N60478.AR.001544
NWS EARLE
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TRANSMITTAL LETTER FOR THE U S NAVY RESPONSES TO STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION COMMENTS ON BASELINE ENVIRONMENTAL MONITORING PLAN NWS EARLE NJ
4/10/2003
TETRA TECH

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PITT-04-3-033

April 10, 2003

Project No. N1940

Mr. Paul Burgio
c/o Commanding Officer
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop 82 – Attn: Code 1812/PRB
Lester, Pennsylvania 19113-2090

Reference: CLEAN Contract No. N62467-94-D-0888
Contract Task Order (CTO) Number 844

RE: Subpart X Permit Application for the Open Burning/Open Detonation of Waste Propellants and Explosives, Department of the Navy, Naval Weapons Station Earle, Federal Enclave Located in Monmouth County, U.S. EPA ID No. NJ0 170 022 172

Subject: Response to New Jersey Department of Environmental Protection (NJDEP) Comments Dated May 22, 2002 – Final Tables

Dear Mr. Burgio:

Responses to NJDEP comments dated May 22, 2002, and one (1) copy of the Baseline Environmental Monitoring Plan were provided to you on April 4, 2003. Per instructions of the Navy, these responses and four (4) copies of the Baseline Environmental Monitoring Plan for the NWS Earle OB/OD unit were submitted directly to NJDEP, and one (1) copy to U.S. EPA Region II. This document was submitted on behalf of the Navy under a cover letter provided by NWS Earle.

As noted in the Response to Comments, the tables containing the laboratory QA/QC limits were incomplete. The completed tables are enclosed.

Please contact Ralph Basinski at 412-921-8308 (e-mail basinskir@ttnus.com) or Tom Johnston at 412-921-8615 (e-mail johnstont@ttnus.com) regarding any questions.

Very truly yours,

Ralph R. Basinski
Project Manager

Enclosures

cc: Mr. Lawrence Burg, NWS Earle (letter and 1 copy of enclosure)
Mr. Roger Boucher (letter only)
Mr. Michael Gerchman (letter and 4 copies of enclosure)
Mr. Barry Tornick (letter and 1 copy of enclosure)
Mr. Ralph Basinski (letter and 1 copy of enclosure)
Mr. John Trepanowski (letter and 1 copy of enclosure)
Project file

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ENCLOSURE

Please complete the following steps to update your copy(s) of the Baseline Environmental Plan for Open Burning/Open Detonation Unit at the Naval Weapons Station Earle, dated April 2003.

Step 1: Remove existing Tables 1-1 through 1-26 in Section 1.0 of the Baseline Environmental Plan for Open Burning/Open Detonation Unit at the Naval Weapons Station Earle, dated April 2003.

Step 2: Insert the enclosed new Tables 1-1 through 1-26 in Section 1.0 of the Baseline Environmental Monitoring Plan for Open Burning/Open Detonation Unit at the Naval Weapons Station Earle, dated April 2003.

TABLE 1-1

SOIL ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Soil Cleanup Criteria (µg/kg)(2)	Laboratory Reporting Limit (µg/kg)	Laboratory Detection Limit (µg/kg)
EXPLOSIVES (SW-846[3] METHOD 8330 Except as Noted), STL KNOXVILLE				
99-35-4	1,3,5-Trinitrobenzene		0	0
99-65-0	1,3-Dinitrobenzene		0	0
118-96-7	2,4,6-Trinitrotoluene (TNT)		0	0
121-14-2	2,4-Dinitrotoluene		0	0
606-20-2	2,6-Dinitrotoluene		0	0
355-72-78-2	2-Amino-4,6-dinitrotoluene		0	0
88-72-2	2-Nitrotoluene		0	0
99-08-1	3-Nitrotoluene		0	0
1946-51-0	4-Amino-2,6-dinitrotoluene		0	0
99-99-0	4-Nitrotoluene		0	0
2691-41-0	HMX		1	0
98-95-3	Nitrobenzene	10,000	0	0
14797-73-0	Ammonium Perchlorate (USEPA 314)		40	24
121-82-4	RDX		1	0
479-45-8	Tetryl		1	0
NITROCELLULOSE (SW-846 METHOD 8332), AccuTestNE				
9004-70-0	Nitrocellulose (USEPA 352.1 Modified)		TBD	TBD
EXPLOSIVES (Exotic and Miscellaneous) (SW-846[3] METHOD 8330 Modifed, Except as Noted), NSWC CRANE				
28930-29-2	1,3-Diamino-2,4,6-trinitrobenzene (DATB)		930	720
131-74-8	Ammonium Picrate		988	200
693-21-0	Diethyleneglycol Dinitrate (DEGDN)		930	180
122-39-4	Diphenylamine (DPA)		930	40
55-63-0	Nitroglycerin (SW-846 8332)		1,000	180
556-88-7	Nitroguanidine		196	30
78-11-5	Pentaerythritol tetranitrate (PETN)		1,000	180
111-22-8	Triethylene Glycol Dinitrate (TEGDN)		930	100
12185-10-3	White Phosphorous (SW-846 7580)		1,000	3
TOTAL METALS GROUP 1 (SW-846[3] METHOD 3050B/6020, Except as Noted), STL NC		**mg/kg**	**mg/kg**	**mg/kg**
7440-36-0	Antimony	14	0	0
7440-38-2	Arsenic	20	1	0
7440-39-3	Barium	700	0	0
7440-41-7	Beryllium	2	0	0
7440-43-9	Cadmium	39(10,11)	0	0
18540-29-9	Chromium (Hexavalent) SW-846 (3060A/7196A)	20(10,11)	5	2
7440-47-3	Chromium (total)	240	0	0
7440-48-4	Cobalt		0	0
7440-50-8	Copper	600	0	0

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NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Soil Cleanup Criteria (µg/kg)(2)	Laboratory Reporting Limit (µg/kg)	Laboratory Detection Limit (µg/kg)
7439-92-1	Lead	400	0	0
7439-96-5	Manganese		0	0
7439-97-6	Mercury (SW-846 7471A)	14	0	0
7440-02-0	Nickel	250	0	0
7782-49-2	Selenium	63	1	0
7440-22-4	Silver[4]	110	0	0
7440-28-0	Thallium	2	0	0
7440-66-6	Zinc	1,500	1	0
TOTAL METALS GROUP 2 (SW-846[3] METHOD 3050B/6010B), LIONVILLE		mg/kg	mg/kg	mg/kg
7429-90-5	Aluminum		6	2
7440-42-8	Boron		1	0
7440-70-2	Calcium		2	1
7439-89-6	Iron		6	2
7439-95-4	Magnesium		2	1
7440-09-7	Potassium		6	2
7440-23-5	Sodium		1	0
7440-24-6	Strontium		0	0
7440-31-5	Tin		0	0
7440-62-2	Vanadium	370	0	0
DIOXINS/FURANS (SW-846[3] METHOD 8290), STL KNOXVILLE[5]			pg/kg	pg/kg
39001-02-0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran		10	5
3268-87-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin		10	5
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran		5	3
35822-39-4	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin		5	3
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran		5	3
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran		5	3
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin		5	3
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran		5	3
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin		5	3
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran		5	3
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin		5	3
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran		5	1
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin		5	1
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran		5	1
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran		5	1
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran		1	1
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin		1	1
NA	Total Heptachlorodibenzofuran		5	3

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CAS NUMBER[1]	CHEMICAL	NJ Soil Cleanup Criteria (µg/kg)(2)	Laboratory Reporting Limit (µg/kg)	Laboratory Detection Limit (µg/kg)
NA	Total Heptachlorodibenzo-p-dioxin		5	3
NA	Total Hexachlorodibenzofuran		5	3
NA	Total Hexachlorodibenzo-p-dioxin		5	3
NA	Total Pentachlorodibenzofuran		5	1
NA	Total Pentachlorodibenzo-p-dioxin		5	1
NA	Total Tetrachlorodibenzofuran		1	1
NA	Total Tetrachlorodibenzo-p-dioxin		1	1
VOLATILES GROUP 1 (SW-846[3] METHOD 5030/8260B Encore Sampler, 5 g aliquot), AccuTestNE				
630-20-6	1,1,1,2-Tetrachloroethane	1,000	250	20
71-55-6	1,1,1-Trichloroethane	1,000	100	30
79-34-5	1,1,2,2-Tetrachloroethane	1,000	100	20
79-00-5	1,1,2-Trichloroethane	1,000	100	20
75-34-3	1,1-Dichloroethane	10,000	100	20
75-35-4	1,1-Dichloroethene	8,000	100	25
96-18-4	1,2,3-Trichloropropane		250	30
120-82-1	1,2,4-Trichlorobenzene	68,000	250	25
96-12-8	1,2-Dibromo-3-chloropropane		250	45
106-93-4	1,2-Dibromoethane		100	20
95-50-1	1,2-Dichlorobenzene	50,000	100	20
107-06-2	1,2-Dichloroethane	1,000	100	15
78-87-5	1,2-Dichloropropane	10,000	100	20
541-73-1	1,3-Dichlorobenzene	100,000	100	15
542-75-6	1,3-Dichloropropene (cis and trans)	1,000	200	30
106-46-7	1,4-Dichlorobenzene	100,000	100	20
78-93-3	2-Butanone	50,000	250	40
126-99-8	2-Chloro-1,3-butadiene (chloroprene)		250	TBD
591-78-6	2-Hexanone		250	50
107-05-1	3-Chloro-1-propene		TBD	TBD
108-10-1	4-Methyl-2-pentanone (MIBK)	50,000	250	25
67-64-1	Acetone	100,000	250	125
107-02-8	Acrolein		1,300	175
107-13-1	Acrylonitrile	1,000	1,300	100
71-43-2	Benzene	1,000	100	20
75-27-4	Bromodichloromethane	1,000	100	10
72-25-2	Bromoform	1,000	100	25
74-83-9	Bromomethane	1,000	100	25
75-15-0	Carbon disulfide		250	15
56-23-5	Carbon tetrachloride	1,000	100	25

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COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Soil Cleanup Criteria (µg/kg)(2)	Laboratory Reporting Limit (µg/kg)	Laboratory Detection Limit (µg/kg)
108-90-7	Chlorobenzene	1	100	20
124-48-1	Chlorodibromomethane	1,000	100	10
75-00-3	Chloroethane		250	55
67-66-3	Chloroform	1,000	100	20
74-87-3	Chloromethane	10,000	250	50
156-59-2	Cis-1,2-dichloroethene	1,000	100	20
10061-01-5	Cis-1,3-Dichloropropene		100	15
74-95-3	Dibromomethane		250	10
75-71-8	Dichlorodifluoromethane		100	25
97-63-2	Ethyl methacrylate		250	TBD
100-41-4	Ethylbenzene	100,000	100	20
126-98-7	Methacrylonitrile		250	TBD
74-88-4	Methyl iodide		TBD	TBD
80-62-6	Methyl methacrylate		250	TBD
75-09-2	Methylene Chloride	1,000	100	30
76-01-7	Pentachloroethane		TBD	TBD
100-42-5	Styrene	23,000	250	15
127-18-4	Tetrachloroethene	1,000	100	20
108-88-3	Toluene	500,000	100	15
1330-20-7	Total Xylenes	67,000	100	50
156-60-5	Trans-1,2-Dichloroethene	1,000	100	25
10061-02-6	Trans-1,3-Dichloropropene		100	15
110-57-6	Trans-1,4-Dichloro-2-butene		250	TBD
79-01-6	Trichloroethene	1,000	100	20
75-69-4	Trichlorofluoromethane		100	20
108-05-4	Vinyl acetate		250	50
75-01-4	Vinyl Chloride	2,000	100	98
VOLATILES GROUP 2 (SW-846[3] METHOD 5030/8015B), AccuTestNE				
123-91-1	1,4-Dioxane		250	235
75-05-8	Acetonitrile		250	25
78-83-1	Isobutyl alcohol		250	150
107-12-0	Propionitrile		250	130
SEMIVOLATILES (SW-846[3] METHOD 3540C/8270C or 3550B/8270C), LIONVILLE[6]				
95-94-3	1,2,4,5-Tetrachlorobenzene		330	21
120-82-1	1,2,4-Trichlorobenzene	68,000	330	56
130-15-4	1,4-Naphthoquinone		330	214
134-32-7	1-Naphthylamine		330	25
58-90-2	2,3,4,6-Tetrachlorophenol		330	27

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NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

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95-95-4	2,4,5-Trichlorophenol	50,000	330	60
88-06-2	2,4,6-Trichlorophenol	10,000	330	27
120-83-2	2,4-Dichlorophenol	10,000	330	46
105-67-9	2,4-Dimethylphenol	10,000	330	53
51-28-5	2,4-Dinitrophenol	10,000	1,650	371
87-65-0	2,6-Dichlorophenol		330	30
53-96-3	2-Acetylaminofluorene		330	20
91-58-7	2-Chloronaphthalene		330	29
95-57-8	2-Chlorophenol	10,000	330	57
91-57-6	2-Methylnaphthalene		330	52
95-48-7	2-methylphenol	2,800,000	330	41
91-59-8	2-Naphthylamine		330	29
88-74-4	2-Nitroaniline		1,650	51
88-75-5	2-Nitrophenol		330	45
109-06-8	2-Picoline		330	23
91-94-1	3,3'-Dichlorobenzidine	2,000	660	126
119-93-7	3,3'-Dimethylbenzidine		330	22
56-49-5	3-Methylcholanthrene		330	43
108-39-4	3-methylphenol (Co-elutes with 4-methyl phenol)		NA	NA
99-09-2	3-Nitroaniline		1,650	113
534-52-1	4,6-Dinitro-o-cresol		1,650	124
92-67-1	4-Aminobiphenyl		330	30
101-55-3	4-Bromophenyl phenyl ether		330	100
59-50-7	4-chloro-3-methylphenol	100,000	330	16
106-47-8	4-Chloroaniline	230,000	330	67
7005-72-3	4-Chlorophenyl phenyl ether		330	37
106-44-5	4-Methylphenol	2,800,000	330	47
100-01-6	4-Nitroaniline		1,650	131
100-02-7	4-Nitrophenol		1,650	167
56-57-5	4-Nitroquinoline-1-oxide		330	7
99-55-8	5-Nitro-o-toluidine		330	25
57-97-6	7,12-Dimethylbenz[a]anthracene		330	43
98-86-2	Acetophenone		330	36
122-09-8	Alpha, alpha-Dimethylphenethylamine		330	35
62-53-3	Aniline		660	199
140-57-8	Aramite		330	58
100-51-6	Benzyl alcohol	50,000	330	49
111-91-1	Bis(2-chloroethoxy)methane		330	57

