APPENDIX D

OU1 SURFACE WATER AND SEDIMENT FIELD DATA RECORDS – SOUTH DITCH

(Provided on CD)

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/9/10

FIELD SAMPLE ID (SW): OC-SW-1560 2XXX
SW BOTTLE TIME: 1145
FIELD SAMPLE ID (SED): OC-SD-1560-2-XXX
SED BOTTLE TIME: 1200
QC SAMPLES COLLECTED:
ACTIVITY TIME: START 1140 END 1230

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 5 IN FT
SPEC. COND: 1569 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3 IN FT
D.O.: 6.67 mg/L
TEMPERATURE: 0.42 DEG C
SALINITY: NA %
TURBIDITY: 873 NTU
ORP: -46.0 mV
pH: 6.43 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: YES
COLOR: DARK BRN
DESCRIPTION: MUD to fine SAND w/ TRACE ORGANICS.

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x] DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[x] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[x]
[x] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[x]
[x] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[x]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[x] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[x]
[x] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[x]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES
Sampled Previously sampled location ± 5' Sampled in Stream
flow was observed

SIGNATURE: Charles H. Lyman

Checked By:

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 6-6-11

FIELD SAMPLE ID (SW): OC-SW-15C02-XXX | SW BOTTLE TIME: 11:00

FIELD SAMPLE ID (SED): / | SED BOTTLE TIME: /

QC SAMPLES COLLECTED: / | ACTIVITY TIME: START 10:55 END 11:30

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 FT

SPEC. COND: 2441 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 0.2 FT

D.O.: 6.32 mg/L

TEMPERATURE: 16.41 DEG C

SALINITY: / %

TURBIDITY: 28.9 NTU

ORP: -74.8 mV

pH: 6.64 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER N/A

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR:

COLOR:

DESCRIPTION:

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x] DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 2/17/11

FIELD SAMPLE ID (SW): —
SW BOTTLE TIME: —
FIELD SAMPLE ID (SED): OC-SD-ISCO-2-XXX
SED BOTTLE TIME: 0940
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 0930 END 1030

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: uS/cm
DEPTH OF SAMPLE FROM SURFACE: FT
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

Slowly moving water; Not much Ice

DEPTH OF SEDIMENT: 0-0.5 ft

TYPE OF SAMPLE
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [x] ORGANIC Trace
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS
ODOR: Dk Br/Br
COLOR: odor noted
DESCRIPTION: Trace sheen, Dk Br f/m Sand/silt w organics
odor noted

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	SVOCs	8270C	4 DEG. C	2 X 1 L	[ ]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[ ]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[ ]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[ ]
[ ]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[ ]
[ ]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[x]	Toxicity		4 Deg. C	3x 1 Gal Buckets	[x]

NOTES: + Grain Size

SIGNATURE: [signature]

Checked By: GM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/9/10

FIELD SAMPLE ID (SW): OC-SW-SD-1-XXX
SW BOTTLE TIME: 1300
FIELD SAMPLE ID (SED): OC-SD-SD-1-XXX
SED BOTTLE TIME: 1315
QC SAMPLES COLLECTED: NONE
ACTIVITY TIME: START 1235 END 1335

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 8 in ft
SPEC. COND: 1783 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3 in ft
D.O.: 6.33 mg/L
TEMPERATURE: 0.14 DEG C
SALINITY: NA %
TURBIDITY: 4.55 NTU
ORP: 18.6 mV
pH: 6.51 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: Trace
COLOR: Br/Dk Br
DESCRIPTION: F Sand w organics Trace

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND Fine
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x] DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[x] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[x]
[x] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[x]
[x] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[x]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[x] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[x]
[x] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[x]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES
Found location utilizing GPS.

SIGNATURE: Charles H. Tyson

Checked By:

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-6-11

FIELD SAMPLE ID (SW): OC-SW-SD1-7 ++
SW BOTTLE TIME: 12:15
FIELD SAMPLE ID (SED): /
SED BOTTLE TIME: /
QC SAMPLES COLLECTED: /
ACTIVITY TIME: START 12:10 END 12:40

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 FT
SPEC. COND: 2477 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 FT
D.O.: 5.48 mg/L
TEMPERATURE: 24.45 DEG C
SALINITY: / %
TURBIDITY: 12.0 NTU
ORP: 19.7 mV
pH: 6.65 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER N/A

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE:

Checked By: CJM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-12-0016

DATE: 12-17-17

FIELD SAMPLE ID (SW): QC-~~SD~~SW-SD-1-XMS

SW BOTTLE TIME: 15:30

FIELD SAMPLE ID (SED): /

SED BOTTLE TIME: /

QC SAMPLES COLLECTED: /

ACTIVITY TIME: START 15:25 END 15:35

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 FT

SPEC. COND: 600 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 0.2 FT

D.O.: 14.53 mg/L

TEMPERATURE: 1.41 DEG C

SALINITY: / %

TURBIDITY: 16.7 NTU

ORP: 136.2 mV

pH: 6.18 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP N/A
- [ ] MARSH N/A
- OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [x] LIQUINOX
- [x] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR _____

COLOR _____

DESCRIPTION _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B	HCl	3 x 40 mL	[x]
[x] SVOCs	8270C	4°C	2 x 1 L Amber	[x]
[x] NDMA	MCD-EPA 521	4°C	2 x 1 L Amb	[x]
[x] Metals	6010B/6020A	HNO3	1 x 500 mL	[x]
[x] Hex Cr	7199	4°C	1 x 250 mL	[x]
[x] Anions	300	4°C	1 x 1 L	[x]
[x] Hardness	SM2340B	HNO3	1 x 500 mL	[x]
[x] TSS	SM2540D	4°C	1 x 1 L	[x]
[x] TOC	SM5310B	H2SO4	1 x 500 mL	[x]
[x] Ammonia	350.1	H2SO4	1 x 500 mL	[x]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B	DI (methanol)	3 x 40 mL	[x]
[x] SVOCs	8270C	4°C	8 oz	[x]
[x] NDMA	EPA 521	4°C	4 oz	[x]
[x] Metals	SW 846 6010B	4°C	8 oz	[x]
[x] Hex Cr	7199	4°C	2 x 4 oz	[x]
[x] Ammonia	350.1	4°C	8 oz	[x]
[x] Chloride	300	4°C	8 oz	[x]
[x] Sulfate	300	4°C	8 oz	[x]
[x] TOC	300	4°C	8 oz	[x]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]

NOTES: No sediment collected

amec

SIGNATURE: _____

Checked By: MAM 1/2/13

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-10-0016 | DATE: 12/9/10

FIELD SAMPLE ID (SW): ~~OC-SD-SWE-XXX~~ | SW BOTTLE TIME: —

FIELD SAMPLE ID (SED): OC-SDSWE-XXX | SED BOTTLE TIME: 1440

QC SAMPLES COLLECTED: NA | ACTIVITY TIME: START 1430 END 1450

SURFACE WATER DATA

WATER DEPTH AT LOCATION	FT	SPEC. COND	uS/cm
DEPTH OF SAMPLE FROM SURFACE	FT	D.O.	mg/L
TEMPERATURE	DEG C	SALINITY	%
TURBIDITY	NTU	ORP	mV
pH	UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [ ] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

Depth of water: 0.5 ft.

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
- ODOR: None
- COLOR: Brown
- DESCRIPTION: Gravelly mud to fine SAND with trace organic

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	SVOCs	8270C	4 DEG. C	2 X 1 L	[ ]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[ ]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[ ]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[ ]
[ ]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[ ]
[ ]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[x]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[x]
[x]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[x]
[x]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[x]
[x]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[x]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[x]
[x]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[x]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES

CM - No SW collected.

SIGNATURE: Charles H. [illegible]

Checked By: CM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-6-11

FIELD SAMPLE ID (SW): OC-SW-PZ16RR-XXX
SW BOTTLE TIME: 13:05
FIELD SAMPLE ID (SED): /
SED BOTTLE TIME: /
QC SAMPLES COLLECTED: /
ACTIVITY TIME: START 13:00 END 1320

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 FT
SPEC. COND: 2393 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 FT
D.O.: 5.64 mg/L
TEMPERATURE: 19.97 DEG C
SALINITY: / %
TURBIDITY: 9.09 NTU
ORP: 72.1 mV
pH: 5.93 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER N/A

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT.
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: LTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/9/10

FIELD SAMPLE ID (SW): OC-SW-PZ-162R-XXX
SW BOTTLE TIME: 1510
FIELD SAMPLE ID (SED): No SD @ this loc.
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: NA
ACTIVITY TIME: START 1455 END 1530

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 1984 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3" in pf
D.O.: 7.00 mg/L
TEMPERATURE: 0.41 DEG C
SALINITY: NA %
TURBIDITY: 10.4 NTU
ORP: 56.8 mV
pH: 5.90 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

DESCRIPTION _____

ANALYTICAL PARAMETERS

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: Charles H. [illegible]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/9/10

FIELD SAMPLE ID (SW): None Collected
SW BOTTLE TIME: —
FIELD SAMPLE ID (SED): DC-SD-SD-SD3-XXX
SED BOTTLE TIME: 1545
QC SAMPLES COLLECTED: N/A
ACTIVITY TIME: START 1540 END 1555

SURFACE WATER DATA

WATER DEPTH AT LOCATION: FT
SPEC. COND: uS/cm
DEPTH OF SAMPLE FROM SURFACE: FT
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

Depth of Water: 0.5 ft.

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS
ODOR: Slight
COLOR: Dark Brown
DESCRIPTION: Gravelly Med to fine SAND trace ORGANICS

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	
SVOCs	8270C	4 DEG. C	2 X 1 L	
NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	
TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	
Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	
Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	
Diphenylamine	3620B	4 DEG. C	w/ SVOCs	
Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	
VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	
EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	
Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	
Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	
Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	
DMF	mod 8033	4 DEG. C	2 X 40 mL	
Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	
Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	
TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	X
SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	X
NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	X
TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	X
Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	X
VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	X
EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	X
Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	X
Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	X
Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	X
DMF	mod 8033	4 DEG. C	1 X 4 oz.	X
Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	X
				X

NOTES

SIGNATURE: Charles H. Lyon

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 11/10/10

FIELD SAMPLE ID (SW): OC-SW-PZ-1722-XXX
SW BOTTLE TIME: 0815
FIELD SAMPLE ID (SED): NA
SED BOTTLE TIME: NA
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 0810 END 0840

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 8" ft
SPEC. COND: 2273 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3" ft
D.O.: 3.25 mg/L
TEMPERATURE: 1.52 DEG C
SALINITY: NA %
TURBIDITY: 6617 NTU
ORP: 164.0 mV
pH: 5.66 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

DESCRIPTION _____

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x] DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: Charles W. Lyn

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-6-11

FIELD SAMPLE ID (SW): OC-SW-PZ17RR-XXX
SW BOTTLE TIME: 13:45
FIELD SAMPLE ID (SED): /
SED BOTTLE TIME: /
QC SAMPLES COLLECTED: /
ACTIVITY TIME: START 13:40 END 1355

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 2439 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 FT
D.O.: 3.26 mg/L
TEMPERATURE: 19.20 DEG C
SALINITY: / %
TURBIDITY: 20.0 NTU
ORP: 9.1 mV
pH: 5.86 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER N/A

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

DESCRIPTION _____

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-12-0016

DATE: 12-17-17

FIELD SAMPLE ID (SW): OC-SW-PZ-17RR-XX

SW BOTTLE TIME: 15:45

FIELD SAMPLE ID (SED): /

SED BOTTLE TIME: /

QC SAMPLES COLLECTED: /

ACTIVITY TIME: START 15:42 END 15:50

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 FT

SPEC. COND: 914 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 0.2 FT

D.O.: 8.08 mg/L

TEMPERATURE: 2.97 DEG C

SALINITY: / %

TURBIDITY: 9.26 NTU

ORP: ~~[illegible]~~ mV 58.3

pH: 5.83 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH N/A
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR _____

COLOR _____

DESCRIPTION _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B	HCl	3 x 40 mL	[x]
[x] SVOCs	8270C	4°C	2 x 1 L Amber	[x]
[x] NDMA	Mod-EPA 521	4°C	2 x 1 L Amb	[x]
[x] Metals	6010B/6020A	HNO3	1 x 500 mL	[x]
[x] Hex Cr	7199	4°C	1 x 250 mL	[x]
[x] Anions	300	4°C	1 x 1 L	[x]
[x] Hardness	SM2340B	HNO3	1 x 500mL	[x]
[x] TSS	SM2540D	4°C	1 x 1 L	[x]
[x] TOC	SM5310B	H2SO4	1 x 500mL	[x]
[x] Ammonia	350.1	H2SO4	1 x 500mL	[x]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B	DI (methanol)	3 x 40 mL	[x]
[x] SVOCs	8270C	4°C	8 oz	[x]
[x] NDMA	EPA 521	4°C	4 oz	[x]
[x] Metals	SW 846 6010B	4°C	8 oz	[x]
[x] Hex Cr	7199	4°C	2 x 4 oz	[x]
[x] Ammonia	350.1	4°C	8 oz	[x]
[x] chloride	300	4°C	8 oz	[x]
[x] Sulfate	300	4°C	8 oz	[x]
[x] TOC	300	4°C	8 oz	[x]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]

NOTES: No sediment collected

amec

SIGNATURE: [signature]

Checked By: MAM 1/2/13

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/10/10

FIELD SAMPLE ID (SW): NA
SW BOTTLE TIME: NA
FIELD SAMPLE ID (SED): OC-SD-SD2-XXX
SED BOTTLE TIME: 0900
QC SAMPLES COLLECTED: YES: DUP / MS / MSD
ACTIVITY TIME: START 0845 END 0945

SURFACE WATER DATA

WATER DEPTH AT LOCATION: FT
SPEC. COND: uS/cm
DEPTH OF SAMPLE FROM SURFACE: FT
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

0.5' depth of water

DEPTH OF SEDIMENT: 0-6 in

TYPE OF SAMPLE
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS

ODOR: BRINE

COLOR: BRN.

DESCRIPTION: SAND, fine w/ trace organics

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	SVOCs	8270C	4 DEG. C	2 X 1 L	[ ]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[ ]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[ ]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[ ]
[ ]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[ ]
[ ]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[x]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[x]
[x]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[x]
[x]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[x]
[x]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[x]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[x]
[x]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[x]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/10/10

FIELD SAMPLE ID (SW): OC-SW-ISCO 1-XXX
SW BOTTLE TIME: 1045
FIELD SAMPLE ID (SED): NA
SED BOTTLE TIME: NA
QC SAMPLES COLLECTED: MS/ MSD/ DUP
ACTIVITY TIME: START 1015 END 1115

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 13.5" FT
SPEC. COND: 1179 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3" FT
D.O.: 1.07 mg/L
TEMPERATURE: 1.97 DEG C
SALINITY: NA %
TURBIDITY: 8.20 NTU
ORP: 74.3 mV
pH: 5.80 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
DESCRIPTION _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x] DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: Charles H. Lyman

Checked By: CJM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-6-11

FIELD SAMPLE ID (SW): OC-SW-15001-XXX
SW BOTTLE TIME: 14:35
FIELD SAMPLE ID (SED):
SED BOTTLE TIME: /
QC SAMPLES COLLECTED: " " " DUP/XMS/MSD
ACTIVITY TIME: START 14:30 END 15:40

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.7 FT
SPEC. COND: 1007 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 FT
D.O.: 2.71 mg/L
TEMPERATURE: 17.95 DEG C
SALINITY: / %
TURBIDITY: 8.02 NTU
ORP: 79.0 mV
pH: 6.55 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER N/A

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[x]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[x]
[x]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[x]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[x]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[x]
[x]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[x]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-12-0016

DATE: 12-17-17

FIELD SAMPLE ID (SW): OC-SW-SD-501-[illegible]

SW BOTTLE TIME: 12:15

FIELD SAMPLE ID (SED): OC-SD-SD-501-[illegible]

SED BOTTLE TIME: 12:15

QC SAMPLES COLLECTED: /

ACTIVITY TIME: START 12:00 END 12:10

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.75 FT	SPEC. COND	1454 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.3 FT	D.O.	17.62 mg/L
TEMPERATURE	3.38 DEG C	SALINITY	/ %
TURBIDITY	8.15 NTU	ORP	207.0 mV
pH	6.28 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [x] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [x] LIQUINOX
- [x] OTHER distilled

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-0.5'

TYPE OF SAMPLE
- [ ] DISCRETE
- [x] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: /

COLOR: brown - dark brown

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [x] OTHER Silt

EQUIPMENT FOR COLLECTION
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [x] OTHER distilled

DESCRIPTION: Mostly brown - dark brown SILT and ORGANICS, saturated

ANALYTICAL PARAMETERS SURFACE WATER

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B	HCl	3 x 40 mL	[x]
[x]	SVOCs	8270C	4°C	2 x 1 L Amber	[x]
[x]	NDMA	Mod-EPA 521	4°C	2 x 1 L Amb	[x]
[x]	Metals	6010B/6020A	HNO3	1 x 500 mL	[x]
[x]	Hex Cr	7199	4°C	1 x 250 mL	[x]
[x]	Anions	300	4°C	1 x 1 L	[x]
[x]	Hardness	SM2340B	HNO3	1 x 500 mL	[x]
[x]	TSS	SM2540D	4°C	1 x 1 L	[x]
[x]	TOC	SM5310B	H2SO4	1 x 500 mL	[x]
[x]	Ammonia	350.1	H2SO4	1 x 500 mL	[x]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

ANALYTICAL PARAMETERS SEDIMENT

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B	DI (methanol)	3 x 40 mL	[x]
[x]	SVOCs	8270C	4°C	8 oz	[x]
[x]	NDMA	EPA 521	4°C	4 oz	[x]
[x]	Metals	SW 846 6010B	4°C	8 oz	[x]
[x]	Hex Cr	7199	4°C	2 x 4 oz	[x]
[x]	Ammonia	350.1	4°C	8 oz	[x]
[x]	chloride	300	4°C	8 oz	[x]
[x]	Sulfate	300	4°C	8 oz	[x]
[x]	TOC	300	4°C	8 oz	[x]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

amec

SIGNATURE: [signature]

Checked By: MAm 1/2/18

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-12-0016 | DATE: 12-17-07

FIELD SAMPLE ID (SW): / | SW BOTTLE TIME: /

FIELD SAMPLE ID (SED): QC-SD-SD-502-MT | SED BOTTLE TIME: 12:45

QC SAMPLES COLLECTED: / | ACTIVITY TIME: START 12:10 END 12:45

SURFACE WATER DATA

WATER DEPTH AT LOCATION: FT | SPEC. COND: uS/cm

DEPTH OF SAMPLE FROM SURFACE: FT | D.O.: mg/L

TEMPERATURE: DEG C | SALINITY: %

TURBIDITY: NTU | ORP: mV

pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-0.5'

TYPE OF SAMPLE: [ ] DISCRETE [X] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: none

COLOR: dark brown, brown

DESCRIPTION: organic SILT, wet, trace coarse sand

TYPE OF SEDIMENT:
- [X] ORGANIC
- [X] SAND
- [ ] GRAVEL
- [ ] CLAY
- [X] OTHER: Silt

EQUIPMENT FOR COLLECTION
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [X] OTHER: distilled

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X] VOCs	8260B	HCl	3 x 40 mL	[X]
[X] SVOCs	8270C	4°C	2 x 1 L Amber	[X]
[X] NDMA	MCD-EPA 521	4°C	2 x 1 L Amb	[X]
[X] Metals	6000B/6020A	HNO3	1 x 500 mL	[X]
[X] Hex Cr	7199	4°C	1 x 250 mL	[X]
[X] Anions	300	4°C	1 x 1 L	[X]
[X] Hardness	SM2340B	HNO3	1 x 500 mL	[X]
[X] TSS	SM2540D	4°C	1 x 1 L	[X]
[X] TOC	SM5310B	H2SO4	1 x 500 mL	[X]
[X] Ammonia	350.1	H2SO4	1 x 500 mL	[X]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X] VOCs	8260B	DI / methanol	3 x 40 mL	[X]
[X] SVOCs	8270C	4°C	8 oz	[X]
[X] NDMA	EPA 521	4°C	4 oz	[X]
[X] Metals	SW 846 6010B	4°C	8 oz	[X]
[X] Hex Cr	7199	4°C	2 x 4 oz	[X]
[X] Ammonia	350.1	4°C	8 oz	[X]
[X] Chloride	300	4°C	8 oz	[X]
[X] Sulfate	300	4°C	8 oz	[X]
[X] TOC	300	4°C	8 oz	[X]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]
[ ]				[ ]

