117.53
di-n-Butylphthalate	778.21	424.03	978.91	6.52	0.56	1117.53
Fluoranthene	778.21	424.03	978.91	6.52	0.56	1117.53
Pyrene	778.21	424.03	978.91	6.52	0.56	1117.53
Butylbenzylphthalate	778.21	424.03	978.91	6.52	0.56	1117.53
3,3'-Dichlorobenzidine	778.21	424.03	978.91	6.52	0.56	1117.53
Benzo(a)anthracene	778.21	424.03	978.91	6.52	0.56	1117.53
Chrysene	778.21	424.03	978.91	6.52	0.56	1117.53
Bis(2-ethylhexyl)phthalate	740.36	423.28	940.70	6.47	0.56	1055.02
di-n-Octylphthalate	778.21	424.03	978.91	6.52	0.56	1117.53
Benzo(b)fluoranthene	778.21	424.03	978.91	6.52	0.56	1117.53
Benzo(k)fluoranthene	778.21	424.03	978.91	6.52	0.56	1117.53
Benzo(a)pyrene	778.21	424.03	978.91	6.52	0.56	1117.53
Indeno(1,2,3-cd)pyrene	778.21	424.03	978.91	6.52	0.56	1117.53
Dibenz(a,h)anthracene	778.21	424.03	978.91	6.52	0.56	1117.53
Benzo(g,h,i)perylene	778.21	424.03	978.91	6.52	0.56	1117.53

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD01-01	BGWPSD01-02	BGWPSD02-01	BGWPSD02-02	BGWPSD03-01	BGWPSD03-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
beta-BHC	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
delta-BHC	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
gamma-BHC (Lindane)	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
Heptachlor	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
Aldrin	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
Heptachlor Epoxide	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
Endosulfan I	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
Dieldrin	14.0 U	13.0 U	21.0 U	10.0 U	17.0 U	12.0 U
4,4'-DDE	14.0 U	13.0 U	21.0 U	10.0 U	17.0 U	12.0 U
Endrin	14.0 U	13.0 U	21.0 U	10.0 U	17.0 U	12.0 U
Endosulfan II	14.0 U	13.0 U	21.0 U	10.0 U	17.0 U	12.0 U
4,4'-DDD	14.0 U	13.0 U	21.0 U	10.0 U	17.0 U	12.0 U
Endosulfan Sulfate	14.0 U	13.0 U	21.0 U	10.0 U	17.0 U	12.0 U
4,4'-DDT	14.0 U	13.0 U	21.0 U	10.0 U	17.0 U	12.0 U
Methoxychlor	72.0 U	64.0 U	100.0 U	52.0 U	83.0 U	60.0 U
Endrin Ketone	14.0 U	13.0 U	21.0 U	10.0 U	17.0 U	12.0 U
Endrin Aldehyde	14.0 U	13.0 U	21.0 U	10.0 U	17.0 U	12.0 U
alpha-Chlordane	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
gamma-Chlordane	7.2 U	6.4 U	10.0 U	5.2 U	8.3 U	6.0 U
Toxaphene	720.0 U	640.0 U	1000.0 U	520.0 U	830.0 U	600.0 U
Aroclor-1016	140.0 U	130.0 U	210.0 U	100.0 U	170.0 U	120.0 U
Aroclor-1221	290.0 U	250.0 U	410.0 U	210.0 U	330.0 U	240.0 U
Aroclor-1232	140.0 U	130.0 U	210.0 U	100.0 U	170.0 U	120.0 U
Aroclor-1242	140.0 U	130.0 U	210.0 U	100.0 U	170.0 U	120.0 U
Aroclor-1248	140.0 U	130.0 U	210.0 U	100.0 U	170.0 U	120.0 U
Aroclor-1254	140.0 U	130.0 U	210.0 U	100.0 U	170.0 U	120.0 U
Aroclor-1260	140.0 U	130.0 U	210.0 U	100.0 U	170.0 U	120.0 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD03-02	BGWPSD04-01	BGWPSD04-02	BGPLSD03-01	BGPLSD03-02	BGPLSD04-01
Date sampled	08/02/94	08/03/94	08/03/94	08/05/94	08/05/94	08/04/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
beta-BHC	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
delta-BHC	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
gamma-BHC (Lindane)	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
Heptachlor	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
Aldrin	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
Heptachlor Epoxide	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
Endosulfan I	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
Dieldrin	8.8 U	23.0 U	5.7 U	37.0 U	16.0 U	26.0 U
4,4'-DDE	8.8 U	23.0 U	7.1	37.0 U	16.0 U	50.0
Endrin	8.8 U	23.0 U	5.7 U	37.0 U	16.0 U	26.0 U
Endosulfan II	8.8 U	23.0 U	5.7 U	37.0 U	16.0 U	26.0 U
4,4'-DDD	8.8 U	23.0 U	5.7 U	37.0 U	16.0 U	26.0 U
Endosulfan Sulfate	8.8 U	23.0 U	5.7 U	37.0 U	16.0 U	26.0 U
4,4'-DDT	8.8 U	23.0 U	5.7 U	37.0 U	16.0 U	26.0 U
Methoxychlor	44.0 U	120.0 U	29.0 U	180.0 U	79.0 U	130.0 U
Endrin Ketone	8.8 U	23.0 U	5.7 U	37.0 U	16.0 U	26.0 U
Endrin Aldehyde	8.8 U	23.0 U	5.7 U	37.0 U	16.0 U	26.0 U
alpha-Chlordane	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
gamma-Chlordane	4.4 U	12.0 U	2.9 U	18.0 U	7.9 U	13.0 U
Toxaphene	440.0 U	1200.0 U	290.0 U	1800.0 U	790.0 U	1300.0 U
Aroclor-1016	88.0 U	230.0 U	57.0 U	370.0 U	160.0 U	260.0 U
Aroclor-1221	180.0 U	470.0 U	110.0 U	730.0 U	320.0 U	510.0 U
Aroclor-1232	88.0 U	230.0 U	57.0 U	370.0 U	160.0 U	260.0 U
Aroclor-1242	88.0 U	230.0 U	57.0 U	370.0 U	160.0 U	260.0 U
Aroclor-1248	88.0 U	230.0 U	57.0 U	370.0 U	160.0 U	260.0 U
Aroclor-1254	88.0 U	230.0 U	57.0 U	370.0 U	160.0 U	260.0 U
Aroclor-1260	88.0 U	230.0 U	57.0 U	370.0 U	160.0 U	260.0 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSD04-01D		BGPLSD04-02	
Date sampled	08/04/94		08/04/94	
Depth	4-8"		4-8"	
Units	UG/KG		UG/KG	
alpha-BHC	11.0	U	7.5	U
beta-BHC	11.0	U	7.5	U
delta-BHC	11.0	U	7.5	U
gamma-BHC (Lindane)	11.0	U	7.5	U
Heptachlor	11.0	U	7.5	U
Aldrin	11.0	U	7.5	U
Heptachlor Epoxide	11.0	U	7.5	U
Endosulfan I	11.0	U	7.5	U
Dieldrin	22.0	U	15.0	U
4,4'-DDE	61.0		44.0	
Endrin	22.0	U	15.0	U
Endosulfan II	22.0	U	15.0	U
4,4'-DDD	22.0	U	15.0	U
Endosulfan Sulfate	22.0	U	15.0	U
4,4'-DDT	22.0	U	15.0	U
Methoxychlor	110.0	U	75.0	U
Endrin Ketone	22.0	U	15.0	U
Endrin Aldehyde	22.0	U	15.0	U
alpha-Chlordane	11.0	U	7.5	U
gamma-Chlordane	11.0	U	7.5	U
Toxaphene	1100.0	U	750.0	U
Aroclor-1016	220.0	U	150.0	U
Aroclor-1221	440.0	U	300.0	U
Aroclor-1232	220.0	U	150.0	U
Aroclor-1242	220.0	U	150.0	U
Aroclor-1248	220.0	U	150.0	U
Aroclor-1254	220.0	U	150.0	U
Aroclor-1260	220.0	U	150.0	U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	2.9 U	18 U	ND	ND		0/14
beta-BHC	2.9 U	18 U	ND	ND		0/14
delta-BHC	2.9 U	18 U	ND	ND		0/14
gamma-BHC (Lindane)	2.9 U	18 U	ND	ND		0/14
Heptachlor	2.9 U	18 U	ND	ND		0/14
Aldrin	2.9 U	18 U	ND	ND		0/14
Heptachlor Epoxide	2.9 U	18 U	ND	ND		0/14
Endosulfan I	2.9 U	18 U	ND	ND		0/14
Dieldrin	5.7 U	37 U	ND	ND		0/14
4,4'-DDE	8.8 U	37 U	7.1	61	BGPLSD04-01D	4/14
Endrin	5.7 U	37 U	ND	ND		0/14
Endosulfan II	5.7 U	37 U	ND	ND		0/14
4,4'-DDD	5.7 U	37 U	ND	ND		0/14
Endosulfan Sulfate	5.7 U	37 U	ND	ND		0/14
4,4'-DDT	5.7 U	37 U	ND	ND		0/14
Methoxychlor	29 U	180 U	ND	ND		0/14
Endrin Ketone	5.7 U	37 U	ND	ND		0/14
Endrin Aldehyde	5.7 U	37 U	ND	ND		0/14
alpha-Chlordane	2.9 U	18 U	ND	ND		0/14
gamma-Chlordane	2.9 U	18 U	ND	ND		0/14
Toxaphene	290 U	1800 U	ND	ND		0/14
Aroclor-1016	57 U	370 U	ND	ND		0/14
Aroclor-1221	110 U	730 U	ND	ND		0/14
Aroclor-1232	57 U	370 U	ND	ND		0/14
Aroclor-1242	57 U	370 U	ND	ND		0/14
Aroclor-1248	57 U	370 U	ND	ND		0/14
Aroclor-1254	57 U	370 U	ND	ND		0/14
Aroclor-1260	57 U	370 U	ND	ND		0/14

TABLE 14
STATISTICAL SUMMARY
FRESHWATER PONDS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	4.28	1.98	5.22	1.35	0.47	5.70
beta-BHC	4.28	1.98	5.22	1.35	0.47	5.70
delta-BHC	4.28	1.98	5.22	1.35	0.47	5.70
gamma-BHC (Lindane)	4.28	1.98	5.22	1.35	0.47	5.70
Heptachlor	4.28	1.98	5.22	1.35	0.47	5.70
Aldrin	4.28	1.98	5.22	1.35	0.47	5.70
Heptachlor Epoxide	4.28	1.98	5.22	1.35	0.47	5.70
Endosulfan I	4.28	1.98	5.22	1.35	0.47	5.70
Dieldrin	8.59	4.06	10.51	2.05	0.48	11.51
4,4'-DDE	17.71	19.03	26.72	2.46	0.88	32.67
Endrin	8.59	4.06	10.51	2.05	0.48	11.51
Endosulfan II	8.59	4.06	10.51	2.05	0.48	11.51
4,4'-DDD	8.59	4.06	10.51	2.05	0.48	11.51
Endosulfan Sulfate	8.59	4.06	10.51	2.05	0.48	11.51
4,4'-DDT	8.59	4.06	10.51	2.05	0.48	11.51
Methoxychlor	42.79	19.81	52.16	3.66	0.47	57.01
Endrin Ketone	8.59	4.06	10.51	2.05	0.48	11.51
Endrin Aldehyde	8.59	4.06	10.51	2.05	0.48	11.51
alpha-Chlordane	4.28	1.98	5.22	1.35	0.47	5.70
gamma-Chlordane	4.28	1.98	5.22	1.35	0.47	5.70
Toxaphene	427.86	198.07	521.61	5.96	0.47	570.13
Aroclor-1016	85.89	40.58	105.10	4.35	0.48	115.10
Aroclor-1221	171.07	79.76	208.83	5.04	0.48	229.11
Aroclor-1232	85.89	40.58	105.10	4.35	0.48	115.10
Aroclor-1242	85.89	40.58	105.10	4.35	0.48	115.10
Aroclor-1248	85.89	40.58	105.10	4.35	0.48	115.10
Aroclor-1254	85.89	40.58	105.10	4.35	0.48	115.10
Aroclor-1260	85.89	40.58	105.10	4.35	0.48	115.10

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD01-01	BGWPSD01-02	BGWPSD02-01	BGWPSD02-02	BGWPSD03-01	BGWPSD03-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD03-02	BGWPSD04-01	BGWPSD04-02	BGPLSD03-01	BGPLSD03-02	BGPLSD04-01
Date sampled	08/02/94	08/03/94	08/03/94	08/05/94	08/05/94	08/04/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSD04-01D	BGPLSD04-02
Date sampled	08/04/94	08/04/94
Depth	0-4"	4-8"
Units	MG/KG	MG/KG
HMX	0.5 U	0.5 U
RDX	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.5 U	0.5 U	ND	ND		0/14
RDX	0.59 U	0.59 U	ND	ND		0/14
1,3,5-Trinitrobenzene	0.56 U	0.56 U	ND	ND		0/14
1,3-Dinitrobenzene	0.42 U	0.42 U	ND	ND		0/14
Tetryl	1.2 U	1.2 U	ND	ND		0/14
Nitrobenzene	0.58 U	0.58 U	ND	ND		0/14
2,4,6-Trinitrotoluene	0.44 U	0.44 U	ND	ND		0/14
4-Amino-2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/14
2-Amino-Dinitrotoluene	1 U	1 U	ND	ND		0/14
2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/14
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/14
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	ND	ND		0/14
2-Nitrotoluene	0.45 U	0.45 U	ND	ND		0/14
4-Nitrotoluene	0.69 U	0.69 U	ND	ND		0/14
3-Nitrotoluene	1.2 U	1.2 U	ND	ND		0/14

TABLE 14
STATISTICAL SUMMARY
FRESHWATER PONDS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.25	0.00	0.25	-1.39	0.00	0.25
RDX	0.30	0.00	0.30	-1.22	0.00	0.30
1,3,5-Trinitrobenzene	0.28	0.00	0.28	-1.27	0.00	0.28
1,3-Dinitrobenzene	0.21	0.00	0.21	-1.56	0.00	0.21
Tetryl	0.60	0.00	0.60	-0.51	0.00	0.60
Nitrobenzene	0.29	0.00	0.29	-1.24	0.00	0.29
2,4,6-Trinitrotoluene	0.22	0.00	0.22	-1.51	0.00	0.22
4-Amino-2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2-Amino-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
Dinitrotoluene (isomeric mixture)	0.41	0.00	0.41	-0.89	0.00	0.41
2-Nitrotoluene	0.23	0.00	0.23	-1.49	0.00	0.23
4-Nitrotoluene	0.35	0.00	0.35	-1.06	0.00	0.35
3-Nitrotoluene	0.60	0.00	0.60	-0.51	0.00	0.60

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD01-01	BGWPSD01-02	BGWPSD02-01	BGWPSD02-02	BGWPSD03-01	BGWPSD03-01D
Date sampled	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94	08/02/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	26100	17400	42300	20500	25600	19300
Antimony	39.6 UL	26.8 UL	50 UL	23.1 UL	46.8 UL	32.7 UL
Arsenic	20	9.9	12.6 J	9.7	12.2 J	9.4
Barium	99.9 J	51.4 J	148 J	69.9 J	159 J	98.9 J
Beryllium	1.3 J	0.93 J	1.6 J	0.9 J	1.3 U	0.88 J
Cadmium	5.3 U	3.6 U	6.8 U	3.1 U	6.3 U	4.4 U
Calcium	7830	5300	8410	4460	6510	5430
Chromium	52.7	35.2	63.4	32.8	50.6	35.1
Cobalt	7.5 J	7.6 J	12.8 J	5.9 J	5.1 U	4.4 J
Copper	20.2 J	12.6 J	18.7 J	6.6 J	14.4 J	7.5 J
Iron	37200	22800	49900	17000	41200	23600
Lead	42.5	21.2	32.3	16.1	36.9	27
Magnesium	3820 J	3550 J	4540 J	2650 J	2230 J	1680 J
Manganese	194	144	237	76.3	145	85.4
Mercury	0.32 J	0.16 U	0.32 U	0.16 U	0.32 U	0.23 U
Nickel	35 J	17 J	37.7 J	10.5 J	26.1 J	16.1 J
Potassium	4780 J	2380 J	4250 J	1400 J	3060 J	1470 J
Selenium	1.1 UL	0.71 UL	1.3 UL	0.62 UL	1.3 UL	0.9 UL
Silver	4.3 R	2.9 R	5.4 R	2.5 R	5.1 R	3.5 R
Sodium	376 J	276 J	388 J	268 J	386 J	463 J
Thallium	1.1 U	0.71 U	1.3 U	0.62 U	1.3 U	0.9 U
Vanadium	59.2	39.3	84.3	39	64.8	45.3
Zinc	96.4	69.8	113	39.2	61	47.2
Cyanide	2.7 U	1.8 U	3.4 U	1.5 U	3.2 U	2.2 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGWPSD03-02	BGWPSD04-01	BGWPSD04-02	BGPLSD03-01	BGPLSD03-02	BGPLSD04-01
Date sampled	08/02/94	08/03/94	08/03/94	08/05/94	08/05/94	08/04/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	19000	21400	4920	18100	28200	18400
Antimony	17.6 UL	47.7 UL	11.4 UL	59.1 R	32.5 R	57.7 R
Arsenic	6.4	14.6	2.5 J	23.5	39.7	19
Barium	99.1	87 J	24.7 J	76.1 J	68.2 J	80 J
Beryllium	0.93 J	1.3 U	0.31 U	1.6 U	1.1 J	1.6 U
Cadmium	2.4 U	6.5 U	1.5 U	8 UL	4.4 UL	7.8 UL
Calcium	3630	5750 J	1150 J	3950 J	4640	3650 J
Chromium	29.2	39.1	9	36.8	46.7	35
Cobalt	3.8 J	6.4 J	1.8 J	9.8 J	12.3 J	10.9 J
Copper	5.9 J	9.3 J	2 J	28.7 J	18.7 J	55.7
Iron	25600	24900	6860	22100	32000	19200
Lead	23	41.3	7.4	41.5	27.1	62
Magnesium	1460 J	1370 J	422 J	2490 J	4730	1790 J
Manganese	65.4	75.9	33.1	99.2	141	70
Mercury	0.12 U	0.29 U	0.08 U	0.4 UL	0.22 UL	0.37 UL
Nickel	20.2	28 J	4.9 U	25.6 U	29.8 J	24.9 U
Potassium	1410 J	2030 U	484 U	2500 U	3960 J	2440 U
Selenium	0.48 UL	1.3 UL	0.31 UL	1.6 L	1.3 L	2.4 L
Silver	1.9 R	5.2 R	1.2 R	6.4 U	3.5 U	6.2 U
Sodium	190 J	165 J	39.4 J	882 J	1330 J	241 J
Thallium	0.48 U	1.3 U	0.31 U	1.6 U	0.87 U	1.6 U
Vanadium	41.6	45.9 J	10.2 J	48.9 J	57.9	54.3 J
Zinc	41.4	56.8	13.6	105	74.9	156
Cyanide	1.2 U	3.2 U	0.78 U	4 U	2.2 U	3.9 U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGPLSD04-01D		BGPLSD04-02	
Date sampled	08/04/94		08/04/94	
Depth	0-4"		4-8"	
Units	MG/KG		MG/KG	
Aluminum	17300		29000	
Antimony	41.9	R	18.5	R
Arsenic	20.6		11.7	
Barium	69.6	J	98.4	J
Beryllium	1.1	U	0.94	J
Cadmium	5.7	UL	2.5	UL
Calcium	3220		2780	
Chromium	30.4		35.5	
Cobalt	4.9	J	5.7	J
Copper	40.1		11	J
Iron	15800		15900	
Lead	39.1		27.9	
Magnesium	1600	J	2220	J
Manganese	54.8		60.5	
Mercury	0.27	UL	0.12	UL
Nickel	18.1	U	18	J
Potassium	2420	J	2370	J
Selenium	1.5	L	0.88	L
Silver	4.5	U	2	U
Sodium	267	J	200	J
Thallium	1.1	U	0.49	U
Vanadium	41.4	J	52.2	
Zinc	118		82.2	
Cyanide	2.8	U	1.2	U

TABLE 14
FREQUENCY OF DETECTION SUMMARY
FRESHWATER PONDS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	4920	42300	BGWPSD02-01	14/14
Antimony	11.4 UL	50 UL	ND	ND		0/9
Arsenic	NA	NA	2.5 J	39.7	BGPLSD03-02	14/14
Barium	NA	NA	24.7 J	159 J	BGWPSD03-01	14/14
Beryllium	0.31 U	1.6 U	0.88 J	1.6 J	BGWPSD02-01	8/14
Cadmium	1.5 U	8 UL	ND	ND		0/14
Calcium	NA	NA	1150 J	8410	BGWPSD02-01	14/14
Chromium	NA	NA	9	63.4	BGWPSD02-01	14/14
Cobalt	5.1 U	5.1 U	1.8 J	12.8 J	BGWPSD02-01	13/14
Copper	NA	NA	2 J	55.7	BGPLSD04-01	14/14
Iron	NA	NA	6860	49900	BGWPSD02-01	14/14
Lead	NA	NA	7.4	62	BGPLSD04-01	14/14
Magnesium	NA	NA	422 J	4730	BGPLSD03-02	14/14
Manganese	NA	NA	33.1	237	BGWPSD02-01	14/14
Mercury	0.08 U	0.4 UL	0.32 J	0.32 J	BGWPSD01-01	1/14
Nickel	4.9 U	25.6 U	10.5 J	37.7 J	BGWPSD02-01	10/14
Potassium	484 U	2500 U	1400 J	4780 J	BGWPSD01-01	10/14
Selenium	0.31 UL	1.3 UL	0.88 L	2.4 L	BGPLSD04-01	5/14
Silver	2 U	6.4 U	ND	ND		0/5
Sodium	NA	NA	39.4 J	1330 J	BGPLSD03-02	14/14
Thallium	0.31 U	1.6 U	ND	ND		0/14
Vanadium	NA	NA	10.2 J	84.3	BGWPSD02-01	14/14
Zinc	NA	NA	13.6	156	BGPLSD04-01	14/14
Cyanide	0.78 U	4 U	ND	ND		0/14

TABLE 14
STATISTICAL SUMMARY
FRESHWATER PONDS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	21965.71	8372.71	25928.68	9.91	0.48	29855.12
Antimony	16.43	7.02	20.78	2.70	0.51	26.30
Arsenic	15.13	9.18	19.47	2.54	0.66	24.17
Barium	87.87	34.80	104.34	4.39	0.45	116.59
Beryllium	0.87	0.34	1.03	-0.24	0.54	1.27
Cadmium	2.44	1.04	2.93	0.79	0.50	3.39
Calcium	4765.00	1963.59	5694.40	8.37	0.50	6542.71
Chromium	37.96	12.81	44.03	3.56	0.45	50.74
Cobalt	6.88	3.47	8.53	1.79	0.58	10.09
Copper	17.96	14.78	24.95	2.58	0.86	35.60
Iron	25290.00	11397.85	30684.83	10.04	0.49	34328.33
Lead	31.81	13.54	38.21	3.35	0.52	45.07
Magnesium	2468.00	1264.97	3066.74	7.66	0.62	3859.96
Manganese	105.83	58.38	133.46	4.53	0.54	149.14
Mercury	0.13	0.07	0.17	-2.16	0.56	0.19
Nickel	19.65	10.34	24.55	2.80	0.71	34.34
Potassium	2230.50	1349.95	2869.46	7.49	0.77	4088.41
Selenium	0.84	0.64	1.14	-0.45	0.78	1.48
Silver	2.26	0.93	3.14	0.73	0.48	4.73
Sodium	390.81	333.52	548.68	5.68	0.82	746.20
Thallium	0.49	0.21	0.59	-0.82	0.50	0.67
Vanadium	48.88	16.53	56.70	3.81	0.48	66.85
Zinc	76.75	37.96	94.72	4.20	0.62	119.69
Cyanide	1.22	0.52	1.46	0.09	0.50	1.69

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD01-01	BGCPSD01-02	BGCPSD02-01	BGCPSD02-02	BGCPSD03-01	BGCPSD03-01D
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	22 J	16 U	13 U	13 U	14 U	13 U
Bromomethane	22 U	16 U	13 U	13 U	14 U	13 U
Vinyl chloride	22 U	16 U	13 U	13 U	14 U	13 U
Chloroethane	22 U	16 U	13 U	13 U	14 U	13 U
Methylene chloride	22 U	16 U	13 U	13 U	35 B	15 J
Acetone	130 J	35 J	13 U	13 U	64 B	13 U
Carbon disulfide	22 U	16 U	13 U	13 U	14 U	13 U
1,1-Dichloroethene	22 U	16 U	13 U	13 U	14 U	13 U
1,1-Dichloroethane	22 U	16 U	13 U	13 U	14 U	13 U
Trans-1,2-dichloroethene	22 U	16 U	13 U	13 U	14 U	13 U
Cis-1,2-dichloroethene	22 U	16 U	13 U	13 U	14 U	13 U
Chloroform	22 U	16 U	13 U	13 U	14 U	13 U
1,2-Dichloroethane	22 U	16 U	13 U	13 U	14 U	13 U
2-Butanone	25 J	16 U	13 U	13 U	14 U	13 U
1,1,1-Trichloroethane	22 U	16 U	13 U	13 U	14 U	13 U
Carbon tetrachloride	22 U	16 U	13 U	13 U	14 U	13 U
Bromodichloromethane	22 U	16 U	13 U	13 U	14 U	13 U
1,2-Dichloropropane	22 U	16 U	13 U	13 U	14 U	13 U
cis-1,3-Dichloropropene	22 U	16 U	13 U	13 U	14 U	13 U
Trichloroethene	22 U	16 U	13 U	13 U	14 U	13 U
Dibromochloromethane	22 U	16 U	13 U	13 U	14 U	13 U
1,1,2-Trichloroethane	22 U	16 U	13 U	13 U	14 U	13 U
Benzene	22 U	16 U	13 U	13 U	14 U	13 U
Trans-1,3-dichloropropene	22 U	16 U	13 U	13 U	14 U	13 U
Bromoform	22 U	16 U	13 U	13 U	14 U	13 U
4-Methyl-2-pentanone	22 U	16 U	13 U	13 U	14 U	13 UJ
2-Hexanone	22 U	16 U	13 U	13 U	14 U	13 UJ
Tetrachloroethene	22 U	16 U	13 U	13 U	14 U	13 UJ
1,1,2,2-Tetrachloroethane	22 U	16 U	13 U	13 U	14 U	13 UJ
Toluene	22 U	16 U	13 U	13 U	14 U	13 UJ
Chlorobenzene	22 U	16 U	13 U	13 U	14 U	13 UJ
Ethylbenzene	22 U	16 U	13 U	13 U	14 U	13 UJ
Styrene	22 U	16 U	13 U	13 U	14 U	13 UJ
M/P xylenes	22 U	16 U	13 U	13 U	14 U	13 UJ
O xylene	22 U	16 U	13 U	13 U	14 U	13 UJ

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD03-02	BGCPSD04-01	BGCPSD04-02	BGCPSD05-01	BGCPSD05-02	BGTNSD06-01
Date sampled	08/06/94	08/07/94	08/07/94	08/07/94	08/07/94	08/20/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	12 UJ	14 U	15 U	14 U	13 U	29 U
Bromomethane	12 UJ	14 U	15 U	14 U	13 U	29 U
Vinyl chloride	12 UJ	14 U	15 U	14 U	13 U	29 U
Chloroethane	12 UJ	14 U	15 U	14 U	13 U	29 U
Methylene chloride	12 UJ	14 U	15 U	14 U	13 U	29 U
Acetone	20 B	14 U	9 J	14 U	82 J	250 J
Carbon disulfide	12 UJ	14 U	15 U	14 U	13 U	29 U
1,1-Dichloroethene	12 UJ	14 U	15 U	14 U	13 U	29 U
1,1-Dichloroethane	12 UJ	14 U	15 U	14 U	13 U	29 U
Trans-1,2-dichloroethene	12 UJ	14 U	15 U	14 U	13 U	29 U
Cis-1,2-dichloroethene	12 UJ	14 U	15 U	14 U	13 U	29 U
Chloroform	12 UJ	14 U	15 U	14 U	13 U	29 U
1,2-Dichloroethane	12 UJ	14 U	15 U	14 U	13 U	29 U
2-Butanone	12 UJ	14 U	15 U	14 U	12 J	26 J
1,1,1-Trichloroethane	12 UJ	14 U	15 U	14 U	13 U	29 U
Carbon tetrachloride	12 UJ	14 U	15 U	14 U	13 U	29 U
Bromodichloromethane	12 UJ	14 U	15 U	14 U	13 U	29 U
1,2-Dichloropropane	12 UJ	14 U	15 U	14 U	13 U	29 U
cis-1,3-Dichloropropene	12 UJ	14 U	15 U	14 U	13 U	29 U
Trichloroethene	12 UJ	14 U	15 U	14 U	13 U	17 J
Dibromochloromethane	12 UJ	14 U	15 U	14 U	13 U	29 U
1,1,2-Trichloroethane	12 UJ	14 U	15 U	14 U	13 U	29 U
Benzene	12 UJ	14 U	15 U	14 U	13 U	29 U
Trans-1,3-dichloropropene	12 UJ	14 U	15 U	14 U	13 U	29 U
Bromoform	12 UJ	14 U	15 U	14 U	13 U	29 U
4-Methyl-2-pentanone	12 UJ	14 U	15 U	14 U	13 U	29 U
2-Hexanone	12 UJ	14 U	15 U	14 U	13 U	29 U
Tetrachloroethene	12 UJ	14 U	15 U	14 U	13 U	29 U
1,1,2,2-Tetrachloroethane	12 UJ	14 U	15 U	14 U	13 U	29 U
Toluene	12 UJ	14 U	15 U	14 U	13 U	29 U
Chlorobenzene	12 UJ	14 U	15 U	14 U	13 U	29 U
Ethylbenzene	12 UJ	14 U	15 U	14 U	13 U	29 U
Styrene	12 UJ	14 U	15 U	14 U	13 U	29 U
M/P xylenes	12 UJ	14 U	15 U	14 U	13 U	29 U
O xylene	12 UJ	14 U	15 U	14 U	13 U	29 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD06-02
Date sampled	08/20/94
Depth	4-8"
Units	UG/KG
Chloromethane	13 U
Bromomethane	13 U
Vinyl chloride	13 U
Chloroethane	13 U
Methylene chloride	13 U
Acetone	13 BJ
Carbon disulfide	13 U
1,1-Dichloroethene	13 U
1,1-Dichloroethane	13 U
Trans-1,2-dichloroethene	13 U
Cis-1,2-dichloroethene	13 U
Chloroform	13 U
1,2-Dichloroethane	13 U
2-Butanone	13 U
1,1,1-Trichloroethane	13 U
Carbon tetrachloride	13 U
Bromodichloromethane	13 U
1,2-Dichloropropane	13 U
cis-1,3-Dichloropropene	13 U
Trichloroethene	8 J
Dibromochloromethane	13 U
1,1,2-Trichloroethane	13 U
Benzene	13 U
Trans-1,3-dichloropropene	13 U
Bromoform	13 U
4-Methyl-2-pentanone	13 U
2-Hexanone	13 U
Tetrachloroethene	13 U
1,1,2,2-Tetrachloroethane	13 U
Toluene	13 U
Chlorobenzene	13 U
Ethylbenzene	13 U
Styrene	13 U
M/P xylenes	13 U
O xylene	13 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	12 UJ	29 U	22 J	22 J	BGCPSD01-01	1/13
Bromomethane	12 UJ	29 U	ND	ND		0/13
Vinyl chloride	12 UJ	29 U	ND	ND		0/13
Chloroethane	12 UJ	29 U	ND	ND		0/13
Methylene chloride	12 UJ	35 B	15 J	15 J	BGCPSD03-01D	1/13
Acetone	13 U	64 B	9 J	250 J	BGTNSD06-01	5/13
Carbon disulfide	12 UJ	29 U	ND	ND		0/13
1,1-Dichloroethene	12 UJ	29 U	ND	ND		0/13
1,1-Dichloroethane	12 UJ	29 U	ND	ND		0/13
Trans-1,2-dichloroethene	12 UJ	29 U	ND	ND		0/13
Cis-1,2-dichloroethene	12 UJ	29 U	ND	ND		0/13
Chloroform	12 UJ	29 U	ND	ND		0/13
1,2-Dichloroethane	12 UJ	29 U	ND	ND		0/13
2-Butanone	12 UJ	16 U	12 J	26 J	BGTNSD06-01	3/13
1,1,1-Trichloroethane	12 UJ	29 U	ND	ND		0/13
Carbon tetrachloride	12 UJ	29 U	ND	ND		0/13
Bromodichloromethane	12 UJ	29 U	ND	ND		0/13
1,2-Dichloropropane	12 UJ	29 U	ND	ND		0/13
cis-1,3-Dichloropropene	12 UJ	29 U	ND	ND		0/13
Trichloroethene	12 UJ	22 U	8 J	17 J	BGTNSD06-01	2/13
Dibromochloromethane	12 UJ	29 U	ND	ND		0/13
1,1,2-Trichloroethane	12 UJ	29 U	ND	ND		0/13
Benzene	12 UJ	29 U	ND	ND		0/13
Trans-1,3-dichloropropene	12 UJ	29 U	ND	ND		0/13
Bromoform	12 UJ	29 U	ND	ND		0/13
4-Methyl-2-pentanone	12 UJ	29 U	ND	ND		0/13
2-Hexanone	12 UJ	29 U	ND	ND		0/13
Tetrachloroethene	12 UJ	29 U	ND	ND		0/13
1,1,2,2-Tetrachloroethane	12 UJ	29 U	ND	ND		0/13
Toluene	12 UJ	29 U	ND	ND		0/13
Chlorobenzene	12 UJ	29 U	ND	ND		0/13
Ethylbenzene	12 UJ	29 U	ND	ND		0/13
Styrene	12 UJ	29 U	ND	ND		0/13
M/P xylenes	12 UJ	29 U	ND	ND		0/13
O xylene	12 UJ	29 U	ND	ND		0/13

TABLE 15
STATISTICAL SUMMARY
FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	8.58	4.59	10.84	2.07	0.38	10.56
Bromomethane	7.73	2.39	8.91	2.01	0.25	8.86
Vinyl chloride	7.73	2.39	8.91	2.01	0.25	8.86
Chloroethane	7.73	2.39	8.91	2.01	0.25	8.86
Methylene chloride	9.19	3.95	11.14	2.15	0.38	11.42
Acetone	45.23	72.01	80.82	2.90	1.31	181.38
Carbon disulfide	7.73	2.39	8.91	2.01	0.25	8.86
1,1-Dichloroethene	7.73	2.39	8.91	2.01	0.25	8.86
1,1-Dichloroethane	7.73	2.39	8.91	2.01	0.25	8.86
Trans-1,2-dichloroethene	7.73	2.39	8.91	2.01	0.25	8.86
Cis-1,2-dichloroethene	7.73	2.39	8.91	2.01	0.25	8.86
Chloroform	7.73	2.39	8.91	2.01	0.25	8.86
1,2-Dichloroethane	7.73	2.39	8.91	2.01	0.25	8.86
2-Butanone	10.12	6.99	13.57	2.17	0.51	13.76
1,1,1-Trichloroethane	7.73	2.39	8.91	2.01	0.25	8.86
Carbon tetrachloride	7.73	2.39	8.91	2.01	0.25	8.86
Bromodichloromethane	7.73	2.39	8.91	2.01	0.25	8.86
1,2-Dichloropropane	7.73	2.39	8.91	2.01	0.25	8.86
cis-1,3-Dichloropropene	7.73	2.39	8.91	2.01	0.25	8.86
Trichloroethene	8.04	2.98	9.51	2.04	0.28	9.36
Dibromochloromethane	7.73	2.39	8.91	2.01	0.25	8.86
1,1,2-Trichloroethane	7.73	2.39	8.91	2.01	0.25	8.86
Benzene	7.73	2.39	8.91	2.01	0.25	8.86
Trans-1,3-dichloropropene	7.73	2.39	8.91	2.01	0.25	8.86
Bromoform	7.73	2.39	8.91	2.01	0.25	8.86
4-Methyl-2-pentanone	7.73	2.39	8.91	2.01	0.25	8.86
2-Hexanone	7.73	2.39	8.91	2.01	0.25	8.86
Tetrachloroethene	7.73	2.39	8.91	2.01	0.25	8.86
1,1,2,2-Tetrachloroethane	7.73	2.39	8.91	2.01	0.25	8.86
Toluene	7.73	2.39	8.91	2.01	0.25	8.86
Chlorobenzene	7.73	2.39	8.91	2.01	0.25	8.86
Ethylbenzene	7.73	2.39	8.91	2.01	0.25	8.86
Styrene	7.73	2.39	8.91	2.01	0.25	8.86
M/P xylenes	7.73	2.39	8.91	2.01	0.25	8.86
O xylene	7.73	2.39	8.91	2.01	0.25	8.86

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD01-01	BGCPSD01-02	BGCPSD02-01	BGCPSD02-02	BGCPSD03-01	BGCPSD03-01D
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	870 U	490 U	440 U	420 U	500 U	470 U
Bis(2-chloroethyl)ether	870 U	490 U	440 U	420 U	500 U	470 U
2-Chlorophenol	870 U	490 U	440 U	420 U	500 U	470 U
1,3-Dichlorobenzene	870 U	490 U	440 U	420 U	500 U	470 U
1,4-Dichlorobenzene	870 U	490 U	440 U	420 U	500 U	470 U
1,2-Dichlorobenzene	870 U	490 U	440 U	420 U	500 U	470 U
2-Methylphenol	870 U	490 U	440 U	420 U	500 U	470 U
2,2'-Oxybis(1-chloropropane)	870 U	490 U	440 U	420 U	500 U	470 U
4-Methylphenol	870 U	490 U	440 U	420 U	500 U	470 U
N-Nitroso-di-n-propylamine	870 U	490 U	440 U	420 U	500 U	470 U
Hexachloroethane	870 U	490 U	440 U	420 U	500 U	470 U
Nitrobenzene	870 U	490 U	440 U	420 U	500 U	470 U
Isophorone	870 U	490 U	440 U	420 U	500 U	470 U
2-Nitrophenol	870 U	490 U	440 U	420 U	500 U	470 U
2,4-Dimethylphenol	870 U	490 U	440 U	420 U	500 U	470 U
Bis(2-chloroethoxy)methane	870 U	490 U	440 U	420 U	500 U	470 U
2,4-Dichlorophenol	870 U	490 U	440 U	420 U	500 U	470 U
1,2,4-Trichlorobenzene	870 U	490 U	440 U	420 U	500 U	470 U
Naphthalene	870 U	490 U	440 U	420 U	500 U	470 U
4-Chloroaniline	870 U	490 U	440 U	420 U	500 U	470 U
Hexachlorobutadiene	870 U	490 U	440 U	420 U	500 U	470 U
4-Chloro-3-methylphenol	870 U	490 U	440 U	420 U	500 U	470 U
2-Methylnaphthalene	870 U	490 U	440 U	420 U	500 U	470 U
Hexachlorocyclopentadie	870 U	490 U	440 UJ	420 UJ	500 U	470 UJ
2,4,6-Trichlorophenol	870 U	490 U	440 U	420 U	500 U	470 U
2,4,5-Trichlorophenol	2100 U	1200 U	1100 U	1000 U	1200 U	1100 U
2-Chloronaphthalene	870 U	490 U	440 U	420 U	500 U	470 U
2-Nitroaniline	2100 U	1200 U	1100 U	1000 U	1200 U	1100 U
Dimethylphthalate	870 U	490 U	440 U	420 U	500 U	470 U
Acenaphthylene	870 U	490 U	440 U	420 U	500 U	470 U
2,6-Dinitrotoluene	870 U	490 U	440 U	420 U	500 U	470 U
3-Nitroaniline	2100 U	1200 U	1100 U	1000 U	1200 U	1100 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD01-01	BGCPSD01-02	BGCPSD02-01	BGCPSD02-02	BGCPSD03-01	BGCPSD03-01D
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Acenaphthene	870 U	490 U	440 U	420 U	500 U	470 U
2,4-Dinitrophenol	2100 U	1200 U	1100 U	1000 U	1200 U	1100 U
4-Nitrophenol	2100 U	1200 U	1100 U	1000 U	1200 U	1100 U
Dibenzofuran	870 U	490 U	440 U	420 U	500 U	470 U
2,4-Dinitrotoluene	870 U	490 U	440 U	420 U	500 U	470 U
Diethylphthalate	870 U	490 U	440 U	420 U	500 U	470 U
4-Chlorophenyl-phenylether	870 U	490 U	440 U	420 U	500 U	470 U
Fluorene	870 U	490 U	440 U	420 U	500 U	470 U
4-Nitroaniline	2100 U	1200 U	1100 U	1000 U	1200 U	1100 U
4,6-Dinitro-2-methylphenol	2100 U	1200 U	1100 U	1000 U	1200 U	1100 U
N-Nitrosodiphenylamine	870 U	490 U	440 U	420 U	500 U	470 U
4-Bromophenyl-phenylether	870 U	490 U	440 U	420 U	500 U	470 U
Hexachlorobenzene	870 U	490 U	440 U	420 U	500 U	470 U
Pentachlorophenol	2100 U	1200 U	1100 U	1000 U	1200 U	1100 U
Phenanthrene	870 U	490 U	440 U	420 U	500 U	470 U
Anthracene	870 U	490 U	440 U	420 U	500 U	470 U
Carbazole	870 U	490 U	440 U	420 U	500 U	470 U
di-n-Butylphthalate	870 U	490 U	440 U	420 U	500 U	470 U
Fluoranthene	870 U	490 U	440 U	420 U	500 U	470 U
Pyrene	870 U	490 U	440 U	420 U	500 U	470 U
Butylbenzylphthalate	870 U	490 U	440 U	420 U	500 U	470 U
3,3'-Dichlorobenzidine	870 U	490 U	440 U	420 U	500 U	470 U
Benzo(a)anthracene	870 U	490 U	440 U	420 U	500 U	470 U
Chrysene	870 U	490 U	440 U	420 U	500 U	470 U
Bis(2-ethylhexyl)phthalate	870 U	490 U	440 U	250 J	470 J	580
di-n-Octylphthalate	870 U	490 U	440 U	420 U	500 UJ	470 UJ
Benzo(b)fluoranthene	870 U	490 U	440 U	420 U	500 UJ	470 UJ
Benzo(k)fluoranthene	870 U	490 U	440 U	420 U	500 UJ	470 UJ
Benzo(a)pyrene	870 U	490 U	440 U	420 U	500 UJ	470 UJ
Indeno(1,2,3-cd)pyrene	870 U	490 U	440 U	420 U	500 UJ	470 UJ
Dibenz(a,h)anthracene	870 U	490 U	440 U	420 U	500 UJ	470 UJ
Benzo(g,h,i)perylene	870 U	490 U	440 U	420 U	500 UJ	470 UJ

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD03-02	BGCPSD04-01	BGCPSD04-02	BGCPSD05-01	BGCPSD05-02	BGTNSD06-01
Date sampled	08/06/94	08/07/94	08/07/94	08/07/94	08/07/94	08/20/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	420 U	430 U	420 U	480 U	420 U	680 U
Bis(2-chloroethyl)ether	420 U	430 U	420 U	480 U	420 U	680 U
2-Chlorophenol	420 U	430 U	420 U	480 U	420 U	680 U
1,3-Dichlorobenzene	420 U	430 U	420 U	480 U	420 U	680 U
1,4-Dichlorobenzene	420 U	430 U	420 U	480 U	420 U	680 U
1,2-Dichlorobenzene	420 U	430 U	420 U	480 U	420 U	680 U
2-Methylphenol	420 U	430 U	420 U	480 U	420 U	680 U
2,2'-Oxybis(1-chloropropane)	420 U	430 U	420 U	480 U	420 U	680 U
4-Methylphenol	420 U	430 U	420 U	480 U	420 U	680 U
N-Nitroso-di-n-propylamine	420 U	430 U	420 U	480 U	420 U	680 U
Hexachloroethane	420 U	430 U	420 U	480 U	420 U	680 U
Nitrobenzene	420 U	430 U	420 U	480 U	420 U	680 U
Isophorone	420 U	430 U	420 U	480 U	420 U	680 U
2-Nitrophenol	420 U	430 U	420 U	480 U	420 U	680 U
2,4-Dimethylphenol	420 U	430 U	420 U	480 U	420 U	680 U
Bis(2-chloroethoxy)methane	420 U	430 U	420 U	480 U	420 U	680 U
2,4-Dichlorophenol	420 U	430 U	420 U	480 U	420 U	680 U
1,2,4-Trichlorobenzene	420 U	430 U	420 U	480 U	420 U	680 U
Naphthalene	420 U	430 U	420 U	480 U	420 U	680 U
4-Chloroaniline	420 U	430 U	420 U	480 U	420 U	680 U
Hexachlorobutadiene	420 U	430 U	420 U	480 U	420 U	680 U
4-Chloro-3-methylphenol	420 U	430 U	420 U	480 U	420 U	680 U
2-Methylnaphthalene	420 U	430 U	420 U	480 U	420 U	680 U
Hexachlorocyclopentadie	420 U	430 UJ	420 U	480 U	420 UJ	680 UJ
2,4,6-Trichlorophenol	420 U	430 U	420 U	480 U	420 U	680 U
2,4,5-Trichlorophenol	1000 U	1000 U	1000 U	1200 U	1000 U	1700 U
2-Chloronaphthalene	420 U	430 U	420 U	480 U	420 U	680 U
2-Nitroaniline	1000 U	1000 U	1000 U	1200 U	1000 U	1700 U
Dimethylphthalate	420 U	430 U	420 U	480 U	420 U	680 U
Acenaphthylene	420 U	430 U	420 U	480 U	420 U	680 U
2,6-Dinitrotoluene	420 U	430 U	420 U	480 U	420 U	680 U
3-Nitroaniline	1000 U	1000 U	1000 U	1200 U	1000 U	1700 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD03-02	BGCPSD04-01	BGCPSD04-02	BGCPSD05-01	BGCPSD05-02	BGTNSD06-01
Date sampled	08/06/94	08/07/94	08/07/94	08/07/94	08/07/94	08/20/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Acenaphthene	420 U	430 U	420 U	480 U	420 U	680 U
2,4-Dinitrophenol	1000 U	1000 U	1000 U	1200 U	1000 U	1700 U
4-Nitrophenol	1000 U	1000 U	1000 U	1200 U	1000 U	1700 U
Dibenzofuran	420 U	430 U	420 U	480 U	420 U	680 U
2,4-Dinitrotoluene	420 U	430 U	420 U	480 U	420 U	680 U
Diethylphthalate	420 U	430 U	420 U	480 U	420 U	680 U
4-Chlorophenyl-phenylether	420 U	430 U	420 U	480 U	420 U	680 U
Fluorene	420 U	430 U	420 U	480 U	420 U	680 U
4-Nitroaniline	1000 U	1000 U	1000 U	1200 U	1000 U	1700 U
4,6-Dinitro-2-methylphenol	1000 U	1000 U	1000 U	1200 U	1000 U	1700 U
N-Nitrosodiphenylamine	420 U	430 U	420 U	480 U	420 U	680 U
4-Bromophenyl-phenylether	420 U	430 U	420 U	480 U	420 U	680 U
Hexachlorobenzene	420 U	430 U	420 U	480 U	420 U	680 U
Pentachlorophenol	1000 U	1000 U	1000 U	1200 U	1000 U	1700 U
Phenanthrene	420 U	430 U	420 U	480 U	420 U	680 U
Anthracene	420 U	430 U	420 U	480 U	420 U	680 U
Carbazole	420 U	430 U	420 U	480 U	420 U	680 U
di-n-Butylphthalate	420 U	430 U	420 U	480 U	420 U	680 U
Fluoranthene	420 U	430 U	420 U	480 U	420 U	680 U
Pyrene	420 U	430 U	420 U	480 U	420 U	680 U
Butylbenzylphthalate	420 U	430 U	420 U	480 U	420 U	680 U
3,3'-Dichlorobenzidine	420 U	430 U	420 U	480 U	420 U	680 U
Benzo(a)anthracene	420 U	430 U	420 U	480 U	420 U	680 U
Chrysene	420 U	430 U	420 U	480 U	420 U	680 U
Bis(2-ethylhexyl)phthalate	420 U	430 U	310 J	430 J	240 J	680 U
di-n-Octylphthalate	420 U	430 U	420 U	480 U	420 U	680 UJ
Benzo(b)fluoranthene	420 U	430 U	420 U	480 U	420 U	680 U
Benzo(k)fluoranthene	420 U	430 U	420 U	480 U	420 U	680 U
Benzo(a)pyrene	420 U	430 U	420 U	480 U	420 U	680 U
Indeno(1,2,3-cd)pyrene	420 U	430 U	420 U	480 U	420 U	680 U
Dibenz(a,h)anthracene	420 U	430 U	420 U	480 U	420 U	680 U
Benzo(g,h,i)perylene	420 U	430 U	420 U	480 U	420 U	680 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD06-02
Date sampled	08/20/94
Depth	4-8"
Units	UG/KG
Phenol	400 U
Bis(2-chloroethyl)ether	400 U
2-Chlorophenol	400 U
1,3-Dichlorobenzene	400 U
1,4-Dichlorobenzene	400 U
1,2-Dichlorobenzene	400 U
2-Methylphenol	400 U
2,2'-Oxybis(1-chloropropane)	400 U
4-Methylphenol	400 U
N-Nitroso-di-n-propylamine	400 U
Hexachloroethane	400 U
Nitrobenzene	400 U
Isophorone	400 U
2-Nitrophenol	400 U
2,4-Dimethylphenol	400 U
Bis(2-chloroethoxy)methane	400 U
2,4-Dichlorophenol	400 U
1,2,4-Trichlorobenzene	400 U
Naphthalene	400 U
4-Chloroaniline	400 U
Hexachlorobutadiene	400 U
4-Chloro-3-methylphenol	400 U
2-Methylnaphthalene	400 U
Hexachlorocyclopentadie	400 UJ
2,4,6-Trichlorophenol	400 U
2,4,5-Trichlorophenol	960 U
2-Chloronaphthalene	400 U
2-Nitroaniline	960 U
Dimethylphthalate	400 U
Acenaphthylene	400 U
2,6-Dinitrotoluene	400 U
3-Nitroaniline	960 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD06-02
Date sampled	08/20/94
Depth	4-8"
Units	UG/KG
Acenaphthene	400 U
2,4-Dinitrophenol	960 U
4-Nitrophenol	960 U
Dibenzofuran	400 U
2,4-Dinitrotoluene	400 U
Diethylphthalate	400 U
4-Chlorophenyl-phenylether	400 U
Fluorene	400 U
4-Nitroaniline	960 U
4,6-Dinitro-2-methylphenol	960 U
N-Nitrosodiphenylamine	400 U
4-Bromophenyl-phenylether	400 U
Hexachlorobenzene	400 U
Pentachlorophenol	960 U
Phenanthrene	400 U
Anthracene	400 U
Carbazole	400 U
di-n-Butylphthalate	400 U
Fluoranthene	400 U
Pyrene	400 U
Butylbenzylphthalate	400 U
3,3'-Dichlorobenzidine	400 U
Benzo(a)anthracene	400 U
Chrysene	400 U
Bis(2-ethylhexyl)phthalate	400 U
di-n-Octylphthalate	400 UJ
Benzo(b)fluoranthene	400 U
Benzo(k)fluoranthene	400 U
Benzo(a)pyrene	400 U
Indeno(1,2,3-cd)pyrene	400 U
Dibenz(a,h)anthracene	400 U
Benzo(g,h,i)perylene	400 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	400 U	870 U	ND	ND		0/13
Bis(2-chloroethyl)ether	400 U	870 U	ND	ND		0/13
2-Chlorophenol	400 U	870 U	ND	ND		0/13
1,3-Dichlorobenzene	400 U	870 U	ND	ND		0/13
1,4-Dichlorobenzene	400 U	870 U	ND	ND		0/13
1,2-Dichlorobenzene	400 U	870 U	ND	ND		0/13
2-Methylphenol	400 U	870 U	ND	ND		0/13
2,2'-Oxybis(1-chloropropane)	400 U	870 U	ND	ND		0/13
4-Methylphenol	400 U	870 U	ND	ND		0/13
N-Nitroso-di-n-propylamine	400 U	870 U	ND	ND		0/13
Hexachloroethane	400 U	870 U	ND	ND		0/13
Nitrobenzene	400 U	870 U	ND	ND		0/13
Isophorone	400 U	870 U	ND	ND		0/13
2-Nitrophenol	400 U	870 U	ND	ND		0/13
2,4-Dimethylphenol	400 U	870 U	ND	ND		0/13
Bis(2-chloroethoxy)methane	400 U	870 U	ND	ND		0/13
2,4-Dichlorophenol	400 U	870 U	ND	ND		0/13
1,2,4-Trichlorobenzene	400 U	870 U	ND	ND		0/13
Naphthalene	400 U	870 U	ND	ND		0/13
4-Chloroaniline	400 U	870 U	ND	ND		0/13
Hexachlorobutadiene	400 U	870 U	ND	ND		0/13
4-Chloro-3-methylphenol	400 U	870 U	ND	ND		0/13
2-Methylnaphthalene	400 U	870 U	ND	ND		0/13
Hexachlorocyclopentadie	400 UJ	870 U	ND	ND		0/13
2,4,6-Trichlorophenol	400 U	870 U	ND	ND		0/13
2,4,5-Trichlorophenol	960 U	2100 U	ND	ND		0/13
2-Chloronaphthalene	400 U	870 U	ND	ND		0/13
2-Nitroaniline	960 U	2100 U	ND	ND		0/13
Dimethylphthalate	400 U	870 U	ND	ND		0/13
Acenaphthylene	400 U	870 U	ND	ND		0/13
2,6-Dinitrotoluene	400 U	870 U	ND	ND		0/13
3-Nitroaniline	960 U	2100 U	ND	ND		0/13

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Acenaphthene	400 U	870 U	ND	ND		0/13
2,4-Dinitrophenol	960 U	2100 U	ND	ND		0/13
4-Nitrophenol	960 U	2100 U	ND	ND		0/13
Dibenzofuran	400 U	870 U	ND	ND		0/13
2,4-Dinitrotoluene	400 U	870 U	ND	ND		0/13
Diethylphthalate	400 U	870 U	ND	ND		0/13
4-Chlorophenyl-phenylether	400 U	870 U	ND	ND		0/13
Fluorene	400 U	870 U	ND	ND		0/13
4-Nitroaniline	960 U	2100 U	ND	ND		0/13
4,6-Dinitro-2-methylphenol	960 U	2100 U	ND	ND		0/13
N-Nitrosodiphenylamine	400 U	870 U	ND	ND		0/13
4-Bromophenyl-phenylether	400 U	870 U	ND	ND		0/13
Hexachlorobenzene	400 U	870 U	ND	ND		0/13
Pentachlorophenol	960 U	2100 U	ND	ND		0/13
Phenanthrene	400 U	870 U	ND	ND		0/13
Anthracene	400 U	870 U	ND	ND		0/13
Carbazole	400 U	870 U	ND	ND		0/13
di-n-Butylphthalate	400 U	870 U	ND	ND		0/13
Fluoranthene	400 U	870 U	ND	ND		0/13
Pyrene	400 U	870 U	ND	ND		0/13
Butylbenzylphthalate	400 U	870 U	ND	ND		0/13
3,3'-Dichlorobenzidine	400 U	870 U	ND	ND		0/13
Benzo(a)anthracene	400 U	870 U	ND	ND		0/13
Chrysene	400 U	870 U	ND	ND		0/13
Bis(2-ethylhexyl)phthalate	400 U	870 U	240 J	580	BGCPSD03-01D	6/13
di-n-Octylphthalate	400 UJ	870 U	ND	ND		0/13
Benzo(b)fluoranthene	400 U	870 U	ND	ND		0/13
Benzo(k)fluoranthene	400 U	870 U	ND	ND		0/13
Benzo(a)pyrene	400 U	870 U	ND	ND		0/13
Indeno(1,2,3-cd)pyrene	400 U	870 U	ND	ND		0/13
Dibenz(a,h)anthracene	400 U	870 U	ND	ND		0/13
Benzo(g,h,i)perylene	400 U	870 U	ND	ND		0/13