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111-44-4	Bis(2-chloroethyl)ether	3,000	330	38
108-60-1	Bis(2-chloroisopropyl)ether	10,000	330	28
117-81-7	Bis(2-ethylhexyl) phthalate	49,000	330	36
85-68-7	Butyl benzyl phthalate	100,000	330	47
510-15-6	Chlorobenzilate		330	19
2303-16-4	Diallate		330	19
132-64-9	Dibenzofuran		330	29
84-66-2	Diethyl phthalate	50,000	330	34
60-51-5	Dimethoate		330	TBD
131-11-3	Dimethyl phthalate	50,000	330	34
84-74-2	Di-n-butyl phthalate	100,000	330	50
117-84-0	Di-n-octyl phthalate	100,000	330	22
97-63-2	Ethyl methacrylate		330	30
62-50-0	Ethyl methanesulfonate		330	20
52-85-7	Famphur		330	31
118-74-1	Hexachlorobenzene	2,000	330	55
87-68-3	Hexachlorobutadiene	1,000	330	60
77-47-4	Hexachlorocyclopentadiene	100,000	330	21
67-72-1	Hexachloroethane	6,000	330	49
70-30-4	Hexachlorophene		2,970	716
1888-71-7	Hexachloropropene		330	31
465-73-6	Isodrin		330	26
78-59-1	Isophorone	50,000	330	34
120-58-1	Isosafrole		330	19
143-50-0	Kepone		670	69
91-80-5	Methapyrilene		330	26
66-27-3	Methyl methanesulfonate		330	23
55-18-5	N-Nitrosodiethylamine		330	22
62-75-9	N-Nitrosodimethylamine		330	53
924-16-3	N-Nitrosodi-n-butylamine		330	19
86-30-6	N-Nitrosodiphenylamine	100,000	330	50
621-64-7	N-Nitrosodipropylamine	660	330	36
10595-95-6	N-Nitrosomethylethylamine		330	38
59-89-2	N-Nitrosomorpholine		330	15
100-75-4	N-Nitrosopiperidine		1,650	22
930-55-2	N-Nitrosopyrrolidine		330	5
126-68-1	O,O,O-Triethyl phosphorothioate		330	22
95-53-4	o-Toluidine		330	27

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CAS NUMBER[1]	CHEMICAL	NJ Soil Cleanup Criteria (µg/kg)(2)	Laboratory Reporting Limit (µg/kg)	Laboratory Detection Limit (µg/kg)
60-11-7	p-(Dimethylamino)azobenzene		330	22
608-93-5	Pentachlorobenzene		330	30
76-01-7	Pentachloroethane		330	26
82-68-8	Pentachloronitrobenzene		1,650	20
87-86-5	Pentachlorophenol	6,000	1,650	113
62-44-2	Phenacetin		330	18
108-95-2	Phenol	50,000	330	3
298-02-2	Phorate		330	17
106-50-3	p-Phenylenediamine		330	26
23950-58-5	Pronamide		330	68
110-86-1	Pyridine		330	20
94-59-7	Safrole		330	20
3689-24-5	Sulfotepp		330	22
297-97-2	Thionazin		330	28
POLYCYCLIC AROMATIC HYDROCARBONS (SW-846[3] METHOD 3540/8310 or 3550B/8310), LIONVILLE[6]				
83-32-9	Acenaphthene	100,000	1,200	143
208-96-8	Acenaphthylene		1,500	150
120-12-7	Anthracene	100,000	440	96
56-55-3	Benzo[a]anthracene	900	9	2
50-32-8	Benzo[a]pyrene	100,000	15	11
205-99-2	Benzo[b]fluoranthene	900	12	3
191-24-2	Benzo[ghi]perylene		51	7
207-08-9	Benzo[k]fluoranthene	900	11	2
218-01-9	Chrysene	9,000	100	17
53-70-3	Dibenz[a,h]anthracene	100,000	20	2
206-44-0	Fluoranthene	100,000	140	72
86-73-7	Fluorene	100,000	140	15
193-39-5	Indeno(1,2,3-cd)pyrene	900	29	9
91-20-3	Naphthalene	100,000	1,200	125
85-01-8	Phenanthrene		430	45
129-00-0	Pyrene	100,000	180	15
ORGANOCHLORINE PESTICIDES (SW-846[3] METHOD 3540C/8081A or 3550B/8081A), AccuTestNE[6]				
72-54-8	4,4'-DDD	3,000	7	2
72-55-9	4,4'-DDE	2,000	7	2
50-29-3	4,4'-DDT	2,000	7	2
309-00-2	Aldrin	40	7	2
319-84-6	Alpha-BHC		7	2
319-85-7	Beta-BHC		7	2

TABLE 1-1

SOIL ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Soil Cleanup Criteria (µg/kg)(2)	Laboratory Reporting Limit (µg/kg)	Laboratory Detection Limit (µg/kg)
57-74-9	Chlordane		67	15
319-86-8	Delta-BHC		7	2
60-57-1	Dieldrin	42	7	2
959-98-8	Endosulfan I		7	3
33213-65-9	Endosulfan II		7	2
1031-07-8	Endosulfan sulfate		7	2
72-20-8	Endrin	17,000	7	2
7421-93-4	Endrin aldehyde		7	2
58-89-9	Gamma-BHC	520	7	2
76-44-8	Heptachlor	150	7	2
1024-57-3	Heptachlor epoxide		7	2
72-43-5	Methoxychlor	50,000	7	2
8001-35-2	Toxaphene	50,000	350	75
POLYCHLORINATED BIPHENYLS (SW-846[3] METHOD 3540C/8082 or 3550B/8082), AccuTestNE[7]				
12674-11-2	Aroclor 1016		100	25
11104-28-2	Aroclor-1221		100	50
11141-16-5	Aroclor 1232		100	25
53469-21-9	Aroclor-1242		100	25
12672-29-6	Aroclor-1248		100	75
11097-69-1	Aroclor-1254		100	25
11096-82-5	Aroclor-1260		100	25
1336-36-3	Total Aroclors	0	600(9)	225(9)
MISCELLANEOUS ORGANIC COMPOUNDS (METHODS AS INDICATED), LIONVILLE				
88-85-7	Dinoseb (SW-846 3540C/8151A)[10]		20	7
298-04-4	Disulfoton (SW-846 3540C/8141A or 3550B/8141A)[8]		7	3
298-00-0	Methyl Parathion (SW-846 3540C/8141A or 3550B/8141A)[8]		7	2
56-38-2	Parathion (SW-846 3540C/8141A or 3550B/8141A)[8]		7	1
GENERAL CHEMISTRY PARAMETERS, LIONVILLE				
16887-00-6	Chloride (SW-846 9065)		1	0
NA	Nitrate-Nitrite (as N) (SW-846 9065)		1	0
NA	Orthophosphate (as P) (SW-846 9065)		1	1
14808-79-8	Sulfate (SW-846 9065)		1	0
18496-25-8	Sulfide (SW-846 9030B)		40	39
57-12-5	Total and Amenable Cyanide (SW-846 9010B)	1,100	1	0
7440-44-0	Total Organic Carbon (SW-846 9060)		20	5
NA	Total Organic Halides (TOX) (SW-846 9020)		25	25

TABLE 1-1

SOIL ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER(1)	CHEMICAL	NJ Soil Cleanup Criteria (µg/kg)(2)	Laboratory Reporting Limit (µg/kg)	Laboratory Detection Limit (µg/kg)

AccuTestNE = Accutest Laboratory of New England
CRANE = Naval Surface Warfare Center Crane Laboratory
LIONVILLE = Lionville Laboratory
NA - not available for this constituent
NC = North Canton
NJ = New Jersey
PQL = Practical Quantitation Level
STL = Severn Trent (Knoxville, TN or North Canton, OH, as indicated)
TAL = U.S. EPA Target Analyte List
TBD = To be determined prior to sample analyses

1 Chemical Abstracts Service registry numbers
2 Lowest of Cleanup Standards for Contaminated Sites, N.J.A.C. 7:26D, Tables 3-2 and 7-1, last revised 5/12/99.
3 SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.
4 Re-analysis of a portion of the sample by Section 1.5 of USEPA Method 200.2 is required when the silver concentrations is determined to exceed 50 mg/kg using the method indicated in this table.
5 If sample cleanup is necessary prior to anlaysis, allowed cleanup methods are: 3610, 3620B, or 3650
6 If sample cleanup is necessary prior to anlaysis, allowed cleanup methods are: 3620B, 3640A, or 3660
7 If sample cleanup is necessary prior to anlaysis, allowed cleanup methods are: 3620B, or 3665A
8 If sample cleanup is necessary prior to anlaysis, allowed cleanup method is 3630.
9 Reporting and detection limits are estimated values based on limits for individual Aroclors.
10 Value is based on residential or non-residential cleanup standards (See N.J.A.C. 7:26D). The impact to ground water values should be developed based upon site specific chemical and physical parameters.
11 Site specific determination required for the allergic contact dermatitis exposure pathway.

TABLE 1-2

GROUNDWATER ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Groundwater Quality Criteria (µg/L)[2]	NJ Practical Quantitation Levels (µg/L)[2]	Greater of NJ GWQC and NJ PQL (ug/L)	Laboratory Reporting Limit (µg/L)	Laboratory Detection Limit (µg/L)
EXPLOSIVES (SW-846[3] METHOD 8330, Except as Noted), STL KNOXVILLE						
99-35-4	1,3,5-Trinitrobenzene				0.2	0.11
99-65-0	1,3-Dinitrobenzene				0.2	0.08
118-96-7	2,4,6-Trinitrotoluene (TNT)				0.2	0.08
121-14-2	2,4-Dinitrotoluene	0.05	10	10	0.2	0.07
606-20-2	2,6-Dinitrotoluene	NA	10	NA	0.2	0.11
355-72-78-2	2-Amino-4,6-dinitrotoluene				0.2	0.09
88-72-2	2-Nitrotoluene				0.2	0.14
99-08-1	3-Nitrotoluene				0.2	0.13
1946-51-0	4-Amino-2,6-dinitrotoluene				0.2	0.11
99-99-0	4-Nitrotoluene				0.2	0.17
2691-41-0	HMX				0.5	0.1
98-95-3	Nitrobenzene	3	10	10	0.2	0.07
14797-73-0	Ammonium Perchlorate (USEPA 314)				4	1.8
121-82-4	RDX				0.5	0.13
479-45-8	Tetryl				0.2	0.17
NITROCELLULOSE (SW-846 METHOD 8332), AccuTestNE						
9004-70-0	Nitrocellulose (USEPA 352.1 Modified)				TBD	TBD
EXPLOSIVES (Exotic and Miscellaneous), (SW-846[3] METHOD 8330 Modifed, Except as Noted) NSWC CRANE LABORATORY						
28930-29-2	1,3-Diamino-2,4,6-trinitrobenzene (DATB)				5	3.04
131-74-8	Ammonium Picrate				4	0.84
693-21-0	Diethyleneglycol Dinitrate (DEGDN)				4	0.76
122-39-4	Diphenylamine (DPA)				4	0.17
55-63-0	Nitroglycerin (SW-846 8332)				4	0.76
556-88-7	Nitroguanidine				98	0.13
78-11-5	Pentaerythritol tetranitrate (PETN)				4	0.76
111-22-8	Triethylene Glycol Dinitrate (TEGDN)				4	0.42
12185-10-3	White Phosphorous (SW-846 7580)				4	0.01
TOTAL METALS GROUP 1 (SW-846[3] METHOD 3005/6020, Except as Noted), STL NC						
7440-36-0	Antimony	2	20	20	2	0.12
7440-38-2	Arsenic	0.02	8	8	5	0.21
7440-39-3	Barium	2000	200	2000	1	0.057
7440-41-7	Beryllium	0.008	20	20	1	0.16
7440-43-9	Cadmium	4	2	4	1	0.075
18540-29-9	Chromium (Hexavalent) (SW-846 7196A)				20	5
7440-47-3	Chromium (total)	100	10	100	2	0.16
7440-48-4	Cobalt				1	0.033
7440-50-8	Copper	1000	1000	1000	2	0.33
7439-92-1	Lead	5	10	10	1	0.029
7439-96-5	Manganese	50	6	50	1	0.2
7439-97-6	Mercury (SW-846 7470A)	2	0.5	2	2	0.087

TABLE 1-2

GROUNDWATER ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Groundwater Quality Criteria (µg/L)[2]	NJ Practical Quantitation Levels (µg/L)[2]	Greater of NJ GWQC and NJ PQL (ug/L)	Laboratory Reporting Limit (µg/L)	Laboratory Detection Limit (µg/L)
7440-02-0	Nickel	100	10	100	2	0.059
7782-49-2	Selenium	50	10	50	5	0.3
7440-22-4	Silver[4]	NA	2	NA	1	0.13
7440-28-0	Thallium	0.5	10	10	1	0.033
7440-66-6	Zinc	5000	30	5000	10	2.2
TOTAL METALS GROUP 2 (SW-846[3] METHOD 3005/6010B), LIONVILLE						
7429-90-5	Aluminum	200	200	200	60	20
7440-42-8	Boron				6.6	2.2
7440-70-2	Calcium				18.6	6.2
7439-89-6	Iron	300	100	300	59.1	19.7
7439-95-4	Magnesium				15	5
7440-09-7	Potassium				62.4	20.8
7440-23-5	Sodium	50000	400	50000	14.4	4.8
7440-24-6	Strontium				0.3	0.1
7440-31-5	Tin				10.8	3.6
7440-62-2	Vanadium				0.3	0.1
DISSOLVED METALS GROUP 1 (SW-846[3] METHOD 3010A/6020[7], Except as Noted), STL NC						
7440-36-0	Antimony	2	20	20	2	0.12
7440-38-2	Arsenic	0.02	8	8	5	0.21
7440-39-3	Barium	2000	200	2000	1	0.057
7440-41-7	Beryllium	0.008	20	20	1	0.16
7440-43-9	Cadmium	4	2	4	1	0.075
7440-47-3	Chromium (total)[5]	100	10	100	2	0.16
7440-48-4	Cobalt			0	1	0.033
7440-50-8	Copper	1000	1000	1000	2	0.33
7439-92-1	Lead	5	10	10	1	0.029
7439-96-5	Manganese	50	6	50	1	0.2
7439-97-6	Mercury (SW-846 7470A)	2	0.5	2	2	0.087
7440-02-0	Nickel	100	10	100	2	0.059
7782-49-2	Selenium				5	0.3
7440-22-4	Silver[4]				1	0.13
7440-28-0	Thallium	0.5	10	10	1	0.033
7440-66-6	Zinc	5000	30	5000	10	2.2
DISSOLVED METALS GROUP 2 (SW-846[3] METHOD 3010A/6010B), LIONVILLE						
7429-90-5	Aluminum	200	200	200	60	20
7440-42-8	Boron				6.6	2.2
7440-70-2	Calcium				18.6	6.2
7439-89-6	Iron	300	100	300	59.1	19.7
7439-95-4	Magnesium				15	5

TABLE 1-2

GROUNDWATER ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Groundwater Quality Criteria (µg/L)[2]	NJ Practical Quantitation Levels (µg/L)[2]	Greater of NJ GWQC and NJ PQL (ug/L)	Laboratory Reporting Limit (µg/L)	Laboratory Detection Limit (µg/L)
7440-09-7	Potassium				62.4	20.8
7440-23-5	Sodium				14.4	4.8
7440-24-6	Strontium				0.3	0.1
7440-31-5	Tin				10.8	3.6
7440-62-2	Vanadium				0.3	0.1
DIOXINS/FURANS (SW-846[3] METHOD 8290), STL KNOXVILLLE[6]					**pg/L**	**pg/L**
39001-02-0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran				100	50
3268-87-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin				100	50
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran				50	25
35822-39-4	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin				50	25
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran				50	25
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran				50	25
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin				50	25
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran				50	25
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin				50	25
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran				50	25
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin				50	25
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran				50	10
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin				50	10
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran				50	10
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran				50	10
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran				10	10
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.0000002	0.01	0.01	10	10
NA	Total Heptachlorodibenzofuran	NA	2	2	50	25
NA	Total Heptachlorodibenzo-p-dioxin	NA	2	2	50	25
NA	Total Hexachlorodibenzofuran	NA	2	2	50	25
NA	Total Hexachlorodibenzo-p-dioxin	NA	2	2	50	25
NA	Total Pentachlorodibenzofuran	NA	2	2	50	10
NA	Total Pentachlorodibenzo-p-dioxin	NA	2	2	50	10
NA	Total Tetrachlorodibenzofuran	NA	2	2	10	10
NA	Total Tetrachlorodibenzo-p-dioxin	NA	2	2	10	10
VOLATILES GROUP 1 (SW-846[3] METHOD 5035/8260B, 25 mL purge volume), AccuTestNE						
630-20-6	1,1,1,2-Tetrachloroethane	10	NA	NA	5	0.5
71-55-6	1,1,1-Trichloroethane	30	1	30	2	0.5
79-34-5	1,1,2,2-Tetrachloroethane	2	1	2	2	0.5
79-00-5	1,1,2-Trichloroethane	3	2	3	2	0.5
75-34-3	1,1-Dichloroethane	70	NA	NA	2	0.5
75-35-4	1,1-Dichloroethene	1	2	2	1	0.5
96-18-4	1,2,3-Trichloropropane			0	5	0.5
120-82-1	1,2,4-Trichlorobenzene	9	1	9	5	0.6
96-12-8	1,2-Dibromo-3-chloropropane	NA	2	NA	5	1.75