NOTES: No surface water collected

amec

SIGNATURE: [signature]

Checked By: MAM 1/2/13

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA (DW) | JOB NUMBER: 6107-12-0016 | DATE: 12-17-17

FIELD SAMPLE ID (SW): OC-SW-SD-~~501~~ 503 | SW BOTTLE TIME: 14:30

FIELD SAMPLE ID (SED): OC-SD-SD-~~501~~ 503 | SED BOTTLE TIME: 14:30

QC SAMPLES COLLECTED: | ACTIVITY TIME: START 13:45 END 14:40

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.75 FT	SPEC. COND	450 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.3 FT	D.O.	17.33 mg/L
TEMPERATURE	2.00 DEG C	SALINITY	/ %
TURBIDITY	18.1 NTU	ORP	113.2 mV
pH	6.80 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [x] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [x] LIQUINOX
- [x] OTHER distilled

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-0.5'

TYPE OF SAMPLE: [ ] DISCRETE [x] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: /
COLOR: dark brown

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [x] OTHER silt

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [x] OTHER distilled

DESCRIPTION: Dark brown, SILT, some f-m sand, some organics, saturated

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B	HCl	3 x 40 mL	[x]
[x]	SVOCs	8270C	4°C	2 x 1 L Amber	[x]
[x]	NDMA	MCD-EPA 521	4°C	2 x 1 L Amb	[x]
[x]	Metals	6010B/6020A	HNO3	1 x 500 mL	[x]
[x]	Hex Cr	7199	4°C	1 x 250 mL	[x]
[x]	Anions	300	4°C	1 x 1 L	[x]
[x]	Hardness	SM2340B	HNO3	1 x 500 mL	[x]
[x]	TSS	SM2540D	4°C	1 x 1 L	[x]
[x]	TOC	SM5310B	H2SO4	1 x 500 mL	[x]
[x]	Ammonia	350.1	H2SO4	1 x 500 mL	[x]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B	DI / methanol	3 x 40 mL	[x]
[x]	SVOCs	8270C	4°C	8 oz	[x]
[x]	NDMA	EPA 521	4°C	4 oz	[x]
[x]	Metals	SW 846 6010B	4°C	8 oz	[x]
[x]	Hex Cr	7199	4°C	2 x 4 oz	[x]
[x]	Ammonia	350.1	4°C	8 oz	[x]
[x]	Chloride	300	4°C	8 oz	[x]
[x]	Sulfate	300	4°C	8 oz	[x]
[x]	TOC	300	4°C	8 oz	[x]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

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SIGNATURE: [signature]

Checked By: MAM 12/13

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-12-0016 | DATE: 12-17-2012

FIELD SAMPLE ID (SW): / | SW BOTTLE TIME: /

FIELD SAMPLE ID (SED): OC-SD-SD-504-XXX | SED BOTTLE TIME: 15:00

QC SAMPLES COLLECTED: / | ACTIVITY TIME: START 14:50 END 15:05

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.5 FT | SPEC. COND: uS/cm

DEPTH OF SAMPLE FROM SURFACE: FT | D.O.: mg/L

TEMPERATURE: DEG C | SALINITY: %

TURBIDITY: NTU | ORP: mV

pH: UNITS

EQUIPMENT USED: [ ] BEAKER [ ] DIRECT DIP [ ] PERISTALTIC PUMP [ ] FILTER (0.45 micron) [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER: [ ] STREAM/ RIVER [ ] LAKE/ POND [ ] SEEP [ ] MARSH [ ] OTHER

DECON FLUIDS USED: [ ] DI WATER [ ] LIQUINOX [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 6"

TYPE OF SAMPLE: [ ] DISCRETE [X] COMPOSITE

SAMPLE OBSERVATIONS: ODOR: none; COLOR: brown

TYPE OF SEDIMENT: [X] ORGANIC [X] SAND [ ] GRAVEL [ ] CLAY [X] OTHER silt

EQUIPMENT FOR COLLECTION: [X] HAND AUGER [X] S.S. SPOON [X] S.S. BOWL [ ] DREDGE [ ] OTHER

DECON FLUIDS USED: [ ] DI WATER [ ] POTABLE WATER [X] LIQUINOX [X] OTHER distilled

DESCRIPTION: Brown - dark brown silt, some f-m sand, some organics, saturated

ANALYTICAL PARAMETERS SURFACE WATER

	Parameter	Method Number	Preservation Method	Volume Required	Sample Collected
[X]	VOCs	8260B	HCl	3 x 40 mL	[X]
[X]	SVOCs	8270C	4°C	2 x 1 L Amber	[X]
[X]	NDMA	MCD-EPA 521	4°C	2 x 1 L Amber	[X]
[X]	Metals	6010B/6020A	HNO3	1 x 500 mL	[X]
[X]	Hex Cr	7199	4°C	1 x 250 mL	[X]
[X]	Anions	300	4°C	1 x 1 L	[X]
[X]	Hardness	SM2340B	HNO3	1 x 500 mL	[X]
[X]	TSS	SM2540D	4°C	1 x 1 L	[X]
[X]	TOC	SM5310B	H2SO4	1 x 500 mL	[X]
[X]	Ammonia	350.1	H2SO4	1 x 500 mL	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

ANALYTICAL PARAMETERS SEDIMENT

	Parameter	Method Number	Preservation Method	Volume Required	Sample Collected
[X]	VOCs	8260B	DI / methanol	3 x 40 mL	[X]
[X]	SVOCs	8270C	4°C	8 oz	[X]
[X]	NDMA	EPA 521	4°C	4 oz	[X]
[X]	Metals	SW 846 6010B	4°C	8 oz	[X]
[X]	Hex Cr	7199	4°C	2 x 4 oz	[X]
[X]	Ammonia	350.1	4°C	8 oz	[X]
[X]	Chloride	300	4°C	8 oz	[X]
[X]	Sulfate	300	4°C	8 oz	[X]
[X]	TOC	300	4°C	8 oz	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES: No surface water samples collected

amec

SIGNATURE: [signature]

Checked By: MAM 1/2/13

APPENDIX D

QUARTERLY SURFACE WATER AND SEDIMENT FIELD DATA RECORDS – SOUTH DITCH

(Provided on CD)

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 2/18/2010
FIELD SAMPLE ID: OC-SW-ISCO1-0.2
ACTIVITY TIME: START 10:40 END 10:45
BOTTLE TIME: 10:45
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.1 ft.
SPEC. COND: 2173 µs/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 7.54 mg/L
TEMPERATURE: -0.5 DEG C
SALINITY: --- %
TURBIDITY: 19.6 NTU
ORP: 62.3 mV
pH: 5.96 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Mark Myette

Sampled by: MAM
Prepared by: DLC
Checked by: RRD

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 2/18/2010
FIELD SAMPLE ID: OC-SW-ISCO2-0.2
ACTIVITY TIME: START 8:55 END 9:00
BOTTLE TIME: 9:00
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.3 ft.	SPEC. COND	1297 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	12.55 mg/L
TEMPERATURE	0.19 DEG C	SALINITY	--- %
TURBIDITY	24.6 NTU	ORP	176.1 mV
pH	6.24 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

SEDIMENT SAMPLE START DEPTH:
END DEPTH:
TYPE OF SAMPLE GRAB:

SAMPLE OBSERVATIONS
ODOR:
COLOR:
FLOC OBSERVED:

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

CLEAR OF LEAF LITTER:

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Mark Mayo

Sampled by: MAM
Prepared by: DLC
Checked by: RRD

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-10-0016.04

DATE: 2/18/2010

FIELD SAMPLE ID: OC-SW-ISCO3-0.2

ACTIVITY TIME: START 8:40 END 8:45

BOTTLE TIME: 8:45

QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 ft.

SPEC. COND: 620 µs/cm

DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.

D.O.: 12.52 mg/L

TEMPERATURE: 3.27 DEG C

SALINITY: --- %

TURBIDITY: 1.89 NTU

ORP: 174.2 mV

pH: 6.81 UNITS

EQUIPMENT USED

- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER

- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:

- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:

RINSATE BLANK:

SEDIMENT SAMPLE START DEPTH:

END DEPTH:

TYPE OF SAMPLE GRAB:

SAMPLE OBSERVATIONS

ODOR

COLOR

FLOC OBSERVED

CLEAR OF LEAF LITTER

TYPE OF SEDIMENT

- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION

- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED

- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Mark Mayo

Sampled by: MAM
Prepared by: DLC
Checked by: RRD

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 2/18/2010
FIELD SAMPLE ID: OC-SW-PZ16RR-0.2
ACTIVITY TIME: START 9:25 END 9:30
BOTTLE TIME: 9:30
QC SAMPLES COLLECTED: OC-SW-PZ16RR-0.2-DUP

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.4 ft.	SPEC. COND	1243 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	15.08 mg/L
TEMPERATURE	2.04 DEG C	SALINITY	--- %
TURBIDITY	28.0 NTU	ORP	157.3 mV
pH	6.29 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
x	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
x	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
x	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
x	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
x	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
x	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
x	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Mich Myll

Sampled by: MAM
Prepared by: DLC
Checked by: RRD

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 2/18/2010

FIELD SAMPLE ID: OC-SW-PZ17RR-0.2
ACTIVITY TIME: START 9:45 END 9:50
BOTTLE TIME: 9:50

QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.6 ft.	SPEC. COND	1040 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	14.29 mg/L
TEMPERATURE	2.93 DEG C	SALINITY	--- %
TURBIDITY	16.9 NTU	ORP	134.4 mV
pH	6.33 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____ RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____ CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Mal Myers

Sampled by: MAM
Prepared by: DLC
Checked by: RRD

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-10-0016.04

DATE: 2/18/2010

FIELD SAMPLE ID: OC-SW-PZ18R-0.2

ACTIVITY TIME: START 10:30 END 10:35

BOTTLE TIME: 10:35

QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.9 ft.	SPEC. COND	2097 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	2.83 mg/L
TEMPERATURE	-0.21 DEG C	SALINITY	— %
TURBIDITY	20.9 NTU	ORP	105.9 mV
pH	5.99 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____

RINSATE BLANK: _____

SEDIMENT SAMPLE: START DEPTH [ ] END DEPTH [ ]

TYPE OF SAMPLE: GRAB [ ]

SAMPLE OBSERVATIONS

ODOR _____

COLOR _____

FLOC OBSERVED _____

CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Mark Mazzi

Sampled by: MAM
Prepared by: DLC
Checked by: RRD

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 2/18/2010
FIELD SAMPLE ID: OC-SW-SD17-0.2
ACTIVITY TIME: START 9:55 END 10:00
BOTTLE TIME: 10:00
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 ft.
SPEC. COND: 1017 µs/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 10.67 mg/L
TEMPERATURE: 3.16 DEG C
SALINITY: --- %
TURBIDITY: 21.6 NTU
ORP: 126.0 mV
pH: 6.29 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
x	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
x	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
x	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
x	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
x	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
x	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
x	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: MAM
Prepared by: DLC
Checked by: RRD

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 6/9/2010

FIELD SAMPLE NUMBER: OC-ISCO-1
ACTIVITY TIME: START 11:20 END 11:25
BOTTLE TIME: 11:25

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.3 FT
SPEC. COND: 827 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.7 FT
D.O.: 2.33 mg/L
TEMPERATURE: 15.40 DEG C
SALINITY: N/A %
TURBIDITY: 26.9 NTU
ORP: 28.7 mV
PH: 6.33 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: DLC
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 6/9/2010

FIELD SAMPLE NUMBER: OC-ISCO-2
ACTIVITY TIME: START 9:50 END 9:55
BOTTLE TIME: 9:55

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.4 FT	SPEC. COND	2,678 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 FT	D.O.	7.33 mg/L
TEMPERATURE	14.4 DEG C	SALINITY	N/A %
TURBIDITY	23.3 NTU	ORP	4.9 mV
PH	6.57 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: DLC
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 6/9/2010

FIELD SAMPLE NUMBER: OC-ISCO-3
ACTIVITY TIME: START 9:35 END 9:40
BOTTLE TIME: 9:40

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 FT
SPEC. COND: 698 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.15 FT
D.O.: 8.12 mg/L
TEMPERATURE: 17.22 DEG C
SALINITY: N/A %
TURBIDITY: 19.6 NTU
ORP: 115.4 mV
PH: 6.96 UNITS

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: DLC
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 6/9/2010

FIELD SAMPLE NUMBER: OC-PZ16RR
ACTIVITY TIME: START 10:15 END 10:20
BOTTLE TIME: 10:20

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 FT
SPEC. COND: 1,409 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.15 FT
D.O.: 6.64 mg/L
TEMPERATURE: 15.11 DEG C
SALINITY: N/A %
TURBIDITY: 46.7 NTU
ORP: 28.0 mV
PH: 6.27 UNITS

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: DLC
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 6/9/2010

FIELD SAMPLE NUMBER: OC-PZ17RRSW
ACTIVITY TIME: START 10:30 END 10:35
BOTTLE TIME: 10:35

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 FT
SPEC. COND: 1,108 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 FT
D.O.: 5.81 mg/L
TEMPERATURE: 16.45 DEG C
SALINITY: N/A %
TURBIDITY: 17.9 NTU
ORP: 20.2 mV
PH: 6.65 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: DLC
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 6/9/2010

FIELD SAMPLE NUMBER: OC-PZ18RSW
ACTIVITY TIME: START 11:05 END 11:10
BOTTLE TIME: 11:10

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.2 FT
SPEC. COND: 802 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.6 FT
D.O.: 1.63 mg/L
TEMPERATURE: 16.31 DEG C
SALINITY: N/A %
TURBIDITY: 13.3 NTU
ORP: 8.2 mV
PH: 6.46 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: DLC
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 6/9/2010

FIELD SAMPLE NUMBER: OC-SD-17
ACTIVITY TIME: START 10:50 END 10:55
BOTTLE TIME: 10:55

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 FT
SPEC. COND: 1,066 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 FT
D.O.: 6.40 mg/L
TEMPERATURE: 16.67 DEG C
SALINITY: N/A %
TURBIDITY: 13.6 NTU
ORP: 24.2 mV
PH: 6.48 UNITS

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: DLC
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 9/1/2010

FIELD SAMPLE NUMBER: OC-ISCO-1
ACTIVITY TIME: START 12:25 END 12:35
BOTTLE TIME: 12:20

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.75 FT
SPEC. COND: 641 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.4 FT
D.O.: 5.16 mg/L
TEMPERATURE: 24.91 DEG C
SALINITY: N/A %
TURBIDITY: 6.3 NTU
ORP: 436 mV
PH: 3.62 UNITS

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

Created By: DLC 11/12/10
Checked By: CTM 11/12/10

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 9/1/2010

FIELD SAMPLE NUMBER: OC-ISCO-2
ACTIVITY TIME: START 12:55 END 13:05
BOTTLE TIME: 13:00

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 1,680 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.3 FT
D.O.: 7.48 mg/L
TEMPERATURE: 25.11 DEG C
SALINITY: N/A %
TURBIDITY: 4.6 NTU
ORP: 115 mV
PH: 5.46 UNITS

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

Created By: DLC 11/12/10
Checked By: CTM 11/12/10

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 9/1/2010

FIELD SAMPLE NUMBER: OC-ISCO-3
ACTIVITY TIME: START 13:20 END 13:35
BOTTLE TIME: 13:25

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 FT
SPEC. COND: 755 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 FT
D.O.: 6.67 mg/L
TEMPERATURE: 29.35 DEG C
SALINITY: N/A %
TURBIDITY: 4.8 NTU
ORP: 55 mV
PH: 6.38 UNITS

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
x	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
x	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
x	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
x	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
x	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
x	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
x	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

Created By: DLC 11/12/10
Checked By: CTM 11/12/10

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 9/1/2010

FIELD SAMPLE NUMBER: OC-PZ16RR
ACTIVITY TIME: START 13:55 END 14:05
BOTTLE TIME: 14:00

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 FT
SPEC. COND: 1,330 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.15 FT
D.O.: 6.57 mg/L
TEMPERATURE: 26.94 DEG C
SALINITY: N/A %
TURBIDITY: 7.2 NTU
ORP: 91 mV
PH: 6.40 UNITS

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

Created By: DLC 11/12/10
Checked By: CTM 11/12/10

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 9/1/2010

FIELD SAMPLE NUMBER: OC-PZ17RRSW
ACTIVITY TIME: START 10:20 END 10:35
BOTTLE TIME: 10:25

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 1,280 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.3 FT
D.O.: 6.09 mg/L
TEMPERATURE: 22.30 DEG C
SALINITY: N/A %
TURBIDITY: 5.3 NTU
ORP: 63 mV
PH: 6.56 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] POTABLE WATER
- [X] NONE

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

Created By: DLC 11/12/10
Checked By: CTM 11/12/10

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 9/1/2010

FIELD SAMPLE NUMBER: OC-PZ18RSW
ACTIVITY TIME: START 11:55 END 12:05
BOTTLE TIME: 12:00

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.25 FT
SPEC. COND: 681 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.75 FT
D.O.: 3.23 mg/L
TEMPERATURE: 25.3 DEG C
SALINITY: N/A %
TURBIDITY: 7.6 NTU
ORP: 398 mV
PH: 4.24 UNITS

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

Created By: DLC 11/12/10
Checked By: CTM 11/12/10

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 9/9/2010

FIELD SAMPLE NUMBER: OC-SD-17
ACTIVITY TIME: START 9:20 END 10:55
BOTTLE TIME: 9:25

QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.8 FT
SPEC. COND: 1,430 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.4 FT
D.O.: 4.26 mg/L
TEMPERATURE: 19.37 DEG C
SALINITY: N/A %
TURBIDITY: 7.9 NTU
ORP: 121 mV
PH: 5.59 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] POTABLE WATER
- [X] NONE

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER_____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

Created By: DLC 11/12/10
Checked By: CTM 11/12/10

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6100-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE ID: OC-SD-SD1
ACTIVITY TIME: START 11:55 END 12:05
BOTTLE TIME: 12:00
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION:
SPEC. COND: µs/cm
DEPTH SAMPLE COLLECTED FROM SURFACE:
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: –
RINSATE BLANK: –

SEDIMENT SAMPLE START DEPTH: 0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE: GRAB X

SAMPLE OBSERVATIONS
ODOR: Sulfur odor
COLOR: Brown to dark brown
FLOC OBSERVED: No

TYPE OF SEDIMENT
- [X] ORGANIC
- [X] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [X] OTHER: SHOVEL

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

CLEAR OF LEAF LITTER: Yes
COMMENTS: Sheen noted. Water not moving.

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	[X]
[X]	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Created by: DLC
Checked by: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6100-10-0016.04 | DATE: 11/15/2010

FIELD SAMPLE ID: OC-SD-SD2 | ACTIVITY TIME: START 11:39 END 11:45 | BOTTLE TIME: 11:40

QC SAMPLES COLLECTED: DUP, MS, MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ____

SPEC. COND: ____ µs/cm

DEPTH SAMPLE COLLECTED FROM SURFACE: ____

D.O.: ____ mg/L

TEMPERATURE: ____ DEG C

SALINITY: ____ %

TURBIDITY: ____ NTU

ORP: ____ mV

pH: ____ UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER ____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: --

RINSATE BLANK: --

SEDIMENT SAMPLE — START DEPTH: 0 ft. — END DEPTH: 0.5 ft.

TYPE OF SAMPLE — GRAB: X

SAMPLE OBSERVATIONS

ODOR: Trace sulfur odor

COLOR: Brown to very dark brown

FLOC OBSERVED: No

TYPE OF SEDIMENT
- [X] ORGANIC
- [X] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER ____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [X] OTHER: SHOVEL

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER ____

CLEAR OF LEAF LITTER: Yes

COMMENTS: Trace iron floc noted. Water moving.