TABLE 15
STATISTICAL SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	247.69	66.85	280.73	5.49	0.22	279.96
Bis(2-chloroethyl)ether	247.69	66.85	280.73	5.49	0.22	279.96
2-Chlorophenol	247.69	66.85	280.73	5.49	0.22	279.96
1,3-Dichlorobenzene	247.69	66.85	280.73	5.49	0.22	279.96
1,4-Dichlorobenzene	247.69	66.85	280.73	5.49	0.22	279.96
1,2-Dichlorobenzene	247.69	66.85	280.73	5.49	0.22	279.96
2-Methylphenol	247.69	66.85	280.73	5.49	0.22	279.96
2,2'-Oxybis(1-chloropropane)	247.69	66.85	280.73	5.49	0.22	279.96
4-Methylphenol	247.69	66.85	280.73	5.49	0.22	279.96
N-Nitroso-di-n-propylamine	247.69	66.85	280.73	5.49	0.22	279.96
Hexachloroethane	247.69	66.85	280.73	5.49	0.22	279.96
Nitrobenzene	247.69	66.85	280.73	5.49	0.22	279.96
Isophorone	247.69	66.85	280.73	5.49	0.22	279.96
2-Nitrophenol	247.69	66.85	280.73	5.49	0.22	279.96
2,4-Dimethylphenol	247.69	66.85	280.73	5.49	0.22	279.96
Bis(2-chloroethoxy)methane	247.69	66.85	280.73	5.49	0.22	279.96
2,4-Dichlorophenol	247.69	66.85	280.73	5.49	0.22	279.96
1,2,4-Trichlorobenzene	247.69	66.85	280.73	5.49	0.22	279.96
Naphthalene	247.69	66.85	280.73	5.49	0.22	279.96
4-Chloroaniline	247.69	66.85	280.73	5.49	0.22	279.96
Hexachlorobutadiene	247.69	66.85	280.73	5.49	0.22	279.96
4-Chloro-3-methylphenol	247.69	66.85	280.73	5.49	0.22	279.96
2-Methylnaphthalene	247.69	66.85	280.73	5.49	0.22	279.96
Hexachlorocyclopentadie	247.69	66.85	280.73	5.49	0.22	279.96
2,4,6-Trichlorophenol	247.69	66.85	280.73	5.49	0.22	279.96
2,4,5-Trichlorophenol	598.46	166.93	680.96	6.37	0.23	680.00
2-Chloronaphthalene	247.69	66.85	280.73	5.49	0.22	279.96
2-Nitroaniline	598.46	166.93	680.96	6.37	0.23	680.00
Dimethylphthalate	247.69	66.85	280.73	5.49	0.22	279.96
Acenaphthylene	247.69	66.85	280.73	5.49	0.22	279.96
2,6-Dinitrotoluene	247.69	66.85	280.73	5.49	0.22	279.96
3-Nitroaniline	598.46	166.93	680.96	6.37	0.23	680.00

TABLE 15
STATISTICAL SUMMARY
FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Acenaphthene	247.69	66.85	280.73	5.49	0.22	279.96
2,4-Dinitrophenol	598.46	166.93	680.96	6.37	0.23	680.00
4-Nitrophenol	598.46	166.93	680.96	6.37	0.23	680.00
Dibenzofuran	247.69	66.85	280.73	5.49	0.22	279.96
2,4-Dinitrotoluene	247.69	66.85	280.73	5.49	0.22	279.96
Diethylphthalate	247.69	66.85	280.73	5.49	0.22	279.96
4-Chlorophenyl-phenylether	247.69	66.85	280.73	5.49	0.22	279.96
Fluorene	247.69	66.85	280.73	5.49	0.22	279.96
4-Nitroaniline	598.46	166.93	680.96	6.37	0.23	680.00
4,6-Dinitro-2-methylphenol	598.46	166.93	680.96	6.37	0.23	680.00
N-Nitrosodiphenylamine	247.69	66.85	280.73	5.49	0.22	279.96
4-Bromophenyl-phenylether	247.69	66.85	280.73	5.49	0.22	279.96
Hexachlorobenzene	247.69	66.85	280.73	5.49	0.22	279.96
Pentachlorophenol	598.46	166.93	680.96	6.37	0.23	680.00
Phenanthrene	247.69	66.85	280.73	5.49	0.22	279.96
Anthracene	247.69	66.85	280.73	5.49	0.22	279.96
Carbazole	247.69	66.85	280.73	5.49	0.22	279.96
di-n-Butylphthalate	247.69	66.85	280.73	5.49	0.22	279.96
Fluoranthene	247.69	66.85	280.73	5.49	0.22	279.96
Pyrene	247.69	66.85	280.73	5.49	0.22	279.96
Butylbenzylphthalate	247.69	66.85	280.73	5.49	0.22	279.96
3,3'-Dichlorobenzidine	247.69	66.85	280.73	5.49	0.22	279.96
Benzo(a)anthracene	247.69	66.85	280.73	5.49	0.22	279.96
Chrysene	247.69	66.85	280.73	5.49	0.22	279.96
Bis(2-ethylhexyl)phthalate	318.85	122.60	379.44	5.70	0.36	393.32
di-n-Octylphthalate	247.69	66.85	280.73	5.49	0.22	279.96
Benzo(b)fluoranthene	247.69	66.85	280.73	5.49	0.22	279.96
Benzo(k)fluoranthene	247.69	66.85	280.73	5.49	0.22	279.96
Benzo(a)pyrene	247.69	66.85	280.73	5.49	0.22	279.96
Indeno(1,2,3-cd)pyrene	247.69	66.85	280.73	5.49	0.22	279.96
Dibenz(a,h)anthracene	247.69	66.85	280.73	5.49	0.22	279.96
Benzo(g,h,i)perylene	247.69	66.85	280.73	5.49	0.22	279.96

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD01-01	BGCPSD01-02	BGCPSD02-01	BGCPSD02-02	BGCPSD03-01	BGCPSD03-01D
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
beta-BHC	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
delta-BHC	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
gamma-BHC (Lindane)	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
Heptachlor	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
Aldrin	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
Heptachlor Epoxide	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
Endosulfan I	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
Dieldrin	8.8 U	5.0 UL	4.5 U	4.3 U	5.0 U	4.8 UJ
4,4'-DDE	8.8 U	5.0 UL	4.5 U	4.3 U	5.0 U	4.8 UJ
Endrin	8.8 U	5.0 UL	4.5 U	4.3 U	5.0 U	4.8 UJ
Endosulfan II	8.8 U	5.0 UL	4.5 U	4.3 U	5.0 U	4.8 UJ
4,4'-DDD	8.8 U	5.0 UL	4.5 U	4.3 U	5.0 U	4.8 UJ
Endosulfan Sulfate	8.8 U	5.0 UL	4.5 U	4.3 U	5.0 U	4.8 UJ
4,4'-DDT	8.8 U	5.0 UL	4.5 U	4.3 U	5.0 U	4.8 UJ
Methoxychlor	44.0 U	25.0 UL	22.0 U	21.0 U	25.0 U	24.0 UJ
Endrin Ketone	8.8 U	5.0 UL	4.5 U	4.3 U	5.0 U	4.8 UJ
Endrin Aldehyde	8.8 U	5.0 UL	4.5 U	4.3 U	5.0 U	4.8 UJ
alpha-Chlordane	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
gamma-Chlordane	4.4 U	2.5 UL	2.2 U	2.1 U	2.5 U	2.4 UJ
Toxaphene	440.0 U	250.0 UL	220.0 U	210.0 U	250.0 U	240.0 UJ
Aroclor-1016	88.0 U	50.0 UL	45.0 U	43.0 U	50.0 U	48.0 UJ
Aroclor-1221	180.0 U	100.0 UL	89.0 U	85.0 U	100.0 U	96.0 UJ
Aroclor-1232	88.0 U	50.0 UL	45.0 U	43.0 U	50.0 U	48.0 UJ
Aroclor-1242	88.0 U	50.0 UL	45.0 U	43.0 U	50.0 U	48.0 UJ
Aroclor-1248	88.0 U	50.0 UL	45.0 U	43.0 U	50.0 U	48.0 UJ
Aroclor-1254	88.0 U	50.0 UL	45.0 U	43.0 U	50.0 U	48.0 UJ
Aroclor-1260	88.0 U	50.0 UL	45.0 U	43.0 U	50.0 U	48.0 UJ

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD03-02	BGCPSD04-01	BGCPSD04-02	BGCPSD05-01	BGCPSD05-02	BGTNSD06-01
Date sampled	08/06/94	08/07/94	08/07/94	08/07/94	08/07/94	08/20/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
beta-BHC	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
delta-BHC	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
gamma-BHC (Lindane)	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
Heptachlor	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
Aldrin	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
Heptachlor Epoxide	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
Endosulfan I	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
Dieldrin	4.3 U	4.4 U	4.3 UJ	4.9 UJ	4.2 U	6.9 U
4,4'-DDE	4.3 U	4.4 U	4.3 UJ	4.9 UJ	4.2 U	6.9 U
Endrin	4.3 U	4.4 U	4.3 UJ	4.9 UJ	4.2 U	6.9 U
Endosulfan II	4.3 U	4.4 U	4.3 UJ	4.9 UJ	4.2 U	6.9 U
4,4'-DDD	4.3 U	4.4 U	4.3 UJ	4.9 UJ	4.2 U	6.9 U
Endosulfan Sulfate	4.3 U	4.4 U	4.3 UJ	4.9 UJ	4.2 U	6.9 U
4,4'-DDT	4.3 U	4.4 U	4.3 UJ	4.9 UJ	4.2 U	6.9 U
Methoxychlor	21.0 U	22.0 U	21.0 UJ	24.0 UJ	21.0 U	35.0 U
Endrin Ketone	4.3 U	4.4 U	4.3 UJ	4.9 UJ	4.2 U	6.9 U
Endrin Aldehyde	4.3 U	4.4 U	4.3 UJ	4.9 UJ	4.2 U	6.9 U
alpha-Chlordane	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
gamma-Chlordane	2.1 U	2.2 U	2.1 UJ	2.4 UJ	2.1 U	3.5 U
Toxaphene	210.0 U	220.0 U	210.0 UJ	240.0 UJ	210.0 U	350.0 U
Aroclor-1016	43.0 U	44.0 U	43.0 UJ	49.0 UJ	42.0 U	69.0 U
Aroclor-1221	85.0 U	87.0 U	85.0 UJ	97.0 UJ	84.0 U	140.0 U
Aroclor-1232	43.0 U	44.0 U	43.0 UJ	49.0 UJ	42.0 U	69.0 U
Aroclor-1242	43.0 U	44.0 U	43.0 UJ	49.0 UJ	42.0 U	69.0 U
Aroclor-1248	43.0 U	44.0 U	43.0 UJ	49.0 UJ	42.0 U	69.0 U
Aroclor-1254	43.0 U	44.0 U	43.0 UJ	49.0 UJ	42.0 U	69.0 U
Aroclor-1260	43.0 U	44.0 U	43.0 UJ	49.0 UJ	42.0 U	69.0 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD06-02	
Date sampled	08/20/94	
Depth	4-6"	
Units	UG/KG	
alpha-BHC	2.0	U
beta-BHC	2.0	U
delta-BHC	2.0	U
gamma-BHC (Lindane)	2.0	U
Heptachlor	2.0	U
Aldrin	2.0	U
Heptachlor Epoxide	2.0	U
Endosulfan I	2.0	U
Dieldrin	4.0	U
4,4'-DDE	4.0	U
Endrin	4.0	U
Endosulfan II	4.0	U
4,4'-DDD	4.0	U
Endosulfan Sulfate	4.0	U
4,4'-DDT	4.0	U
Methoxychlor	20.0	U
Endrin Ketone	4.0	U
Endrin Aldehyde	4.0	U
alpha-Chlordane	2.0	U
gamma-Chlordane	2.0	U
Toxaphene	200.0	U
Aroclor-1016	40.0	U
Aroclor-1221	80.0	U
Aroclor-1232	40.0	U
Aroclor-1242	40.0	U
Aroclor-1248	40.0	U
Aroclor-1254	40.0	U
Aroclor-1260	40.0	U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	2 U	4.4 U	ND	ND		0/13
beta-BHC	2 U	4.4 U	ND	ND		0/13
delta-BHC	2 U	4.4 U	ND	ND		0/13
gamma-BHC (Lindane)	2 U	4.4 U	ND	ND		0/13
Heptachlor	2 U	4.4 U	ND	ND		0/13
Aldrin	2 U	4.4 U	ND	ND		0/13
Heptachlor Epoxide	2 U	4.4 U	ND	ND		0/13
Endosulfan I	2 U	4.4 U	ND	ND		0/13
Dieldrin	4 U	8.8 U	ND	ND		0/13
4,4'-DDE	4 U	8.8 U	ND	ND		0/13
Endrin	4 U	8.8 U	ND	ND		0/13
Endosulfan II	4 U	8.8 U	ND	ND		0/13
4,4'-DDD	4 U	8.8 U	ND	ND		0/13
Endosulfan Sulfate	4 U	8.8 U	ND	ND		0/13
4,4'-DDT	4 U	8.8 U	ND	ND		0/13
Methoxychlor	20 U	44 U	ND	ND		0/13
Endrin Ketone	4 U	8.8 U	ND	ND		0/13
Endrin Aldehyde	4 U	8.8 U	ND	ND		0/13
alpha-Chlordane	2 U	4.4 U	ND	ND		0/13
gamma-Chlordane	2 U	4.4 U	ND	ND		0/13
Toxaphene	200 U	440 U	ND	ND		0/13
Aroclor-1016	40 U	88 U	ND	ND		0/13
Aroclor-1221	80 U	180 U	ND	ND		0/13
Aroclor-1232	40 U	88 U	ND	ND		0/13
Aroclor-1242	40 U	88 U	ND	ND		0/13
Aroclor-1248	40 U	88 U	ND	ND		0/13
Aroclor-1254	40 U	88 U	ND	ND		0/13
Aroclor-1260	40 U	88 U	ND	ND		0/13

TABLE 15
STATISTICAL SUMMARY
FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	1.25	0.34	1.42	0.20	0.23	1.42
beta-BHC	1.25	0.34	1.42	0.20	0.23	1.42
delta-BHC	1.25	0.34	1.42	0.20	0.23	1.42
gamma-BHC (Lindane)	1.25	0.34	1.42	0.20	0.23	1.42
Heptachlor	1.25	0.34	1.42	0.20	0.23	1.42
Aldrin	1.25	0.34	1.42	0.20	0.23	1.42
Heptachlor Epoxide	1.25	0.34	1.42	0.20	0.23	1.42
Endosulfan I	1.25	0.34	1.42	0.20	0.23	1.42
Dieldrin	2.52	0.67	2.85	0.90	0.22	2.84
4,4'-DDE	2.52	0.67	2.85	0.90	0.22	2.84
Endrin	2.52	0.67	2.85	0.90	0.22	2.84
Endosulfan II	2.52	0.67	2.85	0.90	0.22	2.84
4,4'-DDD	2.52	0.67	2.85	0.90	0.22	2.84
Endosulfan Sulfate	2.52	0.67	2.85	0.90	0.22	2.84
4,4'-DDT	2.52	0.67	2.85	0.90	0.22	2.84
Methoxychlor	12.50	3.45	14.20	2.50	0.23	14.17
Endrin Ketone	2.52	0.67	2.85	0.90	0.22	2.84
Endrin Aldehyde	2.52	0.67	2.85	0.90	0.22	2.84
alpha-Chlordane	1.25	0.34	1.42	0.20	0.23	1.42
gamma-Chlordane	1.25	0.34	1.42	0.20	0.23	1.42
Toxaphene	125.00	34.46	142.03	4.80	0.23	141.70
Aroclor-1016	25.15	6.74	28.49	3.20	0.22	28.42
Aroclor-1221	50.31	14.17	57.31	3.89	0.23	57.11
Aroclor-1232	25.15	6.74	28.49	3.20	0.22	28.42
Aroclor-1242	25.15	6.74	28.49	3.20	0.22	28.42
Aroclor-1248	25.15	6.74	28.49	3.20	0.22	28.42
Aroclor-1254	25.15	6.74	28.49	3.20	0.22	28.42
Aroclor-1260	25.15	6.74	28.49	3.20	0.22	28.42

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD01-01	BGCPSD01-02	BGCPSD02-01	BGCPSD02-02	BGCPSD03-01	BGCPSD03-01D
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD03-02	BGCPSD04-01	BGCPSD04-02	BGCPSD05-01	BGCPSD05-02	BGTNSD06-01
Date sampled	08/06/94	08/07/94	08/07/94	08/07/94	08/07/94	08/20/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD06-02	
Date sampled	08/20/94	
Depth	4-8"	
Units	MG/KG	
HMX	0.5	U
RDX	0.59	U
1,3,5-Trinitrobenzene	0.56	U
1,3-Dinitrobenzene	0.42	U
Tetryl	1.2	U
Nitrobenzene	0.58	U
2,4,6-Trinitrotoluene	0.44	U
4-Amino-2,6-Dinitrotoluene	1	U
2-Amino-Dinitrotoluene	1	U
2,6-Dinitrotoluene	1	U
2,4-Dinitrotoluene	1	U
Dinitrotoluene (isomeric mixture)	0.82	U
2-Nitrotoluene	0.45	U
4-Nitrotoluene	0.69	U
3-Nitrotoluene	1.2	U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.5 U	0.5 U	ND	ND		0/13
RDX	0.59 U	0.59 U	ND	ND		0/13
1,3,5-Trinitrobenzene	0.56 U	0.56 U	ND	ND		0/13
1,3-Dinitrobenzene	0.42 U	0.42 U	ND	ND		0/13
Tetryl	1.2 U	1.2 U	ND	ND		0/13
Nitrobenzene	0.58 U	0.58 U	ND	ND		0/13
2,4,6-Trinitrotoluene	0.44 U	0.44 U	ND	ND		0/13
4-Amino-2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/13
2-Amino-Dinitrotoluene	1 U	1 U	ND	ND		0/13
2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/13
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/13
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	ND	ND		0/13
2-Nitrotoluene	0.45 U	0.45 U	ND	ND		0/13
4-Nitrotoluene	0.69 U	0.69 U	ND	ND		0/13
3-Nitrotoluene	1.2 U	1.2 U	ND	ND		0/13

TABLE 15
STATISTICAL SUMMARY
FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.25	0.00	0.25	-1.39	0.00	0.25
RDX	0.30	0.00	0.30	-1.22	0.00	0.30
1,3,5-Trinitrobenzene	0.28	0.00	0.28	-1.27	0.00	0.28
1,3-Dinitrobenzene	0.21	0.00	0.21	-1.56	0.00	0.21
Tetryl	0.60	0.00	0.60	-0.51	0.00	0.60
Nitrobenzene	0.29	0.00	0.29	-1.24	0.00	0.29
2,4,6-Trinitrotoluene	0.22	0.00	0.22	-1.51	0.00	0.22
4-Amino-2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2-Amino-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
Dinitrotoluene (isomeric mixture)	0.41	0.00	0.41	-0.89	0.00	0.41
2-Nitrotoluene	0.23	0.00	0.23	-1.49	0.00	0.23
4-Nitrotoluene	0.35	0.00	0.35	-1.06	0.00	0.35
3-Nitrotoluene	0.60	0.00	0.60	-0.51	0.00	0.60

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD01-01	BGCPSD01-02	BGCPSD02-01	BGCPSD02-02	BGCPSD03-01	BGCPSD03-01D
Date sampled	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94	08/06/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	15400 J	17700 J	858 J	2400 J	4600 J	1410 J
Antimony	29.1 L	14.4 L	9.7 R	9.6 R	10.7 R	9.9 R
Arsenic	3.4 L	5.4 L	0.26 UL	0.62 L	1 L	0.27 L
Barium	44.2 J	46.6 J	5.1 J	15.2 J	29.1 J	7.8 J
Beryllium	0.51 J	0.99 J	0.26 U	0.26 U	0.35 J	0.27 U
Cadmium	2.2 U	1.5 U	1.3 U	1.3 U	1.4 U	1.3 U
Calcium	44000 J	22300 J	524 J	1060 J	1800 J	418 J
Chromium	23.8	32.8	2.9 J	5.4	7.3	4.4
Cobalt	3.9 J	6.2 J	1.1 J	1.6 J	2 J	1.2 J
Copper	6.3 J	4.9 J	1 U	1.1 U	1.3 U	2.4 J
Iron	14300 J	27700 J	936 J	2740 J	4060 J	1590 J
Lead	381 L	48.7 L	3.4 L	10.1 L	27.5 L	12.4 L
Magnesium	1200 J	2060	64.2 J	147 J	474 J	167 J
Manganese	91.1 J	68.4 J	16.5 J	53.8 J	36.6 J	32.2 J
Mercury	0.11 UL	0.07 UL	0.06 UL	0.06 UL	0.07 UL	0.06 UL
Nickel	13.2 J	10.5 J	5.3 K	4.2 U	4.8 K	4.3 U
Potassium	1320 J	1910	411 U	409 U	503 J	420 U
Selenium	0.44 UL	0.31 UL	0.26 UL	0.26 UL	0.29 UL	0.27 UL
Silver	1.8 U	1.2 U	1 U	1 U	1.2 U	1.1 U
Sodium	128 J	280 J	92.5 J	111 J	135 J	78.1 J
Thallium	0.44 U	0.31 U	0.26 U	0.26 U	0.29 U	0.27 U
Vanadium	34.4	38.9	2 J	5.3 J	11.5 J	4.5 J
Zinc	143	45.8	4.4	9.4	16.3	11.9
Cyanide	1.1 U	0.78 U	0.66 U	0.64 U	0.72 U	0.66 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGCPSD03-02	BGCPSD04-01	BGCPSD04-02	BGCPSD05-01	BGCPSD05-02	BGTNSD06-01
Date sampled	08/06/94	08/07/94	08/07/94	08/07/94	08/07/94	08/20/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	7170 J	1210 J	1030 J	648 J	970 J	11400 K
Antimony	8.7 R	10.2 R	11 R	10.2 R	9.4 R	22 UL
Arsenic	0.24 UL	0.27 UL	0.3 UL	0.69 L	0.83 L	4.9 J
Barium	84.8	10 J	7.9 J	7.3 J	8.3 J	73.7 J
Beryllium	0.28 J	0.28 U	0.3 U	0.27 U	0.26 U	0.85 J
Cadmium	1.2 U	1.4 U	1.5 U	1.4 U	1.3 U	3 U
Calcium	1390 J	1290 J	2760 J	6950 J	12700 J	2340 J
Chromium	9.3	5	5.3	3.7	5	14.4
Cobalt	2.1 J	1.4 J	2.2 J	1.1 U	1 U	7.9 J
Copper	1 J	1.3 U	1.2 U	1.3 U	1.2 U	6.2 J
Iron	2490 J	2190 J	1550 J	3520 J	3840 J	11700
Lead	6.9 L	1.9 L	6.5 L	1.8 L	1.8 L	27.6
Magnesium	509 J	144 J	90.1 J	109 J	131 J	788 J
Manganese	18 J	32.6 J	24.4 J	23.1 J	33.6 J	93.1
Mercury	0.09 L	0.07 UL	0.08 UL	0.07 UL	0.06 L	0.14 UL
Nickel	5.5 K	4.4 U	4.7 U	4.4 U	4.6 K	17.5 K
Potassium	370 U	432 U	465 U	431 U	401 U	933 U
Selenium	0.24 UL	0.27 UL	0.3 UL	0.27 UL	0.25 UL	0.86 L
Silver	0.94 U	1.1 U	1.2 U	1.1 U	1 U	2.4 U
Sodium	80.6 J	323 J	65.3 J	199 J	312 J	93.4 J
Thallium	0.24 U	0.27 U	0.3 U	0.27 U	0.25 U	0.59 U
Vanadium	10.9 J	5 J	4.8 J	2.5 J	3.7 J	21.2 J
Zinc	9.6	11	8.9	7	6.8	55.1
Cyanide	0.58 U	0.68 U	0.75 U	0.68 U	0.64 U	1.5 U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD06-02	
Date sampled	08/20/94	
Depth	4-8"	
Units	MG/KG	
Aluminum	482	K
Antimony	9.4	UL
Arsenic	0.25	U
Barium	2.3	J
Beryllium	0.25	U
Cadmium	1.3	U
Calcium	74.9	J
Chromium	2.8	
Cobalt	1.2	J
Copper	1.3	U
Iron	329	
Lead	4.6	
Magnesium	37.8	J
Manganese	8.7	
Mercury	0.06	UL
Nickel	4.1	U
Potassium	399	U
Selenium	0.25	UL
Silver	1	U
Sodium	12.2	J
Thallium	0.25	U
Vanadium	1.9	J
Zinc	3.2	J
Cyanide	0.63	U

TABLE 15
FREQUENCY OF DETECTION SUMMARY
FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	482 K	17700 J	BGCPSD01-02	13/13
Antimony	9.4 UL	22 UL	14.4 L	29.1 L	BGCPSD01-01	2/4
Arsenic	0.24 UL	0.3 UL	0.27 L	5.4 L	BGCPSD01-02	8/13
Barium	NA	NA	2.3 J	84.8	BGCPSD03-02	13/13
Beryllium	0.25 U	0.3 U	0.28 J	0.99 J	BGCPSD01-02	5/13
Cadmium	1.2 U	3 U	ND	ND		0/13
Calcium	NA	NA	74.9 J	44000 J	BGCPSD01-01	13/13
Chromium	NA	NA	2.8	32.8	BGCPSD01-02	13/13
Cobalt	1 U	1.1 U	1.1 J	7.9 J	BGTNSD06-01	11/13
Copper	1 U	1.3 U	1 J	6.3 J	BGCPSD01-01	5/13
Iron	NA	NA	329	27700 J	BGCPSD01-02	13/13
Lead	NA	NA	1.8 L	381 L	BGCPSD01-01	13/13
Magnesium	NA	NA	37.8 J	2060	BGCPSD01-02	13/13
Manganese	NA	NA	8.7	93.1	BGTNSD06-01	13/13
Mercury	0.06 UL	0.14 UL	0.06 L	0.09 L	BGCPSD03-02	2/13
Nickel	4.1 U	4.7 U	4.6 K	17.5 K	BGTNSD06-01	7/13
Potassium	370 U	933 U	503 J	1910	BGCPSD01-02	3/13
Selenium	0.24 UL	0.44 UL	0.86 L	0.86 L	BGTNSD06-01	1/13
Silver	0.94 U	2.4 U	ND	ND		0/13
Sodium	NA	NA	12.2 J	323 J	BGCPSD04-01	13/13
Thallium	0.24 U	0.59 U	ND	ND		0/13
Vanadium	NA	NA	1.9 J	38.9	BGCPSD01-02	13/13
Zinc	NA	NA	3.2 J	143	BGCPSD01-01	13/13
Cyanide	0.58 U	1.5 U	ND	ND		0/13

TABLE 15
STATISTICAL SUMMARY
FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	5021.38	6040.11	8006.64	7.80	1.26	21696.24
Antimony	14.80	10.35	26.97	2.50	0.75	377.05
Arsenic	1.37	1.90	2.30	-0.61	1.43	7.29
Barium	26.33	27.67	40.01	2.73	1.12	83.06
Beryllium	0.31	0.29	0.46	-1.48	0.77	0.53
Cadmium	0.77	0.25	0.90	-0.29	0.26	0.89
Calcium	7508.22	12687.05	13778.65	7.70	1.73	86301.04
Chromium	9.39	9.12	13.90	1.92	0.77	16.11
Cobalt	2.45	2.24	3.56	0.57	0.82	4.70
Copper	1.97	2.26	3.09	0.16	0.99	4.34
Iron	5918.85	7752.86	9750.60	8.05	1.18	19325.32
Lead	41.09	103.07	92.03	2.28	1.54	219.63
Magnesium	455.47	591.92	748.02	5.44	1.20	1502.52
Manganese	40.93	27.58	54.56	3.50	0.69	67.67
Mercury	0.04	0.02	0.05	-3.19	0.37	0.05
Nickel	5.73	4.96	8.18	1.46	0.76	9.98
Potassium	466.81	533.69	730.58	5.78	0.78	772.13
Selenium	0.20	0.20	0.30	-1.82	0.53	0.26
Silver	0.62	0.21	0.72	-0.52	0.27	0.71
Sodium	146.93	100.10	196.40	4.72	0.86	318.45
Thallium	0.15	0.05	0.18	-1.91	0.26	0.18
Vanadium	11.28	12.48	17.44	1.92	1.02	30.33
Zinc	25.57	38.73	44.71	2.59	1.07	65.93
Cyanide	0.39	0.13	0.45	-0.99	0.26	0.44

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD01-01	BGTNSD01-02	BGTNSD02-01	BGTNSD02-02	BGTNSD03-01	BGTNSD03-01D
Date sampled	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	37 U	20 U	36 U	29 U	42 U	38 UJ
Bromomethane	37 U	20 U	36 U	29 U	42 U	38 UJ
Vinyl chloride	37 U	20 U	36 U	29 U	42 U	38 UJ
Chloroethane	37 U	20 U	36 U	29 U	42 U	38 UJ
Methylene chloride	32 B	15 BJ	33 BJ	18 BJ	35 BJ	37 BJ
Acetone	350 B	140 BJ	210 BJ	130 BJ	140 BJ	140 BJ
Carbon disulfide	37 U	15 J	36 U	23 J	42 U	20 J
1,1-Dichloroethene	37 U	20 U	36 U	29 U	42 U	38 UJ
1,1-Dichloroethane	37 U	20 U	36 U	29 U	42 U	38 UJ
Trans-1,2-dichloroethene	37 U	20 U	36 U	29 U	42 U	38 UJ
Cis-1,2-dichloroethene	37 U	20 U	36 U	29 U	42 U	38 UJ
Chloroform	37 U	20 U	36 U	29 U	42 U	38 UJ
1,2-Dichloroethane	37 U	20 U	36 U	29 U	42 U	38 UJ
2-Butanone	37 U	20 U	36 U	29 U	42 U	38 UJ
1,1,1-Trichloroethane	37 U	20 U	36 U	29 U	42 U	38 U
Carbon tetrachloride	37 U	20 U	36 U	29 U	42 U	38 U
Bromodichloromethane	37 U	20 U	36 U	29 U	42 U	38 U
1,2-Dichloropropane	37 U	20 U	36 U	29 U	42 U	38 U
cis-1,3-Dichloropropene	37 U	20 U	36 U	29 U	42 U	38 U
Trichloroethene	37 U	20 U	36 U	29 U	42 U	38 U
Dibromochloromethane	37 U	20 U	36 U	29 U	42 U	38 U
1,1,2-Trichloroethane	37 U	20 U	36 U	29 U	42 U	38 U
Benzene	37 U	20 U	36 U	29 U	42 U	38 U
Trans-1,3-dichloropropene	37 U	20 U	36 U	29 U	42 U	38 U
Bromoform	37 U	20 U	36 U	29 U	42 U	38 U
4-Methyl-2-pentanone	37 U	20 U	36 U	29 U	42 U	38 U
2-Hexanone	37 U	20 U	36 U	29 U	42 U	38 U
Tetrachloroethene	37 U	20 U	36 U	29 U	42 U	38 U
1,1,2,2-Tetrachloroethane	37 U	20 U	36 U	29 U	42 U	38 U
Toluene	37 U	20 U	36 U	29 U	42 U	38 U
Chlorobenzene	37 U	20 U	36 U	29 U	42 U	38 U
Ethylbenzene	37 U	20 U	36 U	29 U	42 U	38 U
Styrene	37 U	20 U	36 U	29 U	42 U	38 U
M/P xylenes	37 U	20 U	36 U	29 U	42 U	38 U
O xylene	37 U	20 U	36 U	29 U	42 U	38 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD03-02	BGTNSD04-01	BGTNSD04-01D	BGTNSD04-02	BGTNSD05-01	BGTNSD05-02
Date sampled	08/19/94	08/20/94	08/20/94	08/20/94	08/20/94	08/20/94
Depth	4-8"	0-4"	0-4"	4-8"	0-4"	4-8"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
Bromomethane	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
Vinyl chloride	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
Chloroethane	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
Methylene chloride	34 BJ	26 U	20 U	9 J	18 BJ	14 BJ
Acetone	280 BJ	200 J	100 BJ	25 BJ	840 J	870 J
Carbon disulfide	120 J	26 U	20 U	9 J	25 UJ	7 J
1,1-Dichloroethene	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
1,1-Dichloroethane	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
Trans-1,2-dichloroethene	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
Cis-1,2-dichloroethene	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
Chloroform	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
1,2-Dichloroethane	30 UJ	26 U	20 U	14 U	25 UJ	12 UJ
2-Butanone	30 UJ	38 J	17 J	14 U	37 J	12 UJ
1,1,1-Trichloroethane	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
Carbon tetrachloride	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
Bromodichloromethane	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
1,2-Dichloropropane	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
cis-1,3-Dichloropropene	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
Trichloroethene	30 U	26 U	20 U	14 UJ	65 J	12 UJ
Dibromochloromethane	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
1,1,2-Trichloroethane	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
Benzene	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
Trans-1,3-dichloropropene	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
Bromoform	30 U	26 U	20 U	14 UJ	25 UJ	12 UJ
4-Methyl-2-pentanone	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ
2-Hexanone	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ
Tetrachloroethene	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ
1,1,2,2-Tetrachloroethane	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ
Toluene	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ
Chlorobenzene	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ
Ethylbenzene	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ
Styrene	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ
M/P xylenes	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ
O xylene	30 UJ	26 U	20 U	14 UJ	25 UJ	12 UJ

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD01-01	BGTCSD01-02	BGTCSD02-01	BGTCSD02-02	BGTCSD03-01	BGTCSD03-01D
Date sampled	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	48 U	38 U	25 U	26 U	34 UJ	43 UJ
Bromomethane	48 U	38 U	25 U	26 U	34 UJ	43 UJ
Vinyl chloride	48 U	38 U	25 U	26 U	34 UJ	43 UJ
Chloroethane	48 U	38 U	25 U	26 U	34 UJ	43 UJ
Methylene chloride	67 J	55 J	31 J	37 J	23 J	26 J
Acetone	71 J	280 J	28 J	180 J	37 J	200 J
Carbon disulfide	48 U	38 U	25 U	53 J	34 UJ	43 UJ
1,1-Dichloroethene	48 U	38 U	25 U	26 U	34 UJ	43 UJ
1,1-Dichloroethane	48 U	38 U	25 U	26 U	34 UJ	43 UJ
Trans-1,2-dichloroethene	48 U	38 U	25 U	26 U	34 UJ	43 UJ
Cis-1,2-dichloroethene	48 U	38 U	25 U	26 U	34 UJ	43 UJ
Chloroform	48 U	38 U	25 U	26 U	34 UJ	43 UJ
1,2-Dichloroethane	48 U	38 U	25 U	26 U	34 UJ	43 UJ
2-Butanone	48 U	34 J	25 U	13 J	34 UJ	43 UJ
1,1,1-Trichloroethane	48 U	38 U	25 U	26 UJ	34 UJ	43 U
Carbon tetrachloride	48 U	38 U	25 U	26 UJ	34 UJ	43 U
Bromodichloromethane	48 U	38 U	25 U	26 UJ	34 UJ	43 U
1,2-Dichloropropane	48 U	38 U	25 U	26 UJ	34 UJ	43 U
cis-1,3-Dichloropropene	48 U	38 U	25 U	26 UJ	34 UJ	43 U
Trichloroethene	48 U	38 U	25 U	26 UJ	34 UJ	43 U
Dibromochloromethane	48 U	38 U	25 U	26 UJ	34 UJ	43 U
1,1,2-Trichloroethane	48 U	38 U	25 U	26 UJ	34 UJ	43 U
Benzene	48 U	38 U	25 U	26 UJ	34 UJ	43 U
Trans-1,3-dichloropropene	48 U	38 U	25 U	26 UJ	34 UJ	43 U
Bromoform	48 U	38 U	25 U	26 UJ	34 UJ	43 U
4-Methyl-2-pentanone	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ
2-Hexanone	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ
Tetrachloroethene	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ
1,1,2,2-Tetrachloroethane	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ
Toluene	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ
Chlorobenzene	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ
Ethylbenzene	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ
Styrene	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ
M/P xylenes	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ
O xylene	48 U	38 UJ	25 UJ	26 UJ	34 UJ	43 UJ

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD03-02	BGTCSD04-01	BGTCSD04-02	BGTCSD05-01	BGTCSD05-02	BGTCSD06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94	08/10/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chloromethane	30 U	24 U	29 U	24 U	24 U	17 U
Bromomethane	30 U	24 U	29 U	24 U	24 U	17 U
Vinyl chloride	30 U	24 U	29 U	24 U	24 U	17 U
Chloroethane	30 U	24 U	29 U	24 U	24 U	17 U
Methylene chloride	30 U	24 U	43 J	24 U	24 U	17 U
Acetone	120	210	190 J	14 J	82	17 J
Carbon disulfide	30 U	24 U	38 J	24 U	24 U	17 U
1,1-Dichloroethene	30 U	24 U	29 U	24 U	24 U	17 U
1,1-Dichloroethane	30 U	24 U	29 U	24 U	24 U	17 U
Trans-1,2-dichloroethene	30 U	24 U	29 U	24 U	24 U	17 U
Cis-1,2-dichloroethene	30 U	24 U	29 U	24 U	24 U	17 U
Chloroform	30 U	24 U	29 U	24 U	24 U	17 U
1,2-Dichloroethane	30 U	24 U	29 U	24 U	24 U	17 U
2-Butanone	18 J	35	29 U	24 U	17 J	17 U
1,1,1-Trichloroethane	30 U	24 U	29 UJ	24 U	24 U	17 U
Carbon tetrachloride	30 U	24 U	29 UJ	24 U	24 U	17 U
Bromodichloromethane	30 U	24 U	29 UJ	24 U	24 U	17 U
1,2-Dichloropropane	30 U	24 U	29 UJ	24 U	24 U	17 U
cis-1,3-Dichloropropene	30 U	24 U	29 UJ	24 U	24 U	17 U
Trichloroethene	30 U	24 U	29 UJ	24 U	24 U	17 U
Dibromochloromethane	30 U	24 U	29 UJ	24 U	24 U	17 U
1,1,2-Trichloroethane	30 U	24 U	29 UJ	24 U	24 U	17 U
Benzene	30 U	24 U	29 UJ	24 U	24 U	17 U
Trans-1,3-dichloropropene	30 U	24 U	29 UJ	24 U	24 U	17 U
Bromoform	30 U	24 U	29 UJ	24 U	24 U	17 U
4-Methyl-2-pentanone	30 U	24 U	29 UJ	24 U	24 U	17 U
2-Hexanone	30 U	24 U	29 UJ	24 U	24 U	17 U
Tetrachloroethene	30 U	24 U	29 UJ	24 U	24 U	17 U
1,1,2,2-Tetrachloroethane	30 U	24 U	29 UJ	24 U	24 U	17 U
Toluene	30 U	24 U	29 UJ	24 U	24 U	17 U
Chlorobenzene	30 U	24 U	29 UJ	24 U	24 U	17 U
Ethylbenzene	30 U	24 U	29 UJ	24 U	24 U	17 U
Styrene	30 U	24 U	29 UJ	24 U	24 U	17 U
M/P xylenes	30 U	24 U	29 UJ	24 U	24 U	17 U
O xylene	30 U	24 U	29 UJ	24 U	24 U	17 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD06-02
Date sampled	08/10/94
Depth	4-8"
Units	UG/KG
Chloromethane	42 U
Bromomethane	42 U
Vinyl chloride	42 U
Chloroethane	42 U
Methylene chloride	48 J
Acetone	98 J
Carbon disulfide	42 U
1,1-Dichloroethene	42 U
1,1-Dichloroethane	42 U
Trans-1,2-dichloroethene	42 U
Cis-1,2-dichloroethene	42 U
Chloroform	42 U
1,2-Dichloroethane	42 U
2-Butanone	42 U
1,1,1-Trichloroethane	42 U
Carbon tetrachloride	42 U
Bromodichloromethane	42 U
1,2-Dichloropropane	42 U
cis-1,3-Dichloropropene	42 U
Trichloroethene	42 U
Dibromochloromethane	42 U
1,1,2-Trichloroethane	42 U
Benzene	42 U
Trans-1,3-dichloropropene	42 U
Bromoform	42 U
4-Methyl-2-pentanone	42 U
2-Hexanone	42 U
Tetrachloroethene	42 U
1,1,2,2-Tetrachloroethane	42 U
Toluene	42 U
Chlorobenzene	42 U
Ethylbenzene	42 U
Styrene	42 U
M/P xylenes	42 U
O xylene	42 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Chloromethane	12 UJ	48 U	ND	ND		0/25
Bromomethane	12 UJ	48 U	ND	ND		0/25
Vinyl chloride	12 UJ	48 U	ND	ND		0/25
Chloroethane	12 UJ	48 U	ND	ND		0/25
Methylene chloride	14 BJ	37 BJ	9 J	67 J	BGTCSD01-01	9/25
Acetone	25 BJ	350 B	14 J	870 J	BGTNSD05-02	16/25
Carbon disulfide	17 U	48 U	7 J	120 J	BGTNSD03-02	8/25
1,1-Dichloroethene	12 UJ	48 U	ND	ND		0/25
1,1-Dichloroethane	12 UJ	48 U	ND	ND		0/25
Trans-1,2-dichloroethene	12 UJ	48 U	ND	ND		0/25
Cis-1,2-dichloroethene	12 UJ	48 U	ND	ND		0/25
Chloroform	12 UJ	48 U	ND	ND		0/25
1,2-Dichloroethane	12 UJ	48 U	ND	ND		0/25
2-Butanone	12 UJ	48 U	13 J	38 J	BGTNSD04-01	8/25
1,1,1-Trichloroethane	12 UJ	48 U	ND	ND		0/25
Carbon tetrachloride	12 UJ	48 U	ND	ND		0/25
Bromodichloromethane	12 UJ	48 U	ND	ND		0/25
1,2-Dichloropropane	12 UJ	48 U	ND	ND		0/25
cis-1,3-Dichloropropene	12 UJ	48 U	ND	ND		0/25
Trichloroethene	12 UJ	48 U	65 J	65 J	BGTNSD05-01	1/25
Dibromochloromethane	12 UJ	48 U	ND	ND		0/25
1,1,2-Trichloroethane	12 UJ	48 U	ND	ND		0/25
Benzene	12 UJ	48 U	ND	ND		0/25
Trans-1,3-dichloropropene	12 UJ	48 U	ND	ND		0/25
Bromoform	12 UJ	48 U	ND	ND		0/25
4-Methyl-2-pentanone	12 UJ	48 U	ND	ND		0/25
2-Hexanone	12 UJ	48 U	ND	ND		0/25
Tetrachloroethene	12 UJ	48 U	ND	ND		0/25
1,1,2,2-Tetrachloroethane	12 UJ	48 U	ND	ND		0/25
Toluene	12 UJ	48 U	ND	ND		0/25
Chlorobenzene	12 UJ	48 U	ND	ND		0/25
Ethylbenzene	12 UJ	48 U	ND	ND		0/25
Styrene	12 UJ	48 U	ND	ND		0/25
M/P xylenes	12 UJ	48 U	ND	ND		0/25
O xylene	12 UJ	48 U	ND	ND		0/25

TABLE 16
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
VOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Chloromethane	14.66	4.72	16.28	2.63	0.35	16.91
Bromomethane	14.66	4.72	16.28	2.63	0.35	16.91
Vinyl chloride	14.66	4.72	16.28	2.63	0.35	16.91
Chloroethane	14.66	4.72	16.28	2.63	0.35	16.91
Methylene chloride	21.58	16.29	27.16	2.85	0.66	28.68
Acetone	167.78	218.99	242.72	4.56	1.08	328.61
Carbon disulfide	22.10	22.61	29.84	2.86	0.60	27.48
1,1-Dichloroethene	14.66	4.72	16.28	2.63	0.35	16.91
1,1-Dichloroethane	14.66	4.72	16.28	2.63	0.35	16.91
Trans-1,2-dichloroethene	14.66	4.72	16.28	2.63	0.35	16.91
Cis-1,2-dichloroethene	14.66	4.72	16.28	2.63	0.35	16.91
Chloroform	14.66	4.72	16.28	2.63	0.35	16.91
1,2-Dichloroethane	14.66	4.72	16.28	2.63	0.35	16.91
2-Butanone	18.76	8.91	21.81	2.82	0.48	22.99
1,1,1-Trichloroethane	14.66	4.72	16.28	2.63	0.35	16.91
Carbon tetrachloride	14.66	4.72	16.28	2.63	0.35	16.91
Bromodichloromethane	14.66	4.72	16.28	2.63	0.35	16.91
1,2-Dichloropropane	14.66	4.72	16.28	2.63	0.35	16.91
cis-1,3-Dichloropropene	14.66	4.72	16.28	2.63	0.35	16.91
Trichloroethene	16.76	11.09	20.56	2.70	0.47	19.97
Dibromochloromethane	14.66	4.72	16.28	2.63	0.35	16.91
1,1,2-Trichloroethane	14.66	4.72	16.28	2.63	0.35	16.91
Benzene	14.66	4.72	16.28	2.63	0.35	16.91
Trans-1,3-dichloropropene	14.66	4.72	16.28	2.63	0.35	16.91
Bromoform	14.66	4.72	16.28	2.63	0.35	16.91
4-Methyl-2-pentanone	14.66	4.72	16.28	2.63	0.35	16.91
2-Hexanone	14.66	4.72	16.28	2.63	0.35	16.91
Tetrachloroethene	14.66	4.72	16.28	2.63	0.35	16.91
1,1,2,2-Tetrachloroethane	14.66	4.72	16.28	2.63	0.35	16.91
Toluene	14.66	4.72	16.28	2.63	0.35	16.91
Chlorobenzene	14.66	4.72	16.28	2.63	0.35	16.91
Ethylbenzene	14.66	4.72	16.28	2.63	0.35	16.91
Styrene	14.66	4.72	16.28	2.63	0.35	16.91
M/P xylenes	14.66	4.72	16.28	2.63	0.35	16.91
O xylene	14.66	4.72	16.28	2.63	0.35	16.91