TABLE 1-2

GROUNDWATER ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Groundwater Quality Criteria (µg/L)[2]	NJ Practical Quantitation Levels (µg/L)[2]	Greater of NJ GWQC and NJ PQL (ug/L)	Laboratory Reporting Limit (µg/L)	Laboratory Detection Limit (µg/L)
106-93-4	1,2-Dibromoethane	0.0004	0.05	0.05	2	0.5
95-50-1	1,2-Dichlorobenzene	600	5	600	2	0.5
107-06-2	1,2-Dichloroethane	0.3	2	2	2	0.5
78-87-5	1,2-Dichloropropane	0.5	1	1	2	0.5
541-73-1	1,3-Dichlorobenzene	600	5	600	2	0.5
542-75-6	1,3-Dichloropropene (cis and trans)	0.2	NA	NA	1	0.5
106-46-7	1,4-Dichlorobenzene	75	5	75	2	0.5
78-93-3	2-Butanone	300	NA	NA	5	1.5
126-99-8	2-Chloro-1,3-butadiene (chloroprene)				5	TBD
591-78-6	2-Hexanone				5	0.5
107-05-1	3-Chloro-1-propene				TBD	TBD
108-10-1	4-Methyl-2-pentanone (MIBK)	400	NA	NA	5	0.5
67-64-1	Acetone	700	NA	NA	5	4.5
107-02-8	Acrolein	NA	50	NA	25	5
107-13-1	Acrylonitrile	0.06	50	50	25	3
71-43-2	Benzene	0.2	1	1	0.5	0.3
75-27-4	Bromodichloromethane	0.3	1	1	2	0.5
72-25-2	Bromoform	4	0.8	4	2	0.5
74-83-9	Bromomethane	10	2	10	2	1.5
75-15-0	Carbon Disulfide				5	0.5
56-23-5	Carbon tetrachloride	0.4	2	2	2	0.5
108-90-7	Chlorobenzene	4	2	4	2	0.5
124-48-1	Chlorodibromomethane	10	1	10	2	0.5
75-00-3	Chloroethane				5	0.5
67-66-3	Chloroform	6	1	6	2	0.5
74-87-3	Chloromethane					
156-59-2	Cis-1,2-Dichloroethene	10	2	10	2	1
10061-01-5	Cis-1,3-Dichloropropene	NA	5	NA	0.5	0.3
74-95-3	Dibromomethane				5	0.5
75-71-8	Dichlorodifluoromethane				2	0.5
97-63-2	Ethyl methacrylate				5	TBD
100-41-4	Ethylbenzene	700	5	700	1	0.5
126-98-7	Methacrylonitrile				5	TBD
74-88-4	Methyl Iodide				TBD	TBD
80-62-6	Methyl methacrylate				5	TBD
75-09-2	Methylene chloride	2	2	2	2	1.5
76-01-7	Pentachloroethane				TBD	TBD
100-42-5	Styrene	100	5	100	5	0.5
127-18-4	Tetrachloroethene	0.4	1	1	2	0.5
108-88-3	Toluene	1000	5	1000	1	0.5
1330-20-7	Total Xylenes	40	2	40	1	0.6

TABLE 1-2

GROUNDWATER ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Groundwater Quality Criteria (µg/L)[2]	NJ Practical Quantitation Levels (µg/L)[2]	Greater of NJ GWQC and NJ PQL (ug/L)	Laboratory Reporting Limit (µg/L)	Laboratory Detection Limit (µg/L)
156-60-5	Trans-1,2-Dichloroethene	100	2	100	2	0.5
10061-02-6	Trans-1,3-Dichloropropene	NA	7	NA	0.5	0.3
110-57-6	Trans-1,4-Dichloro-2-butene				TBD	TBD
79-01-6	Trichloroethene	1	1	1	2	0.5
75-69-4	Trichlorofluoromethane				2	0.5
108-05-4	Vinyl acetate				5	0.7
75-01-4	Vinyl chloride	0.08	5	5	2	0.5
VOLATILES GROUP 2 (SW-846[3] METHOD 5035/8015B, 25 mL purge volume), AccuTestNE						
123-91-1	1,4-Dioxane				25	20
75-05-8	Acetonitrile				5	1.5
78-83-1	Isobutyl alcohol				5	3
107-12-0	Propionitrile				5	3
SEMIVOLATILES (SW-846[3] METHOD 3510C/8270C or 3520C/8270C), LIONVILLE[7]						
95-94-3	1,2,4,5-Tetrachlorobenzene				10	0.794
120-82-1	1,2,4-Trichlorobenzene	9	1	9	10	1.07
130-15-4	1,4-Naphthoquinone				10	5.69
134-32-7	1-Naphthylamine				10	5.26
58-90-2	2,3,4,6-Tetrachlorophenol	NA	10	NA	10	1.2
95-95-4	2,4,5-Trichlorophenol	700	10	700	10	1.13
88-06-2	2,4,6-Trichlorophenol	3	20	20	10	1.06
120-83-2	2,4-Dichlorophenol	20	10	20	10	0.863
105-67-9	2,4-Dimethylphenol	100	20	100	10	1.23
51-28-5	2,4-Dinitrophenol	10	40	40	50	14.6
87-65-0	2,6-Dichlorophenol				10	1.03
53-96-3	2-Acetylaminofluorene				10	0.429
91-58-7	2-Chloronaphthalene				10	0.86
95-57-8	2-Chlorophenol	40	20	40	10	0.863
91-57-6	2-Methylnaphthalene				10	0.977
95-48-7	2-Methylphenol				10	0.591
91-59-8	2-Naphthylamine				10	6.61
88-74-4	2-Nitroaniline				10	6.16
88-75-5	2-Nitrophenol				10	1.02
109-06-8	2-Picoline				10	0.507
91-94-1	3,3'-Dichlorobenzidine	0.08	60	60	50	27.4
119-93-7	3,3'-Dimethylbenzidine				10	4.47
56-49-5	3-Methylcholanthrene				10	2.25
108-39-4	3-Methylphenol (Co-elutes with 4-methyl phenol)				NA	NA
99-09-2	3-Nitroaniline				50	24.8
534-52-1	4,6-Dinitro-o-cresol	NA	60	NA	50	11.5
92-67-1	4-Aminobiphenyl				10	6.21
101-55-3	4-Bromophenyl phenyl ether				10	1.03

TABLE 1-2

GROUNDWATER ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Groundwater Quality Criteria (µg/L)[2]	NJ Practical Quantitation Levels (µg/L)[2]	Greater of NJ GWQC and NJ PQL (ug/L)	Laboratory Reporting Limit (µg/L)	Laboratory Detection Limit (µg/L)
59-50-7	4-chloro-3-methylphenol	NA	20	NA	10	0.726
106-47-8	4-Chloroaniline				50	32.2
7005-72-3	4-Chlorophenyl phenyl ether				10	0.818
106-44-5	4-Methylphenol				10	0.803
100-01-6	4-Nitroaniline				50	18
100-02-7	4-Nitrophenol				50	6.27
56-57-5	4-Nitroquinoline-1-oxide				20	0.387
99-55-8	5-Nitro-o-toluidine				10	2.85
57-97-6	7,12-Dimethylbenz[a]anthracene				10	1.87
98-86-2	Acetophenone				10	0.384
122-09-8	Alpha, alpha-Dimethylphenethylamine				10	1.87
62-53-3	Aniline				20	17.3
140-57-8	Aramite				20	2.65
100-51-6	Benzyl alcohol	2000	NA	NA	10	0.693
111-91-1	Bis(2-chloroethoxy)methane				10	2.6
111-44-4	Bis(2-chloroethyl)ether	0.03	10	10	10	1.08
108-60-1	Bis(2-chloroisopropyl)ether				10	0.881
117-81-7	Bis(2-ethylhexyl) phthalate	3	30	30	10	3.93
85-68-7	Butyl benzyl phthalate	100	20	100	10	1.12
510-15-6	Chlorobenzilate				10	0.705
2303-16-4	Diallate				10	0.711
132-64-9	Dibenzofuran				10	0.83
84-66-2	Diethyl phthalate	5000	10	5000	10	1.1
60-51-5	Dimethoate				10	1.3
131-11-3	Dimethyl phthalate	0	10	10	10	1
84-74-2	Di-n-butyl phthalate	900	20	900	10	1.4
117-84-0	Di-n-octyl phthalate	100	NA	NA	10	1.24
97-63-2	Ethyl methacrylate				10	0.519
62-50-0	Ethyl methanesulfonate				10	0.45
52-85-7	Famphur				10	0.884
118-74-1	Hexachlorobenzene	0.02	10	10	10	1.12
87-68-3	Hexachlorobutadiene	1	1	1	10	0.86
77-47-4	Hexachlorocyclopentadiene	50	10	50	10	0.27
67-72-1	Hexachloroethane	0.7	10	10	10	0.977
70-30-4	Hexachlorophene				90	458
1888-71-7	Hexachloropropene				10	1.37
465-73-6	Isodrin				10	1.26
78-59-1	Isophorone	100	10	100	10	0.821
120-58-1	Isosafrole				10	0.729
143-50-0	Kepone				20	7.6
91-80-5	Methapyrilene				10	1.38

TABLE 1-2

GROUNDWATER ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Groundwater Quality Criteria (µg/L)[2]	NJ Practical Quantitation Levels (µg/L)[2]	Greater of NJ GWQC and NJ PQL (ug/L)	Laboratory Reporting Limit (µg/L)	Laboratory Detection Limit (µg/L)
66-27-3	Methyl methanesulfonate				10	0.36
55-18-5	N-Nitrosodiethylamine				10	0.417
62-75-9	N-Nitrosodimethylamine	0.0007	20	20	10	0.852
924-16-3	N-Nitrosodi-n-butylamine				10	0.357
86-30-6	N-Nitrosodiphenylamine	7	20	20	10	3.28
621-64-7	N-Nitrosodipropylamine	0.005	20	20	10	0.8
10595-95-6	N-Nitrosomethylethylamine				10	0.773
59-89-2	N-Nitrosomorpholine				10	0.558
100-75-4	N-Nitrosopiperidine				50	0.696
930-55-2	N-Nitrosopyrrolidine				10	0.471
126-68-1	O,O,O-Triethyl phosphorothioate				10	0.863
95-53-4	o-Toluidine				10	4.07
60-11-7	p-(Dimethylamino)azobenzene				10	0.687
608-93-5	Pentachlorobenzene				10	0.513
76-01-7	Pentachloroethane				10	0.938
82-68-8	Pentachloronitrobenzene				10	0.633
87-86-5	Pentachlorophenol	0.3	1	1	50	13.3
62-44-2	Phenacetin				10	0.678
108-95-2	Phenol	4000	10	4000	10	0.8
298-02-2	Phorate				10	1.2
106-50-3	p-Phenylenediamine				10	22.8
23950-58-5	Pronamide				10	0.974
110-86-1	Pyridine				10	0.941
94-59-7	Safrole				10	0.432
3689-24-5	Sulfotepp				10	1.24
297-97-2	Thionazin				10	2.09
POLYCYCLIC AROMATIC HYDROCARBONS (SW-846[3] METHOD 3510C/8310 or 3520C/8310), LIONVILLE[7]						
83-32-9	Acenaphthene	400	10	400	18	0.67
208-96-8	Acenaphthylene	NA	10	NA	23	0.97
120-12-7	Anthracene	2000	10	2000	6.6	0.33
56-55-3	Benzo[a]anthracene	NA	10	NA	0.1	0.01
50-32-8	Benzo[a]pyrene	NA	20	NA	0.2	0.01
205-99-2	Benzo[b]fluoranthene	NA	10	NA	0.2	0.01
191-24-2	Benzo[ghi]perylene	NA	20	NA	0.8	0.04
207-08-9	Benzo[k]fluoranthene	NA	2	NA	0.2	0.01
218-01-9	Chrysene	NA	20	NA	1.5	0.08
53-70-3	Dibenz[a,h]anthracene	NA	20	NA	0.3	0.01
206-44-0	Fluoranthene	300	10	300	2.1	0.11
86-73-7	Fluorene	300	10	300	2.1	0.09
193-39-5	Indeno(1,2,3-cd)pyrene	NA	20	NA	0.4	0.29
91-20-3	Naphthalene				18	1.08

TABLE 1-2

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NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Groundwater Quality Criteria (µg/L)[2]	NJ Practical Quantitation Levels (µg/L)[2]	Greater of NJ GWQC and NJ PQL (ug/L)	Laboratory Reporting Limit (µg/L)	Laboratory Detection Limit (µg/L)
85-01-8	Phenanthrene	NA	10	NA	6.4	0.79
129-00-0	Pyrene	200	20	200	2.7	0.12
ORGANOCHLORINE PESTICIDES (SW-846[3] METHOD 3510C/8081A or 3520C/8081A), AccuTestNE[8]						
72-54-8	4,4'-DDD	0.1	0.04	0.1	0.05	0.01
72-55-9	4,4'-DDE	0.1	0.04	0.1	0.05	0.02
50-29-3	4,4'-DDT	0.1	0.06	0.1	0.05	0.01
309-00-2	Aldrin	0.002	0.04	0.04	0.05	0.01
319-84-6	Alpha-BHC	0.006	0.02	0.02	0.05	0.01
319-85-7	Beta-BHC	0.2	0.04	0.2	0.05	0.01
57-74-9	Chlordane	0.01	0.5	0.5	0.5	0.15
319-86-8	Delta-BHC				0.05	0.03
60-57-1	Dieldrin	0.002	0.03	0.03	0.05	0.01
959-98-8	Endosulfan I	0.4	0.02	0.4	0.05	0.02
33213-65-9	Endosulfan II	0.4	0.04	0.4	0.05	0.01
1031-07-8	Endosulfan sulfate	0.4	0.08	0.4	0.05	0.01
72-20-8	Endrin	2	0.04	2	0.05	0.01
7421-93-4	Endrin aldehyde				0.05	0.01
58-89-9	Gamma-BHC	0.2	0.2	0.2	0.05	0.01
76-44-8	Heptachlor	0.008	0.4	0.4	0.05	0.01
1024-57-3	Heptachlor epoxide	0.004	0.2	0.2	0.05	0.01
72-43-5	Methoxychlor	40	10	40	0.05	0.02
8001-35-2	Toxaphene	0.03	3	3	2.5	1
POLYCHLORINATED BIPHENYLS (SW-846[3] METHOD 3510C/8082 or 3520C/8082), AccuTestNE[9]						
12674-11-2	Aroclor 1016				0.25	0.1
11104-28-2	Aroclor-1221				0.25	0.2
11141-16-5	Aroclor 1232				0.25	0.2
53469-21-9	Aroclor-1242				0.25	0.2
12672-29-6	Aroclor-1248				0.25	0.2
11097-69-1	Aroclor-1254				0.25	0.2
11096-82-5	Aroclor-1260				0.25	0.1
1336-36-3	Total Aroclors	0.03	3	3	1.5	1
MISCELLANEOUS ORGANIC COMPOUNDS (METHODS AS INDICATED), LIONVILLE						
88-85-7	Dinoseb (SW-846 3540C/8151A)[10]				1.0	0.375
298-04-4	Disulfoton (SW-846 3540C/8141A or 3550B/8141A)[8]				0.2	0.025
298-00-0	Methyl parathion (SW-846 3540C/8141A or 3550B/8141A)[8]				0.2	0.014
56-38-2	Parathion (SW-846 3540C/8141A or 3550B/8141A)[8]				0.2	0.013
GENERAL CHEMISTRY PARAMETERS (METHODS AS INDICATED), LIONVILLE						
7664-41-7	Ammonia (as N) (USEPA350.1)				100	3.5
NA	Biochemical Oxygen Demand (USEPA 405.1)	NA	2	NA	1000	3.5
NA	Chemical Oxygen Demand (USEPA 410.4)	NA	2	NA	1000	NA
16887-00-6	Chloride (SW-846 9065)	250000	2000	250000	250	14