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	[X]
[X]	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: Ch Mh

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MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6100-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE ID: OC-SD-SD3
ACTIVITY TIME: START 11:29 END 11:35
BOTTLE TIME: 11:30
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION:
SPEC. COND: µs/cm
DEPTH SAMPLE COLLECTED FROM SURFACE:
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: –
RINSATE BLANK: –

SEDIMENT SAMPLE START DEPTH: 0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE: GRAB X

TYPE OF SEDIMENT
- [X] ORGANIC
- [X] SAND
- [X] GRAVEL (Trace)
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [X] OTHER: SHOVEL

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS
ODOR: Sulfur odor
COLOR: Brown to very dark brown
FLOC OBSERVED: No
CLEAR OF LEAF LITTER: Yes
COMMENTS: Trace iron floc noted. Water moving.

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	[X]
[X]	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: Ch m

Created by: DLC
Checked by: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6100-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE ID: OC-SD-SD4
ACTIVITY TIME: START 10:55 END 11:05
BOTTLE TIME: 11:00
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ____
SPEC. COND: ____ µs/cm
DEPTH SAMPLE COLLECTED FROM SURFACE: ____
D.O.: ____ mg/L
TEMPERATURE: ____ DEG C
SALINITY: ____ %
TURBIDITY: ____ NTU
ORP: ____ mV
pH: ____ UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER ____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: --
RINSATE BLANK: --

SEDIMENT SAMPLE — START DEPTH: 0 ft. — END DEPTH: 0.5 ft.
TYPE OF SAMPLE — GRAB: X

SAMPLE OBSERVATIONS
ODOR: Trace sulfur odor
COLOR: Brown to dark brown
FLOC OBSERVED: No
CLEAR OF LEAF LITTER: Yes

TYPE OF SEDIMENT
- [X] ORGANIC
- [X] SAND
- [ ] GRAVEL (Trace)
- [ ] CLAY
- [ ] OTHER ____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [X] OTHER: SHOVEL

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER ____

COMMENTS: Trace iron floc noted. Sheen. Water not moving.

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	[X]
[X]	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Created by: DLC
Checked by: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6100-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE ID: OC-SD-SD5
ACTIVITY TIME: START 11:15 END 11:25
BOTTLE TIME: 11:20
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION:
SPEC. COND: µs/cm
DEPTH SAMPLE COLLECTED FROM SURFACE:
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: --
RINSATE BLANK: --

SEDIMENT SAMPLE
START DEPTH: 0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE: GRAB X

SAMPLE OBSERVATIONS
ODOR: Slight organic odor
COLOR: Brown

TYPE OF SEDIMENT
- [X] ORGANIC
- [X] SAND
- [ ] GRAVEL (Trace)
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [X] OTHER: SHOVEL

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

FLOC OBSERVED: No
CLEAR OF LEAF LITTER: Yes
COMMENTS: Trace iron floc noted. Sheen. Water not moving.

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	[X]
[X]	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Created by: DLC
Checked by: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE NUMBER: OC-SW-ISCO-1
ACTIVITY TIME: START 14:50 END 14:58
BOTTLE TIME: 14:52
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 2.5 FT
SPEC. COND: 962 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.3 FT
D.O.: 0.32 mg/L
TEMPERATURE: 11.83 DEG C
SALINITY: N/A %
TURBIDITY: 2.8 NTU
ORP: 111 mV
PH: 4.11 UNITS
ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: MAM
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE NUMBER: OC-SW-ISCO-2
ACTIVITY TIME: START 13:05 END 13:15
BOTTLE TIME: 13:10
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 FT
SPEC. COND: 154 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.1 FT
D.O.: 8.34 mg/L
TEMPERATURE: 12.63 DEG C
SALINITY: N/A %
TURBIDITY: 5.2 NTU
ORP: 170 mV
PH: 4.22 UNITS
ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE:

Created By: MAM
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE NUMBER: OC-SW-ISCO-3
ACTIVITY TIME: START 12:50 END 13:04
BOTTLE TIME: 12:55
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 883 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.1 FT
D.O.: 6.07 mg/L
TEMPERATURE: 13.73 DEG C
SALINITY: N/A %
TURBIDITY: 83.3 NTU
ORP: 154 mV
PH: 4.02 UNITS
ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: MAM
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE NUMBER: OC-SW-PZ-16RR
ACTIVITY TIME: START 13:25 END 13:35
BOTTLE TIME: 13:30
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 1,640 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.4 FT
D.O.: 7.33 mg/L
TEMPERATURE: 12.55 DEG C
SALINITY: N/A %
TURBIDITY: 5.24 NTU
ORP: 171 mV
PH: 4.25 UNITS
ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE:

Created By: MAM
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE NUMBER: OC-SW-PZ17-RR
ACTIVITY TIME: START 13:50 END 14:00
BOTTLE TIME: 13:55
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.7 FT
SPEC. COND: 1,710 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 6.16 mg/L
TEMPERATURE: 12.68 DEG C
SALINITY: N/A %
TURBIDITY: 6.69 NTU
ORP: 193 mV
PH: 4.24 UNITS
ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED:
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

DEPTH OF SEDIMENT:

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION:
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: MAM
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE NUMBER: OC-SW-PZ-18R
ACTIVITY TIME: START 14:18 END 14:45
BOTTLE TIME: 14:20
QC SAMPLES COLLECTED: DUP/ MS/ MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 2.5 FT
SPEC. COND: 1,080 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.3 FT
D.O.: 2.28 mg/L
TEMPERATURE: 11.57 DEG C
SALINITY: N/A %
TURBIDITY: 2.53 NTU
ORP: 164 mV
PH: 4.22 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION:
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: MAM
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016.04
DATE: 11/15/2010
FIELD SAMPLE NUMBER: OC-SW-SD-17
ACTIVITY TIME: START 14:02 END 14:10
BOTTLE TIME: 14:05
QC SAMPLES COLLECTED: NA

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 168 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.4 FT
D.O.: 4.49 mg/L
TEMPERATURE: 12.44 DEG C
SALINITY: N/A %
TURBIDITY: 10.7 NTU
ORP: 194 mV
PH: 4.22 UNITS
ASSOCIATED TRIP BLANK: N/A
RINSATE BLANK: N/A

EQUIPMENT USED:
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND CORER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER N2 PURGE
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	Dis. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SOIL

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Created By: MAM
Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 3/22/2011
FIELD SAMPLE ID: OC-SW-ISCO
ACTIVITY TIME: START 10:45 END 10:52
BOTTLE TIME: 10:50
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.5 ft.	SPEC. COND	659 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.7 ft.	D.O.	5.92 mg/L
TEMPERATURE	5.29 DEG C	SALINITY	--- %
TURBIDITY	1.67 NTU	ORP	96.1 mV
pH	5.70 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

SEDIMENT SAMPLE START DEPTH:
END DEPTH:
TYPE OF SAMPLE GRAB:

SAMPLE OBSERVATIONS
ODOR:
COLOR:
FLOC OBSERVED:
CLEAR OF LEAF LITTER:

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE:

Sampled by: DLC
Prepared by: DLC 5/3/11
Checked by: MAM 5/6/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 3/22/2011
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 9:22 END 9:27
BOTTLE TIME: 9:25
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.7 ft.	SPEC. COND	660 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	9.15 mg/L
TEMPERATURE	4.33 DEG C	SALINITY	--- %
TURBIDITY	2.32 NTU	ORP	197.4 mV
pH	4.66 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 5/3/11
Checked by: MAM 5/6/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 3/22/2011

FIELD SAMPLE ID: OC-SW-ISCO3 | ACTIVITY TIME: START 9:10 END 9:20 | BOTTLE TIME: 9:15

QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.3 ft.	SPEC. COND	829 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	13.18 mg/L
TEMPERATURE	6.94 DEG C	SALINITY	— %
TURBIDITY	1.18 NTU	ORP	95.0 mV
pH	6.18 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____ RINSATE BLANK: _____

SEDIMENT SAMPLE: START DEPTH [ ] END DEPTH [ ]

TYPE OF SAMPLE: GRAB [ ]

SAMPLE OBSERVATIONS

ODOR _____

COLOR _____

FLOC OBSERVED _____ CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 5/3/11
Checked by: MAM 5/6/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 3/22/2011

FIELD SAMPLE ID: OC-SW-PZ16RRSW | ACTIVITY TIME: START 9:42 END 9:47 | BOTTLE TIME: 9:45

QC SAMPLES COLLECTED: OC-SW-PZ16RR-0.2-DUP

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.4 ft.	SPEC. COND	779 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	9.29 mg/L
TEMPERATURE	4.61 DEG C	SALINITY	--- %
TURBIDITY	14.7 NTU	ORP	128.6 mV
pH	5.53 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____ RINSATE BLANK: _____

SEDIMENT SAMPLE: START DEPTH [ ] END DEPTH [ ]

TYPE OF SAMPLE: GRAB [ ]

SAMPLE OBSERVATIONS

ODOR _____

COLOR _____

FLOC OBSERVED _____ CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 5/3/11
Checked by: MAM 5/6/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 3/22/2011
FIELD SAMPLE ID: OC-SW-PZ17RRSW
ACTIVITY TIME: START 10:00 END 10:07
BOTTLE TIME: 10:05
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.4 ft.	SPEC. COND	846 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	7.26 mg/L
TEMPERATURE	5.19 DEG C	SALINITY	--- %
TURBIDITY	9.12 NTU	ORP	107.0 mV
pH	5.89 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 5/3/11
Checked by: MAM 5/6/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 3/23/2011
FIELD SAMPLE ID: OC-SW-PZ18RSW
ACTIVITY TIME: START 10:35 END 10:42
BOTTLE TIME: 10:40
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.7 ft.
SPEC. COND: 734 µs/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 5.76 mg/L
TEMPERATURE: 5.13 DEG C
SALINITY: — %
TURBIDITY: 2.62 NTU
ORP: 105.0 mV
pH: 5.68 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 5/3/11
Checked by: MAM 5/6/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 3/22/2011

FIELD SAMPLE ID: OC-SW-SD17 | ACTIVITY TIME: START 10:15 END 10:22 | BOTTLE TIME: 10:20

QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.6 ft.	SPEC. COND	867 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.3 ft.	D.O.	7.21 mg/L
TEMPERATURE	5.45 DEG C	SALINITY	--- %
TURBIDITY	9.12 NTU	ORP	88.5 mV
pH	6.02 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____ RINSATE BLANK: _____

SEDIMENT SAMPLE: START DEPTH [ ] END DEPTH [ ]

TYPE OF SAMPLE: GRAB [ ]

SAMPLE OBSERVATIONS

ODOR _____

COLOR _____

FLOC OBSERVED _____ CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 5/6/11
Checked by: MAM 5/6/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 5/16/2011

FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 12:50 END 12:55
BOTTLE TIME: 12:55

QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.9 ft.	SPEC. COND	772 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	20.91 mg/L
TEMPERATURE	10.57 DEG C	SALINITY	— %
TURBIDITY	6.82 NTU	ORP	-131.8 mV
pH	12.09 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____ RINSATE BLANK: _____

SEDIMENT SAMPLE: START DEPTH _____ END DEPTH _____
TYPE OF SAMPLE: GRAB _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____ CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 6/16/11
Checked by: MAM 6/20/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 5/16/2011
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 11:10 END 11:20
BOTTLE TIME: 11:15
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 ft.
SPEC. COND: 744 µs/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 8.09 mg/L
TEMPERATURE: 11.14 DEG C
SALINITY: --- %
TURBIDITY: 3.69 NTU
ORP: 97.0 mV
pH: 6.30 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 6/16/11
Checked by: MAM 6/20/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 5/16/2011
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 10:55 END 11:05
BOTTLE TIME: 11:00
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.3 ft.	SPEC. COND	864 µs/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	9.88 mg/L
TEMPERATURE	11.27 DEG C	SALINITY	--- %
TURBIDITY	0.98 NTU	ORP	114.3 mV
pH	6.84 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

SEDIMENT SAMPLE START DEPTH:
END DEPTH:
TYPE OF SAMPLE GRAB:

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS
ODOR:
COLOR:
FLOC OBSERVED:
CLEAR OF LEAF LITTER:

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE:

Sampled by: DLC
Prepared by: DLC 6/16/11
Checked by: MAM 6/20/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 5/16/2011
FIELD SAMPLE ID: OC-SW-PZ16RRSW
ACTIVITY TIME: START 11:30 END 11:40
BOTTLE TIME: 11:35
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 ft.
SPEC. COND: 836 µs/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 20.64 mg/L
TEMPERATURE: 11.15 DEG C
SALINITY: — %
TURBIDITY: 4.67 NTU
ORP: 136.2 mV
pH: 6.18 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE: START DEPTH [ ] END DEPTH [ ]
TYPE OF SAMPLE: GRAB [ ]

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 6/16/11
Checked by: MAM 6/20/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 5/16/2011
FIELD SAMPLE ID: OC-SW-PZ17RRSW
ACTIVITY TIME: START 11:50 END 12:00
BOTTLE TIME: 11:55
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 ft.
SPEC. COND: 1020 µs/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 5.43 mg/L
TEMPERATURE: 10.87 DEG C
SALINITY: — %
TURBIDITY: 9.86 NTU
ORP: 153.5 mV
pH: 6.53 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

SEDIMENT SAMPLE START DEPTH:
END DEPTH:
TYPE OF SAMPLE GRAB:
SAMPLE OBSERVATIONS
ODOR:
COLOR:
FLOC OBSERVED:
CLEAR OF LEAF LITTER:

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINUM PAN
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE:

Sampled by: DLC
Prepared by: DLC 6/16/11
Checked by: MAM 6/20/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 5/16/2011
FIELD SAMPLE ID: OC-SW-PZ18RSW
ACTIVITY TIME: START 12:25 END 12:35
BOTTLE TIME: 12:30
QC SAMPLES COLLECTED: DUP/MS/MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.8 ft.
SPEC. COND: 698 µs/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 8.22 mg/L
TEMPERATURE: 10.67 DEG C
SALINITY: --- %
TURBIDITY: 2.72 NTU
ORP: -57.7 mV
pH: 6.97 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE: START DEPTH _____ END DEPTH _____
TYPE OF SAMPLE: GRAB _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

DUP/MS/MSD collected

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 6/16/11
Checked by: MAM 6/20/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 5/16/2011

FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 12:00 END 12:10
BOTTLE TIME: 12:05

QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 ft.
SPEC. COND: 1034 µs/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 12.00 mg/L
TEMPERATURE: 10.68 DEG C
SALINITY: — %
TURBIDITY: 5.36 NTU
ORP: -20.5 mV
pH: 6.87 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: DLC 6/16/11
Checked by: MAM 6/20/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 8/23/2011
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 10:20 END 10:30
BOTTLE TIME: 10:25
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.0 ft.
SPEC. COND: 791 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 ft.
D.O.: 3.35 mg/L
TEMPERATURE: 24.7 DEG C
SALINITY: --- %
TURBIDITY: 4.23 NTU
ORP: 109 mV
pH: 6.00 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

SEDIMENT SAMPLE: START DEPTH / END DEPTH
TYPE OF SAMPLE: GRAB
SAMPLE OBSERVATIONS
ODOR
COLOR
FLOC OBSERVED
CLEAR OF LEAF LITTER

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINUM PAN
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Ch m h

Sampled by: CTM/BEG
Prepared by: CTM 9/22/11
Checked by: SFR 11/14/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 8/23/2011
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 9:10 END 9:20
BOTTLE TIME: 9:15
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 ft.
SPEC. COND: 2150 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.25 ft.
D.O.: 6.29 mg/L
TEMPERATURE: 21.37 DEG C
SALINITY: — %
TURBIDITY: 7.45 NTU
ORP: 81 mV
pH: 6.31 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE: START DEPTH [ ] END DEPTH [ ]
TYPE OF SAMPLE: GRAB [ ]

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM/BEG
Prepared by: CTM 9/22/11
Checked by: SFR 11/14/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 8/23/2011
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 8:55 END 9:05
BOTTLE TIME: 9:00
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.6 ft.
SPEC. COND: 804 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.25 ft.
D.O.: 6.46 mg/L
TEMPERATURE: 22.08 DEG C
SALINITY: --- %
TURBIDITY: 1.23 NTU
ORP: 21 mV
pH: 6.18 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM/BEG
Prepared by: CTM 9/22/11
Checked by: SFR 11/14/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 8/23/2011
FIELD SAMPLE ID: OC-SW-PZ-16RR
ACTIVITY TIME: START 9:20 END 9:30
BOTTLE TIME: 9:25
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 ft.
SPEC. COND: 2280 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.15 ft.
D.O.: 5.15 mg/L
TEMPERATURE: 21.43 DEG C
SALINITY: — %
TURBIDITY: 8.24 NTU
ORP: 84 mV
pH: 5.75 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM/BEG
Prepared by: CTM 9/22/11
Checked by: SFR 11/14/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 8/23/2011
FIELD SAMPLE ID: OC-SW-PZ-17RR
ACTIVITY TIME: START 9:35 END 9:45
BOTTLE TIME: 9:40
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.45 ft.
SPEC. COND: 2020 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 3.29 mg/L
TEMPERATURE: 21.77 DEG C
SALINITY: — %
TURBIDITY: 15.20 NTU
ORP: 110 mV
pH: 5.65 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: _____
END DEPTH: _____
TYPE OF SAMPLE GRAB: _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: CTM/BEG
Prepared by: CTM 9/22/11
Checked by: SFR 11/14/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 8/23/2011
FIELD SAMPLE ID: OC-SW-PZ-18R
ACTIVITY TIME: START 10:05 END 10:15
BOTTLE TIME: 10:10
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.5 ft.
SPEC. COND: 799 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.8 ft.
D.O.: 2.70 mg/L
TEMPERATURE: 23.19 DEG C
SALINITY: --- %
TURBIDITY: 4.89 NTU
ORP: 125 mV
pH: 5.78 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK: _____
RINSATE BLANK: _____

SEDIMENT SAMPLE START DEPTH: ____
END DEPTH: ____
TYPE OF SAMPLE GRAB: ____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: CTM/BEG
Prepared by: CTM 9/22/11
Checked by: SFR 11/14/11

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 8/23/2011
FIELD SAMPLE ID: OC-SW-SD-17
ACTIVITY TIME: START 9:45 END 9:55
BOTTLE TIME: 9:50
QC SAMPLES COLLECTED: —

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 ft.
SPEC. COND: 2220 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.25 ft.
D.O.: 3.68 mg/L
TEMPERATURE: 22.02 DEG C
SALINITY: --- %
TURBIDITY: 6.91 NTU
ORP: 91 mV
pH: 5.25 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

ASSOCIATED TRIP BLANK:
RINSATE BLANK:

SEDIMENT SAMPLE START DEPTH:
END DEPTH:
TYPE OF SAMPLE GRAB:

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS
ODOR:
COLOR:
FLOC OBSERVED:
CLEAR OF LEAF LITTER:

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Ch Mah

Sampled by: CTM/BEG
Prepared by: CTM 9/22/11
Checked by: SFR 11/14/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/8/2011
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 12:40 END 12:50
BOTTLE TIME: 12:45
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 2.0 ft.
SPEC. COND: 0.817 ms/cm
DEPTH OF SAMPLE FROM SURFACE: 1.0 ft.
D.O.: 2.96 mg/L
TEMPERATURE: 10.57 DEG C
SALINITY: --- %
TURBIDITY: 2.38 NTU
ORP: 43.8 mV
pH: 5.99 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/8/2011
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 11:40 END 11:55
BOTTLE TIME: 11:45
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.8 ft.
SPEC. COND: 0.863 ms/cm
DEPTH OF SAMPLE FROM SURFACE: 0.4 ft.
D.O.: 8.25 mg/L
TEMPERATURE: 10.19 DEG C
SALINITY: --- %
TURBIDITY: 35.20 NTU
ORP: 11.5 mV
pH: 6.33 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/8/2011
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 11:30 END 11:40
BOTTLE TIME: 11:30
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.8 ft.	SPEC. COND	0.754 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.4 ft.	D.O.	9.74 mg/L
TEMPERATURE	12.43 DEG C	SALINITY	--- %
TURBIDITY	9.44 NTU	ORP	7.6 mV
pH	6.74 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/8/2011
FIELD SAMPLE ID: OC-SW-PZ16RR
ACTIVITY TIME: START 11:50 END 12:00
BOTTLE TIME: 11:55
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.5 ft.	SPEC. COND	0.965 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.25 ft.	D.O.	8.30 mg/L
TEMPERATURE	11.37 DEG C	SALINITY	--- %
TURBIDITY	10.50 NTU	ORP	28.3 mV
pH	6.49 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/8/2011
FIELD SAMPLE ID: OC-SW-PZ17RR
ACTIVITY TIME: START 12:05 END 12:15
BOTTLE TIME: 12:10
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 ft.
SPEC. COND: 1.033 ms/cm
DEPTH OF SAMPLE FROM SURFACE: 0.25 ft.
D.O.: 7.64 mg/L
TEMPERATURE: 11.43 DEG C
SALINITY: --- %
TURBIDITY: 13.20 NTU
ORP: 32.5 mV
pH: 6.33 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/8/2011
FIELD SAMPLE ID: OC-SW-PZ18R
ACTIVITY TIME: START 12:25 END 12:40
BOTTLE TIME: 12:30
QC SAMPLES COLLECTED: DUP/MS/MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 ft.	SPEC. COND	2.729 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.50 ft.	D.O.	2.13 mg/L
TEMPERATURE	9.59 DEG C	SALINITY	--- %
TURBIDITY	2.73 NTU	ORP	43.6 mV
pH	6.00 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/8/2011
FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 12:15 END 12:25
BOTTLE TIME: 12:20
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.5 ft.	SPEC. COND	1.046 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.25 ft.	D.O.	5.89 mg/L
TEMPERATURE	11.38 DEG C	SALINITY	--- %
TURBIDITY	10.40 NTU	ORP	41.1 mV
pH	6.29 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/11/2011
FIELD SAMPLE ID: OC-SD-SD1
ACTIVITY TIME: START 12:33 END 12:40
BOTTLE TIME: 12:35
QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE GRAB: X