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD01-01	BGTNSD01-02	BGTNSD02-01	BGTNSD02-02	BGTNSD03-01	BGTNSD03-01D
Date sampled	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Bis(2-chloroethyl)ether	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2-Chlorophenol	1100 U	890 U	1300 U	990 U	1400 U	1300 U
1,3-Dichlorobenzene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
1,4-Dichlorobenzene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
1,2-Dichlorobenzene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2-Methylphenol	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2,2'-Oxybis(1-chloropropane)	1100 U	890 U	1300 U	990 U	1400 U	1300 U
4-Methylphenol	1100 U	890 U	1300 U	990 U	1400 U	1300 U
N-Nitroso-di-n-propylamine	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Hexachloroethane	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Nitrobenzene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Isophorone	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2-Nitrophenol	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2,4-Dimethylphenol	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Bis(2-chloroethoxy)methane	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2,4-Dichlorophenol	1100 U	890 U	1300 U	990 U	1400 U	1300 U
1,2,4-Trichlorobenzene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Naphthalene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
4-Chloroaniline	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Hexachlorobutadiene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
4-Chloro-3-methylphenol	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2-Methylnaphthalene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Hexachlorocyclopentadie	1100 U	890 U	1300 UJ	990 U	1400 UJ	1300 U
2,4,6-Trichlorophenol	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2,4,5-Trichlorophenol	2600 U	2100 U	3200 U	2400 U	3300 U	3100 U
2-Chloronaphthalene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2-Nitroaniline	2600 U	2100 U	3200 U	2400 U	3300 U	3100 U
Dimethylphthalate	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Acenaphthylene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2,6-Dinitrotoluene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
3-Nitroaniline	2600 U	2100 U	3200 U	2400 U	3300 U	3100 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD01-01	BGTNSD01-02	BGTNSD02-01	BGTNSD02-02	BGTNSD03-01	BGTNSD03-01D
Date sampled	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Acenaphthene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2,4-Dinitrophenol	2600 U	2100 U	3200 U	2400 U	3300 U	3100 U
4-Nitrophenol	2600 U	2100 U	3200 U	2400 U	3300 U	3100 U
Dibenzofuran	1100 U	890 U	1300 U	990 U	1400 U	1300 U
2,4-Dinitrotoluene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Diethylphthalate	1100 U	890 U	1300 U	990 U	1400 U	1300 U
4-Chlorophenyl-phenylether	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Fluorene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
4-Nitroaniline	2600 U	2100 U	3200 U	2400 U	3300 U	3100 U
4,6-Dinitro-2-methylphenol	2600 U	2100 U	3200 U	2400 U	3300 U	3100 U
N-Nitrosodiphenylamine	1100 U	890 U	1300 U	990 U	1400 U	1300 U
4-Bromophenyl-phenylether	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Hexachlorobenzene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Pentachlorophenol	2600 U	2100 U	3200 U	2400 U	3300 U	3100 U
Phenanthrene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Anthracene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Carbazole	1100 U	890 U	1300 U	990 U	1400 U	1300 U
di-n-Butylphthalate	1100 U	890 U	1300 UJ	990 U	1400 U	1300 U
Fluoranthene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Pyrene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Butylbenzylphthalate	1100 U	890 U	1300 U	990 U	1400 U	1300 U
3,3'-Dichlorobenzidine	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Benzo(a)anthracene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Chrysene	1100 U	890 U	1300 U	990 U	1400 U	1300 U
Bis(2-ethylhexyl)phthalate	1100 U	890 U	1300 U	990 U	1400 U	1300 U
di-n-Octylphthalate	1100 UJ	890 UJ	1300 U	990 UJ	1400 UJ	1300 U
Benzo(b)fluoranthene	1100 U	890 UJ	1300 U	990 UJ	1400 U	1300 U
Benzo(k)fluoranthene	1100 U	890 UJ	1300 U	990 UJ	1400 U	1300 U
Benzo(a)pyrene	1100 U	890 UJ	1300 U	990 UJ	1400 U	1300 U
Indeno(1,2,3-cd)pyrene	1100 U	890 UJ	1300 U	990 UJ	1400 U	1300 U
Dibenz(a,h)anthracene	1100 U	890 UJ	1300 U	990 UJ	1400 U	1300 U
Benzo(g,h,i)perylene	1100 U	890 UJ	1300 U	990 UJ	1400 U	1300 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD03-02	BGTNSD04-01	BGTNSD04-01D	BGTNSD04-02	BGTNSD05-01	BGTNSD05-02
Date sampled	08/19/94	08/20/94	08/20/94	08/20/94	08/20/94	08/20/94
Depth	4-8"	0-4"	0-4"	4-8"	0-4"	4-8"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	960 U	780 U	710 U	470 U	500 U	400 U
Bis(2-chloroethyl)ether	960 U	780 U	710 U	470 U	500 U	400 U
2-Chlorophenol	960 U	780 U	710 U	470 U	500 U	400 U
1,3-Dichlorobenzene	960 U	780 U	710 U	470 U	500 U	400 U
1,4-Dichlorobenzene	960 U	780 U	710 U	470 U	500 U	400 U
1,2-Dichlorobenzene	960 U	780 U	710 U	470 U	500 U	400 U
2-Methylphenol	960 U	780 U	710 U	470 U	500 U	400 U
2,2'-Oxybis(1-chloropropane)	960 U	780 U	710 U	470 U	500 U	400 U
4-Methylphenol	960 U	780 U	710 U	470 U	500 U	400 U
N-Nitroso-di-n-propylamine	960 U	780 U	710 U	470 U	500 U	400 U
Hexachloroethane	960 U	780 U	710 U	470 U	500 U	400 U
Nitrobenzene	960 U	780 U	710 U	470 U	500 U	400 U
Isophorone	960 U	780 U	710 U	470 U	500 U	400 U
2-Nitrophenol	960 U	780 U	710 U	470 U	500 U	400 U
2,4-Dimethylphenol	960 U	780 U	710 U	470 U	500 U	400 U
Bis(2-chloroethoxy)methane	960 U	780 U	710 U	470 U	500 U	400 U
2,4-Dichlorophenol	960 U	780 U	710 U	470 U	500 U	400 U
1,2,4-Trichlorobenzene	960 U	780 U	710 U	470 U	500 U	400 U
Naphthalene	960 U	780 U	710 U	470 U	500 U	400 U
4-Chloroaniline	960 U	780 U	710 U	470 U	500 U	400 U
Hexachlorobutadiene	960 U	780 U	710 U	470 U	500 U	400 UJ
4-Chloro-3-methylphenol	960 U	780 U	710 U	470 U	500 U	400 U
2-Methylnaphthalene	960 U	780 U	710 U	470 U	500 U	400 U
Hexachlorocyclopentadie	960 U	780 UJ	710 U	470 UJ	500 UJ	400 U
2,4,6-Trichlorophenol	960 U	780 U	710 U	470 U	500 U	400 U
2,4,5-Trichlorophenol	2300 U	1900 U	1700 U	1100 U	1200 U	960 U
2-Chloronaphthalene	960 U	780 U	710 U	470 U	500 U	400 U
2-Nitroaniline	2300 U	1900 U	1700 U	1100 U	1200 U	960 U
Dimethylphthalate	960 U	780 U	710 U	470 U	500 U	400 U
Acenaphthylene	960 U	780 U	710 U	470 U	500 U	400 U
2,6-Dinitrotoluene	960 U	780 U	710 U	470 U	500 U	400 U
3-Nitroaniline	2300 U	1900 U	1700 U	1100 U	1200 U	960 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD03-02	BGTNSD04-01	BGTNSD04-01D	BGTNSD04-02	BGTNSD05-01	BGTNSD05-02
Date sampled	08/19/94	08/20/94	08/20/94	08/20/94	08/20/94	08/20/94
Depth	4-8"	0-4"	0-4"	4-8"	0-4"	4-8"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Acenaphthene	960 U	780 U	710 U	470 U	500 U	400 U
2,4-Dinitrophenol	2300 U	1900 U	1700 U	1100 U	1200 U	960 U
4-Nitrophenol	2300 U	1900 U	1700 U	1100 U	1200 U	960 U
Dibenzofuran	960 U	780 U	710 U	470 U	500 U	400 U
2,4-Dinitrotoluene	960 U	780 U	710 U	470 U	500 U	400 U
Diethylphthalate	960 U	780 U	710 U	470 U	500 U	400 U
4-Chlorophenyl-phenylether	960 U	780 U	710 U	470 U	500 U	400 U
Fluorene	960 U	780 U	710 U	470 U	500 U	400 U
4-Nitroaniline	2300 U	1900 U	1700 U	1100 U	1200 U	960 U
4,6-Dinitro-2-methylphenol	2300 U	1900 U	1700 U	1100 U	1200 U	960 U
N-Nitrosodiphenylamine	960 U	780 U	710 U	470 U	500 U	400 U
4-Bromophenyl-phenylether	960 U	780 U	710 U	470 U	500 U	400 U
Hexachlorobenzene	960 U	780 U	710 U	470 U	500 U	400 U
Pentachlorophenol	2300 U	1900 U	1700 U	1100 U	1200 U	960 U
Phenanthrene	960 U	780 U	710 U	470 U	500 U	400 U
Anthracene	960 U	780 U	710 U	470 U	500 U	400 U
Carbazole	960 U	780 U	710 U	470 U	500 U	400 U
di-n-Butylphthalate	960 U	780 U	710 U	470 U	500 U	400 U
Fluoranthene	960 U	780 U	710 U	470 U	500 U	400 U
Pyrene	960 U	780 U	710 U	470 U	500 U	400 U
Butylbenzylphthalate	960 U	780 U	710 U	470 U	500 U	400 U
3,3'-Dichlorobenzidine	960 U	780 U	710 U	470 U	500 U	400 U
Benzo(a)anthracene	960 U	780 U	710 U	470 U	500 U	400 U
Chrysene	960 U	780 U	710 U	470 U	500 U	400 U
Bis(2-ethylhexyl)phthalate	290 J	780 U	710 U	470 U	500 U	400 U
di-n-Octylphthalate	960 U	780 UJ	710 UJ	470 UJ	500 UJ	400 UJ
Benzo(b)fluoranthene	960 U	780 U	710 U	470 U	500 U	400 U
Benzo(k)fluoranthene	960 U	780 U	710 U	470 U	500 U	400 U
Benzo(a)pyrene	960 U	780 U	710 U	470 U	500 U	400 U
Indeno(1,2,3-cd)pyrene	960 U	780 U	710 U	470 U	500 U	400 U
Dibenz(a,h)anthracene	960 U	780 U	710 U	470 U	500 U	400 U
Benzo(g,h,i)perylene	960 U	780 U	710 U	470 U	500 U	400 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD01-01	BGTCSD01-02	BGTCSD02-01	BGTCSD02-02	BGTCSD03-01	BGTCSD03-01D
Date sampled	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	1400 U	1400 U	940 U	750 U	1200 U	870 U
Bis(2-chloroethyl)ether	1400 U	1400 U	940 U	750 U	1200 U	870 U
2-Chlorophenol	1400 U	1400 U	940 U	750 U	1200 U	870 U
1,3-Dichlorobenzene	1400 U	1400 U	940 U	750 U	1200 U	870 U
1,4-Dichlorobenzene	1400 U	1400 U	940 U	750 U	1200 U	870 U
1,2-Dichlorobenzene	1400 U	1400 U	940 U	750 U	1200 U	870 U
2-Methylphenol	1400 U	1400 U	940 U	750 U	1200 U	870 U
2,2'-Oxybis(1-chloropropane)	1400 U	1400 U	940 U	750 U	1200 U	870 U
4-Methylphenol	1400 U	1400 U	940 U	750 U	1200 U	870 U
N-Nitroso-di-n-propylamine	1400 U	1400 U	940 U	750 U	1200 U	870 U
Hexachloroethane	1400 U	1400 U	940 U	750 U	1200 U	870 U
Nitrobenzene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Isophorone	1400 U	1400 U	940 U	750 U	1200 U	870 U
2-Nitrophenol	1400 U	1400 U	940 U	750 U	1200 U	870 U
2,4-Dimethylphenol	1400 U	1400 U	940 U	750 U	1200 U	870 U
Bis(2-chloroethoxy)methane	1400 U	1400 U	940 U	750 U	1200 U	870 U
2,4-Dichlorophenol	1400 U	1400 U	940 U	750 U	1200 U	870 U
1,2,4-Trichlorobenzene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Naphthalene	1400 U	1400 U	940 U	750 U	1200 U	870 U
4-Chloroaniline	1400 U	1400 U	940 U	750 U	1200 U	870 U
Hexachlorobutadiene	1400 U	1400 U	940 U	750 U	1200 U	870 U
4-Chloro-3-methylphenol	1400 U	1400 U	940 U	750 U	1200 U	870 U
2-Methylnaphthalene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Hexachlorocyclopentadie	1400 U	1400 U	940 U	750 U	1200 U	870 U
2,4,6-Trichlorophenol	1400 U	1400 U	940 U	750 U	1200 U	870 U
2,4,5-Trichlorophenol	3500 U	3300 U	2300 U	1800 U	2900 U	2100 U
2-Chloronaphthalene	1400 U	1400 U	940 U	750 U	1200 U	870 U
2-Nitroaniline	3500 U	3300 U	2300 U	1800 U	2900 U	2100 U
Dimethylphthalate	1400 U	1400 U	940 U	750 U	1200 U	870 U
Acenaphthylene	1400 U	1400 U	940 U	750 U	1200 U	870 U
2,6-Dinitrotoluene	1400 U	1400 U	940 U	750 U	1200 U	870 U
3-Nitroaniline	3500 U	3300 U	2300 U	1800 U	2900 U	2100 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD01-01	BGTCSD01-02	BGTCSD02-01	BGTCSD02-02	BGTCSD03-01	BGTCSD03-01D
Date sampled	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Acenaphthene	1400 U	1400 U	940 U	750 U	1200 U	870 U
2,4-Dinitrophenol	3500 U	3300 U	2300 U	1800 U	2900 U	2100 U
4-Nitrophenol	3500 U	3300 U	2300 U	1800 U	2900 U	2100 U
Dibenzofuran	1400 U	1400 U	940 U	750 U	1200 U	870 U
2,4-Dinitrotoluene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Diethylphthalate	1400 U	1400 U	940 U	750 U	1200 U	870 U
4-Chlorophenyl-phenylether	1400 U	1400 U	940 U	750 U	1200 U	870 U
Fluorene	1400 U	1400 U	940 U	750 U	1200 U	870 U
4-Nitroaniline	3500 U	3300 U	2300 U	1800 U	2900 U	2100 U
4,6-Dinitro-2-methylphenol	3500 U	3300 U	2300 U	1800 U	2900 U	2100 U
N-Nitrosodiphenylamine	1400 U	1400 U	940 U	750 U	1200 U	870 U
4-Bromophenyl-phenylether	1400 U	1400 U	940 U	750 U	1200 U	870 U
Hexachlorobenzene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Pentachlorophenol	3500 U	3300 U	2300 U	1800 U	2900 U	2100 U
Phenanthrene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Anthracene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Carbazole	1400 U	1400 U	940 U	750 U	1200 U	870 U
di-n-Butylphthalate	1400 U	1400 U	940 U	750 U	1200 U	870 U
Fluoranthene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Pyrene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Butylbenzylphthalate	1400 U	1400 U	940 U	750 U	1200 U	870 U
3,3'-Dichlorobenzidine	1400 U	1400 U	940 U	750 U	1200 U	870 U
Benzo(a)anthracene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Chrysene	1400 U	1400 U	940 U	750 U	1200 U	870 U
Bis(2-ethylhexyl)phthalate	1400 U	1400 U	940 U	750 U	1200 U	870 U
di-n-Octylphthalate	1400 U	1400 U	940 UJ	750 U	1200 R	870 U
Benzo(b)fluoranthene	1400 U	1400 U	940 UJ	750 U	1200 R	870 U
Benzo(k)fluoranthene	1400 U	1400 U	940 UJ	750 U	1200 R	870 U
Benzo(a)pyrene	1400 U	1400 U	940 UJ	750 U	1200 R	870 U
Indeno(1,2,3-cd)pyrene	1400 U	1400 U	940 UJ	750 U	1200 R	870 U
Dibenz(a,h)anthracene	1400 U	1400 U	940 UJ	750 U	1200 R	870 U
Benzo(g,h,i)perylene	1400 U	1400 U	940 UJ	750 U	1200 R	870 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD03-02	BGTCSD04-01	BGTCSD04-02	BGTCSD05-01	BGTCSD05-02	BGTCSD06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94	08/10/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Phenol	1100 U	860 U	840 U	1100 U	620 U	450 U
Bis(2-chloroethyl)ether	1100 U	860 U	840 U	1100 U	620 U	450 U
2-Chlorophenol	1100 U	860 U	840 U	1100 U	620 U	450 U
1,3-Dichlorobenzene	1100 U	860 U	840 U	1100 U	620 U	450 U
1,4-Dichlorobenzene	1100 U	860 U	840 U	1100 U	620 U	450 U
1,2-Dichlorobenzene	1100 U	860 U	840 U	1100 U	620 U	450 U
2-Methylphenol	1100 U	860 U	840 U	1100 U	620 U	450 U
2,2'-Oxybis(1-chloropropane)	1100 U	860 U	840 U	1100 U	620 U	450 U
4-Methylphenol	1100 U	860 U	840 U	1100 U	620 U	450 U
N-Nitroso-di-n-propylamine	1100 U	860 U	840 U	1100 U	620 U	450 U
Hexachloroethane	1100 U	860 U	840 U	1100 U	620 U	450 U
Nitrobenzene	1100 U	860 U	840 U	1100 U	620 U	450 U
Isophorone	1100 U	860 U	840 U	1100 U	620 U	450 U
2-Nitrophenol	1100 U	860 U	840 U	1100 U	620 U	450 U
2,4-Dimethylphenol	1100 U	860 U	840 U	1100 U	620 U	450 U
Bis(2-chloroethoxy)methane	1100 U	860 U	840 U	1100 U	620 U	450 U
2,4-Dichlorophenol	1100 U	860 U	840 U	1100 U	620 U	450 U
1,2,4-Trichlorobenzene	1100 U	860 U	840 U	1100 U	620 U	450 U
Naphthalene	1100 U	860 U	840 U	1100 U	620 U	450 U
4-Chloroaniline	1100 U	860 U	840 U	1100 U	620 U	450 U
Hexachlorobutadiene	1100 U	860 U	840 U	1100 U	620 U	450 U
4-Chloro-3-methylphenol	1100 U	860 U	840 U	1100 U	620 U	450 U
2-Methylnaphthalene	1100 U	860 U	840 U	1100 U	620 U	450 U
Hexachlorocyclopentadie	1100 U	860 U	840 U	1100 U	620 U	450 U
2,4,6-Trichlorophenol	1100 U	860 U	840 U	1100 U	620 U	450 U
2,4,5-Trichlorophenol	2600 U	2100 U	2000 U	2700 U	1500 U	1100 U
2-Chloronaphthalene	1100 U	860 U	840 U	1100 U	620 U	450 U
2-Nitroaniline	2600 U	2100 U	2000 U	2700 U	1500 U	1100 U
Dimethylphthalate	1100 U	860 U	840 U	1100 U	620 U	450 U
Acenaphthylene	1100 U	860 U	840 U	1100 U	620 U	450 U
2,6-Dinitrotoluene	1100 U	860 U	840 U	1100 U	620 U	450 U
3-Nitroaniline	2600 U	2100 U	2000 U	2700 U	1500 U	1100 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD03-02	BGTCSD04-01	BGTCSD04-02	BGTCSD05-01	BGTCSD05-02	BGTCSD06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94	08/10/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Acenaphthene	1100 U	860 U	840 U	1100 U	620 U	450 U
2,4-Dinitrophenol	2600 U	2100 U	2000 U	2700 U	1500 U	1100 U
4-Nitrophenol	2600 U	2100 U	2000 U	2700 U	1500 U	1100 U
Dibenzofuran	1100 U	860 U	840 U	1100 U	620 U	450 U
2,4-Dinitrotoluene	1100 U	860 U	840 U	1100 U	620 U	450 U
Diethylphthalate	1100 U	860 U	840 U	1100 U	620 U	450 U
4-Chlorophenyl-phenylether	1100 U	860 U	840 U	1100 U	620 U	450 U
Fluorene	1100 U	860 U	840 U	1100 U	620 U	450 U
4-Nitroaniline	2600 U	2100 U	2000 U	2700 U	1500 U	1100 U
4,6-Dinitro-2-methylphenol	2600 U	2100 U	2000 U	2700 U	1500 U	1100 U
N-Nitrosodiphenylamine	1100 U	860 U	840 U	1100 U	620 U	450 U
4-Bromophenyl-phenylether	1100 U	860 U	840 U	1100 U	620 U	450 U
Hexachlorobenzene	1100 U	860 U	840 U	1100 U	620 U	450 U
Pentachlorophenol	2600 U	2100 U	2000 U	2700 U	1500 U	1100 U
Phenanthrene	1100 U	860 U	840 U	1100 U	620 U	450 U
Anthracene	1100 U	860 U	840 U	1100 U	620 U	450 U
Carbazole	1100 U	860 U	840 U	1100 U	620 U	450 U
di-n-Butylphthalate	1100 U	860 U	840 U	1100 U	620 U	450 U
Fluoranthene	1100 U	860 U	840 U	1100 U	620 U	450 U
Pyrene	1100 U	860 U	840 U	1100 U	620 U	450 U
Butylbenzylphthalate	1100 U	860 U	840 U	1100 U	620 U	450 U
3,3'-Dichlorobenzidine	1100 U	860 U	840 U	1100 U	620 U	450 U
Benzo(a)anthracene	1100 U	860 U	840 U	1100 U	620 U	450 U
Chrysene	1100 U	860 U	840 U	1100 U	620 U	450 U
Bis(2-ethylhexyl)phthalate	1100 U	860 U	840 U	1100 U	620 U	450 U
di-n-Octylphthalate	1100 U	860 U	840 UJ	1100 U	620 UJ	450 U
Benzo(b)fluoranthene	1100 U	860 U	840 UJ	1100 U	620 UJ	450 U
Benzo(k)fluoranthene	1100 U	860 U	840 UJ	1100 U	620 UJ	450 U
Benzo(a)pyrene	1100 U	860 U	840 UJ	1100 U	620 UJ	450 U
Indeno(1,2,3-cd)pyrene	1100 U	860 U	840 UJ	1100 U	620 UJ	450 U
Dibenz(a,h)anthracene	1100 U	860 U	840 UJ	1100 U	620 UJ	450 U
Benzo(g,h,i)perylene	1100 U	860 U	840 UJ	1100 U	620 UJ	450 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD06-02
Date sampled	08/10/94
Depth	4-8"
Units	UG/KG
Phenol	460 U
Bis(2-chloroethyl)ether	460 U
2-Chlorophenol	460 U
1,3-Dichlorobenzene	460 U
1,4-Dichlorobenzene	460 U
1,2-Dichlorobenzene	460 U
2-Methylphenol	460 U
2,2'-Oxybis(1-chloropropane)	460 U
4-Methylphenol	460 U
N-Nitroso-di-n-propylamine	460 U
Hexachloroethane	460 U
Nitrobenzene	460 U
Isophorone	460 U
2-Nitrophenol	460 U
2,4-Dimethylphenol	460 U
Bis(2-chloroethoxy)methane	460 U
2,4-Dichlorophenol	460 U
1,2,4-Trichlorobenzene	460 U
Naphthalene	460 U
4-Chloroaniline	460 U
Hexachlorobutadiene	460 U
4-Chloro-3-methylphenol	460 U
2-Methylnaphthalene	460 U
Hexachlorocyclopentadie	460 U
2,4,6-Trichlorophenol	460 U
2,4,5-Trichlorophenol	1100 U
2-Chloronaphthalene	460 U
2-Nitroaniline	1100 U
Dimethylphthalate	460 U
Acenaphthylene	460 U
2,6-Dinitrotoluene	460 U
3-Nitroaniline	1100 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD06-02
Date sampled	08/10/94
Depth	4-8"
Units	UG/KG
Acenaphthene	460 U
2,4-Dinitrophenol	1100 U
4-Nitrophenol	1100 U
Dibenzofuran	460 U
2,4-Dinitrotoluene	460 U
Diethylphthalate	460 U
4-Chlorophenyl-phenylether	460 U
Fluorene	460 U
4-Nitroaniline	1100 U
4,6-Dinitro-2-methylphenol	1100 U
N-Nitrosodiphenylamine	460 U
4-Bromophenyl-phenylether	460 U
Hexachlorobenzene	460 U
Pentachlorophenol	1100 U
Phenanthrene	460 U
Anthracene	460 U
Carbazole	460 U
di-n-Butylphthalate	460 U
Fluoranthene	460 U
Pyrene	460 U
Butylbenzylphthalate	460 U
3,3'-Dichlorobenzidine	460 U
Benzo(a)anthracene	460 U
Chrysene	460 U
Bis(2-ethylhexyl)phthalate	460 U
di-n-Octylphthalate	460 U
Benzo(b)fluoranthene	460 U
Benzo(k)fluoranthene	460 U
Benzo(a)pyrene	460 U
Indeno(1,2,3-cd)pyrene	460 U
Dibenz(a,h)anthracene	460 U
Benzo(g,h,i)perylene	460 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Phenol	400 U	1400 U	ND	ND		0/25
Bis(2-chloroethyl)ether	400 U	1400 U	ND	ND		0/25
2-Chlorophenol	400 U	1400 U	ND	ND		0/25
1,3-Dichlorobenzene	400 U	1400 U	ND	ND		0/25
1,4-Dichlorobenzene	400 U	1400 U	ND	ND		0/25
1,2-Dichlorobenzene	400 U	1400 U	ND	ND		0/25
2-Methylphenol	400 U	1400 U	ND	ND		0/25
2,2'-Oxybis(1-chloropropane)	400 U	1400 U	ND	ND		0/25
4-Methylphenol	400 U	1400 U	ND	ND		0/25
N-Nitroso-di-n-propylamine	400 U	1400 U	ND	ND		0/25
Hexachloroethane	400 U	1400 U	ND	ND		0/25
Nitrobenzene	400 U	1400 U	ND	ND		0/25
Isophorone	400 U	1400 U	ND	ND		0/25
2-Nitrophenol	400 U	1400 U	ND	ND		0/25
2,4-Dimethylphenol	400 U	1400 U	ND	ND		0/25
Bis(2-chloroethoxy)methane	400 U	1400 U	ND	ND		0/25
2,4-Dichlorophenol	400 U	1400 U	ND	ND		0/25
1,2,4-Trichlorobenzene	400 U	1400 U	ND	ND		0/25
Naphthalene	400 U	1400 U	ND	ND		0/25
4-Chloroaniline	400 U	1400 U	ND	ND		0/25
Hexachlorobutadiene	400 UJ	1400 U	ND	ND		0/25
4-Chloro-3-methylphenol	400 U	1400 U	ND	ND		0/25
2-Methylnaphthalene	400 U	1400 U	ND	ND		0/25
Hexachlorocyclopentadie	400 U	1400 UJ	ND	ND		0/25
2,4,6-Trichlorophenol	400 U	1400 U	ND	ND		0/25
2,4,5-Trichlorophenol	960 U	3500 U	ND	ND		0/25
2-Chloronaphthalene	400 U	1400 U	ND	ND		0/25
2-Nitroaniline	960 U	3500 U	ND	ND		0/25
Dimethylphthalate	400 U	1400 U	ND	ND		0/25
Acenaphthylene	400 U	1400 U	ND	ND		0/25
2,6-Dinitrotoluene	400 U	1400 U	ND	ND		0/25
3-Nitroaniline	960 U	3500 U	ND	ND		0/25

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Acenaphthene	400 U	1400 U	ND	ND		0/25
2,4-Dinitrophenol	960 U	3500 U	ND	ND		0/25
4-Nitrophenol	960 U	3500 U	ND	ND		0/25
Dibenzofuran	400 U	1400 U	ND	ND		0/25
2,4-Dinitrotoluene	400 U	1400 U	ND	ND		0/25
Diethylphthalate	400 U	1400 U	ND	ND		0/25
4-Chlorophenyl-phenylether	400 U	1400 U	ND	ND		0/25
Fluorene	400 U	1400 U	ND	ND		0/25
4-Nitroaniline	960 U	3500 U	ND	ND		0/25
4,6-Dinitro-2-methylphenol	960 U	3500 U	ND	ND		0/25
N-Nitrosodiphenylamine	400 U	1400 U	ND	ND		0/25
4-Bromophenyl-phenylether	400 U	1400 U	ND	ND		0/25
Hexachlorobenzene	400 U	1400 U	ND	ND		0/25
Pentachlorophenol	960 U	3500 U	ND	ND		0/25
Phenanthrene	400 U	1400 U	ND	ND		0/25
Anthracene	400 U	1400 U	ND	ND		0/25
Carbazole	400 U	1400 U	ND	ND		0/25
di-n-Butylphthalate	400 U	1400 U	ND	ND		0/25
Fluoranthene	400 U	1400 U	ND	ND		0/25
Pyrene	400 U	1400 U	ND	ND		0/25
Butylbenzylphthalate	400 U	1400 U	ND	ND		0/25
3,3'-Dichlorobenzidine	400 U	1400 U	ND	ND		0/25
Benzo(a)anthracene	400 U	1400 U	ND	ND		0/25
Chrysene	400 U	1400 U	ND	ND		0/25
Bis(2-ethylhexyl)phthalate	400 U	1400 U	290 J	290 J	BGTNSD03-02	1/25
di-n-Octylphthalate	400 UJ	1400 UJ	ND	ND		0/24
Benzo(b)fluoranthene	400 U	1400 U	ND	ND		0/24
Benzo(k)fluoranthene	400 U	1400 U	ND	ND		0/24
Benzo(a)pyrene	400 U	1400 U	ND	ND		0/24
Indeno(1,2,3-cd)pyrene	400 U	1400 U	ND	ND		0/24
Dibenz(a,h)anthracene	400 U	1400 U	ND	ND		0/24
Benzo(g,h,i)perylene	400 U	1400 U	ND	ND		0/24

TABLE 16
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Phenol	455.80	159.38	510.34	6.06	0.39	534.49
Bis(2-chloroethyl)ether	455.80	159.38	510.34	6.06	0.39	534.49
2-Chlorophenol	455.80	159.38	510.34	6.06	0.39	534.49
1,3-Dichlorobenzene	455.80	159.38	510.34	6.06	0.39	534.49
1,4-Dichlorobenzene	455.80	159.38	510.34	6.06	0.39	534.49
1,2-Dichlorobenzene	455.80	159.38	510.34	6.06	0.39	534.49
2-Methylphenol	455.80	159.38	510.34	6.06	0.39	534.49
2,2'-Oxybis(1-chloropropane)	455.80	159.38	510.34	6.06	0.39	534.49
4-Methylphenol	455.80	159.38	510.34	6.06	0.39	534.49
N-Nitroso-di-n-propylamine	455.80	159.38	510.34	6.06	0.39	534.49
Hexachloroethane	455.80	159.38	510.34	6.06	0.39	534.49
Nitrobenzene	455.80	159.38	510.34	6.06	0.39	534.49
Isophorone	455.80	159.38	510.34	6.06	0.39	534.49
2-Nitrophenol	455.80	159.38	510.34	6.06	0.39	534.49
2,4-Dimethylphenol	455.80	159.38	510.34	6.06	0.39	534.49
Bis(2-chloroethoxy)methane	455.80	159.38	510.34	6.06	0.39	534.49
2,4-Dichlorophenol	455.80	159.38	510.34	6.06	0.39	534.49
1,2,4-Trichlorobenzene	455.80	159.38	510.34	6.06	0.39	534.49
Naphthalene	455.80	159.38	510.34	6.06	0.39	534.49
4-Chloroaniline	455.80	159.38	510.34	6.06	0.39	534.49
Hexachlorobutadiene	455.80	159.38	510.34	6.06	0.39	534.49
4-Chloro-3-methylphenol	455.80	159.38	510.34	6.06	0.39	534.49
2-Methylnaphthalene	455.80	159.38	510.34	6.06	0.39	534.49
Hexachlorocyclopentadie	455.80	159.38	510.34	6.06	0.39	534.49
2,4,6-Trichlorophenol	455.80	159.38	510.34	6.06	0.39	534.49
2,4,5-Trichlorophenol	1097.20	385.50	1229.12	6.93	0.39	1287.78
2-Chloronaphthalene	455.80	159.38	510.34	6.06	0.39	534.49
2-Nitroaniline	1097.20	385.50	1229.12	6.93	0.39	1287.78
Dimethylphthalate	455.80	159.38	510.34	6.06	0.39	534.49
Acenaphthylene	455.80	159.38	510.34	6.06	0.39	534.49
2,6-Dinitrotoluene	455.80	159.38	510.34	6.06	0.39	534.49
3-Nitroaniline	1097.20	385.50	1229.12	6.93	0.39	1287.78

TABLE 16
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
SEMIVOLATILE ORGANIC COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Acenaphthene	455.80	159.38	510.34	6.06	0.39	534.49
2,4-Dinitrophenol	1097.20	385.50	1229.12	6.93	0.39	1287.78
4-Nitrophenol	1097.20	385.50	1229.12	6.93	0.39	1287.78
Dibenzofuran	455.80	159.38	510.34	6.06	0.39	534.49
2,4-Dinitrotoluene	455.80	159.38	510.34	6.06	0.39	534.49
Diethylphthalate	455.80	159.38	510.34	6.06	0.39	534.49
4-Chlorophenyl-phenylether	455.80	159.38	510.34	6.06	0.39	534.49
Fluorene	455.80	159.38	510.34	6.06	0.39	534.49
4-Nitroaniline	1097.20	385.50	1229.12	6.93	0.39	1287.78
4,6-Dinitro-2-methylphenol	1097.20	385.50	1229.12	6.93	0.39	1287.78
N-Nitrosodiphenylamine	455.80	159.38	510.34	6.06	0.39	534.49
4-Bromophenyl-phenylether	455.80	159.38	510.34	6.06	0.39	534.49
Hexachlorobenzene	455.80	159.38	510.34	6.06	0.39	534.49
Pentachlorophenol	1097.20	385.50	1229.12	6.93	0.39	1287.78
Phenanthrene	455.80	159.38	510.34	6.06	0.39	534.49
Anthracene	455.80	159.38	510.34	6.06	0.39	534.49
Carbazole	455.80	159.38	510.34	6.06	0.39	534.49
di-n-Butylphthalate	455.80	159.38	510.34	6.06	0.39	534.49
Fluoranthene	455.80	159.38	510.34	6.06	0.39	534.49
Pyrene	455.80	159.38	510.34	6.06	0.39	534.49
Butylbenzylphthalate	455.80	159.38	510.34	6.06	0.39	534.49
3,3'-Dichlorobenzidine	455.80	159.38	510.34	6.06	0.39	534.49
Benzo(a)anthracene	455.80	159.38	510.34	6.06	0.39	534.49
Chrysene	455.80	159.38	510.34	6.06	0.39	534.49
Bis(2-ethylhexyl)phthalate	448.20	162.67	503.87	6.03	0.39	526.54
di-n-Octylphthalate	449.79	159.89	505.73	6.04	0.39	529.32
Benzo(b)fluoranthene	449.79	159.89	505.73	6.04	0.39	529.32
Benzo(k)fluoranthene	449.79	159.89	505.73	6.04	0.39	529.32
Benzo(a)pyrene	449.79	159.89	505.73	6.04	0.39	529.32
Indeno(1,2,3-cd)pyrene	449.79	159.89	505.73	6.04	0.39	529.32
Dibenz(a,h)anthracene	449.79	159.89	505.73	6.04	0.39	529.32
Benzo(g,h,i)perylene	449.79	159.89	505.73	6.04	0.39	529.32

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD01-01	BGTNSD01-02	BGTNSD02-01	BGTNSD02-02	BGTNSD03-01	BGTNSD03-01D
Date sampled	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
beta-BHC	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
delta-BHC	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
gamma-BHC (Lindane)	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
Heptachlor	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
Aldrin	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
Heptachlor Epoxide	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
Endosulfan I	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
Dieldrin	11.0 U	9.1 U	13.0 U	10.0 U	14.0 U	13.0 U
4,4'-DDE	11.0 U	9.1 U	13.0 U	10.0 U	14.0 U	13.0 U
Endrin	11.0 U	9.1 U	13.0 U	10.0 U	14.0 U	13.0 U
Endosulfan II	11.0 U	9.1 U	13.0 U	10.0 U	14.0 U	13.0 U
4,4'-DDD	11.0 U	9.1 U	13.0 U	10.0 U	14.0 U	13.0 U
Endosulfan Sulfate	11.0 U	9.1 U	13.0 U	10.0 U	14.0 U	13.0 U
4,4'-DDT	11.0 U	9.1 U	13.0 U	10.0 U	14.0 U	13.0 U
Methoxychlor	55.0 U	45.0 U	66.0 U	51.0 U	70.0 U	65.0 U
Endrin Ketone	11.0 U	9.1 U	13.0 U	10.0 U	14.0 U	13.0 U
Endrin Aldehyde	11.0 U	9.1 U	13.0 U	10.0 U	14.0 U	13.0 U
alpha-Chlordane	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
gamma-Chlordane	5.5 U	4.5 U	6.6 U	5.1 U	7.0 U	6.5 U
Toxaphene	550.0 U	450.0 U	660.0 U	510.0 U	700.0 U	650.0 U
Aroclor-1016	110.0 U	91.0 U	130.0 U	100.0 U	140.0 U	130.0 U
Aroclor-1221	220.0 U	180.0 U	260.0 U	200.0 U	280.0 U	260.0 U
Aroclor-1232	110.0 U	91.0 U	130.0 U	100.0 U	140.0 U	130.0 U
Aroclor-1242	110.0 U	91.0 U	130.0 U	100.0 U	140.0 U	130.0 U
Aroclor-1248	110.0 U	91.0 U	130.0 U	100.0 U	140.0 U	130.0 U
Aroclor-1254	110.0 U	91.0 U	130.0 U	100.0 U	140.0 U	130.0 U
Aroclor-1260	110.0 U	91.0 U	130.0 U	100.0 U	140.0 U	130.0 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD03-02	BGTNSD04-01	BGTNSD04-01D	BGTNSD04-02	BGTNSD05-01	BGTNSD05-02
Date sampled	08/19/94	08/20/94	08/20/94	08/20/94	08/20/94	08/20/94
Depth	4-8"	0-4"	0-4"	4-8"	0-4"	4-8"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
beta-BHC	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
delta-BHC	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
gamma-BHC (Lindane)	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
Heptachlor	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
Aldrin	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
Heptachlor Epoxide	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
Endosulfan I	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
Dieldrin	9.7 U	7.8 U	7.2 U	4.8 U	5.1 U	4.0 U
4,4'-DDE	9.7 U	7.8 U	7.2 U	4.8 U	5.1 U	4.0 U
Endrin	9.7 U	7.8 U	7.2 U	4.8 U	5.1 U	4.0 U
Endosulfan II	9.7 U	7.8 U	7.2 U	4.8 U	5.1 U	4.0 U
4,4'-DDD	9.7 U	7.8 U	7.2 U	4.8 U	5.1 U	4.0 U
Endosulfan Sulfate	9.7 U	7.8 U	7.2 U	4.8 U	5.1 U	4.0 U
4,4'-DDT	9.7 U	7.8 U	7.2 U	4.8 U	5.1 U	4.0 U
Methoxychlor	48.0 U	39.0 U	36.0 U	24.0 U	25.0 U	20.0 U
Endrin Ketone	9.7 U	7.8 U	7.2 U	4.8 U	5.1 U	4.0 U
Endrin Aldehyde	9.7 U	7.8 U	7.2 U	4.8 U	5.1 U	4.0 U
alpha-Chlordane	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
gamma-Chlordane	4.8 U	3.9 U	3.6 U	2.4 U	2.5 U	2.0 U
Toxaphene	480.0 U	390.0 U	360.0 U	240.0 U	250.0 U	200.0 U
Aroclor-1016	97.0 U	78.0 U	72.0 U	48.0 U	51.0 U	40.0 U
Aroclor-1221	190.0 U	160.0 U	140.0 U	95.0 U	100.0 U	79.0 U
Aroclor-1232	97.0 U	78.0 U	72.0 U	48.0 U	51.0 U	40.0 U
Aroclor-1242	97.0 U	78.0 U	72.0 U	48.0 U	51.0 U	40.0 U
Aroclor-1248	97.0 U	78.0 U	72.0 U	48.0 U	51.0 U	40.0 U
Aroclor-1254	97.0 U	78.0 U	72.0 U	48.0 U	51.0 U	40.0 U
Aroclor-1260	97.0 U	78.0 U	72.0 U	48.0 U	51.0 U	40.0 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD01-01	BGTCSD01-02	BGTCSD02-01	BGTCSD02-02	BGTCSD03-01	BGTCSD03-01D
Date sampled	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
beta-BHC	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
delta-BHC	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
gamma-BHC (Lindane)	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
Heptachlor	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
Aldrin	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
Heptachlor Epoxide	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
Endosulfan I	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
Dieldrin	14.0 UL	14.0 UL	9.4 UJ	7.5 UL	12.0 U	8.7 UL
4,4'-DDE	14.0 UL	14.0 UL	9.4 UJ	7.5 UL	12.0 U	8.7 UL
Endrin	14.0 UL	14.0 UL	9.4 UJ	7.5 UL	12.0 U	8.7 UL
Endosulfan II	14.0 UL	14.0 UL	9.4 UJ	7.5 UL	12.0 U	8.7 UL
4,4'-DDD	14.0 UL	14.0 UL	9.4 UJ	7.5 UL	12.0 U	8.7 UL
Endosulfan Sulfate	14.0 UL	14.0 UL	9.4 UJ	7.5 UL	12.0 U	8.7 UL
4,4'-DDT	14.0 UL	14.0 UL	9.4 UJ	7.5 UL	12.0 U	8.7 UL
Methoxychlor	72.0 UL	69.0 UL	47.0 UJ	38.0 UL	61.0 U	43.0 UL
Endrin Ketone	14.0 UL	14.0 UL	9.4 UJ	7.5 UL	12.0 U	8.7 UL
Endrin Aldehyde	14.0 UL	14.0 UL	9.4 UJ	7.5 UL	12.0 U	8.7 UL
alpha-Chlordane	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
gamma-Chlordane	7.2 UL	6.9 UL	4.7 UJ	3.8 UL	6.1 U	4.3 UL
Toxaphene	720.0 UL	690.0 UL	470.0 UJ	380.0 UL	610.0 U	430.0 UL
Aroclor-1016	140.0 UL	140.0 UL	94.0 UJ	75.0 UL	120.0 U	87.0 UL
Aroclor-1221	290.0 UL	270.0 UL	190.0 UJ	150.0 UL	250.0 U	170.0 UL
Aroclor-1232	140.0 UL	140.0 UL	94.0 UJ	75.0 UL	120.0 U	87.0 UL
Aroclor-1242	140.0 UL	140.0 UL	94.0 UJ	75.0 UL	120.0 U	87.0 UL
Aroclor-1248	140.0 UL	140.0 UL	94.0 UJ	75.0 UL	120.0 U	87.0 UL
Aroclor-1254	140.0 UL	140.0 UL	94.0 UJ	75.0 UL	120.0 U	87.0 UL
Aroclor-1260	140.0 UL	140.0 UL	94.0 UJ	75.0 UL	120.0 U	87.0 UL

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD03-02	BGTCSD04-01	BGTCSD04-02	BGTCSD05-01	BGTCSD05-02	BGTCSD06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94	08/10/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
alpha-BHC	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
beta-BHC	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
delta-BHC	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
gamma-BHC (Lindane)	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
Heptachlor	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
Aldrin	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
Heptachlor Epoxide	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
Endosulfan I	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
Dieldrin	11.0 UL	8.8 UJ	8.6 R	11.0 UL	6.3 UL	4.5 U
4,4'-DDE	11.0 UL	8.8 UJ	8.6 R	11.0 UL	6.3 UL	4.5 U
Endrin	11.0 UL	8.8 UJ	8.6 R	11.0 UL	6.3 UL	4.5 U
Endosulfan II	11.0 UL	8.8 UJ	8.6 R	11.0 UL	6.3 UL	4.5 U
4,4'-DDD	11.0 UL	8.8 UJ	8.6 R	11.0 UL	6.3 UL	4.5 U
Endosulfan Sulfate	11.0 UL	8.8 UJ	8.6 R	11.0 UL	6.3 UL	4.5 U
4,4'-DDT	11.0 UL	8.8 UJ	8.6 R	11.0 UL	6.3 UL	4.5 U
Methoxychlor	54.0 UL	44.0 UJ	43.0 R	56.0 UL	32.0 UL	23.0 U
Endrin Ketone	11.0 UL	8.8 UJ	8.6 R	11.0 UL	6.3 UL	4.5 U
Endrin Aldehyde	11.0 UL	8.8 UJ	8.6 R	11.0 UL	6.3 UL	4.5 U
alpha-Chlordane	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
gamma-Chlordane	5.4 UL	4.4 UJ	4.3 R	5.6 UL	3.2 UL	2.3 U
Toxaphene	540.0 UL	440.0 UJ	430.0 R	560.0 UL	320.0 UL	230.0 U
Aroclor-1016	110.0 UL	88.0 UJ	86.0 R	110.0 UL	63.0 UL	45.0 U
Aroclor-1221	220.0 UL	180.0 UJ	170.0 R	220.0 UL	130.0 UL	91.0 U
Aroclor-1232	110.0 UL	88.0 UJ	86.0 R	110.0 UL	63.0 UL	45.0 U
Aroclor-1242	110.0 UL	88.0 UJ	86.0 R	110.0 UL	63.0 UL	45.0 U
Aroclor-1248	110.0 UL	88.0 UJ	86.0 R	110.0 UL	63.0 UL	45.0 U
Aroclor-1254	110.0 UL	88.0 UJ	86.0 R	110.0 UL	63.0 UL	45.0 U
Aroclor-1260	110.0 UL	88.0 UJ	86.0 R	110.0 UL	63.0 UL	45.0 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD06-02	
Date sampled	08/10/94	
Depth	4-8"	
Units	UG/KG	
alpha-BHC	2.3	U
beta-BHC	2.3	U
delta-BHC	2.3	U
gamma-BHC (Lindane)	2.3	U
Heptachlor	2.3	U
Aldrin	2.3	U
Heptachlor Epoxide	2.3	U
Endosulfan I	2.3	U
Dieldrin	4.6	U
4,4'-DDE	4.6	U
Endrin	4.6	U
Endosulfan II	4.6	U
4,4'-DDD	4.6	U
Endosulfan Sulfate	4.6	U
4,4'-DDT	4.6	U
Methoxychlor	23.0	U
Endrin Ketone	4.6	U
Endrin Aldehyde	4.6	U
alpha-Chlordane	2.3	U
gamma-Chlordane	2.3	U
Toxaphene	230.0	U
Aroclor-1016	46.0	U
Aroclor-1221	92.0	U
Aroclor-1232	46.0	U
Aroclor-1242	46.0	U
Aroclor-1248	46.0	U
Aroclor-1254	46.0	U
Aroclor-1260	46.0	U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
alpha-BHC	2 U	7.2 UL	ND	ND		0/24
beta-BHC	2 U	7.2 UL	ND	ND		0/24
delta-BHC	2 U	7.2 UL	ND	ND		0/24
gamma-BHC (Lindane)	2 U	7.2 UL	ND	ND		0/24
Heptachlor	2 U	7.2 UL	ND	ND		0/24
Aldrin	2 U	7.2 UL	ND	ND		0/24
Heptachlor Epoxide	2 U	7.2 UL	ND	ND		0/24
Endosulfan I	2 U	7.2 UL	ND	ND		0/24
Dieldrin	4 U	14 U	ND	ND		0/24
4,4'-DDE	4 U	14 U	ND	ND		0/24
Endrin	4 U	14 U	ND	ND		0/24
Endosulfan II	4 U	14 U	ND	ND		0/24
4,4'-DDD	4 U	14 U	ND	ND		0/24
Endosulfan Sulfate	4 U	14 U	ND	ND		0/24
4,4'-DDT	4 U	14 U	ND	ND		0/24
Methoxychlor	20 U	72 UL	ND	ND		0/24
Endrin Ketone	4 U	14 U	ND	ND		0/24
Endrin Aldehyde	4 U	14 U	ND	ND		0/24
alpha-Chlordane	2 U	7.2 UL	ND	ND		0/24
gamma-Chlordane	2 U	7.2 UL	ND	ND		0/24
Toxaphene	200 U	720 UL	ND	ND		0/24
Aroclor-1016	40 U	140 U	ND	ND		0/24
Aroclor-1221	79 U	290 UL	ND	ND		0/24
Aroclor-1232	40 U	140 U	ND	ND		0/24
Aroclor-1242	40 U	140 U	ND	ND		0/24
Aroclor-1248	40 U	140 U	ND	ND		0/24
Aroclor-1254	40 U	140 U	ND	ND		0/24
Aroclor-1260	40 U	140 U	ND	ND		0/24

TABLE 16
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
PESTICIDES/PCBs
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
alpha-BHC	2.30	0.82	2.59	0.77	0.39	2.72
beta-BHC	2.30	0.82	2.59	0.77	0.39	2.72
delta-BHC	2.30	0.82	2.59	0.77	0.39	2.72
gamma-BHC (Lindane)	2.30	0.82	2.59	0.77	0.39	2.72
Heptachlor	2.30	0.82	2.59	0.77	0.39	2.72
Aldrin	2.30	0.82	2.59	0.77	0.39	2.72
Heptachlor Epoxide	2.30	0.82	2.59	0.77	0.39	2.72
Endosulfan I	2.30	0.82	2.59	0.77	0.39	2.72
Dieldrin	4.59	1.62	5.16	1.46	0.39	5.42
4,4'-DDE	4.59	1.62	5.16	1.46	0.39	5.42
Endrin	4.59	1.62	5.16	1.46	0.39	5.42
Endosulfan II	4.59	1.62	5.16	1.46	0.39	5.42
4,4'-DDD	4.59	1.62	5.16	1.46	0.39	5.42
Endosulfan Sulfate	4.59	1.62	5.16	1.46	0.39	5.42
4,4'-DDT	4.59	1.62	5.16	1.46	0.39	5.42
Methoxychlor	23.04	8.16	25.90	3.07	0.39	27.20
Endrin Ketone	4.59	1.62	5.16	1.46	0.39	5.42
Endrin Aldehyde	4.59	1.62	5.16	1.46	0.39	5.42
alpha-Chlordane	2.30	0.82	2.59	0.77	0.39	2.72
gamma-Chlordane	2.30	0.82	2.59	0.77	0.39	2.72
Toxaphene	230.42	81.59	258.96	5.37	0.39	271.95
Aroclor-1016	45.94	16.17	51.60	3.76	0.39	54.20
Aroclor-1221	92.02	32.62	103.43	4.45	0.40	108.71
Aroclor-1232	45.94	16.17	51.60	3.76	0.39	54.20
Aroclor-1242	45.94	16.17	51.60	3.76	0.39	54.20
Aroclor-1248	45.94	16.17	51.60	3.76	0.39	54.20
Aroclor-1254	45.94	16.17	51.60	3.76	0.39	54.20
Aroclor-1260	45.94	16.17	51.60	3.76	0.39	54.20

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD01-01	BGTNSD01-02	BGTNSD02-01	BGTNSD02-02	BGTNSD03-01	BGTNSD03-01D
Date sampled	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD03-02	BGTNSD04-01	BGTNSD04-01D	BGTNSD04-02	BGTNSD05-01	BGTNSD05-02
Date sampled	08/19/94	08/20/94	08/20/94	08/20/94	08/20/94	08/20/94
Depth	4-8"	0-4"	0-4"	4-8"	0-4"	4-8"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD01-01	BGTCSD01-02	BGTCSD02-01	BGTCSD02-02	BGTCSD03-01	BGTCSD03-01D
Date sampled	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD03-02	BGTCSD04-01	BGTCSD04-02	BGTCSD05-01	BGTCSD05-02	BGTCSD06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94	08/10/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
1,3,5-Trinitrobenzene	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U
1,3-Dinitrobenzene	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetryl	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Nitrobenzene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
2,4,6-Trinitrotoluene	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
4-Amino-2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2-Amino-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dinitrotoluene	1 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
2-Nitrotoluene	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
4-Nitrotoluene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
3-Nitrotoluene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD06-02	
Date sampled	08/10/94	
Depth	4-8"	
Units	MG/KG	
HMX	0.5	U
RDX	0.59	U
1,3,5-Trinitrobenzene	0.56	U
1,3-Dinitrobenzene	0.42	U
Tetryl	1.2	U
Nitrobenzene	0.58	U
2,4,6-Trinitrotoluene	0.44	U
4-Amino-2,6-Dinitrotoluene	1	U
2-Amino-Dinitrotoluene	1	U
2,6-Dinitrotoluene	1	U
2,4-Dinitrotoluene	1	U
Dinitrotoluene (isomeric mixture)	0.82	U
2-Nitrotoluene	0.45	U
4-Nitrotoluene	0.69	U
3-Nitrotoluene	1.2	U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
HMX	0.5 U	0.5 U	ND	ND		0/25
RDX	0.59 U	0.59 U	ND	ND		0/25
1,3,5-Trinitrobenzene	0.56 U	0.56 U	ND	ND		0/25
1,3-Dinitrobenzene	0.42 U	0.42 U	ND	ND		0/25
Tetryl	1.2 U	1.2 U	ND	ND		0/25
Nitrobenzene	0.58 U	0.58 U	ND	ND		0/25
2,4,6-Trinitrotoluene	0.44 U	0.44 U	ND	ND		0/25
4-Amino-2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/25
2-Amino-Dinitrotoluene	1 U	1 U	ND	ND		0/25
2,6-Dinitrotoluene	1 U	1 U	ND	ND		0/25
2,4-Dinitrotoluene	1 U	1 U	ND	ND		0/25
Dinitrotoluene (isomeric mixture)	0.82 U	0.82 U	ND	ND		0/25
2-Nitrotoluene	0.45 U	0.45 U	ND	ND		0/25
4-Nitrotoluene	0.69 U	0.69 U	ND	ND		0/25
3-Nitrotoluene	1.2 U	1.2 U	ND	ND		0/25

TABLE 16
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
NITRAMINE COMPOUNDS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
HMX	0.25	0.00	0.25	-1.39	0.00	0.25
RDX	0.30	0.00	0.30	-1.22	0.00	0.29
1,3,5-Trinitrobenzene	0.28	0.00	0.28	-1.27	0.00	0.28
1,3-Dinitrobenzene	0.21	0.00	0.21	-1.56	0.00	0.21
Tetryl	0.60	0.00	0.60	-0.51	0.00	0.60
Nitrobenzene	0.29	0.00	0.29	-1.24	0.00	0.29
2,4,6-Trinitrotoluene	0.22	0.00	0.22	-1.51	0.00	0.22
4-Amino-2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2-Amino-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,6-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
2,4-Dinitrotoluene	0.50	0.00	0.50	-0.69	0.00	0.50
Dinitrotoluene (isomeric mixture)	0.41	0.00	0.41	-0.89	0.00	0.41
2-Nitrotoluene	0.22	0.00	0.23	-1.49	0.00	0.23
4-Nitrotoluene	0.35	0.00	0.35	-1.06	0.00	0.35
3-Nitrotoluene	0.60	0.00	0.60	-0.51	0.00	0.60

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD01-01	BGTNSD01-02	BGTNSD02-01	BGTNSD02-02	BGTNSD03-01	BGTNSD03-01D
Date sampled	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	25200	19200	30200	32300	40500	30600
Antimony	27 UL	15 UL	26.2 UL	21.7 UL	30.9 UL	27.6 UL
Arsenic	7.1 J	7.7	6.2 J	8.8	9.3	6.3 J
Barium	49.4 J	37.6 J	56.5 J	60 J	70.2 J	54.6 J
Beryllium	0.89 J	0.7 J	0.96 J	1.2 J	1.6 J	0.92 J
Cadmium	3.6 U	2 U	3.5 U	2.9 U	4.2 U	3.7 U
Calcium	3420 J	2630	2540 J	2630 J	2950 J	2230 J
Chromium	46.5	33.2	50.7	52.2	66.1	46.7
Cobalt	9.2 J	7.3 J	9.3 J	10 J	15 J	7.6 J
Copper	22	16.7	33.2	34.6	43.1	29.6
Iron	31500	24000	33300	35000	44900	30000
Lead	26.5	24.2	30.8	50.1	51.6	31.8
Magnesium	8180 K	5180 K	8310 K	7720 K	9720 K	7230 K
Manganese	308	181	268	235	299	200
Mercury	0.17 UL	0.1 UL	0.16 UL	0.2 L	0.29 L	0.26 L
Nickel	28.2 J	23.1	16.7 J	27.7	55.2	20.8 J
Potassium	4260	3140	5490	5110	6000	5220
Selenium	0.83 L	0.4 UL	0.79 L	0.83 L	1.2 L	0.82 L
Silver	2.9 U	1.6 U	2.8 U	2.3 U	3.3 U	3 U
Sodium	16500 J	6660 J	15800 J	9660 J	15500 J	15000 J
Thallium	0.74 U	0.4 U	0.71 U	0.58 U	0.84 U	0.74 U
Vanadium	50.7	39.4	55.7	58.6	67.6	48.2
Zinc	127 J	91.6 J	150 J	159 J	202 J	132 J
Cyanide	1.9 U	1 U	1.8 U	1.4 U	2.1 U	1.9 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTNSD03-02	BGTNSD04-01	BGTNSD04-01D	BGTNSD04-02	BGTNSD05-01	BGTNSD05-02
Date sampled	08/19/94	08/20/94	08/20/94	08/20/94	08/20/94	08/20/94
Depth	4-8"	0-4"	0-4"	4-8"	0-4"	4-8"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	31900	21000 K	7940 K	16200 K	5590 K	1510
Antimony	22.4 UL	19 UL	14.9 UL	10.5 UL	18.4 UL	8.6 U
Arsenic	6.6	6.1	4.2	8.5	2.6 J	1.4 J
Barium	54.8 J	50.2 J	18.9 J	50.7 J	17.4 J	3.6 J
Beryllium	1.2 J	0.95 J	0.55 J	1.1 J	0.5 U	0.23 U
Cadmium	3 U	2.6 UL	2 UL	1.4 UL	2.5 UL	1.2 U
Calcium	2300 J	1280 J	889 J	789 J	1010 J	217 J
Chromium	49.9	37	16.4	29.9	9.3	3.8
Cobalt	9.7 J	9.8 J	5 J	5.9 J	3.8 J	0.93 U
Copper	33.5	15.1	9.5 J	8.3	3.7 J	1.2 U
Iron	34600	34400	14200	27300	7920	3060
Lead	39.9	24.2	19.9	15.8	12.9	3.4
Magnesium	7260 K	3880	2260	2780	1030 J	292 J
Manganese	229	66.1	44.9	33.7	29.3	7.4
Mercury	0.14 UL	0.18 L	0.1 UL	0.07 UL	0.12 UL	0.05 U
Nickel	28.2	19.7 K	9.3 K	10.9 K	8 U	3.7 U
Potassium	3980	3470	1520 J	2510	780 U	366 U
Selenium	0.84 L	0.74 L	0.46 L	0.67 L	0.5 U	0.23 U
Silver	2.4 U	2.1 U	1.6 U	1.1 U	2 U	0.93 U
Sodium	8900 J	5070	4810	2610	946 J	177 J
Thallium	0.59 U	0.51 U	0.4 U	0.28 U	0.5 U	0.23 U
Vanadium	54.8	55.2	21.1	45.5	11.6 J	4.8 J
Zinc	146 J	60	41.2	34.4	30.7	4 J
Cyanide	1.5 U	1.3 UL	1 UL	0.7 UL	1.2 UL	0.58 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD01-01	BGTCSD01-02	BGTCSD02-01	BGTCSD02-02	BGTCSD03-01	BGTCSD03-01D
Date sampled	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94	08/09/94
Depth	0-4"	4-8"	0-4"	4-8"	0-4"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	24700	21400	27500	21500	26000	26000
Antimony	35.2 UL	28.9 UL	17.9 UL	18.8 UL	24.9 UL	32.7 UL
Arsenic	11.8	9.5	11.4	8.6	11.2	9.3
Barium	60.6 J	53.8 J	52.1 J	46.3 J	61.7 J	64.4 J
Beryllium	1.5 J	1.2 J	1.4 J	1.3 J	1.4 J	1.5 J
Cadmium	4.8 UL	3.9 UL	2.4 UL	2.5 UL	3.4 UL	4.4 UL
Calcium	3000 J	2640 J	1840 J	1860 J	3110 J	2930 J
Chromium	54.2	44.3	58.1	48.2	53.9	54.9
Cobalt	13.4 J	10.2 J	11.7 J	9.2 J	14.3 J	12 J
Copper	25.6	20	11.8 J	24.9	27.9	23.8
Iron	40600	34300	42700	29900	43000	43200
Lead	31.3	30.6	42.7	34.1	18.3	34.6
Magnesium	9250	7430	8280	6770	8200	7960
Manganese	1980	1810	429	389	524	667
Mercury	0.23 U	0.19 U	0.12 U	0.12 U	0.16 U	0.21 U
Nickel	40.6	27.1 J	27.3	31.2	35.7	46.8
Potassium	6080	4520	5230	3760	4660	5450
Selenium	1.4 J	0.78 U	0.72 L	0.73 L	0.69 U	0.88 U
Silver	3.8 U	3.1 U	1.9 U	2 U	2.7 U	3.5 U
Sodium	16700	13400	6060	6480	8450	10300
Thallium	0.95 UL	0.78 UL	0.5 UL	0.5 UL	0.69 UL	0.88 U
Vanadium	67.4 K	55.1 K	61.8 K	62.5 K	63.8 K	60.9 K
Zinc	165	129	72.4	157	150	144
Cyanide	2.3 U	1.9 U	1.2 U	1.3 U	1.7 U	2.2 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD03-02	BGTCSD04-01	BGTCSD04-02	BGTCSD05-01	BGTCSD05-02	BGTCSD06-01
Date sampled	08/09/94	08/09/94	08/09/94	08/10/94	08/10/94	08/10/94
Depth	4-8"	0-4"	4-8"	0-4"	4-8"	0-4"
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	20100	15000	12300	10600	11900	6970
Antimony	22.4 UL	17.4 UL	21.3 UL	18.9 L	17.7 UL	12.4 UL
Arsenic	11.7	7.2	7.7	4.8 L	6.3	5.4
Barium	48.4 J	39.7 J	35.4 J	40.7 J	46.3 J	35.6 J
Beryllium	1.4 J	0.94 J	1 J	0.7 J	0.81 J	0.58 J
Cadmium	3 UL	2.4 UL	2.9 UL	2.3 UL	2.4 UL	1.7 UL
Calcium	2760 J	1480 J	2520 J	4220	1760 J	1720
Chromium	45.1 J	39.3	31.9	24.5	26.7	16.4
Cobalt	12.2 J	6.9 J	9.6 J	6 J	6.7 J	4.2 J
Copper	17.6	9.3 J	13.2 J	10.5 J	10.3 J	5.2 J
Iron	42700	30200	27100	21600	24900	16300
Lead	23.9	10.6	20.5	7.1	11.5	8
Magnesium	6970	4640	4420	2570	2940	1460 J
Manganese	395	196	240	155	143	123
Mercury	0.15 U	0.11 U	0.14 U	0.11 U	0.11 U	0.08 U
Nickel	24.5	18 J	22.6 J	22.5	18 J	10 J
Potassium	4830	3230	2840 J	2000 J	2710	1200 J
Selenium	0.61 U	0.47 U	1.5 L	0.81 J	1.2 L	0.59 L
Silver	2.4 U	1.9 U	2.3 U	1.8 U	2.2 J	1.3 U
Sodium	7020	2430	3290	1460 J	1550 J	622 J
Thallium	0.61 UL	0.47 U	0.57 U	0.47 U	0.49 U	0.34 U
Vanadium	57.1 K	38.3 K	34.6 K	25.5 K	28 K	16.8 K
Zinc	110	43.3	80.3	51	66.3	30.5
Cyanide	1.5 U	1.2 U	1.4 U	1.2 U	1.2 U	0.85 U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID	BGTCSD06-02	
Date sampled	08/10/94	
Depth	4-8"	
Units	MG/KG	
Aluminum	16100	
Antimony	30.7	UL
Arsenic	13.1	
Barium	93.2	J
Beryllium	1	J
Cadmium	4.1	UL
Calcium	2830	J
Chromium	35.7	
Cobalt	7.5	J
Copper	12.6	J
Iron	46000	
Lead	18.1	
Magnesium	3120	J
Manganese	175	
Mercury	0.2	U
Nickel	25	J
Potassium	2970	J
Selenium	1.4	L
Silver	3.3	U
Sodium	1210	J
Thallium	0.81	U
Vanadium	41.7	K
Zinc	71.9	
Cyanide	2.1	U

TABLE 16
FREQUENCY OF DETECTION SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID Date sampled Depth Units	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	NA	NA	1510	40500	BGTNSD03-01	25/25
Antimony	8.6 U	35.2 UL	18.9 L	18.9 L	BGTCSD05-01	1/25
Arsenic	NA	NA	1.4 J	13.1	BGTCSD06-02	25/25
Barium	NA	NA	3.6 J	93.2 J	BGTCSD06-02	25/25
Beryllium	0.23 U	0.5 U	0.55 J	1.6 J	BGTNSD03-01	23/25
Cadmium	1.2 U	4.8 UL	ND	ND		0/25
Calcium	NA	NA	217 J	4220	BGTCSD05-01	25/25
Chromium	NA	NA	3.8	66.1	BGTNSD03-01	25/25
Cobalt	0.93 U	0.93 U	3.8 J	15 J	BGTNSD03-01	24/25
Copper	1.2 U	1.2 U	3.7 J	43.1	BGTNSD03-01	24/25
Iron	NA	NA	3060	46000	BGTCSD06-02	25/25
Lead	NA	NA	3.4	51.6	BGTNSD03-01	25/25
Magnesium	NA	NA	292 J	9720 K	BGTNSD03-01	25/25
Manganese	NA	NA	7.4	1980	BGTCSD01-01	25/25
Mercury	0.05 U	0.23 U	0.18 L	0.29 L	BGTNSD03-01	4/25
Nickel	3.7 U	8 U	9.3 K	55.2	BGTNSD03-01	23/25
Potassium	366 U	780 U	1200 J	6080	BGTCSD01-01	23/25
Selenium	0.23 U	0.88 U	0.46 L	1.5 L	BGTCSD04-02	17/25
Silver	0.93 U	3.8 U	2.2 J	2.2 J	BGTCSD05-02	1/25
Sodium	NA	NA	177 J	16700	BGTCSD01-01	25/25
Thallium	0.23 U	0.95 UL	ND	ND		0/25
Vanadium	NA	NA	4.8 J	67.6	BGTNSD03-01	25/25
Zinc	NA	NA	4 J	202 J	BGTNSD03-01	25/25
Cyanide	0.58 U	2.3 U	ND	ND		0/25