TABLE 1-2

GROUNDWATER ANALYSIS CONSTITUENTS, CRITERIA, AND DETECTION LIMITS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

CAS NUMBER[1]	CHEMICAL	NJ Groundwater Quality Criteria (µg/L)[2]	NJ Practical Quantitation Levels (µg/L)[2]	Greater of NJ GWQC and NJ PQL (ug/L)	Laboratory Reporting Limit (µg/L)	Laboratory Detection Limit (µg/L)
NA	Total Organic Halides (TOX) (SW-846 9020B)	NA	2	NA	5.2	5.2

AccuTestNE = Accutest Laboratory of New England
CRANE = Naval Surface Warfare Center Crane Laboratory
LIONVILLE = Lionville Laboratory
NA - not applicable for this constituent
NC = North Canton
NJ = New Jersey
PQL = Practical Quantitation Level
STL = Severn Trent (Knoxville, TN or North Canton, OH, as indicated)
TAL = U.S. EPA Target Analyte List

1 Chemical Abstracts Service registry numbers
2 Ground Water Quality Standards N.J.A.C. 7:9-6 Table 1 Specific Ground Water Quality Criteria-IIA and Practical Quantitation Levels, last updated 1/17/02.
3 SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.
4 Re-analysis of a portion of the sample by Section 1.5 of USEPA Method 200.2 is required when the silver concentration is determined to exceed 0.1 µg/L using the method indicated in this table.
5 Filtered water samples will not be analyzed for hexavalent chromium. The act of filtration could cause a change in chromium oxidation state.
6 If sample cleanup is necessary prior to analysis, allowed cleanup methods are: 3610, 3620B, or 3650.
7 If sample cleanup is necessary prior to anlalysis, allowed cleanup methods are: 3640A.
8 If sample cleanup is necessary prior to analysis, allowed cleanup methods are: 3620B, 3640A, or 3660.
9 If sample cleanup is necessary prior to analysis, allowed cleanup methods are: 3620B.
10 If sample cleanup is necessary prior to analysis, allowed cleanup method is 3630.
11 Reporting and detection limits are estimated values based in limits for individual Aroclors.

TABLE 1-3

PHASE I SAMPLE LOCATIONS AND ANALYSIS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Sample Location	Sample ID Round 01	Depth (bgs)(1)	Soil / Groundwater	8330 Explosives and Perchlorate	Misc. and Exotic Explosives(2) (3)	Nitrocellulose	VOCs, Group 1(4)	VOCs, Group 2(5)	8081A Organo-chlorine	8082 PCBs(6)	8270C SVOCs & PAHs	8290 Dioxins / Furans	Total Metals, Group 1(7)	Total Metals, Group 2(7)	Dissolved Metals, Group 1(8)	Dissolved Metals, Group 2(8)	Miscellaneous Organic Compounds	General Chemistry(9)
Center of Radial (DPT)																		
02SO001	02SO0010101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0010201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0010301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0010401	five feet below water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP001	02DP0010101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0010201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0010301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
100 Foot Radial (DPT)																		
02SO002	02SO0020101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0020201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0020301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0020401	five feet below water table	S															
02DP002	02DP0020101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0020201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0020301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO003	02SO0030101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0030201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0030301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP003	02DP0030101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0030201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0030301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO004	02SO0040101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0040201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0040301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0040401	five feet below water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP004	02DP0040101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0040201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0040301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO005	02SO0050101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0050201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0050301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0050401	five feet below water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP005	02DP0050101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0050201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0050301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO006	02SO0060101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0060201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0060301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0060401	five feet below water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP006	02DP0060101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0060201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0060301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO007	02SO0070101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0070201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0070301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP007	02DP0070101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0070201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0070301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO008	02SO0080101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0080201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0080301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP008	02DP0080101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0080201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0080301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO009	02SO0090101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0090201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0090301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP009	02DP0090101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0090201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0090301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
200 Foot Radial (DPT)																		
02SO010	02SO0100101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0100201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0100301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0100401	five feet below water table	S															
02DP010	02DP0100101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0100201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0100301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO011	02SO0110101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0110201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0110301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0110401	five feet below water table	S															
02DP011	02DP0110101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0110201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0110301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

TABLE 1-3

PHASE I SAMPLE LOCATIONS AND ANALYSIS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Sample Location	Sample ID Round 01	Depth (bgs)(1)	Soil / Groundwater	8330 Explosives and Perchlorate	Misc. and Exotic Explosives(2) (3)	Nitrocellulose	VOCs, Group 1(4)	VOCs, Group 2(5)	8081A Organo-chlorine	8082 PCBs(6)	8270C SVOCs & PAHs	8290 Dioxins / Furans	Total Metals, Group 1(7)	Total Metals, Group 2(7)	Dissolved Metals, Group 1(8)	Dissolved Metals, Group 2(8)	Miscellaneous Organic Compounds	General Chemistry(9)
02SO012	02SO0120101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0120201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0120301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0120401	five feet below water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP012	02DP0120101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0120201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0120301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO013	02SO0130101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0130201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0130301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0130401	five feet below water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP013	02DP0130101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0130201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0130301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO014	02SO0140101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0140201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0140301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0140401	five feet below water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP014	02DP0140101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0140201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0140301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
02SO015	02SO0150101	0.5-1ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0150201	mid-depth	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0150301	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02DP015	02DP0150101	10ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0150201	30ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	02DP0150301	50ft.	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Misc Radial (DPT)																		
02SO016	02SO0160101	0.5-1ft.	S															
	02SO0160201	mid-depth	S															
	02SO0160301	water table	S															
02DP016	02DP0160101	10ft.	GW															
	02DP0160201	30ft.	GW															
	02DP0160301	50ft.	GW															
02SO017	02SO0160101	0.5-1ft.	S															
	02SO0160201	mid-depth	S															
	02SO0160301	water table	S															
02DP017	02DP0160101	10ft.	GW															
	02DP0160201	30ft.	GW															
	02DP0160301	50ft.	GW															
Berms (Soil Coring Device)																		
02SO018	02SO0180101	2-4ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO019	02SO0190101	2-4ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO020	02SO0200101	2-4ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO021	02SO0210101	2-4ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO022	02SO0220101	2-4ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO023	02SO0230101	2-4ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO024	02SO0240101	2-4ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO025	02SO0250101	2-4ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO026	02SO0260101	2-4ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
Within Berms (DPT)																		
02SO027	02SO0270101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0270201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO028	02SO0280101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0280201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO029	02SO0290101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0290201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO030	02SO0300101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0300201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO031	02SO0310101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0310201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO032	02SO0320101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0320201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO033	02SO0330101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0330201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO034	02SO0340101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0340201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO035	02SO0350101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0350201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO036	02SO0360101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0360201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0360301	five feet below water table	S															
02SO037	02SO0370101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0370201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0370301	five feet below water table	S															
02SO038	02SO0380101	0.5-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0380201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0380301	five feet below water table	S															

TABLE 1-3

PHASE I SAMPLE LOCATIONS AND ANALYSIS
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Sample Location	Sample ID Round 01	Depth (bgs)[1]	Soil / Groundwater	8330 Explosives and Perchlorate	Misc. and Exotic Explosives[2] [3]	Nitrocellulose	VOCs, Group 1[4]	VOCs, Group 2[5]	8081A Organo-chlorine	8082 PCBs[6]	8270C SVOCs & PAHs	8290 Dioxins / Furans	Total Metals, Group 1[7]	Total Metals, Group 2[7]	Dissolved Metals, Group 1[8]	Dissolved Metals, Group 2[8]	Miscellaneous Organic Compounds	General Chemistry[9]
Misc Berms (DPT)																		
02SO039	02SO0390101	0.5-2ft.	S															
	02SO0390201	water table	S															
	02SO0390301	five feet below water table	S															
02SO040	02SO0400101	0.5-2ft.	S															
	02SO0400201	water table	S															
	02SO0400301	five feet below water table	S															
02SO041	02SO0410101	0.5-2ft.	S															
	02SO0410201	water table	S															
02SO042	02SO0420101	0.5-2ft.	S															
	02SO0420201	water table	S															
02SO043	02SO0430101	0.5-2ft.	S															
	02SO0430201	water table	S															
02SO044	02SO0440101	0.5-2ft.	S															
	02SO0440201	water table	S															
02SO045	02SO0450101	0.5-2ft.	S															
	02SO0450201	water table	S															
Ponding Water Areas (DPT)																		
02SO046	02SO0460101	1-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0460201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO047	02SO0470101	1-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0470201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
02SO048	02SO0480101	1-2ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	02SO0480201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
Background Wells[10]																		
	BGMW001010101	scr. Int. of bgd well	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	BGMW002010101	scr. Int. of bgd well	GW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Adjacent To Background Wells (DPT)																		
	BGSO0030101	0.5-1.0ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	BGSO0030201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	BGSO0030301	scr. Int. of bgd well	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	BGSO0040101	0.5-1.0ft.	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	BGSO0040201	water table	S	1	1	1	1	1	1	1	1	1	1	1			1	1
	BGSO0040301	scr. Int. of bgd well	S	1	1	1	1	1	1	1	1	1	1	1			1	1

Notes:

1 Maximum depth of boring may be limited due to soil coring device refusal or encountering of a confining unit. No samples will be collected beyond a given point where these conditions exist (for DPT locations). When refusal is encountered using the soil coring device, locations adjacent to the original boring shall be attempted.
2 Misc. Explosives consist of Nitrocellulose, Nitroglycerin, Nitroguanidine and Pentaerythritol tetranitrate (PETN).
3 Exotic Explosives are listed in Tables 1-1 and 1-2.
4 8260B Volatiles are listed in Tables 1-1 and 1-2 as Volatiles, Group 1.
5 8015B Volatiles consist of 1,4-Dioxane, Acetonitrile, Isobutanol and Propionitrile (Volatiles, Group 2 in Tables 1-1 and 1-2).
6 PCBs are listed in Tables 1-1 and 1-2.
7 Total Metals Groups 1 and 2 are defined in Tables 1-1 and 1-2.
8 Dissolved Metals Groups 1 and 2 are defined in Tables 1-1 and 1-2.
9 General Chemistry Parameters are listed in Tables 1-1 and 1-2.
10 Background wells are basewide.

bgd	background
bgs	below ground surface
DPT	direct push technology
ft	feet
GW	groundwater
Int	interval
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
S	soil
scr	screen
SVOC	semivolatile organic compound
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

TABLE 1-4

SUMMARY OF SAMPLE ANALYSES, CONTAINER TYPES AND VOLUMES, PRESERVATION REQUIREMENTS, AND HOLDING TIMES
BASELINE ENVIRONMENTAL MONITORING PLAN
SOIL SAMPLES
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	Sample Container	Container Volume	Preservation	Maximum Holding Time[1]	Analytical Methodology
Explosives (except exotics/miscellaneous, nitrocellulose, and perchlorate)	Glass, Teflon-lined cap	(1) 4 ounce[2,3]	Cool to 4°C	Extract within 14 days; Analyze within 40 days of extraction	SW-846 8330
Exotic and Miscellaneous Explosives	Glass, Teflon-lined cap	(1) 8 ounce[2,3]	Cool to 4°C	Extract within 14 days; Analyze within 40 days of extraction	See Table 1-1
Ammonium Perchlorate	Glass, Teflon-lined cap	(1) 4 ounce[2,3]	Cool to 4°C	28 days to analysis	USEPA 314
Nitrocellulose	Glass, Teflon-lined cap	(1) 4 ounce[2,3]	Cool to 4°C	28 days to analysis	USEPA 353.3
Total Metals, Group 1	Glass, Teflon-lined cap	(1) 4 ounce[2,3]	Cool to 4°C	Within 180 days; Mercury within 28 days	SW-846 6020
Total Metals, Group 2	Glass, Teflon-lined cap	(1) 4 ounce[2,3]	Cool to 4°C	Within 180 days; Mercury within 28 days	SW-846 6010B
Dioxins/Furans	Glass, Teflon-lined cap	(1) 4 ounce[2,3]	Cool to 4°C	Extract within 30 days; Analyze within 45 days of extraction	SW-846 8290
Volatile Organic Compounds, Group 1	EnCore Sampler	(3) 5 grams [5,6]	Cool to 4°C	48 hours to preservation; 14 days to analysis	SW-846 8260B
Volatile Organic Compounds, Group 2	EnCore Sampler	(3) 5 grams[5,6]	Cool to 4°C	48 hours to preservation; 14 days to analysis	SW-846 8015B
Semivolatile Organic Compounds (except PAHs)	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	Extract within 14 days; Analyze within 40 days of extraction	SW-846 8270C

TABLE 1-4

SUMMARY OF SAMPLE ANALYSES, CONTAINER TYPES AND VOLUMES, PRESERVATION REQUIREMENTS, AND HOLDING TIMES
BASELINE ENVIRONMENTAL MONITORING PLAN
SOIL SAMPLES
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	Sample Container	Container Volume	Preservation	Maximum Holding Time[1]	Analytical Methodology
PAHs	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	Extract within 14 days; Analyze within 40 days of extraction	SW-846 8310
Organochlorine Pesticides	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	Extract within 14 days; Analyze within 40 days of extraction	SW-846 8081A
Polychlorinated Biphenyls	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	Extract within 14 days; Analyze within 40 days of extraction	SW-846 8082
Miscellaneous Organic Compounds	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	Extract within 14 days; Analyze within 40 days of extraction	See Table 1-1
Chloride	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	28 days to analysis	SW-846 9065
Nitrate-Nitrite (as N)	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	28 days to analysis	SW-846 9065
Orthophosphate (as P)	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	48 hours to analysis	SW-846 9065
Sulfate	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	28 days to analysis	SW-846 9065
Sulfide	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	7 days to analysis	SW-846 9030B

TABLE 1-4

SUMMARY OF SAMPLE ANALYSES, CONTAINER TYPES AND VOLUMES, PRESERVATION REQUIREMENTS, AND HOLDING TIMES
BASELINE ENVIRONMENTAL MONITORING PLAN
SOIL SAMPLES
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	Sample Container	Container Volume	Preservation	Maximum Holding Time[1]	Analytical Methodology
Total and Amenable Cyanide	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	14 days to analysis	SW-846 9010B
Total Organic Carbon	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	28 days to analysis	SW-846 9060
Total Organic Halides (TOX)	Wide-mouth jar, Teflon-lined plastic cap	(1) 8 ounce	Cool to 4°C	28 days to analysis	SW-846 9020

BEMP = Baseline Environmental Monitoring Plan
PAH = Polycyclic aromatic hydrocarbon
TAL = USEPA Target Analyte List
USEPA = U.S. Environmental Protection Agency
Std. Methods = Standard Methods for the Examination of Water and Wastewater, 20th ed., American Public Health Administration, American Water Works Association, and Water Environment Federation, 1998.