SAMPLE OBSERVATIONS
ODOR: Yes
COLOR: Dark Brown, Dark Gray
FLOC OBSERVED: None

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND (M/F)/Silt
- [X] GRAVEL (Trace)
- [X] CLAY (Trace)
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

CLEAR OF LEAF LITTER: Yes
OBSERVATIONS: 0.2 ft. of water; no flow

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE:

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/11/2011
FIELD SAMPLE ID: OC-SD-SD2
ACTIVITY TIME: START 12:18 END 12:25
BOTTLE TIME: 12:20
QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE GRAB: X

SAMPLE OBSERVATIONS
ODOR: Yes
COLOR: Dark Brown, Dark Gray
FLOC OBSERVED: Trace

TYPE OF SEDIMENT
- [X] ORGANIC
- [X] SAND (M/F)
- [X] GRAVEL (Trace)
- [X] CLAY (Trace)
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

CLEAR OF LEAF LITTER: Yes
OBSERVATIONS: 0.4 ft. of water; slow flow

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE:

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/11/2011
FIELD SAMPLE ID: OC-SD-SD3
ACTIVITY TIME: START 12:08 END 12:15
BOTTLE TIME: 12:10
QC SAMPLES COLLECTED: DUP/MS/MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE GRAB: X

SAMPLE OBSERVATIONS
ODOR: Yes
COLOR: Dark Brown, Dark Gray
FLOC OBSERVED: Trace

TYPE OF SEDIMENT
- [X] ORGANIC
- [X] SAND (M/F)/Silt
- [X] GRAVEL (Trace)
- [X] CLAY (Trace)
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

CLEAR OF LEAF LITTER: Yes
OBSERVATIONS: 0.3 ft. of water; moderate flow

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE:

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/11/2011
FIELD SAMPLE ID: OC-SD-SD4
ACTIVITY TIME: START 11:58 END 12:05
BOTTLE TIME: 12:00
QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE GRAB: X

SAMPLE OBSERVATIONS
ODOR: None
COLOR: Dark Brown, Dark Gray
FLOC OBSERVED: None

TYPE OF SEDIMENT
- [X] ORGANIC
- [X] SAND (M/F)/Silt
- [ ] GRAVEL
- [X] CLAY (Trace)
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

CLEAR OF LEAF LITTER: Yes
OBSERVATIONS: 0.1 ft. of water; no flow

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE:

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107110016
DATE: 11/11/2011
FIELD SAMPLE ID: OC-SD-SD5
ACTIVITY TIME: START 11:48 END 11:55
BOTTLE TIME: 11:50
QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE GRAB: X

SAMPLE OBSERVATIONS
ODOR: Slight
COLOR: Dark Brown, Dark Gray
FLOC OBSERVED: Trace

TYPE OF SEDIMENT
- [X] ORGANIC
- [X] SAND (M,F)/Silt
- [X] GRAVEL (Trace)
- [X] CLAY (Trace)
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

CLEAR OF LEAF LITTER: Yes
OBSERVATIONS: 0.2 ft. of water; slow flow

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: Chr Mr

Sampled by: CTM

Checked by: SFR 11/18/11

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 2/23/2012
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 9:00 END 9:15
BOTTLE TIME: 9:05
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.5 ft.	SPEC. COND	1.24 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.80 ft.	D.O.	7.04 mg/L
TEMPERATURE	9.13 DEG C	SALINITY	--- %
TURBIDITY	3.92 NTU	ORP	110.0 mV
pH	5.63 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

Sampled by: BEG

Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 2/23/2012
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 7:35 END 7:50
BOTTLE TIME: 7:40
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.5 ft.	SPEC. COND	1.44 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.25 ft.	D.O.	7.35 mg/L
TEMPERATURE	14.39 DEG C	SALINITY	--- %
TURBIDITY	2.95 NTU	ORP	60.0 mV
pH	5.63 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

amec

SIGNATURE: [signature] for Olin

Sampled by: BEG

Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 2/23/2012
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 7:15 END 7:30
BOTTLE TIME: 7:20
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.5 ft.	SPEC. COND	0.669 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.25 ft.	D.O.	5.56 mg/L
TEMPERATURE	16.22 DEG C	SALINITY	--- %
TURBIDITY	5.61 NTU	ORP	81.0 mV
pH	5.39 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

Sampled by: BEG

Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 2/23/2012
FIELD SAMPLE ID: OC-SW-PZ16RR
ACTIVITY TIME: START 7:55 END 8:00
BOTTLE TIME: 8:10
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.25 ft.	SPEC. COND	0.002 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.15 ft.	D.O.	8.19 mg/L
TEMPERATURE	13.23 DEG C	SALINITY	--- %
TURBIDITY	21.60 NTU	ORP	112.0 mV
pH	5.57 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for a.i.n

amec

Sampled by: BEG

Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 2/23/2012
FIELD SAMPLE ID: OC-SW-PZ17RR
ACTIVITY TIME: START 8:15 END 8:35
BOTTLE TIME: 8:20
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.50 ft.	SPEC. COND	2.31 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.25 ft.	D.O.	6.43 mg/L
TEMPERATURE	12.72 DEG C	SALINITY	--- %
TURBIDITY	29.60 NTU	ORP	147.0 mV
pH	5.21 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

Sampled by: BEG

Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 2/23/2012
FIELD SAMPLE ID: OC-SW-PZ18R
ACTIVITY TIME: START 8:50 END 9:05
BOTTLE TIME: 8:55
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.80 ft.
SPEC. COND: 1.14 ms/cm
DEPTH OF SAMPLE FROM SURFACE: 0.40 ft.
D.O.: 5.26 mg/L
TEMPERATURE: 11.75 DEG C
SALINITY: --- %
TURBIDITY: 4.30 NTU
ORP: 101.0 mV
pH: 5.6 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____
CLEAR OF LEAF LITTER _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

amec

SIGNATURE: [signature] for olin

Sampled by: BEG

Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 2/23/2012
FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 8:40 END 8:55
BOTTLE TIME: 8:45
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.75 ft.	SPEC. COND	1.88 ms/cm
DEPTH OF SAMPLE FROM SURFACE	0.40 ft.	D.O.	6.34 mg/L
TEMPERATURE	13.0 DEG C	SALINITY	--- %
TURBIDITY	45.20 NTU	ORP	111.0 mV
pH	5.51 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____ for Olin

amec

Sampled by: BEG

Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 6/7/2012
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 10:25 END 10:40
BOTTLE TIME: 10:30
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 ft.	SPEC. COND	0.655 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.50 ft.	D.O.	6.20 mg/L
TEMPERATURE	17.70 DEG C	SALINITY	--- %
TURBIDITY	3.23 NTU	ORP	66 mV
pH	5.66 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

amec

Sampled by: BEG
Prepared by: DLC
Checked by: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 6/7/2012
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 8:40 END 8:50
BOTTLE TIME: 8:45
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.40 ft.	SPEC. COND	0.991 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	8.70 mg/L
TEMPERATURE	18.67 DEG C	SALINITY	--- %
TURBIDITY	5.25 NTU	ORP	-17 mV
pH	5.88 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

amec

Sampled by: BEG
Prepared by: DLC
Checked by: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 6/7/2012
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 8:25 END 8:40
BOTTLE TIME: 8:30
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.20 ft.	SPEC. COND	0.685 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.10 ft.	D.O.	8.34 mg/L
TEMPERATURE	19.66 DEG C	SALINITY	--- %
TURBIDITY	2.66 NTU	ORP	24 mV
pH	5.65 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

amec

Sampled by: BEG
Prepared by: DLC
Checked by: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 6/7/2012
FIELD SAMPLE ID: OC-SW-PZ16RR
ACTIVITY TIME: START 9:00 END 9:10
BOTTLE TIME: 9:05
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.35 ft.	SPEC. COND	1.13 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	7.71 mg/L
TEMPERATURE	19.15 DEG C	SALINITY	--- %
TURBIDITY	6.70 NTU	ORP	54 mV
pH	5.70 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

amec

Sampled by: BEG
Prepared by: DLC
Checked by: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 6/7/2012
FIELD SAMPLE ID: OC-SW-PZ17RR
ACTIVITY TIME: START 9:15 END 9:25
BOTTLE TIME: 9:20
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.40 ft.	SPEC. COND	1.24 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	5.42 mg/L
TEMPERATURE	18.64 DEG C	SALINITY	--- %
TURBIDITY	6.13 NTU	ORP	88 mV
pH	5.50 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

amec

Sampled by: BEG
Prepared by: DLC
Checked by: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 6/7/2012
FIELD SAMPLE ID: OC-SW-PZ18R
ACTIVITY TIME: START 9:50 END 10:20
BOTTLE TIME: 9:55
QC SAMPLES COLLECTED: DUP, MS, MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 ft.	SPEC. COND	0.641 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.50 ft.	D.O.	3.78 mg/L
TEMPERATURE	18.09 DEG C	SALINITY	--- %
TURBIDITY	17.6 NTU	ORP	68 mV
pH	5.68 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES Collect MS, MSD, DUP

SIGNATURE: Ch Mh for Olin

Sampled by: BEG
Prepared by: DLC
Checked by: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 6/7/2012
FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 9:30 END 9:45
BOTTLE TIME: 9:35
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.60 ft.	SPEC. COND	1.22 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.30 ft.	D.O.	8.22 mg/L
TEMPERATURE	18.07 DEG C	SALINITY	--- %
TURBIDITY	16.2 NTU	ORP	78 mV
pH	5.37 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Ch Mh for Olin

amec

Sampled by: BEG
Prepared by: DLC
Checked by: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 8/23/2012
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 11:45 END 12:00
BOTTLE TIME: 11:50
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.5 ft.	SPEC. COND	0.685 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.75 ft.	D.O.	3.64 mg/L
TEMPERATURE	22.83 DEG C	SALINITY	--- %
TURBIDITY	2.72 NTU	ORP	69 mV
pH	6.22 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [X] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Ch Mk for Olin

amec

Sampled by: BEG
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 8/23/2012
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 10:10 END 10:25
BOTTLE TIME: 10:15
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.33 ft.	SPEC. COND	2.17 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.17 ft.	D.O.	8.91 mg/L
TEMPERATURE	21.55 DEG C	SALINITY	--- %
TURBIDITY	2.57 NTU	ORP	-57 mV
pH	6.48 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [X] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature]

Sampled by: BEG
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 8/23/2012
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 9:45 END 10:05
BOTTLE TIME: 9:50
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.33 ft.	SPEC. COND	0.627 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.17 ft.	D.O.	4.73 mg/L
TEMPERATURE	32.84 DEG C	SALINITY	--- %
TURBIDITY	3.04 NTU	ORP	95 mV
pH	6.02 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [X] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Ch Mb for Olin

amec

Sampled by: BEG
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 8/23/2012
FIELD SAMPLE ID: OC-SW-PZ16RR
ACTIVITY TIME: START 10:30 END 10:45
BOTTLE TIME: 10:35
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.17 ft.	SPEC. COND	2.60 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.08 ft.	D.O.	5.19 mg/L
TEMPERATURE	21.82 DEG C	SALINITY	--- %
TURBIDITY	5.07 NTU	ORP	-32 mV
pH	6.33 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [X] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Ch Mh for Olin

Sampled by: BEG
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 8/23/2012
FIELD SAMPLE ID: OC-SW-PZ17RR
ACTIVITY TIME: START 10:50 END 11:05
BOTTLE TIME: 10:55
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.42 ft.	SPEC. COND	2.50 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.21 ft.	D.O.	3.74 mg/L
TEMPERATURE	22.03 DEG C	SALINITY	--- %
TURBIDITY	20.90 NTU	ORP	88 mV
pH	5.38 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [X] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

amec

Sampled by: BEG
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 8/23/2012
FIELD SAMPLE ID: OC-SW-PZ18R
ACTIVITY TIME: START 11:25 END 11:40
BOTTLE TIME: 11:30
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.83 ft.	SPEC. COND	0.664 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.42 ft.	D.O.	2.60 mg/L
TEMPERATURE	22.88 DEG C	SALINITY	--- %
TURBIDITY	1.64 NTU	ORP	63 mV
pH	6.14 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [X] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: Ch Mh for Oln

amec

Sampled by: BEG
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 8/23/2012
FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 11:05 END 11:20
BOTTLE TIME: 11:10
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.33 ft.	SPEC. COND	2.25 mS/cm
DEPTH OF SAMPLE FROM SURFACE	0.17 ft.	D.O.	2.81 mg/L
TEMPERATURE	21.14 DEG C	SALINITY	--- %
TURBIDITY	75.3 NTU	ORP	41 mV
pH	5.81 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [X] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for Olin

Sampled by: BEG
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 10:00 END 10:10
BOTTLE TIME: 10:05
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 ft.	SPEC. COND	695 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	2.96 mg/L
TEMPERATURE	5.06 DEG C	SALINITY	--- %
TURBIDITY	1.97 NTU	ORP	54.4 mV
pH	5.73 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES No water flow.

SIGNATURE: _____

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 8:40 END 8:50
BOTTLE TIME: 8:45
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.50 ft.	SPEC. COND	1240 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	7.56 mg/L
TEMPERATURE	4.26 DEG C	SALINITY	--- %
TURBIDITY	3.76 NTU	ORP	58.4 mV
pH	5.99 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES: Slight water flow. Iron floc in water (sheen noted).

SIGNATURE: [signature]

amec

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 8:30 END 8:40
BOTTLE TIME: 8:35
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.50 ft.	SPEC. COND	658 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	9.57 mg/L
TEMPERATURE	5.56 DEG C	SALINITY	--- %
TURBIDITY	2.45 NTU	ORP	59.8 mV
pH	6.43 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES: Slight water flow. Iron floc in water (sheen noted).

SIGNATURE: _____

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SW-PZ16RR
ACTIVITY TIME: START 8:55 END 9:05
BOTTLE TIME: 9:00
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.40 ft.	SPEC. COND	1279 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	8.97 mg/L
TEMPERATURE	5.62 DEG C	SALINITY	--- %
TURBIDITY	6.79 NTU	ORP	47.0 mV
pH	5.83 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES Good water flow. Iron floc in water.

SIGNATURE: _____

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SW-PZ17RR
ACTIVITY TIME: START 9:15 END 9:25
BOTTLE TIME: 9:20
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.30 ft.	SPEC. COND	1347 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.10 ft.	D.O.	5.09 mg/L
TEMPERATURE	6.33 DEG C	SALINITY	--- %
TURBIDITY	10.7 NTU	ORP	74.4 mV
pH	5.56 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES: Good water flow. Orange/green floc in water.

SIGNATURE: _____

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SW-PZ18R
ACTIVITY TIME: START 9:50 END 10:00
BOTTLE TIME: 9:55
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 ft.	SPEC. COND	693 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	2.69 mg/L
TEMPERATURE	5.33 DEG C	SALINITY	--- %
TURBIDITY	2.09 NTU	ORP	59.5 mV
pH	5.77 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES No water flow.

SIGNATURE: _____

amec

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 9:25 END 9:45
BOTTLE TIME: 9:30
QC SAMPLES COLLECTED: DUP/ MS/ MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.60 ft.	SPEC. COND	1322 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	3.12 mg/L
TEMPERATURE	7.39 DEG C	SALINITY	--- %
TURBIDITY	10.2 NTU	ORP	78.1 mV
pH	5.57 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES: Good water flow. Orange/green floc in water.
Collect DUP/ MS/ MSD.

SIGNATURE: _____

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107120016 | DATE: 11/16/2012

FIELD SAMPLE ID: OC-SD-SD1 | ACTIVITY TIME: START 11:30 END 11:35 | BOTTLE TIME: 11:30

QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.

SPEC. COND: µs/cm

DEPTH OF SAMPLE FROM SURFACE: ft.

D.O.: mg/L

TEMPERATURE: DEG C

SALINITY: --- %

TURBIDITY: NTU

ORP: mV

pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0 ft.

END DEPTH: 0.5 ft.

TYPE OF SAMPLE GRAB: X

SAMPLE OBSERVATIONS

ODOR: Trace

COLOR: Dark Brown/Gray

FLOC OBSERVED: None

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [X] GRAVEL (Trace)
- [ ] CLAY
- [X] OTHER Wet

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

CLEAR OF LEAF LITTER: Yes (cleared)

OBSERVATIONS: 0.3 ft. of water; No flow

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE:

amec

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107120016 | DATE: 11/16/2012

FIELD SAMPLE ID: OC-SD-SD2 | ACTIVITY TIME: START 11:22 END 11:30 | BOTTLE TIME: 11:25

QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.

SPEC. COND: µs/cm

DEPTH OF SAMPLE FROM SURFACE: ft.

D.O.: mg/L

TEMPERATURE: DEG C

SALINITY: --- %

TURBIDITY: NTU

ORP: mV

pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0 ft.

END DEPTH: 0.5 ft.

TYPE OF SAMPLE: GRAB X

SAMPLE OBSERVATIONS

ODOR: Trace

COLOR: Dark Gray/Brown

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [X] GRAVEL (Trace)
- [ ] CLAY
- [X] OTHER Wet

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER _____

FLOC OBSERVED: Yes (cleared) | CLEAR OF LEAF LITTER: Yes (cleared) | OBSERVATIONS: 0.3 ft. of water; Good flow

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: _____

amec

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SD-SD3
ACTIVITY TIME: START 11:10 END 11:20
BOTTLE TIME: 11:15
QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE GRAB: X
SAMPLE OBSERVATIONS
ODOR: Trace
COLOR: Dark Gray/Brown

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [X] GRAVEL (Trace)
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER _____

FLOC OBSERVED: Yes (cleared)
CLEAR OF LEAF LITTER: Yes (cleared)
OBSERVATIONS: 0.3 ft. of water; Good flow

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: _____

amec

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SD-SD4
ACTIVITY TIME: START 10:55 END 11:05
BOTTLE TIME: 11:00
QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE: GRAB X

SAMPLE OBSERVATIONS
ODOR: Slight
COLOR: Dark Gray/Brown
FLOC OBSERVED: None

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [X] GRAVEL (Trace)
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER: Yes (cleared)
OBSERVATIONS: 0.2 ft. of water; No flow

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: _____

amec

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107120016
DATE: 11/16/2012
FIELD SAMPLE ID: OC-SD-SD5
ACTIVITY TIME: START 10:40 END 10:50
BOTTLE TIME: 10:45
QC SAMPLES COLLECTED: DUP/ MS/ MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE GRAB: X
SAMPLE OBSERVATIONS
ODOR: Slight
COLOR: Dark Gray/Brown

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [X] GRAVEL (Trace)
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER _____

FLOC OBSERVED: Trace (cleared)
CLEAR OF LEAF LITTER: Yes (cleared)
OBSERVATIONS: 0.2 ft. of water; Slight flow

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE: Chr Martin

amec

Sampled by: CTM
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 3/21/2013
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 9:55 END 10:05
BOTTLE TIME: 10:00
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 ft.	SPEC. COND	678 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.50 ft.	D.O.	10.21 mg/L
TEMPERATURE	3.14 DEG C	SALINITY	--- %
TURBIDITY	1.35 NTU	ORP	96.0 mV
pH	6.26 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for BG

amec

Sampled by: BEG
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 3/21/2013
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 8:25 END 8:35
BOTTLE TIME: 8:30
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.80 ft.	SPEC. COND	665 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.40 ft.	D.O.	13.30 mg/L
TEMPERATURE	1.48 DEG C	SALINITY	--- %
TURBIDITY	NA NTU	ORP	127.8 mV
pH	6.42 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for BG.