TABLE 16
STATISTICAL SUMMARY
TIDAL FRESHWATER STREAMS
SEDIMENT
TOTAL INORGANICS AND CYANIDE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	20088.40	9672.25	23398.24	9.73	0.71	30490.44
Antimony	11.21	3.84	12.52	2.35	0.37	13.05
Arsenic	7.71	2.89	8.70	1.95	0.50	9.71
Barium	48.08	18.06	54.26	3.75	0.63	68.67
Beryllium	1.01	0.38	1.14	-0.11	0.59	1.37
Cadmium	1.46	0.47	1.62	0.32	0.35	1.68
Calcium	2222.20	929.04	2540.12	7.57	0.62	3120.89
Chromium	39.00	16.06	44.49	3.52	0.65	55.87
Cobalt	8.68	3.45	9.86	2.02	0.68	12.96
Copper	18.50	10.98	22.26	2.66	0.90	34.34
Iron	30507.20	11448.89	34425.01	10.20	0.61	42695.58
Lead	24.90	12.97	29.34	3.05	0.66	34.94
Magnesium	5514.08	2837.91	6485.21	8.39	0.83	9391.01
Manganese	365.10	487.60	531.95	5.28	1.23	862.79
Mercury	0.09	0.07	0.12	-2.55	0.59	0.12
Nickel	23.80	12.35	28.02	2.98	0.74	36.77
Potassium	3630.12	1689.17	4208.15	7.99	0.84	6357.45
Selenium	0.71	0.39	0.85	-0.52	0.67	1.00
Silver	1.21	0.43	1.36	0.12	0.38	1.41
Sodium	7224.20	5563.74	9128.11	8.42	1.18	18528.40
Thallium	0.29	0.09	0.32	-1.29	0.36	0.34
Vanadium	45.07	18.21	51.30	3.67	0.63	63.84
Zinc	97.94	53.99	116.42	4.35	0.85	169.15
Cyanide	0.73	0.24	0.81	-0.37	0.36	0.84

APPENDIX I.2
ENGINEERING PARAMETERS

TABLE 1
SURFACE SOIL
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID:	BGS01	BGS02	BGS03	BGS04	BGS05	BGS06	BGS07	BGS08	BGS09	BGS10	BGS11	BGS12	BGS13	BGS14	BGS15
Date Sampled:	7/8/94	7/8/94	7/8/94	7/8/94	7/8/94	7/8/94	7/8/94	7/8/94	7/8/94	7/19/94	7/19/94	7/20/94	7/20/94	7/19/94	7/20/94
Depth:	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
pH	3.79	5.32	5.6	6.34	6.42	5.84	5.03	4.76	4.73	NA	NA	3.57	3.12	NA	4.6

TABLE 1
SURFACE SOIL
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID:	BGS16	BGS17	BGS18	BGS18D	BGS19	BGS20	BGS20D	BGS21	BGS22	BGS23	BGS24	BGS24D	BGS25	BGS26	BGS27
Date Sampled:	7/19/94	7/20/94	7/20/94	7/20/94	7/20/94	7/21/94	7/21/94	7/21/94	7/21/94	7/21/94	7/21/94	7/21/94	7/21/94	7/21/94	7/21/94
Depth:	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
pH	2.95	4.2	4.83	4.07	4.61	6.28	6.55	4.19	6.11	4.43	5.23	5.34	5.11	4.34	4.98

TABLE 1
SURFACE SOIL
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Sample ID:	BGS28	BGS29	BGS30	BGS31	BGS33	BGS34	BGS34D	BGS35	BGS36	BGS37	BGS38	BGS39	BGS39D	BGS40
Date Sampled:	7/21/94	7/21/94	7/21/94	7/21/94	7/22/94	7/23/94	7/23/94	7/23/94	7/22/94	7/23/94	7/23/94	7/23/94	7/23/94	7/23/94
Depth:	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
pH	5.22	4.8	4.95	5.7	5.27	6.09/5.95	6.1	4.81	4.77	5.2	6.53	4.8	4.8	5.19

TABLE 2
SUBSURFACE SOIL
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGSB04-01	BGSB04-01D	BGSB04-07	BGSB04-09	BGGW04-21	BGGW04A-38	BGSB05-01	BGSB05-02	BGSB05-10	BGSB05-11	BGSB05-17
	Date Sampled:	8/8/94	8/8/94	8/8/94	8/8/94	8/15/94	8/16/94	7/19/94	7/19/94	7/19/94	7/19/94	7/19/94
	Depth:	1-3'	1-3'	13-15'	17-19'	41-43'	75-77'	1-3'	3-5'	19-21'	21-23'	33-35'
	Units:											
pH		5.27	5.25	5.2	7.24	NA	NA	5.39	4.47	4.35	NA	NA
TOC	MG/KG	8,900	6,230	1,280	4,550	5,300	1,580	10,500	614	NA	362	1,060

TABLE 2
SUBSURFACE SOIL
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGSB06-05	BGSB06-05D	BGSB06-11	BGSB06-17	BGGW06-31	BGSB07-04	BGSB07-11	BGSB07-16	BGGW07-19	BGGW07A
	Date Sampled:	7/26/94	7/26/94	7/26/94	7/26/94	8/1/94	8/9/94	8/9/94	8/9/94	8/9/94	8/9/94
	Depth:	9-11'	9-11'	21-23'	33-35'	61-63'	7-9'	21-23'	31-33'	37-39'	41-43'
	Units:										
pH		4.16	4.42	4.53	NA	NA	NA	NA	NA	NA	NA
TOC	MG/KG	1,090	1,410	816	9,300	873	1,020	7,970	14,300	3,670	1,540

TABLE 2
SUBSURFACE SOIL
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGSB08-02	BGSB08-07	BGSB08-18	BGGW08-10	BGGW08A-01	BGGW08A-01D
	Date Sampled:	8/4/94	8/4/94	8/4/94	8/4/94	8/4/94	8/4/94
	Depth:	3-5'	13-15'	35-37'	19-21'	1-3'	1-3'
	Units:						
pH		4.41	4.26	NA	NA	4.72	4.68
TOC	MG/KG	634	533	1,300	10,100	5,380	4,670

TABLE 3
ANTHROPOGENIC SURFACE SOIL
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGS41RR	BGS42RR	BGS43RR	BGS44RR	BGS44RRD	BGS45RR	BGS46RR	BGS47RR	BGS48RR	BGS49RR	BGS50RR	BGS51RR	BGS52RR
	Date Sampled:	7/9/94	7/9/94	7/9/94	7/9/94	7/9/94	7/9/94	7/9/94	7/9/94	7/9/94	7/9/94	7/9/94	7/9/94	7/9/94
	Depth:	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
pH		5.9	4.95	4.5	5.44	5.37	6.29	6.89	7.37	7.58	6.23	7.28	6.63	7.8

TABLE 4
GROUNDWATER
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGGW01-01	BGGW01A-01	BGGW02-01	BGGW02A-01	BGGW03-01	BGGW03-01D	BGGW03A-01	BGGW04-01	BGGW04A-01
	Date Sampled:	10/6/94	9/8/94	9/20/94	9/21/94	9/23/94	10/6/94	9/23/94	10/6/94	10/6/94
	Units:									
Nitrate/Nitrite	MG/L	0.07	0.02 U	0.29	0.02 U	0.04	0.04	0.02 U	0.02 U	0.02 U
TDS	MG/L	130	120	270	140	45	44	310	330	170
TSS	MG/L	1200	37	15	93	63	62	7	38	25
Total Alkalinity	MG/L	NA	1 U	NA	1 U	NA	NA	NA	NA	NA
Total Carbonate	MG/L	NA	1 U	NA	1 U	NA	NA	NA	NA	NA
Total Bicarbonate	MG/L	NA	64	NA	1 U	NA	NA	NA	NA	NA

TABLE 4
GROUNDWATER
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGGW05-01	BGGW05A-01	BGGW06-01	BGGW06-01D	BGGW06A-01	BGGW07-01	BGGW07A-01	BGGW08-01	BGGW08A-01
	Date Sampled:	9/26/94	9/26/94	10/6/94	10/6/94	10/6/94	9/26/94	9/26/94	10/5/94	10/5/94
	Units:									
Nitrate/Nitrite	MG/L	1	0.2	0.03	0.03	0.04	0.12	0.2 U	.03/.03	0.02 U
TDS	MG/L	38	160	31	24	63	350	340	10/10 U	120
TSS	MG/L	65	69	62	37	340	150	80	76/76	560
Total Alkalinity	MG/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Carbonate	MG/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Bicarbonate	MG/L	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 5
SURFACE WATER
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGWPSW01-01	BGWPSW01-02	BGWPSW02-01	BGWPSW02-02	BGWPSW03-01	BGWPSW03-01D	BGWPSW03-02	BGWPSW04-01
	Date Sampled:	8/2/94	8/2/94	8/2/94	8/2/94	8/2/94	8/2/94	8/2/94	8/2/94
	Units:								
Hardness	MG/L	72	84	140	750	72	NA	140	76
TOC	MG/L	8.92	10.6	9.5	13.8	8.72	NA	8.57	9.01

TABLE 5
SURFACE WATER
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGPLSW03-01	BGPLSW03-02	BGPLSW04-01	BGPLSW04-01D	BGPLSW04-02	BGCPSW01-01	BGCPSW02-01	BGCPSW03-01
	Date Sampled:	8/4/94	8/4/94	8/4/94	8/4/94	8/4/94	8/6/94	8/6/94	8/6/94
	Units:								
Hardness	MG/L	44	48	40	NA	40	260	200	104
TOC	MG/L	7.47	7.75	7.13	NA	8.23	3.08	8.36	10.3

TABLE 5
SURFACE WATER
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGCPSW03-01D	BGCPSW04-01	BGCPSW05-01	BGTNSW01-01	BGTNSW01-02	BGTNSW02-01	BGTNSW02-02	BGTNSW03-01
	Date Sampled:	8/6/94	8/7/94	8/7/94	8/18/94	8/18/94	8/18/94	8/18/94	8/18/94
	Units:								
Hardness	MG/L	NA	164	600	3,800	4,000	3,500	3,700	3,200
TOC	MG/L	NA	4.08	1.71	NA	NA	NA	NA	NA

TABLE 5
SURFACE WATER
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGTNSW04-01	BGTNSW04-01D	BGTNSW05-01	BGTNSW06-01	BGTCSW01-01	BGTCSW01-02	BGTCSW02-02	BGTCSW03-01
	Date Sampled:	8/20/94	8/20/94	8/20/94	8/20/94	8/8/94	8/8/94	8/8/94	8/9/94
	Units:								
Hardness	MG/L	2,400	NA	400	272	2,320	2,320	2,700	2,400
TOC	MG/L	NA	NA	NA	NA	4.79	4.44	5.59	4.37

TABLE 5
SURFACE WATER
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGTCSW03-02	BGTCSW04-01	BGTCSW05-01	BGTCSW06-01
	Date Sampled:	8/9/94	8/9/94	8/10/94	8/10/94
	Units:				
Hardness	MG/L	1,220	480	240	220
TOC	MG/L	6.9	8	7.9	8.6

TABLE 6
SEDIMENT
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGWPSD01-01	BGWPSD01-02	BGWPSD02-01	BGWPSD02-02	BGWPSD03-01	BGWPSD03-01D	BGWPSD03-02	BGWPSD04-01	BGWPSD04-02
	Date Sampled:	8/2/94	8/2/94	8/2/94	8/2/94	8/2/94	8/2/94	8/2/94	8/3/94	8/3/94
	Units:									
pH		6.27	5.25/4.50	6.01	5.26	5.88	5.97	5.66	6.17	5.73
TOC	MG/KG	96,400	132,00	117,000	94,200	74,200	NA	79,700	59,500	22,200

TABLE 6
SEDIMENT
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGPLSD03-01	BGPLSD03-02	BGPLSD04-01	BGPLSD04-01D	BGPLSD04-02	BGCPSD01-01	BGCPSD01-02	BGCPSD02-01	BGCPSD02-02
	Date Sampled:	8/5/94	8/5/94	8/4/94	8/4/94	8/4/94	8/6/94	8/6/94	8/6/94	8/6/94
	Units:									
pH		5.94	5.59	5.7	5.77	4.96	6.31	6.97	7.51	6.03
TOC	MG/KG	68,200	90,700	67,100	NA	48,600	57,500	21,800	17,100	10,400

TABLE 6
SEDIMENT
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGCPSD03-01	BGCPSD03-01D	BGCPSD03-02	BGCPSD04-01	BGCPSD04-02	BGCPSD05-01	BGCPSD05-02	BGTNSD01-01	BGTNSD01-02
	Date Sampled:	8/6/94	8/6/94	8/6/94	8/7/94	8/7/94	8/7/94	8/7/94	8/19/94	8/19/94
	Units:									
pH		6.42	5.87	7.5	7.35	7.04	6.8	7.1	7.4	7.36
TOC	MG/KG	10,100	NA	9,890	4,610	6,020	11,600	11,900	17,700	14,500

TABLE 6
SEDIMENT
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGTNSD02-01	BGTNSD02-02	BGTNSD03-01	BGTNSD03-01D	BGTNSD03-02	BGTNSD04-01	BGTNSD04-01D	BGTNSD04-02	BGTNSD05-01
	Date Sampled:	8/19/94	8/19/94	8/19/94	8/19/94	8/19/94	8/20/94	8/20/94	8/20/94	8/20/94
	Units:									
pH		7.21	7.47	6.88	7.06	7.15	7.37	7.25	7.05	6.01
TOC	MG/KG	25,400	24,600	53,600	NA	31,100	14,000	NA	3,640	36,700

TABLE 6
SEDIMENT
ENGINEERING PARAMETERS
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

	Sample ID:	BGTNSD05-02	BGTNSD06-01	BGTNSD06-02
	Date Sampled:	8/20/94	8/20/94	8/20/94
	Units:			
pH		3.97	6.19	5.78
TOC	MG/KG	42,400	22,900	24,900

APPENDIX J
GRAIN SIZE AND BULK DENSITY RESULTS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGGW04-21

Project Name: KEMRON

Client Number: 25985

Project Number: 483557.01

ETDC Number: ETDC-5911

Specific Gravity = 2.6500 Assumed

* Moisture Content = 29.4%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.9%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.6%
	#40	0.425	94.9%
	#60	0.250	77.1%
	#100	0.149	
	#140	0.106	19.0%
	#200	0.075	12.1%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04928	9.2%
	0.03509	8.1%
	0.02212	7.6%
	0.01277	7.6%
	0.00909	7.0%
	0.00645	6.5%
	0.00459	5.4%
	0.00319	4.9%
	0.00081	3.3%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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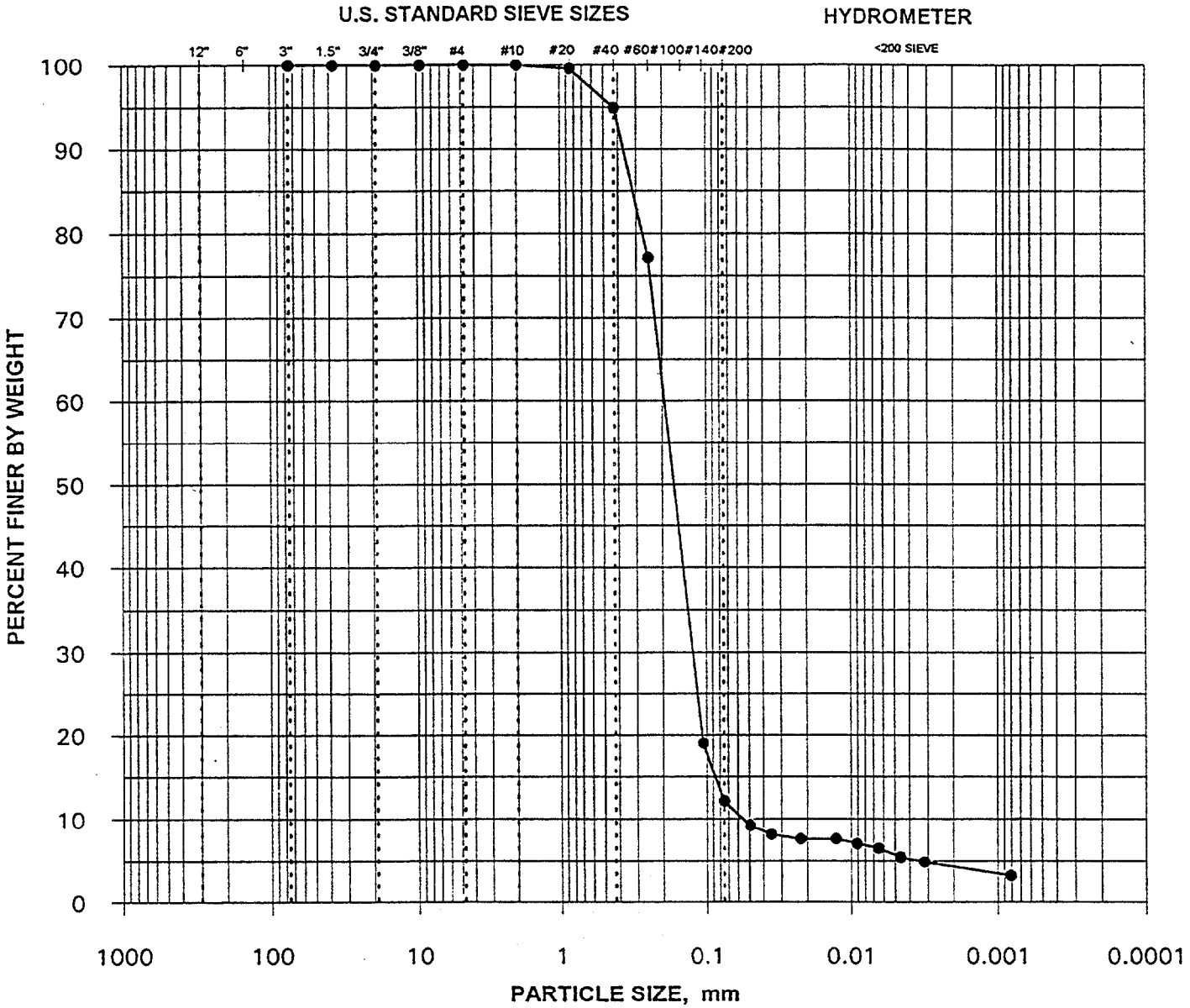
KEMRON



CLIENT SAMPLE NO.: 25985

ETDC SAMPLE NO.: ETDC-5911

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGGwo49-38

Project Name: KEMRON

Client Number: 25842

Project Number: 483557.01

ETDC Number: ETDC-5870

Specific Gravity = 2.6500 Assumed

* Moisture Content = 27.1%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.9%
	#10	2.000	99.5%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.1%
	#40	0.425	96.6%
	#60	0.250	88.3%
	#100	0.149	
	#140	0.106	30.3%
	#200	0.075	17.0%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04980	11.2%
	0.03534	10.4%
	0.02243	9.5%
	0.01295	9.5%
	0.00919	8.6%
	0.00650	8.6%
	0.00461	7.8%
	0.00320	6.9%
	0.00081	4.3%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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BGGW04A-38

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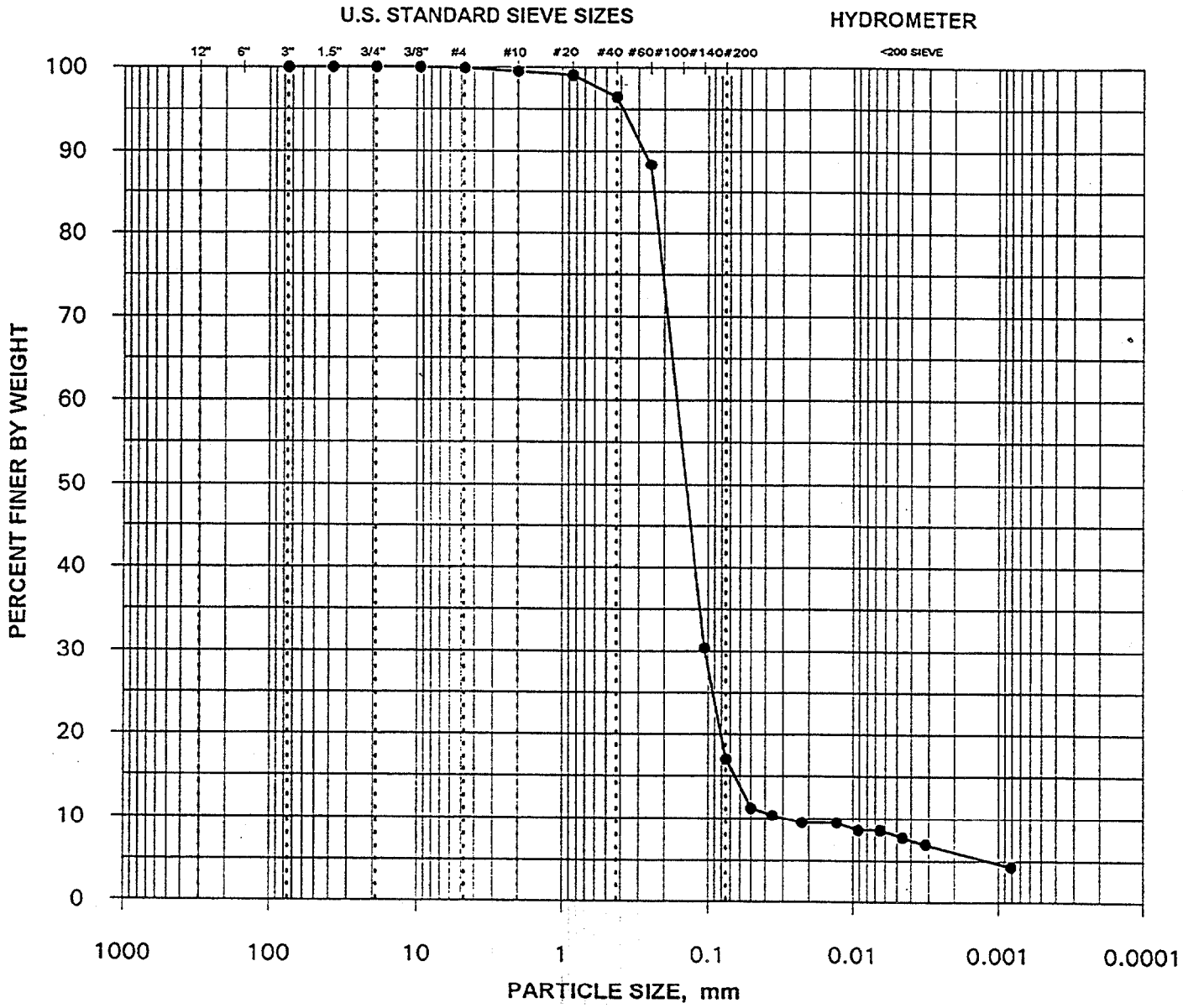

CLIENT SAMPLE NO.: 25842

ETDC SAMPLE NO.: ETDC-5870

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	

SILT 2 - 75 microns

CLAY <2 microns

682A-6-93

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Specific Gravity

ASTM D854

Versar Batch #	Laboratory ID	Client ID	Specific Gravity
18	*23637*	*16SD06-01*	*1.9791*
	23638	*16SD06-01D*	*1.9306*
	23639	*16SD06-02*	*2.0383*
	23640	*16SD07-01*	*1.6477*
	23641	*16SD07-02*	*2.5740*
	23642	*16SD08-01*	*2.3049*
	23643	*16SD08-02*	*1.9457*
	23650	*BGSB05-17*	*2.3276*

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:5- Aug-94

Project Name: Baker

Sample ID. BGSB05-17

Batch No: 18

Lab. ID: 23650

Specific Gravity = 2.6500
Assumed

Moisture Content =60.55%

Sieve Analysis

SIEVE

Seive No.	Diameter mm	Percent Finer
.5"	12.5000mm	100%
#4	4.750mm	68.72%
#10	2.000mm	55.84%
#20	0.850mm	48.73%
#40	0.425mm	44.86%
#60	0.250mm	42.20%
#140	0.106mm	24.36%
#200	0.075mm	21.44%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	21.17%
.005mm	14.23%
.001mm	10.09%

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Janice Landshof
Kemron Environmental Services
October 27, 1994
Client Project I.D.: Kemron Virginia
ETDC Project No.: 483564.01

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SPECIFIC GRAVITY
ASTM D 854

PROJECT NAME: KEMRON VIRGINIA PROJECT NUMBER: 483564.01

ETDC SAMPLE NO.	CLIENT SAMPLE NO.	SPECIFIC GRAVITY
ETDC-6052	24759 / BGSB0605	2.7388
ETDC-6053	24757 / BGSB0605D	2.7801
ETDC-6054	24758 / BGSB06-11	2.7136
ETDC-6055	23794 / BGSB05-11	2.6470
ETDC-6056	23793 / 12SB09-23	2.7051

Janice Landshof
Kemron Environmental Services
October 27, 1994
Client Project I.D.: Kemron Virginia
ETDC Project No.: 483564.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BG-SB05-11

Project Name: Kemron Virginia

Client Sample No.: 23794

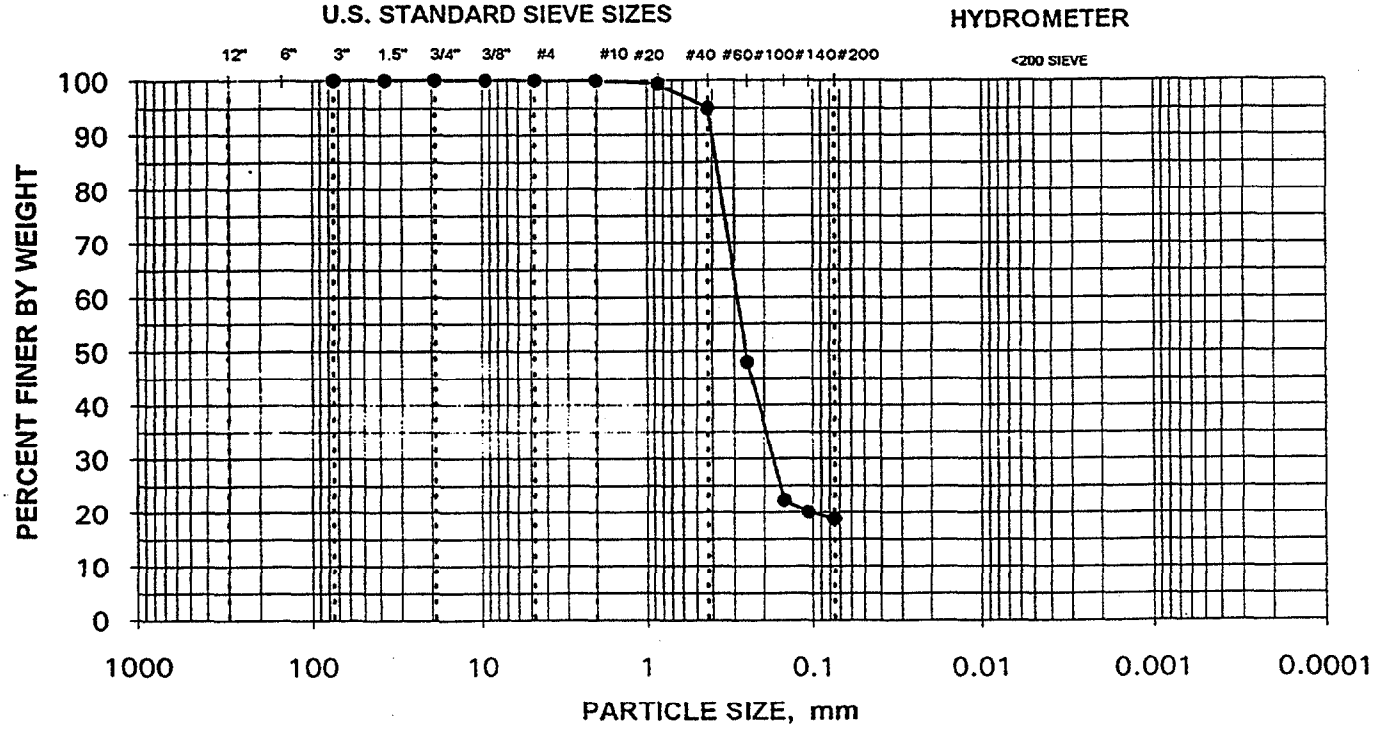
Project Number: 483564.01

ETDC Sample No.: ETDC-6055

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.9%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.2%
	#40	0.425	95.0%
	#60	0.250	48.0%
	#100	0.149	22.3%
	#140	0.106	20.1%
	#200	0.075	18.7%

DISTRIBUTION CURVE



Gravel: 76.2-4.75mm Sand: 4.75-0.75mm Silt: 0.75-0.002mm Clay: <0.002mm

Janice Landshof
Kemron Environmental Services
October 27, 1994
Client Project I.D.: Kemron Virginia
ETDC Project No.: 483564.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGSB06-05

Project Name: Kemron Virginia

Client Sample No.: 24759

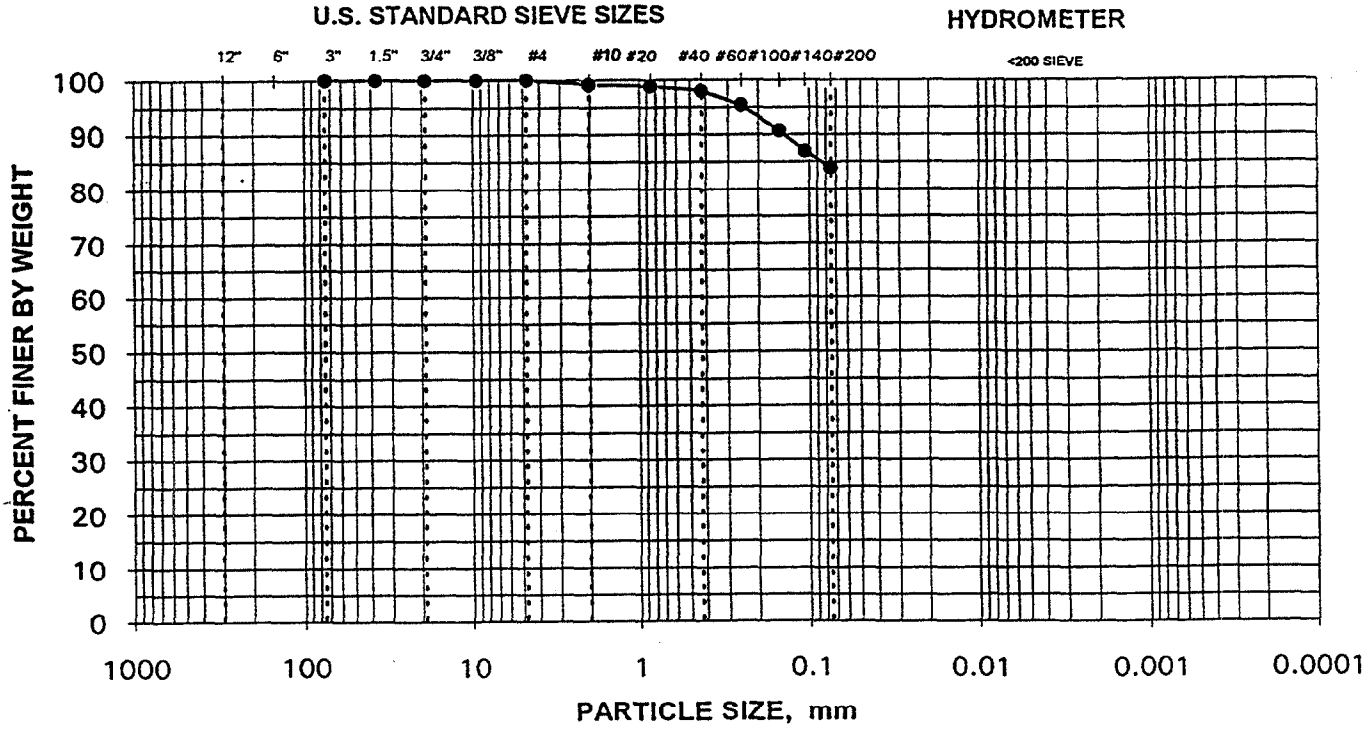
Project Number: 483564.01

ETDC Sample No.: ETDC-6052

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.2%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	98.8%
	#40	0.425	98.0%
	#60	0.250	95.4%
	#100	0.149	90.7%
	#140	0.106	86.9%
	#200	0.075	84.0%

DISTRIBUTION CURVE



Gravel: 76.2-4.75mm Sand: 4.75-0.75mm Silt: 0.75-0.002mm Clay: <0.002mm

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Kemron Environmental Services
October 27, 1994
Client Project I.D.: Kemron Virginia
ETDC Project No.: 483564.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGSB06-05D

Project Name: Kemron Virginia

Client Sample No.: 24757

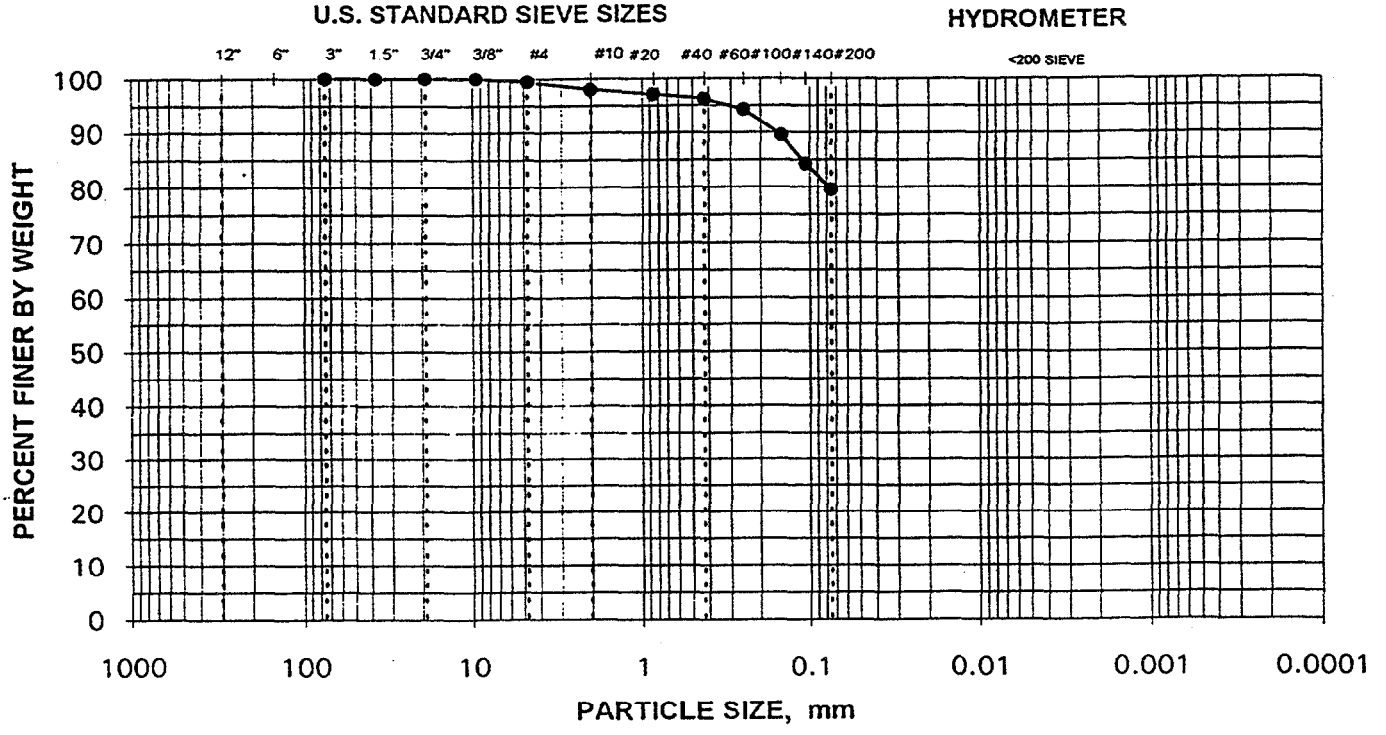
Project Number: 483564.01

ETDC Sample No.: ETDC-6053

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.4%
	#10	2.000	98.0%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	97.0%
	#40	0.425	96.2%
	#60	0.250	94.1%
	#100	0.149	89.6%
	#140	0.106	84.3%
	#200	0.075	79.6%

DISTRIBUTION CURVE



Gravel: 76.2-4.75mm Sand: 4.75-0.75mm Silt: 0.75-0.002mm Clay: <0.002mm

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Kemron Environmental Services
October 27, 1994
Client Project I.D.: Kemron Virginia
ETDC Project No.: 483564.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGSB06-11

Project Name: **Kemron Virginia**

Client Sample No.: **24758**

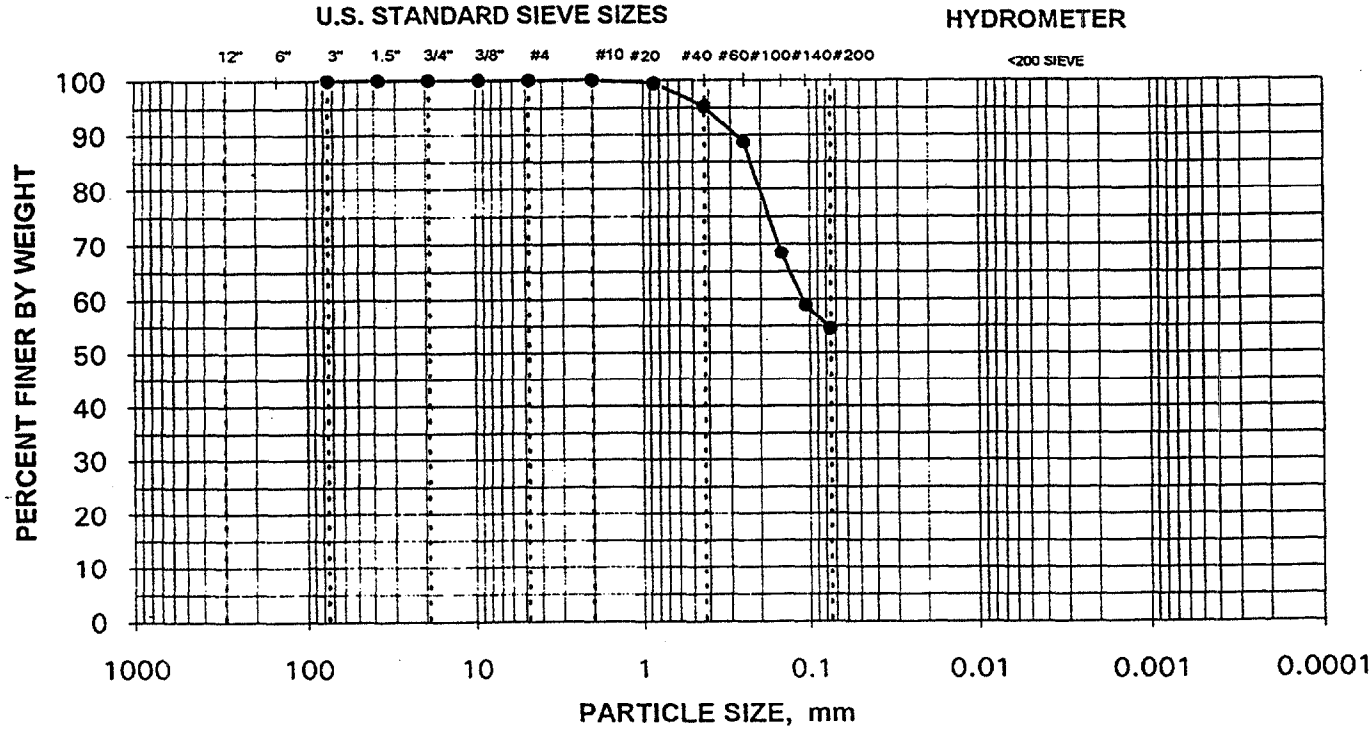
Project Number: 483564.01

ETDC Sample No.: ETDC-6054

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	100.0%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.4%
	#40	0.425	95.2%
	#60	0.250	88.5%
	#100	0.149	68.4%
	#140	0.106	58.9%
	#200	0.075	54.4%

DISTRIBUTION CURVE



Gravel: 76.2-4.75mm Sand: 4.75-0.75mm Silt: 0.75-0.002mm Clay: <0.002mm

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 1-Sept-94

Project Name: Baker *Sample ID. BGSB06-17*

Batch No: 34 *Lab. ID: 24796*

Specific Gravity = 2.6500
Assumed

Moisture Content =23.51%

Sieve Analysis

SIEVE	Seive No.	Diameter mm	Percent Finer
	.5"	12.5000mm	100%
	#4	4.750mm	100%
	#10	2.000mm	100%
	#20	0.850mm	99.95%
	#40	0.425mm	98.03%
	#60	0.250mm	76.18%
	#140	0.106mm	38.12%
	#200	0.075mm	36.33%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	36.91%
.005mm	22.11%
.001mm	13.26%

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Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGCW06-31

Project Name: KEMRON

Client Number: 24866

Project Number: 483557.01

ETDC Number: ETDC-5881

Specific Gravity = 2.6500 Assumed

* Moisture Content = 20.5%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	94.6%
	#4	4.750	88.1%
	#10	2.000	77.5%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	70.2%
	#40	0.425	62.8%
	#60	0.250	48.6%
	#100	0.149	
	#140	0.106	32.0%
	#200	0.075	30.3%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04619	28.5%
	0.03293	26.3%
	0.02091	25.5%
	0.01235	20.3%
	0.00880	18.0%
	0.00630	15.0%
	0.00453	11.3%
	0.00315	9.8%
	0.00081	3.8%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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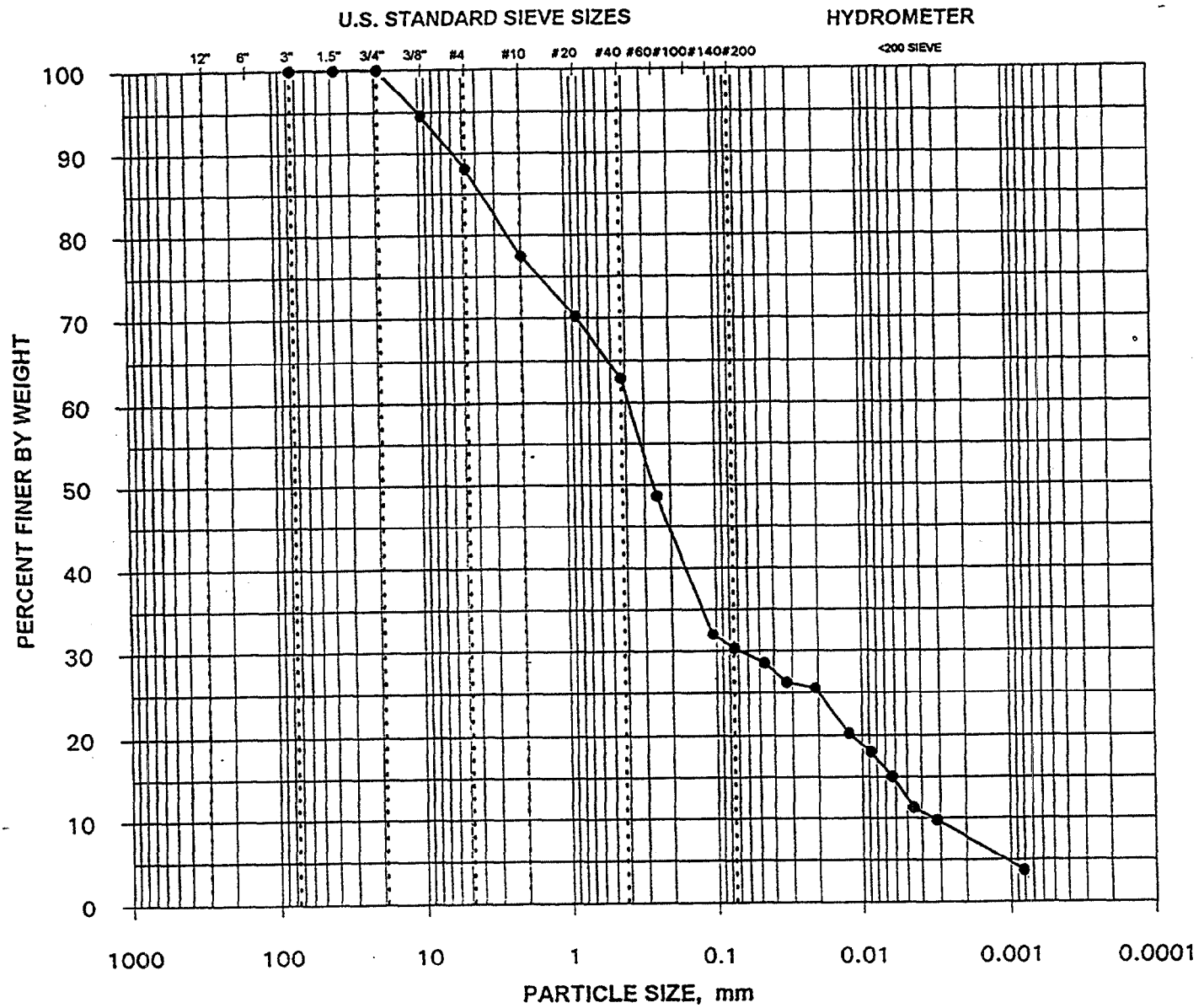

CLIENT SAMPLE NO.: 24866

ETDC SAMPLE NO.: ETDC-5881

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	CLAY <2 microns

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25762 BGSB07-04

Project Number: 483557.01

ETDC Number: ETDC-5851

Specific Gravity = 2.6500 Assumed

* Moisture Content = 15.4%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	100.0%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.9%
	#40	0.425	99.5%
	#60	0.250	91.8%
	#140	0.106	23.8%
	#200	0.075	22.1%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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BGSB07-04

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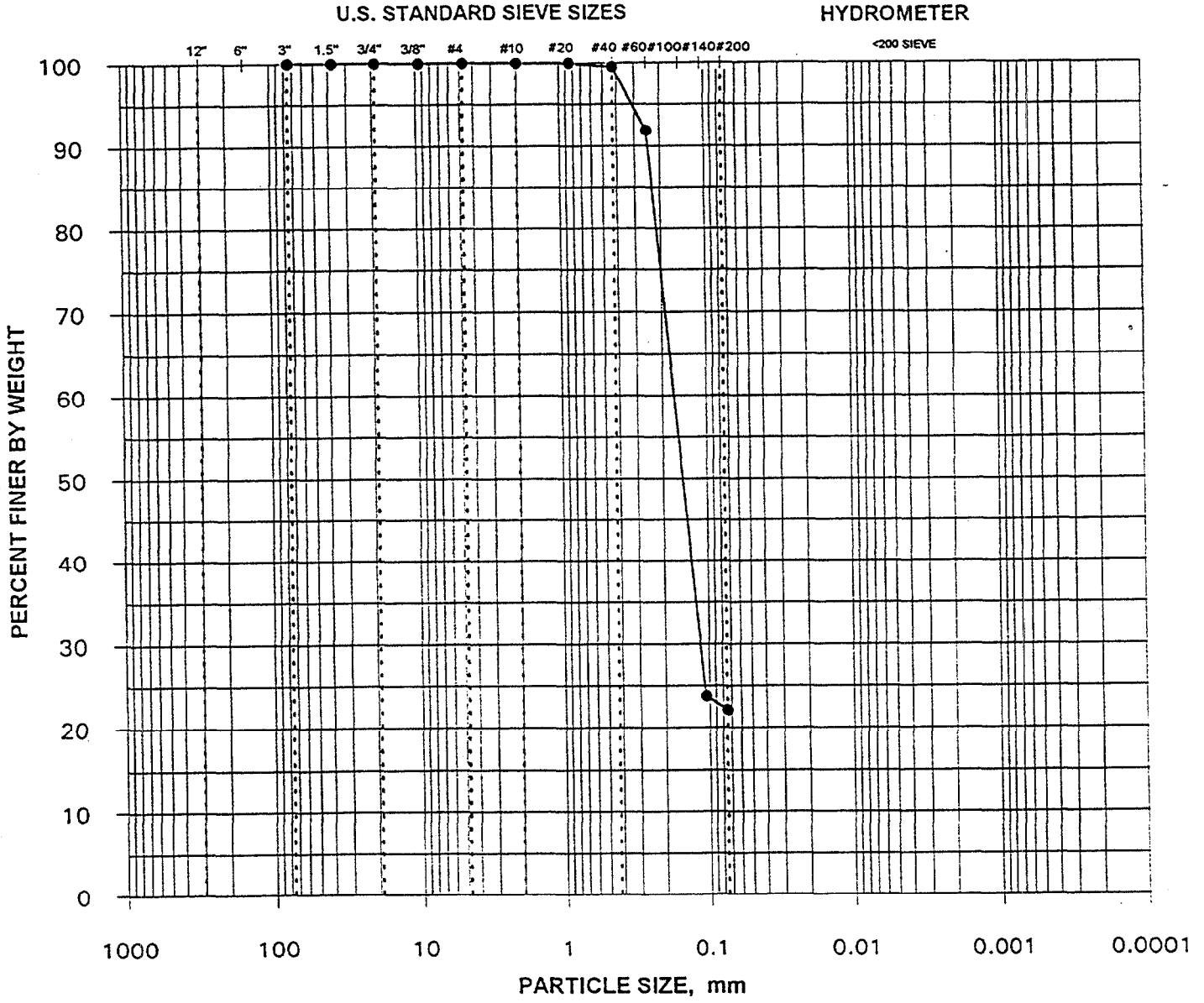

CLIENT SAMPLE NO.: 25762

ETDC SAMPLE NO.: ETDC-5851

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25761 BGSB07-11

Project Number: 483557.01

ETDC Number: ETDC-5850

Specific Gravity = 2.6500 Assumed

* Moisture Content = 49.8%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	97.7%
	#4	4.750	88.4%
	#10	2.000	68.8%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	55.5%
	#40	0.425	47.0%
	#60	0.250	39.7%
	#140	0.106	16.2%
	#200	0.075	12.2%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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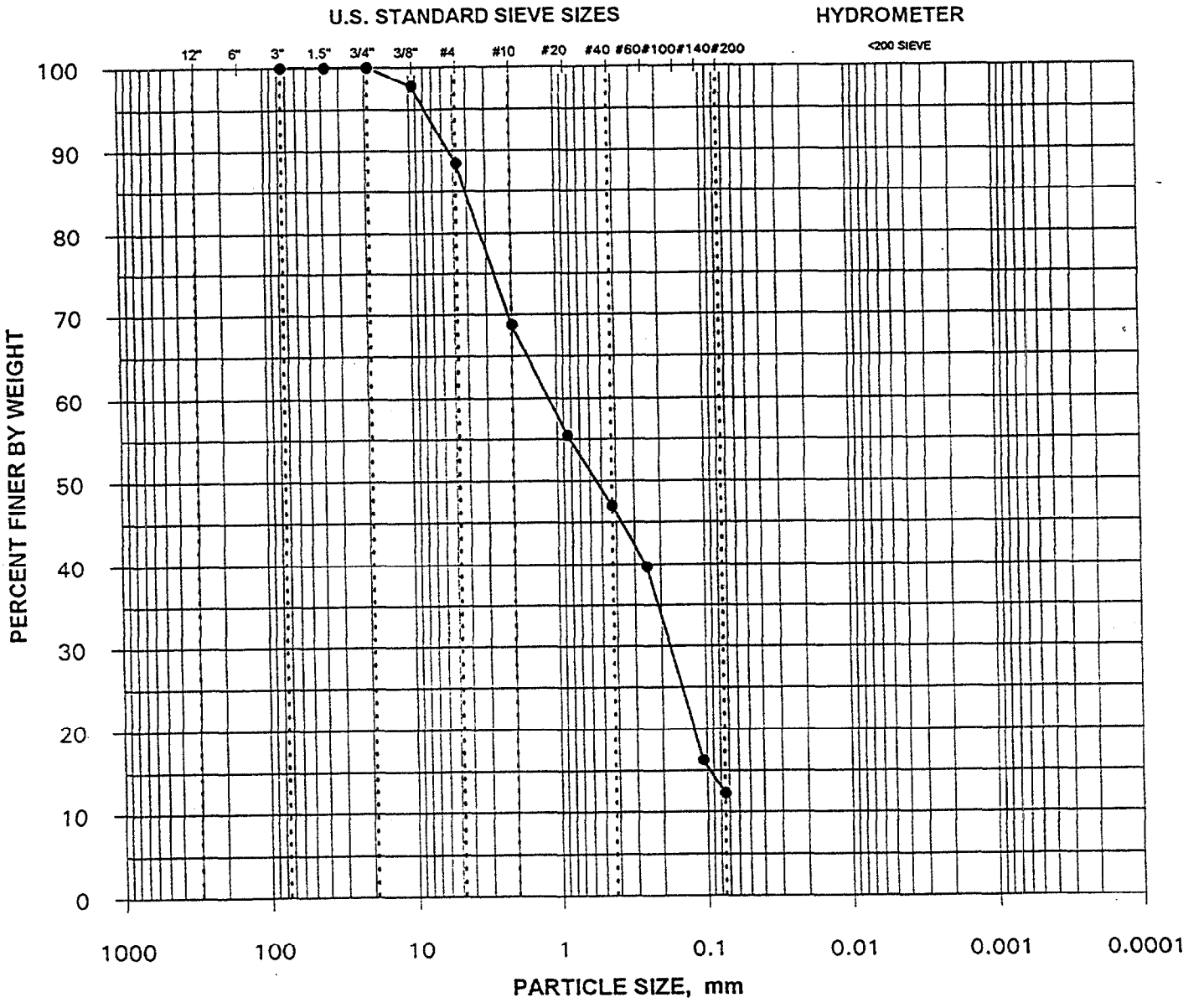
BGSB07-11