1 All holding times are from date of collection.
2 One additional container is required for samples designated for duplicate analysis (minimum 1 in 20 samples).
3 Two additional containers are required for samples designated for matrix spike/matrix spike duplicate analysis (minimum 1 in 20 samples).
4 U.S. EPA, 1986. Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods. SW-846, 3rd ed., including updates.
5 Three additional EnCore™ samplers are required for samples designated for duplicate analysis (minimum 1 in 20 samples).
6 Six additional EnCore samplers are required for samples designated for matrix spike/matrix spike duplicate analysis (minimum 1 in 20 samples).

TABLE 1-5

SUMMARY OF SAMPLE ANALYSES, CONTAINER TYPES AND VOLUMES, PRESERVATION REQUIREMENTS, AND HOLDING TIMES
BASELINE ENVIRONMENTAL MONITORING PLAN
GROUNDWATER SAMPLES
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	Sample Container	Container Volume	Preservation[1]	Maximum Holding Time[2]	Analytical Methodology
Explosives (except exotics/miscellaneous, nitrocellulose, and perchlorate)	Amber glass, Teflon-lined cap	(1) 1000 mL[3,4]	Cool to 4°C, dark	Extract within 7 days; Analyze within 40 days of extraction	SW-846 8330
Exotic and Miscellaneous Explosives	Amber glass, Teflon-lined cap	(2) 1000 mL[3,4]	Cool to 4°C, dark	Extract within 7 days; Analyze within 40 days of extraction	See Table 1-2
Ammonium Perchlorate	Polyethylene bottle, plastic cap, plastic liner	(1) 500 mL[3,4]	Cool to 4°C	28 days to analysis	USEPA 314
Nitrocellulose	Amber glass, Teflon-lined cap	(2) 1000 mL[3,4]	Cool to 4°C, dark	28 days to analysis	USEPA 353.3
Total Metals, Group 1	Polyethylene bottle, plastic cap, plastic liner	(1) 1000 mL[3,4,6,]	Cool to 4°C, HNO_3 to pH < 2	Analyze within 180 days; Mercury within 28 days	SW-846 6020
Total Metals, Group 2	Polyethylene bottle, plastic cap, plastic liner	(1) 1000 mL[3,4,6,]	Cool to 4°C, HNO_3 to pH < 2	Analyze within 180 days; Mercury within 28 days	SW-846 6010B
Dissolved Metals, Group 1	Polyethylene bottle, plastic cap, plastic liner	(1) 1000 mL[3,4,6,]	Cool to 4°C, HNO_3 to pH < 2	Analyze within 180 days; Mercury within 28 days	SW-846 6020
Dissolved Metals, Group 2	Polyethylene bottle, plastic cap, plastic liner	(1) 1000 mL[3,4,6,]	Cool to 4°C, HNO_3 to pH < 2	Analyze within 180 days; Mercury within 28 days	SW-846 6010B
Dioxins/Furans	Amber Glass, Teflon-lined cap	(2) 1000 mL	Cool to 4°C	Extract within 30 days; Analyze within 45 days of extraction	SW-846 8290

TABLE 1-5

SUMMARY OF SAMPLE ANALYSES, CONTAINER TYPES AND VOLUMES, PRESERVATION REQUIREMENTS, AND HOLDING TIMES
BASELINE ENVIRONMENTAL MONITORING PLAN
GROUNDWATER SAMPLES
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	Sample Container	Container Volume	Preservation[1]	Maximum Holding Time[2]	Analytical Methodology
Volatile Organic Compounds, Group 1	Glass, black phenolic plastic screw cap, Teflon-lined septum	(3) 40 mL[7,8]	Cool to 4°C, zero headspace, HCl to pH < 2	14 days to anlaysis	SW-846 8260B
Volatile Organic Compounds, Group 2	Glass, black phenolic plastic screw cap, Teflon-lined septum	(3) 40 mL[7,8]	Cool to 4°C, zero headspace, HCl to pH < 2	14 days to anlaysis	SW-846 8015B
Semivolatile Organic Compounds (except PAHs)	Amber Glass, Teflon-lined cap	(2) 1000 mL	Cool to 4°C, dark	Extract within 7 days; Analyze within 40 days of extraction	SW-846 8270C
PAHs	Amber Glass, Teflon-lined cap	(2) 1000 mL	Cool to 4°C, dark	Extract within 7 days; Analyze within 40 days of extraction	SW-846 8310
Organochlorine Pesticides	Amber Glas, Teflon-lined cap	(2) 1000 mL	Cool to 4°C, dark	Extract within 7 days; Analyze within 40 days of extraction	SW-846 8081A
Polychlorinated Biphenyls	Amber Glas, Teflon-lined cap	(2) 1000 mL	Cool to 4°C, dark	Extract within 7 days; Analyze within 40 days of extraction	SW-846 8082
Miscellaneous Organic Compounds	Amber Glas, Teflon-lined cap	(2) 1000 mL	Cool to 4°C, dark	Extract within 7 days; Analyze within 40 days of extraction	See Table 1-2
Ammonia (as N)	Polyethylene bottle, plastic cap, plastic liner	(1) 500 mL	Cool to 4°C, H_2SO_4 to pH < 2	28 days to analysis	USEPA350.1

TABLE 1-5

SUMMARY OF SAMPLE ANALYSES, CONTAINER TYPES AND VOLUMES, PRESERVATION REQUIREMENTS, AND HOLDING TIMES
BASELINE ENVIRONMENTAL MONITORING PLAN
GROUNDWATER SAMPLES
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	Sample Container	Container Volume	Preservation[1]	Maximum Holding Time[2]	Analytical Methodology
Biochemical Oxygen Demand	Polyethylene bottle, plastic cap, plastic liner	(1) 1000mL	Cool to 4°C, dark	48 hours to analysis	USEPA 405.1
Chemical Oxygen Demand	Glass, Teflon-lined cap	(1) 1000 mL	Cool to 4°C, HCl to pH < 2	28 days to analysis	USEPA 410.4
Chloride	Polyethylene bottle, plastic cap, plastic liner	(1) 1000 mL	None	28 days to analysis	SW-846 9065
Nitrate-Nitrite (as N)	Polyethylene bottle, plastic cap, plastic liner	(1) 1000 mL	Cool to 4°C, H_2SO_4 to pH < 2	28 days to analysis	SW-846 9065
Phosphate (as P)	Polyethylene bottle, plastic cap, plastic liner	(1) 1000 mL	Cool to 4°C	48 hrs. to analysis	SW-846 9065
Sulfate	Polyethylene bottle, plastic cap, plastic liner	(1) 1000 mL	Cool to 4°C	28 days to analysis	SW-846 9065
Sulfide	Polyethylene bottle, plastic cap, plastic liner	(1) 1000 mL	Cool to 4°C, NaOH to pH > 12, 4 drops 2N Zn acetate,	7 days to analysis	SW-846 9030B
Total and Ammenable Cyanide	Glass, Teflon-lined cap	(1) 1000 mL	Cool to 4°C, NaOH to pH > 12, plus Ascorbic Acid (or 0.1 N NaAsO2),	14 days to analysis	SW-846 9010B
Total Organic Carbon	Amber glass, Teflon-lined cap	(1) 125 mL	Cool to 4°C, H_2SO_4 to pH < 2	28 days to analysis	SW-846 9060
Total Organic Halides (TOX)	Amber Glass, Teflon-lined cap	(1) 125 mL	Cool to 4°C, H_2SO_4 to pH < 2	28 days to analysis	SW-846 9020B

TABLE 1-5

SUMMARY OF SAMPLE ANALYSES, CONTAINER TYPES AND VOLUMES, PRESERVATION REQUIREMENTS, AND HOLDING TIMES
BASELINE ENVIRONMENTAL MONITORING PLAN
GROUNDWATER SAMPLES
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

BEMP = Baseline Environmental Monitoring Plan
PAH = Polycyclic aromatic hydrocarbon
TAL = USEPA Target Analyte List
USEPA = U.S. Environmental Protection Agency
Std. Methods = Standard Methods for the Examination of Water and Wastewater, 20th ed., American Public Health Administration, American Water Works Association, and Water Environment Federation, 1998.

1 HCl = Hydrochloric acid; HNO_3 = Nitric Acid.
2 All holding times are from date of collection.
3 One additional container is required for samples designated for duplicate analysis (minimum 1 in 20 samples).
4 Two additional containers are required for samples designated for matrix spike/matrix spike duplicate analysis (minimum 1 in 20 samples).
5 U.S. EPA, 1986. Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods. SW-846, 3rd ed, including updates.
6 One container of unfiltered groundwater will provide sufficient sample volume for the analysis of Appendix IX metals (total) and total strontium.
7 Three additional vials are required for samples designated for duplicate analysis (minimum 1 in 20 samples).
8 Six additional vials are required for samples designated for matrix spike/matrix spike duplicate analysis (minimum 1 in 20 samples).

TABLE 1-6

SUMMARY OF SAMPLE ANALYSIS AND QA/QC SAMPLES FOR SOIL
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	No. of Samples	Field Duplicates(1)	Trip Blanks(2)	Source Blanks(3)	MS/MSD(4)	Total(5)
Explosives (includes ammonium perchlorate)	125	13	NA	1	13/13	151+
Nitrocellulose	125	13	NA	1	13/13	151+
Exotic and Miscellaneous Explosives	125	13	NA	1	13/13	151+
Total Metals, Group 1	125	13	NA	1	13	151+
Total Metals, Group 2	125	13	NA	1	13	151+
Dioxins/Furans	125	13	NA	1	13/13	151+
Volatile Organic Compounds , Group 1	125	13	TBD	1	13/13	151+
Volatile Organic Compounds , Group 2	125	13	TBD	1	13/13	151+
Semivolatile Organic Compounds(except PAHs)	125	13	NA	1	13/13	151+
PAHs	125	13	NA	1	13/13	151+
Organochlorine Pesticides	125	13	NA	1	13/13	151+
Polychlorinated Biphenyls	125	13	NA	1	13/13	151+
Miscellaneous Organic Compounds	125	13	NA	1	13/13	151+
General Chemistry Parameters	125	13	NA	1	13/13	151+

1 Field duplicates will be collected at a minimum frequency of 1 per 20 samples.
2 Trip blanks will be submitted for analysis at a frequency of two per cooler containing samples for volatile organic analysis. One will be used for SW-846 8260B analyses; the other will be used for SW-846 8015 analyses. Because the number of sample coolers shipped varies, totals are to be determined (TBD).
3 Source Blanks will be collected for each source of decontamination water used for decontamination. Ambient condition blanks may also be collected at the discretion of the Field Operations Leader to estimate the effect of site conditions on ambient sample contamination. The number of ambient blanks collected will vary with site conditions.
4 Matrix spike (MS) and matrix spike duplicate (MSD) samples will be collected at a frequency of 1 per 20 samples.
5 Plus sign (+) indicates potential for the total number of samples to increase, due to TBD variables.

NA Not Applicable
PAH Polycyclic aromatic hydrocarbon

TABLE 1-7

SUMMARY OF SAMPLE ANALYSIS AND QA/QC SAMPLES FOR GROUNDWATER
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	No. of Samples	Field Duplicates(1)	Trip Blanks(2)	Source Blanks(3)	MS/MSD(4)	Total(5)
Explosives (includes ammonium perchlorate)	53	6	NA	1	6/6	65+
Nitrocellulose	53	6	NA	1	6/6	65+
Exotic and Miscellaneous Explosives	53	6	NA	1	6/6	65+
Total Metals, Group 1	53	6	NA	1	6	65+
Total Metals, Group 2	53	6	NA	1	6	65+
Dissolved Metals, Group 1	53	6	NA	1	6	65+
Dissolved Metals, Group 2	53	6	NA	1	6	65+
Dioxins/Furans	53	6	NA	1	6/6	65+
Volatile Organic Compounds, Group 1	53	6	TBD	1	6/6	65+
Volatile Organic Compounds, Group 2	53	6	TBD	1	6/6	65+
Semivolatile Organic Compounds(except PAHs)	53	6	NA	1	6/6	65+
PAHs	53	6	NA	1	6/6	65+
Organochlorine Pesticides	53	6	NA	1	6/6	65+
Polychlorinated Biphenyls	53	6	NA	1	6/6	65+
Miscellaneous Organic Compounds	53	6	NA	1	6/6	65+
General Chemistry Parameters	53	6	NA	1	6/6	65+

1 Field duplicates will be collected at a minimum frequency of 1 per 20 samples.
2 Trip blanks will be submitted for analysis at a frequency of two per cooler containing samples for volatile organic analysis. One will be used for SW-846 8260B analyses; the other will be used for SW-846 8015 analyses. Because the number of sample coolers shipped varies, totals are to be determined (TBD).
3 Source Blanks will be collected for each source of decontamination water used for decontamination. Ambient condition blanks may also be collected at the discretion of the Field Operations Leader to estimate the effect of site conditions on ambient sample contamination. The number of ambient blanks collected will vary with site conditions.
4 Matrix spike (MS) and matrix spike duplicate (MSD) samples will be collected at a frequency of 1 per 20 samples.
5 Plus sign (+) indicates potential for the total number of samples to increase, due to TBD variables.