Sampled by: BEG
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 3/21/2013
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 8:05 END 8:20
BOTTLE TIME: 8:15
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.50 ft.	SPEC. COND	582 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.25 ft.	D.O.	11.20 mg/L
TEMPERATURE	2.40 DEG C	SALINITY	--- %
TURBIDITY	6.80 NTU	ORP	214.3 mV
pH	6.90 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for BG

amec

Sampled by: BEG
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 3/21/2013
FIELD SAMPLE ID: OC-SW-PZ16RR
ACTIVITY TIME: START 8:45 END 9:00
BOTTLE TIME: 8:50
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.50 ft.	SPEC. COND	771 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.25 ft.	D.O.	10.66 mg/L
TEMPERATURE	1.89 DEG C	SALINITY	--- %
TURBIDITY	10.90 NTU	ORP	118.6 mV
pH	5.88 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for BG

Sampled by: BEG
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 3/21/2013
FIELD SAMPLE ID: OC-SW-PZ17RR
ACTIVITY TIME: START 9:05 END 9:20
BOTTLE TIME: 9:15
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.80 ft.	SPEC. COND	776 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.40 ft.	D.O.	18.30 mg/L
TEMPERATURE	2.47 DEG C	SALINITY	--- %
TURBIDITY	13.70 NTU	ORP	110.8 mV
pH	6.12 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

amec

SIGNATURE: [signature] for BG

Sampled by: BEG
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 3/21/2013
FIELD SAMPLE ID: OC-SW-PZ18R
ACTIVITY TIME: START 9:40 END 9:50
BOTTLE TIME: 9:45
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 ft.	SPEC. COND	673 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.50 ft.	D.O.	7.35 mg/L
TEMPERATURE	3.28 DEG C	SALINITY	--- %
TURBIDITY	1.00 NTU	ORP	98.3 mV
pH	6.13 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: [signature] for BC

Sampled by: BEG
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 3/21/2013
FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 9:20 END 9:35
BOTTLE TIME: 9:25
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 ft.	SPEC. COND	706 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.50 ft.	D.O.	25.60 mg/L
TEMPERATURE	2.52 DEG C	SALINITY	--- %
TURBIDITY	12.9 NTU	ORP	97.5 mV
pH	6.2 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES High DO?

amec

SIGNATURE: [signature] for BG

Sampled by: BEG
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 5/13/2013
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 10:10 END 10:20
BOTTLE TIME: 10:15
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.80 ft.	SPEC. COND	803 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.40 ft.	D.O.	3.41 mg/L
TEMPERATURE	10.46 DEG C	SALINITY	--- %
TURBIDITY	4.60 NTU	ORP	75.4 mV
pH	5.92 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH ____
END DEPTH ____
TYPE OF SAMPLE GRAB ____

SAMPLE OBSERVATIONS
ODOR ____
COLOR ____
FLOC OBSERVED ____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER ____

CLEAR OF LEAF LITTER ____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER ____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER ____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: ____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 5/13/2013
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 8:40 END 8:50
BOTTLE TIME: 8:45
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.30 ft.	SPEC. COND	1151 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	9.51 mg/L
TEMPERATURE	10.87 DEG C	SALINITY	--- %
TURBIDITY	4.65 NTU	ORP	0.9 mV
pH	6.25 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 5/13/2013
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 8:25 END 8:30
BOTTLE TIME: 8:30
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.30 ft.	SPEC. COND	907 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	7.31 mg/L
TEMPERATURE	10.98 DEG C	SALINITY	--- %
TURBIDITY	28.60 NTU	ORP	-25.0 mV
pH	6.49 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 5/13/2013
FIELD SAMPLE ID: OC-SW-PZ16RR
ACTIVITY TIME: START 8:58 END 9:08
BOTTLE TIME: 9:05
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.40 ft.	SPEC. COND	1241 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	6.63 mg/L
TEMPERATURE	11.09 DEG C	SALINITY	--- %
TURBIDITY	7.71 NTU	ORP	61.2 mV
pH	5.79 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 5/13/2013
FIELD SAMPLE ID: OC-SW-PZ17RR
ACTIVITY TIME: START 9:10 END 9:20
BOTTLE TIME: 9:15
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.50 ft.	SPEC. COND	1287 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	11.28 mg/L
TEMPERATURE	11.21 DEG C	SALINITY	--- %
TURBIDITY	7.17 NTU	ORP	72.0 mV
pH	5.83 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 5/13/2013
FIELD SAMPLE ID: OC-SW-PZ18R
ACTIVITY TIME: START 9:38 END 9:48
BOTTLE TIME: 9:40
QC SAMPLES COLLECTED: DUP/ MS/ MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.60 ft.	SPEC. COND	830 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.30 ft.	D.O.	4.17 mg/L
TEMPERATURE	10.71 DEG C	SALINITY	--- %
TURBIDITY	2.81 NTU	ORP	62.9 mV
pH	5.89 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES
DUP/ MS/ MSD collected
Blind DUP = OC-DUP-SW

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 5/13/2013
FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 9:20 END 9:30
BOTTLE TIME: 9:25
QC SAMPLES COLLECTED: ---

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.40 ft.	SPEC. COND	1299 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	3.73 mg/L
TEMPERATURE	11.22 DEG C	SALINITY	--- %
TURBIDITY	7.55 NTU	ORP	93.7 mV
pH	5.41 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 8/22/2013
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 10:07 END 10:12
BOTTLE TIME: 10:10
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.90 ft.	SPEC. COND	967 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.30 ft.	D.O.	3.81 mg/L
TEMPERATURE	20.78 DEG C	SALINITY	--- %
TURBIDITY	2.56 NTU	ORP	-5.3 mV
pH	6.21 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 8/22/2013
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 8:53 END 8:58
BOTTLE TIME: 8:55
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.20 ft.
SPEC. COND: 1380 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.10 ft.
D.O.: 2.04 mg/L
TEMPERATURE: 19.68 DEG C
SALINITY: --- %
TURBIDITY: 29.4 NTU
ORP: -88.0 mV
pH: 6.52 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 8/22/2013
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 8:40 END 8:47
BOTTLE TIME: 8:45
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.30 ft.
SPEC. COND: 896 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.20 ft.
D.O.: 5.42 mg/L
TEMPERATURE: 18.46 DEG C
SALINITY: --- %
TURBIDITY: 29.4 NTU
ORP: -57.7 mV
pH: 6.36 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS

SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 8/22/2013
FIELD SAMPLE ID: OC-SW-PZ16RR
ACTIVITY TIME: START 9:10 END 9:17
BOTTLE TIME: 9:15
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.30 ft.	SPEC. COND	3188 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	4.22 mg/L
TEMPERATURE	19.19 DEG C	SALINITY	--- %
TURBIDITY	12.3 NTU	ORP	-8.9 mV
pH	6.24 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 8/22/2013
FIELD SAMPLE ID: OC-SW-PZ17RRR
ACTIVITY TIME: START 9:25 END 9:35
BOTTLE TIME: 9:30
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.60 ft.	SPEC. COND	3484 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.30 ft.	D.O.	5.35 mg/L
TEMPERATURE	17.51 DEG C	SALINITY	--- %
TURBIDITY	42.3 NTU	ORP	33.8 mV
pH	5.43 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 8/22/2013
FIELD SAMPLE ID: OC-SW-PZ18R
ACTIVITY TIME: START 9:57 END 10:02
BOTTLE TIME: 10:00
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.90 ft.	SPEC. COND	967 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.30 ft.	D.O.	3.61 mg/L
TEMPERATURE	20.56 DEG C	SALINITY	--- %
TURBIDITY	3.42 NTU	ORP	9.2 mV
pH	5.85 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____ CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 8/22/2013
FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 9:37 END 9:42
BOTTLE TIME: 9:40
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.50 ft.	SPEC. COND	3565 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	1.71 mg/L
TEMPERATURE	17.03 DEG C	SALINITY	--- %
TURBIDITY	49.3 NTU	ORP	42.0 mV
pH	5.11 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: DLC
Prepared by: CTM
Checked by: EYM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SW-ISCO1
ACTIVITY TIME: START 14:25 END 14:35
BOTTLE TIME: 14:30
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.8 ft.	SPEC. COND	523 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	2.85 mg/L
TEMPERATURE	4.26 DEG C	SALINITY	--- %
TURBIDITY	4.04 NTU	ORP	-4.5 mV
pH	6.38 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: MAM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SW-ISCO2
ACTIVITY TIME: START 13:12 END 13:19
BOTTLE TIME: 13:15
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.3 ft.	SPEC. COND	1612 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 ft.	D.O.	1.89 mg/L
TEMPERATURE	2.49 DEG C	SALINITY	--- %
TURBIDITY	17.7 NTU	ORP	-3.2 mV
pH	6.49 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: MAM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SW-ISCO3
ACTIVITY TIME: START 13:00 END 13:05
BOTTLE TIME: 13:00
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.4 ft.	SPEC. COND	671 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.20 ft.	D.O.	10.09 mg/L
TEMPERATURE	-0.11 DEG C	SALINITY	--- %
TURBIDITY	3.73 NTU	ORP	-6.5 mV
pH	6.93 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: MAM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SW-PZ16RR
ACTIVITY TIME: START 13:30 END 13:40
BOTTLE TIME: 13:35
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.20 ft.	SPEC. COND	2290 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.10 ft.	D.O.	4.66 mg/L
TEMPERATURE	-0.07 DEG C	SALINITY	--- %
TURBIDITY	4.28 NTU	ORP	11.8 mV
pH	6.31 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: MAM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SW-PZ17RRR
ACTIVITY TIME: START 13:50 END 14:00
BOTTLE TIME: 13:55
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.3 ft.
SPEC. COND: 2264 µS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 ft.
D.O.: 4.86 mg/L
TEMPERATURE: 5.32 DEG C
SALINITY: --- %
TURBIDITY: 12.0 NTU
ORP: 20 mV
pH: 5.91 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]
SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: MAM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SW-PZ18R
ACTIVITY TIME: START 14:05 END 14:20
BOTTLE TIME: 14:10
QC SAMPLES COLLECTED: DUP/ MS/ MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.6 ft.	SPEC. COND	543 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.5 ft.	D.O.	3.01 mg/L
TEMPERATURE	3.79 DEG C	SALINITY	--- %
TURBIDITY	3.93 NTU	ORP	-40.0 mV
pH	6.21 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER: Weir Area

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES DUP/ MS/ MSD collected

SIGNATURE: _____

Sampled by: MAM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SW-SD17
ACTIVITY TIME: START 14:00 END 14:05
BOTTLE TIME: 14:00
QC SAMPLES COLLECTED: N/A

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.2 ft.	SPEC. COND	2360 µS/cm
DEPTH OF SAMPLE FROM SURFACE	0.1 ft.	D.O.	2.51 mg/L
TEMPERATURE	6.13 DEG C	SALINITY	--- %
TURBIDITY	2.31 NTU	ORP	15 mV
pH	6.33 UNITS		

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [X] PERISTALTIC PUMP
- [X] FILTER (0.45 micron)
- [X] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [X] STREAM/ DITCH
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [X] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH [ ]
END DEPTH [ ]
TYPE OF SAMPLE GRAB [ ]

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
FLOC OBSERVED _____

TYPE OF SEDIMENT
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] ALUMINIUM PAN
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

CLEAR OF LEAF LITTER _____

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	X
X	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	X
X	Chloride	300.0	N	4 DEG. C	1 X 500 mL	X
X	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	X
X	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	X
X	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	X
X	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	X

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	% Solids / Moisture	160.3	4 DEG. C	1 X 8 oz.	
	Total Al, Cr, Fe	Total 6010B	4 DEG. C	1 X 8 oz.	

NOTES

SIGNATURE: _____

Sampled by: MAM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SD-SD1
ACTIVITY TIME: START 10:40 END 10:55
BOTTLE TIME: 10:45
QC SAMPLES COLLECTED: DUP/ MS/ MSD

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE Grab/Composite: X
SAMPLE OBSERVATIONS
ODOR: Trace
COLOR: Dark Brown/Gray
FLOC OBSERVED: None

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [X] GRAVEL-M/C Sand (Trace)
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

CLEAR OF LEAF LITTER: Yes (cleared)
OBSERVATIONS: 0.3 ft. of water; No flow; Ice

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES: DUP/ MS/ MSD collected

SIGNATURE:

Sampled by: CTM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SD-SD2
ACTIVITY TIME: START 12:02 END 12:10
BOTTLE TIME: 12:05
QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE Grab/Composite: X

SAMPLE OBSERVATIONS
ODOR: Yes
COLOR: Dark Gray/Black

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [X] GRAVEL-C Sand (Trace)
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

FLOC OBSERVED: Yes (cleared)
CLEAR OF LEAF LITTER: Yes (cleared)
OBSERVATIONS: 0.5 ft. of water; Trace flow

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE:

Sampled by: CTM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107130016 | DATE: 11/21/2013

FIELD SAMPLE ID: OC-SD-SD3 | ACTIVITY TIME: START 11:50 END 12:00 | BOTTLE TIME: 11:55

QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.

SPEC. COND: µs/cm

DEPTH OF SAMPLE FROM SURFACE: ft.

D.O.: mg/L

TEMPERATURE: DEG C

SALINITY: --- %

TURBIDITY: NTU

ORP: mV

pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.
END DEPTH: 0.5 ft.

TYPE OF SAMPLE: Grab/Composite X

SAMPLE OBSERVATIONS
ODOR: Yes
COLOR: Dark Gray/Black

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [X] GRAVEL-C/M Sand (Trace)
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

FLOC OBSERVED: Trace (cleared) | CLEAR OF LEAF LITTER: Yes (cleared) | OBSERVATIONS: 0.2 ft. of water; No flow

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE:

Sampled by: CTM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107130016 | DATE: 11/21/2013

FIELD SAMPLE ID: OC-SD-SD4 | ACTIVITY TIME: START 11:38 END 11:45 | BOTTLE TIME: 11:40

QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.

SPEC. COND: µs/cm

DEPTH OF SAMPLE FROM SURFACE: ft.

D.O.: mg/L

TEMPERATURE: DEG C

SALINITY: --- %

TURBIDITY: NTU

ORP: mV

pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.

END DEPTH: 0.5 ft.

TYPE OF SAMPLE: Grab/ Composite X

SAMPLE OBSERVATIONS

ODOR: Slight

COLOR: Dark Gray/Brown

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [X] GRAVEL-C Sand (Trace)
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

FLOC OBSERVED: None | CLEAR OF LEAF LITTER: Yes (cleared) | OBSERVATIONS: 0.4 ft. of water; No flow; Ice

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE:

Sampled by: CTM
Prepared by: CTM
Checked by: DLC

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SEDIMENT

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107130016
DATE: 11/21/2013
FIELD SAMPLE ID: OC-SD-SD5
ACTIVITY TIME: START 11:25 END 11:35
BOTTLE TIME: 11:30
QC SAMPLES COLLECTED: --

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ft.
SPEC. COND: µs/cm
DEPTH OF SAMPLE FROM SURFACE: ft.
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: --- %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] PACS BOMB
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] NONE

SEDIMENT DATA

SEDIMENT SAMPLE START DEPTH: 0.0 ft.
END DEPTH: 0.5 ft.
TYPE OF SAMPLE Grab/Composite: X

SAMPLE OBSERVATIONS
ODOR: Slight
COLOR: Dark Gray/Brown
FLOC OBSERVED: None

TYPE OF SEDIMENT
- [X] ORGANIC (Trace)
- [X] SAND/ SILT
- [ ] GRAVEL (Trace)
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTIO
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

CLEAR OF LEAF LITTER: Yes (cleared)
OBSERVATIONS: 0.2 ft. of water; No flow; Ice

ANALYTICAL PARAMETERS
SURFACE WATER

		METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	Ammonia-Nitrogen	10-107-06-1	N	H2SO4 / 4 DEG. C	1 X 250 mL	[ ]
[ ]	Nitrate / Nitrite	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Chloride	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Sulfate	300.0	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Specific Conductivity	SM 2510B	N	4 DEG. C	1 X 500 mL	[ ]
[ ]	Total Al, Cr, Na	Total 6010B	N	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Dissolved Al, Cr, Na	DIS. 6010B	Y	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]						[ ]
[ ]						[ ]

ANALYTICAL PARAMETERS
SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X]	% Solids / Moisture	160.3	4 DEG. C	1 X 4 oz.	[X]
[X]	Total Al, Cr, Fe	6010B	4 DEG. C	1 X 4 oz.	[X]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]
[ ]					[ ]

NOTES

SIGNATURE:

amec

Sampled by: CTM
Prepared by: CTM
Checked by: DLC

APPENDIX D

BACKGROUND SURFACE WATER AND SEDIMENT FIELD DATA RECORDS

(Provided on CD)

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/13/10

FIELD SAMPLE ID (SW): OC-SW-BK-SW/SD-001-XXX
SW BOTTLE TIME: 1235
FIELD SAMPLE ID (SED): OC-SD-BK-SW/SD-001-XXX
SED BOTTLE TIME: 1245
QC SAMPLES COLLECTED: ——
ACTIVITY TIME: START 1225 END 1255

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 4 in.
DEPTH OF SAMPLE FROM SURFACE: 1 in.
TEMPERATURE: 7.68 DEG C
TURBIDITY: 2.15 NTU
pH: 6.77 UNITS
SPEC. COND: 900 uS/cm
D.O.: 9.09 mg/L
SALINITY: — %
ORP: 90.5 mV

EQUIPMENT USED:
- [ ] BEAKER
- [X] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

water slightly moving

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6 in.

TYPE OF SAMPLE:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: None
COLOR: Drk - Lt Br

TYPE OF SEDIMENT:
- [X] ORGANIC (Trace)
- [X] SAND
- [X] GRAVEL (Trace)
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

DESCRIPTION: Dark Br to Lt Br silt sand. Trace organics / gravel Water moving slowly.