KEMRON



CLIENT SAMPLE NO.: 25761

ETDC SAMPLE NO.: ETDC-5850

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25760 BGSB07-16

Project Number: 483557.01

ETDC Number: ETDC-5849

Specific Gravity = 2.6500 Assumed

* Moisture Content = 32.9%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	98.2%
	#4	4.750	94.1%
	#10	2.000	89.2%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	76.7%
	#40	0.425	57.8%
	#60	0.250	46.3%
	#140	0.106	24.5%
	#200	0.075	20.9%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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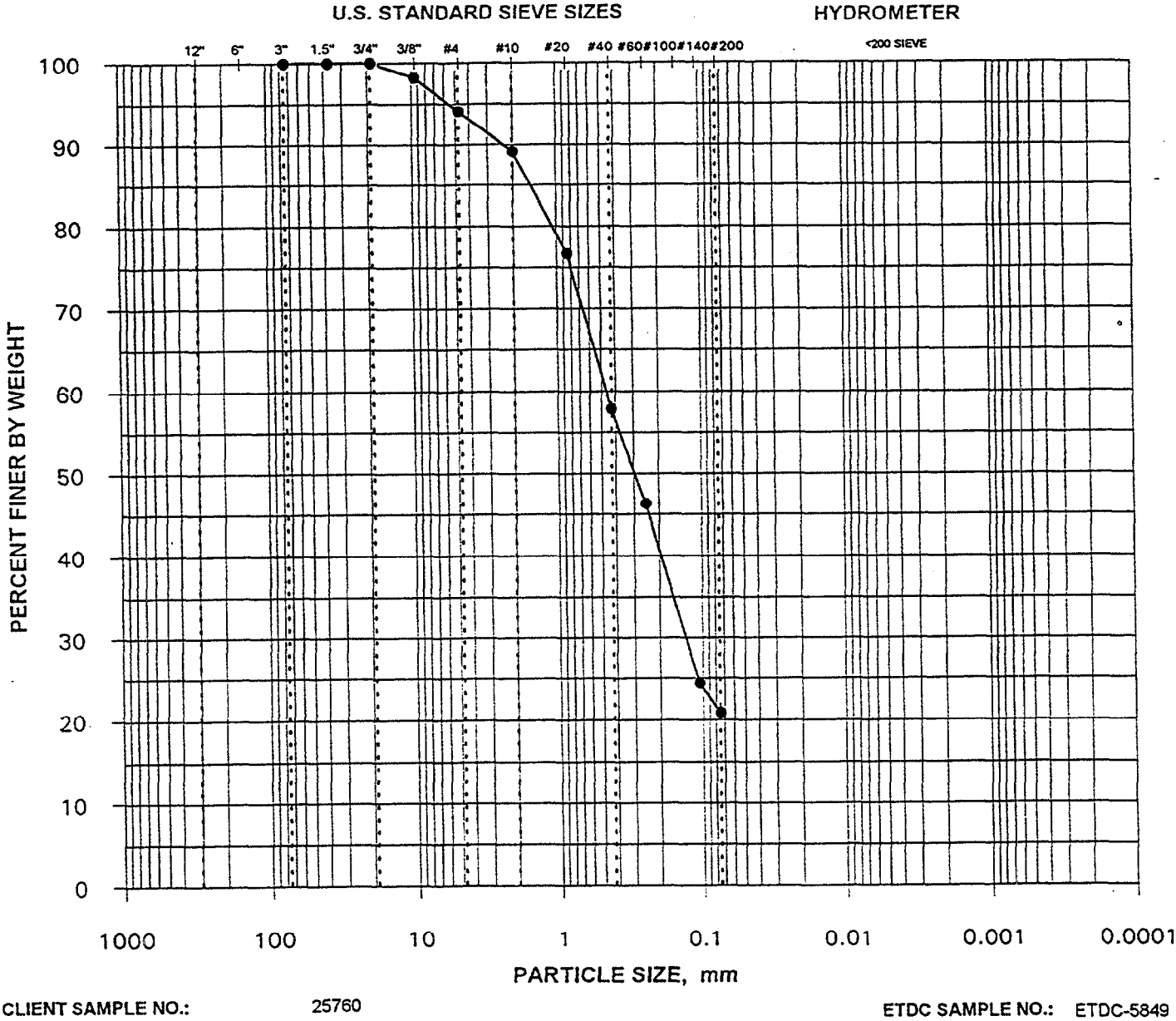
BGSB07-16

KEMRON



CLIENT SAMPLE NO.: 25760

ETDC SAMPLE NO.: ETDC-5849

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25775 BGGW0719

Project Number: 483557.01

ETDC Number: ETDC-5864

Specific Gravity = 2.6500 Assumed

* Moisture Content = 29.5%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	95.5%
	#4	4.750	86.8%
	#10	2.000	71.9%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	60.8%
	#40	0.425	47.5%
	#60	0.250	40.0%
	#100	0.149	
	#140	0.106	24.9%
	#200	0.075	20.2%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER	0.06559	20.3%
	0.04730	17.0%
	0.03358	15.9%
	0.02164	12.6%
	0.01263	10.4%
	0.00900	9.3%
	0.00638	8.8%
	0.00451	7.7%
	0.00315	7.1%
	0.00080	4.4%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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BGGW0719

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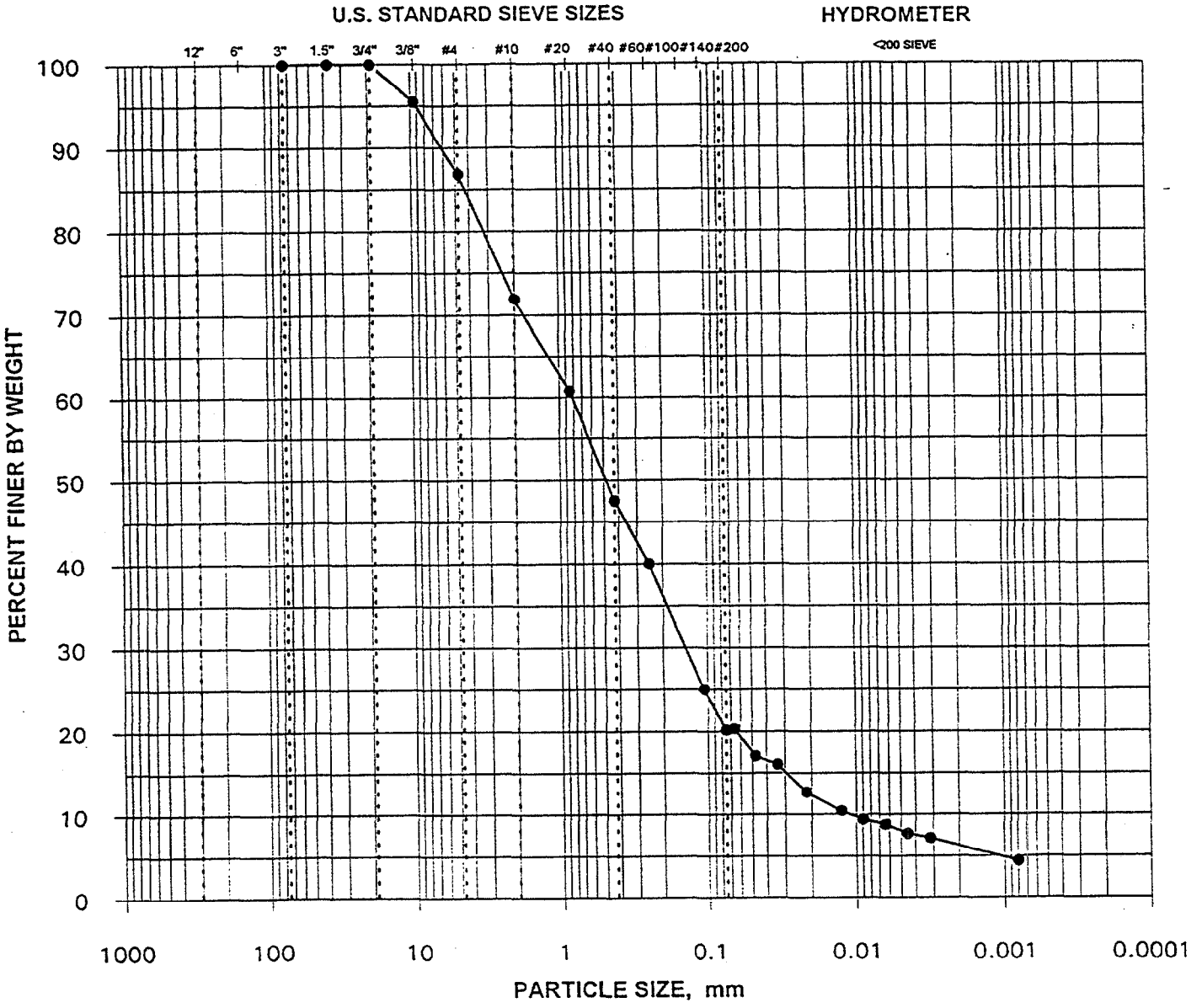

CLIENT SAMPLE NO.: 25775

ETDC SAMPLE NO.: ETDC-5864

BOULDERS	COBBLES	GRAVEL		SAND		
		COARSE	FINE	COARSE	MEDIUM	FINE

SILT 2 - 75 microns

CLAY <2 microns

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGGW07A

Project Name: KEMRON

Client Number: 26369

Project Number: 483557.01

ETDC Number: ETDC-5880

Specific Gravity = 2.6500 Assumed

* Moisture Content = 31.2%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	97.1%
	#4	4.750	90.5%
	#10	2.000	81.4%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	76.1%
	#40	0.425	70.3%
	#60	0.250	59.5%
	#100	0.149	
	#140	0.106	42.0%
	#200	0.075	38.6%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER	0.06289	38.4%
	0.04505	35.3%
	0.03219	32.9%
	0.02049	31.3%
	0.01207	26.6%
	0.00864	24.3%
	0.00619	20.4%
	0.00445	16.5%
	0.00309	14.9%
	0.00080	6.3%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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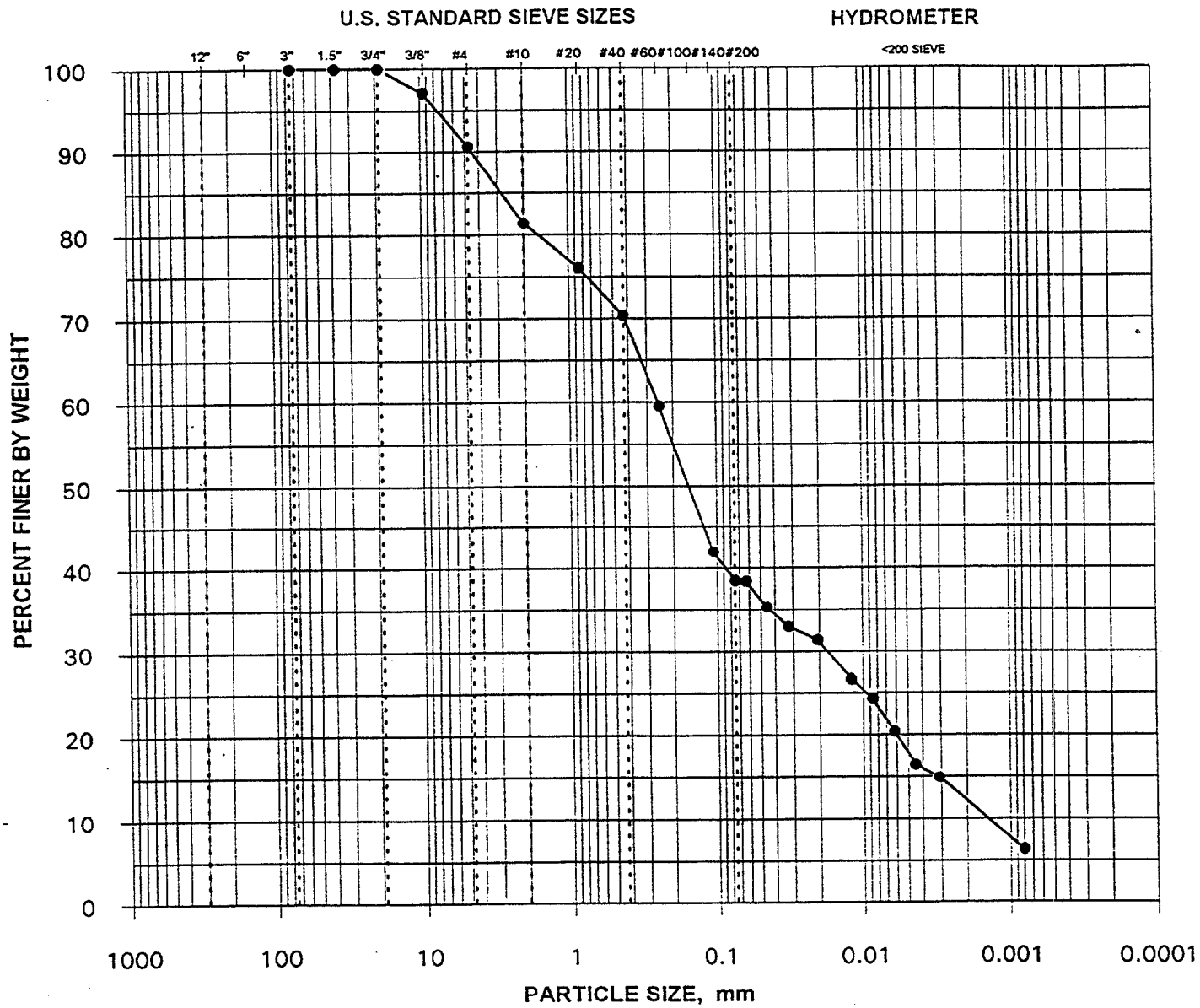
BGGW07A

KEMRON



CLIENT SAMPLE NO.: 26369

ETDC SAMPLE NO.: ETDC-5880

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

682A-6-93

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 7-Sept-94

Project Name: Baker

Sample ID. BGGW08-10

Batch No:45

Lab. ID: 25417

Specific Gravity = 2.6500 Assumed

Moisture Content

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	100%
	#10	2.000mm	100%
	#20	0.850mm	99.68%
	#40	0.425mm	97.79%
	#60	0.250mm	89.00%
	#140	0.106mm	55.57%
	#200	0.075mm	52.99%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	53.99%
.005mm	40.59%
.001mm	32.58%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:10-Aug-94

Project Name: Baker

Sample ID. BGSB08-18

Batch No:42

Lab. ID: 25173

Specific Gravity = 2.6500 Assumed

Moisture Content

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S	.5"	12.5000mm	100%
I	#4	4.750mm	100%
E	#10	2.000mm	100%
V	#20	0.850mm	95.98%
E	#40	0.425mm	89.04%
	#60	0.250mm	83.37%
	#140	0.106mm	64.61%
	#200	0.075mm	61.55%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	61.50%
.005mm	29.84%
.001mm	10.94%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:11-Sept-94

Project Name: Baker

Sample ID. BGWPSD01-01

Batch No: 37

Lab. ID: 25034

Specific Gravity = 2.6500 Assumed

Moisture Content =81.28%

Sieve Analysis

SIEVE

Seive No.	Diameter mm	Percent Finer
.5"	12.5000mm	99.92%
#4	4.750mm	99.92%
#10	2.000mm	99.84%
#20	0.850mm	94.77%
#40	0.425mm	87.18%
#60	0.250mm	83.77%
#140	0.106mm	79.13%
#200	0.075mm	77.70%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	76.37%
.005mm	38.62%
.001mm	16.06%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:11-Sept-94

Project Name: Baker

Sample ID. BGWPSD01-01

Batch No: 37

Lab. ID: 25034DUP

Specific Gravity = 2.6500
Assumed

Moisture Content =81.28%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S I E V E	.5"	12.5000mm	96.88%
	#4	4.750mm	95.43%
	#10	2.000mm	95.27%
	#20	0.850mm	92.43%
	#40	0.425mm	90.19%
	#60	0.250mm	84.93%
	#140	0.106mm	81.50%
	#200	0.075mm	79.14%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	79.60%
.005mm	39.29%
.001mm	15.12%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:13-Sept-94

Project Name: Baker

Sample ID. BGWPSD01-02

Batch No: 37

Lab. ID: 25033

Specific Gravity = 2.6500
Assumed

Moisture Content =72.44%

Sieve Analysis

	Seive No.	*Diameter mm*	*Percent Finer*
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	100%
	#10	2.000mm	100%
	#20	0.850mm	96.86%
	#40	0.425mm	94.56%
	#60	0.250mm	93.57%
	#140	0.106mm	90.75%
	#200	0.075mm	89.00%

Hydrometer Reading

Diameter mm	*Percent Finer*
.074mm	90.10%
.005mm	49.38%
.001mm	25.06%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 7-Sept-94

Project Name: Baker

Sample ID. BGWPSD02-01

Batch No: 37

Lab. ID: 25031

Specific Gravity = 2.6500
Assumed

Moisture Content =85.22%

Sieve Analysis

SIEVE

Seive No.	Diameter mm	Percent Finer
.5"	12.5000mm	100%
#4	4.750mm	99.69%
#10	2.000mm	99.02%
#20	0.850mm	83.15%
#40	0.425mm	77.45%
#60	0.250mm	76.60%
#140	0.106mm	73.93%
#200	0.075mm	71.40%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	71.25%
.005mm	42.62%
.001mm	25.52%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 13-Sept-94

Project Name: Baker

Sample ID. BGWPSD02-02

Batch No: 37

Lab. ID: 25030

Specific Gravity = 2.6500
Assumed

Moisture Content =67.85%

Sieve Analysis

SIEVE

Seive No.	*Diameter mm*	*Percent Finer*
.5"	*12.5000mm*	*100%*
#4	*4.750mm*	*100%*
#10	*2.000mm*	*100%*
#20	*0.850mm*	*93.60%*
#40	*0.425mm*	*92.07%*
#60	*0.250mm*	*89.90%*
#140	*0.106mm*	*86.63%*
#200	*0.075mm*	*85.60%*

Hydrometer Reading

Diameter mm	*Percent Finer*
.074mm	*85.47%*
.005mm	*42.75%*
.001mm	*17.24%*

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 7-Sept-94

Project Name: Baker

Sample ID. BGWPSD03-01

Batch No: 37

Lab. ID: 25035

Specific Gravity = 2.6500 Assumed

Moisture Content =84.15%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
SIEVE	.5"	12.5000mm	99.37%
	#4	4.750mm	99.13%
	#10	2.000mm	98.94%
	#20	0.850mm	86.78%
	#40	0.425mm	82.12%
	#60	0.250mm	80.90%
	#140	0.106mm	78.49%
	#200	0.075mm	76.73%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	76.37%
.005mm	35.80%
.001mm	11.56%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 7-Sept-94

Project Name: Baker

Sample ID. BGWPSD03-01

Batch No: 37

Lab. ID: 25035DUP

Specific Gravity = 2.6500
Assumed

Moisture Content =84.15%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S	.5"	12.5000mm	99.64%
I	#4	4.750mm	98.90%
E	#10	2.000mm	98.12%
V	#20	0.850mm	90.80%
E	#40	0.425mm	86.57%
	#60	0.250mm	83.34%
	#140	0.106mm	79.06%
	#200	0.075mm	76.12%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	75.81%
.005mm	47.93%
.001mm	31.28%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 8-Sept-94

Project Name: Baker

Sample ID. BGWPSD03-02

Batch No: 37

Lab. ID: 25032

Specific Gravity = 2.6500
Assumed

Moisture Content =58.03%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
SIEVE	.5"	12.5000mm	100%
	#4	4.750mm	100%
	#10	2.000mm	100%
	#20	0.850mm	99.13%
	#40	0.425mm	95.39%
	#60	0.250mm	93.02%
	#140	0.106mm	92.73%
	#200	0.075mm	91.35%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	92.10%
.005mm	41.54%
.001mm	11.34%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:7-Sept-94

Project Name: Baker

Sample ID. BGWPSD04-01

Batch No: 37

Lab. ID: 25029

Specific Gravity = 2.6500 Assumed

Moisture Content =84.45%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	100%
	#10	2.000mm	99.71%
	#20	0.850mm	92.34%
	#40	0.425mm	91.57%
	#60	0.250mm	89.81%
	#140	0.106mm	87.26%
	#200	0.075mm	85.45%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	85.17%
.005mm	46.58%
.001mm	23.21%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 2-Sept-94

Project Name: Baker

Sample ID. BGWPSD04-02

Batch No: 37

Lab. ID: 25028

Specific Gravity = 2.6500
Assumed

Moisture Content =35.77%

Sieve Analysis

SIEVE	Seive No.	Diameter mm	Percent Finer
	.5"	12.5000mm	100%
	#4	4.750mm	98.79%
	#10	2.000mm	98.63%
	#20	0.850mm	98.39%
	#40	0.425mm	96.12%
	#60	0.250mm	89.85%
	#140	0.106mm	56.60%
	#200	0.075mm	43.36%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	42.93%
.005mm	24.03%
.001mm	12.74%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 7-Sept-94

Project Name: Baker *Sample ID. BGPLSD03-01*

Batch No:44 *Lab. ID: 25280*

Specific Gravity = 2.6500
Assumed

Moisture Content =87.56%

Sieve Analysis

	Seive No.	*Diameter mm*	*Percent Finer*
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	100%
	#10	2.000mm	100%
	#20	0.850mm	84.12%
	#40	0.425mm	79.23%
	#60	0.250mm	77.50%
	#140	0.106mm	76.84%
	#200	0.075mm	76.28%

Hydrometer Reading

Diameter mm	*Percent Finer*
.074mm	76.68%
.005mm	53.10%
.001mm	39.02%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:13-Sept-94

Project Name: Baker

Sample ID. BGPLSD03-02

Batch No:44

Lab. ID: 25285

Specific Gravity = 2.6500
Assumed

Moisture Content =77.19%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	100%
	#10	2.000mm	100%
	#20	0.850mm	93.10%
	#40	0.425mm	90.81%
	#60	0.250mm	89.45%
	#140	0.106mm	87.44%
	#200	0.075mm	82.96%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	82.57%
.005mm	62.14%
.001mm	49.94%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 11-Sept-94

Project Name: Baker

Sample ID. BGPLSD04-01

Batch No:44

Lab. ID: 25278

Specific Gravity = 2.6500
Assumed

Moisture Content = 87.33%

Sieve Analysis

	Seive No.	*Diameter mm*	*Percent Finer*
S I E V E	*.5"*	*12.5000mm*	*100%*
	#4	*4.750mm*	*99.83%*
	#10	*2.000mm*	*99.14%*
	#20	*0.850mm*	*95.00%*
	#40	*0.425mm*	*83.34%*
	#60	*0.250mm*	*64.57%*
	#140	*0.106mm*	*39.23%*
	#200	*0.075mm*	*37.32%*

Hydrometer Reading

Diameter mm	*Percent Finer*
.074mm	*38.39%*
.005mm	*22.17%*
.001mm	*12.48%*

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 10-Aug-94

Project Name: Baker *Sample ID. BGPLSD04-02*

Batch No:44 *Lab. ID: 25279*

Specific Gravity = 2.6500 Assumed

Moisture Content =59.91%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
SIEVE	.5"	12.5000mm	100%
	#4	4.750mm	100%
	#10	2.000mm	100%
	#20	0.850mm	99.83%
	#40	0.425mm	98.14%
	#60	0.250mm	94.09%
	#140	0.106mm	54.95%
	#200	0.075mm	45.57%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	45.86%
.005mm	28.60%
.001mm	18.29%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:8-Sept-94

Project Name: Baker

Sample ID. BGCPSD01-01

Batch No:45

Lab. ID: 25411

Specific Gravity = 2.6500
Assumed

Moisture Content = 54.99%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	99.31%
	#10	2.000mm	97.66%
	#20	0.850mm	96.37%
	#40	0.425mm	93.10%
	#60	0.250mm	86.51%
	#140	0.106mm	56.07%
	#200	0.075mm	55.29%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	55.91%
.005mm	31.67%
.001mm	17.20%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:8-Sept-94

Project Name: Baker

Sample ID. BGCPSD01-02

Batch No:45

Lab. ID: 25410

Specific Gravity = 2.6500
Assumed

Moisture Content = 36.01%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	98.59%
	#10	2.000mm	97.05%
	#20	0.850mm	95.78%
	#40	0.425mm	93.70%
	#60	0.250mm	89.36%
	#140	0.106mm	77.69%
	#200	0.075mm	76.09%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	76.62%
.005mm	44.79%
.001mm	25.78%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:3-Sept-94

Project Name: Baker

Sample ID. BGCPSD02-01

Batch No:45

Lab. ID: 25412

Specific Gravity = 2.6500
Assumed

Moisture Content =24.39%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	99.91%
	#10	2.000mm	99.71%
	#20	0.850mm	99.35%
	#40	0.425mm	93.70%
	#60	0.250mm	69.59%
	#140	0.106mm	11.53%
	#200	0.075mm	9.58%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	9.28%
.005mm	8.33%
.001mm	7.76%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:10-Aug-94

Project Name: Baker

Sample ID. BGCPSD02-02

Batch No:45

Lab. ID: 25413

Specific Gravity = 2.6500
Assumed

Moisture Content =22.33%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	100%
	#10	2.000mm	100%
	#20	0.850mm	99.36%
	#40	0.425mm	92.96%
	#60	0.250mm	68.15%
	#140	0.106mm	19.34%
	#200	0.075mm	16.74%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	16.29%
.005mm	10.84%
.001mm	7.58%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:8-Sept-94

Project Name: Baker

Sample ID. BGCPSD03-01

Batch No:45

Lab. ID: 25415

Specific Gravity = 2.6500 Assumed

Moisture Content =30.86%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
SIEVE	.5"	12.5000mm	100%
	#4	4.750mm	99.16%
	#10	2.000mm	97.31%
	#20	0.850mm	92.96%
	#40	0.425mm	86.22%
	#60	0.250mm	72.13%
	#140	0.106mm	38.29%
	#200	0.075mm	35.47%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	35.20%
.005mm	23.19%
.001mm	16.02%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:8-Sept-94

Project Name: Baker

Sample ID. BGCPSD03-01

Batch No:45

Lab. ID: 25415DUP

Specific Gravity = 2.6500
Assumed

Moisture Content =30.86%

Sieve Analysis

	Seive No.	*Diameter mm*	*Percent Finer*
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	99.01%
	#10	2.000mm	96.74%
	#20	0.850mm	91.64%
	#40	0.425mm	84.94%
	#60	0.250mm	70.55%
	#140	0.106mm	37.49%
	#200	0.075mm	35.85%

Hydrometer Reading

Diameter mm	*Percent Finer*
.074mm	36.01%
.005mm	22.58%
.001mm	14.56%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:7-Sept-94

Project Name: Baker

Sample ID. BGCPSD03-02

Batch No:45

Lab. ID: 25414

Specific Gravity = 2.6500 Assumed

Moisture Content =15.25%

Sieve Analysis

SIEVE

Seive No.	Diameter mm	Percent Finer
.5"	12.5000mm	100%
#4	4.750mm	100%
#10	2.000mm	100%
#20	0.850mm	99.01%
#40	0.425mm	93.87%
#60	0.250mm	79.12%
#140	0.106mm	45.55%
#200	0.075mm	42.90%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	43.88%
.005mm	28.75%
.001mm	19.70%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 7-Sept-94

Project Name: Baker

Sample ID. BGCPSD04-01

Batch No:45

Lab. ID: 25408

Specific Gravity = 2.6500
Assumed

Moisture Content = 27.30%

Sieve Analysis

	Seive No.	*Diameter mm*	*Percent Finer*
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	99.56%
	#10	2.000mm	97.84%
	#20	0.850mm	92.72%
	#40	0.425mm	86.91%
	#60	0.250mm	71.34%
	#140	0.106mm	7.50%
	#200	0.075mm	6.73%

Hydrometer Reading

Diameter mm	*Percent Finer*
.074mm	6.60%
.005mm	6.28%
.001mm	6.10%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 11-Aug-94

Project Name: Baker

Sample ID. BGCPSD04-02

Batch No:45

Lab. ID: 25416

Specific Gravity = 2.6500
Assumed

Moisture Content =33.79%

Sieve Analysis

	Seive No.	Diameter mm	Percent Finer
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	97.47%
	#10	2.000mm	90.83%
	#20	0.850mm	79.12%
	#40	0.425mm	61.13%
	#60	0.250mm	37.61%
	#140	0.106mm	12.07%
	#200	0.075mm	11.25%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	11.91%
.005mm	10.72%
.001mm	10.01%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis: 3-Sept-94

Project Name: Baker *Sample ID. BGCPSD05-01*

Batch No:45 *Lab. ID: 25407*

Specific Gravity = 2.6500
Assumed

Moisture Content = 27.09%

Sieve Analysis

	Seive No.	*Diameter mm*	*Percent Finer*
S I E V E	.5"	12.5000mm	100%
	#4	4.750mm	99.62%
	#10	2.000mm	99.19%
	#20	0.850mm	98.70%
	#40	0.425mm	93.09%
	#60	0.250mm	75.72%
	#140	0.106mm	15.27%
	#200	0.075mm	7.18%

Hydrometer Reading

Diameter mm	*Percent Finer*
.074mm	7.03%
.005mm	7.01%
.001mm	6.99%

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PARTICILE SIZE ANALYSIS
ASTM D422

Date of Analysis:10-Aug-94

Project Name: Baker

Sample ID. BGCPSD05-02

Batch No:45

Lab. ID: 25409

Specific Gravity = 2.6500
Assumed

Moisture Content = 21.61%

Sieve Analysis

SIEVE

Seive No.	Diameter mm	Percent Finer
.5"	12.5000mm	100%
#4	4.750mm	99.92%
#10	2.000mm	99.70%
#20	0.850mm	98.72%
#40	0.425mm	90.49%
#60	0.250mm	67.92%
#140	0.106mm	15.96%
#200	0.075mm	15.33%

Hydrometer Reading

Diameter mm	Percent Finer
.074mm	15.66%
.005mm	12.83%
.001mm	11.14%

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25769 BGTCSD01-01

Project Number: 483557.01

ETDC Number: ETDC-5858

Specific Gravity = 2.6500 Assumed

* Moisture Content = 334.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	98.2%
	#10	2.000	86.7%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	55.4%
	#40	0.425	39.7%
	#60	0.250	31.6%
	#140	0.106	23.4%
	#200	0.075	21.8%

*BASED ON DRY WEIGHT BASIS

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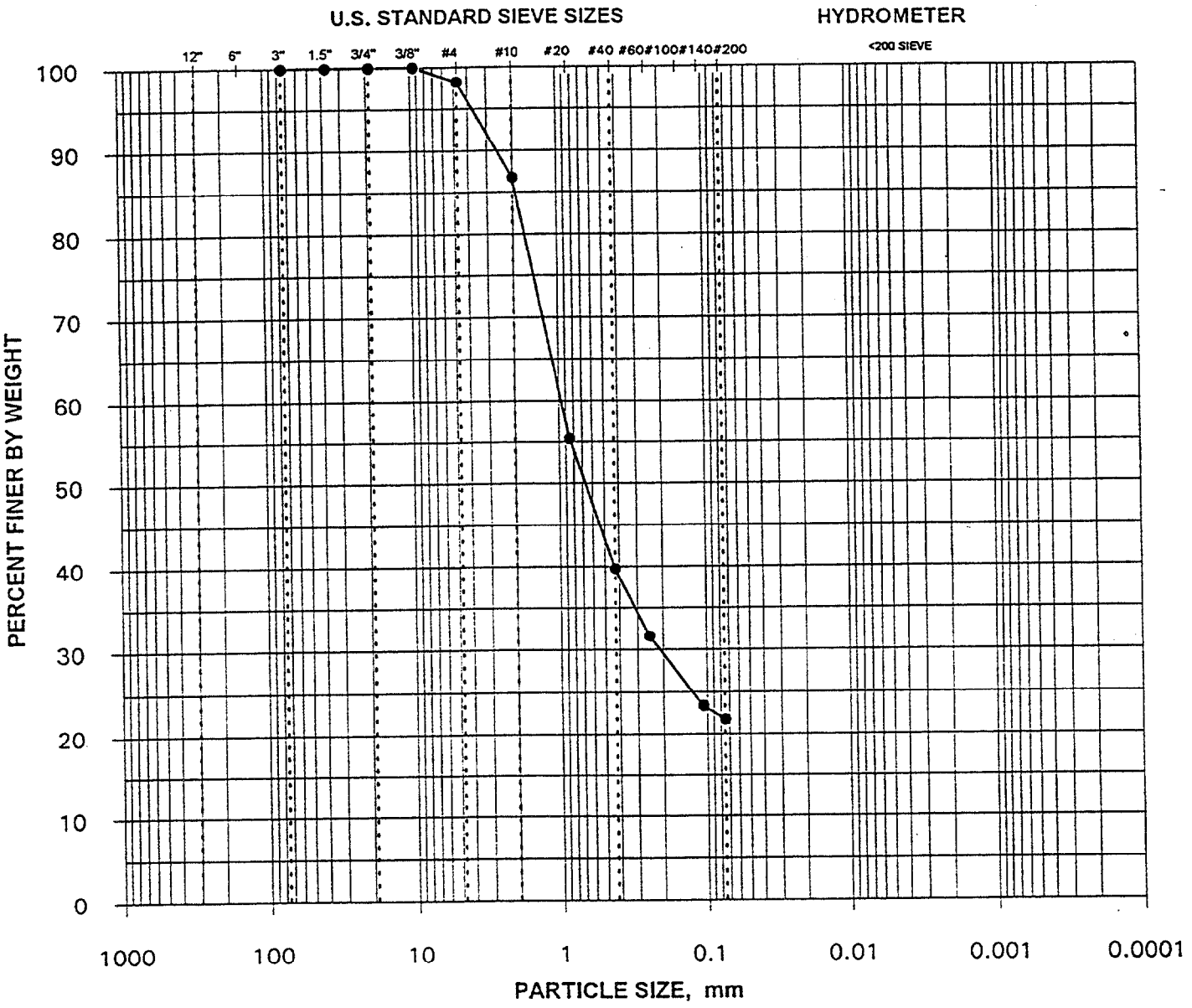

CLIENT SAMPLE NO.: 25769

ETDC SAMPLE NO.: ETDC-5858

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25770 BGTESD01-02

Project Number: 483557.01

ETDC Number: ETDC-5859

Specific Gravity = 2.6500 Assumed

* Moisture Content = 276.1%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.6%
	#10	2.000	89.3%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	58.8%
	#40	0.425	43.6%
	#60	0.250	35.8%
	#140	0.106	25.5%
	#200	0.075	22.7%

*BASED ON DRY WEIGHT BASIS

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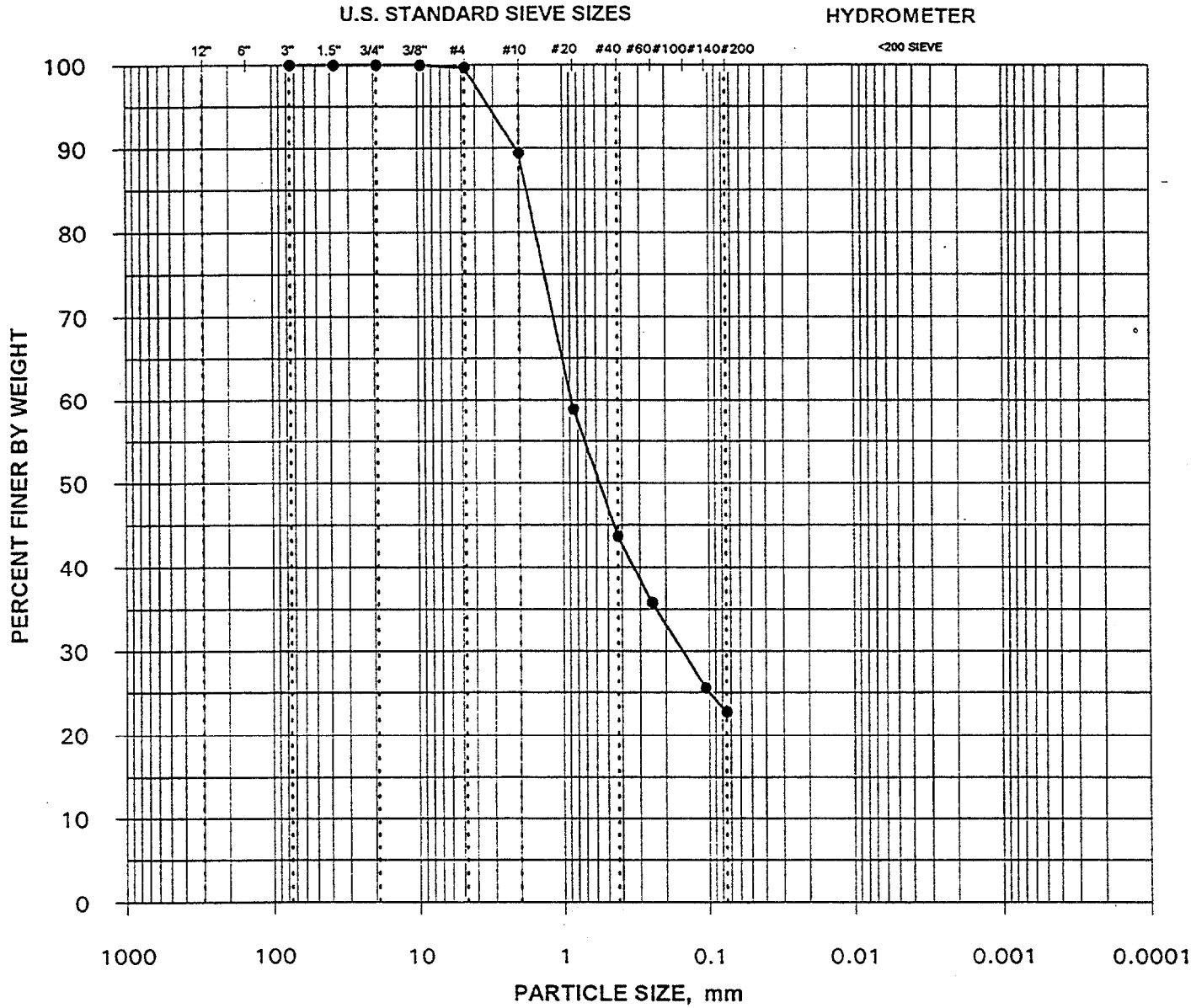

CLIENT SAMPLE NO.: 25770

ETDC SAMPLE NO.: ETDC-5859

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25771 BGTCS002-01

Project Number: 483557.01

ETDC Number: ETDC-5860

Specific Gravity = 2.6500 Assumed

* Moisture Content = 201.6%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.1%
	#4	4.750	97.4%
	#10	2.000	90.7%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	61.6%
	#40	0.425	46.4%
	#60	0.250	38.2%
	#140	0.106	27.2%
	#200	0.075	24.5%

*BASED ON DRY WEIGHT BASIS

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Client Project ID: Kemron
ETDC Project No.: 483557.01

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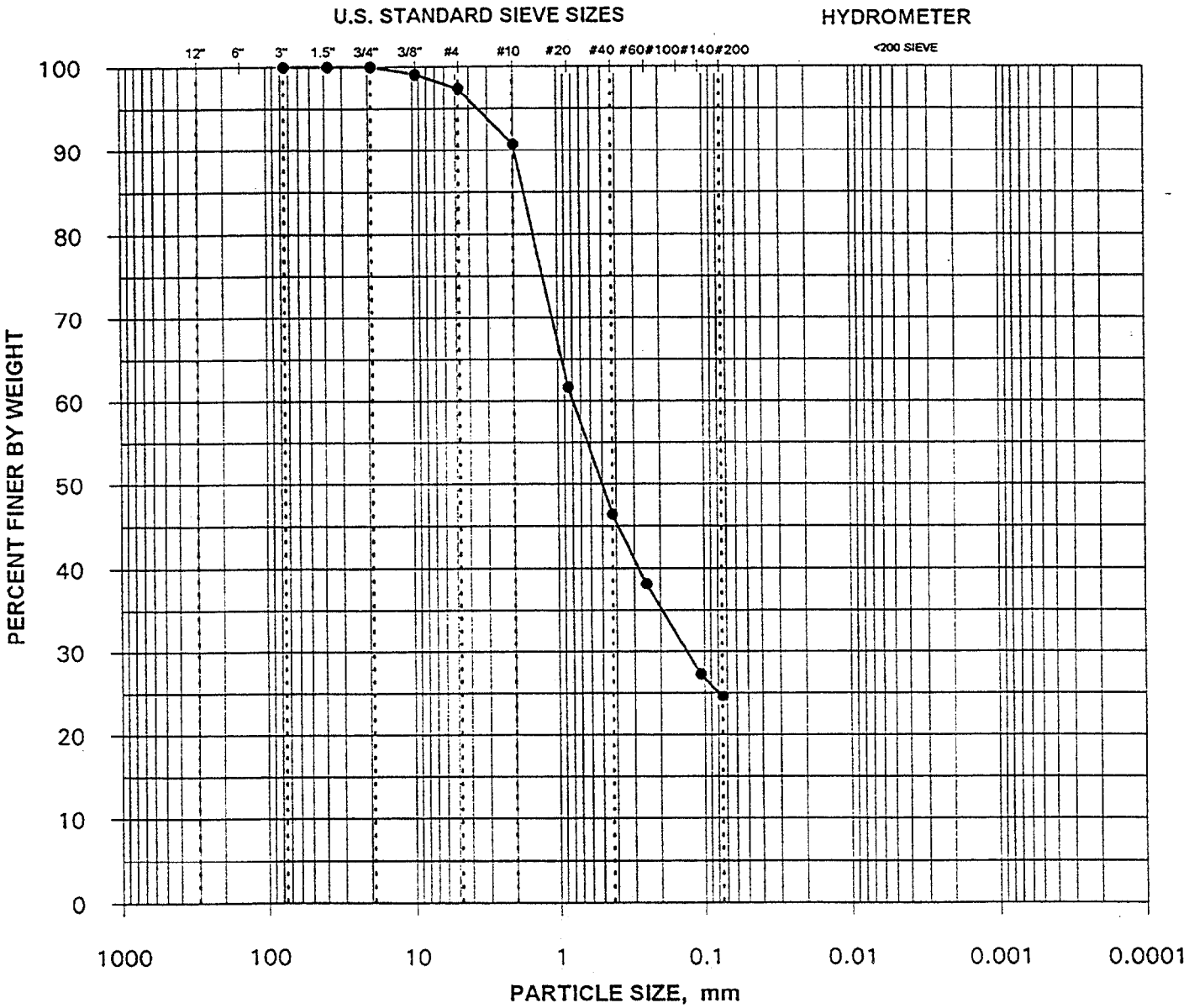

CLIENT SAMPLE NO.: 25771

ETDC SAMPLE NO.: ETDC-5860

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	CLAY <2 microns

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Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25772 BGTCSD02-02

Project Number: 483557.01

ETDC Number: ETDC-5861

Specific Gravity = 2.6500 Assumed

* Moisture Content = 180.9%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	98.6%
	#10	2.000	89.2%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	58.9%
	#40	0.425	44.5%
	#60	0.250	37.8%
	#140	0.106	30.2%
	#200	0.075	28.1%

*BASED ON DRY WEIGHT BASIS

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BGTCSD02-02

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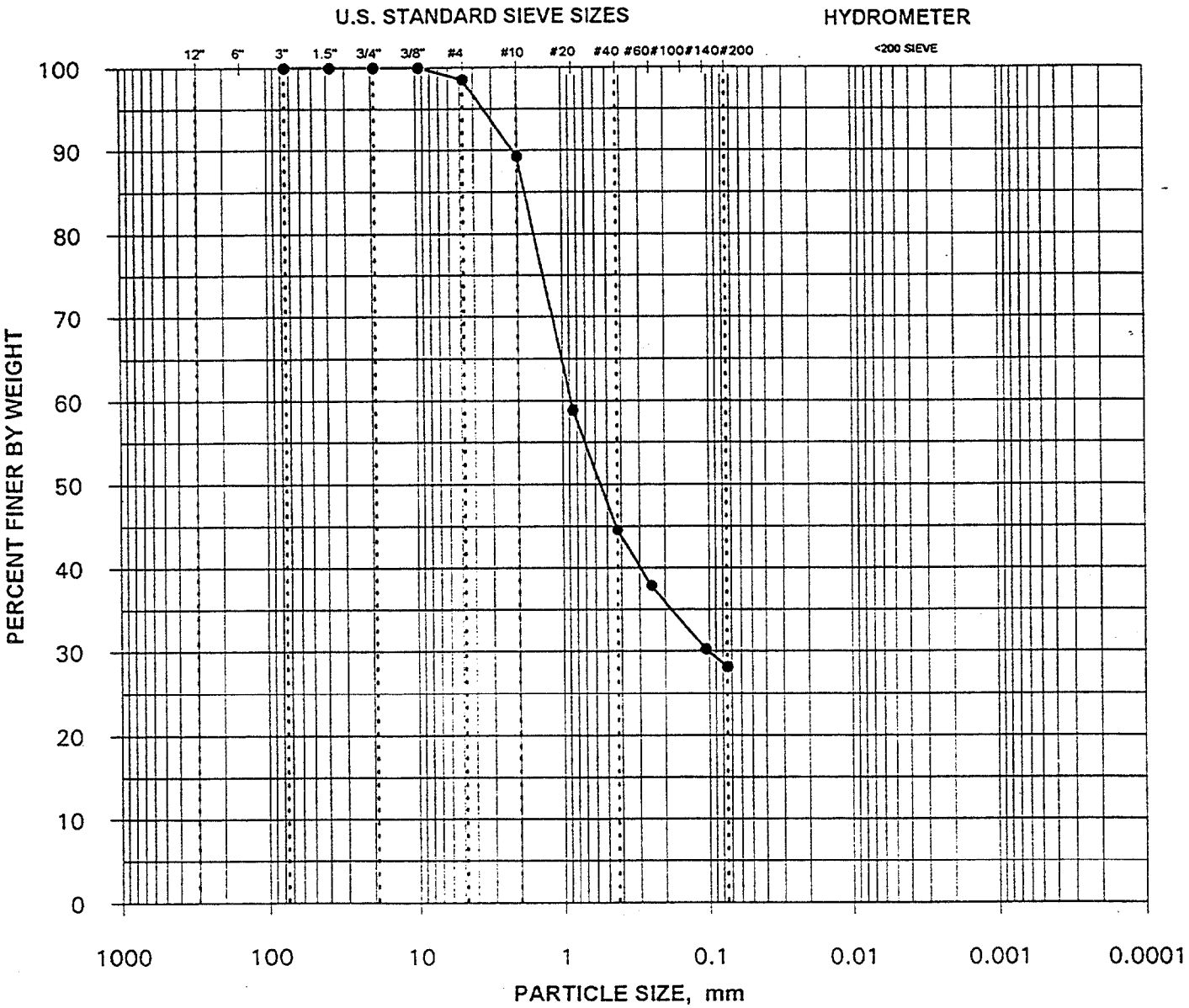

CLIENT SAMPLE NO.: 25772

ETDC SAMPLE NO.: ETDC-5861

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	CLAY <2 microns

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Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25773 BATCSD03-01

Project Number: 483557.01

ETDC Number: ETDC-5862

Specific Gravity = 2.6500 Assumed

* Moisture Content = 229.3%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	98.8%
	#4	4.750	95.9%
	#10	2.000	85.4%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	61.8%
	#40	0.425	46.4%
	#60	0.250	37.6%
	#140	0.106	22.1%
	#200	0.075	19.6%

*BASED ON DRY WEIGHT BASIS

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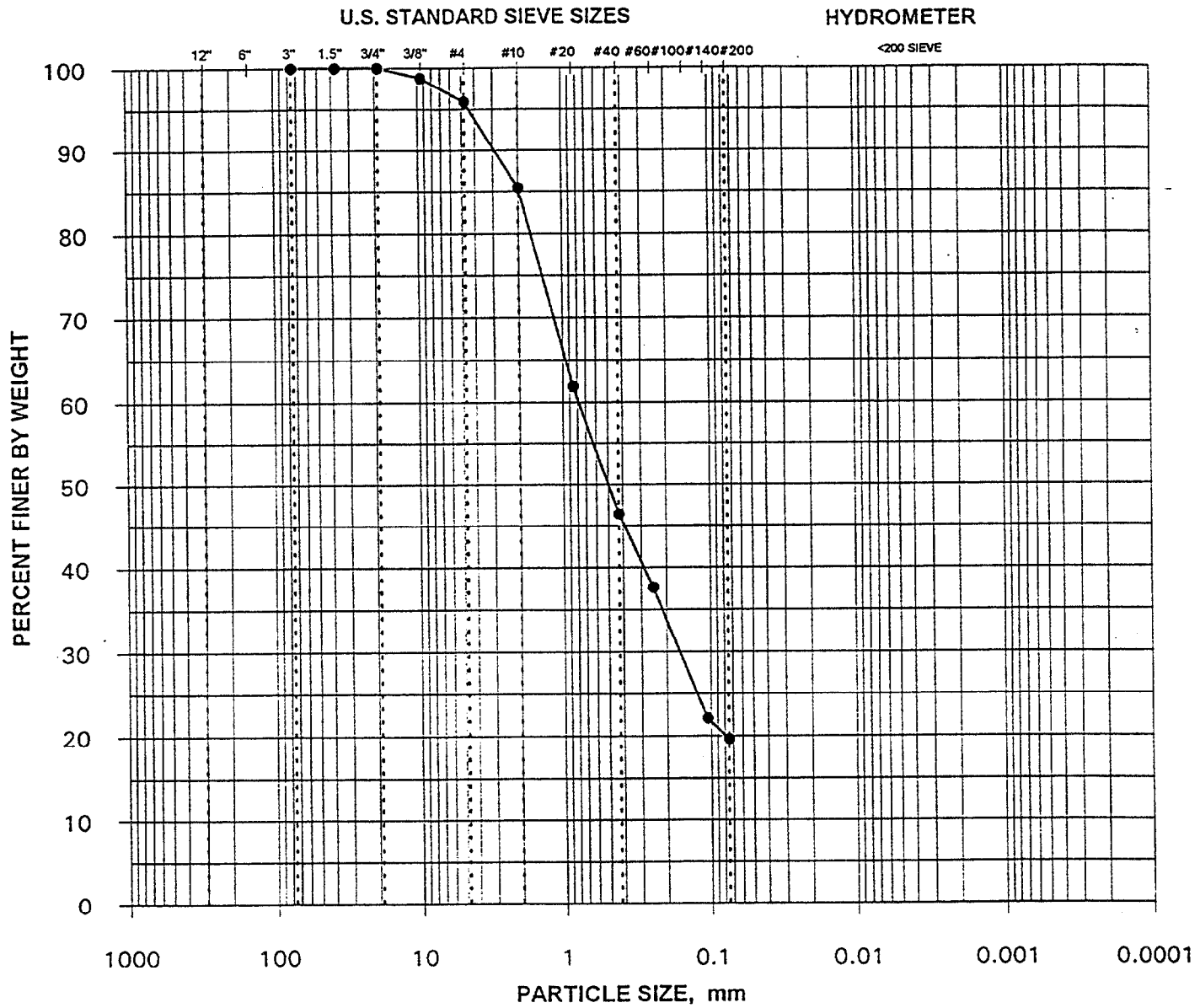

CLIENT SAMPLE NO.: 25773

ETDC SAMPLE NO.: ETDC-5862

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

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Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Project Number: 483557.01

Client Number: 25774 BGTCSD03-02

ETDC Number: ETDC-5863

Specific Gravity = 2.6500 Assumed

* Moisture Content = 201.5%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	92.7%
	#10	2.000	71.2%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	46.7%
	#40	0.425	33.5%
	#60	0.250	26.7%
	#140	0.106	19.9%
	#200	0.075	18.3%

*BASED ON DRY WEIGHT BASIS

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Client Project ID: Kemron
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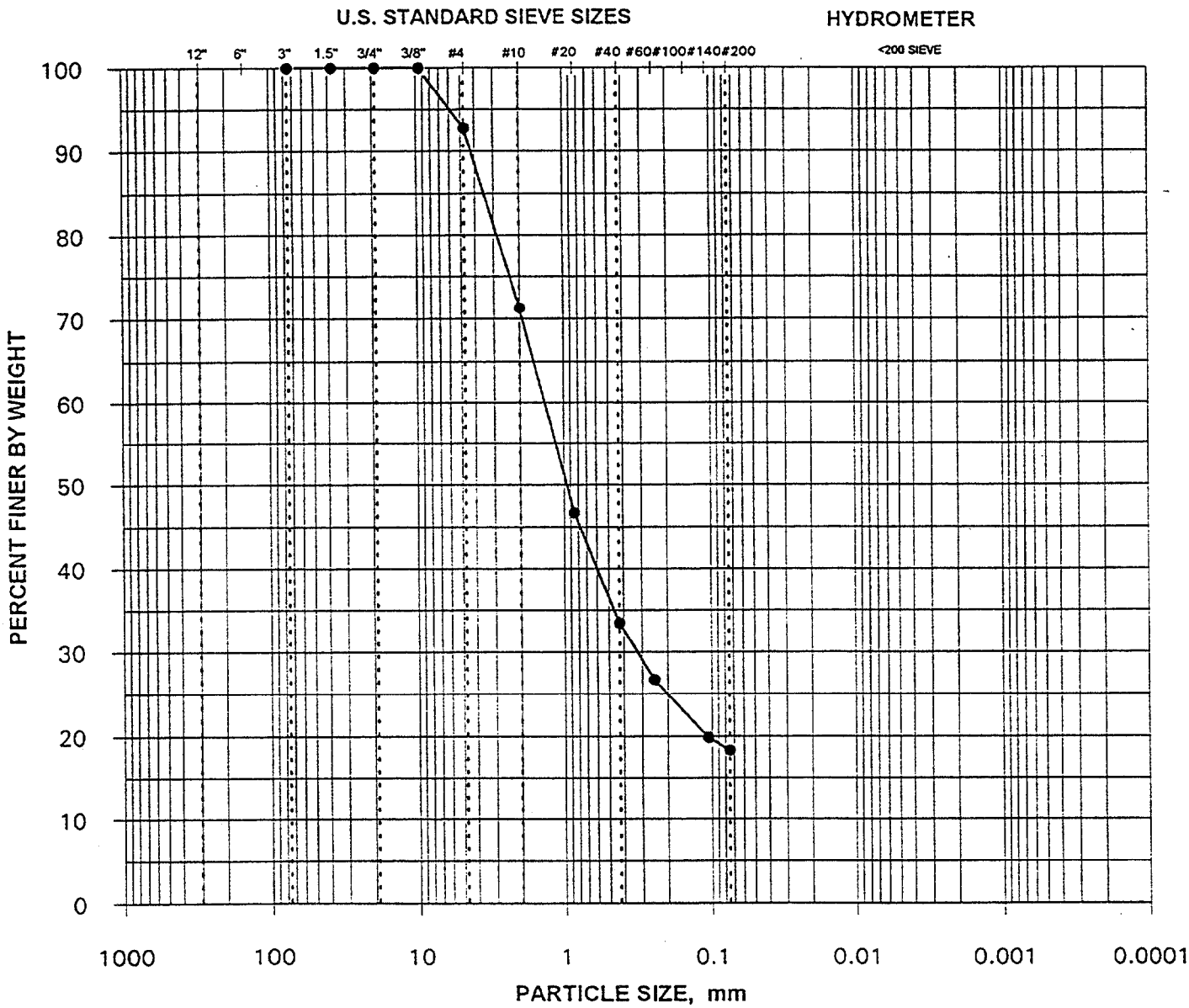

CLIENT SAMPLE NO.: 25774

ETDC SAMPLE NO.: ETDC-5863

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	

SILT 2 - 75 microns

CLAY <2 microns

682A-6-93

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Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Project Number: 483557.01

Client Number: 25763 BGTCSDoY-01

ETDC Number: ETDC-5852

Specific Gravity = 2.6500 Assumed

* Moisture Content = 140.8%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.7%
	#10	2.000	92.2%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	75.8%
	#40	0.425	62.3%
	#60	0.250	53.6%
	#140	0.106	27.2%
	#200	0.075	20.2%

*BASED ON DRY WEIGHT BASIS

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Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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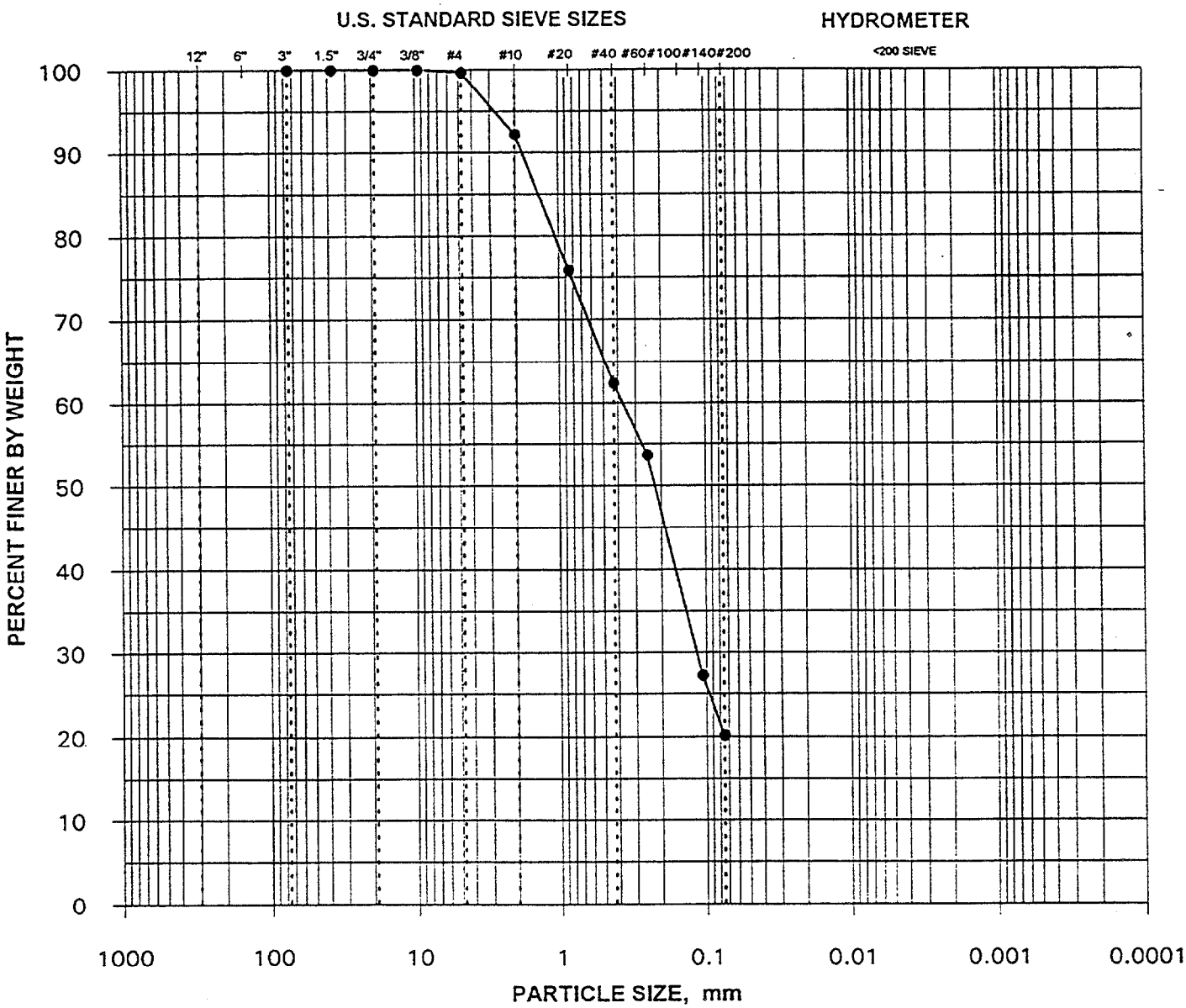

CLIENT SAMPLE NO.: 25763

ETDC SAMPLE NO.: ETDC-5852

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25764 BGTCSD04-02

Project Number: 483557.01

ETDC Number: ETDC-5853

Specific Gravity = 2.6500 Assumed

* Moisture Content = 163.2%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	98.5%
	#10	2.000	86.8%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	66.5%
	#40	0.425	53.6%
	#60	0.250	46.0%
	#140	0.106	28.3%
	#200	0.075	24.0%

*BASED ON DRY WEIGHT BASIS

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September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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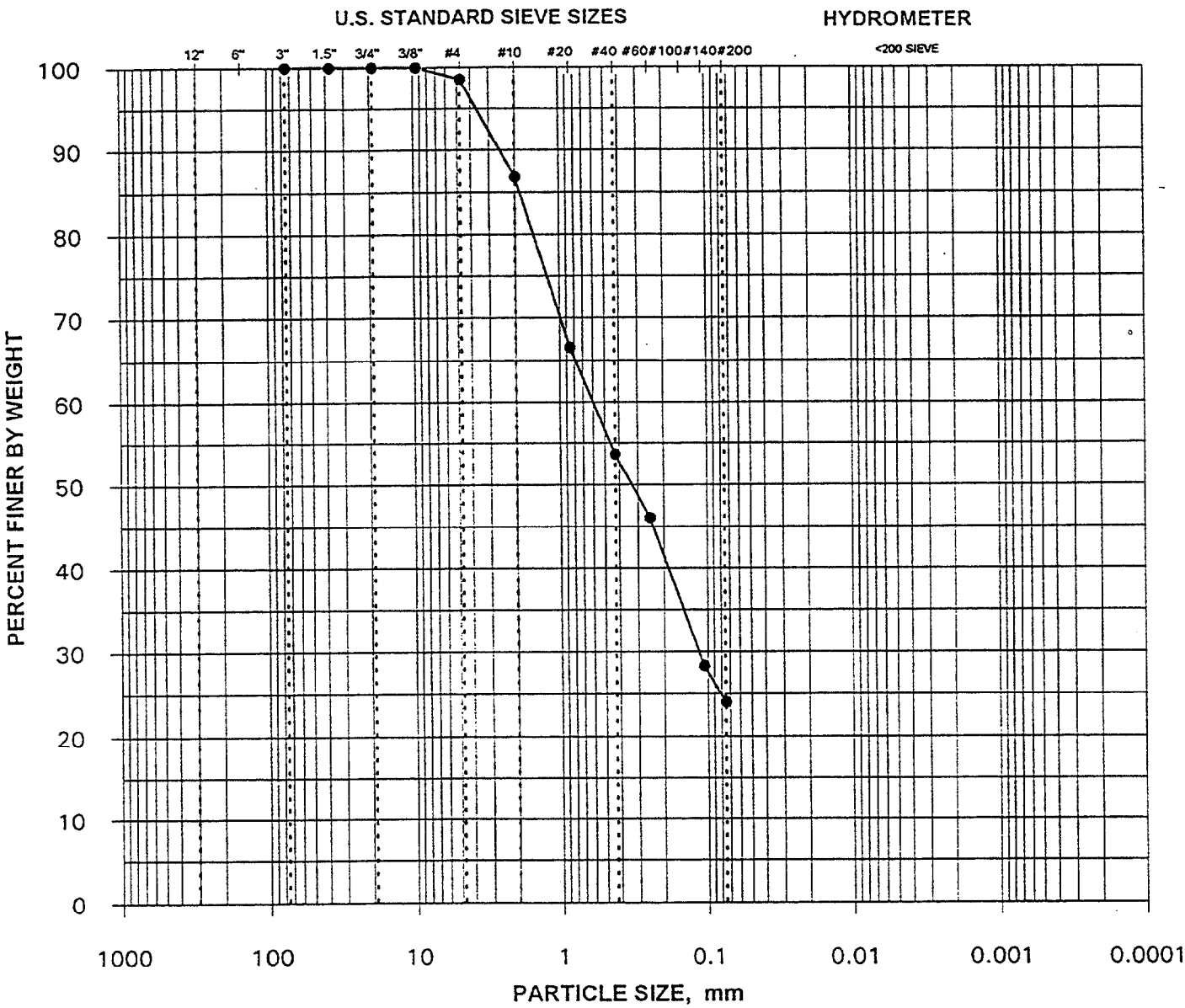
BCTESD04-02

KEMRON



CLIENT SAMPLE NO.: 25764

ETDC SAMPLE NO.: ETDC-5853

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25765 BGTCSD05-01

Project Number: 483557.01

ETDC Number: ETDC-5854

Specific Gravity = 2.6500 Assumed

* Moisture Content = 103.6%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	94.7%
	#4	4.750	86.9%
	#10	2.000	80.5%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	75.3%
	#40	0.425	64.4%
	#60	0.250	38.7%
	#140	0.106	6.0%
	#200	0.075	4.5%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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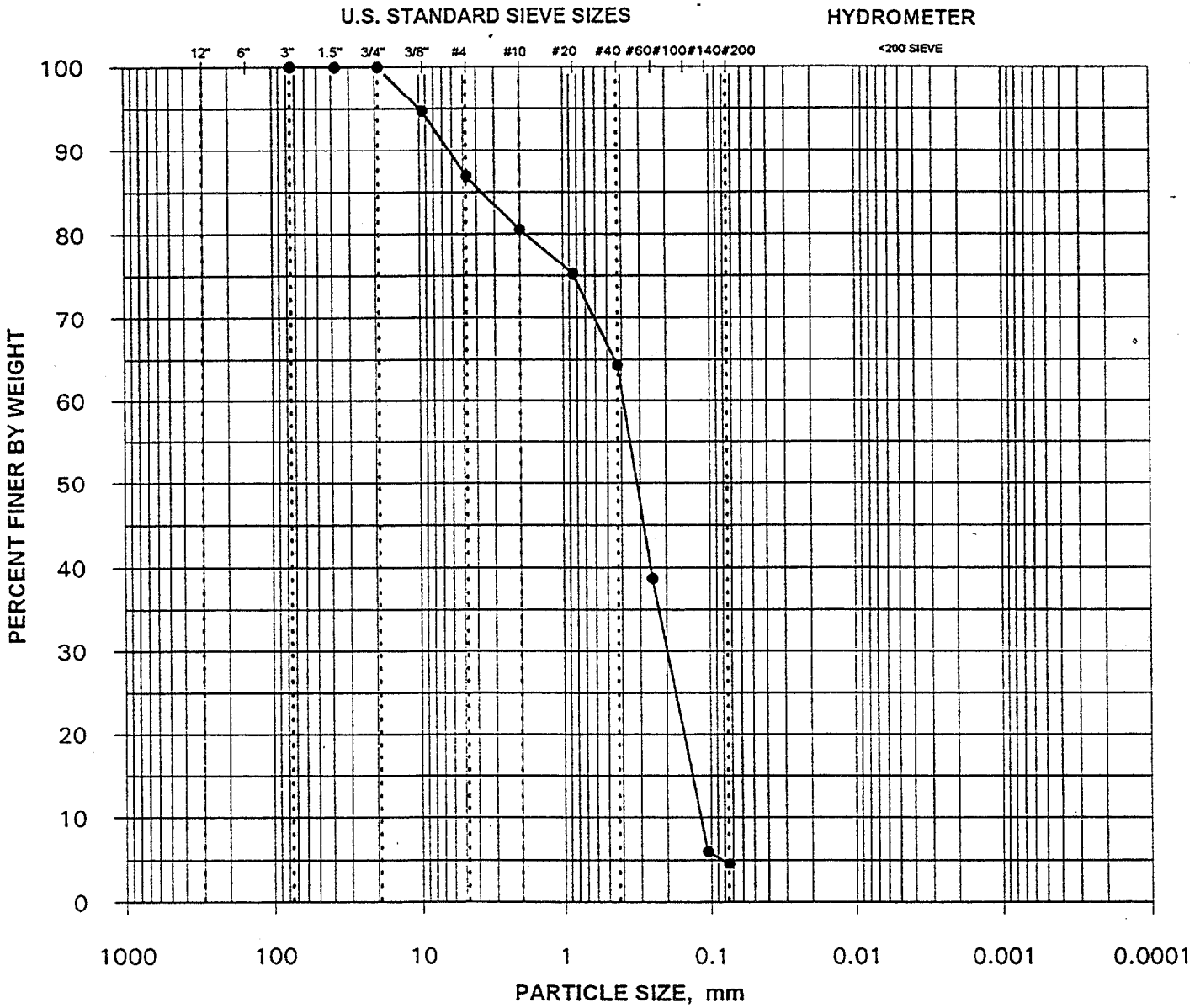
BGTCSD05-01

KEMRON



CLIENT SAMPLE NO.: 25765

ETDC SAMPLE NO.: ETDC-5854

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	CLAY <2 microns

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25766 BGTCSD05-02

Project Number: 483557.01

ETDC Number: ETDC-5855

Specific Gravity = 2.6500 Assumed

* Moisture Content = 102.4%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	97.8%
	#4	4.750	91.2%
	#10	2.000	84.7%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	77.9%
	#40	0.425	67.4%
	#60	0.250	47.6%
	#140	0.106	9.2%
	#200	0.075	6.3%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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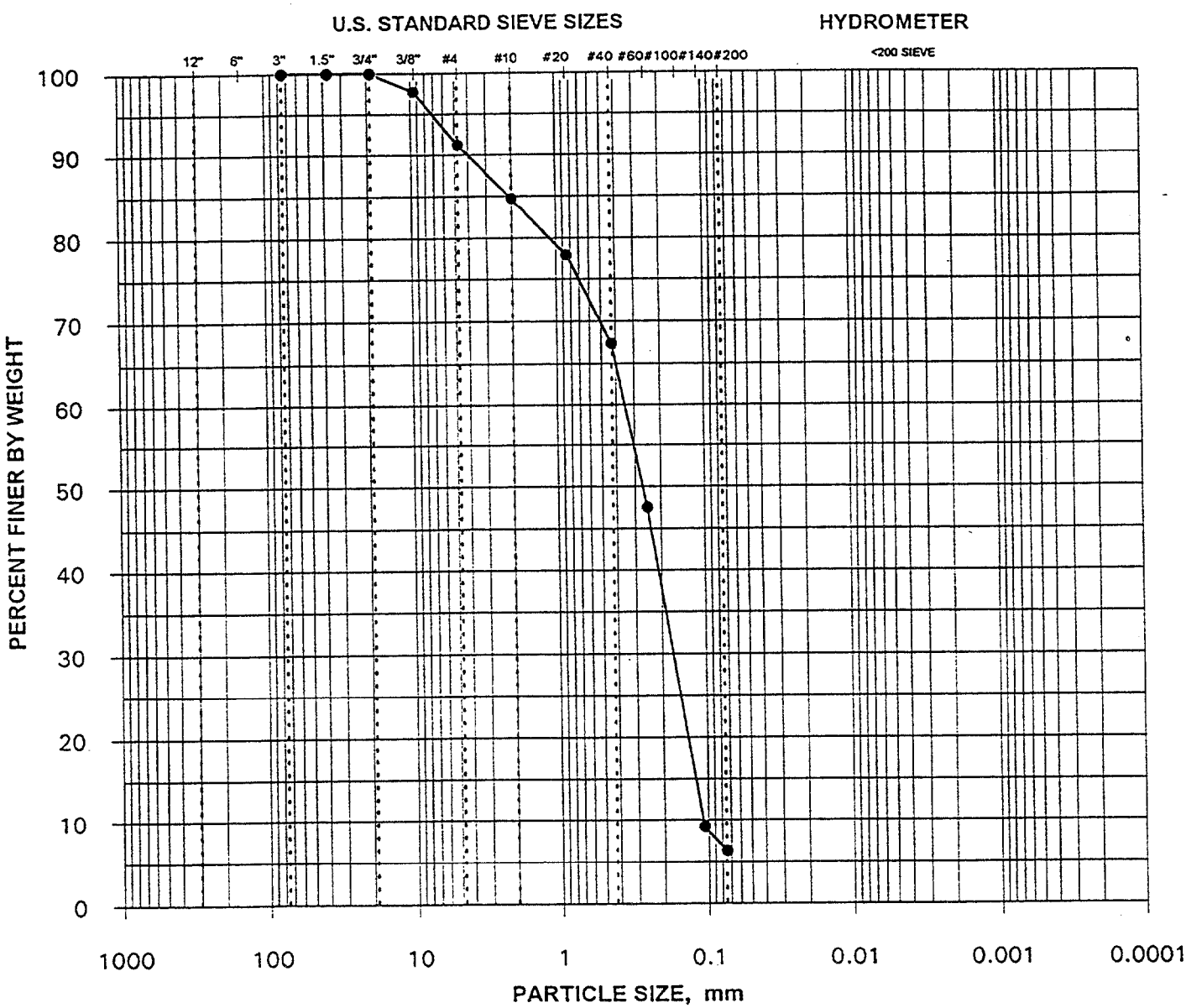
BGTCS205-02

KEMRON



CLIENT SAMPLE NO.: 25766

ETDC SAMPLE NO.: ETDC-5855

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	CLAY <2 microns

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25767 BCTCSD06-01

Project Number: 483557.01

ETDC Number: ETDC-5856

Specific Gravity = 2.6500 Assumed

* Moisture Content = 67.9%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	93.2%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	89.5%
	#40	0.425	78.6%
	#60	0.250	41.7%
	#140	0.106	4.9%
	#200	0.075	2.9%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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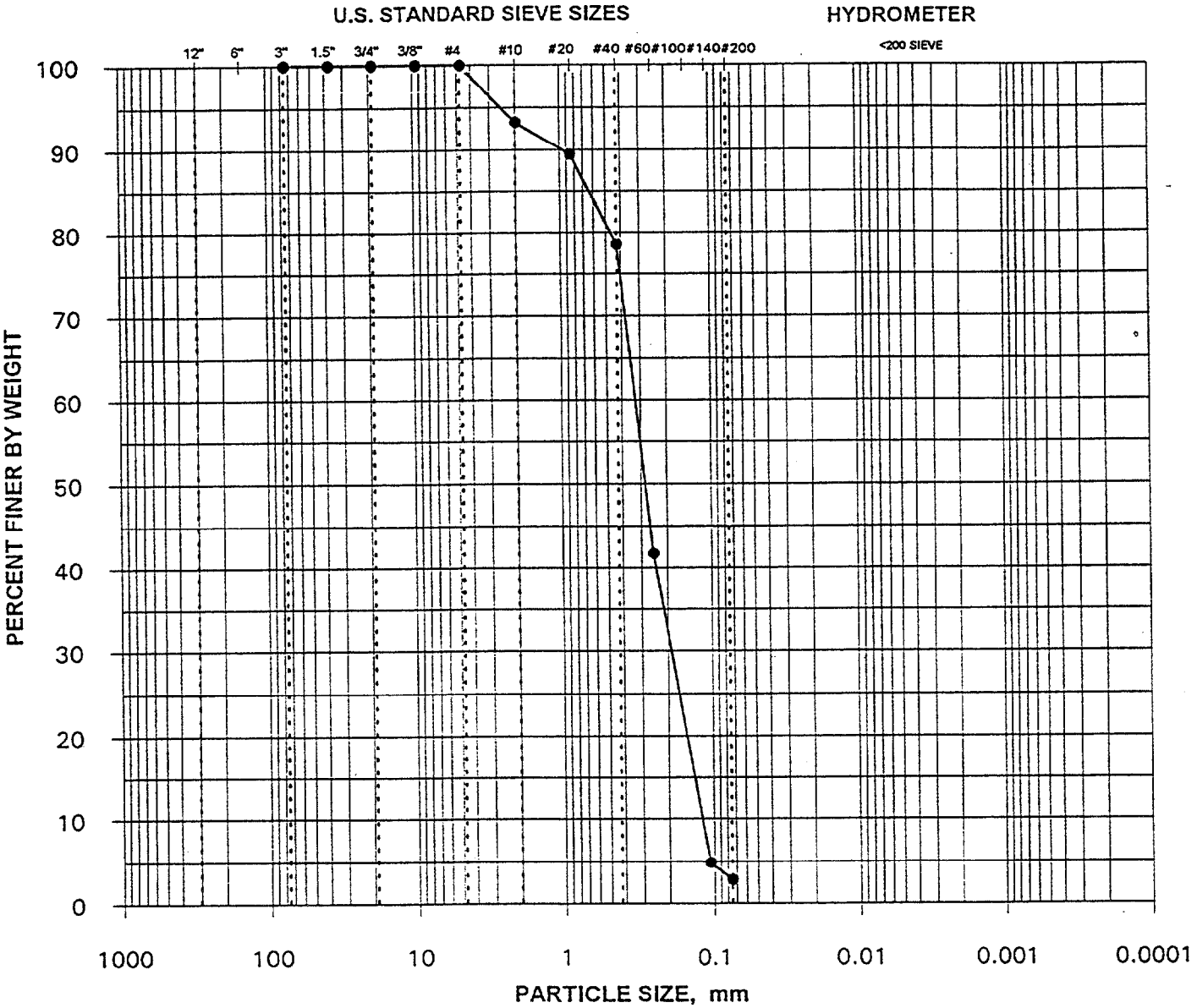
BGTCSD06-01

KEMRON



CLIENT SAMPLE NO.: 25767

ETDC SAMPLE NO.: ETDC-5856

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 25768 BGTCSD06-02

Project Number: 483557.01

ETDC Number: ETDC-5857

Specific Gravity = 2.6500 Assumed

* Moisture Content = 39.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.9%
	#10	2.000	99.3%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	97.5%
	#40	0.425	90.5%
	#60	0.250	55.3%
	#140	0.106	6.0%
	#200	0.075	3.0%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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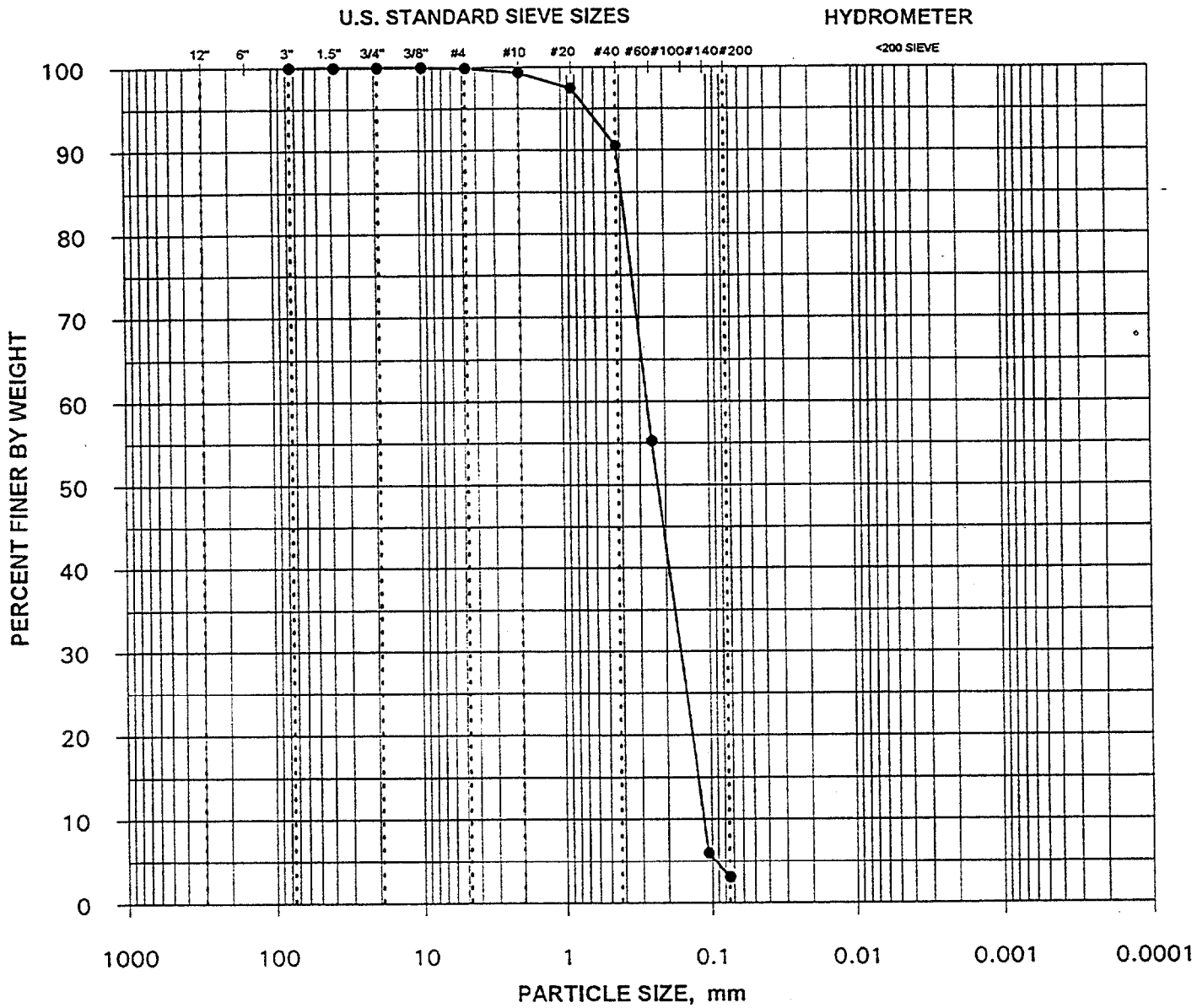
BGTCSD06-02

KEMRON



CLIENT SAMPLE NO.: 25768

ETDC SAMPLE NO.: ETDC-5857

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGTNSD01-01

Project Name: KEMRON

Client Number: 26116

Project Number: 483557.01

ETDC Number: ETDC-5902

Specific Gravity = 2.6500 Assumed

* Moisture Content = 215.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.5%
	#10	2.000	91.4%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	67.9%
	#40	0.425	57.5%
	#60	0.250	52.7%
	#140	0.106	46.9%
	#200	0.075	43.9%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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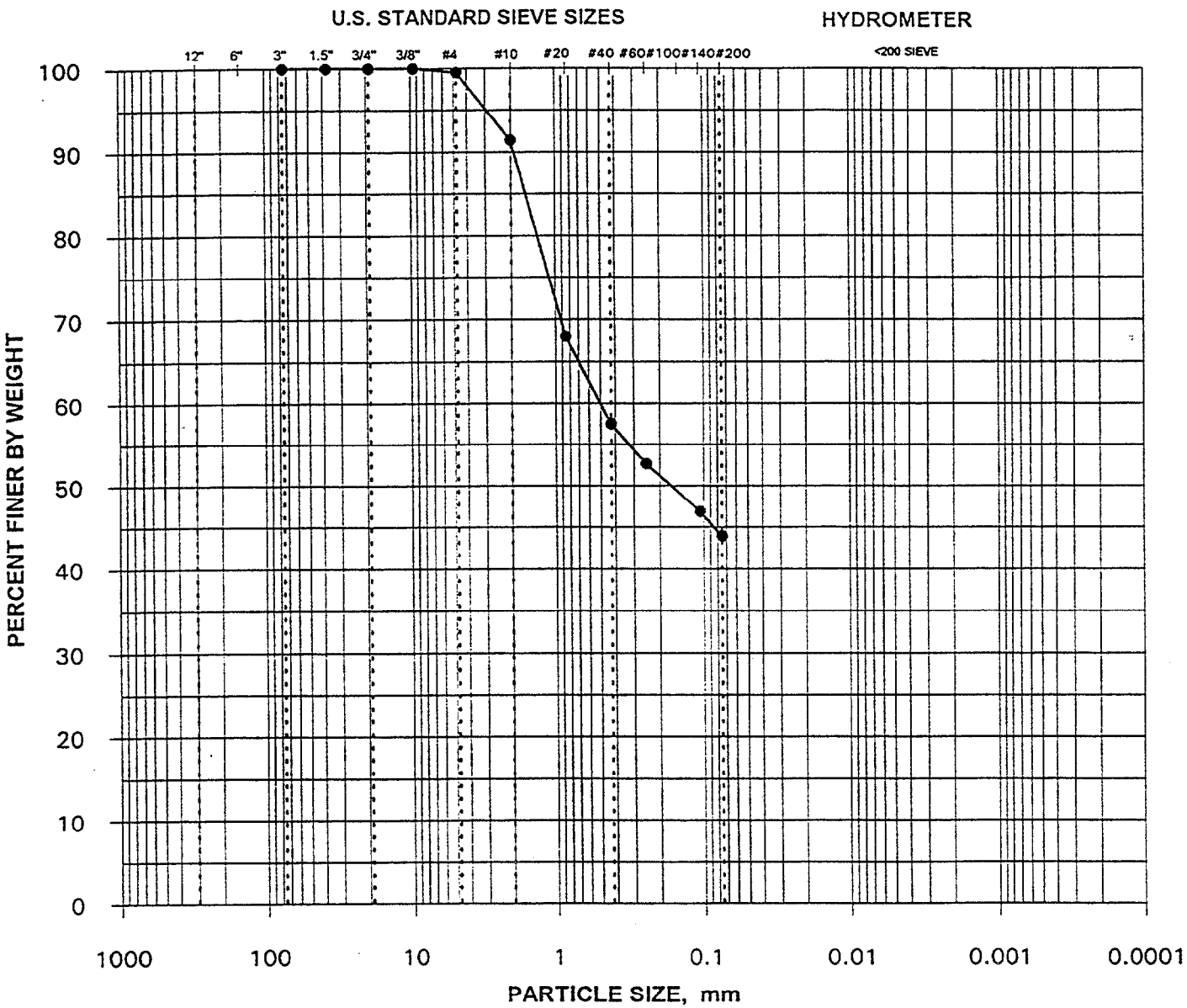
BGTNSD01-01

KEMRON



CLIENT SAMPLE NO.: 26116

ETDC SAMPLE NO.: ETDC-5902

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGTNSD01-02

Project Name: KEMRON

Client Number: 26115

Project Number: 483557.01

ETDC Number: ETDC-5901

Specific Gravity = 2.6500 Assumed

* Moisture Content = 139.3%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	98.6%
	#10	2.000	93.0%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	77.4%
	#40	0.425	68.3%
	#60	0.250	62.3%
	#140	0.106	52.9%
	#200	0.075	48.1%

*BASED ON DRY WEIGHT BASIS

Janice Landshoi
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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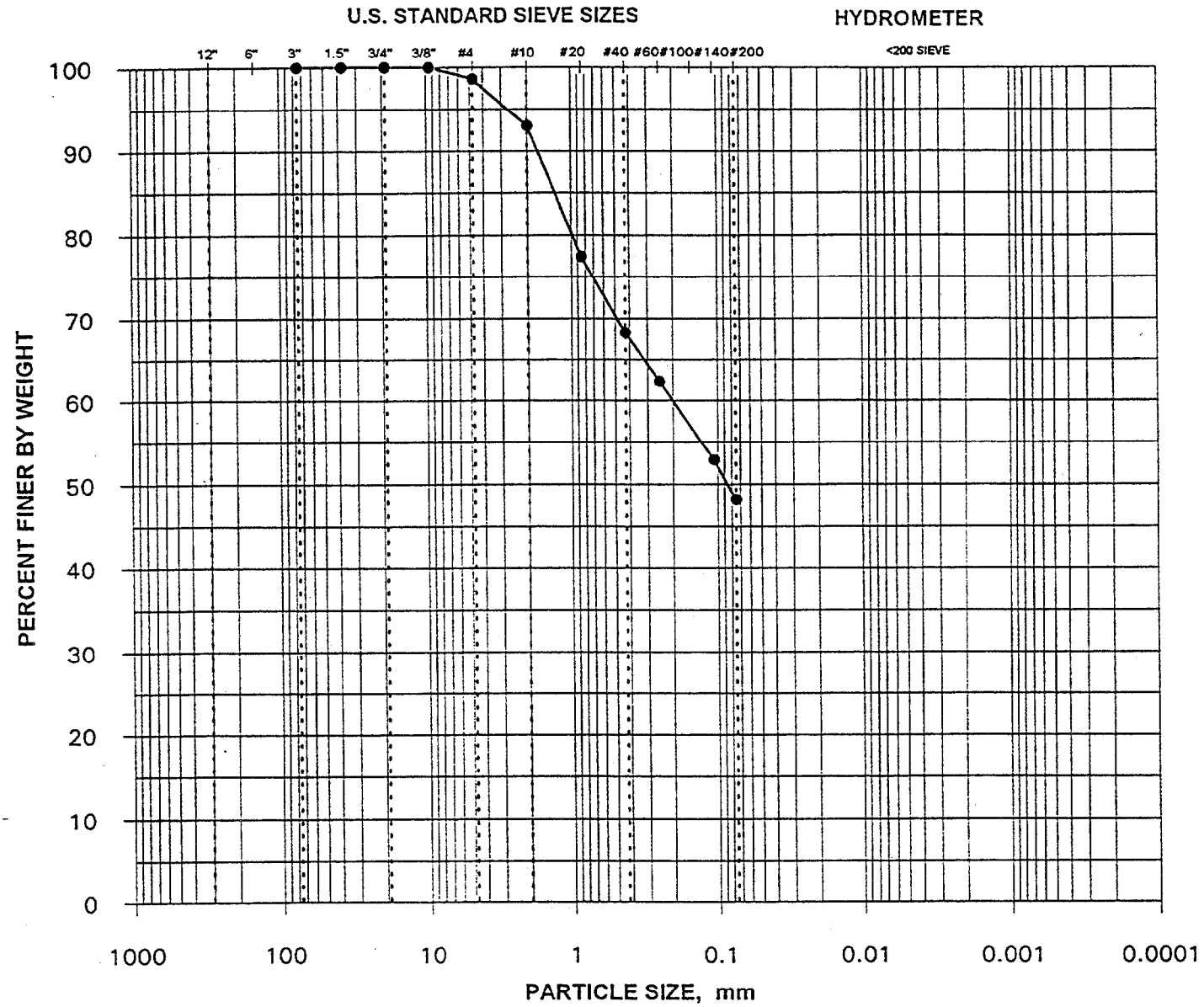
BGTNSD01-02

KEMRON



CLIENT SAMPLE NO.: 26115

ETDC SAMPLE NO.: ETDC-5901

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGTNSD02-01

Project Name: KEMRON

Client Number: 26114

Project Number: 483557.01

ETDC Number: ETDC-5900

Specific Gravity = 2.6500 Assumed

* Moisture Content = 283.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.8%
	#10	2.000	93.3%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	68.3%
	#40	0.425	56.1%
	#60	0.250	50.3%
	#140	0.106	44.6%
	#200	0.075	43.1%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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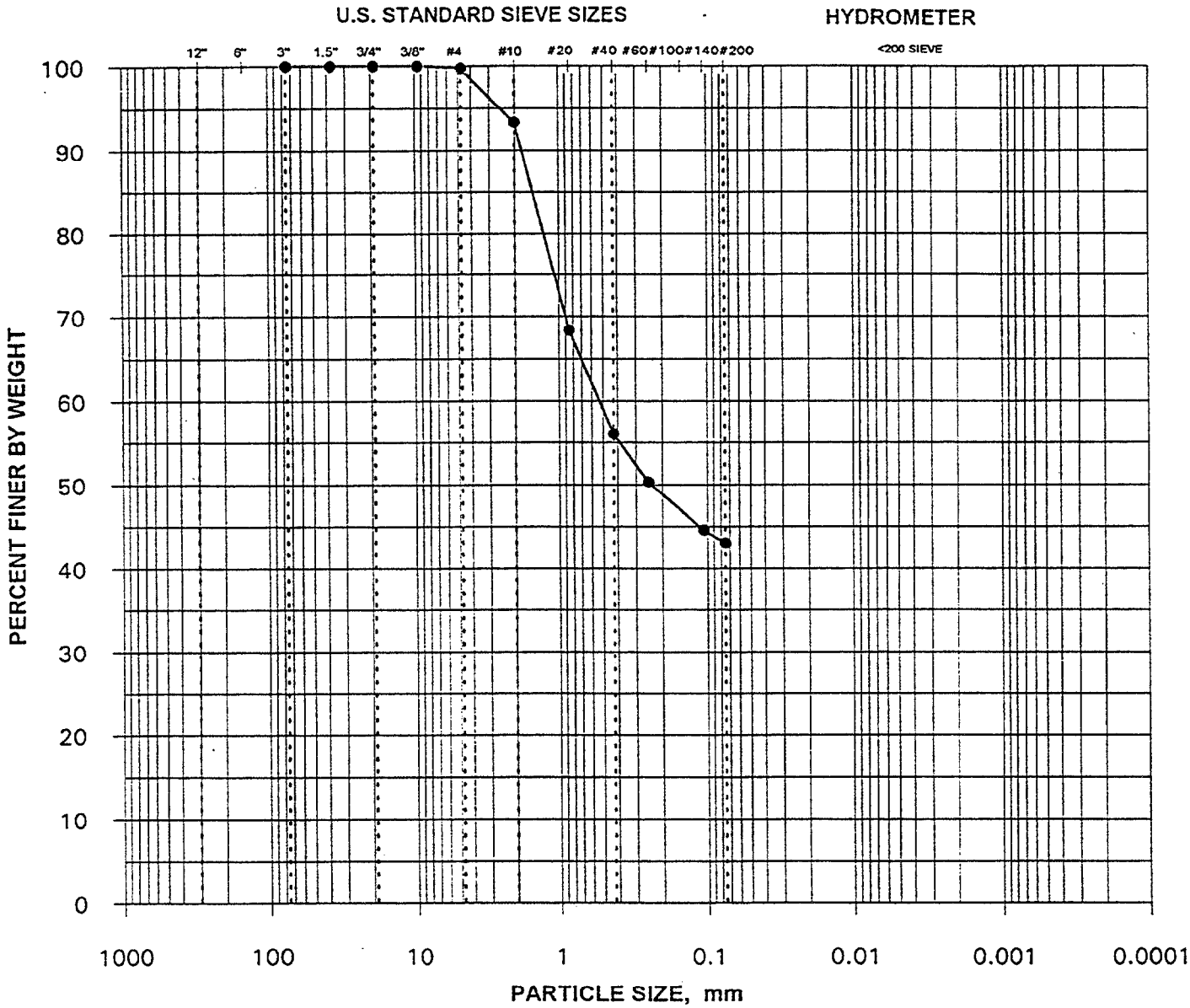
BG-TNSD02-01

KEMRON



CLIENT SAMPLE NO.: 26114

ETDC SAMPLE NO.: ETDC-5900

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGTN 5202-02

Project Name: KEMRON

Client Number: 26113

Project Number: 483557.01

ETDC Number: ETDC-5899

Specific Gravity = 2.6500 Assumed

* Moisture Content = 184.3%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	98.8%
	#10	2.000	88.5%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	60.2%
	#40	0.425	49.3%
	#60	0.250	44.9%
	#140	0.106	40.6%
	#200	0.075	39.3%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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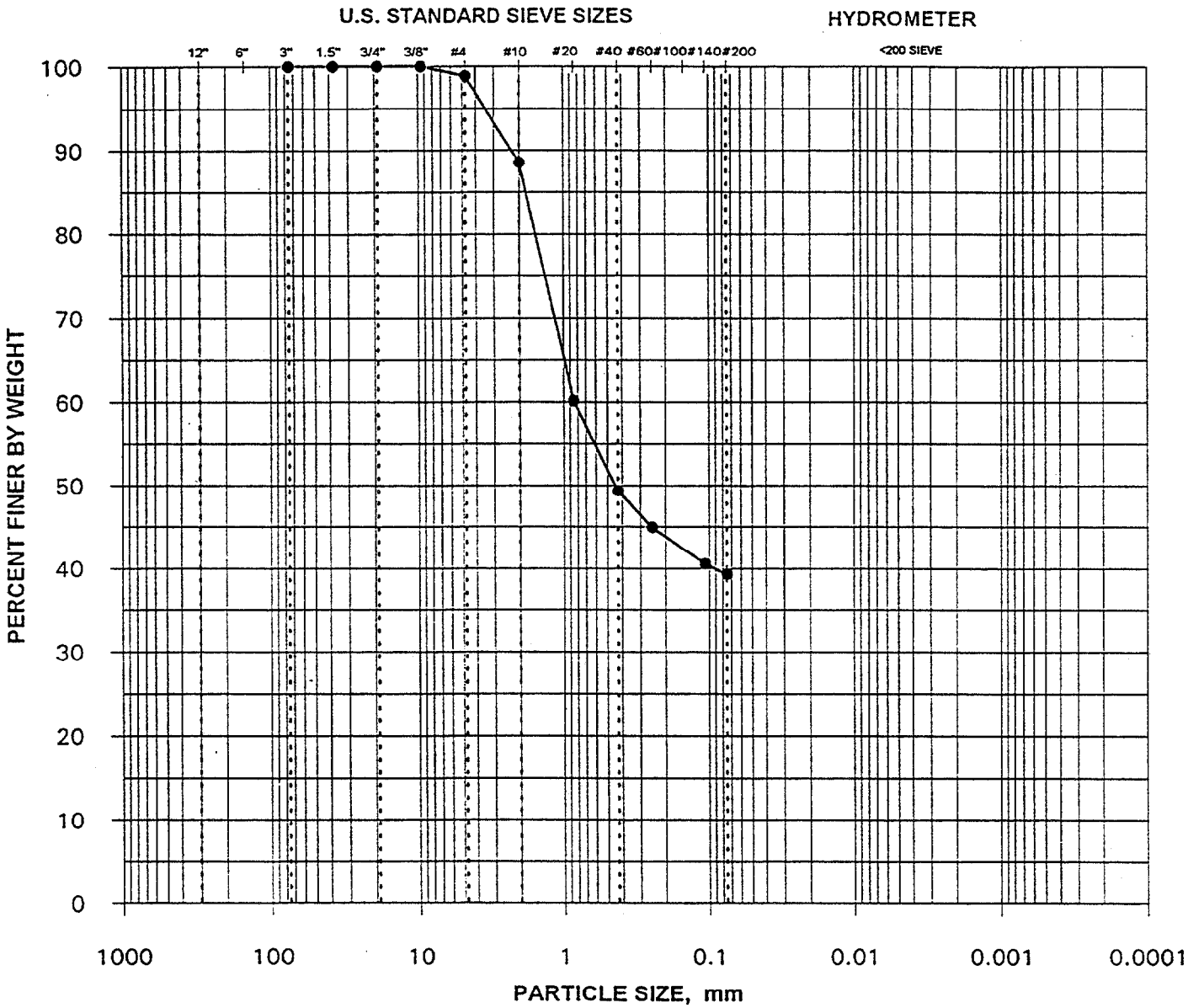
BGTNSD02-02

KEMRON



CLIENT SAMPLE NO.: 26113

ETDC SAMPLE NO.: ETDC-5899

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BCTNSD03-01

Project Name: KEMRON

Client Number: 26112

Project Number: 483557.01

ETDC Number: ETDC-5897

Specific Gravity = 2.6500 Assumed

* Moisture Content = 310.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.4%
	#10	2.000	85.6%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	55.4%
	#40	0.425	39.4%
	#60	0.250	30.9%
	#140	0.106	20.3%
	#200	0.075	17.1%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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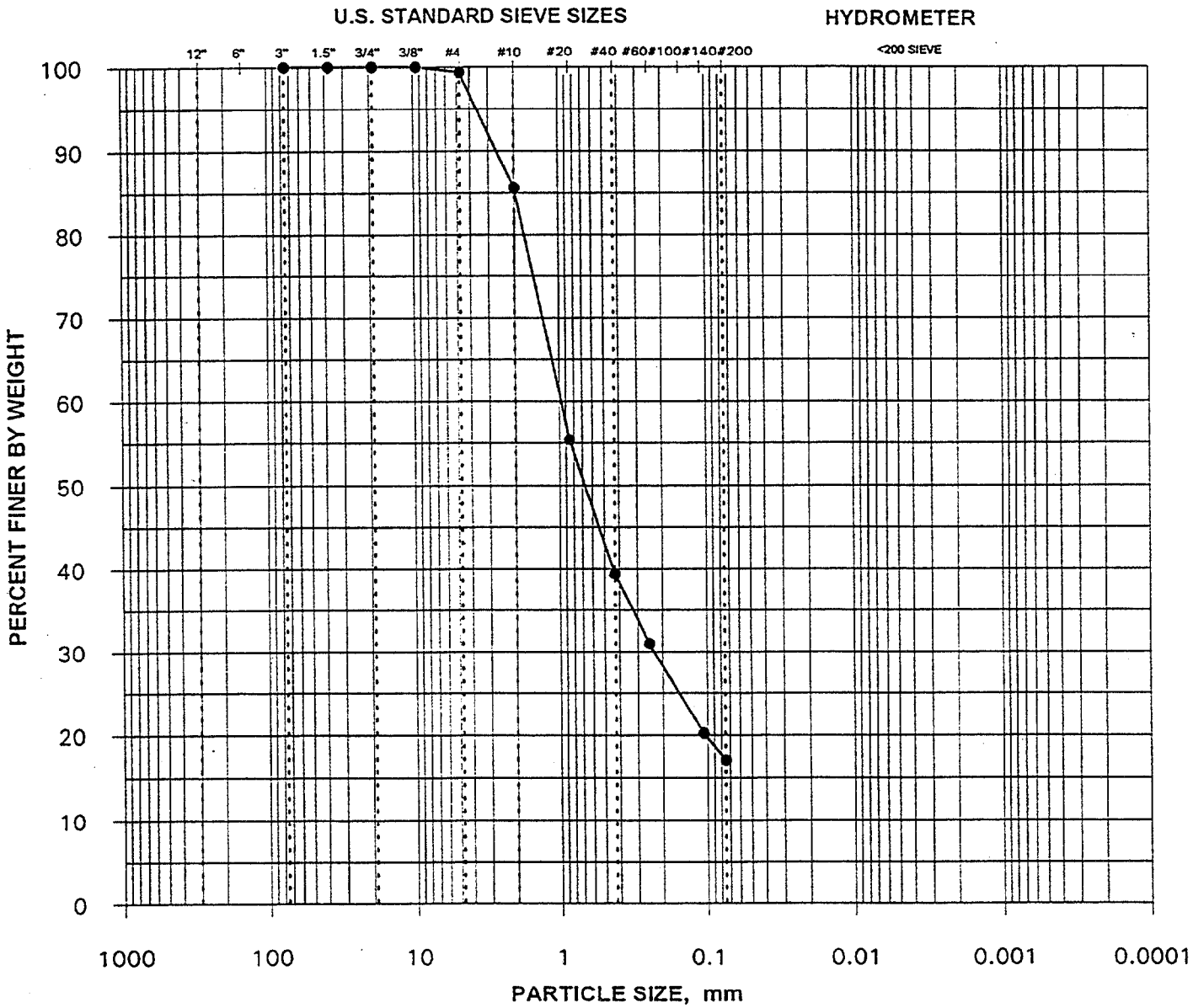
BGTNSD03-01

KEMRON



CLIENT SAMPLE NO.: 26112

ETDC SAMPLE NO.: ETDC-5897

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGTNSD03-01D

Project Name: KEMRON

Client Number: 26112/DUP.

Project Number: 483557.01

ETDC Number: ETDC-5898

Specific Gravity = 2.6500 Assumed

* Moisture Content = 310.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.8%
	#10	2.000	80.6%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	53.4%
	#40	0.425	41.4%
	#60	0.250	35.0%
	#140	0.106	27.0%
	#200	0.075	25.2%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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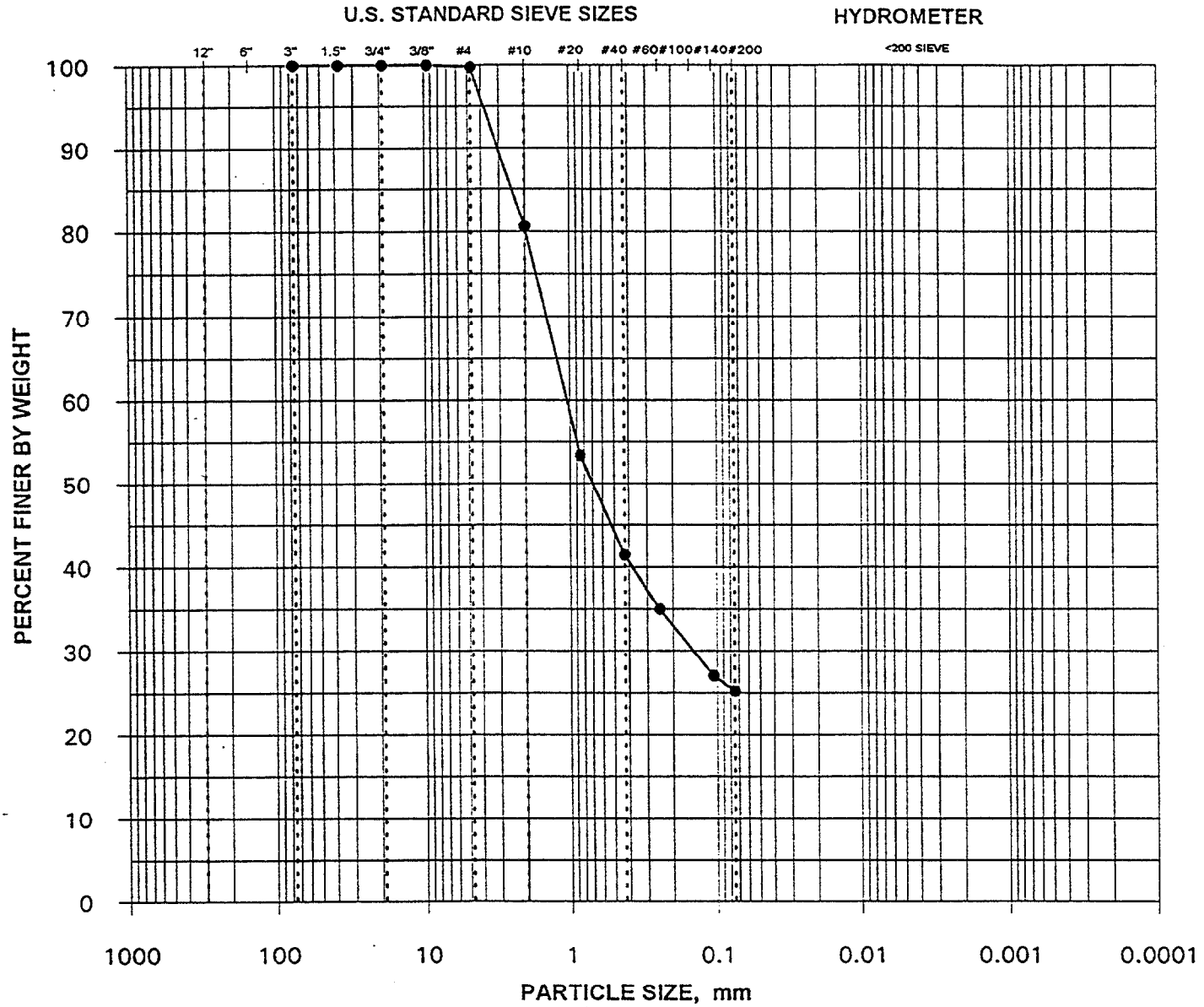
BGTNSD03-01D

KEMRON



CLIENT SAMPLE NO.: 26112/DUP.