NA Not Applicable
PAH Polycyclic aromatic hydrocarbon

TABLE 1-8

MINIMUM LABORATORY REQUIREMENTS FOR SAMPLE VOLUMES
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	Analytical Methodology	Laboratory	Required Sample Volume	Matrix
Explosives (excludes exotics/miscellaneous, nitrocellulose and perchlorate)	SW-846 8330	STL Knoxville	30 grams	Soil
Exotic and Miscellaneous Explosives	See Table 1-1	NSWC Crane	200 grams	Soil
Perchlorate	USEPA 314	STL Knoxville	10-20 grams	Soil
Nitrocellulose	USEPA 353.3	AccuTest NE	200 grams	Soil
Total Metals, Group 1	SW-846 6020	STL North Canton	10 grams(1)	Soil
Total Metals, Group 2	SW-846 6010B	Lionville	10 grams(1)	Soil
Dioxins/Furans	SW-846 8290	STL Knoxville	30 grams	Soil
Volatile Organic Compounds, Group 1	SW-846 8260B	AccuTest NE	3 x 5 gram EnCore	Soil
Volatile Organic Compounds, Group 2	SW-846 8015B	AccuTest NE	3 x 5 gram EnCore	Soil
Semivolatile Organic Compounds (except PAHs)	SW-846 8270C	Lionville	8 ounces	Soil
PAHs	SW-846 8310	Lionville	8 ounces	Soil
Organochlorine Pesticides	SW-846 8081A	AccuTest NE	8 ounces	Soil
Polychlorinated Biphenyls	SW-846 8082	AccuTest NE	8 ounces	Soil
Miscellaneous Organic Compounds	See Tables 1-1 and 1-2	Lionville	8 ounces	Soil
General Chemistry Parameters	See Tables 1-1 and 1-2	Lionville	8 ounces	Soil
Explosives (excludes exotics/miscellaneous, nitrocellulose and perchlorate)	SW-846 8330	STL Knoxville	1000 mL(2)	Groundwater
Exotic and Miscellaneous Explosives	See Table 1-2	NSWC Crane	1000 mL(2)	Groundwater
Perchlorate	USEPA 314	STL Knoxville	500 mL	Groundwater
Nitrocellulose	USEPA 353.3	AccuTest NE	1000 mL	Groundwater

TABLE 1-8

MINIMUM LABORATORY REQUIREMENTS FOR SAMPLE VOLUMES
BASELINE ENVIRONMENTAL MONITORING PLAN
OPEN BURNING/OPEN DETONATION UNIT
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter	Analytical Methodology	Laboratory	Required Sample Volume	Matrix
Total Metals, Group 1	SW-846 6020	STL North Canton	1000 mL	Groundwater
Total Metals, Group 2	SW-846 6010B	Lionville	1000 mL	Groundwater
Dissolved Metals, Group 1	SW-846 6020	STL North Canton	1000 mL	Groundwater
Dissolved Metals, Group 2	SW-846 6010B	Lionville	1000 mL	Groundwater
Dioxins/Furans	SW-846 8290	STL Knoxville	1000 mL	Groundwater
Volatile Organic Compounds, Group 1	SW-846 8260B	AccuTest NE	120 mL(4)	Groundwater
Volatile Organic Compounds, Group 2	SW-846 8015B	AccuTest NE	120 mL(4)	Groundwater
Semivolatile Organic Compounds (except PAHs)	SW-846 8270C	Lionville	1000 mL	Groundwater
PAHs	SW-846 8310	Lionville	1000 mL	Groundwater
Organochlorine Pesticides	SW-846 8081A	AccuTest NE	1000 mL	Groundwater
Polychlorinated Biphenyls	SW-846 8082	AccuTest NE	1000 mL	Groundwater
Miscellaneous Organic Compounds	See Tables 1-1 and 1-2	Lionville		
General Chemistry Parameters	See Tables 1-1 and 1-2	Lionville	1000 mL	Groundwater

1 May be combined with sample volume for explosives.
2 Two liters if possible (for breakage).
4 Three 40 mL vials.

PAH = Polycyclic aromatic hydrocarbon
TAL = USEPA Target Analyte List
USEPA = U.S. Environmental Protection Agency

TABLE 1-9

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 METHOD 8330 EXPLOSIVES AND PERCHLORATE ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
1,3,5-Trinitrobenzene	76-119	26	70-124	33
1,3-Dinitrobenzene	75-118	26	72-130	42
2,4,6-Trinitrotoluene	74-123	32	71-123	34
2,4-Dinitrotoluene	77-119	24	70-133	36
2,6-Dinitrotoluene	73-125	27	66-136	32
2-Amino-4,6-dinitrotoluene	77-119	26	64-134	34
2-Nitrotoluene	78-117	24	54-136	38
3,4-Dinitrobenzene (surrogate)	74-121	NA	53-133	NA
3-Nitrotoluene	78-118	23	58-133	36
4-Amino-2,6-dinitrotoluene	73-128	27	66-124	43
4-Nitrotoluene	78-119	29	59-131	33
Ammonium Perchlorate	80-120	20	80-120	20
HMX	68-123	27	61-132	40
Nitrobenzene	78-120	25	59-136	36
RDX	66-118	25	30-191	35
Tetryl	42-125	39	55-125	37

1 In-house QC limits provided by Severn Trent Laboratory, Knoxville meet or exceed these criteria.

NA = Not applicable
%R = Percent recovery
RPD = Relative percent difference
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986

TABLE 1-10

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
SW-846 METHOD 8330 EXPLOSIVES AND PERCHLORATE ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix Accuracy (%R)	Aqueous Matrix Accuracy (%R)
1,3,5-Trinitrobenzene	76-116	70-124
1,3-Dinitrobenzene	75-117	72-124
2,4,6-Trinitrotoluene	76-118	71-123
2,4-Dinitrotoluene	78-118	70-125
2,6-Dinitrotoluene	74-122	66-129
2-Amino-4,6-dinitrotoluene	78-119	65-124
2-Nitrotoluene	78-117	54-121
3-Nitrotoluene	78-117	58-124
4-Amino-2,6-dinitrotoluene	80-122	66-122
4-Nitrotoluene	78-118	59-123
Ammonium Perchlorate	85-115	85-115
HMX	76-121	68-122
Nitrobenzene	78-115	60-122
RDX	79-118	71-127
Tetryl	42-125	68-123

1 In-house QC limits provided by Severn Trent Laboratory, Knoxville meet or exceed these criteria.

%R = Percent recovery
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-11

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
EXOTIC AND MISCELLANEOUS EXPLOSIVES AND NITROCELLULOSE ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical[2]	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
1,3-Diamino-2,4,6-trinitrobenzene (DATB)	NA[4]	NA[4]	62 – 109	14%
Ammonium Picrate	NA[4]	NA[4]	52 – 134	22%
Diethyleneglycol Dinitrate (DEGDN)	NA[4]	NA[4]	72 – 150	18%
Diphenylamine (DPA)	NA[4]	NA[4]	84 – 114	10%
Nitrocellulose[3]	TBD	TBD	TBD	TBD
Nitroglycerin (SW-846 8332)	NA[4]	NA[4]	85 – 126	10%
Nitroguanidine	NA[4]	NA[4]	88 – 111	10%
Pentaerythritol tetranitrate (PETN)	NA[4]	NA[4]	85 – 116	10%
Triethylene Glycol Dinitrate (TEGDN)	NA[4]	NA[4]	72 – 150	18%
White Phosphorous (SW-846 7580)	NA[4]	NA[4]	NA[4]	NA[4]

1 In-house QC limits provided by NSWC Crane laboratory meet or exceed these criteria for all analytes except nitrocellulose.
2 Analysis done by SW-846 Method 8330, Modified, unless otherwise noted.
3 In-house QC limits provided by AccuTest Laboratory of New England meet or exceed these criteria. AccuTest Laboratory of New England is scheduled to perform nitrocellulose analyses and will determine the QC limits prior to analysis of project samples.
4 QC limits will be developed by the NSWC Crane laboratory prior to sample analyses.

NA = Not applicable
%R = Percent recovery
RPD = Relative percent difference
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.
TBD = To be determined.

TABLE 1-12

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
EXOTIC AND MISCELLANEOUS EXPLOSIVES AND NITROCELLULOSE ANALYSES
BASELINE ENVIRONMENTAL PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical[2]	Solid Matrix Accuracy (%R)	Aqueous Matrix Accuracy (%R)
1,3-Diamino-2,4,6-trinitrobenzene (DATB)	(4)	62 – 109
Ammonium Picrate	(4)	52 – 134
Diethyleneglycol Dinitrate (DEGDN)	(4)	72 – 150
Diphenylamine (DPA)	(4)	84 – 114
Nitrocellulose[3]	TBD	TBD
Nitroglycerin (SW-846 8332)	(4)	85 – 126
Nitroguanidine	(4)	88 – 111
Pentaerythritol tetranitrate (PETN)	(4)	85 – 116
Triethylene Glycol Dinitrate (TEGDN)	(4)	72 – 150
White Phosphorous	(4)	NA[4]

1 In-house QC limits provided by NSWC Crane laboratory meet or exceed these criteria for all analytes except nitrocellulose.
2 Analysis done by SW-846 Method 8330, Modified, unless otherwise noted.
3 In-house QC limits provided by AccuTest Laboratory of New England meet or exceed these criteria. AccuTest Laboratory of New England is scheduled to perform nitrocellulose analyses and will determine the QC limits prior to analysis of project samples.
4 QC limits will be developed by the NSWC Crane laboratory prior sample analyses.

NA = Not Applicable
%R = Percent recovery
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.
TBD = To be determined.

TABLE 1-13

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE AND LABORATORY DUPLICATE SAMPLES
SW-846 METHOD 6020 (EXCEPT WHERE NOTED) METALS ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy[2] (%R)	Precision[3] (RPD)	Accuracy[2] (%R)	Precision[3] (RPD)
Aluminum[4]	75 - 125	20	75 - 125	20
Antimony	70-130	20	70-130	20
Arsenic	70-130	20	70-130	20
Barium	70-130	20	70-130	20
Beryllium	70-130	20	70-130	20
Boron[4]	75 - 125	20	75 - 125	20
Cadmium	70-130	20	70-130	20
Calcium[4]	75 - 125	20	75 - 125	20
Chromium (Hexavalent) SW-846 (3060A, soil only/7196A, soil and water)	10-157	99	34-136	30
Chromium (total)	70-130	20	70-130	20
Cobalt	70-130	20	70-130	20
Copper	70-130	20	70-130	20
Iron[4]	75 - 125	20	75 - 125	20
Lead	70-130	20	70-130	20
Magnesium[4]	75 - 125	20	75 - 125	20
Manganese	70-130	20	70-130	20
Mercury (SW-846 7471A, soil, or 7470A, water)	10-209	20	53-135	20
Nickel	70-130	20	70-130	20
Potassium[4]	75 - 125	20	75 - 125	20
Selenium	70-130	20	70-130	20
Silver	70-130	20	70-130	20
Sodium[4]	75 - 125	20	75 - 125	20
Strontium[4]	75 - 125	20	75 - 125	20
Thallium	70-130	20	70-130	20
Tin[4]	75 - 125	20	75 - 125	20
Vanadium[4]	75 - 125	20	75 - 125	20
Zinc	70-130	20	70-130	20

TABLE 1-13

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE AND LABORATORY DUPLICATE SAMPLES
SW-846 METHOD 6020 (EXCEPT WHERE NOTED) METALS ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

1 Except as noted, in-house QC limits provided by Severn Trent Laboratory, North Canton meet or exceed these limits.
2 These acceptance limits apply to spikes that augment the native sample analyte concentration by at least 25 percent.
3 These acceptance limits apply to original and duplicate sample concentrations >5x RL. If one or both of the results is <5x RL, the acceptance criterion is ± RL. If one of the results is a non-detect, the reported %RPD will be 200%.
4 In-house QC limits provided by Lionville Laboratory meet or exceed the acceptance limits provided in this table.

%R = Percent recovery
RPD = Relative percent difference
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-14

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
SW-846 METHOD 6020 (EXCEPT WHERE NOTED) METALS ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix Accuracy (%R)[2]	Aqueous Matrix Accuracy (%R)[2]
Aluminum[3]	80 - 120	80 - 120
Antimony	6-228	80-120
Arsenic	79-121	80-120
Barium	80-120	80-120
Beryllium	79-121	80-120
Boron[3]	80 - 120	80 - 120
Cadmium	81-119	80-120
Calcium[3]	80 - 120	80 - 120
Chromium (Hexavalent) SW-846 (3060A/7196A)	56-130	80-116
Chromium (total)	77-123	80-120
Cobalt	79-121	80-120
Copper	79-120	80-120
Iron[3]	80 - 120	80 - 120
Lead	78-123	80-120
Magnesium[3]	80 - 120	80 - 120
Manganese	76-124	80-120
Mercury (SW-846 Method 7470A/7471A)	66-134	70-118
Nickel	78-121	80-120
Potassium[3]	80 - 120	80 - 120
Selenium	72-128	80-120
Silver	55-145	80-120
Sodium[3]	80 - 120	80 - 120
Strontium[3]	80 - 120	80 - 120
Thallium	74-126	80-120
Tin[3]	80 - 120	80 - 120
Vanadium[3]	80 - 120	80 - 120
Zinc	77-123	80-120

TABLE 1-14

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
SW-846 METHOD 6020 (EXCEPT WHERE NOTED) METALS ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

1 Except as noted, in-house QC limits provided by Severn Trent Laboratory, North Canton meet or exceed these limits.
2 The laboratory may use a purchased standard reference material (SRM) in place of a LCS. If a SRM is used, the acceptance limits provided by the supplier of the SRM may be used unless the SRM limits are wider than the acceptance limits provided in this table. If the SRM limits are wider, the laboratory must use the acceptance limits provided in this table.
3 In-house QC limits provided by Lionville Laboratory meet or exceed the acceptance limits provided in this table.

%R = Percent recovery
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-15

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 METHOD 8290 DIOXIN AND FURAN ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	52-137	37	66-123	28
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	33-154	41	75-115	20
1,2,3,4,6,7,8-Heptachlorodibenzofuran	51-133	28	65-130	20
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	40-154	34	71-117	20
1,2,3,4,7,8,9-Heptachlorodibenzofuran	60-125	37	57-131	39
1,2,3,4,7,8-Hexachlorodibenzofuran	74-114	20	65-125	28
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	62-130	24	65-120	20
1,2,3,6,7,8-Hexachlorodibenzofuran	66-114	28	68-124	20
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	75-114	22	71-118	20
1,2,3,7,8,9-Hexachlorodibenzofuran	60-130	36	65-131	36
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	59-128	42	71-139	24
1,2,3,7,8-Pentachlorodibenzofuran	67-123	20	73-124	20
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	75-113	20	71-124	20
2,3,4,6,7,8-Hexachlorodibenzofuran	65-118	28	62-135	32
2,3,4,7,8-Pentachlorodibenzofuran	62-126	32	58-135	20
2,3,7,8-Tetrachlorodibenzofuran	65-130	20	72-123	20
2,3,7,8-Tetrachlorodibenzo-p-dioxin	70-116	30	63-119	24

1 In-house QC limits provided by Severn Trent Laboratory, Knoxville meet or exceed these limits.

NA = Not applicable
%R = Percent recovery
RPD = Relative percent difference
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-16

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
SW-846 METHOD 8290 DIOXIN AND FURAN ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix Accuracy (%R)	Aqueous Matrix Accuracy (%R)
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	69-128	60-135
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	75-112	75-112
1,2,3,4,6,7,8-Heptachlorodibenzofuran	72-111	73-110
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	74-109	69-110
1,2,3,4,7,8,9-Heptachlorodibenzofuran	60-125	62-117
1,2,3,4,7,8-Hexachlorodibenzofuran	78-114	75-113
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	68-120	66-115
1,2,3,6,7,8-Hexachlorodibenzofuran	78-114	74-117
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	76-114	71-115
1,2,3,7,8,9-Hexachlorodibenzofuran	60-130	75-114
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	62-123	71-115
1,2,3,7,8-Pentachlorodibenzofuran	75-117	69-119
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	76-113	68-117
2,3,4,6,7,8-Hexachlorodibenzofuran	74-112	80-114
2,3,4,7,8-Pentachlorodibenzofuran	63-126	63-127
2,3,7,8-Tetrachlorodibenzofuran	70-115	71-117
2,3,7,8-Tetrachlorodibenzo-p-dioxin	70-115	68-117

1 In-house QC limits provided by Severn Trent Laboratory, Knoxville meet or exceed these criteria.

%R = Percent recovery
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-17

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 Methods 8015B AND 8260B VOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
SW-846 METHOD 8260B VOLATILE ORGANIC COMPOUNDS				
1,1,1,2-Tetrachloroethane	48-143	34	76-130	30
1,1,1-Trichloroethane	52-142	31	74-139	30
1,1,2,2-Tetrachloroethane	41-153	40	68-136	30
1,1,2-Trichloroethane	51-146	37	74-127	30
1,1-Dichloroethane	54-149	31	70-147	30
1,1-Dichloroethene	53-148	30	60-153	30
1,2,3-Trichloropropane	41-149	33	59-134	30
1,2,4-Trichlorobenzene	10-167	57	53-126	30
1,2-Dibromo-3-chloropropane	10-173	44	49-132	30
1,2-Dibromoethane	48-144	30	74-127	30
1,2-Dichlorobenzene	20-157	50	78-123	30
1,2-Dichloroethane	54-144	30	72-135	30
1,2-Dichloropropane	57-137	30	75-126	30
1,3-Dichlorobenzene	21-156	50	78-123	30
1,3-Dichloropropene (cis)	47-141	32	67-126	30
1,3-Dichloropropene (trans)	46-148	32	78-127	30
1,4-Dichlorobenzene	19-156	53	79-124	30
2-Butanone	23-170	49	60-148	30
2-Chloro-1,3-butadiene (chloroprene)	55-143	30	71-130	30
2-Hexanone	8-176	39	53-136	30
3-Chloro-1-propene	TBD	TBD	TBD	TBD
4-Methyl-2-pentanone (MIBK)	34-159	38	54-138	30
Acetone	10-175	50	46-167	30
Acrolein	10-175	53	10-175	38
Acrylonitrile	22-182	33	56-152	30
Benzene	50-146	30	73-128	30
Bromodichloromethane	52-142	31	76-128	30
Bromoform	43-138	35	54-134	30
Bromomethane	26-156	31	43-160	30
Carbon disulfide	32-155	36	40-148	30
Carbon tetrachloride	39-146	39	71-139	30

TABLE 1-17

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 Methods 8015B AND 8260B VOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
Chlorobenzene	43-144	36	80-127	30
Chlorodibromomethane	51-139	32	69-132	30
Chloroethane	41-159	31	48-163	30
Chloroform	54-143	30	76-139	30
Chloromethane	26-173	37	9-194	30
Cis-1,2-dichloroethene	53-144	30	72-130	30
Cis-1,3-Dichloropropene	47-141	32	67-126	30
Dibromomethane	58-141	30	79-130	30
Dichlorodifluoromethane	10-175	43	10-175	30
Ethyl methacrylate	59-138	30	62-128	30
Ethylbenzene	36-150	42	75-132	30
Methacrylonitrile	45-146	30	57-133	30
Methyl iodide	TBD	TBD	TBD	TBD
Methyl methacrylate	40-152	39	56-127	30
Methylene Chloride	43-164	30	63-151	30
Pentachloroethane	10-175	30	47-160	30
Styrene	21-158	43	68-127	30
Tetrachloroethene	33-155	43	71-130	30
Toluene	47-143	35	73-130	30
Total Xylenes	33-157	42	75-137	30
Trans-1,2-Dichloroethene	50-151	31	64-149	30
Trans-1,3-Dichloropropene	46-148	32	66-133	30
Trans-1,4-Dichloro-2-butene	33-150	30	39-126	30
Trichloroethene	45-150	34	75-128	30
Trichlorofluoromethane	24-182	37	43-186	30
Vinyl acetate	10-175	65	47-166	30
Vinyl Chloride	10-175	31	23-190	30
SW-846 METHOD 8015 VOLATILE ORGANIC COMPOUNDS				
1,4-Dioxane	1-176	30	49-133	38
Acetonitrile	58-143	30	66-121	30
Isobutyl alcohol	1-156	30	55-140	30
Propionitrile	40-145	50	53-144	31

TABLE 1-17

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 Methods 8015B AND 8260B VOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

1 In-house QC limits provided by AccuTest Laboratory of New England meet or exceed these limits.

NA = Not applicable
%R = Percent recovery
RPD = Relative percent difference
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.
TBD = To be determined prior to sample analysis.

TABLE 1-18

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
SW-846 METHODS 8015B AND 8260B VOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix Accuracy (%R)	Aqueous Matrix Accuracy (%R)
SW-846 METHOD 8260B VOLATILE ORGANIC COMPOUNDS		
1,1,1-Trichlorethane	66-137	73-140
1,1,2,2-Tetrachloroethane	67-135	69-134
1,1,2-Trichlorethane	73-134	75-127
1,1-Dichloroethane	69-138	72-144
1,1-Dichloroethene	65-140	64-149
1,2-Dichloroethane	67-140	73-132
1,2-Dichloropropane	73-130	76-127
2-Butanone	56-142	62-142
2-Hexanone	57-144	58-134
4-Methyl-2-pentanone	63-142	59-135
Acetone	42-169	54-159
Benzene	76-130	75-129
Bromodichloromethane	73-136	79-130
Bromoform	70-139	70-137
Bromomethane	58-151	45-161
Bromobenzene	72-132	78-125
Carbon Tetrachloride	61-141	70-144
Chlorobenzene	77-127	81-128
Chloroethane	63-155	53-161
Chloroform	72-130	76-137
Chloromethane	41-174	13-194
Cis-1,2-Dichloroethene	70-134	73-131
Cis-1,3-Dichloropropene	73-134	71-133
Dibromochloromethane	74-137	78-135
Ethylbenzene	75-129	80-130
Methylene Chloride	59-157	65-149
Styrene	73-132	76-128
Tetrachloroethene	63-141	71-137
Toluene	75-128	78-127
Trans-1,2-Dichloroethene	65-145	68-146
Trans-1,3-Dichloropropene	74-141	71-138
Trichloroethene	72-129	74-129

TABLE 1-18

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
SW-846 METHODS 8015B AND 8260B VOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix Accuracy (%R)	Aqueous Matrix Accuracy (%R)
Vinyl Chloride	48-169	31-185
Dibromofluoromethane	41-154	80-129
Toluene-D8	59-133	80-110
4-Bromofluorobenzene	42-154	80-119
SW-846 METHOD 8015B VOLATILE ORGANIC COMPOUNDS		
1,4-Dioxane	1-185	51-135
Acetonitrile	71-140	74-131
Isobutyl alcohol	1-184	57-138
Propionitrile	56-152	59-138

1 In-house QC limits provided by AccuTest Laboratory of New England meet or exceed these limits.

NA = Not applicable
%R = Percent recovery
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-19

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 METHODS 8270C AND 8310 SEMIVOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
SW-846 METHOD 8270C SEMIVOLATILE ORGANIC COMPOUNDS				
1,2,4,5-Tetrachlorobenzene	50 – 150[2]	30[2]	50 - 150[2]	30[2]
1,2,4-Trichlorobenzene	38 - 107	23	43 - 94	28
1,4-Naphthoquinone	50 - 150[2]	30[2]	50 - 150[2]	30[2]
1-Naphthylamine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
2,3,4,6-Tetrachlorophenol	50 - 150[2]	30[2]	50 - 150[2]	30[2]
2,4,5-Trichlorophenol	50 - 150	30	28 - 145	30
2,4,6-Trichlorophenol	50 - 150	30	56 - 132	30
2,4-Dichlorophenol	50 - 150	30	56 - 122	30
2,4-Dimethylphenol	50 - 150	30	33 - 140	30
2,4-Dinitrophenol	50 - 150	30	16 - 187	30
2,6-Dichlorophenol	50 - 150[2]	30[2]	50 - 150[2]	30[2]
2-Acetylaminofluorene	50 - 150[2]	30[2]	50 - 150[2]	30[2]
2-Chloronaphthalene	50 - 150	30	54 - 113	30
2-Chlorophenol	25 – 102	50	54 - 117	40
2-Methylnaphthalene	50 - 150	30	1 - 138	30
2-methylphenol	50 - 150	30	35 - 120	30
2-Naphthylamine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
2-Nitroaniline	50 - 150	30	18 - 142	30
2-Nitrophenol	50 - 150	30	52 - 124	30
2-Picoline	50 - 150[2]	30[2]	50 - 150[2]	30[2]
3,3'-Dichlorobenzidine	50 - 150	30	1 - 109	30
3,3'-Dimethylbenzidine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
3-Methylcholanthrene	50 - 150[2]	30[2]	50 - 150[2]	30[2]
3-methylphenol (reported as 4-methlyphenol)	---	---	---	---
3-Nitroaniline	50 - 150	30	1 - 186	30
4,6-Dinitro-o-cresol	50 - 150	30	52 - 171	30
4-Aminobiphenyl	50 - 150[2]	30[2]	50 - 150[2]	30[2]
4-Bromophenyl phenyl ether	50 - 150	30	53 - 110	30
4-chloro-3-methylphenol	26 - 103	33	58 - 127	42
4-Chloroaniline	50 - 150	30	10 - 138	30
4-Chlorophenyl phenyl ether	50 - 150	30	57 - 121	30

TABLE 1-19

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 METHODS 8270C AND 8310 SEMIVOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
4-Methylphenol	50 - 150	30	48 - 126	30
4-Nitroaniline	50 - 150	30	1 - 146	30
4-Nitrophenol	11 - 114	50	10 - 80	50
4-Nitroquinoline-1-oxide	50 - 150[2]	30[2]	50 - 150[2]	30[2]
5-Nitro-o-toluidine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
7,12-Dimethylbenz[a]anthracene	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Acetophenone	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Alpha, alpha-Dimethylphenethylamine	*[1]50 - 150	30[2]	50 - 150[2]	30[2]
Aniline	50 - 150	30	50 - 150	30
Aramite	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Benzyl alcohol	50 - 150	30	50 - 150	30
Bis(2-chloro-1-methylethyl) ether	50 - 150	30	39 - 125	30
Bis(2-chloroethoxy)methane	50 - 150	30	1 - 150	30
Bis(2-chloroethyl)ether	50 - 150	30	46 0 112	30
Bis(2-ethylhexyl) phthalate	50 - 150	30	1 - 150	30
Butyl benzyl phthalate	50 - 150	30	41 - 149	30
Chlorobenzilate	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Diallate	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Dibenzofuran	50 - 150	30	27 - 144	30
Diethyl phthalate	50 - 150	30	64 - 120	30
Dimethoate	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Dimethyl phthalate	50 - 150	30	63 - 123	30
Di-n-butyl phthalate	50 - 150	30	59 - 129	30
Di-n-octyl phthalate	50 - 150	30	19 - 185	30
Ethyl methacrylate	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Ethyl methanesulfonate	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Famphur	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Hexachlorobenzene	50 - 150	30	65 - 127	30
Hexachlorobutadiene	50 - 150	30	41 - 98	30
Hexachlorocyclopentadiene	50 - 150	30	1 - 87	30
Hexachloroethane	50 - 150	30	33 - 87	30
Hexachlorophene	50 - 150[2]	30[2]	*[1]50 - 150	30[2]

TABLE 1-19

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 METHODS 8270C AND 8310 SEMIVOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
Hexachloropropene	50 - 150[2]	30[2]	[1]50 - 150	30[2]
Isodrin	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Isophorone	50 - 150	30	64 - 114	30
Isosafrole	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Kepone	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Methapyrilene	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Methyl methanesulfonate	50 - 150[2]	30[2]	50 - 150[2]	30[2]
N-Nitrosodiethylamine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
N-Nitrosodimethylamine	50 - 150	30	89 - 111	30
N-Nitrosodi-n-butylamine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
N-Nitrosodiphenylamine	50 - 150	30	1 - 142	30
N-Nitrosodipropylamine	41 - 126	38	51 - 114	38
N-Nitrosomethylethylamine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
N-Nitrosomorpholine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
N-Nitrosopiperidine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
N-Nitrosopyrrolidine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
O,O,O-Triethyl phosphorothioate	50 - 150[2]	30[2]	50 - 150[2]	30[2]
o-Toluidine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
p-(Dimethylamino)azobenzene	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Pentachlorobenzene	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Pentachloroethane	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Pentachloronitrobenzene	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Pentachlorophenol	17 - 109	47	52 - 155	50
Phenacetin	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Phenol	26 - 90	35	51 - 119	26
Phorate	50 - 150[2]	30[2]	50 - 150[2]	30[2]
p-Phenylenediamine	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Pronamide	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Pyridine	50 - 150	30	50 - 150	30
Safrole	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Sulfotepp	50 - 150[2]	30[2]	50 - 150[2]	30[2]
Thionazin	50 - 150[2]	30[2]	50 - 150[2]	30[2]

TABLE 1-19

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 METHODS 8270C AND 8310 SEMIVOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
Nitrobenzene-d8 (Surrogate)	23 - 120	NA	35 - 114	NA
2-Fluorobiphenyl (Surrogate)	30 - 115	NA	43 - 116	NA
p-Terphenyl-d14 (Surrogate)	18 - 137	NA	33 - 141	NA
Phenol-d5 (Surrogate)	24 – 113	NA	10 – 94	NA
2-fluorophenol (Surrogate)	25 – 121	NA	21 – 100	NA
2,4,6-Tribromophenol (Surrogate)	19 - 122	NA	10 - 123	NA
SW-846 METHOD 8310 SEMIVOLATILE ORGANIC COMPOUNDS (PAHs)				
Acenaphthene	40 - 132	20	17 – 139	20
Acenaphthylene	25 – 132	20	15 – 140	20
Anthracene	5 – 1752	20	19 – 171	20
Benzo[a]anthracene	60 – 156	20	32 – 157	20
Benzo[a]pyrene	51 – 137	20	29 – 145	20
Benzo[b]fluoranthene	65 – 151	20	33 – 164	20
Benzo[ghi]perylene	59 - 155	20	32 – 157	20
Benzo[k]fluoranthene	47 – 153	20	28 – 161	20
Chrysene	57 – 147	20	31 – 159	20
Dibenz[a,h]anthracene	58 – 145	20	27 – 153	20
Fluoranthene	66 – 143	20	34 – 159	20
Fluorene	53 – 130	20	28 – 145	20
Indeno(1,2,3-cd)pyrene	63 – 146	20	31 – 156	20
Naphthalene	18 – 136	20	0 – 127	20
Phenanthrene	58 – 136	20	30 – 152	20
Pyrene	67 - 137	20	33 - 152	20
Triphenylene (Surrogate)	61 – 132	NA	68 - 129	NA

1 In-house QC limits provided by Lionville Laboratory meet or exceed these limits.
2 Advisory limits.

NA = Not applicable
%R = Percent recovery
RPD = Relative percent difference
PAH = Polycyclic aromatic hydrocarbon
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-20

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
8270C AND 8310 SEMIVOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix Accuracy (%R)	Aqueous Matrix Accuracy (%R)
SW-846 METHOD 8270C SEMIVOLATILE ORGANIC COMPOUNDS		
1,2,4,5-Tetrachlorobenzene	NA	NA
1,2,4-Trichlorobenzene	38 - 107	43 – 94
1,4-Naphthoquinone	50 – 150[2]	50 – 150[2]
1-Naphthylamine	50 – 150[2]	50 – 150[2]
2,3,4,6-Tetrachlorophenol	50 – 150[2]	50 – 150[2]
2,4,5-Trichlorophenol	50 - 150	28 – 145
2,4,6-Trichlorophenol	50 – 150	56 – 132
2,4-Dichlorophenol	50 – 150	56 – 122
2,4-Dimethylphenol	50 – 150	33 – 140
2,4-Dinitrophenol	50 – 150	16 - 187
2,6-Dichlorophenol	50 – 150[2]	50 – 150[2]
2-Acetylaminofluorene	50 – 150[2]	50 – 150[2]
2-Chloronaphthalene	50 – 150	54 – 113
2-Chlorophenol	25 – 102	52 – 117
2-Methylnaphthalene	50 – 150	1 – 138
2-Methylphenol	50 - 150	35 - 120
2-Naphthylamine	50 – 150[2]	50 – 150[2]
2-Nitroaniline	50 - 150	18 – 142
2-Nitrophenol	50 - 150	52 – 124
2-Picoline	50 – 150[2]	50 – 150[2]
3,3'-Dichlorobenzidine	50 - 150	1 – 109
3,3'-Dimethylbenzidine	50 – 150[2]	50 – 150[2]
3-Methylcholanthrene	50 – 150[2]	50 – 150[2]
3-Methylphenol (report as 4-methylphenol)	--	--
3-Nitroaniline	50 - 150	1 – 186
4,6-Dinitro-o-cresol	50 - 150	52 – 171
4-Aminobiphenyl	50 – 150[2]	50 – 150[2]
4-Bromophenyl phenyl ether	50 - 150	53 – 110
4-chloro-3-methylphenol	26 - 103	59 – 127
4-Chloroaniline	50 - 150	10 – 138
4-Chlorophenyl phenyl ether	50 - 150	57 – 121
4-Methylphenol	50 - 150	48 – 126

TABLE 1-20

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
8270C AND 8310 SEMIVOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix Accuracy (%R)	Aqueous Matrix Accuracy (%R)
4-Nitroaniline	50 - 150	1 – 146
4-Nitrophenol	11 – 114	1 – 80
4-Nitroquinoline-1-oxide	50 – 150[2]	50 – 150[2]
5-Nitro-o-toluidine	50 – 150[2]	50 – 150[2]
7,12-Dimethylbenz[a]anthracene	50 – 150[2]	50 – 150[2]
Acetophenone	50 – 150[2]	50 – 150[2]
Alpha, alpha-Dimethylphenethylamine	50 – 150[2]	50 – 150[2]
Aniline	50 – 150	50 – 150
Aramite	50 – 150[2]	50 – 150[2]
Benzyl alcohol	50 - 150	50 – 150
Bis(2-chloro-1-methylethyl) ether	50 - 150	39 – 125
Bis(2-chloroethoxy)methane	50 - 150	1 – 150
Bis(2-chloroethyl)ether	50 - 150	46 – 112
Bis(2-ethylhexyl) phthalate	50 - 150	1 – 150
Butyl benzyl phthalate	50 - 150	41 – 149
Chlorobenzilate	50 – 150[2]	50 – 150[2]
Diallate	50 – 150[2]	50 – 150[2]
Dibenzofuran	50 - 150	27 – 144
Diethyl phthalate	50 - 150	64 – 120
Dimethoate	50 – 150[2]	50 – 150[2]
Dimethyl phthalate	50 - 150	63 – 123
Di-n-butyl phthalate	50 - 150	59 – 129
Di-n-octyl phthalate	50 - 150	19 – 185
Ethyl methacrylate	50 – 150[2]	50 – 150[2]
Ethyl methanesulfonate	50 – 150[2]	50 – 150[2]
Famphur	50 – 150[2]	50 – 150[2]
Hexachlorobenzene	50 - 150	65 – 127
Hexachlorobutadiene	50 - 150	41 – 98
Hexachlorocyclopentadiene	50 - 150	1 – 87
Hexachloroethane	50 - 150	33 – 87
Hexachlorophene	50 – 150[2]	50 – 150[2]
Hexachloropropene	50 – 150[2]	50 – 150[2]
Isodrin	50 – 150[2]	50 – 150[2]

TABLE 1-20

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
8270C AND 8310 SEMIVOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix Accuracy (%R)	Aqueous Matrix Accuracy (%R)
Isophorone	50 - 150	64 – 114
Isosafrole	50 – 150[2]	50 – 150[2]
Kepone	50 – 150[2]	50 – 150[2]
Methapyrilene	50 – 150[2]	50 – 150[2]
Methyl methanesulfonate	50 – 150[2]	50 – 150[2]
N-Nitrosodiethylamine	50 – 150[2]	50 – 150[2]
N-Nitrosodimethylamine	50 - 150	39 – 111
N-Nitrosodi-n-butylamine	50 – 150[2]	50 – 150[2]
N-Nitrosodiphenylamine	50 - 150	1 – 142
N-Nitrosodipropylamine	41 - 126	51 – 114
N-Nitrosomethylethylamine	50 – 150[2]	50 – 150[2]
N-Nitrosomorpholine	50 – 150[2]	50 – 150[2]
N-Nitrosopiperidine	50 – 150[2]	50 – 150[2]
N-Nitrosopyrrolidine	50 – 150[2]	50 – 150[2]
O,O,O-Triethyl phosphorothioate	50 – 150[2]	50 – 150[2]
o-Toluidine	50 – 150[2]	50 – 150[2]
p-(Dimethylamino)azobenzene	50 – 150[2]	50 – 150[2]
Pentachlorobenzene	50 – 150[2]	50 – 150[2]
Pentachloroethane	50 – 150[2]	50 – 150[2]
Pentachloronitrobenzene	50 – 150[2]	50 – 150[2]
Pentachlorophenol	17 - 109	52 – 155
Phenacetin	50 – 150[2]	50 – 150[2]
Phenol	26 - 90	51 - 119
Phorate	50 – 150[2]	50 – 150[2]
p-Phenylenediamine	50 – 150[2]	50 – 150[2]
Pronamide	50 – 150[2]	50 – 150[2]
Pyridine	50 - 150	50 – 150
Safrole	50 – 150[2]	50 – 150[2]
Sulfotepp	50 – 150[2]	50 – 150[2]
Thionazin	50 – 150[2]	50 – 150[2]
SW-846 METHOD 8310 SEMIVOLATILE ORGANIC COMPOUNDS (PAHs)		
Acenaphthene	40 – 132	17 – 139
Acenaphthylene	25 – 132	15 – 140

TABLE 1-20

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
8270C AND 8310 SEMIVOLATILE ORGANIC COMPOUND ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix Accuracy (%R)	Aqueous Matrix Accuracy (%R)
Anthracene	5 – 172	19 – 171
Benzo[a]anthracene	60 – 156	32 – 157
Benzo[a]pyrene	51 - 137	29 – 149
Benzo[b]fluoranthene	65 – 151	33 – 164
Benzo[ghi]perylene	59 – 155	32 – 157
Benzo[k]fluoranthene	47 – 153	28 – 161
Chrysene	57 – 147	31 – 159
Dibenz[a,h]anthracene	58 – 145	27 – 153
Fluoranthene	66 – 143	34 – 159
Fluorene	53 – 130	28 – 145
Indeno(1,2,3-cd)pyrene	63 – 146	31 – 156
Naphthalene	18 – 136	0 – 127
Phenanthrene	58 – 136	30 – 152
Pyrene	67 - 137	33 - 152

1 In-house QC limits provided by Lionville Laboratory meet or exceed these limits.
2 Advisory limits.

NA = Not applicable
PAH = Polycyclic Aromatic Hydrocarbon
%R = Percent recovery
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-21

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 METHOD 8081A ORGANOCHLORINE PESTICIDE AND 8082 PCB ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
4,4'-DDD	36-135	43	48-131	30
4,4'-DDE	48-145	42	46-126	30
4,4'-DDT	32-180	30	49-152	47
Aldrin	26-132	45	43-115	30
alpha-BHC	13-137	37	36-116	30
beta-BHC	33-133	36	58-128	30
Chlordane	48-156	30	48-143	30
delta-BHC	10-128	30	10-118	30
Dieldrin	10-164	43	51-125	30
Endosulfan I	10-158	41	49-134	30
Endosulfan II	16-142	37	46-140	30
Endosulfan sulfate	32-135	43	44-136	30
Endrin	23-156	44	64-138	30
Endrin aldehyde	14-145	48	49-142	30
gamma-BHC	17-131	38	48-119	30
Heptachlor	24-145	37	48-138	30
Heptachlor epoxide	29-157	39	54-128	30
Methoxychlor	18-153	41	51-175	30
Toxaphene	36-155	30	47-163	30
Total Aroclors	NA	NA	NA	NA
Aroclor 1016	30-147	41	42-129	30
Aroclor-1221	30-150	30	30-150	30
Aroclor-1242	30-150	30	30-150	30
Aroclor-1248	30-150	30	30-150	30
Aroclor-1254	30-150	30	30-150	30
Aroclor-1260	34-138	38	39-144	30
Decachlorobiphenyl (surrogate) 8081A	34-159	NA	23-128	NA
Tetrachloro-m-xylene (surrogate) 8081A	24-128	NA	28-117	NA
Decachlorobiphenyl (surrogate) 8082	19-168	NA	12-141	NA
Tetrachloro-m-xylene (surrogate) 8082	12-143	NA	24-128	NA

1 In-house QC limits provided by AccuTest Laboratory of New England meet or exceed these limits.
NA = Not applicable
%R = Percent recovery
RPD = Relative percent difference
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-22

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
SW- 846 METHOD 8081A ORGANOCHLORINE PESTICIDE AND 8082 PCB ANALYSES
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix	Aqueous Matrix
	Accuracy (%R)	Accuracy (%R)
4,4'-DDD	41-148	51-138
4,4'-DDE	41-144	52-131
4,4'-DDT	32-173	42-161
Aldrin	41-140	35-120
alpha-BHC	13-164	40-122
beta-BHC	50-139	51-138
Chlordane	48-156	48-143
delta-BHC	10-127	16-113
Dieldrin	40-150	45-136
Endosulfan I	45-142	43-148
Endosulfan II	50-153	43-148
Endosulfan sulfate	47-144	44-142
Endrin	46-151	58-141
Endrin aldehyde	39-150	51-141
gamma-BHC	34-136	42-130
Heptachlor	45-146	39-139
Heptachlor epoxide	56-135	48-142
Methoxychlor	37-171	50-169
Toxaphene	36-154	47-163
Total Aroclors	NA	NA
Aroclor 1016	33-138	42-126
Aroclor-1221	30-150	30-150
Aroclor-1242	30-150	30-150
Aroclor-1248	30-150	30-150
Aroclor-1254	30-150	30-150
Aroclor-1260	48-136	39-136

1 In-house QC limits provided by AccuTest Laboratory of New England meet or exceed these limits.

NA = Not applicable
%R = Percent recovery
RPD = Relative percent difference
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-23

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES AND SURROGATE SPIKES
SW-846 METHODS 8141A AND 8151A MISCELLANEOUS ORGANIC COMPOUNDS
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)	Accuracy (%R)	Precision (RPD)
Dinoseb (SW-846 8151A)	50 – 150[2]	50[2]	50 – 150[2]	50[2]
DCAA (Surrogate)	30 - 165		40 - 150	
Disulfoton (SW-846 8141A)	40 – 140[2]	50[2]	40 – 140[2]	50[2]
Methyl Parathion (SW-846 8141A)	40 – 140[2]	50[2]	40 – 140[2]	50[2]
Parathion (SW-846 8141A)	40 – 140[2]	50[2]	40 – 140[2]	50[2]
Tributly phosphate (Surrogate)	40 – 140		40 – 140	
Triphenul phosphate (Surrogate)	40 – 140		40 – 140	

1 In-house QC limits provided by Lionville Laboratory meet or exceed these limits.
2 Advisory limits.

NA = Not applicable
%R = Percent recovery
RPD = Relative percent difference
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-24

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
SW-846 METHODS 8141A AND 8151A MISCELLANEOUS ORGANIC COMPOUNDS
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix	Aqueous Matrix
	Accuracy (%R)	Accuracy (%R)
Dinoseb (SW-846 8151A)	50 – 150	50 – 150
Disulfoton (SW-846 8141A)	40 – 140	40 – 140
Methyl Parathion (SW-846 8141A)	40 – 140	40 – 140
Parathion (SW-846 8141A)	40 – 140	40 - 140

1 In-house QC limits provided by Lionville Laboratory meet or exceed these limits.

NA = Not applicable
%R = Percent recovery
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-25

QUALITY CONTROL LIMITS[1]
MATRIX SPIKE AND LABORATORY DUPLICATE SAMPLES
GENERAL CHEMISTRY PARAMETERS
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix		Aqueous Matrix	
	Accuracy (%R)	Precision (RPD)[2]	Accuracy (%R)	Precision (RPD)[2]
Ammonia (as N) (USEPA 350.1)	NR	NR	75 - 125	20
Biochemical Oxygen Demand (USEPA 405.1)	NR	NR	NR	20
Chemical Oxygen Demand (USEPA 410.4)	NR	NR	75 - 125	20
Chloride (SW-846 9065)	75 - 125	20	75 - 125	20
Nitrate-Nitrite (as N) (SW-846 9065)	75 - 125	20	75 - 125	20
Orthophosphate (as P) (SW-846 9065)	75 - 125	20	75 - 125	20
Sulfate (SW-846 9065)	75 - 125	20	75 - 125	20
Sulfide (SW-846 9030B)	75 - 125	20	75 - 125	20
Total and Amenable Cyanide (SW-846 Method 9010B)	75 - 125	20	75 - 125	20
Total Organic Carbon (SW-846 9060)	75 - 125	20	75 - 125	20
Total Organic Halides (TOX) (SW-846 9020)	75 - 125	20	75 - 125	20

1 In-house QC limits provided by Lionville Laboratory meet or exceed these limits.
2 These acceptance limits apply to original and duplicate sample concentrations >5x RL. If one or both of the results is <5x RL, the acceptance criterion is ± 5x RL. If one of the results is a non-detect, the reported percent RPD will be 200%.

NR = Analysis not required
%R = Percent recovery
RPD = Relative percent difference

SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.

TABLE 1-26

QUALITY CONTROL LIMITS[1]
LABORATORY CONTROL SAMPLES
MISCELLANEOUS PARAMETERS
BASELINE ENVIRONMENTAL MONITORING PLAN
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Chemical	Solid Matrix[2] Accuracy (%R)	Aqueous Matrix[2] Accuracy (%R)
Ammonia (as N) (USEPA 350.1)	NR	90 – 110
Biochemical Oxygen Demand (USEPA 405.1)	NR	NR
Chemical Oxygen Demand (USEPA 410.4)	NR	80 – 120
Chloride (SW-846 9056)	90 – 110	90 - 110
Nitrate-Nitrite (as N) (SW-846 9056)	90 – 110	90 – 110
Orthophosphate (as P) (SW-846 9056)	90 – 110	90 – 110
Sulfate (SW-846 9056)	90 – 110	90 – 110
Sulfide (SW-846 9030B)	80 – 120	80 – 120
Total and Amenable Cyanide (SW-846 Method 9010B)	90 – 110	90 – 110
Total Organic Carbon (SW-846 9060)	80 – 120	90 – 110
Total Organic Halides (TOX) (SW-846 9020)	80 - 120	80 - 120

1 In-house QC limits provided by Lionville Laboratory meet or exceed these limits.
2 The laboratory may use a purchased standard reference material (SRM) in place of a LCS. If a SRM is used, the acceptance limits provided by the supplier of the SRM may be used unless the SRM limits are wider than the acceptance limits provided in this table. If the SRM limits are wider, the laboratory must use the acceptance limits provided as this table.

NR = Analysis not required
%R = Percent recovery
SW-846 = SW-846 "Test Methods for Evaluating Solid Wastes," Third Edition plus updates, 1986.