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	X
X	SVOCs	8270C	4 DEG. C	2 X 1 L	X
	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	
X	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	X
	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	
	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	
	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	
	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	
	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	
	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	
	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	
	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	
	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	
	DMF	mod 8033	4 DEG. C	2 X 40 mL	
X	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	X
X	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	X
	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	X
X	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	X
	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	
X	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	X
	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	
	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	
	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	
	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	
	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	
	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	
	DMF	mod 8033	4 DEG. C	1 X 4 oz.	
X	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	X

NOTES

SIGNATURE: [signature]

Checked By:

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6/8/11

FIELD SAMPLE ID (SW): OC-SW-SDBK-001-XXX
SW BOTTLE TIME: 1130
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1120 END 1140

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 3047 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 2 in ~~FT~~
D.O.: 1.49 mg/L
TEMPERATURE: 21.41 DEG C
SALINITY: — %
TURBIDITY: 5.27 NTU
ORP: -51.0 mV
pH: 6.63 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

No Movement/ Stagnant Water

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: [signature]

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-10-0016 | DATE: 12-3-10

FIELD SAMPLE ID (SW): OC-SW-BK-SW15D-003-RT1 | SW BOTTLE TIME: 13:30

FIELD SAMPLE ID (SED): OC-SD-BK-SW15D-003-RT1 | SED BOTTLE TIME: 13:40

QC SAMPLES COLLECTED: /

ACTIVITY TIME: START 13:30 END 14:00

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 FT	SPEC. COND	472 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.3 FT	D.O.	10.47 mg/L
TEMPERATURE	6.50 DEG C	SALINITY	/ %
TURBIDITY	5.54 NTU	ORP	41.0 mV
pH	7.03 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [x] ~~DI WATER~~ NA
- [x] ~~LIQUINOX~~ NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: /

COLOR: brown - dark brown - grey

TYPE OF SEDIMENT:
- [x] ORGANIC (Trace)
- [x] SAND (Fine)
- [ ] GRAVEL
- [ ] CLAY
- [x] OTHER silt

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [x] DI WATER
- [x] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER _____

DESCRIPTION: mostly grey - brown sandy silt. saturated sulfur odor, Flow in water

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: CJM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-7-11

FIELD SAMPLE ID (SW): OC-SW-SDBK-002 -XXX
SW BOTTLE TIME: 1430
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1415 END 1440

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.0 FT
SPEC. COND: 651 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.3 FT
D.O.: 7.93 mg/L
TEMPERATURE: 17.69° DEG C
SALINITY: — %
TURBIDITY: 3.25 NTU
ORP: 77.8 mV
pH: 6.80 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

DESCRIPTION _____

ANALYTICAL PARAMETERS

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

water clear, flowing, No odor

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 2/17/11

FIELD SAMPLE ID (SW): —
SW BOTTLE TIME: —
FIELD SAMPLE ID (SED): OC-SD-SDBK-002-XXX
SED BOTTLE TIME: 1130
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1050 END 1215

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ~ 1.0 FT
SPEC. COND: uS/cm
DEPTH OF SAMPLE FROM SURFACE: FT
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

Moving water, No ice

DEPTH OF SEDIMENT: 0.5 FT

TYPE OF SAMPLE
- [X] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [X] ORGANIC Trace
- [X] SAND / Silts
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS

ODOR: None

COLOR: Drk Br / Br

DESCRIPTION: Drk Br f/m Sands, Trace organics some silt

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] SVOCs	8270C	4 DEG. C	2 X 1 L	[ ]
[ ] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[ ] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[ ] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[ ]
[ ] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[ ]
[ ] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[X]
[X] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[X]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[X] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[X]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[X] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[X]
[X] Toxicity		4 Deg C	3x 1 Gal Buckets	[X]

NOTES: Grain Size

SIGNATURE: [signature]

Checked By: JM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12-3-10

FIELD SAMPLE ID (SW): OC-SW-BK-SW15D-004-xxx
SW BOTTLE TIME: 11:00
FIELD SAMPLE ID (SED): OC-SD-BK-SW15D-004-xxx
SED BOTTLE TIME: 11:10
QC SAMPLES COLLECTED: ✓
ACTIVITY TIME: START 10:50 END 11:20

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.2 FT
SPEC. COND: 327 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 13.63 mg/L
TEMPERATURE: 3.61 DEG C
SALINITY: ✓ %
TURBIDITY: ~~2.63~~ 2.63 (DP) NTU
ORP: 65.5 mV
pH: 7.23 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- OTHER _____

DECON FLUIDS USED:
- [x] ~~DI WATER~~ NA
- [x] ~~LIQUINOX~~ NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0.5"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: None
COLOR: brown-dark brown
DESCRIPTION: Mostly brown-dark brown silt, some organics, saturated sulfur odor, water moving slow

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND (Trace)
- [ ] GRAVEL
- [ ] CLAY
- [x] OTHER silt

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6/8/11

FIELD SAMPLE ID (SW): OC-SW-SDBK-004-XXX
SW BOTTLE TIME: 1220
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1200 END 1255

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.5 FT
SPEC. COND: 582 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 1.95 mg/L
TEMPERATURE: 22.09 DEG C
SALINITY: — %
TURBIDITY: 6.70 NTU
ORP: -57.3 mV
pH: 7.03 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

Slightly moving water; slightly sulfur odor

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: JTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/3/10

FIELD SAMPLE ID (SW): — REF
SW BOTTLE TIME: —
FIELD SAMPLE ID (SED): CC-SD- SDBK-002-xxx
SED BOTTLE TIME: 1345
QC SAMPLES COLLECTED: None
ACTIVITY TIME: START 1340 END 1350

SURFACE WATER DATA

WATER DEPTH AT LOCATION: FT
SPEC. COND: uS/cm
DEPTH OF SAMPLE FROM SURFACE: FT
D.O.: mg/L
TEMPERATURE: DEG C
SALINITY: %
TURBIDITY: NTU
ORP: mV
pH: UNITS

EQUIPMENT USED
- [ ] BEAKER
- [ ] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS
ODOR: None
COLOR: BROWN
DESCRIPTION: ORGANIC W/ SAND-

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	SVOCs	8270C	4 DEG. C	2 X 1 L	[ ]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[ ]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[ ]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[ ]
[ ]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[ ]
[ ]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES

SIGNATURE: Charles H. Symm

Checked By: CTM

APPENDIX D

OU2 SURFACE WATER AND SEDIMENT FIELD DATA RECORDS – OFF-PROPERTY WEST DITCH

(Provided on CD)

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/10/10

FIELD SAMPLE ID (SW): OC-SW-SPWD-1-XXX
SW BOTTLE TIME: 1315
FIELD SAMPLE ID (SED): OC-SD-SPWD-1-XXX
SED BOTTLE TIME: 1315
QC SAMPLES COLLECTED: None
ACTIVITY TIME: START 1300 END 1325

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5' FT
SPEC. COND: 1381 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3.5' FT
D.O.: 4.06 mg/L
TEMPERATURE: 1.37 DEG C
SALINITY: NA %
TURBIDITY: 9.77 NTU
ORP: 53.3 mV
pH: 6.07 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS
ODOR: None
COLOR: BROWN
DESCRIPTION: SAND fine to med w/ trace organics

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: [illegible]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-7-11

FIELD SAMPLE ID (SW): OC-SW-OPWD-1-XXX
SW BOTTLE TIME: 0900
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: none
ACTIVITY TIME: START 0855 END 0915

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5' FT
SPEC. COND: 1568 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3" ■
D.O.: 0.32 mg/L
TEMPERATURE: 15.01 DEG C
SALINITY: — %
TURBIDITY: 8.36 NTU
ORP: -89 mV
pH: 6.29 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

water is murky, standing, no flow

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/10/10

FIELD SAMPLE ID (SW): OC-SW-OPWD-2-XXX
SW BOTTLE TIME: 1345
FIELD SAMPLE ID (SED): OC-SD-OPWD-2-XXX
SED BOTTLE TIME: 1345
QC SAMPLES COLLECTED: ——
ACTIVITY TIME: START 1330 END 1355

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 530 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 6" FT
D.O.: 1.78 mg/L
TEMPERATURE: 0.30 DEG C
SALINITY: NA %
TURBIDITY: 22.5 NTU
ORP: 44.9 mV
pH: 6.25 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER ____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: NONE
COLOR: BRN Trace
DESCRIPTION: M/F SAND w Organics

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER ____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER ____

DECON FLUIDS USED
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER ____

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 6-7-11

FIELD SAMPLE ID (SW): OC-SW-OPWA-2 | SW BOTTLE TIME: 1005

FIELD SAMPLE ID (SED): — | SED BOTTLE TIME: —

QC SAMPLES COLLECTED: — | ACTIVITY TIME: START 1000 END 1030

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.5 FT	SPEC. COND	678 uS/cm
DEPTH OF SAMPLE FROM SURFACE	2" FT	D.O.	0.50 mg/L
TEMPERATURE	17.30 DEG C	SALINITY	— %
TURBIDITY	50.6 NTU	ORP	-57 mV
pH	6.65 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE: [ ] DISCRETE [ ] COMPOSITE

SAMPLE OBSERVATIONS: ODOR ____ COLOR ____

TYPE OF SEDIMENT: [ ] ORGANIC [ ] SAND [ ] GRAVEL [ ] CLAY [ ] OTHER

EQUIPMENT FOR COLLECTION: [ ] HAND AUGER [ ] S.S SPOON [ ] S.S BOWL [ ] DREDGE [ ] OTHER

DECON FLUIDS USED: [ ] DI WATER [ ] POTABLE WATER [ ] LIQUINOX [ ] OTHER

DESCRIPTION:

ANALYTICAL PARAMETERS SURFACE WATER

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
X	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	X
X	SVOCs	8270C	4 DEG. C	2 X 1 L	X
X	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	X
X	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	X
	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	
X	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	X
	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	
	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	
	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	
	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	
X	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	X
X	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	X
	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	
	DMF	mod 8033	4 DEG. C	2 X 40 mL	
X	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	X
X	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	X
X	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	X

ANALYTICAL PARAMETERS SEDIMENT

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	
	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	
	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	
	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	
	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	
	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	
	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	
	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	
	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	
	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	
	DMF	mod 8033	4 DEG. C	1 X 4 oz.	
	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	

NOTES

Water is murky, standing. No Flow
Floc in water.

SIGNATURE: [signature]

Checked By: LTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/10/6

FIELD SAMPLE ID (SW): OC-SW-OPWD-SD/SOKW-S-XXX
SW BOTTLE TIME: 1230
FIELD SAMPLE ID (SED): OCSD-OPWD-SD/KO/SW-S-XXX
SED BOTTLE TIME: 1230
QC SAMPLES COLLECTED: None
ACTIVITY TIME: START 1210 END 1255

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 10" FT
SPEC. COND: 1216 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3" FT
D.O.: 4.43 mg/L
TEMPERATURE: 2.19 DEG C
SALINITY: NO %
TURBIDITY: 13.3 NTU
ORP: 78.6 mV
pH: 6.00 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: None
COLOR: Black
DESCRIPTION: Muck w/ Trace Sand

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[x] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[x]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-7-11

FIELD SAMPLE ID (SW): OC-SW-OPWD-SD-SW-S-XXY
SW BOTTLE TIME: 0835
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: None
ACTIVITY TIME: START 0830 END 0850

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 10"
SPEC. COND: 1141 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3"
D.O.: 1.02 mg/L
TEMPERATURE: 16.55 DEG C
SALINITY: — %
TURBIDITY: 5.80 NTU
ORP: -28 mV
pH: 6.40 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES: Had is murky, standing. NO Flow

SIGNATURE: [signature]

Checked By: CTM

APPENDIX D

OU2 SURFACE WATER AND SEDIMENT FIELD DATA RECORDS – EAST DITCH

(Provided on CD)

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/13/10

FIELD SAMPLE ID (SW): OC-SW-EDSD/SW0-XXX
SW BOTTLE TIME: 1200
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1155 END 1215

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.4 FT
SPEC. COND: 507 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 2 in.
D.O.: 7.72 mg/L
TEMPERATURE: 9.90 DEG C
SALINITY: — %
TURBIDITY: 2 NTU
ORP: 89.2 mV
pH: 6.63 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

water moving

SEDIMENT DATA 0-6 in

DEPTH OF SEDIMENT: ~~0.5 ft~~

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: —
COLOR: —

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [x] OTHER Ballast

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

DESCRIPTION: large gravel / cobbel no sediment / no sample collected

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By:

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6/8/11

FIELD SAMPLE ID (SW): OC-SW-EDSD/SW0-XXX
SW BOTTLE TIME: 1045
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1035 END 1055

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 1320 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 2 in ~~FT~~
D.O.: 6.76 mg/L
TEMPERATURE: 19.06 DEG C
SALINITY: — %
TURBIDITY: 3.04 NTU
ORP: 476 mV
pH: 6.40 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

Orange Water from / Not moving ~~water~~ on Potomac Ditch

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
DESCRIPTION _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] ~~S.S. SPOON~~
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	~~[x]~~ CTM
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-10-0016

DATE: 12/13/10

FIELD SAMPLE ID (SW): OC-SW-GDSD/SW (GDDS) - [illegible]

SW BOTTLE TIME: 1045

FIELD SAMPLE ID (SED): None collected

SED BOTTLE TIME: ~~1100~~

QC SAMPLES COLLECTED: —

ACTIVITY TIME: START 1030 END 1110

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 6 in ~~FT~~

SPEC. COND: 661 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 2 in ~~FT~~

D.O.: 5.32 mg/L

TEMPERATURE: 9.38 DEG C

SALINITY: — %

TURBIDITY: 3 NTU

ORP: 113.2 mV

pH: 6.68 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

water ~~[illegible]~~ moving

SEDIMENT DATA

DEPTH OF SEDIMENT: 6 in

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: —

COLOR: —

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER Ballast

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

DESCRIPTION: Large gravel / cobbel (no sediment no sample)

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

Iron floc

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-11-0016

DATE: 6/8/11

FIELD SAMPLE ID (SW): OC-SW-EDBD/SW1 (EDBS5)-XXX

SW BOTTLE TIME: 1000

FIELD SAMPLE ID (SED): —

SED BOTTLE TIME: —

QC SAMPLES COLLECTED: —

ACTIVITY TIME: START 0950 END 1015

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT

SPEC. COND: 718 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 2 in

D.O.: 7.89 mg/L

TEMPERATURE: 20.8 DEG C

SALINITY: — %

TURBIDITY: 2.0 NTU

ORP: 253 mV

pH: 6.72 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

Orange Iron Bottom of Ditch / water moving

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR:

COLOR:

DESCRIPTION:

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-10-0016 | DATE: 12/13/16

FIELD SAMPLE ID (SW): OC-SW-EDSD-SW2-ED BSG-XXX | SW BOTTLE TIME: 0930

FIELD SAMPLE ID (SED): OC-SD-EDSD-SW2-ED BSG-XXX | SED BOTTLE TIME: 0945

QC SAMPLES COLLECTED: —

ACTIVITY TIME: START 0920 END 0955

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.5 FT	SPEC. COND	402 uS/cm
DEPTH OF SAMPLE FROM SURFACE	2 in	D.O.	8.93 mg/L
TEMPERATURE	9.07 DEG C	SALINITY	— %
TURBIDITY	7 NTU	ORP	126.8 mV
pH	7.19 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

water moving

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-4 in

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [x] OTHER silt

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS

ODOR: None

COLOR: Dark B./Blk

DESCRIPTION: vF silt; mock; Trace organics w/ large gravel / cobble Ballast

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-11-0016

DATE: 6/8/11

FIELD SAMPLE ID (SW): OC-SW-EDSD-SW2-(EDB56) ~~XXX~~

SW BOTTLE TIME: 0900

FIELD SAMPLE ID (SED): X

SED BOTTLE TIME: X

QC SAMPLES COLLECTED: —

ACTIVITY TIME: START 0855 END 0915

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT

SPEC. COND: 929 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 2 in ~~FT~~

D.O.: 0.9 mg/L

TEMPERATURE: 18.64 DEG C

SALINITY: — %

TURBIDITY: 2.07 NTU

ORP: -219.6 mV

pH: 7.28 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

True Tropic, Organic
Not moving water

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR _____

COLOR _____

DESCRIPTION _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTm

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/13/10

FIELD SAMPLE ID (SW): QC-SW-EDSD/SW5 (EDBSH)-2XX
SW BOTTLE TIME: 0830

FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —

QC SAMPLES COLLECTED: —

ACTIVITY TIME: START 0820 END 0845

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 2 ft. FT
SPEC. COND: 183 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 2 in. ~~FT~~
D.O.: 10.82 mg/L
TEMPERATURE: 5.91 DEG C
SALINITY: — %
TURBIDITY: 5 NTU
ORP: 131 mV
pH: 7.96 UNITS

water moving

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0 - 6 in

TYPE OF SAMPLE
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: none
COLOR: light brown
DESCRIPTION: large gravel / cobbles trace organic [redacted] not enough for sample

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [x] OTHER Ballast

EQUIPMENT FOR COLLECTION
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: BQ Pace

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-11-0016

DATE: 6/8/11

FIELD SAMPLE ID (SW): CC-SW-EDSD/SW5 (EDBS11)-xxl

SW BOTTLE TIME: 0815

FIELD SAMPLE ID (SED): X

SED BOTTLE TIME: X

QC SAMPLES COLLECTED: —

ACTIVITY TIME: START 0810 END 0825

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT

SPEC. COND: 829 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 2 in FT

D.O.: 7.58 mg/L

TEMPERATURE: 17.61 DEG C

SALINITY: — %

TURBIDITY: 2.23 NTU

ORP: 18.4 mV

pH: 6.82 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

NA

Orange Iron Mold / moving water

Bottom of Ditch

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR _____

COLOR _____

DESCRIPTION _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-12-0016
DATE: 6/18/12

FIELD SAMPLE ID (SW): OC-SW-EDSD/SW7-xxx
SW BOTTLE TIME: 1110
FIELD SAMPLE ID (SED): OC-SD-EDSD/SW7-xxx
SED BOTTLE TIME: 1125
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1055 END 1145

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.0 FT
SPEC. COND: 744 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.2 in. RD
D.O.: 8.31 mg/L
TEMPERATURE: 15.53 DEG C
SALINITY: — %
TURBIDITY: 8.82 NTU
ORP: -14.5 mV
pH: 7.07 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

Medium Flow
Trace Sheen noted

SEDIMENT DATA

DEPTH OF SEDIMENT: 0.5 ft

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: —
COLOR: light brown
DESCRIPTION: SEE Notes

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [x] SAND
- [x] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[x] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[x]
[x] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[x]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES
Medium to corse sand tr. gravel (wet)
Good Stream Flow
Trace Sheen

amec

SIGNATURE: [signature]

Checked By: CTN

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-12-0016 | DATE: 11/06/12

FIELD SAMPLE ID (SW): OC-SW-ED5D / SW7-XXX | SW BOTTLE TIME: 0930

FIELD SAMPLE ID (SED): OC-SD-ED5D / SW7-XXX | SED BOTTLE TIME: 0955

QC SAMPLES COLLECTED: —

ACTIVITY TIME: START 0930 END 1010

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 FT	SPEC. COND	672 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 FT	D.O.	8.89 mg/L
TEMPERATURE	4.48 DEG C	SALINITY	— %
TURBIDITY	3.19 NTU	ORP	53.6 mV
pH	6.74 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [X] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [X] OTHER Ditch

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

Ditch : Good Flow

SEDIMENT DATA

DEPTH OF SEDIMENT: 0.5 ft

TYPE OF SAMPLE:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
- ODOR: —
- COLOR: Br/Dk Br
- DESCRIPTION: See notes

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [X] SAND
- [X] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [X] HAND AUGER
- [X] S.S. SPOON
- [X] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [X] DI WATER
- [ ] POTABLE WATER
- [X] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[X]
[X] SVOCs	8270C	4 DEG. C	2 X 1 L	[X]
[X] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[X]
[X] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[X]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[X] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[X]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[X] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[X]
[X] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[X]
[X] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[X]

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[X]
[X] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[X]
[X] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[X]
[X] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[X]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[X] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[X]
[X] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[X]
[X] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[X]
[X] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[X]
[X] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[X]
[ ]				[ ]

NOTES

Medium to Coarse Sand tr. Gravel. (Wet)
Good Stream Flow
Trace Sheen noted in Sed.

amec

SIGNATURE: [signature]

Checked By: CTM

APPENDIX D

OU2 SURFACE WATER AND SEDIMENT FIELD DATA RECORDS – LANDFILL BROOK

(Provided on CD)

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-10-0016 | DATE: 12/9/10

FIELD SAMPLE ID (SW): OC-SW-LB-1-xx | SW BOTTLE TIME: 1035

FIELD SAMPLE ID (SED): OC-SD-LB-1-xx | SED BOTTLE TIME: 1035

QC SAMPLES COLLECTED: NA | ACTIVITY TIME: START 1020 END 1045

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 FT	SPEC. COND	1424 uS/cm
DEPTH OF SAMPLE FROM SURFACE	3" in. ~~ft~~	D.O.	0.93 mg/L
TEMPERATURE	0.02 DEG C	SALINITY	— %
TURBIDITY	574 NTU	ORP	-25.1 mV
pH	6.28 UNITS		

EQUIPMENT USED: [ ] BEAKER; [X] DIRECT DIP; [ ] PERISTALTIC PUMP; [ ] FILTER (0.45 micron); [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER: [X] STREAM/ RIVER; [ ] LAKE/ POND; [ ] SEEP; [ ] MARSH; [ ] OTHER ____

DECON FLUIDS USED: [ ] DI WATER; [ ] LIQUINOX; [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE: [X] DISCRETE; [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: None