ETDC SAMPLE NO.: ETDC-5898

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	

SILT 2 - 75 microns

CLAY <2 microns

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

BGTN SD03-02

Project Name: KEMRON

Client Number: 26117

Project Number: 483557.01

ETDC Number: ETDC-5903

Specific Gravity = 2.6500 Assumed

* Moisture Content = 192.4%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	98.9%
	#10	2.000	88.1%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	57.1%
	#40	0.425	45.8%
	#60	0.250	40.8%
	#140	0.106	35.9%
	#200	0.075	34.8%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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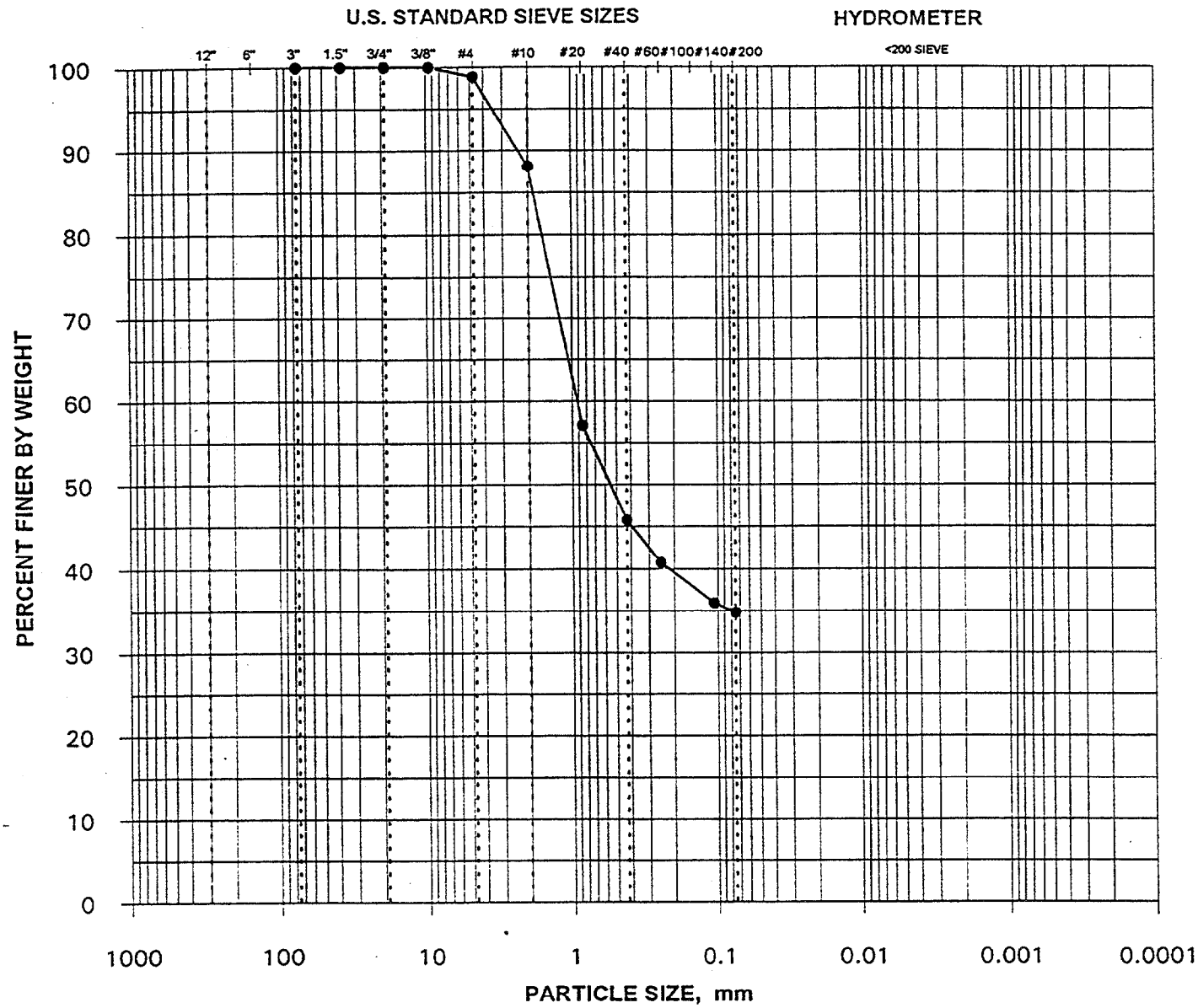
BGTNSD03-02

KEMRON



CLIENT SAMPLE NO.: 26117

ETDC SAMPLE NO.: ETDC-5903

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	

SILT 2 - 75 microns

CLAY <2 microns

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 26361 BGTN5D04-01

Project Number: 483557.01

ETDC Number: ETDC-5871

Specific Gravity = 2.6500 Assumed

* Moisture Content = 80.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	97.7%
	#10	2.000	92.5%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	87.9%
	#40	0.425	83.2%
	#60	0.250	73.4%
	#140	0.106	58.8%
	#200	0.075	56.3%

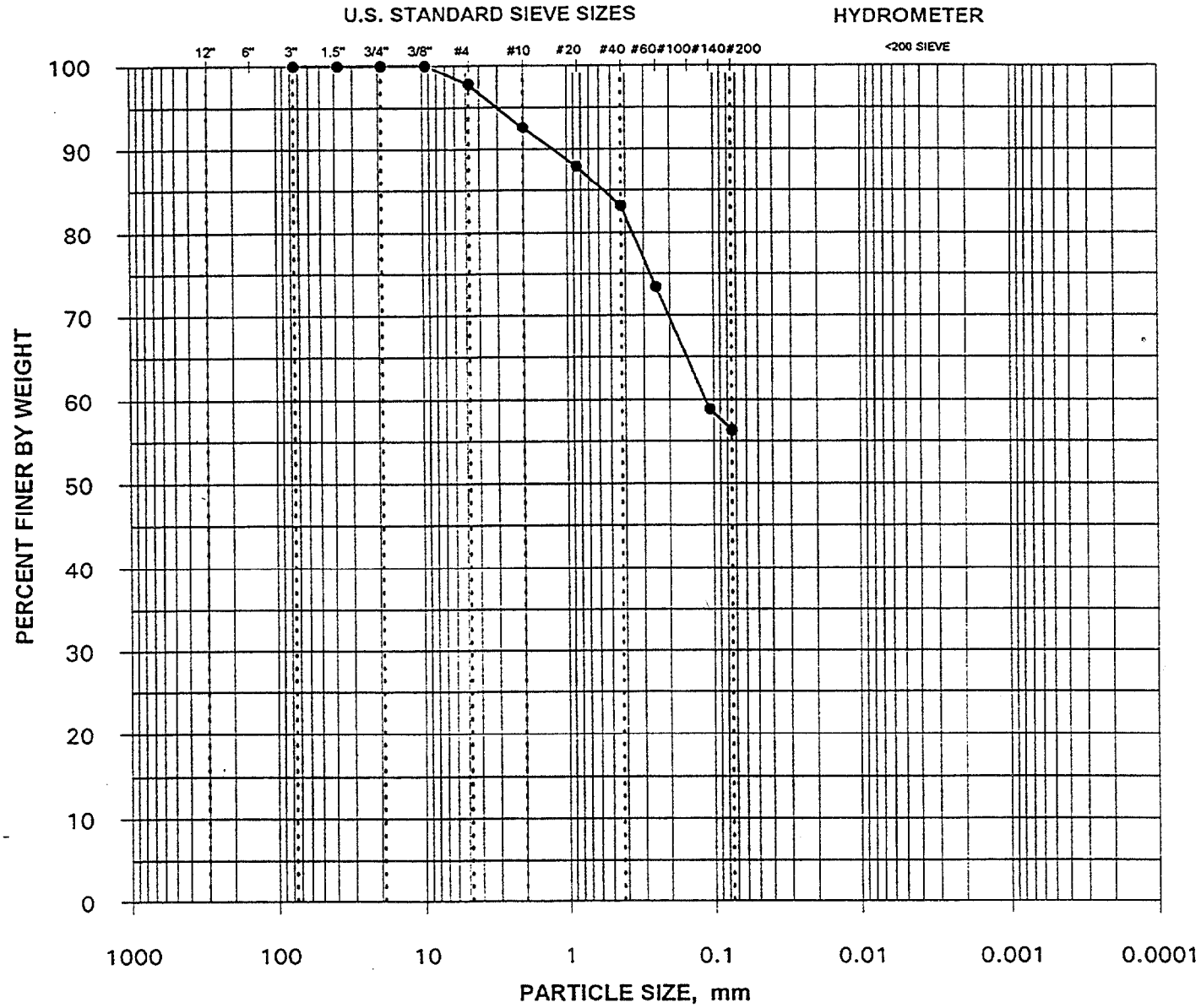
*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

IT ENVIRONMENTAL TECHNOLOGY
DEVELOPMENT CENTER
OAK RIDGE, TN
(615) 482-6497

BGTNSD04-01

KEMRON



CLIENT SAMPLE NO.: 26361

ETDC SAMPLE NO.: ETDC-5871

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Project Number: 483557.01

Client Number: 26362 BGTNSD04-02

ETDC Number: ETDC-5872

Specific Gravity = 2.6500 Assumed

* Moisture Content = 52.3%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.7%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	98.6%
	#40	0.425	96.8%
	#60	0.250	93.3%
	#140	0.106	85.3%
	#200	0.075	81.1%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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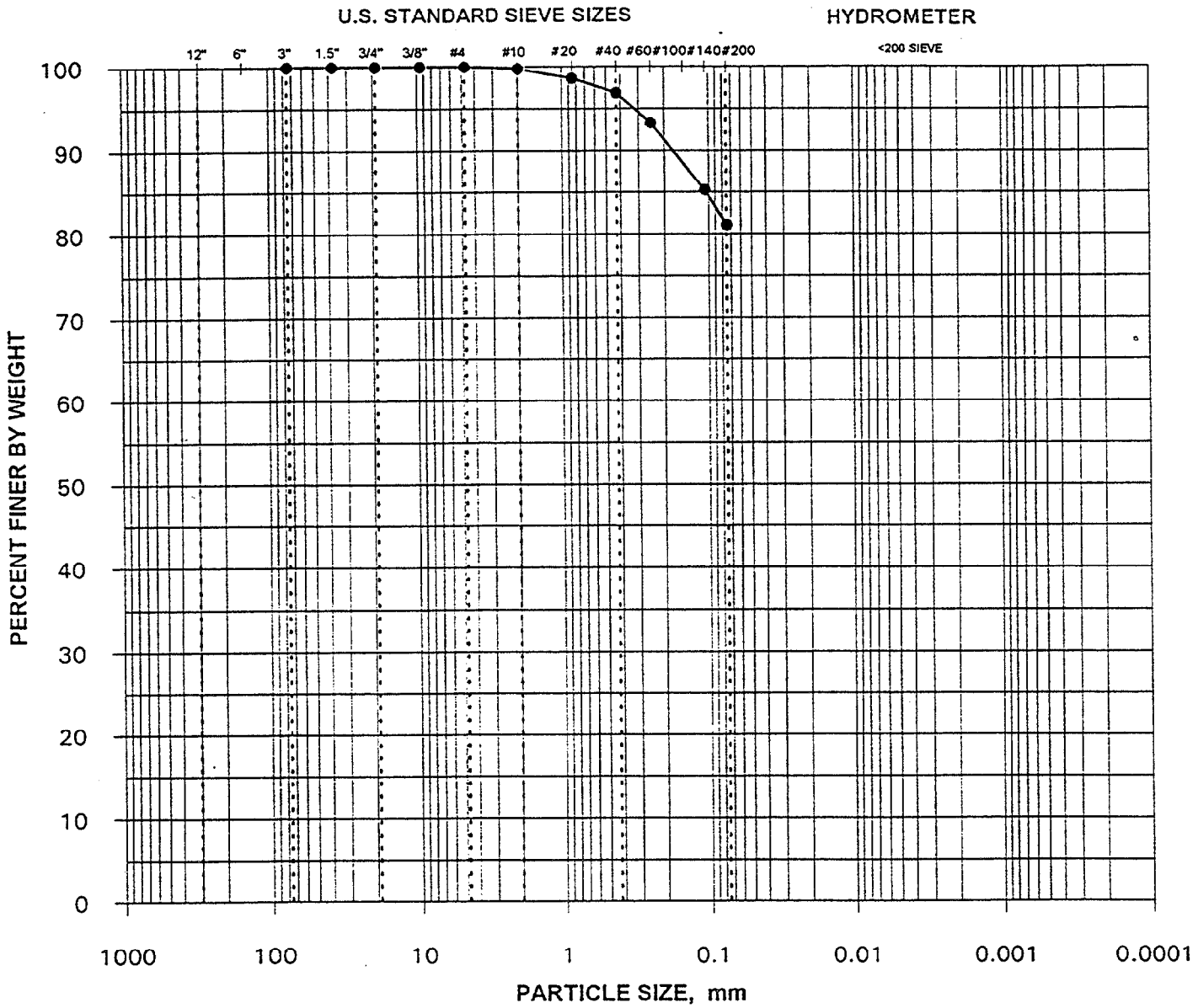
BGTNSD04-02

KEMRON



CLIENT SAMPLE NO.: 26362

ETDC SAMPLE NO.: ETDC-5872

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

IT ENVIRONMENTAL TECHNOLOGY
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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 26367 BGTNSD05-01

Project Number: 483557.01

ETDC Number: ETDC-5877

Specific Gravity = 2.6500 Assumed

* Moisture Content = 89.8%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	95.9%
	#10	2.000	86.4%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	68.6%
	#40	0.425	45.1%
	#60	0.250	23.2%
	#140	0.106	5.4%
	#200	0.075	4.5%

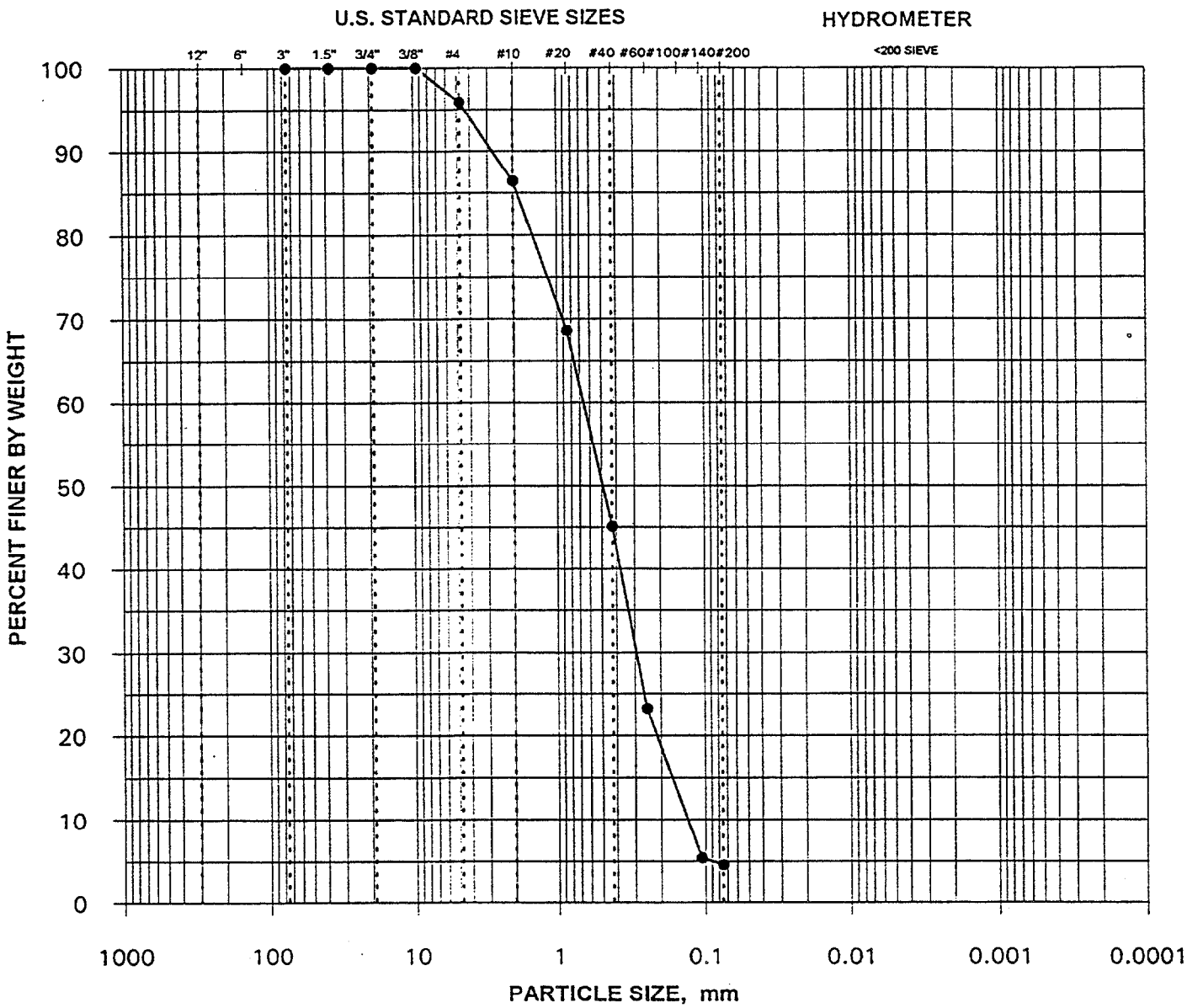
*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

IT ENVIRONMENTAL TECHNOLOGY
DEVELOPMENT CENTER
OAK RIDGE, TN
(615) 482-6497

BGTNSD05-0.

KEMRON



CLIENT SAMPLE NO.: 26367

ETDC SAMPLE NO.: ETDC-5877

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	CLAY <2 microns

662A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

IT ENVIRONMENTAL TECHNOLOGY
DEVELOPMENT CENTER
OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

BGTN5005-01D

Project Name: KEMRON

Client Number: 26367/DUP.

Project Number: 483557.01

ETDC Number: ETDC-5878

Specific Gravity = 2.6500 Assumed

* Moisture Content = 89.8%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.4%
	#4	4.750	97.3%
	#10	2.000	86.3%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	68.6%
	#40	0.425	45.2%
	#60	0.250	22.7%
	#140	0.106	5.0%
	#200	0.075	3.8%

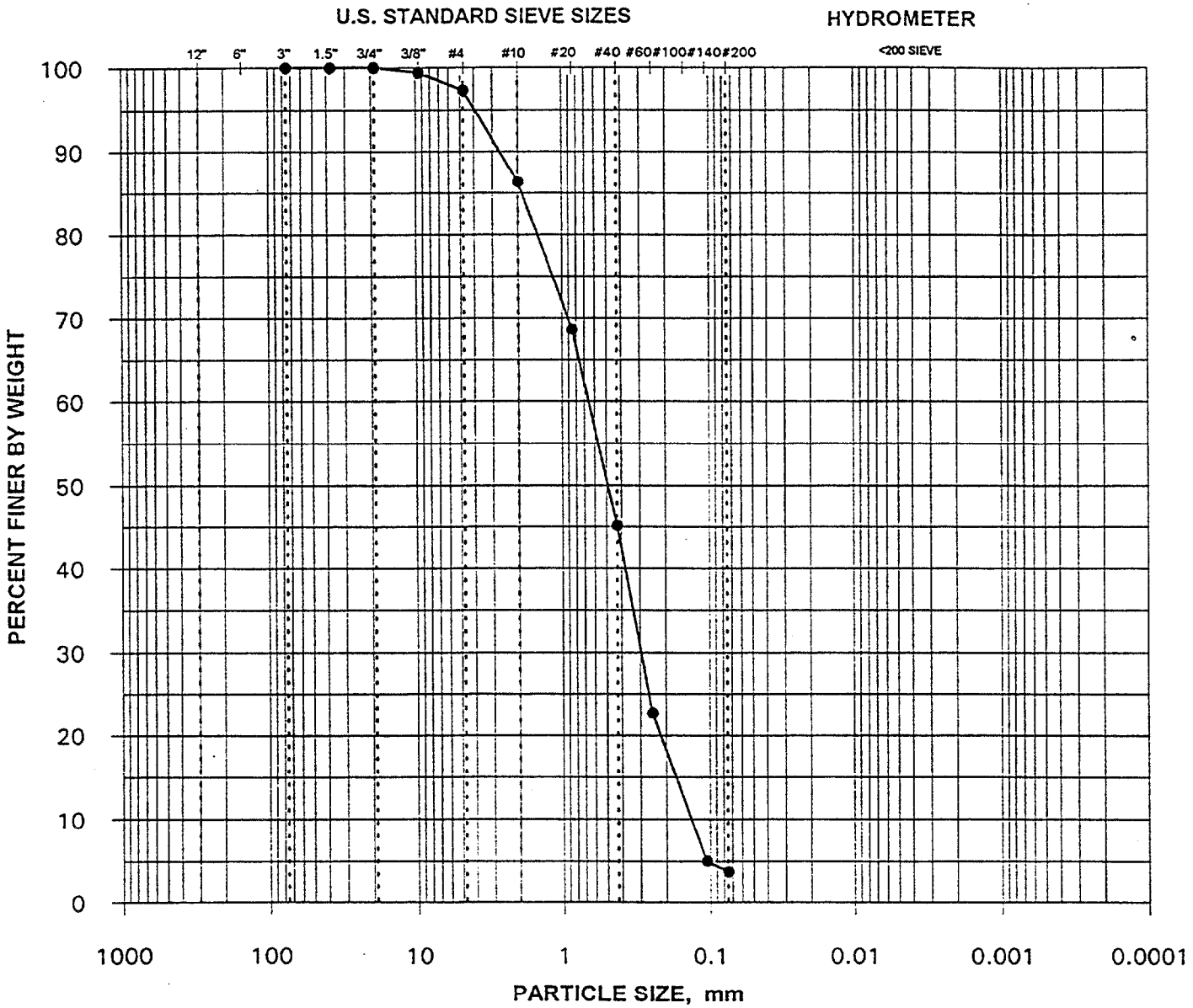
*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

IT ENVIRONMENTAL TECHNOLOGY
DEVELOPMENT CENTER
OAK RIDGE, TN
(615) 482-6497

BGTNSD05-01D

KEMRON



CLIENT SAMPLE NO.: 26367/DUP.

ETDC SAMPLE NO.: ETDC-5878

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	

SILT 2 - 75 microns

CLAY <2 microns

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

IT ENVIRONMENTAL TECHNOLOGY
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OAK RIDGE, TN
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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 26366 BGTNSD05-02

Project Number: 483557.01

ETDC Number: ETDC-5876

Specific Gravity = 2.6500 Assumed

* Moisture Content = 26.1%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	95.3%
	#10	2.000	81.1%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	61.8%
	#40	0.425	40.6%
	#60	0.250	23.3%
	#140	0.106	5.4%
	#200	0.075	3.6%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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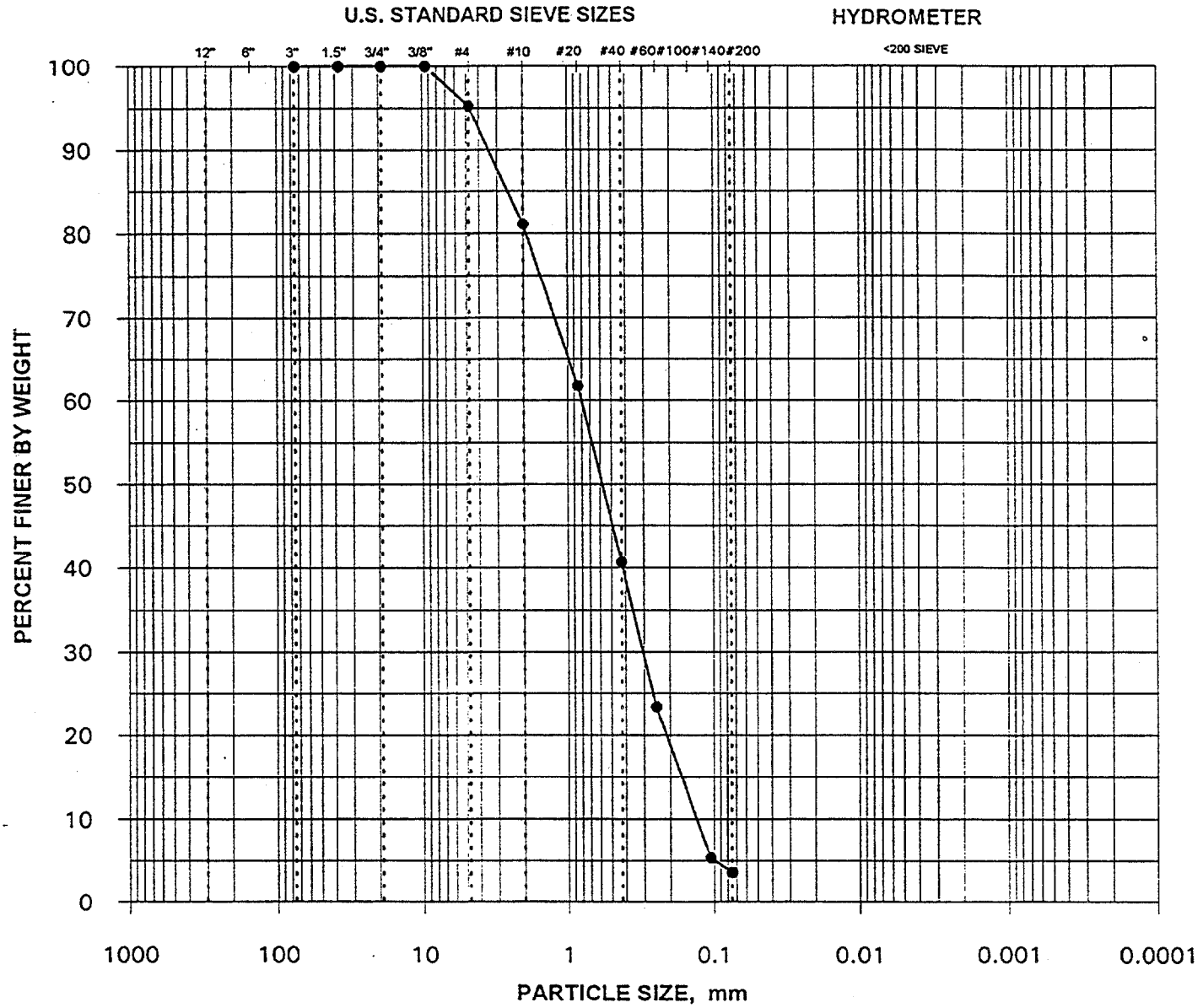
KEMRON



CLIENT SAMPLE NO.: 26366

ETDC SAMPLE NO.: ETDC-5876

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

IT ENVIRONMENTAL TECHNOLOGY
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OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 26363 BGTN5D06-01

Project Number: 483557.01

ETDC Number: ETDC-5873

Specific Gravity = 2.6500 Assumed

* Moisture Content = 68.5%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.2%
	#10	2.000	96.2%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	86.2%
	#40	0.425	61.6%
	#60	0.250	29.5%
	#140	0.106	6.0%
	#200	0.075	4.4%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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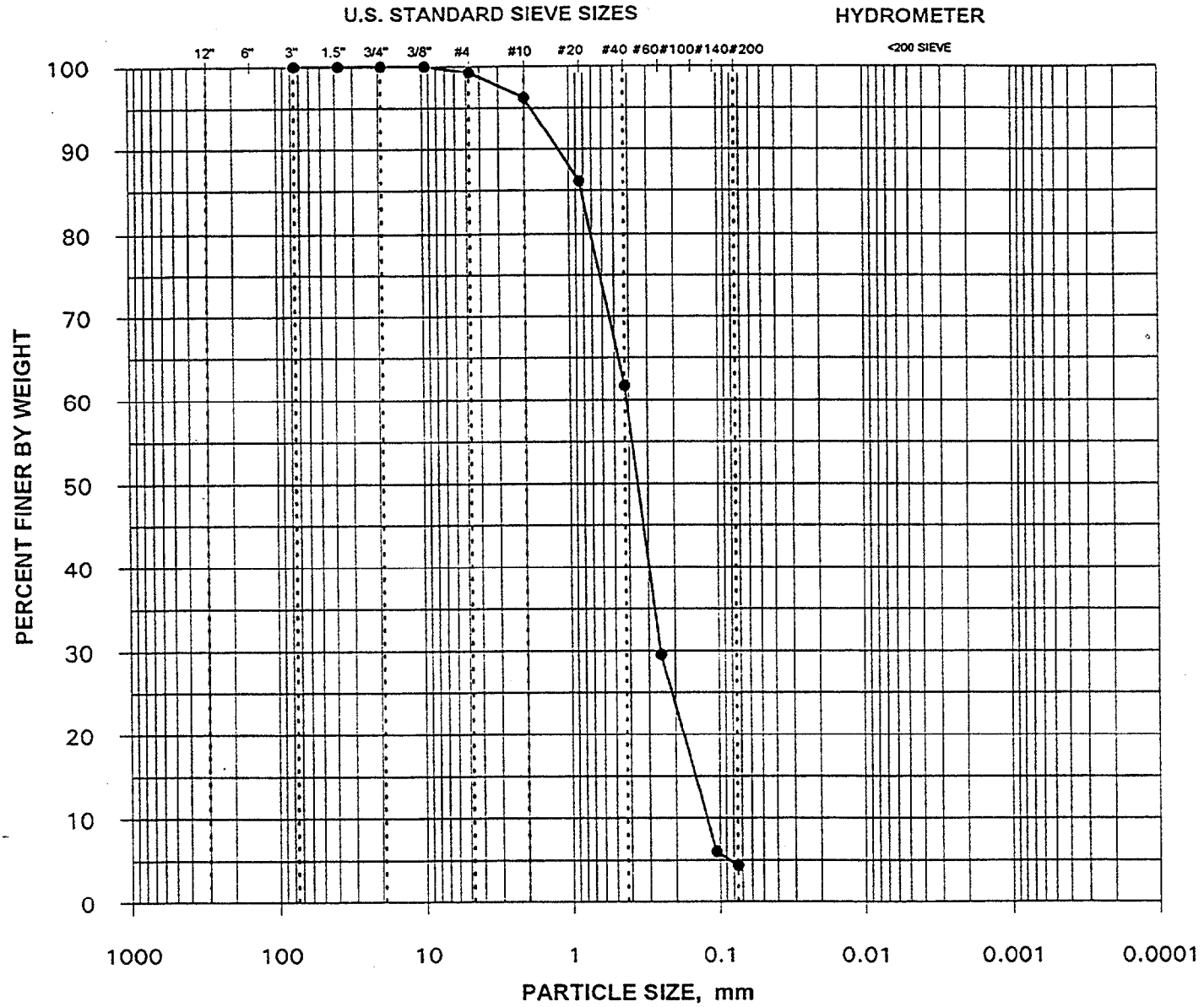
KEMRON



CLIENT SAMPLE NO.: 26363

ETDC SAMPLE NO.: ETDC-5873

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

682A-6-93

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

IT ENVIRONMENTAL TECHNOLOGY
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OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: KEMRON

Client Number: 26365 BGTNSD06-02

Project Number: 483557.01

ETDC Number: ETDC-5875

Specific Gravity = 2.6500 Assumed

* Moisture Content = 28.5%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.6%
	#4	4.750	98.6%
	#10	2.000	94.0%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	79.8%
	#40	0.425	54.4%
	#60	0.250	27.7%
	#140	0.106	3.4%
	#200	0.075	2.2%

*BASED ON DRY WEIGHT BASIS

Janice Landshof
Kemron Environmental Services
September 21, 1994
Client Project ID: Kemron
ETDC Project No.: 483557.01

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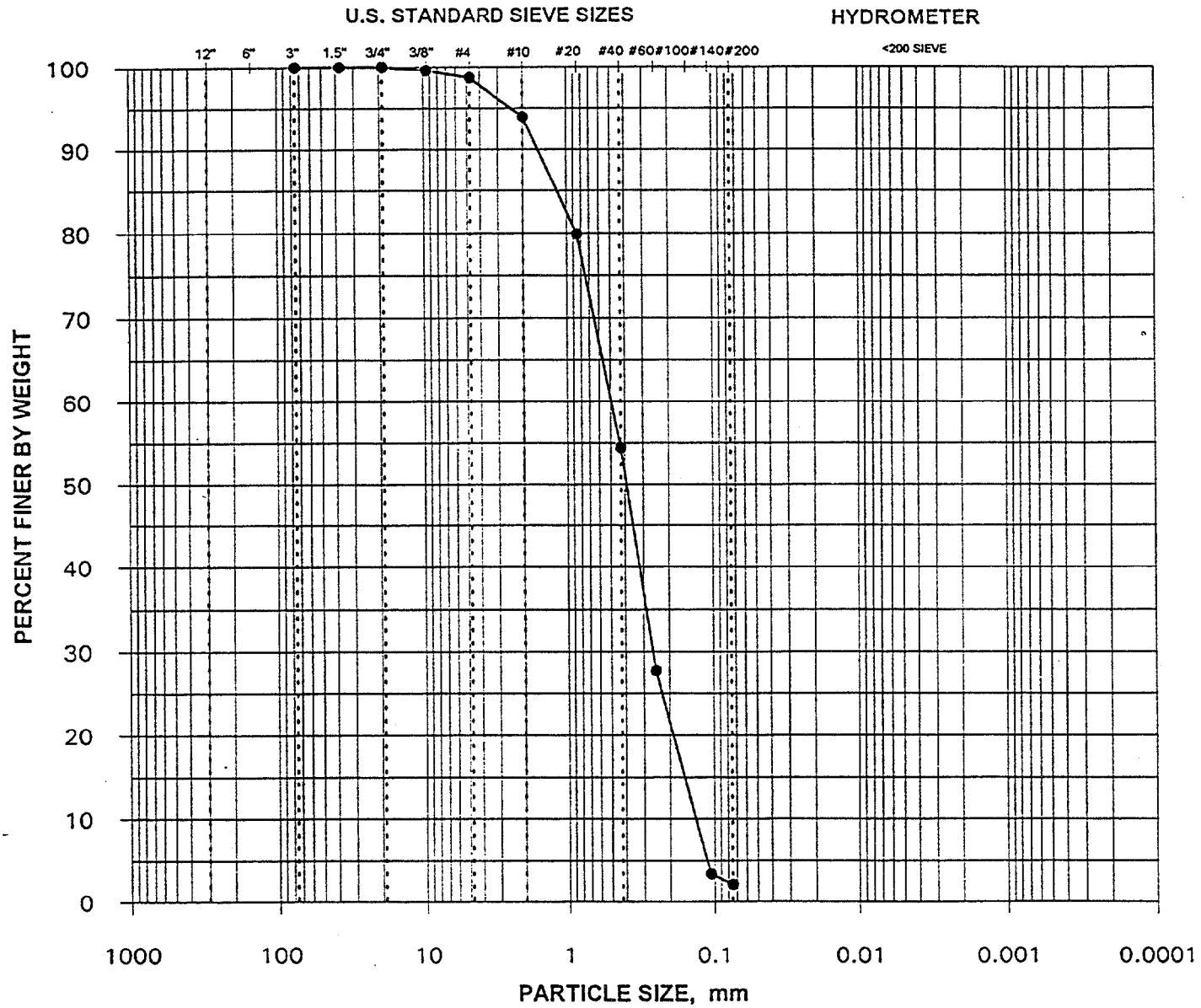
BGTNSD06-02

KEMRON



CLIENT SAMPLE NO.: 26365

ETDC SAMPLE NO.: ETDC-5875

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

682A-6-93

APPENDIX K
FIELD DATA FORMS

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: B6WPSW|SD01 Date: 8-2-94 Time: 1135 and 1140 (SW)

Samplers: AMB; JAG; WJJ Date: 8-2-94 Time: 1433

Water Body: Woodstock Pond State: VA County: _____

Sample Type: Fish (Benthic Macroinvertebrate) (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net (Ponar) Kemmerer (Sediment Corer) Spoon Other: Subsurface water sampler

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Yellow Poplar, red maple, water oak, elm, southern bayberry, marsh mallow, cattail, soft Rush

Aquatic Vegetation: _____

Estimated Stream Width: 50 ft Est. Stream Depth: 8.6 ft Riffle: — ft Run: — ft Pool: — ft

Stream Type: Cold Water (Warm Water) Velocity: — Channelized: Yes __ No __

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: Normal Sewage Petroleum Chemical (Anaerobic) Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 2 Replicate #3: 2

Sediment Description: fine-grain Silt

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	28.4	7.01	12.0	156	0
7.5 ft	27.1	6.38	0.5	430	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: 1.8 ft.

Turbidity: Clear (Slightly Turbid) Turbid Opaque Water Color: _____

Weather Conditions: hazy, hot, and humid Tide: In Out

Comments: Pond located in York River State Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGWPSW/SD02 Date: 8-2-94 Time: 1215 (SW) + 1230

Samplers: AMB, JAG, WJJ Date: 8-2-94 Time: 1640

Water Body: Woodstock Pond State: VA County: _____

Sample Type: Fish (Benthic Macroinvertebrate) (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer (Sediment Corer) Spoon (Other: Subsurface Water Sampler)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Yellow Poplar, Red maple, Water oak, elm, bayberry, Alder

Aquatic Vegetation: _____

Estimated Stream Width: ____ft Est. Stream Depth: 8.2 ft Riffle: ____ft Run: —ft Pool: —ft

Stream Type: Cold Water Warm Water Velocity: — Channelized: Yes __ No __

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: Slight Anaerobic

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 2 Replicate #2: 2 Replicate #3: 1

Sediment Description: Silty muck w/ 25% organic debris

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	28.9	8.04	10.10	151	0
7.2 ft	27.0	6.47	0.76	202	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: 2 ft.

Turbidity: Clear (Slightly Turbid) Turbid Opaque Water Color: green tint

Weather Conditions: hot and humid Tide: In Out

Comments: Pond located in York River State Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGWPSW/SD03 Date: 8-2-94 Time: 1300 and 1552

Samplers: AMB; JAG; WJJ Date: 8-2-94 Time: 1540

Water Body: Woodstock Pond State: _____ County: _____

Sample Type: Fish (Benthic Macroinvertebrate) (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net (Ponar) Kemmerer (Sediment Corer) Spoon (Other: Subsurface Sampler)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) · Urban Industrial Other: _____

Shore Vegetation: yellow Poplar, red maple, water Oak, and elm

Aquatic Vegetation: _____

Estimated Stream Width: 40 ft Est. Stream Depth: 7.9 ft Riffle: _____ft Run: _____ft Pool: _____ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes __ No __

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 2 Replicate #3: 1

Sediment Description: fine silt w/ organic debris (appx. 20%)

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	29.3	8.05	15.0	152	0
6.9 ft	27.9	6.41	11.2	506	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ft.

Turbidity: Clear (Slightly Turbid) Turbid Opaque Water Color: green tint

Weather Conditions: hazy and hot Tide: In Out

Comments: Pond located in the York River State Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGWPSW/SD04 Date: 8-2-93 Time: 1600 (SW)

Samplers: _____ Date: 8-3-94 Time: 1250 (SD)

Water Body: Woodstock Pond State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer (Sediment Corer) Spoon Other: ~~Subsurface~~ Sampler

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Bayberry, Alder, saltstem rush, 3-square sedge juncus effoersey, yellow poplar, red maple, water oak, elm

Aquatic Vegetation: _____

Estimated Stream Width: 40 ft Est. Stream Depth: 2.9 ft Riffle: ~ ft Run: — ft Pool: 100% ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes __ No __

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 2 Replicate #2: 1 Replicate #3: 1

Sediment Description: floculent, clay-like material, trace silt and trace organics

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	28.0	6.55	15	229	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: Clear (Slightly Turbid) Turbid Opaque Water Color: _____

Weather Conditions: breezy, cloudy, hot Tide: In Out

Comments: Pond located in the York River State Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGPLSW/SD03 Date: 8-4-94 Time: 1040 (SW)

Samplers: AMB, JAG, WJT Date: 8-5-94 Time: 0900 (SD)

Water Body: _____ State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon Other: _____

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Black pine, red oak, American holly

Aquatic Vegetation: _____

Estimated Stream Width: 100 ft Est. Stream Depth: 8 ft Riffle: 10% ft Run: 10% ft Pool: 80% ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes __ No __

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: Small sample size, fine silt with trace of organics

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	29.4	7.52	8.25	95.0	0
8 feet	28.5	6.65	0.75	95.0	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: Clear (Slightly Turbid) Turbid Opaque Water Color: _____

Weather Conditions: Hot and Sunny Tide: In Out

Comments: Pond located on AFETA Camp Peary

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGPLSW/SD04+dup Date: 8-4-94 Time: 1110 & 1120 (SW)

Samplers: AMB, JAG, WJJ Date: 8-4-94 Time: 1520 (SD)

Water Body: Powell Lake State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer (Sediment Corer) Spoon (Other: Subsurface Sampler)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Black pine, red oak, American holly

Aquatic Vegetation: _____

Estimated Stream Width: 50 ft Est. Stream Depth: 4.5 ft Riffle: 15% ft Run: 5% ft Pool: 80% ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes __ No __

Canopy Cover: Open (Partly Open) Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: Silt with 10-15% organics, a lot of benthics

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	30.2	7.02	7.5	24.3	0
3 feet	29.4	6.44	4.5	181.0	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: 2 ft.

Turbidity: Clear Slightly Turbid (Turbid) Opaque Water Color: green Tint

Weather Conditions: Hot and Sunny Tide: In Out

Comments: Pond located at AFETA Camp Peary

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGCPSW/SD01 Date: 8-6-94 Time: 1250 (SW)

Samplers: AMB and JAG Date: 8-6-94 Time: 1320 (SD)

Water Body: Yorktown Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon (Other: Sediment Sleeve Dip)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: Roadway Nearby - Colonial Parkway

Shore Vegetation: arrow arum, duckweed, sycamore, willows, marsh hibiscus

Aquatic Vegetation: filamentous algae and coontail

Estimated Stream Width: 100-150 ft Est. Stream Depth: 1 ft Riffle: — ft Run: 20% ft Pool: 80% ft

Stream Type: Cold Water (Warm Water) Velocity: minimal Channelized: Yes __ No X

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 3 Replicate #2: 3 Replicate #3: 3

Sediment Description: 0-4" = black muck } mostly organic debris little sediment
4-8" = Sandy-clay }

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	20.8	7.2	4.6	390	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: NA ft.

Turbidity: (Clear) Slightly Turbid Turbid Opaque Water Color: alot of filamentous algae

Weather Conditions: cloudy cool Tide: In Out

Comments: Station located in Colonial National Historical Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGCPSW/SD02 Date: 8-6-94 Time: 1520(SW)

Samplers: AMB and JAG Date: 8-6-94 Time: 1535(SD)

Water Body: Beaver Dam Creek State: _____ County: _____

Sample Type: Fish Benthic Macroinvertebrate Sediment Surface Water

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon Other: _____

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Willow, Sycamore, Common Pawpaw, Slippery elm, lizards tail, and false nettle

Aquatic Vegetation: _____

Estimated Stream Width: 10 ft Est. Stream Depth: 1-2 ft Riffle: 40% ft Run: 30% ft Pool: 30% ft

Stream Type: Cold Water (Warm Water) Velocity: Minimal Channelized: Yes __ No X

Canopy Cover: Open Partly Open (Partly Shaded) Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: Sand - Fine-grain

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	21.0	7.39	9.0	350	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: Clear to bottom ft.

Turbidity: (Clear) Slightly Turbid Turbid Opaque Water Color: _____

Weather Conditions: _____ Tide: In Out

Comments: Station located in the York Colonial National Historical Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGCPSW/SD03dup MS/MSD Date: 8-6-94 Time: 1715(SW)

Samplers: AMB and JAG Date: 8-6-94 Time: 1808(SD)

Water Body: Great Run State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon (Other: DIP Sediment sleeve)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Sycamores, red maple, tulip poplar, and flowering dogwood

Aquatic Vegetation: _____

Estimated Stream Width: 3 ft Est. Stream Depth: 1-2 ft Riffle: 20% ft Run: 20% ft Pool: 60% ft

Stream Type: Cold Water Warm Water Velocity: minimal Channelized: Yes X No _

Canopy Cover: Open Partly Open (Partly Shaded) Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: Sandy-gray clay, little organic debris

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	21.6	7.11	8.0	223	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: Clear Slightly Turbid (Turbid) Opaque Water Color: brown/yellow tint

Weather Conditions: _____ Tide: In Out

Comments: Station located in Colonial National Historical Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BG SW/SD 04 (C.P.) Date: 8-7-94 Time: 0800 (SW)

Samplers: AMB and JAG Date: 8-7-94 Time: 0820 (SD)

Water Body: Baptist Run State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon (Other: Sediment Sleeve Dip)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Not Available

Aquatic Vegetation: _____

Estimated Stream Width: 6-7 ft Est. Stream Depth: 0.5 ft Riffle: 50% ft Run: 50% ft Pool: 0 ft

Stream Type: Cold Water Warm Water Velocity: Minimal Channelized: Yes __ No __

Canopy Cover: Open Partly Open Partly Shaded (Shaded)

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: Sand, little debris, Shell fragments

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	17.4	6.65	10.2	408	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: (Clear) Slightly Turbid Turbid Opaque Water Color: _____

Weather Conditions: Cool, Partly Cloudy Tide: In Out

Comments: Station located in the Colonial National Historical Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGCPSW/SD05 Date: 8-7-94 Time: 1000 (SW)

Samplers: _____ Date: 8-7-94 Time: 1020 (SD)

Water Body: Yorktown Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon (Other: Sediment sleeve + Dip)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: adjacent to colonial Parkway

Shore Vegetation: Lizards tail, forget-me-nots, sedges, red maple, and green ash

Aquatic Vegetation: _____

Estimated Stream Width: 7-8 ft Est. Stream Depth: < 0.5 ft Riffle: 30% ft Run: 50% ft Pool: ____ ft

Stream Type: Cold Water (Warm Water) Velocity: minimal Channelized: Yes __ No X

Canopy Cover: Open Partly Open Partly Shaded (Shaded)

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: Sand w/ organic debris and shell fragments

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	17.8	7.88	9.8	445	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: (Clear) Slightly Turbid Turbid Opaque Water Color: _____

Weather Conditions: Cool, Partly cloudy Tide: In Out

Comments: Station located in Colonial National Historical Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: B6TNSW|SD01 Date: 8-18-94 Time: 1545 (SW)

Samplers: AMB, JAG, RCS Date: 8-19-94 Time: 1320 (SD)

Water Body: Timberneck Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer (Sediment Corer) Spoon Other: Dip & Subsurface Sampler

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: Some residential and Agriculture

Shore Vegetation: Forested wetland, marshes

Aquatic Vegetation: _____

Estimated Stream Width: 700 ft Est. Stream Depth: 5 ft Riffle: 5% ~~ft~~ Run: 75% ~~ft~~ Pool: 20% ~~ft~~

Stream Type: Cold Water (Warm Water) Velocity: sl to med Channelized: Yes X No _

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: fine-grain silt

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	28.6	8.27	8.5	34,000	23.5
Bottom	27.9	7.59	NE	33,500	24.0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: Clear Slightly Turbid (Turbid) Opaque Water Color: green tint

Weather Conditions: _____ Tide: In Out

Comments: NE = Not Evaluated

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGTNSW/SD02 Date: 8-18-94 Time: 1635 (SW)

Samplers: AMB, JAG, RCS Date: 8-19-94 Time: 1230 (SD)

Water Body: Timberneck Creek State: _____ County: _____

Sample Type: Fish Benthic Macroinvertebrate Sediment Surface Water

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon Other: Dip & Subsurface Sampler & Sediment Sleeve

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: Some residential and Agriculture

Shore Vegetation: forested Wetland, marshes

Aquatic Vegetation: _____

Estimated Stream Width: 500 ft Est. Stream Depth: 4 ft Riffle: 5% Run: 70% Pool: 25%

Stream Type: Cold Water (Warm Water) Velocity: med Channelized: Yes X No _

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: silt with a trace of sand

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	28.8	8.39	NE	33,000	23
Bottom	28.6	7.68	NE	32,000	23

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: Clear Slightly Turbid (Turbid) Opaque Water Color: green tint

Weather Conditions: _____ Tide: In Out

Comments: NE = Not Evaluated

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGTNSW/SD03-DUP-ms/msD Date: 8-18-94 Time: 1705 (SW)

Samplers: AMB, JAG, RCS Date: 8-19-94 Time: 1020 (SD)

Water Body: Timberneck Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate **Sediment** **Surface Water**

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon Other: Dip + Sediment sleeve

Riparian Zone/Instream Features

Predominant Surrounding Land Use: Forest Urban Industrial Other: Agriculture / Residential

Shore Vegetation: forested wetland / marshes

Aquatic Vegetation: _____

Estimated Stream Width: 500 ft Est. Stream Depth: 2.5 ft Riffle: — ft Run: 50% ~~ft~~ Pool: 50% ~~ft~~

Stream Type: Cold Water **Warm Water** Velocity: med Channelized: Yes X No __

Canopy Cover: **Open** Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: **Normal** Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: **Absent** Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: Silt with a trace of fine-grain sand and woody debris

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	32.5	8.68	4.5	29,000	16

Water Odors: **Normal** Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen **None** Secchi: _____ ft.

Turbidity: Clear Slightly Turbid **Turbid** Opaque Water Color: black floating algae

Weather Conditions: _____ Tide: In Out

Comments: _____

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGTNSW/SD04 DUP-MS/MSD Date: 8-20-94 Time: 1635 (SW)

Samplers: AMB, JAG, RCS Date: 8-20-94 Time: 1710 (SD)

Water Body: Timberneck Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon Other: Dip & Sediment sleeve

Riparian Zone/Instream Features

Predominant Surrounding Land Use: Forest Urban Industrial Other: Residential/Agriculture

Shore Vegetation: Tidal Marsh, Saltmarsh Cordgrass, Saltmarsh bulrush, Salt meadow, Salt grass, Marshelder

Aquatic Vegetation: _____

Estimated Stream Width: 5 ft Est. Stream Depth: 1 ft Riffle: ~~— ft~~ Run: ~~25% ft~~ Pool: ~~75% ft~~

Stream Type: Cold Water (Warm Water) Velocity: slow Channelized: Yes _ No X

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: Normal Sewage Petroleum Chemical (Anaerobic) Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: Silt

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	31.3	7.66	7.7	12,500	7

Water Odors: Normal Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen None Secchi: _____ ft.

Turbidity: Clear Slightly Turbid Turbid (Opaque) Water Color: yellow tint, floating algae

Weather Conditions: Sunny and Warm Tide: In Out

Comments: Located on private property. Owners complain of an odor from the "black algae" that comes in with the tide. The odor is sewage-like.

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGTNSW/SD05 Date: 8-20-94 Time: 1340 (SW)

Samplers: AMB, JAG, RCS Date: 8-20-94 Time: 1520 (SD)

Water Body: Timberneck Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon Other: Dip + Sediment sleeve

Riparian Zone/Instream Features

Predominant Surrounding Land Use: Forest Urban Industrial Other: _____

Shore Vegetation: Lizards tail, cardinal flower, touch-me-nots, poison ivy, mertle, willows, red maple, sweetgum, blackgum

Aquatic Vegetation: _____

Estimated Stream Width: 4.6 ft Est. Stream Depth: 0.5 ft Riffle: ____ ft Run: 754 ft Pool: 754

Stream Type: Cold Water Warm Water Velocity: slow Channelized: Yes _ No X

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 3 Replicate #2: 3 Replicate #3: 2

Sediment Description: Sandy with alot of debris

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	31.8	6.85	5.7	3,750	1.0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: NE ft.

Turbidity: (Clear) Slightly Turbid Turbid Opaque Water Color: Clear

Weather Conditions: Sunny and Warm Tide: In Out

Comments: _____

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGTNSW/SD06 Date: 8-20-94 Time: 1250 (SW)

Samplers: AMB, JAG, RCS Date: 8-20-94 Time: 1420 (SD)

Water Body: Timberneck Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon Other: (Dip + Sediment sleeve)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: Forest Urban Industrial Other: _____

Shore Vegetation: lizards tail, Cardinal flower, touch-me-nots, poison ivy, Morytle, willows, red maple, Sweet gum, black gum

Aquatic Vegetation: _____

Estimated Stream Width: 3.5 ft Est. Stream Depth: 3 ft Riffle: 30% ft Run: 30% ft Pool: 40% ft

Stream Type: Cold Water (Warm Water) Velocity: very slow Channelized: Yes __ No __

Canopy Cover: Open Partly Open Partly Shaded (Shaded)

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 4 Replicate #2: 3 Replicate #3: 3

Sediment Description: Organic debris - sticks and leaves

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	30.7	7.06	7.5	180	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: Clear Slightly Turbid Turbid (Opaque) Water Color: yellow tint

Weather Conditions: _____ Tide: In Out

Comments: _____

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGTCSW/SD01 Date: 8-8-94 Time: 1030 + 1045 (SW)

Samplers: AMB, JAG, RCS Date: 8-9-94 Time: 1445 (SD)

Water Body: Taskinas Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate Sediment Surface Water

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon Other: dip and Subsurface Sampler

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Saltmarsh cordgrass, saltmarsh bulrush, big cord grass, saltmarsh hay, and saltmarsh grass

Aquatic Vegetation: Tidal Saltmarsh

Estimated Stream Width: 30 ft Est. Stream Depth: 6 ft Riffle: ____ ft Run: ____ ft Pool: ____ ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes X No __

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: Normal Sewage Petroleum Chemical (Anaerobic) Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: Silty muck with very little organics

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	24.0	7.70	7.9	20,000	14.5
5 ft	25.0	7.73	9.0	20,100	15.0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: <1 ft.

Turbidity: Clear Slightly Turbid (Turbid) Opaque Water Color: green tint

Weather Conditions: appx. 78°F, Sunny Tide: (In) Out

Comments: Located in York River State Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGTCSW/SD02 Date: 8-8-94 Time: 1110 & 1120 (SW)

Samplers: AMB, JAG, RCS Date: 8-9-94 Time: 1320 (SD)

Water Body: Taskinas Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon (Other: Dip + Subsurface Sampler)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Saltmarsh cordgrass, Saltmarsh bulrush, big cordgrass, saltmarsh hay, and salt grass

Aquatic Vegetation: Tidal Saltmarsh

Estimated Stream Width: 30 ft Est. Stream Depth: 10-12 ft Riffle: 20% ft Run: 60% ft Pool: 20% ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes X No _

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: Normal Sewage Petroleum Chemical (Anaerobic) Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 2 Replicate #3: 1

Sediment Description: 0-4" = silt w/ organics

4-8" = silty-clay

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	25.5	7.52	8.4	20,100	14.5
9 feet	25.1	7.47	7.5	20,100	14.5

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: < 1 ft.

Turbidity: Clear Slightly Turbid (Turbid) Opaque Water Color: _____

Weather Conditions: Sunny, 80°F Tide: In Out

Comments: Located in York River State Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: BGTCSW/SD03 + Dup Date: 8-9-94 Time: 0940 + 0950 (SW)

Samplers: AMB, JAG, RCS Date: 8-9-94 Time: 1203 (SD)

Water Body: Taskinas Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer (Sediment Corer) Spoon (Other: Dip + Subsurface Sampler)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: _____

Shore Vegetation: Saltmarsh cordgrass, saltmarsh bulrush, big cordgrass, saltmarsh hay, and salt grass

Aquatic Vegetation: Tidal saltmarsh

Estimated Stream Width: 35 ft Est. Stream Depth: 4 ft Riffle: 30% ft Run: 40% ft Pool: 30% ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes X No _

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: Normal Sewage Petroleum Chemical (Anaerobic) Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 2 Replicate #2: 3 Replicate #3: 2

Sediment Description: petey muck with high organics

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	22.9	7.11	6.1	12,000	7
3 feet	22.8	7.10	5.8	14,000	7

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: <1 ft.

Turbidity: Clear Slightly Turbid (Turbid) Opaque Water Color: green tint, algae sheen

Weather Conditions: Sunny, appx. 80°F Tide: In Out

Comments: Located in the York River State Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: 3GTCSW/SD04 Date: 8-9-94 Time: 1025

Samplers: AMB, JAG, PCS Date: 8-9-94 Time: 1050

Water Body: Taskinas Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer (Sediment Corer) Spoon (Other: Dip)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: Forest Urban Industrial Other: _____

Shore Vegetation: Saltmarsh cordgrass, saltmarsh bulrush, big cordgrass, saltmarsh hay, and salt grass

Aquatic Vegetation: Tidal saltmarsh

Estimated Stream Width: 20 ft Est. Stream Depth: 2.8 ft Riffle: 20% ft Run: 40% ft Pool: 40% ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes __ No __

Canopy Cover: Open Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: Normal Sewage Petroleum Chemical (Anaerobic) Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 2 Replicate #2: 3 Replicate #3: 3

Sediment Description: muck with alot of organics

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	22.6	6.91	7.2	4,000	2.1

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: <1 ft.

Turbidity: Clear Slightly Turbid (Turbid) Opaque Water Color: green tint

Weather Conditions: Sunny - 85°F Tide: In Out

Comments: Located in the York River State Park

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: B6TCSW/SD05 Date: 8-10-94 Time: 1050 (SW)

Samplers: AMB, JAG, RCS Date: 8-10-94 Time: 1105 (SD)

Water Body: Taskinas Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon (Other: DIP sleeve)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: residential area

Shore Vegetation: Saltmarsh Cordgrass, big Cordgrass, Walter's millet

Aquatic Vegetation: oligohaline tidal Marsh

Estimated Stream Width: 8 ft Est. Stream Depth: 1.5 ft Riffle: 20% ft Run: 50% ft Pool: 30% ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes X No _

Canopy Cover: (Open) Partly Open Partly Shaded Shaded

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: 1 Replicate #2: 1 Replicate #3: 1

Sediment Description: 0-4" = Sandy
4-8" = mucky silt

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	29	7.75	14.0	1,250	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: Clear Slightly Turbid (Turbid) (Opaque) Water Color: yellow tint

Weather Conditions: hot, Sunny Tide: In Out

Comments: _____

SAMPLING STATION CHARACTERIZATION DATA SHEET

Station Number: 3GTCSW/SD06 Date: 8-10-94 Time: 1130 (SW)

Samplers: AMB, JAG, RCS Date: 8-10-94 Time: 1140 (SD)

Water Body: Taskinas Creek State: VA County: _____

Sample Type: Fish Benthic Macroinvertebrate (Sediment) (Surface Water)

SAMPLING EQUIPMENT: Seine Gill Net Ponar Kemmerer Sediment Corer Spoon (Other: Dip Sediment sleeve)

Riparian Zone/Instream Features

Predominant Surrounding Land Use: (Forest) Urban Industrial Other: residential area

Shore Vegetation: arrow arum, narrow-leafed cattail, wildrice, giant bulrush, pickerelweed, waterhemp, swampdock, smartweed, marsh mall marsh hibi

Aquatic Vegetation: Tidal freshwater marsh

Estimated Stream Width: 5 ft Est. Stream Depth: 1.5 ft Riffle: ____ft Run: ____ft Pool: ____ft

Stream Type: Cold Water (Warm Water) Velocity: _____ Channelized: Yes __ No __

Canopy Cover: (Open) Partly Open Partly Shaded (Shaded)

Sediment/Substrate:

Sediment Odors: (Normal) Sewage Petroleum Chemical Anaerobic Other: _____

Sediment Oils: (Absent) Slight Moderate Profuse HNu

Ponar Grab: Number of Jars Filled with Sediments Replicate: #1: ____ Replicate #2: ____ Replicate #3: ____

Sediment Description: fine-grain, black, silt

Water:

Depth	Temp. °C	pH (s.u.)	Dissolved Oxygen (mg/L)	Conductivity (micromhos/cm)	Salinity (ppt)
Surface	23.2	7.55	15	1,200	0

Water Odors: (Normal) Sewage Petroleum Chemical Other: _____

Water Surface Oils: Slick Sheen (None) Secchi: _____ ft.

Turbidity: Clear (Slightly Turbid) Turbid Opaque Water Color: _____

Weather Conditions: Hot and Sunny Tide: In Out

Comments: _____

APPENDIX L
FISH DATA

Appendix L Table of Contents

L.1 Freshwater ponds
L.2 Freshwater Streams
L.3 Tidal Freshwater Streams

APPENDIX L.1
FRESHWATER PONDS

FISH DATA
FRESHWATER POND - WOODSTOCK POND
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

DATE	TIME	STATION	SPECIES	WEIGHT (grams)	LENGTH (centimeters)
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	1.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	3
08/03/94	1025	BGWPSW/SD01	BLUEGILL	>10	8.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	>10	8.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	>10	8.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	>10	5.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	60	11
08/03/94	1025	BGWPSW/SD01	BLUEGILL	50	10.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	50	6.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	50	6.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	50	7.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	50	6
08/03/94	1025	BGWPSW/SD01	BLUEGILL	50	3
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	50	1
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	7.6
08/03/94	1025	BGWPSW/SD01	BLUEGILL	50	13.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	9.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	10.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	5.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	13
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	7.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	8.6
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	15.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	5.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	2.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	1.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	1.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	1
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	13.7
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	10.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	7.8
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	9
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	7.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	2.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	8
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	9.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	4
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	6
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	13.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	13.75
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	12.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	3
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	2.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	10.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	4.7
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	8
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	6
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	10.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	5.6
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	5.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	1
08/03/94	1025	BGWPSW/SD01	AMERICAN EEL	NA	39.5
08/03/94	1025	BGWPSW/SD01	AMERICAN EEL	NA	49
08/03/94	1025	BGWPSW/SD01	AMERICAN EEL	NA	46
08/03/94	1025	BGWPSW/SD01	GOLDEN SHINER	75	18.2
08/03/94	1025	BGWPSW/SD01	GOLDEN SHINER	60	17
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	100	16
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	100	16.3
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	20	9.3
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	100	18.4
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	120	18.6
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	15	9.6
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	20	10.2
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	25	10
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	30	10.5
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	NA	10.5
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	NA	9
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	110	17.7
08/03/94	1025	BGWPSW/SD01	REDEAR SUNFISH	NA	10.2
08/04/94	1025	BGWPSW/SD01	REDEAR SUNFISH	110	16
08/04/94	1025	BGWPSW/SD01	GOLDEN SHINER	NA	8.2
08/04/94	1025	BGWPSW/SD01	GOLDEN SHINER	NA	6.5
08/04/94	1025	BGWPSW/SD01	GOLDEN SHINER	NA	7
08/04/94	1025	BGWPSW/SD01	GOLDEN SHINER	NA	7.2
08/04/94	1025	BGWPSW/SD01	GOLDEN SHINER	NA	8.2
08/04/94	1025	BGWPSW/SD01	GOLDEN SHINER	NA	7
08/05/94	0820	BGWPSW/SD01	GOLDEN SHINER	270	25
08/05/94	0820	BGWPSW/SD01	GOLDEN SHINER	210	21.5
08/05/94	0820	BGWPSW/SD01	GOLDEN SHINER	150	19
08/05/94	0820	BGWPSW/SD01	GOLDEN SHINER	130	18

FISH DATA
FRESHWATER POND - WOODSTOCK POND
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

DATE	TIME	STATION	SPECIES	WEIGHT (grams)	LENGTH (centimeters)
08/03/94	1220	BGWPSW/SD01	REDEAR SUNFISH	NA	22.9
08/03/94	1220	BGWPSW/SD01	REDEAR SUNFISH	NA	19.5
08/03/94	1220	BGWPSW/SD01	REDEAR SUNFISH	NA	22
08/03/94	1220	BGWPSW/SD01	REDEAR SUNFISH	NA	25
08/03/94	1220	BGWPSW/SD01	REDEAR SUNFISH	NA	19
08/03/94	1220	BGWPSW/SD01	REDEAR SUNFISH	NA	17.5
08/03/94	1220	BGWPSW/SD01	REDEAR SUNFISH	NA	16
08/03/94	1220	BGWPSW/SD01	REDEAR SUNFISH	NA	20
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	14
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	18
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	13
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	17.2
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	14.5
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	15
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	15
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	14
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	18
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	14.5
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	16
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	13.5
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	15.5
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	16
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	17
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	13
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	11
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	12.5
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	16
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	16
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	18
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	18.5
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	17.2
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	19.5
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	12.9
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	18
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	14
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	11.5
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	13.5
08/03/94	1220	BGWPSW/SD01	BLUEGILL	NA	13.5
08/03/94	1220	BGWPSW/SD0	GOLDEN SHINER	NA	20.5
08/03/94	1220	BGWPSW/SD01	LARGEMOUTH BASS	NA	20.1
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	250	27.5
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	100	19.2
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	250	28.5
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	100	18.5
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	NA	8
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	50	15.4
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	100	20
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	100	19
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	NA	8.2
08/03/94	1025	BGWPSW/SD01	LARGEMOUTH BASS	120	21
08/03/94	1025	BGWPSW/SD01	BLUEGILL	90	6.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	95	13.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	40	11.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	70	14
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	NA
08/03/94	1025	BGWPSW/SD01	BLUEGILL	70	13.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	NA	7
08/03/94	1025	BGWPSW/SD01	BLUEGILL	100	6
08/03/94	1025	BGWPSW/SD01	BLUEGILL	30	11.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	20	9.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	70	15.4
08/03/94	1025	BGWPSW/SD01	BLUEGILL	55	14
08/03/94	1025	BGWPSW/SD01	BLUEGILL	30	12
08/03/94	1025	BGWPSW/SD01	BLUEGILL	40	12.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	70	14.6
08/03/94	1025	BGWPSW/SD01	BLUEGILL	50	12.2
08/03/94	1025	BGWPSW/SD01	BLUEGILL	15	10
08/03/94	1025	BGWPSW/SD01	BLUEGILL	75	14.5
08/03/94	1025	BGWPSW/SD01	BLUEGILL	70	14
08/03/94	1025	BGWPSW/SD01	BLUEGILL	11	10.2

FISH DATA
FRESHWATER POND - WOODSTOCK POND
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

DATE	TIME	STATION	SPECIES	WEIGHT (grams)	LENGTH (centimeters)
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	14.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	120	17.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	16
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	8.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	13
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	11.2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	13
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	11
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	19.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	6.4
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	7
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	1.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	11.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	11.2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	11.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	30	11.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	30	10.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	7
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	6.2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	6
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	4
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	2.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	9
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	9.6
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	6
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	9
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	6.4
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	11
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	8.2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	9
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	10.4
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	13
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	9.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	4.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	6.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	2.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	11.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	9.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	11
08/03/94	1115	BGWPSW/SD04	BLUEGILL	70	16.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	9
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	12
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	4
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	4
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	1.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	14
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	4

FISH DATA
FRESHWATER POND - WOODSTOCK POND
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

DATE	TIME	STATION	SPECIES	WEIGHT (grams)	LENGTH (centimeters)
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	1
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	14.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	7
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	12
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	12
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	9
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	11
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	13
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	4.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	8
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	7
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	4
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	13.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	10.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	10
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	2
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	10.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	8
08/03/94	1115	BGWPSW/SD04	BLUEGILL	17	8
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	17
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	5.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	6.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	4.5
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3
08/03/94	1115	BGWPSW/SD04	BLUEGILL	NA	3.5
08/05/94	0832	BGWPSW/SD04	BLUEGILL	140	18.2
08/05/94	0832	BGWPSW/SD04	BLUEGILL	115	16.5
08/05/94	0832	BGWPSW/SD04	BLUEGILL	160	19.7
08/03/94	1115	BGWPSW/SD04	AMERICAN EEL	NA	35
08/03/94	1115	BGWPSW/SD04	AMERICAN EEL	NA	33
08/03/94	1115	BGWPSW/SD04	AMERICAN EEL	NA	35
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	10.7
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	11
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	12.4
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	130	18.5
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	13
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	12
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	14
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	190	19
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	11
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	13.5
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	12
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	70	15.5
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	16
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	12.5
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	160	17.5
08/03/94	1115	BGWPSW/SD04	REDEAR SUNFISH	NA	9
08/03/94	1115	BGWPSW/SD04	LARGEMOUTH BASS	190	22
08/03/94	1115	BGWPSW/SD04	LARGEMOUTH BASS	NA	8
08/03/94	1115	BGWPSW/SD04	LARGEMOUTH BASS	NA	5.5
08/03/94	1115	BGWPSW/SD04	LARGEMOUTH BASS	NA	8
08/03/94	1335	BGWPSW/SD04	REDEAR SUNFISH	NA	2
08/03/94	1335	BGWPSW/SD04	BLUEGILL	NA	1.7
08/03/94	1335	BGWPSW/SD04	SNAPPING TURTLE	NA	NA
08/03/94	1335	BGWPSW/SD04	SNAPPING TURTLE	NA	NA
08/03/94	1335	BGWPSW/SD04	PAINTED TURTLE	NA	NA

FISH DATA
FRESHWATER POND - POWELL LAKE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

DATE	TIME	STATION	SPECIES	WEIGHT (grams)	LENGTH (centimeters)
08/04/94	1400	BGPLSW/SD04	BLACK CRAPPIE	300	200
08/04/94	1400	BGPLSW/SD04	REDEAR SUNFISH	180	205
08/04/94	1400	BGPLSW/SD04	REDEAR SUNFISH	160	200
08/04/94	1400	BGPLSW/SD04	REDEAR SUNFISH	150	200
08/04/94	1400	BGPLSW/SD04	REDEAR SUNFISH	130	182
08/04/94	1400	BGPLSW/SD04	REDEAR SUNFISH	130	189
08/04/94	1400	BGPLSW/SD04	REDEAR SUNFISH	170	173
08/04/94	1400	BGPLSW/SD04	PUMPKINSEED	160	19.5
08/04/94	1400	BGPLSW/SD04	PUMPKINSEED	130	17
08/04/94	1400	BGPLSW/SD04	PUMPKINSEED	80	14.5
08/04/94	1400	BGPLSW/SD04	PUMPKINSEED	80	14.6
08/04/94	1400	BGPLSW/SD04	PUMPKINSEED	80	15
08/04/94	1400	BGPLSW/SD04	AMERICAN EEL	NA	33
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	7.2
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	4.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	4.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	150	19.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	70	15.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	150	18.4
08/04/94	1400	BGPLSW/SD04	BLUEGILL	150	19.2
08/04/94	1400	BGPLSW/SD04	BLUEGILL	150	19.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	160	20.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	150	19.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	200	21
08/04/94	1400	BGPLSW/SD04	BLUEGILL	200	21
08/04/94	1400	BGPLSW/SD04	BLUEGILL	150	20
08/04/94	1400	BGPLSW/SD04	BLUEGILL	130	17.7
08/04/94	1400	BGPLSW/SD04	BLUEGILL	80	16.4
08/04/94	1400	BGPLSW/SD04	BLUEGILL	130	17.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	50	11
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	9.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	9
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	8.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	11
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	10.5
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	9
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	9
08/04/94	1400	BGPLSW/SD04	BLUEGILL	NA	6.5
08/04/94	1400	BGPLSW/SD04	LARGEMOUTH BASS	960	40.5
08/04/94	1400	BGPLSW/SD04	LARGEMOUTH BASS	1420	45
08/04/94	1400	BGPLSW/SD04	LARGEMOUTH BASS	1360	46
08/04/94	1400	BGPLSW/SD04	LARGEMOUTH BASS	490	33
08/04/94	1400	BGPLSW/SD04	LARGEMOUTH BASS	520	34
08/04/94	1400	BGPLSW/SD04	LARGEMOUTH BASS	180	24
08/04/94	1400	BGPLSW/SD04	LARGEMOUTH BASS	210	26
08/04/94	1400	BGPLSW/SD04	LARGEMOUTH BASS	1000	42
08/05/94	0832	BGPLSW/SD04	GOLDEN SHINER	150	23

APPENDIX L.2
FRESHWATER STREAMS

FISH DATA
FRESHWATER STREAMS - COLONIAL NATIONAL HISTORICAL PARK
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

DATE	TIME	STATION	SPECIES	WEIGHT (grams)	LENGTH (centimet
08/21/94	1430	BGCPSW/SD01	MOSQUITO FISH	NA	NA
08/21/94	1430	BGCPSW/SD01	MOSQUITO FISH	NA	NA
08/21/94	1430	BGCPSW/SD01	MOSQUITO FISH	NA	NA
08/21/94	1430	BGCPSW/SD01	MUD MINNOW	NA	NA
08/21/94	1430	BGCPSW/SD01	MUD MINNOW	NA	NA
08/21/94	1430	BGCPSW/SD01	MUD MINNOW	NA	NA
08/21/94	1430	BGCPSW/SD01	MUD MINNOW	NA	NA
08/21/94	1530	BGCPSW/SD02	MOSQUITO FISH	NA	NA
08/21/94	1530	BGCPSW/SD02	MOSQUITO FISH	NA	NA
08/21/94	1530	BGCPSW/SD02	MOSQUITO FISH	NA	NA
08/21/94	1530	BGCPSW/SD02	MOSQUITO FISH	NA	NA
08/21/94	1610	BGCPSW/SD03	MOSQUITO FISH	NA	NA
08/21/94	1610	BGCPSW/SD03	MUD MINNOW	NA	NA
08/21/94	1610	BGCPSW/SD03	MUD MINNOW	NA	NA
08/21/94	1610	BGCPSW/SD03	MUD MINNOW	NA	NA
08/21/94	1610	BGCPSW/SD03	MUD MINNOW	NA	NA
08/21/94	1610	BGCPSW/SD03	MUD MINNOW	NA	NA
08/21/94	1640	BGCPSW/SD04	MOSQUITO FISH	NA	NA
08/21/94	1640	BGCPSW/SD04	MOSQUITO FISH	NA	NA
08/21/94	1640	BGCPSW/SD04	MOSQUITO FISH	NA	NA
08/21/94	1640	BGCPSW/SD04	MOSQUITO FISH	NA	NA

APPENDIX L.3
TIDAL FRESHWATER STREAMS

FISH COLLECTION DATA
BACKGROUND TIDAL FRESHWATER STREAM - TIMBERNECK CREEK
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

DATE	TIME	STATION	SPECIES	WEIGHT (grams)	LENGTH (centimeters)	
08-19-94	0945	BGTNSW/SD01	ATLANTIC CROAKER	NA	33	
08-19-94	0945	BGTNSW/SD01	ATLANTIC CROAKER	NA	35	
08-19-94	0945	BGTNSW/SD01	ATLANTIC.CROAKER	NA	30	
08-19-94	0945	BGTNSW/SD01	ATLANTIC CROAKER	NA	29	
08-19-94	0945	BGTNSW/SD01	ATLANTIC CROAKER	200	24	
08-19-94	0945	BGTNSW/SD01	SPOT	NA	14.5	
08-19-94	0945	BGTNSW/SD01	SPOT	NA	15	
08-19-94	0945	BGTNSW/SD01	SPOT	60	15	
08-19-94	0945	BGTNSW/SD01	SPOT	50	14	
08-19-94	0945	BGTNSW/SD01	SPOT	NA	16	
08-19-94	0945	BGTNSW/SD01	SPOT	NA	16	
08-19-94	0945	BGTNSW/SD01	SPOT	NA	14	
08-19-94	0945	BGTNSW/SD01	SPOT	NA	15	
08-19-94	0945	BGTNSW/SD01	SPOT	NA	15.5	
08-19-94	0945	BGTNSW/SD01	HOG CHOKER	NA	10.5	
08-19-94	0945	BGTNSW/SD01	HOG CHOKER	NA	8.5	
08-19-94	0945	BGTNSW/SD01	HOG CHOKER	NA	10	
08-19-94	0945	BGTNSW/SD01	SEA ROBIN	NA	17	
08-19-94	0945	BGTNSW/SD01	SEA ROBIN	80	16	
08-19-94	0945	BGTNSW/SD01	SEA ROBIN	NA	14	
08-19-94	0945	BGTNSW/SD01	SEA ROBIN	70	17.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	175	22.5	PARASITES
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	160	22.5	ON
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	150	22.5	MAJORITY
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	150	22	OF
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	150	22	MENHADEN
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	170	23.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	80	19.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	250	23	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	130	22.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	170	21	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	120	22.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	150	21.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	150	22	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	170	23.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	170	23.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	160	23	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	200	23.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	165	22	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	140	22	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	130	22	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	110	22	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	190	22	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	120	21.5	
08-19-94	0945	BGTNSW/SD01	ATLANTIC MENHADEN	130	22.5	
08-21-94	0830	BGTNSW/SD03	SPOT	NA	NA	
08-21-94	0830	BGTNSW/SD03	GIZZARD SHAD	NA	NA	
08-21-94	0830	BGTNSW/SD03	BLUE CRAB	NA	NA	
08-21-94	0830	BGTNSW/SD03	BLUE CRAB	NA	NA	
08-21-94	0830	BGTNSW/SD03	BLUE CRAB	NA	NA	
08-21-94	0845	BGTNSW/SD03	BLUE CRAB	NA	NA	
08-21-94	0845	BGTNSW/SD03	BLUE CRAB	NA	NA	
08-21-94	0830	BGTNSW/SD03	ATLANTIC MENHADEN	NA	NA	
08-21-94	0830	BGTNSW/SD03	WHITE PERCH	425	28	
08-20-94	1805	BGTNSW/SD04	ANCHOVY	NA	NA	
08-20-94	1805	BGTNSW/SD04	FUNDULUS	NA	NA	
08-20-94	1805	BGTNSW/SD04	GRASS SHRIMP	NA	NA	
08-20-94	1805	BGTNSW/SD04	BLUE CRAB	NA	NA	
08-20-94	1555	BGTNSW/SD05	MUMMICHOG	NA	NA	
08-20-94	1555	BGTNSW/SD05	RAINWATER KILLIFISH	NA	NA	
08-20-94	1555	BGTNSW/SD05	GRASS SHRIMP	NA	NA	
08-20-94	1555	BGTNSW/SD05	MOSQUITO FISH	NA	NA	
08-20-94	1555	BGTNSW/SD05	FUNDULUS	NA	NA	
08-20-94	1555	BGTNSW/SD05	SHEEPHEAD MINNOW	NA	NA	

FISH COLLECTION DATA
BACKGROUND TIDAL FRESHWATER STREAM - TASKINAS CREEK
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

DATE	TIME	STATION	SPECIES	WEIGHT (grams)	LENGTH (centimeters)	
08/10/94	1000	BGTCSW/SD01	SUMMER FLOUNDER	9.5	2.2	
08/10/94	1000	BGTCSW/SD01	SUMMER FLOUNDER	150	23.5	
08/09/94	1645	BGTCSW/SD01	WHITE CATFISH	900	40.5	
08/10/94	1000	BGTCSW/SD01	WHITE CATFISH	1400	46	
08/10/94	1000	BGTCSW/SD01	WHITE CATFISH	700	37	
08/10/94	1000	BGTCSW/SD01	WHITE CATFISH	830	38	
08/10/94	1000	BGTCSW/SD01	WHITE CATFISH	250	27	
08/10/94	1000	BGTCSW/SD01	WHITE CATFISH	270	27	
08/09/94	1645	BGTCSW/SD01	CROAKER	320	27	
08/10/94	1000	BGTCSW/SD01	CROAKER	270	36	
08/10/94	1000	BGTCSW/SD01	CROAKER	375	30	
08/10/94	1000	BGTCSW/SD01	CROAKER	240	25	
08/10/94	1000	BGTCSW/SD01	CROAKER	350	26.5	
08/10/94	1000	BGTCSW/SD01	BLUE CRAB	NA	NA	
08/10/94	1000	BGTCSW/SD01	BLUE CRAB	NA	NA	
08/10/94	1000	BGTCSW/SD01	BLUE CRAB	NA	NA	
08/10/94	1000	BGTCSW/SD01	BLUE CRAB	NA	NA	
08/10/94	1000	BGTCSW/SD01	BLUE CRAB	NA	NA	
08/10/94	1000	BGTCSW/SD01	BLUE CRAB	NA	NA	
08/10/94	1000	BGTCSW/SD01	BLUE CRAB	NA	NA	
08/09/94	1645	BGTCSW/SD03	TERRAPIN TURTLE	NA	NA	
08/09/94	1540	BGTCSW/SD03	HOG CHOKER	30	10	
08/09/94	1540	BGTCSW/SD03	WHITE PERCH	225	24	
08/10/94	1540	BGTCSW/SD03	WHITE PERCH	35	14	
08/10/94	1540	BGTCSW/SD03	WHITE PERCH	35	13	
08/09/94	1540	BGTCSW/SD03	BLUE CRAB	NA	NA	
08/09/94	1540	BGTCSW/SD03	SPOT	NA	14	
08/09/94	1540	BGTCSW/SD03	SPOT	NA	NA	
08/09/94	1540	BGTCSW/SD03	CHANNEL CATFISH	50	16	
08/09/94	1540	BGTCSW/SD03	CHANNEL CATFISH	525	34.5	
08/09/94	1540	BGTCSW/SD03	CHANNEL CATFISH	120	20	
08/09/94	1540	BGTCSW/SD03	CHANNEL CATFISH	100	20	
08/09/94	1540	BGTCSW/SD03	CHANNEL CATFISH	100	19	
08/09/94	1540	BGTCSW/SD03	CHANNEL CATFISH	60	17	
08/09/94	1540	BGTCSW/SD03	CHANNEL CATFISH	350	30	
08/09/94	1540	BGTCSW/SD03	CHANNEL CATFISH	50	17.1	
08/09/94	1540	BGTCSW/SD03	CHANNEL CATFISH	50	17.5	
08/10/94	1540	BGTCSW/SD03	WHITE CATFISH	1300	44	
08/10/94	1540	BGTCSW/SD03	WHITE CATFISH	700	39	
08/10/94	1540	BGTCSW/SD03	WHITE CATFISH	680	36	
08/10/94	1540	BGTCSW/SD03	WHITE CATFISH	420	32	
08/10/94	1540	BGTCSW/SD03	WHITE CATFISH	420	32	
08/10/94	1540	BGTCSW/SD03	WHITE CATFISH	270	27	
08/10/94	1540	BGTCSW/SD03	WHITE CATFISH	180	24	
08/10/94	1540	BGTCSW/SD03	GIZZARD SHAD	20	14	
08/23/94	1135	BGTCSW/SD06	MUMMICHOG	NA	NA	
08/23/94	1135	BGTCSW/SD06	WHITE CATFISH		14	juvenile
08/23/94	1135	BGTCSW/SD06	WHITE CATFISH		12	juvenile
08/23/94	1135	BGTCSW/SD06	WHITE CATFISH		14.2	juvenile
08/23/94	1135	BGTCSW/SD06	WHITE CATFISH		13	juvenile
08/23/94	1135	BGTCSW/SD06	WHITE CATFISH		14	juvenile
08/23/94	1135	BGTCSW/SD06	BLUEGILL		11	
08/23/94	1135	BGTCSW/SD06	SPOT		13.5	
08/23/94	1135	BGTCSW/SD06	FUNDULUS		NA	
08/23/94	1135	BGTCSW/SD06	GIZZARD SHAD		9	
08/23/94	1135	BGTCSW/SD06	WHITE PERCH		10	
08/23/94	1135	BGTCSW/SD06	HOG CHOKER		12	

APPENDIX M
BENTHIC MACROINVERTEBRATE DATA

Appendix M Table of Contents

M.1 Freshwater ponds
M.2 Freshwater Streams
M.3 Tidal Freshwater Streams

APPENDIX M.1
FRESHWATER PONDS

BENTHIC MACROINVERTEBRATE DATA
FRESHWATER POND - WOODSTOCK POND
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Station	BGWPBN01			BGWPBN02			BGWPBN03			BGWPBN04		
Replicate	01	02	03	01	02	03	01	02	03	01	02	03
Taxon												
Nematoda				1								
Arthropoda												
Insecta												
Diptera												
Chaoboridae												
Chaoborus sp.	288	215	211	209	163	239	114	94	130		14	35
Chironomidae												
Einfeldia natchitocheae			1	1	1		1			5	8	12
Procladius sp.										4	7	8
Total Taxa	1	1	2	3	2	1	2	1	1	2	3	3
Total Specimens	288	215	212	211	164	239	115	94	130	9	29	53
Shannon-Wiener Index (per replicate)	0	0	0.013017	0.026128	0.016145	0	0.021879	0	0	0.298344	0.455977	0.372173
Shannon-Wiener Index (per station)	0.005			0.015			0.009			0.435		
Brillouin's Index (Base 10) (per station)	0.004			0.013			0.007			0.413		
Replicate Specimens Average	238			205			113			30.3		
Standard Deviation	43			37.9			18.1			22		

BENTHIC MACROINVERTEBRATE DATA
FRESHWATER POND - POWELL LAKE
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Station	BGPLBN03			BGPLBN04		
Replicate / Taxon	01	02	03	01	02	03
Annelida						
Oligochaeta						
Tubificida						
Tubificidae						
Imm. Tub. w/o hair cheatae	9	7			4	
Arthropoda						
Insecta						
Diptera						
Ceratopogonidae						
Probezzia sp.					1	
Sphaeromias sp.					18	
Chaoboridae						
Chaoborus sp.	206	195	138	64	98	78
Chironomidae						
Chironomus plumosus					1	
Einfeldia natchitocheae	1				2	
Procladius sp.				1		1
Total Taxa	3	2	1	2	6	2
Total Specimens	216	202	138	65	124	79
Shannon-Wiener Index (per rep)	0.0879499	0.0653888	0	0.034521	0.313217	0.029483
Shannon-Wiener Index (per station)	0.062			0.199		
Brillouin's Diversity (Base 10)	0.06			0.185		
Replicate Specimens Average	185			89.3		
Standard Deviation	41.6			30.8		

APPENDIX M.2
FRESHWATER STREAMS

BENTHIC MACROINVERTEBRATE DATA
FRESHWATER STREAMS - COLONIAL NATIONAL HISTORICAL PARK
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Station	BGCPBN01			BGCPBN02			BGCPBN03			BGCPBN04			BGCPBN05		
Replicate	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
Taxon															
Mollusca															
Bivalvia															
Veneroida															
Sphaeriidae															
Pisidium adamsi				12							1	10			
Annelida															
Oligochaeta															
Tubificida															
Naididae	2														
Tubificidae							1								
Imm. Tub. w/o hair chaetae											1				
Imm. Tub. with hair chaetae						1									
Isochaetides freyi				2	14	4						30	18	2	3
Lumbricida															
Lumbricidae											1		1	1	
Arthropoda															
Crustacea															
Calanoida														84	
Amphipoda															
Gammaridae															
Gammarus fasciatus				1	3						18	20	53	132	93
Decapoda															
Cambaridae															
Orconectes sp.								1							
Insecta															
Ephemeroptera															
Heptagenidae															
Stenonema modestum														1	
Odonata															
Gomphidae															
Stylurus sp.				1	1	2									
Limbellulidae	1														
Coleoptera															
Dytiscidae															
Celina sp.	1														
Diptera															
Chironomidae															
Ablabesmyia peleensis	7	2	4						3						
Chironomus decorus gr.	1														
Chironomus sp.	3	2	1												
Cryptochironomus fulvus gr.						1			3						
Paratanytarsus sp.											1				
Paratendipes albimanus									4						
Polypedilum halterale											3	4	2	1	
Polypedilum laetum												3			
Polypedilum scalaenum									17						
Tanytarsus sp.	1						1		5						
Thienemannimyia gr.		2													
Stratiomyidae															
Stratiomys			1												
Tabanidae															
Chrysops sp.			1	1											
Tipulidae															
Dicranota sp.													4	1	4
Hexatoma sp.										5		4			
Tipula sp.														1	1
nr. Tanyderidae												1			
Total Taxa	7	3	4	5	3	4	2	1	5	3	4	7	5	6	4
Total Individuals	16	6	7	17	18	8	2	1	32	8	21	72	76	223	101
Shannon-Wiener Index (per replicate)	0.70730061	0.47712125	0.50106376	0.4332586	0.2843194	0.5268025	0.30103	0	0.5775422	0.4068654	0.2462714	0.6546036	0.3852499	0.3655368	0.153742
Shannon-Wiener Index (per station)		0.761			0.615			0.862			0.717			0.402	
Brillouin's Diversity (Base 10)(per station)		0.61			0.534			0.562			0.659			0.369	
Replicate Specimens Average		9.67			14.3			11.7			34			133	
Standard Deviation		5.5			5.5			17.6			33.5			78.7	

APPENDIX M.3
TIDAL FRESHWATER STREAMS

BENTHIC MACROINVERTEBRATE DATA
TIDAL FRESHWATER STREAM - TIMBERNECK CREEK
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

...ion	BCTNBN01			BCTNBN02			BGTNBN03			BGTNBN04			BGTNBN05			BCTNBN06		
...icate	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
...on																		
Nematoda		1		1		3												
Mollusca																		
Bivalvia																		
Veneroida																		
Sphaeriidae																		
Musculium transversum																172	25	30
Pisidium adamsi																103	94	43
Tellinidae																		
Macoma tenta	2																	
Annelida																		
Oligochaeta																		
Tubificida																		
Tubificidae																		
Imm. Tub. w/o hair chaetae												3						
Autodrilus limnobius							9	111	2	2							1	
Autodrilus paucichaeta															6	11	4	5
Limnodrilus hoffmeisteri												4						
Tubificoides sp.	1																	
Polychaeta																		
Phyllodocida																		
Goniadidae																		
Glycinde solitaria		1																
Nereidae																		
Leonereis culveri										1	1							
Phyllodocidae																		
Eteone heteropoda		1					1											
Capitellida																		
Capitellidae																		
Capitella capitata					6	2	214	370	241	1	1							
Heteromastus filiformis										2	3							
Spionida																		
Spionidae																		
Prionospio sp.	7	10	6															
Streblospio benedicti		4	9	8	5	5		4	3									
Terebellida																		
Ampharetidae																		
Hypaniola grayi														2				
Arthropoda																		
Crustacea																		
Ostracoda																	1	
Calanoida					1											2		
Isopoda																		
Asellidae																		
Cascidotea sp.																1		
Amphipoda																		
Gammaridae																		
Gammarus fasciatus																2		
...apoda																		
...alaemonidae																		
Palaemonetes pugio											2	3	24	19	15			
Insecta																		
Odonata																		
Libellulidae																		
Libellula sp.																2		
Trichoptera																		
Phryganeidae																1	1	
Coleoptera																		
Dytiscidae																		
Copelatus sp.				1														
Noteridae																		
Hydrocanthus sp.				1														
Diptera																		
Ceratopogonidae																		
Bezzia/palpomyia gr.																1		1
Ceratopogon sp.																1		
Sphaeromias sp.										5	11	1						
Chironomidae																		
Chironomus decorus gr.													2	1				
Krenopelopia sp.																1	6	6
Larsia sp.																3	2	1
Paratanytarsus sp.														1	2			
Paratendipes albimanus																1		
Polypedilum halterale																3	9	5
Procladius sp.											1	1		2	1	14	17	16
Stenochironomus sp.																		2
Tanytarsus sp.																59	41	20
Tipulidae																		
Ormosia sp.																1	2	1
Total Taxa	3	5	2	4	3	3	3	3	3	3	5	3	2	5	4	17	12	11
Total Specimens	10	17	15	11	12	10	224	485	246	11	26	5	26	25	24	376	203	130
Shannon-Wiener Index (per rep)	0.3462254	0.5005525	0.2822853	0.3846	0.398688	0.447173	0.06553	0.253425	0.049067	0.814214	0.748498	0.412697	0.117778	0.377922	0.425531	0.650287	0.709793	0.790097
Shannon-Wiener Index (per station)		0.518			0.542			0.188			0.81			0.364			0.733	
Brillouin's Index (Base 10)(per station)		0.444			0.456			0.185			0.692			0.314			0.713	
Replicate Specimens Average		14			11			316			14			25			237	
Standard Deviation		3.6			1			144.6			10.8			1			127.4	

BENTHIC MACROINVERTEBRATE DATA
TIDAL FRESHWATER STREAMS - TASKINAS CREEK
BACKGROUND INVESTIGATION
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

Station	BGTCBN01			BGTCBN02			BGTCBN03			BGTCBN04			BGTCBN05			BGTCBN06		
Replicate	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03	01	02	03
Taxon																		
Nematoda	1		2	1	1	2	1						1					
Mollusca																		
Bivalvia																		
Veneroida																		
Mactridae																		
Rangia cuneata										3								
Tellinidae																		
Macoma tenta		1	1				2											
Annelida																		
Oligochaeta																		
Tubificida																		
Tubificidae																		
Imm. Tub. w/o hair chaetae										2		2			1			
Limnodrilus hoffmeisteri													47	16	54	7	33	
Quistadrilus multisetosus																		
Tubificoides sp.			1															
Polychaeta																		
Phyllodocida																		
Nereidae																		
Laeonereis culveri										2	4	2	3	1				
Nereis succinea			4	3	1													
[illegible]																		
[illegible]																		
[illegible]mastus filiformis	3		1	1				1										
Spionida																		
Spionidae																		
[illegible]a sp.													1					
[illegible]olepides viridis					1	1	1			2	2	12	2	1				
Terebellida																		
Ampharetidae																		
Hypaniola grayi												1		2				
Hirudinea																		
Rhynchobdellida																		
Glossiphoniidae													1					
Arthropoda																		
Crustacea																		
Ostracoda																	1	
Calanoida								2		1								
Isopoda																		
Anthuridae																		
Cyathura polita	1			1	6	1		2		5	4	4	5	2	1			
Idoteidae																		
Edotea triloba									1									
Ligiidae																		
Scyphacella arenicola	1																	
Amphipoda																		
Gammaridae																		
Gammarus fasciatus																1		
Photidae																		
Leptocheirus plumulosus	45	48	73	77	24		10	13	63	13	2	7	3	3	2			
Insecta																		
Diptera																		
Ceratopogonidae																		
Sphaeromias sp.											1							
Chironomidae																		
Chironomus decorus gr.										1					1			
Cryptochironomus fulvus gr.							1			5		2					4	
Dicrotendipes sp.											3							
Paratanytarsus sp.										4								1
Polypedilum halterale										19	3	15						
Procladius sp.								1		5	2	5				5	1	2
Tanytarsus sp.										2								
Total Taxa	5	2	6	5	5	3	5	5	2	13	6	9	6	6	5	3	4	4
Total Specimens	51	50	82	83	33	4	15	19	64	64	21	50	63	25	59	13	39	46
Shannon-Wiener Index (per rep)	0.2207873	0.0425778	0.2182911	0.151715	0.373242	0.451545	0.469287	0.453207	0.034954	0.936837	0.970534	0.81464	0.441432	0.521884	0.175067	0.390056	0.244418	0.1622
Shannon-Wiener Index (per station)		0.197			0.267			0.275			0.977			0.393			0.267	
Brillouin's Index (Base 10)(per station)		0.175			0.26			0.232			0.9			0.354			0.255	
Replicate Specimens Average		61			40			32.7			45			49			33.3	
Standard Deviation		18.2			40			27.2			21.9			20.9			18.2	

APPENDIX N
LINEAR REGRESSION ANALYSIS OF DISTRIBUTION

Arsenic in Background Surface Soils
WPNSTA Yorktown

Arsenic ug/Kg	Arsenic mg/Kg	Rank	log As ug/Kg
460	0.46	1	2.662758
530	0.53	2	2.724276
650	0.65	3	2.812913
680	0.68	4	2.832509
750	0.75	5	2.875061
810	0.81	6	2.908485
830	0.83	7	2.919078
840	0.84	8	2.924279
1100	1.1	9	3.041393
1100	1.1	10	3.041393
1100	1.1	11	3.041393
1200	1.2	12	3.079181
1200	1.2	13	3.079181
1200	1.2	14	3.079181
1200	1.2	15	3.079181
1300	1.3	16	3.113943
1400	1.4	17	3.146128
1400	1.4	18	3.146128
1400	1.4	19	3.146128
1500	1.5	20	3.176091
1500	1.5	21	3.176091
1500	1.5	22	3.176091
1600	1.6	23	3.20412
1600	1.6	24	3.20412
1700	1.7	25	3.230449
1800	1.8	26	3.255273
1900	1.9	27	3.278754
2000	2	28	3.30103
2100	2.1	29	3.322219
2400	2.4	30	3.380211
2500	2.5	31	3.39794
2500	2.5	32	3.39794
2600	2.6	33	3.414973
2700	2.7	34	3.431364
2900	2.9	35	3.462398
2900	2.9	36	3.462398
2900	2.9	37	3.462398
3400	3.4	38	3.531479
3600	3.6	39	3.556303
3700	3.7	40	3.568202
4100	4.1	41	3.612784
4200	4.2	42	3.623249
5800	5.8	43	3.763428
63900	63.9	44	4.805501

All Samples (mg/Kg)

I. Regression as Normal Distn.

Regression Output:

Constant	20.84303
Std Err of Y Est	12.10138
R Squared	0.133105
No. of Observations	44
Degrees of Freedom	42
X Coefficient(s)	0.000498
Std Err of Coef.	0.000196

II. Regression as log-normal distn.

Regression Output:

Constant	-81.0011
Std Err of Y Est	6.431804
R Squared	0.755115
No. of Observations	44
Degrees of Freedom	42
X Coefficient(s)	31.88051
Std Err of Coef.	2.801401

III. Regression of Right censored data as l

Regression Output:

Constant	-132.213
Std Err of Y Est	2.191143
R Squared	0.970274
No. of Observations	43
Degrees of Freedom	41
X Coefficient(s)	48.03735
Std Err of Coef.	1.313131

IV. Regression of right censored data as nor

Regression Output:

Constant	2.765077
Std Err of Y Est	4.855845
R Squared	0.85401
No. of Observations	43
Degrees of Freedom	41
X Coefficient(s)	0.010019

Avg.	3.328409		Std Err of Coef. 0.000647
St.Dev.	9.306126	0.346124	
Gmean	1.764135		
Dev.	2.21883		

Right Sensored Data (mg/Kg)

Avg.	1.919767	
St.Dev.	1.14459	0.254465
Gmean	1.622843	
Dev.	1.796656	

Manganese in Background Surface Soils

Manganese mg/Kg	log Mn mg/Kg	Rank
7.6	0.880813592	1
8.3	0.919078092	2
9.5	0.977723605	3
10.3	1.012837225	4
13	1.113943352	5
15.5	1.190331698	6
19	1.278753601	7
20.3	1.307496038	8
26.5	1.423245874	9
28.6	1.456366033	10
28.7	1.457881897	11
29.9	1.475671188	12
36.1	1.557507202	13
39.2	1.593286067	14
40	1.602059991	15
45.2	1.655138435	16
48	1.681241237	17
54.9	1.739572344	18
65.8	1.818225894	19
70.6	1.848804701	20
72.8	1.862131379	21
72.9	1.862727528	22
73.4	1.86569606	23
84.7	1.92788341	24
85.9	1.933993164	25
87.6	1.942504106	26
89.3	1.950851459	27
92.3	1.965201701	28
97.7	1.989894564	29
105	2.021189299	30
118	2.071882007	31
126	2.100370545	32
157	2.195899652	33
169	2.227886705	34
191	2.281033367	35
206	2.31386722	36
252	2.401400541	37
254	2.404833717	38
273	2.436162647	39
298	2.474216264	40
332	2.521138084	41
340	2.531478917	42
413	2.615950052	43
491	2.691081492	44
	0.481412919	

I. Regression as a normal distn.

Regression Output:

Constant	11.39427
Std Err of Y Est	6.121251
R Squared	0.778192
No. of Observations	44
Degrees of Freedom	42

X Coefficient(s) 0.09584
Std Err of Coef. 0.007895

II. Regression as a log-normal dist

Regression Output:

Constant	-25.2961
Std Err of Y Est	1.883876
R Squared	0.978991
No. of Observations	44
Degrees of Freedom	42

X Coefficient(s) 26.09886
Std Err of Coef. 0.58994

All Samples

Average	115.8772727
St.Dev.	116.8811379
Gmean	67.81825878
Dev	[illegible]

Subsurface Soil Arsenic Data
WPNSTA Yorktown

Arsenic (mg/Kg)	Arsenic (ug/Kg)	log-Arsenic (ug/Kg)	Rank
0.23	230	2.361727836	1
0.36	360	2.556302501	2
0.7	700	2.84509804	3
1.1	1100	3.041392685	4
1.2	1200	3.079181246	5
1.2	1200	3.079181246	6
2.2	2200	3.342422681	7
2.2	2200	3.342422681	8
3.4	3400	3.531478917	9
6.5	6500	3.812913357	10
10.3	10300	4.012837225	11
10.5	10500	4.021189299	12
11.2	11200	4.049218023	13
13.8	13800	4.139879086	14
26.2	26200	4.418301291	15
42.7	42700	4.630427875	16

I. Regression lognormal Distn.

Regression Output:

Constant	-16.3106
Std Err of Y Est	0.703935
R Squared	0.979596
No. of Observations	16
Degrees of Freedom	14
X Coefficient(s)	7.055488
Std Err of Coef.	0.272143

II. Regression Normal Distn.

Regression Output:

Constant	5.702158
Std Err of Y Est	2.891461
R Squared	0.655742
No. of Observations	16
Degrees of Freedom	14
X Coefficient(s)	0.000335
Std Err of Coef.	0.000065

Regression Right Censored lognormal

Regression Output:

Constant	-16.5605
Std Err of Y Est	0.721413
R Squared	0.975837
No. of Observations	15
Degrees of Freedom	13
X Coefficient(s)	7.135034
Std Err of Coef.	0.311395

Regression Right Censored Normal Dis

Regression Output:

Constant	4.758804
Std Err of Y Est	2.336553
R Squared	0.746524
No. of Observations	15
Degrees of Freedom	13
X Coefficient(s)	0.000534
Std Err of Coef.	0.000086

Subsurface Soil Manganese Data
WPNSTA Yorktown

Manganese (mg/Kg)	log-Manganese (mg/Kg)	Rank
3.5	0.5440680444	1
5.6	0.748188027	2
6.4	0.806179974	3
11.1	1.0453229788	4
15.3	1.1846914308	5
17.7	1.2479732664	6
20.5	1.3117538611	7
23	1.361727836	8
68.9	1.8382192219	9
78.3	1.8937617621	10
85.6	1.9324737647	11
94.5	1.9754318085	12
254	2.4048337166	13
284	2.45331834	14
353	2.5477747054	15
2940	3.4683473304	16

I. Regression Normal Distn.

Regression Output:

Constant	7.563284
Std Err of Y Est	4.169862
R Squared	0.284034
No. of Observations	16
Degrees of Freedom	14
X Coefficient(s)	0.003517
Std Err of Coef.	0.001492

II. Regression log-normal Distn.

Regression Output:

Constant	-1.29525
Std Err of Y Est	1.238275
R Squared	0.936863
No. of Observations	16
Degrees of Freedom	14
X Coefficient(s)	5.855764
Std Err of Coef.	0.406278

III. Regression Right Censored Normal Distn.

Regression Output:

Constant	5.065886
Std Err of Y Est	2.447299
R Squared	0.721927
No. of Observations	15
Degrees of Freedom	13
X Coefficient(s)	0.033307
Std Err of Coef.	0.005733

IV. Regression Right Censored log-normal Distn.

Regression Output:

Constant	-2.62702
Std Err of Y Est	0.683586
R Squared	0.978304
No. of Observations	15
Degrees of Freedom	13

Subsurface Soil Beryllium Data
WPNSTA Yorktown

Beryllium (mg/Kg)	Beryllium (ug/Kg)	log-Berylliu (ug/Kg)	Rank
0.11	110	2.041392685	1
0.115	115	2.06069784	2
0.12	120	2.079181246	3
0.3	300	2.477121255	4
0.3	300	2.477121255	5
0.33	330	2.51851394	6
0.41	410	2.612783857	7
0.44	440	2.643452676	8
0.48	480	2.681241237	9
0.49	490	2.69019608	10
0.52	520	2.716003344	11
0.57	570	2.755874856	12
0.57	570	2.755874856	13
0.69	690	2.838849091	14
1.5	1500	3.176091259	15
9.8	9800	3.991226076	16

I. Regression Normal Distn.

Regression Output:

Constant	7.399867
Std Err of Y Est	4.208233
R Squared	0.270797
No. of Observations	16
Degrees of Freedom	14
X Coefficient(s)	0.001051
Std Err of Coef.	0.000461

II. Regression log-normal Distn.

Regression Output:

Constant	-15.0517
Std Err of Y Est	2.445933
R Squared	0.753658
No. of Observations	16
Degrees of Freedom	14
X Coefficient(s)	8.863271
Std Err of Coef.	1.354291

III. Regression Right Censored Normal Distn.

Regression Output:

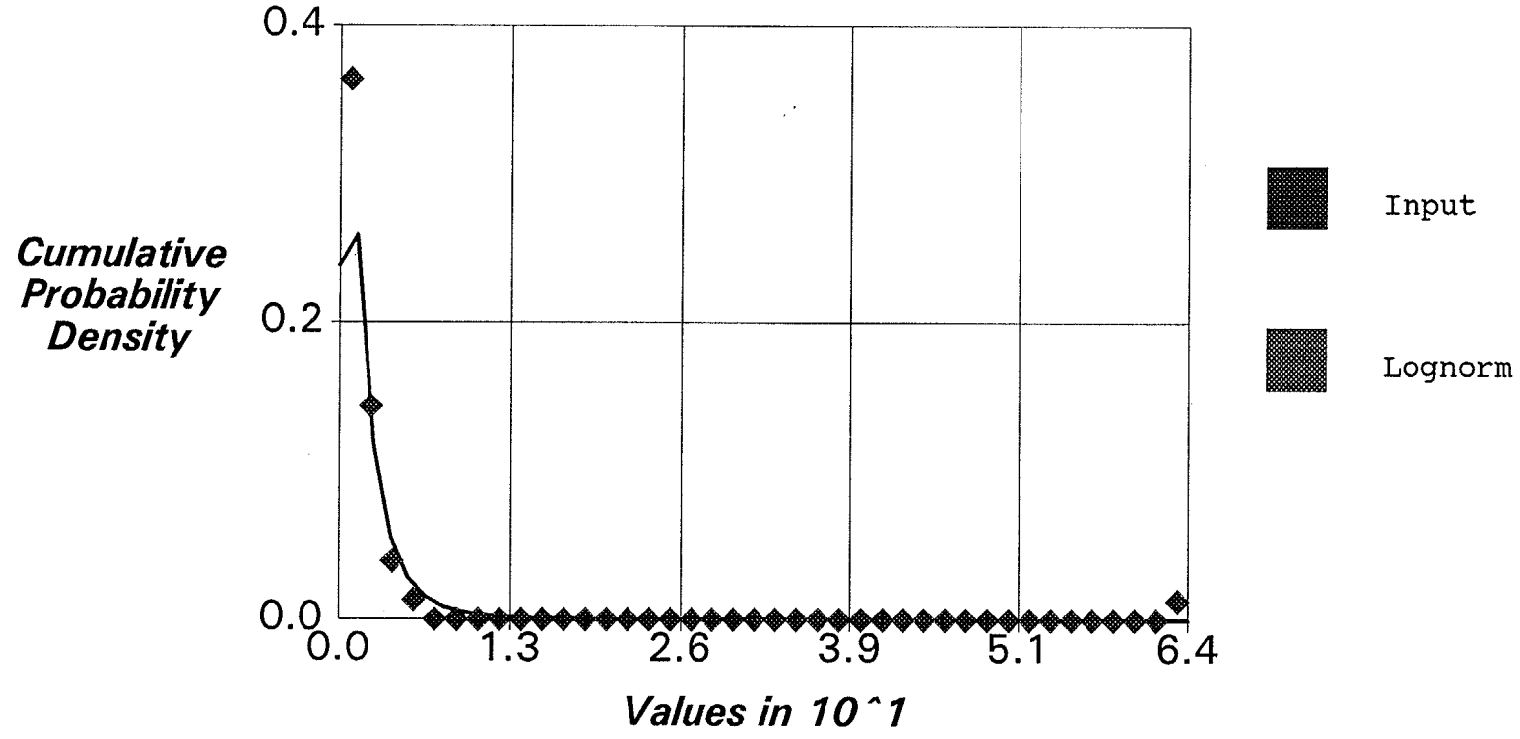
Constant	2.891725
Std Err of Y Est	2.575934
R Squared	0.691926
No. of Observations	15
Degrees of Freedom	13
X Coefficient(s)	0.011033
Std Err of Coef.	0.002042

IV. Regression Right Censored lognormal Distn.

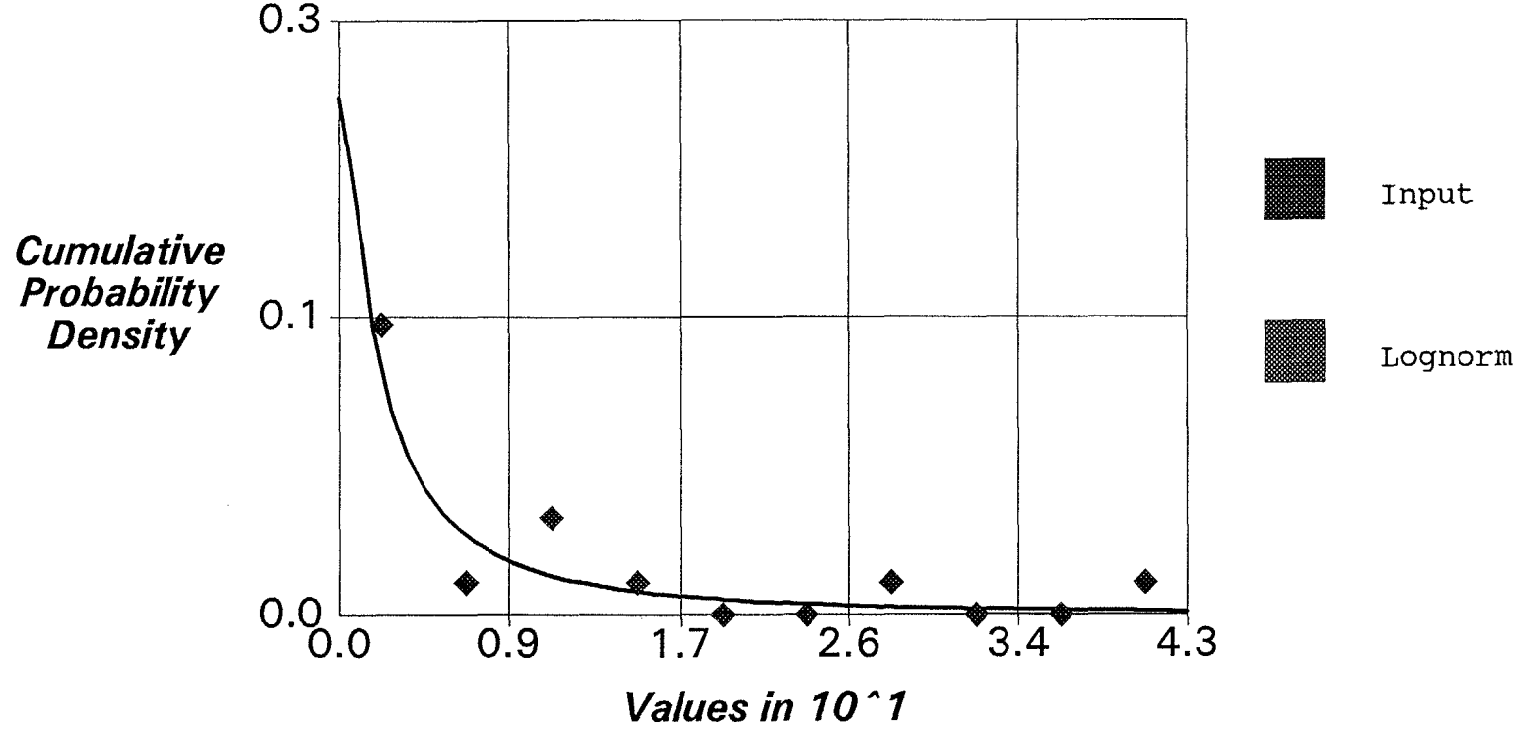
Regression Output:

Constant	-26.3504
Std Err of Y Est	1.665505
R Squared	0.871211
No. of Observations	15
Degrees of Freedom	13
X Coefficient(s)	13.37478
Std Err of Coef.	1.426237

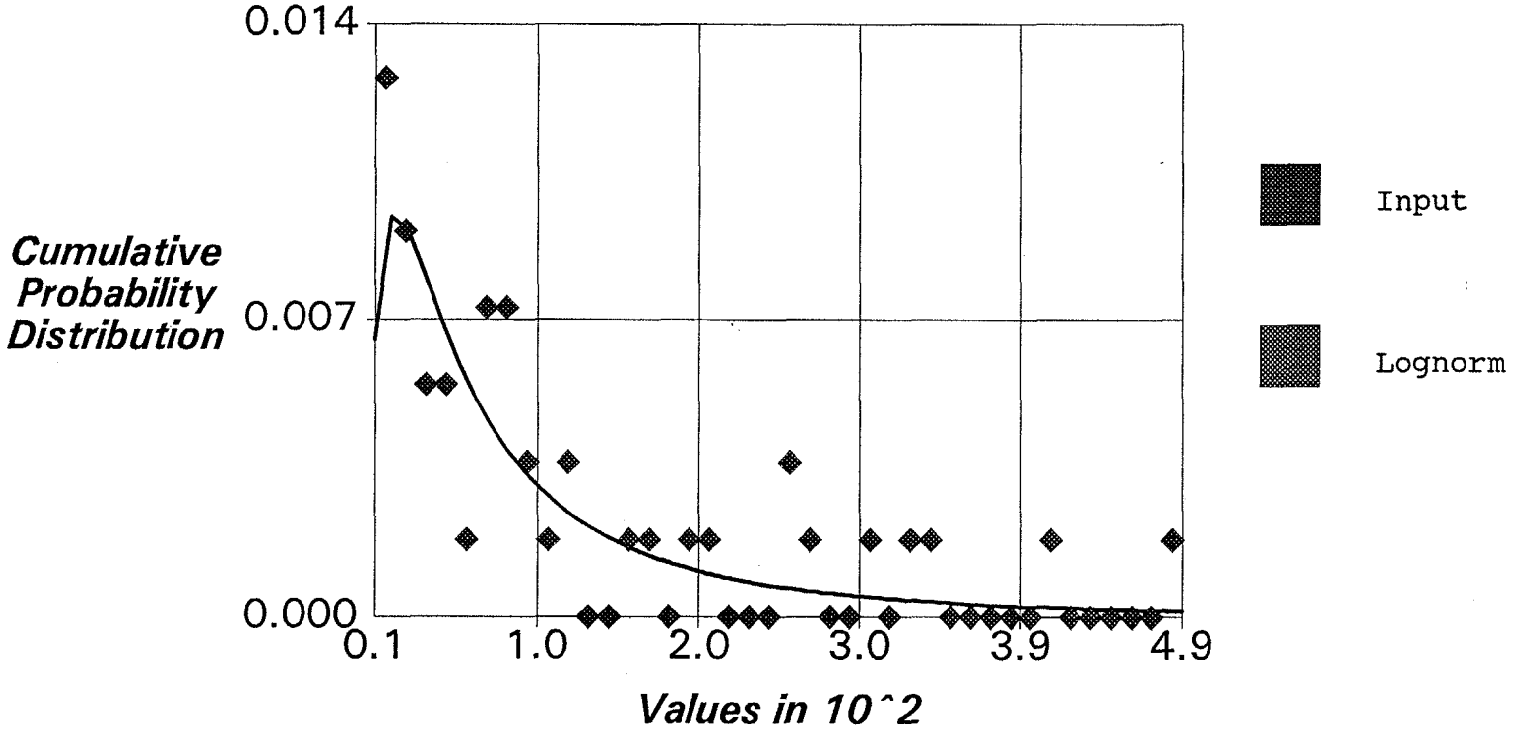
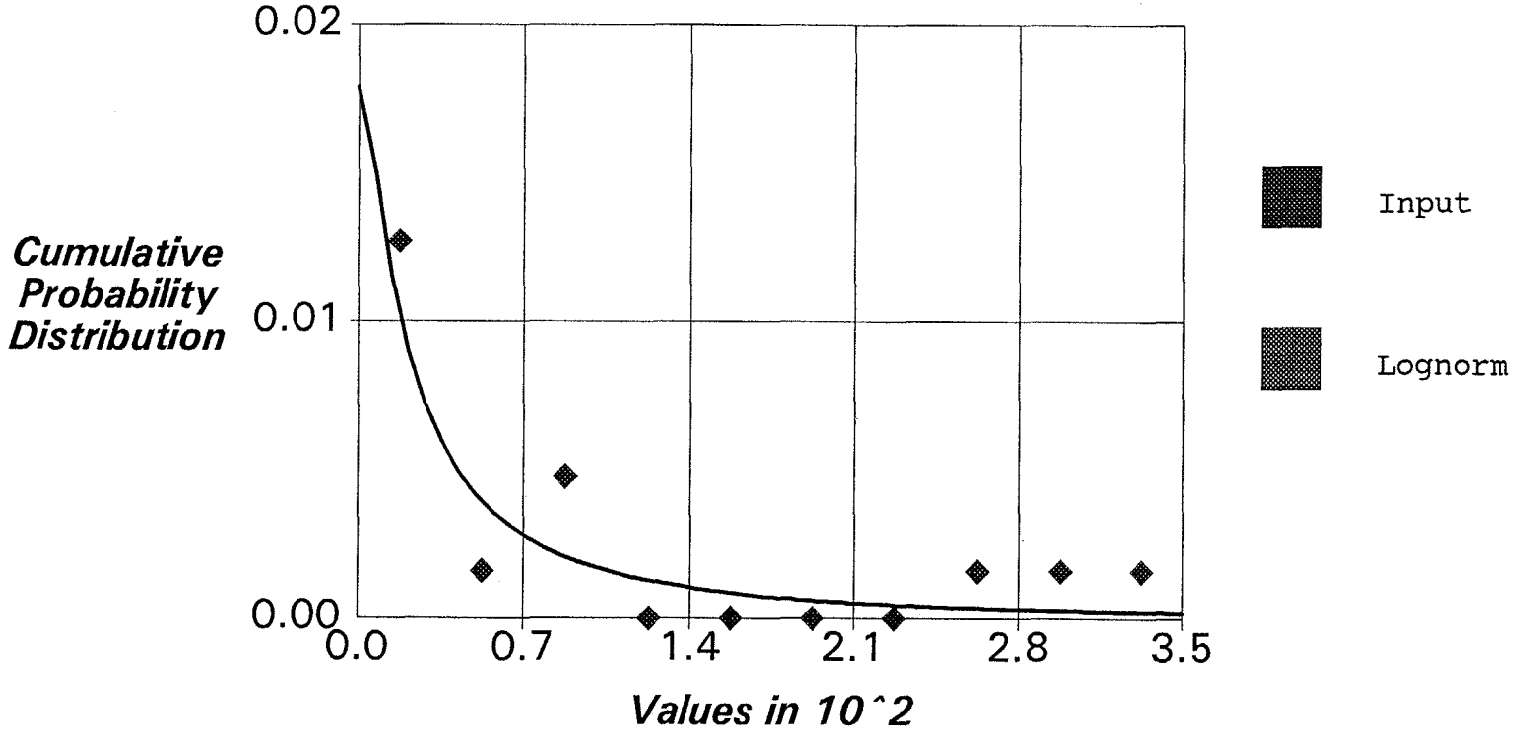
Surface Soil Arsenic Concentrations and the Lognormal Distribution (2.42,2.28)



Subsurface Soil Arsenic Data and the Lognormal Distribution (9.95,28.47)



Soil Manganese Data versus the Lognormal Distribution (1.25e+2,1.95e+2)



Subsurface Manganese Data versus the Lognormal Distribution (1.00e+2,2.64e+2)