COLOR: Dk. Br

TYPE OF SEDIMENT: [X] ORGANIC Trace; [X] SAND f/m; [ ] GRAVEL; [ ] CLAY; [ ] OTHER ____

EQUIPMENT FOR COLLECTION: [X] HAND AUGER; [X] S.S. SPOON; [X] S.S. BOWL; [ ] DREDGE; [ ] OTHER ____

DECON FLUIDS USED: [X] DI WATER; [ ] POTABLE WATER; [X] LIQUINOX; [ ] OTHER ____

DESCRIPTION: M/F Sand w/ trace organics : No Flow observed

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[X]
[X] SVOCs	8270C	4 DEG. C	2 X 1 L	[X]
[ ] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[X] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[X]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[X] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[X]
[X] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[X]
[X] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[X]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[X]
[X] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[X]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[X] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[X]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[X] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[X]
[ ]				[ ]

NOTES

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-7-11

FIELD SAMPLE ID (SW): OC-SW-LB-1-XXX
SW BOTTLE TIME: 1340
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1330 END 1355

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.0 FT
SPEC. COND: 1418 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 3" FT
D.O.: 0.11 mg/L
TEMPERATURE: 24.70 DEG C
SALINITY: — %
TURBIDITY: 16.6 NTU
ORP: -199 mV
pH: 6.91 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES: Standing water, no flow, odor

SIGNATURE: [signature]

Checked By: MAM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/9/10

FIELD SAMPLE ID (SW): OC-SW-LB-2-XXX
SW BOTTLE TIME: 0935
FIELD SAMPLE ID (SED): OC-SD-LB-2-XXX
SED BOTTLE TIME: 0935
QC SAMPLES COLLECTED: NA
ACTIVITY TIME: START 0920 END 0950

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.0 FT
SPEC. COND: 684 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 5.16 mg/L
TEMPERATURE: 3.30 DEG C
SALINITY: NA %
TURBIDITY: 3.38 NTU
ORP: -104.9 mV
pH: 7.37 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER: LFB
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: H2S
COLOR: BLCK
DESCRIPTION: MUCKY SAND W/ TRACE SILT

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

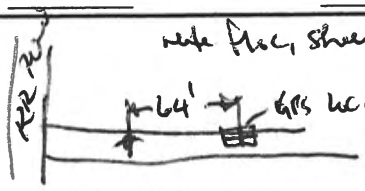
ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES: note floc, sheen, present at time of SW sampling



SIGNATURE: Charles H Lyman

Checked By: CJM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-7-11

FIELD SAMPLE ID (SW): OC-SW-LB-2-XXX
SW BOTTLE TIME: 1250
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1245 END 1300

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.0 FT
SPEC. COND: 771 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 0.53 mg/L
TEMPERATURE: 17.17 DEG C
SALINITY: — %
TURBIDITY: 11.7 NTU
ORP: -91 mV
pH: 6.92 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

DESCRIPTION _____

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES
Floc sheen, standing water, odor

SIGNATURE: [signature]

Checked By: MAM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/9/10

FIELD SAMPLE ID (SW): OC-SW-LB-3-XXX
SW BOTTLE TIME: 0845
FIELD SAMPLE ID (SED): OC-SD-LB-3-XXX
SED BOTTLE TIME: 0848
QC SAMPLES COLLECTED: NA
ACTIVITY TIME: START 0830 END 0900

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.0 FT
SPEC. COND: 1016 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 4.00 mg/L
TEMPERATURE: 0.24 DEG C
SALINITY: NA %
TURBIDITY: 7.98 NTU
ORP: -36.7 mV
pH: 7.83 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

LFB

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [x] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS

ODOR: Bad H_2S

COLOR: Blk

DESCRIPTION: MUCK w/ Trace fine sand & silt. Sheen observed when auger was advanced into sediments

ANALYTICAL PARAMETERS

SURFACE WATER		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES

SIGNATURE: Charles H. [illegible]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6-7-11

FIELD SAMPLE ID (SW): OC-SW-LB-3-XXV
SW BOTTLE TIME: 1115
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: —
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1100 END 1125

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.0 FT
SPEC. COND: 940 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 0.58 mg/L
TEMPERATURE: 16.88 DEG C
SALINITY: — %
TURBIDITY: 12.9 NTU
ORP: -174 mV
pH: 6-8C UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
DESCRIPTION _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[ ] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

moving water, somewhat odor, trace of Orange floy.

SIGNATURE: [signature]

Checked By: CTM

APPENDIX D

OU2 SURFACE WATER AND SEDIMENT FIELD DATA RECORDS – MAPLE MEADOW BROOK WETLAND

(Provided on CD)

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/1/10

FIELD SAMPLE ID (SW): OC-SW-MMB-SW/SD-1-XXX
SW BOTTLE TIME: 1440
FIELD SAMPLE ID (SED): OC-SD-MMB-SW/SD-1-XXX
SED BOTTLE TIME: 1500
QC SAMPLES COLLECTED: NA
ACTIVITY TIME: START 1430 END 1515

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.0' FT
SPEC. COND: 456 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 7.11 mg/L
TEMPERATURE: 5.51 DEG C
SALINITY: NA %
TURBIDITY: 12.4 NTU
ORP: 212.1 mV
pH: 7.34 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [x] ~~DI WATER~~ NA
- [x] ~~LIQUINOX~~ NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS: OIL
ODOR: ~~HC~~ None
COLOR: LT BROWN

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER _____

DESCRIPTION: Gravelly coarse sand, w/ organic standing; 1-2" Highly decomp OM over sand.

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
✓	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	✓
✓	SVOCs	8270C	4 DEG. C	2 X 1 L	✓
✓	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	✓
✓	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	✓
	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	
	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	
✓	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	✓
	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	
	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	
	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	
✓	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	✓
✓	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	✓
	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	
	DMF	mod 8033	4 DEG. C	2 X 40 mL	
✓	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	✓
✓	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	✓
	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
✓	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	✓
✓	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	✓
	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	
✓	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	✓
	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	
	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	
	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	
✓	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	✓
✓	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	✓
	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	
	DMF	mod 8033	4 DEG. C	1 X 4 oz.	
✓	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	✓

NOTES

SIGNATURE: Charles H. Lyme

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 6/6/11

FIELD SAMPLE ID (SW): OC-SW-MMB-SW/SD-1 | SW BOTTLE TIME: 1300

FIELD SAMPLE ID (SED): NA | SED BOTTLE TIME: NA

QC SAMPLES COLLECTED: DUP/MS/MSD | ACTIVITY TIME: START 1235 END 1350

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 FT	SPEC. COND	554 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.3 FT	D.O.	3.3 mg/L
TEMPERATURE	19.8 DEG C	SALINITY	0.27 % ppt
TURBIDITY	1.7 NTU	ORP	7.2 mV
pH	6.6 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER NA

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE: [ ] DISCRETE [ ] COMPOSITE

SAMPLE OBSERVATIONS: ODOR ____ COLOR ____

TYPE OF SEDIMENT: [ ] ORGANIC [ ] SAND [ ] GRAVEL [ ] CLAY [ ] OTHER

EQUIPMENT FOR COLLECTION: [ ] HAND AUGER [ ] S.S. SPOON [ ] S.S. BOWL [ ] DREDGE [ ] OTHER

DECON FLUIDS USED: [ ] DI WATER [ ] POTABLE WATER [ ] LIQUINOX [ ] OTHER

DESCRIPTION

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: Jerry K. Rawlsff

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 2/17/11

FIELD SAMPLE ID (SW): — | SW BOTTLE TIME: —

FIELD SAMPLE ID (SED): OC-SD-MMB-SW/SD-1-XXX | SED BOTTLE TIME: 1330

QC SAMPLES COLLECTED: — | ACTIVITY TIME: START 1310 END 1430

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 2 - 2.5 FT

SPEC. COND: uS/cm

DEPTH OF SAMPLE FROM SURFACE: FT

D.O.: mg/L

TEMPERATURE: DEG C

SALINITY: %

TURBIDITY: NTU

ORP: mV

pH: UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [ ] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

Chip 6" of Ice / water, moving slowly

DEPTH OF SEDIMENT: 0 - 0.5 ft

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [x] ORGANIC / silts
- [x] SAND Trace
- [x] GRAVEL Trace
- [ ] CLAY
- [x] OTHER Silt

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS

ODOR: Sulfur odor

COLOR: Dk Br / Br

DESCRIPTION: Brn / Dark Br mostly organics with silts, fine Sand, trace med Sand / trace gravel

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	SVOCs	8270C	4 DEG. C	2 X 1 L	[ ]
[ ]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[ ]
[ ]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[ ]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[ ]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[ ]
[ ]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[ ]
[ ]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[x]	Toxicity		4 Deg. C	3x 1 Gal. Bucket	[x]

NOTES: Grain Size

Original Location Course/Gravel could not Sample, move 20 ft east tow canal

SIGNATURE: [signature]

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-10-0016 | DATE: 12/3/10

FIELD SAMPLE ID (SW): QC-SW-MMB-SW/SD 2-XXX | SW BOTTLE TIME: 1000

FIELD SAMPLE ID (SED): QC-SD-MMB-SW/SD-2-XXX | SED BOTTLE TIME: 1015

QC SAMPLES COLLECTED: NA | ACTIVITY TIME: START 0950 END 1025

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 FT	SPEC. COND	536 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.5 FT	D.O.	7.09 mg/L
TEMPERATURE	3.23 DEG C	SALINITY	NA %
TURBIDITY	22.1 NTU	ORP	69.6 mV
pH	6.48 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER w/in Marsh system

DECON FLUIDS USED:
- [x] DI WATER
- [x] LIQUINOX NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: NONE

COLOR: BROWN

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

DESCRIPTION: 0-1" Sapric OM; 1"-6" fibric to Hemic organic peat like material.

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[ ] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: Charles H. Lyne

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6/8/11

FIELD SAMPLE ID (SW): OC-SW-MMW-SW/SD-2-0608
SW BOTTLE TIME: 1050

FIELD SAMPLE ID (SED): NA
SED BOTTLE TIME: NA

QC SAMPLES COLLECTED: None
ACTIVITY TIME: START 0930 END 1100

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.8 FT
SPEC. COND: 691 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.3 FT
D.O.: 1.1 mg/L
TEMPERATURE: 17.4 DEG C
SALINITY: 0.34 ~~%~~ ppt
TURBIDITY: 13 NTU
ORP: -21 mV
pH: 6.8 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER NA

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x]	Hydrazine / MMH / UDMH	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

Hydrazine/MMH/UDMH ALSO TAL Metals 6020

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES
Near GW-83 well cluster

SIGNATURE: Jerry K. Baerlocher

Checked By: JM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-10-0016 | DATE: 12/3/10

FIELD SAMPLE ID (SW): OC-SW-MMB-SW/SD-3-XXX | SW BOTTLE TIME: 0900

FIELD SAMPLE ID (SED): OC-SD-MMB-SW/SD-3-XXX | SED BOTTLE TIME: 0930

QC SAMPLES COLLECTED: NA | ACTIVITY TIME: START 0825 END 0940

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.6 FT	SPEC. COND	534 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.5 FT	D.O.	4.15 mg/L
TEMPERATURE	1.91 DEG C	SALINITY	NA %
TURBIDITY	15.8 NTU	ORP	15.7 mV
pH	6.33 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER W/in MARSH

DECON FLUIDS USED:
- [x] ~~DI WATER~~ NA
- [x] ~~LIQUINOX~~ NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
- ODOR: NONE
- COLOR: BROWN

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

DESCRIPTION: 0-1" organic matter; 1"-6" fibrous to humic organic particle material

ANALYTICAL PARAMETERS SURFACE WATER

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
✓	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	✓
✓	SVOCs	8270C	4 DEG. C	2 X 1 L	✓
✓	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	✓
✓	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	✓
	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	
	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	
✓	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	✓
	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	
	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	
	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	
✓	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	✓
✓	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	✓
	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	
	DMF	mod 8033	4 DEG. C	2 X 40 mL	
✓	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	✓
✓	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	✓
	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	

ANALYTICAL PARAMETERS SEDIMENT

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
✓	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	✓
✓	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	✓
	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	
✓	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	✓
	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	
	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	
	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	
✓	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	✓
✓	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	✓
	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	
	DMF	mod 8033	4 DEG. C	1 X 4 oz.	
✓	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	✓

NOTES

SIGNATURE: Charles H. [illegible]

Checked By: CTH

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 6/8/11

FIELD SAMPLE ID (SW): OL-SW-[illegible]-SW/SD-3-[illegible] | SW BOTTLE TIME: 0945

FIELD SAMPLE ID (SED): NA | SED BOTTLE TIME: NA

QC SAMPLES COLLECTED: None | ACTIVITY TIME: START 0820 END 0940

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.6 FT	SPEC. COND	619 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.3 FT	D.O.	2.2 mg/L
TEMPERATURE	19.2 (or 19.8) DEG C	SALINITY	0.30 ppt
TURBIDITY	20 NTU	ORP	-44 mV
pH	6.3 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER NA

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE: [ ] DISCRETE [ ] COMPOSITE

SAMPLE OBSERVATIONS: ODOR ____ COLOR ____ DESCRIPTION ____

TYPE OF SEDIMENT: [ ] ORGANIC [ ] SAND [ ] GRAVEL [ ] CLAY [ ] OTHER

EQUIPMENT FOR COLLECTION: [ ] HAND AUGER [ ] S.S. SPOON [ ] S.S. BOWL [ ] DREDGE [ ] OTHER

DECON FLUIDS USED: [ ] DI WATER [ ] POTABLE WATER [ ] LIQUINOX [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness (ALSO: TAL Metals 6020)	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine/ [illegible]	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES: Located near piezometer just "upstream" from GW-84 well cluster.

SIGNATURE: Jerry L. Ramlett

Checked By: JM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/2/10

FIELD SAMPLE ID (SW): QC-SW-MAB-SW/SD-A-XXX
SW BOTTLE TIME: 1000
FIELD SAMPLE ID (SED): QC-SD-MAB-SW/SD-A-XXX
SED BOTTLE TIME: 1015
QC SAMPLES COLLECTED: NA
ACTIVITY TIME: START 0945 END 1025

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 3.0 FT
SPEC. COND: 457 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 5.24 mg/L
TEMPERATURE: 5.61 DEG C
SALINITY: NA %
TURBIDITY: 3.15 NTU
ORP: 226.1 mV
pH: 6.61 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [x] ~~DI WATER~~ NA
- [x] ~~LIQUINOX~~ NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6 IN

TYPE OF SAMPLE
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS
ODOR: None
COLOR: Brown
DESCRIPTION: Fibric to Hemic organic peat like material.

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[ ] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: Charles H. Lyon

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6/6/11

FIELD SAMPLE ID (SW): DC-SW-MMB-SW/SD-4-[illegible]
SW BOTTLE TIME: 1600
FIELD SAMPLE ID (SED): NA
SED BOTTLE TIME: NA
QC SAMPLES COLLECTED: NA
ACTIVITY TIME: START 1535 END 1615

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 3.0 FT
SPEC. COND: 571 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.4 FT
D.O.: 6.0 mg/L
TEMPERATURE: 20.7 DEG C
SALINITY: 0.28 ppt
TURBIDITY: 1.7 NTU
ORP: 93 mV
pH: 6.7 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER NA

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

(x SOW/HHS TAL Metals 6020)

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: Jerry Rouleff

Checked By: CJM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-10-0016 | DATE: 12/2/10

FIELD SAMPLE ID (SW): QC-SW-MMB SW/SD-5-XXX | SW BOTTLE TIME: 1300

FIELD SAMPLE ID (SED): QC-SD-MMB SW/SD-5-XXX | SED BOTTLE TIME: 1315

QC SAMPLES COLLECTED: NA | ACTIVITY TIME: START 1250 END 1400

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 17 IN FT

SPEC. COND: 369 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 0.5 FT

D.O.: 8.57 mg/L

TEMPERATURE: 6.37 DEG C

SALINITY: NA %

TURBIDITY: 32.0 NTU

ORP: 78.8 mV

pH: 6.88 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER Low marsh

DECON FLUIDS USED:
- [x] ~~DI WATER~~ NA
- [x] ~~LIQUINOX~~ NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6 in

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: NONE

COLOR: BROWN

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

DESCRIPTION: 0-1" Highly decomp. OM; overlying fibric/hemic peat like mtl.

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7198A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[ ] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: Charles H. Lyman

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6/7/10

FIELD SAMPLE ID (SW): OC-SW-MMB-SW150-5-XXX
SW BOTTLE TIME: 0930
FIELD SAMPLE ID (SED): NA
SED BOTTLE TIME: NA
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 0845 END 0940

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.1 FT
SPEC. COND: 684 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.4 FT
D.O.: 1.4 mg/L
TEMPERATURE: 18.5 DEG C
SALINITY: 0.33 ~~%~~ ppt
TURBIDITY: 3.9 NTU
ORP: -64 mV
pH: 6.6 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness + TAL Metals 6020	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[x] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[x]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: Jerry K. Rawlsby

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/3/10

FIELD SAMPLE ID (SW): OC-SW-MMB-SW/SD-6-XXX
SW BOTTLE TIME: 1200
FIELD SAMPLE ID (SED): OC-SD-MMB-SW/SD-6-XXX
SED BOTTLE TIME: 1200
QC SAMPLES COLLECTED: No
ACTIVITY TIME: START 1130 END 1230

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 0.5 FT
SPEC. COND: 430 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 4.94 mg/L
TEMPERATURE: 4.60 DEG C
SALINITY: NA %
TURBIDITY: 5.74 NTU
ORP: 17.0 mV
pH: 6.54 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER w/in marsh.

DECON FLUIDS USED:
- [x] DI WATER NA
- [x] LIQUINOX NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: None
COLOR: Brown, dark
DESCRIPTION: Sapric organic material.

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[ ] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: Charles H. Lyons

Checked By: CTN

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 6/8/11

FIELD SAMPLE ID (SW): OC-SW-MMB-SW-6 | SW BOTTLE TIME: 1155

FIELD SAMPLE ID (SED): NA | SED BOTTLE TIME: NA

QC SAMPLES COLLECTED: None | ACTIVITY TIME: START 1125 END 1230

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.3 FT	SPEC. COND	594 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.2 FT	D.O.	1.4 mg/L
TEMPERATURE	20.7 DEG C	SALINITY	0.29 ppt
TURBIDITY	20 NTU	ORP	-157 mV
pH	7.2 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER NA

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE: [ ] DISCRETE [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR _____

COLOR _____

DESCRIPTION _____

TYPE OF SEDIMENT: [ ] ORGANIC [ ] SAND [ ] GRAVEL [ ] CLAY [ ] OTHER

EQUIPMENT FOR COLLECTION: [ ] HAND AUGER [ ] S.S. SPOON [ ] S.S. BOWL [ ] DREDGE [ ] OTHER

DECON FLUIDS USED: [ ] DI WATER [ ] POTABLE WATER [ ] LIQUINOX [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ALSO: TAL Metals 6020

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES: Very little water in sample area boggy turbid puddles.

SIGNATURE: Jerry Reuff

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-10-0016

DATE: 12-2-10

FIELD SAMPLE ID (SW): OC-SW-MMB-SW/SD-8-xxx

SW BOTTLE TIME: 13:00

FIELD SAMPLE ID (SED): OC-SD-MMB-SW/SD-8-xxx

SED BOTTLE TIME: 13:00

QC SAMPLES COLLECTED: OC-SW-MMB-SW/SD-8-DUP xxx SW/SD

ACTIVITY TIME: START 12:40 END 14:00

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.7 FT

SPEC. COND: 403 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 0.5 FT

D.O.: 11.02 mg/L

TEMPERATURE: 6.65 DEG C

SALINITY: / %

TURBIDITY: 4.79 NTU

ORP: 239.2 mV

pH: 7.28 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [ ] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER stream / bank

DECON FLUIDS USED:
- [x] ~~DI WATER~~ NA
- [x] ~~LIQUINOX~~ NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0.6 in.

TYPE OF SAMPLE
- [x] DISCRETE
- [x] COMPOSITE DLC

SAMPLE OBSERVATIONS

ODOR: None

COLOR: brown- dark brown

DESCRIPTION: Brown- dark brown organic silt, some sand, saturate

TYPE OF SEDIMENT:
- [x] ORGANIC silt
- [x] SAND fine
- [ ] GRAVEL
- [ ] CLAY
- [x] OTHER organic silt

EQUIPMENT FOR COLLECTION
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES

SIGNATURE: [signature]

Checked By: CJM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 6/7/11

FIELD SAMPLE ID (SW): OCSW-MMB-SW80-8-Dup | SW BOTTLE TIME: 1010

FIELD SAMPLE ID (SED): NA | SED BOTTLE TIME: NA

QC SAMPLES COLLECTED: — | ACTIVITY TIME: START 0940 END 1030

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 1.8 FT | SPEC. COND: 842 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 0.4 FT | D.O.: 1.8 mg/L

TEMPERATURE: 18.2 DEG C | SALINITY: 0.42 ~~%~~ ppt

TURBIDITY: 4.5 NTU | ORP: -86 mV

pH: 6.9 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX NA
- [x] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE: [ ] DISCRETE [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR:

COLOR:

DESCRIPTION:

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ALSO: TAL Metals 6020

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: Jerry K. Rawlinson

Checked By: CJM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-10-0016 | DATE: 12/2/10

FIELD SAMPLE ID (SW): OC-SW-MMB-SW/SD-BA-XXX | SW BOTTLE TIME: 1500

FIELD SAMPLE ID (SED): OC-SD-MMB-SW/SD-BA-XXX | SED BOTTLE TIME: 1510

QC SAMPLES COLLECTED: NO | ACTIVITY TIME: START 1445 END 1515

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 FT	SPEC. COND	247 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.5 FT	D.O.	9.83 mg/L
TEMPERATURE	6.88 DEG C	SALINITY	NA %
TURBIDITY	3.54 NTU	ORP	105.8 mV
pH	6.80 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER via marsh
- [ ] OTHER

DECON FLUIDS USED:
- [x] ~~DI WATER~~ NA
- [x] ~~LIQUINOX~~ NA

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6 in

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

SAMPLE OBSERVATIONS

ODOR: NONE

COLOR: BROWN

DESCRIPTION: ORGANIC SAPRIC MTL (0-1"); overlying organic fibric Peat like MTL.

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: Charles W. Lyon

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 6/7/11

FIELD SAMPLE ID (SW): OC-SW-MMB-SW150-8A-MS | SW BOTTLE TIME: 1330

FIELD SAMPLE ID (SED): NA | SED BOTTLE TIME: — NA

QC SAMPLES COLLECTED: — | ACTIVITY TIME: START 1240 END 1345

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.4 FT	SPEC. COND	876 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.5 FT	D.O.	2.6 mg/L
TEMPERATURE	19.7 DEG C	SALINITY	0.43 ~~%~~ ppt
TURBIDITY	10.4 NTU	ORP	-131 mV
pH	6.6 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER NA

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE: [ ] DISCRETE [ ] COMPOSITE

SAMPLE OBSERVATIONS
- ODOR
- COLOR
- DESCRIPTION

TYPE OF SEDIMENT: [ ] ORGANIC [ ] SAND [ ] GRAVEL [ ] CLAY [ ] OTHER

EQUIPMENT FOR COLLECTION: [ ] HAND AUGER [ ] S.S. SPOON [ ] S.S. BOWL [ ] DREDGE [ ] OTHER

DECON FLUIDS USED: [ ] DI WATER [ ] POTABLE WATER [ ] LIQUINOX [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness (ALSO TAL Metals 6020)	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: Jerry K. Rawlsoff

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/1/10

FIELD SAMPLE ID (SW): OC-SW-AMB-SW/SD-9-XXX
SW BOTTLE TIME: 1215
FIELD SAMPLE ID (SED): OC-SD-AMB-SW/SD-9-XXX
SED BOTTLE TIME: 1250
QC SAMPLES COLLECTED: NA
ACTIVITY TIME: START 1200 END 1300

SURFACE WATER DATA

WATER DEPTH AT LOCATION	2.5 FT	SPEC. COND	475 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.5 FT	D.O.	7.09 mg/L
TEMPERATURE	5.17 DEG C	SALINITY	NA %
TURBIDITY	43.1 NTU	ORP	219.7 mV
pH	7.90 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] ~~DI WATER~~
- [ ] ~~LIQUINOX~~
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6 in

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: None
COLOR: Lt Brown
DESCRIPTION: Gravelly coarse sand, w/ organic staining

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [x] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	✓
SVOCs	8270C	4 DEG. C	2 X 1 L	✓
NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	✓
TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	✓
Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	
Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	
Diphenylamine	3620B	4 DEG. C	w/ SVOCs	✓
Nonyiphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	
VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	
EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	
Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	✓
Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	✓
Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	
DMF	mod 8033	4 DEG. C	2 X 40 mL	
Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	✓
Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	✓
TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	✓
SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	✓
NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	
TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	✓
Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	
VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	
EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	
Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	✓
Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	✓
Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	
DMF	mod 8033	4 DEG. C	1 X 4 oz.	
Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	✓

NOTES
SEE Field Notebook for sketch of location.

SIGNATURE: Charles H. Lyons

Checked By: CJM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-11-0016 | DATE: 6/6/11

FIELD SAMPLE ID (SW): OC-SW-MMB-SW/SD-9-xxx | SW BOTTLE TIME: 1100

FIELD SAMPLE ID (SED): NA | SED BOTTLE TIME: —

QC SAMPLES COLLECTED: — | ACTIVITY TIME: START 1030 END 1130

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 2.5 FT | SPEC. COND: 534 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 0.5 FT | D.O.: 2.7 mg/L

TEMPERATURE: 20.6 DEG C | SALINITY: 0.25 ppt

TURBIDITY: 3.9 NTU | ORP: 4.0 mV

pH: 6.7 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX NA
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE: [ ] DISCRETE [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[ ]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

1 x 500 ml HNO3 TAL Metals 6020/6010

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES: Trip Blank in cooler w/ samples.

SIGNATURE: Jerry Rawlings

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-10-0016
DATE: 12/8/10

FIELD SAMPLE ID (SW): OC-SW-MMB-SW/SD-10-XXX
SW BOTTLE TIME: 0900
FIELD SAMPLE ID (SED): OC-SD-MMB-SW/SD-10-XXX
SED BOTTLE TIME: 0925
QC SAMPLES COLLECTED: NA
ACTIVITY TIME: START 0850 END 0945

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 3.0 FT
SPEC. COND: 515 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 5.15 mg/L
TEMPERATURE: 5.25 DEG C
SALINITY: NA %
TURBIDITY: 3.66 NTU
ORP: 212.0 mV
pH: 7.25 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6 IN

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: None
COLOR: Brown

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

DESCRIPTION: 0-1" sapric OM; 1"-6" Brown fibric-hemic peat like OM. Many fine Roots

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[ ] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: Charles H. [illegible]

Checked By:

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6/6/11

FIELD SAMPLE ID (SW): OC-SW-MARS-SWED-10 ~~NA~~
SW BOTTLE TIME: 1520
FIELD SAMPLE ID (SED): NA
SED BOTTLE TIME: NA
QC SAMPLES COLLECTED: NA
ACTIVITY TIME: START 1455 END 1530

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 2.5 FT
SPEC. COND: 573 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.5 FT
D.O.: 4.1 mg/L
TEMPERATURE: 17.4 DEG C
SALINITY: 0.28 ppt
TURBIDITY: 3.0 NTU
ORP: 48 mV
pH: 6.5 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER NA

SEDIMENT DATA

DEPTH OF SEDIMENT:

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR
COLOR
DESCRIPTION

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER

ANALYTICAL PARAMETERS SURFACE WATER

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ]	Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ALSO TAL Metals 6020 low volume HNO3

ANALYTICAL PARAMETERS SEDIMENT

		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]					[ ]

NOTES

SIGNATURE: Jerry K. Ramsey

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-10-0016 | DATE: 12/2/10

FIELD SAMPLE ID (SW): QC-SW-MMB-SW/SD-11-XXX | SW BOTTLE TIME: 1530

FIELD SAMPLE ID (SED): QC-SD-MMB-SW/SD-11-XXX | SED BOTTLE TIME: 1545

QC SAMPLES COLLECTED: NA | ACTIVITY TIME: START 1520 END 1600

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 FT	SPEC. COND	252 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.5 FT	D.O.	10.82 mg/L
TEMPERATURE	6.45 DEG C	SALINITY	NA %
TURBIDITY	3.34 NTU	ORP	118.2 mV
pH	6.94 UNITS		

EQUIPMENT USED:
- [x] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [x] OTHER W/in marsh

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-6"

TYPE OF SAMPLE:
- [x] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: None

COLOR: Brown

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [x] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [ ] OTHER

DESCRIPTION: 0-1" organic OM; 1"-6" fibric to hemic organic peat like material

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[ ] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[ ]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[x] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

SIGNATURE: Charles H. Lyman

Checked By: CTM

MACTEC ENGINEERING AND CONSULTING, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-11-0016
DATE: 6/7/11

FIELD SAMPLE ID (SW): OC-SW-WMB-SW/SD-11-xxa
SW BOTTLE TIME: 1500
FIELD SAMPLE ID (SED): —
SED BOTTLE TIME: NA
QC SAMPLES COLLECTED: —
ACTIVITY TIME: START 1345 END 1535

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 3.0 FT
SPEC. COND: 761 uS/cm
DEPTH OF SAMPLE FROM SURFACE: 0.4 FT
D.O.: 1.1 mg/L
TEMPERATURE: 21.5 DEG C
SALINITY: 0.37 ppt
TURBIDITY: 4.0 NTU
ORP: -21 mV
pH: 6.6 UNITS

EQUIPMENT USED
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER
- [x] STREAM/ RIVER
- [ ] LAKE/ POND
- [ ] SEEP
- [x] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER NA

SEDIMENT DATA

DEPTH OF SEDIMENT: _____

TYPE OF SAMPLE
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS
ODOR _____
COLOR _____
DESCRIPTION _____

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER _____

EQUIPMENT FOR COLLECTION
- [ ] HAND AUGER
- [ ] S.S. SPOON
- [ ] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] DI WATER
- [ ] POTABLE WATER
- [ ] LIQUINOX
- [ ] OTHER _____

ANALYTICAL PARAMETERS

ALSO: TAL Metals 6020

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[ ] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[ ]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[x] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[x]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[x] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[x]
[x] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[x]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[ ] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[ ]
[ ] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[ ]
[ ] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[ ]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[ ] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[ ]
[ ]				[ ]

NOTES

SIGNATURE: Jerry K. Rawlsff

Checked By: CTM

APPENDIX D

OU2 SURFACE WATER AND SEDIMENT FIELD DATA RECORDS – NORTH POND

(Provided on CD)

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA
JOB NUMBER: 6107-13-0016
DATE: 6-20-13

FIELD SAMPLE ID (SW): OC-SW-600-[illegible] SW BOTTLE TIME: 14:05
FIELD SAMPLE ID (SED): OC-SD-600-[illegible] SED BOTTLE TIME: 14:15
QC SAMPLES COLLECTED: DUP, MS, MSD
ACTIVITY TIME: START 14:05 END 14:30

SURFACE WATER DATA

WATER DEPTH AT LOCATION	0.3 FT	SPEC. COND	1238 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.1 FT	D.O.	8.24 mg/L
TEMPERATURE	16.71 DEG C	SALINITY	/ %
TURBIDITY	6.22 NTU	ORP	-23.4 mV
pH	6.84 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [x] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [x] LIQUINOX
- [x] OTHER Distilled

SEDIMENT DATA

DEPTH OF SEDIMENT: 0.0-0.5

TYPE OF SAMPLE:
- [ ] DISCRETE
- [x] COMPOSITE

SAMPLE OBSERVATIONS
ODOR: /
COLOR: brown/ red brown
DESCRIPTION: Brown - red brown SAND, some gravel

TYPE OF SEDIMENT:
- [ ] ORGANIC
- [x] SAND
- [x] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [ ] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [x] OTHER Distilled

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[x] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[x]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

amec

SIGNATURE: [signature] ND

Checked By:

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-13-0016 | DATE: 6-20-13

FIELD SAMPLE ID (SW): OC-SW-601-[illegible] | SW BOTTLE TIME: 13:30

FIELD SAMPLE ID (SED): OC-SD-601-0.0/0.5-[illegible] | SED BOTTLE TIME: 13:45

QC SAMPLES COLLECTED: | ACTIVITY TIME: START 13:20 END 13:55

SURFACE WATER DATA

WATER DEPTH AT LOCATION: 5.0 FT | SPEC. COND: 556 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 1.0 FT | D.O.: 7.85 mg/L

TEMPERATURE: 20.15 DEG C | SALINITY: / %

TURBIDITY: 6.25 NTU | ORP: -12.9 mV

pH: 6.58 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [x] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER Distilled

SEDIMENT DATA

DEPTH OF SEDIMENT: 0-0.5

TYPE OF SAMPLE:
- [ ] DISCRETE
- [x] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: /

COLOR: brown

TYPE OF SEDIMENT:
- [x] ORGANIC
- [ ] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [x] OTHER Distilled

DESCRIPTION: Brown. dark brown SILT and SAND. some organics saturated

ANALYTICAL PARAMETERS

SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x] SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x] NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x] TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x] Hex Cr	3060A/7196A	4 DEG. C no headspace	1 X 250 mL	[x]
[ ] Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ] Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ] Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ] VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ] Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ] DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x] Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x] Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x] TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x] VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x] SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x] NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x] TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[x] Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[x]
[ ] VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ] EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ] Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ] Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ] Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ] DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x] Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]				[ ]

NOTES

amec

SIGNATURE: [signature]

Checked By: [illegible]

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA

JOB NUMBER: 6107-13-0016

DATE: 6-20-13

FIELD SAMPLE ID (SW): OC-SW-602-[illegible]

SW BOTTLE TIME: 12:45

FIELD SAMPLE ID (SED): OC-SD-602-0.0-0.5-[illegible]

SED BOTTLE TIME: 13:00

QC SAMPLES COLLECTED:

ACTIVITY TIME: START 12:40 END 13:05

SURFACE WATER DATA

WATER DEPTH AT LOCATION: ~~2.5~~ 2.5 FT

SPEC. COND: 502 uS/cm

DEPTH OF SAMPLE FROM SURFACE: 0.4 FT

D.O.: 12.80 14.30 mg/L

TEMPERATURE: 20.38 DEG C

SALINITY: / %

TURBIDITY: 8.24 NTU

ORP: -5.4 mV

pH: 6.78 UNITS

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [x] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] LIQUINOX
- [x] OTHER Distilled

SEDIMENT DATA

DEPTH OF SEDIMENT: 0.0-0.5

TYPE OF SAMPLE:
- [ ] DISCRETE
- [x] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: N/A

COLOR: brown / dark brown

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [ ] OTHER

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [x] OTHER Distilled

DESCRIPTION: Brown - dark brown SAND, some silt/ organics

ANALYTICAL PARAMETERS

SURFACE WATER		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x]	Hex Cr	3060A/7196A 7199	4 DEG. C no headspace	1 X 250 mL	[x]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

SEDIMENT		METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[x]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[x]
[ ]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES

amec

SIGNATURE: [signature]

Checked By:

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

FIELD DATA RECORD - SURFACE WATER/ SEDIMENT SAMPLING

PROJECT: OLIN CHEMICAL SUPERFUND SITE, WILMINGTON, MA | JOB NUMBER: 6107-13-0016 | DATE: ~~6-30-13~~ 6.20.13

FIELD SAMPLE ID (SW): ~~QC-SW-603-TXT~~ | SW BOTTLE TIME: ~~12:00~~ 12:10

FIELD SAMPLE ID (SED): 603 | SED BOTTLE TIME: ~~12:10~~ ~~12:00~~

QC SAMPLES COLLECTED: | ACTIVITY TIME: START 11:50 END 12:10

SURFACE WATER DATA

WATER DEPTH AT LOCATION	1.0 FT	SPEC. COND	844 uS/cm
DEPTH OF SAMPLE FROM SURFACE	0.3 FT	D.O.	10.72 mg/L
TEMPERATURE	21.50 DEG C	SALINITY	/ %
TURBIDITY	7.64 NTU	ORP	-114.6 mV
pH	6.56 UNITS		

EQUIPMENT USED:
- [ ] BEAKER
- [x] DIRECT DIP
- [ ] PERISTALTIC PUMP
- [ ] FILTER (0.45 micron)
- [ ] LDPE Tubing & Silicon

TYPE OF SURFACE WATER:
- [ ] STREAM/ RIVER
- [x] LAKE/ POND
- [ ] SEEP
- [ ] MARSH
- [ ] OTHER _____

DECON FLUIDS USED:
- [x] DI WATER
- [x] LIQUINOX
- [ ] OTHER

SEDIMENT DATA

DEPTH OF SEDIMENT: 0.0-0.5'

TYPE OF SAMPLE:
- [ ] DISCRETE
- [x] COMPOSITE

SAMPLE OBSERVATIONS

ODOR: N/A

COLOR: dark brown

DESCRIPTION: Dark brown SAND and SILT, some organics

TYPE OF SEDIMENT:
- [x] ORGANIC
- [x] SAND
- [ ] GRAVEL
- [ ] CLAY
- [x] OTHER Silt

EQUIPMENT FOR COLLECTION:
- [x] HAND AUGER
- [x] S.S. SPOON
- [x] S.S. BOWL
- [ ] DREDGE
- [ ] OTHER _____

DECON FLUIDS USED:
- [ ] DI WATER
- [ ] POTABLE WATER
- [x] LIQUINOX
- [x] OTHER Distilled

ANALYTICAL PARAMETERS

	SURFACE WATER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260	HCl / 4 DEG. C	3 X 40 mL	[x]
[x]	SVOCs	8270C	4 DEG. C	2 X 1 L	[x]
[x]	NDMA/ NDPA	MOD 521	4 DEG. C	2 X 1 L	[x]
[x]	TAL Metals/ Hardness	6010B/7470A	HNO3 / 4 DEG. C	1 X 500 mL	[x]
[x]	Hex Cr	3060A/7196A 17199	4 DEG. C no headspace	1 X 250 mL	[x]
[ ]	Opex/ Kempore	7199	4 DEG. C	2 X 40 mL	[ ]
[ ]	Diphenylamine	3620B	4 DEG. C	w/ SVOCs	[ ]
[ ]	Nonylphenol	ws-ms-1000	H2SO4/ 4 DEG. C	2 X 1L	[ ]
[ ]	VPH	MADEP 98-1	HCl / 4 DEG. C	3 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	HCl / 4 DEG. C	2 X 1L	[ ]
[ ]	Hydrazine	MOD 8315	Acetate Buffer/ 4 DEG. C	2 X 40 mL	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	2 X 250 mL	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	2 X 250 mL	[ ]
[ ]	DMF	mod 8033	4 DEG. C	2 X 40 mL	[ ]
[x]	Ammonia	lachat	H2SO4/ 4 DEG. C	1 X 250 mL	[x]
[x]	Anions/ TSS TDS	EPA 300	4 DEG. C	1 X 500 mL	[x]
[x]	TOC	SM 5310	HCl / 4 DEG. C	1 X 125 mL	[x]

ANALYTICAL PARAMETERS

	SEDIMENT	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[x]	VOCs	8260B/5035A	4 DEG. C DI/MeOH	2-low & 1-med	[x]
[x]	SVOCs/ Diphenylamine	8270C low level	4 DEG. C	1 X 8 oz.	[x]
[x]	NDMA/ NDPA	8270 low level	4 DEG. C	1 X 8 oz.	[x]
[x]	TAL Metals	6010B/7471A	4 DEG. C	1 X 4 oz.	[x]
[x]	Hex Cr	3060A/7199	4 DEG. C	1 X 4 oz.	[x]
[x]	VPH	MADEP 98-1	MeOH / 4 DEG. C	1 X 40 mL	[ ]
[ ]	EPH	MADEP 98-1	4 DEG. C	1 X 8 oz.	[ ]
[ ]	Hydrazine	MOD 8315	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Acetaldehyde/Formaldehyde	sw-846/8315A	4 DEG. C	1 X 4 oz.	[ ]
[ ]	Phthalic Anhydride	mod 8000	4 DEG. C	1 X 8 oz.	[ ]
[ ]	DMF	mod 8033	4 DEG. C	1 X 4 oz.	[ ]
[x]	Ammonia/Anions/TOC	Lachat/ EPA 300/ LK	4 DEG. C	1 X 8 oz.	[x]
[ ]					[ ]

NOTES

amec

SIGNATURE: _____

Checked By: