ATTACHMENT 4

MAY 2003 SUPPLEMENTAL SEEP SAMPLING RESULTS

Dufresne-Henry

Creating Better Places To Live, Work And Play

June 27, 2003

Edward M. Hathaway
US EPA - Region I
mailcode: HBT
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Additional Seep Sampling
Old Springfield Landfill
DH 4030002

Dear Ed:

Enclosed are the analytical results from the seep samples taken at specific locations identified by you and Greg Mischel of TRC Solutions after our meeting of May 21, 2003. The samples were obtained on May 29, 2003, and sent by overnight delivery to Ceimic Corporation in Narragansett, Rhode Island for volatile organic compound (VOC) and Target Analyte List (TAL) metals analysis. The lab provided sample containers.

Relative to the site as a whole, the locations may be found on the site map included with our annual report. The "Headwall" sample was obtained at the junction of the two fabriform ditches near the southeast corner of the site. The "New Seep/LSE1A" sample was taken from the sinkhole area east of the sedimentation basin, roughly halfway between the points labeled LSE01 and LSE02 on the plan. Sample "Station2/LSE2" was taken at the LSE2 location on the plan. Appropriate QA/QC samples were also run.

No VOC's were present above method detection limits in any of the field samples. Numerous metals were identified in the Headwall sample. Fewer, but still several metals were also identified in the other seep samples. To facilitate comparison a summary table, including current MCL's, is enclosed.

The only detected metal which exceeds its MCL is antimony. The exceedence is very slight. Antimony is not a metal with which we have experience, thus the significance of this finding is unclear. Based on the uses of antimony described in the Merck Index it is likely that the metal was used at one or more of the manufacturers in Springfield. Any insight you could offer would be appreciated.

We have not listed secondary standards, but clearly the iron and manganese in the headwall sample are significantly elevated, which accounts for the appearance of that seep.

Very truly yours,

DUFRESNE-HENRY, INC.

F. David Deane, P.E.
Environmental Services

FDD/dim

Enclosures

cc Brian Woods - ANR
Jeff Strong - Springfield DPW
Bob Forguites - Town Manager
Greg Mischel - TRC Environmental

J:\Environmental Services\Old Springfield Landfill\2002 Report\Hathaway Seep Tran 6273.doc

Engineers Planners Landscape Architects Environmental Scientists
54 Route 106, P. O. Box 29 North Springfield, Vermont 05150-0029
Voice: 802-886-2261 Fax: 802-886-2260 E-mail: ddeane@dufresne-henry.com

OLD SPRINGFIELD LANDFILL

Summary of Seep Water Quality Sampling Results

All results are expressed in ug/l

TARGET ANALYTE METALS

SAMPLE / COMPOUND	MCL	Headwall	New Seep/LSE1A	Station2/LSE2
Aluminum	None	250	<99	110
Antimony	6	<5.6	8.2	7.4
Arsenic	10	7.6	<6.9	<6.9
Barium	2000	129	<12	<12
Beryllium	4	<0.28	<0.28	<0.28
Cadmium	5	<0.31	<0.31	<0.31
Calcium	None	54000	16000	18000
Chromium	100	1.9	<0.63	<0.63
Cobalt	None	8.8	<1.0	<1.0
Copper	1300	4.3	<3.0	4.2
Iron	None	46000	49	120
Lead	15	<3.4	<3.4	<3.4
Magnesium	None	5100	1800	1900
Manganese	None	4900	<3.1	10
Mercury	2	<0.025	<0.025	<0.025
Molybdenum	None	<1.6	<1.6	<1.6
Nickel	None	6.2	<2.6	<2.6
Potassium	None	3300	1200	1100
Selenium	50	<6.7	<6.7	<6.7
Silver	None	<0.58	<0.58	<0.58
Sodium	None	2600	1800	1700
Titanium	None	7.9	<3.5	4.9
Vanadium	None	3.3	<1.9	<1.9
Zinc	None	58	<27	54

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

June 16, 2003

Mr. Jeff Strong
Town of Springfield
Public Works Dept.
96 Main Street
Springfield, VT 05156

Dear Mr. Strong:

Enclosed are the results for the analyses performed in support of Town of Springfield, OSL Site, SDG No. 053003. The 4 water samples were taken from the field on May 29, 2003 and received at Ceimic Corporation on May 30, 2003.

This sample is reported under Ceimic Project Number 030626, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Ines Bauer
Laboratory Manager

IB/jr

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SPRINGFIELD SAMPLE NO.

HEADWALL

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-03

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO832

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	3	J
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	1	J
75-15-0	Carbon Disulfide	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	15	U
108-38-3	m,p-Xylenes	10	U

FORM 1 SPRINGFIELD SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

HEADWALL

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-03

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO832

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SPRINGFIELD SAMPLE NO.

NEW SEEP/LSE1A

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-01

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO830

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	1	J
75-15-0	Carbon Disulfide	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	15	U
108-38-3	m,p-Xylenes	10	U

FORM 1 SPRINGFIELD SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

NEW SEEP/LSE1A

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-01

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO830

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SPRINGFIELD SAMPLE NO.

NEW SEEP
/LSE1AMS

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-01MS

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO833

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	57	
75-01-4	Vinyl Chloride	59	
74-83-9	Bromomethane	55	
75-00-3	Chloroethane	57	
67-64-1	Acetone	62	
75-35-4	1,1-Dichloroethene	58	
75-09-2	Methylene Chloride	53	
75-15-0	Carbon Disulfide	57	
156-60-5	trans-1,2-Dichloroethene	56	
75-34-3	1,1-Dichloroethane	55	
78-93-3	2-Butanone	79	
156-59-2	cis-1,2-Dichloroethene	56	
540-59-0	1,2-Dichloroethene (total)	110	
67-66-3	Chloroform	55	
71-55-6	1,1,1-Trichloroethane	55	
56-23-5	Carbon Tetrachloride	56	
107-06-2	1,2-Dichloroethane	53	
71-43-2	Benzene	55	
79-01-6	Trichloroethene	55	
78-87-5	1,2-Dichloropropane	54	
75-27-4	Bromodichloromethane	54	
10061-01-5	cis-1,3-Dichloropropene	53	
108-88-3	Toluene	55	
10061-02-6	trans-1,3-Dichloropropene	53	
79-00-5	1,1,2-Trichloroethane	51	
127-18-4	Tetrachloroethene	55	
108-10-1	4-Methyl-2-Pentanone	91	
591-78-6	2-Hexanone	84	
124-48-1	Dibromochloromethane	52	
108-90-7	Chlorobenzene	54	
100-41-4	Ethylbenzene	55	
1330-20-7	Xylenes (total)	160	
108-38-3	m,p-Xylenes	110	

FORM 1 SPRINGFIELD SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

NEW SEEP /LSE1AMS

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-01MS

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO833

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	55	
100-42-5	Styrene	57	
75-25-2	Bromoform	50	
79-34-5	1,1,2,2-Tetrachloroethane	46	

FORM 1 SPRINGFIELD SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

NEW SEEP /LSE1AMSD

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-01MSD

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO835

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	47	
75-01-4	Vinyl Chloride	50	
74-83-9	Bromomethane	58	
75-00-3	Chloroethane	49	
67-64-1	Acetone	62	
75-35-4	1,1-Dichloroethene	49	
75-09-2	Methylene Chloride	49	
75-15-0	Carbon Disulfide	48	
156-60-5	trans-1,2-Dichloroethene	49	
75-34-3	1,1-Dichloroethane	49	
78-93-3	2-Butanone	78	
156-59-2	cis-1,2-Dichloroethene	50	
540-59-0	1,2-Dichloroethene (total)	100	
67-66-3	Chloroform	50	
71-55-6	1,1,1-Trichloroethane	49	
56-23-5	Carbon Tetrachloride	48	
107-06-2	1,2-Dichloroethane	50	
71-43-2	Benzene	49	
79-01-6	Trichloroethene	49	
78-87-5	1,2-Dichloropropane	50	
75-27-4	Bromodichloromethane	50	
10061-01-5	cis-1,3-Dichloropropene	49	
108-88-3	Toluene	48	
10061-02-6	trans-1,3-Dichloropropene	50	
79-00-5	1,1,2-Trichloroethane	47	
127-18-4	Tetrachloroethene	48	
108-10-1	4-Methyl-2-Pentanone	89	
591-78-6	2-Hexanone	83	
124-48-1	Dibromochloromethane	49	
108-90-7	Chlorobenzene	48	
100-41-4	Ethylbenzene	48	
1330-20-7	Xylenes (total)	140	
108-38-3	m,p-Xylenes	95	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SPRINGFIELD SAMPLE NO.

NEW SEEP /LSE1AMSD

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-01MSD

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO835

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	48	
100-42-5	Styrene	49	
75-25-2	Bromoform	47	
79-34-5	1,1,2,2-Tetrachloroethane	45	

FORM 1 SPRINGFIELD SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

STATION2/LSE2

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO831

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5	U
75-15-0	Carbon Disulfide	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	15	U
108-38-3	m,p-Xylenes	10	U

FORM 1 SPRINGFIELD SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

STATION2/LSE2

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO831

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SPRINGFIELD SAMPLE NO.

TRIPBLANK

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-04

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO829

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	2	J
75-15-0	Carbon Disulfide	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	15	U
108-38-3	m,p-Xylenes	10	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SPRINGFIELD SAMPLE NO.

TRIPBLANK

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: 030626-04

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO829

Level: (low/med) LOW Date Received: 05/30/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKLC

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: V120603-B1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO827

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5	U
75-15-0	Carbon Disulfide	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	15	U
108-38-3	m,p-Xylenes	10	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKLC

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: V120603-B1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO827

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VLCSLC

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: V120603-LCS

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO828

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	48	
75-01-4	Vinyl Chloride	52	
74-83-9	Bromomethane	59	
75-00-3	Chloroethane	49	
67-64-1	Acetone	96	
75-35-4	1,1-Dichloroethene	52	
75-09-2	Methylene Chloride	50	
75-15-0	Carbon Disulfide	51	
156-60-5	trans-1,2-Dichloroethene	51	
75-34-3	1,1-Dichloroethane	51	
78-93-3	2-Butanone	96	
156-59-2	cis-1,2-Dichloroethene	51	
540-59-0	1,2-Dichloroethene (total)	100	
67-66-3	Chloroform	51	
71-55-6	1,1,1-Trichloroethane	51	
56-23-5	Carbon Tetrachloride	51	
107-06-2	1,2-Dichloroethane	51	
71-43-2	Benzene	50	
79-01-6	Trichloroethene	50	
78-87-5	1,2-Dichloropropane	51	
75-27-4	Bromodichloromethane	51	
10061-01-5	cis-1,3-Dichloropropene	52	
108-88-3	Toluene	51	
10061-02-6	trans-1,3-Dichloropropene	52	
79-00-5	1,1,2-Trichloroethane	49	
127-18-4	Tetrachloroethene	49	
108-10-1	4-Methyl-2-Pentanone	95	
591-78-6	2-Hexanone	99	
124-48-1	Dibromochloromethane	51	
108-90-7	Chlorobenzene	49	
100-41-4	Ethylbenzene	50	
1330-20-7	Xylenes (total)	150	
108-38-3	m,p-Xylenes	99	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VLCSLC

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix: (soil/water) WATER Lab Sample ID: V120603-LCS

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: LO828

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 06/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	50	
100-42-5	Styrene	50	
75-25-2	Bromoform	51	
79-34-5	1,1,2,2-Tetrachloroethane	48	

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

	CLIENT SAMPLE NO.	SMC1 (DFM) #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLKLC	104	92	96	96	0
02	VLCSLC	100	88	90	88	0
03	TRIPBLANK	112	98	102	100	0
04	NEW SEEP/LSE	108	92	98	98	0
05	STATION2/LSE	112	96	102	100	0
06	HEADWALL	106	92	98	96	0
07	NEW SEEP/LSE	108	90	98	94	0
08	NEW SEEP/LSE	98	86	86	84	0
09						
10						
11						
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27						
28						

		QC LIMITS
SMC1 (DFM)	= Dibromofluoromethane	(75-125)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-139)
SMC3 (TOL)	= Toluene-d8	(75-125)
OTHER(BFB)	= Bromofluorobenzene	(75-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3A

WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix Spike - EPA Sample No.: VLCSLC

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/l)	LCS % REC #	QC. LIMITS REC.
Chloromethane	50		48	96	63-123
Vinyl Chloride	50		52	104	70-128
Bromomethane	50		59	118	69-122
Chloroethane	50		49	98	69-129
Acetone	100		96	96	27-160
1,1-Dichloroethene	50		52	104	68-124
Methylene Chloride	50		50	100	65-125
Carbon Disulfide	50		51	102	58-153
trans-1,2-Dichloroethen	50		51	102	75-132
1,1-Dichloroethane	50		51	102	73-120
2-Butanone	100		96	96	56-148
cis-1,2-Dichloroethene	50		51	102	63-117
Chloroform	50		51	102	68-124
1,1,1-Trichloroethane	50		51	102	68-128
Carbon Tetrachloride	50		51	102	64-124
1,2-Dichloroethane	50		51	102	65-125
Benzene	50		50	100	78-127
Trichloroethene	50		50	100	75-120
1,2-Dichloropropane	50		51	102	72-121
Bromodichloromethane	50		51	102	66-125
cis-1,3-Dichloropropene	50		52	104	68-126
Toluene	50		51	102	71-132
trans-1,3-Dichloroprope	50		52	104	62-133
1,1,2-Trichloroethane	50		49	98	74-125
Tetrachloroethene	50		49	98	76-118
4-Methyl-2-Pentanone	100		95	95	52-139
2-Hexanone	100		99	99	47-165
Dibromochloromethane	50		51	102	62-122

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Matrix Spike - EPA Sample No.: VLCSLC

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/l)	LCS % REC #	QC. LIMITS REC.
Chlorobenzene	50		49	98	77-128
Ethylbenzene	50		50	100	69-129
Xylenes (total)	150		150	100	68-133
m,p-Xylenes	100		99	99	67-127
o-Xylene	50		50	100	73-133
Styrene	50		50	100	72-132
Bromoform	50		51	102	70-122
1,1,2,2-Tetrachloroetha	50		48	96	72-121

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 36 outside limits

COMMENTS: _____

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKLC

Lab Name: CEIMIC CORP Project: OSL SITE

Lab Code: CEIMIC Case No.: 40300 SDG No.: 053003

Lab File ID: LO827 Lab Sample ID: V120603-B1

Date Analyzed: 06/03/03 Time Analyzed: 1700

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: MS12

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSLC	V120603-LCS	LO828	1750
02	TRIPBLANK	030626-04	LO829	1856
03	NEW SEEP/LSE	030626-01	LO830	1931
04	STATION2/LSE	030626-02	LO831	2007
05	HEADWALL	030626-03	LO832	2043
06	NEW SEEP/LSE	030626-01MS	LO833	2119
07	NEW SEEP/LSE	030626-01MSD	LO835	2249
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COMMENTS:

Ceimic Laboratories

Metals Results

Client: Town of Springfield
SDG: 053003
Project Name: OSL Site
Ceimic ID: 030626

Lab Sample ID	Sample ID	Matrix	Date Sampled	Date Received	% Solids
)30626-01	NEW SEEP/LSE1A	WATER	5/29/2003	5/30/2003	

Parameter	Units	Result	Quant. Limit
Aluminum	ug/L	ND	99
Antimony	ug/L	8.2	5.6
Arsenic	ug/L	ND	6.9
Barium	ug/L	ND	12
Beryllium	ug/L	ND	0.28
Cadmium	ug/L	ND	0.31
Calcium	ug/L	16000	39
Chromium	ug/L	ND	0.63
Cobalt	ug/L	ND	1.0
Copper	ug/L	ND	3.0
Iron	ug/L	49	34
Lead	ug/L	ND	3.4
Magnesium	ug/L	1800	12
Manganese	ug/L	ND	3.1
Molybdenum	ug/L	ND	1.6
Mercury	ug/L	ND	0.025
Nickel	ug/L	ND	2.6
Potassium	ug/L	1200	110
Selenium	ug/L	ND	6.7
Silver	ug/L	ND	0.58
Sodium	ug/L	1800	120
Titanium	ug/L	ND	3.5
Vanadium	ug/L	ND	1.9
Zinc	ug/L	ND	27

Ceimic Laboratories

Metals Results

Client: Town of Springfield
SDG: 053003
Project Name: OSL Site
Ceimic ID: 030626

Lab Sample ID	Sample ID	Matrix	Date Sampled	Date Received	% Solids
030626-02	STATION2/LSE2	WATER	5/29/2003	5/30/2003	

Parameter	Units	Result	Quant. Limit
Aluminum	ug/L	110	99
Antimony	ug/L	7.4	5.6
Arsenic	ug/L	ND	6.9
Barium	ug/L	ND	12
Beryllium	ug/L	ND	0.28
Cadmium	ug/L	ND	0.31
Calcium	ug/L	18000	39
Chromium	ug/L	ND	0.63
Cobalt	ug/L	ND	1.0
Copper	ug/L	4.2	3.0
Iron	ug/L	120	34
Lead	ug/L	ND	3.4
Magnesium	ug/L	1900	12
Manganese	ug/L	10	3.1
Mercury	ug/L	ND	0.025
Molybdenum	ug/L	ND	1.6
Nickel	ug/L	ND	2.6
Potassium	ug/L	1100	110
Selenium	ug/L	ND	6.7
Silver	ug/L	ND	0.58
Sodium	ug/L	1700	120
Titanium	ug/L	4.9	3.5
Vanadium	ug/L	ND	1.9
Zinc	ug/L	54	27

Ceimic Laboratories

Metals Results

Client: Town of Springfield
SDG: 053003
Project Name: OSL Site
Ceimic ID: 030626

Lab Sample ID	Sample ID	Matrix	Date Sampled	Date Received	% Solids
)30626-03	HEADWALL	WATER	5/29/2003	5/30/2003	

Parameter	Units	Result	Quant. Limit
Aluminum	ug/L	250	99
Antimony	ug/L	ND	5.6
Arsenic	ug/L	7.6	6.9
Barium	ug/L	129	12
Beryllium	ug/L	ND	0.28
Cadmium	ug/L	ND	0.31
Calcium	ug/L	54000	39
Chromium	ug/L	1.9	0.63
Cobalt	ug/L	8.8	1.0
Copper	ug/L	4.3	3.0
Iron	ug/L	46000	34
Lead	ug/L	ND	3.4
Magnesium	ug/L	5100	12
Manganese	ug/L	4900	3.1
Mercury	ug/L	ND	0.025
Molybdenum	ug/L	ND	1.6
Nickel	ug/L	6.2	2.6
Potassium	ug/L	3300	110
Selenium	ug/L	ND	6.7
Silver	ug/L	ND	0.58
Sodium	ug/L	2600	120
Titanium	ug/L	7.9	3.5
Vanadium	ug/L	3.3	1.9
Zinc	ug/L	58	27

Ceimic Laboratories

Metals - Quality Control Report
METHOD BLANK

Client: Town of Springfield
SDG: 053003
Project Name: OSL Site
Ceimic ID: 030626

Sample ID: PBW

Parameter	Units	Blank Result
Aluminum	ug/L	<8.900
Antimony	ug/L	<2.500
Arsenic	ug/L	<4.900
Barium	ug/L	<12.03
Beryllium	ug/L	<0.110
Cadmium	ug/L	<0.340
Calcium	ug/L	<69.000
Chromium	ug/L	<0.530
Cobalt	ug/L	<9.500
Copper	ug/L	<5.900
Iron	ug/L	<13.800
Lead	ug/L	<4.500
Magnesium	ug/L	<11.600
Manganese	ug/L	<0.690
Molybdenum	ug/L	<1.000
Mercury	ug/L	<0.025
Nickel	ug/L	<5.000
Potassium	ug/L	<82.200
Selenium	ug/L	<3.500
Silver	ug/L	<1.200
Sodium	ug/L	<40.600
Titanium	ug/L	<1.000
Vanadium	ug/L	<4.800
Zinc	ug/L	<3.200

Ceimic Laboratories

Metals - Quality Control Report
LABORATORY CONTROL SAMPLE

Client: Town of Springfield
SDG: 053003
Project Name: OSL Site
Ceimic ID: 030626

Sample ID: LCSW

Parameter	Units	Spiked Sample	Spike Conc.	% Rec.	QC Limits %
Aluminum	ug/L	2017.47	2000.0	101	80.0-120.0
Antimony	ug/L	749.48	800.0	94	80.0-120.0
Arsenic	ug/L	750.64	800.0	94	80.0-120.0
Barium	ug/L	203.01	200.0	102	80.0-120.0
Beryllium	ug/L	193.23	200.0	97	80.0-120.0
Cadmium	ug/L	193.99	200.0	97	80.0-120.0
Calcium	ug/L	1115.73	1000.0	112	80.0-120.0
Chromium	ug/L	395.87	400.0	99	80.0-120.0
Cobalt	ug/L	205.47	200.0	103	80.0-120.0
Copper	ug/L	294.23	300.0	98	80.0-120.0
Iron	ug/L	2945.80	3000.0	98	80.0-120.0
Lead	ug/L	1014.72	1000.0	101	80.0-120.0
Magnesium	ug/L	2045.08	2000.0	102	80.0-120.0
Manganese	ug/L	204.18	200.0	102	80.0-120.0
Molybdenum	ug/L	386.43	400.0	97	80.0-120.0
Nickel	ug/L	507.99	500.0	102	80.0-120.0
Potassium	ug/L	9705.85	10000.0	97	80.0-120.0
Selenium	ug/L	1837.74	2000.0	92	80.0-120.0
Silver	ug/L	68.90	75.0	92	80.0-120.0
Sodium	ug/L	3406.43	3000.0	114	80.0-120.0
Titanium	ug/L	194.00	200.0	97.0	80.0-120.0
Vanadium	ug/L	279.95	300.0	93	80.0-120.0
Zinc	ug/L	205.04	200.0	103	80.0-120.0

030626
VOA, 1

Chain of Custody

Original Chain of Custody goes to Laboratory

0495

Page 1 of 1

Project #	Project Name
403002	Old Springfield LF

Samplers (please print): Oscar Garcia

Date	Time	Comp./Grab	Sample Identification	Sample Matrix	No. of Containers	VOC's by 8260	TAL Metals*							Remarks
5/29/03	8:35	G	New Sero/LSE 1A	SW	4	↓	↓							
↓	8:45	↓	Station 2/LSE 2	↓	↓	↓	↓							
↓	8:20	↓	Headwall	↓	↓	↓	↓							
			Trip Blank	QA/QC	3	↓								

Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
Relinquished by (signature) Oscar Garcia	Date/Time 5/29/03 4:00p		

Remarks:
*Metals Include: Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn

▇ = Lab Use Only

Celmic Corporation, 10 Dean Knauss Drive, Narragansett, RI 02882 - Tel: (401) 782-8900, Fax: (401) 782-8905

Thank you for labeling the bottles!!

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS #: _____ Cooler Number: 1

Client: D. Henry Number of Coolers: 1

Project: Old Sp. LF Date Received: 5/30/03

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 5/30/03

1. Have designated person initial here to acknowledge receipt of cooler: EA (date): 5/30/03
2. Did cooler come with a shipping slip (airbill, etc.)? (YES) NO
   If YES, enter carrier name & airbill number here: UPS 1Z0256490141986615
3. Were custody seals on outside of cooler? YES (NO)
   How many & where: _____ seal date: / / seal name:
4. Were custody seals unbroken and intact at the date and time of arrival YES NO
5. Did you screen samples for radioactivity using a Geiger Counter? Reading: 0 (YES) NO
6. Chain of Custody #: 0495
7. Were custody papers sealed in a plastic bag & taped inside to the lid? (YES) NO
8. Were custody papers filled out properly (ink, signed, etc.)? (YES) NO
9. Did you sign custody papers in the appropriate place? (YES) NO
10. Was project identifiable from custody papers? (YES) NO
11. If required, was enough ice used? Cooler Temperature: 2 °C Type of ice: loose cubes (YES) NO

B. LOG-IN PHASE: Date samples were logged-in: 5/30/03
   by (print): Elizabeth Asting (sign): Elizabeth Asting
12. Describe type of packing in cooler: bubble wrap, sty. peanuts
13. Were all bottles sealed in separate plastic bags? (YES) NO
14. Did all bottles arrive unbroken and were labels in good condition? (YES) NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? (YES) NO
16. Did all bottle labels agree with custody papers? (YES) NO
17. Were correct containers used for the tests indicated? (YES) NO
18. Were samples received at the correct pH? (YES) NO
19. Was a sufficient amount of sample sent for tests indicated? (YES) NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: _____ (YES) NO
21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? (YES) NO
22. ~~21.~~ Laboratory labelling verified by: (Initials): EA (date): 5/30/03

EA 5/30/03

ATTACHMENT 5

OLD SPRINGFIELD LANDFILL SEMI-ANNUAL INSPECTION REPORT – APRIL 18, 2003

TRC

Customer-Focused Solutions

TRC Reference # 02136-0400-04046

May 30, 2003

Mr. Edward Hathaway
Remedial Project Manager
U.S. Environmental Protection Agency
Suite 1100
Mailcode HBT
One Congress Street
Boston, Massachusetts 02114-2023

Subject: Semi-Annual Inspection Report, Spring 2003
Old Springfield Landfill Superfund Site, Springfield, Vermont

Reference: Contract No. 68-W6-0042 (Subcontract 107061)
Work Assignment No. 131-TATA-01ZZ
Multi-Site Post Construction Monitoring

Dear Mr. Hathaway:

This letter report has been prepared to document and present the observations made by TRC Environmental Corporation (TRC) during the semi-annual inspection of the Old Springfield Landfill Superfund Site (the "Site"). TRC personnel conducted the inspection on April 18, 2003. The inspection was also performed as part of the Five-Year Review for the landfill. A Five-Year Review checklist was used to document the observations made during the inspection (attached). Jeff Strong and Rick Chamber, representatives of the City of Springfield POTW, provided access to the Site and accompanied TRC during an inspection of the interior of the wastewater Pre-Treatment Facility.

This Report is based on visual observations made during the inspection with reference to the Record Drawings of the cover system installation. The inspection by TRC consisted of the following scope of work:

- TRC inspectors traversed the perimeter and top of the landfill cap to look for evidence of erosion, cap disturbance, excessive settlement, and poor growth of vegetation.
- On- and off-cap storm water control structures were inspected for damage, settlement, sedimentation, vegetation and blockage.
- The above ground portions of structures that penetrate the cap (i.e. gas vents etc.) were inspected for damage. No attempt was made to evaluate subsurface conditions.
- The wastewater Pre-Treatment Facility was inspected for obvious damage and to determine if the treatment system was operating at the time of the inspection. No testing

Boott Mills South, Foot of John Street • Lowell, Massachusetts 01852
Telephone 978-970-5600 • Fax 978-453-1995

was performed to determine if the components were operating within specified ranges, or to measure the contaminant removal efficiency of the air stripper and carbon units.
- The above ground portions of the various groundwater and leachate control structures were inspected for damage. No attempt was made to evaluate subsurface conditions.
- TRC inspected recent repair and operation and maintenance (O&M) work to determine if the repairs were performing as intended.

Observations made during the inspection are summarized below.

SUMMARY OF INSPECTION

The results of the inspection are presented in the following sections according to the various components of the landfill cover system.

Landfill Surface

The surface of the landfill was generally in good condition with no obvious signs of settlement, erosion, or cracks (see Photos 1 and 2). The surface of the cover system appeared to be firm and stable on the day of inspection. The vegetative cover was in good condition. During the inspection, a 2-foot wide depression caused by animal burrows was observed on the northern portion of waste area No. 4 (Photo 9). Gopher and mole holes were also observed in the northeast portion of waste area No. 3, near the lower bench on the slope and near the center of waste area No. 2.

Off-Cap Surfaces

TRC engineers inspected the steep slope that was repaired and stabilized using a French drain system in November 2001. The area appeared to be stable, and the vegetation at the top of the slope repair area was in good condition (see Photo 3). Water was flowing from the upper French drain outlet pipe in the slope repair area. However, there was no water flowing from the lower slope repair French drain pipe, which appeared to be raised above the slope and covered with a mound of riprap, rather than situated flush with the slope surface below the riprap like the upper French drain pipe in this area.

Fabri-Form Drainage Channels

There are three concrete-lined Fabri-Form drainage channels at the site that intercept and convey stormwater runon and runoff from the landfill cover system to two culverts on the east side of the landfill.

In general the channels were in fair to good condition (see Photos 3, 4 and 5). However, in the southern Fabri-Form ditch a slight split was observed at a seam in the Fabri-Form material, and water flowing in the channel was seeping into this split (see Photo 6). Adjacent to the split Fabri-Form material, a cavity was present in the soil on the outer edge of the concrete (outside

the landfill cap), and runoff appeared to be entering the cavity from the adjacent wooded area southeast of waste area No. 3 and bypassing the Fabri-Form ditch (see Photo 7).

In general the Fabri-Form ditches and related culverts passing beneath the access road were clear of moss or sediments. As noted in TRC's Fall 2002 inspection report, a minor amount of sediment was observed in the northern Fabri-Form ditch, below the downslope opening of the culvert below the access road. Sediment appears to be collecting here because the elevation of the Fabri-Form ditch lining is slightly raised compared to the corrugated pipe at this end of the culvert. TRC recommends these sediments be removed, and that this area be inspected regularly for sediment accumulation and to evaluate potential settlement of the road and/or associated culvert materials.

The concrete headwall and culverts at the base of the southern and middle Fabri-Form ditches were inspected for build-up of sediment and/or vegetation. The drainage culvert outlet pipe from the middle Fabri-Form ditch was partially obstructed at the opening to the basin due to build-up of sediments and fallen leaves (see Photo 8). The drainage culvert openings at the concrete headwall and the bottom of the drainage basin should be cleared of any sediments or debris. TRC understands that the Fabri-Form ditches and related structures are regularly inspected and cleared of debris, and recommends that these blockages continue to be detected and removed regularly.

Cover Penetrations

Penetrations through the landfill cover system include ten passive gas vent structures, three piezometers, and one source control extraction well. The above ground portions of the gas vent sheds were opened and inspected for damage. Although the gas vent sheds generally appear to be in good condition, rodent holes were observed at the base of several of the sheds. Rodent damage, including displaced insulation and/or mounded soils, was also observed inside some of the sheds (see Photo 10). Mounded soil up to 1-foot deep was observed inside the middle shed on waste area No. 2 and the southern shed on waste area No. 2. The accumulated sediments should be removed from these gas vent sheds. The rodent activity does not appear to be affecting the operation of the gas vent structures. TRC understands that the POTW plans to improve the gas vent sheds with concrete floors sometime this year.

Monitoring Wells

The monitoring wells immediately adjacent to the landfill were inspected for damage to the wellhead. No damage was observed. Most of the well covers were without locks.

Cover Drainage Layer

TRC did not observe any moss or sediments in the outlets of the lateral subsurface drainpipes that discharge into the middle drainage channel. Water was flowing into the Fabri-Form ditches from 3 drainpipe outlets along the southern Fabri-Form ditch and from 2 drainpipe outlets along the middle Fabri-Form ditch. TRC understands that the drainpipe outlets are visually inspected

and cleared of debris on a regular basis. TRC recommends that these blockages continue to be detected and removed regularly.

Detention/Sedimentation Basin

During the April 2003 snowmelt, a seep developed on the western sidewall at the southwest corner of the sedimentation basin (see Photo 11). The location of the slope failure was consistent with the location where a seep was observed during TRC's November 2001 inspection. At the time of TRC's April 18, 2003 inspection, the slope failure spanned approximately ten feet across the western sidewall of the basin, beginning at the southwest corner near the outlet of the southern Fabri-Form channel into the basin. As discussed in the Fall 2002 inspection report, the walls of the sedimentation basin were previously stabilized and regraded in the fall of 2002. The existing geosynthetic clay layer (GCL) lining underlying the detention basin was not replaced as part of the recent repairs. During previous inspections, TRC noted that this GCL was severely degraded and was promoting the infiltration of water into the soils below the basin. In the area of the recent slope failure, a portion of the soils underlying the erosion control mat on the basin wall had eroded and was deposited on the floor of the basin, and an opening was present in the sidewall down to the GCL. Water was flowing in a northeasterly direction across the bottom of the opening in sidewall, but it was not clear whether water was infiltrating the GCL in the slope failure area (see Photo 12).

Groundwater Systems

The aboveground portions of the groundwater collections system at the site appeared to be in good condition at the time of the inspection. The French Drain valve and meter vaults located on the north and south ends of waste area No. 4 were unlocked. TRC recommends that locks are kept on the French Drain vaults to prevent vandalism or unauthorized entrance.

No damage or vandalism to the Pre-Treatment Facility was observed. At the time of the inspection, the Pre-Treatment facility was temporarily shut down during the replacement of the vapor phase carbon units.

Perimeter Ditches and Off-Site Discharge

See the *Fabri-Form Drainage Channels* section for information on perimeter ditches.

Fencing

The majority of fencing was in good condition. However, slight damage (i.e., collapsed barbed-wires) was observed on the perimeter fence located northeast of waste area No. 2 and down-slope of Gate C, apparently as a result of fallen trees outside the cap (see Photo 13). The fence below the bent barbed wire was in tact.

Perimeter Road

The perimeter roads were in good condition with no erosion, rutting, or potholes (see Photo 14).

CORRECTIVE ACTIONS AND RECOMMENDATIONS

Status of Corrective Actions

The following table summarizes the status of previously identified maintenance deficiencies or landfill component defects.

Outstanding Deficiencies/Defects	Status	Corrective Action Adequate?	Recommendation
Holes along edges of Fabri-Form ditches	Hole observed on southern ditch adjacent to split in Fabri-Form.	No. Runoff flowing in hole and undermining ditch.	Capture/divert flow, if necessary. Repair hole.
Sedimentation and vegetation in Fabri-Form ditches	Sediments and leaf debris present in inlets and basin at intersection of southern and middle Fabri-Form ditches.	Yes, if addressed regularly.	Remove debris from inlet pipe from middle Fabri-Form ditch and bottom of basin.
Depression on slope below detention basin	Still Present	Not Applicable.	Monitor depression for expansion or evidence of slope failure.
Erosion of detention basin sidewalls	New slope failure in western sidewall at southwest corner of basin.	No.	Cause of slope failure should be investigated and permanent repair of basin should be undertaken.
Gopher holes	Still Present	No.	

Recommendations

TRC recommends the following corrective actions based on the observations made during the landfill inspection:

- The cause of the seep and related erosion on the western sidewall of the sedimentation basin should be investigated and permanent repairs should be undertaken. As noted in TRC's previous inspection reports, consideration should be given to replacing the GCL lining below the detention basin in the future to prevent further erosion and limit the infiltration of water at the top of the steep slope. An alternative to GCL, such as HDPE geomembrane, is recommended.

- The split in the southern Fabri-Form ditch should be repaired to prevent further damage to the concrete lining and to prevent infiltration and further undermining of the drainage ditch. The related soil erosion area on the south side of the Fabri-Form ditch, adjacent to the cracked Fabri-Form, should be filled or repaired.

- Sediments and leaf debris should be removed from the drainage culvert outlet pipes in the concrete headwall located at the intersection of the southern and middle Fabri-Form ditches, and from the bottom of the concrete headwall basin.

- The damage to the barbed wire on the top of the fence northeast of waste area No. 2 should be repaired and downed trees should be moved away from the fence to prevent further damage.

- The downslope end of the culvert where the access road intersects with the northern Fabri-Form ditch should be monitored for sediment accumulation, and for potential settlement of the culvert structures and/or access road at this location.

- Monitor the depression on the slope below the detention basin that could threaten the stability of the slope.

- The slope of the drainage layer outlet pipes should be adjusted periodically to maintain a free-flowing condition from the pipes. Accumulated sediments should continue to be removed periodically as well.

- The gopher eradication program should continue to be included in regular maintenance activities at the landfill. Mounded soils accumulated as a result of gopher burrows should be removed from the inside of the gas vent sheds (especially the middle and southern gas vent sheds on waste area No. 2) so the gas vent structures are kept visible and accessible for maintenance, etc.

Please do not hesitate to contact me at (978) 656-3569 with any questions or comments.

Sincerely,

TRC Environmental Corporation

Gregory A. Mischel P.E.
Project Manager

Amy L. Stattel
Environmental Engineer

Attachments: Attachment 1, Inspection Checklist and Site Plan
Attachment 2, Photographs

cc: Jeff Strong, Town of Springfield
David Deane, Dufresne-Henry, Inc.
Don Dwight, M&E

Attachment 1

Inspection Checklist and Site Plan
April 18, 2003

Semi-Annual/Five-Year Inspection Report
Old Springfield Landfill
Springfield, Vermont

Five-Year Review Site Inspection Checklist

Purpose of the Checklist

The site inspection checklist provides a useful method for collecting important information during the site inspection portion of the five-year review. The checklist serves as a reminder of what information should to be gathered and provides the means of checking off information obtained and reviewed, or information not available or applicable. The checklist is divided into sections as follows:

I. Site Information
II. Interviews
III. On-site Documents & Records Verified
IV. O&M Costs
V. Access and Institutional Controls
VI. General Site Conditions
VII. Landfill Covers
VIII. Vertical Barrier Walls
IX. Groundwater/Surface Water Remedies
X. Other Remedies
XI. Overall Observations

Some data and information identified in the checklist may or may not be available at the site depending on how the site is managed. Sampling results, costs, and maintenance reports may be kept on site or may be kept in the offices of the contractor or at State offices. In cases where the information is not kept at the site, the item should not be checked as "not applicable," but rather it should be obtained from the office or agency where it is maintained. If this is known in advance, it may be possible to obtain the information before the site inspection.

This checklist was developed by EPA and the U.S. Army Corps of Engineers (USACE). It focuses on the two most common types of remedies that are subject to five-year reviews: landfill covers, and groundwater pump and treat remedies. Sections of the checklist are also provided for some other remedies. The sections on general site conditions would be applicable to a wider variety of remedies. The checklist should be modified to suit your needs when inspecting other types of remedies, as appropriate.

The checklist may be completed and attached to the Five-Year Review report to document site status. Please note that the checklist is not meant to be completely definitive or restrictive; additional information may be supplemented if the reviewer deems necessary. Also note that actual site conditions should be documented with photographs whenever possible.

Using the Checklist for Types of Remedies

The checklist has sections designed to capture information concerning the main types of remedies which are found at sites requiring five-year reviews. These remedies are landfill covers (Section VII of the checklist) and groundwater and surface water remedies (Section IX of the checklist). The primary elements and appurtenances for these remedies are listed in sections which can be checked off as the facility is inspected. The opportunity is also provided to note site conditions, write comments on the facilities, and attach any additional pertinent information. If a site includes remedies beyond these, such as soil vapor extraction or soil landfarming, the information should be gathered in a similar manner and attached to the checklist.

Considering Operation and Maintenance Costs

Unexpectedly widely varying or unexpectedly high O&M costs may be early indicators of remedy problems. For this reason, it is important to obtain a record of the original O&M cost estimate and of annual O&M costs during the years for which costs incurred are available. Section IV of the checklist provides a place for documenting annual costs and for commenting on unanticipated or unusually high O&M costs. A more detailed categorization of costs may be attached to the checklist if available. Examples of categories of O&M costs are listed below.

Operating Labor - This includes all wages, salaries, training, overhead, and fringe benefits associated with the labor needed for operation of the facilities and equipment associated with the remedial actions.

Maintenance Equipment and Materials - This includes the costs for equipment, parts, and other materials required to perform routine maintenance of facilities and equipment associated with a remedial action.

Maintenance Labor - This includes the costs for labor required to perform routine maintenance of facilities and for equipment associated with a remedial action.

Auxiliary Materials and Energy - This includes items such as chemicals and utilities which can include electricity, telephone, natural gas, water, and fuel. Auxiliary materials include other expendable materials such as chemicals used during plant operations.

Purchased Services - This includes items such as sampling costs, laboratory fees, and other professional services for which the need can be predicted.

Administrative Costs - This includes all costs associated with administration of O&M not included under other categories, such as labor overhead.

Insurance, Taxes and Licenses - This includes items such as liability and sudden and accidental insurance, real estate taxes on purchased land or right-of-way, licensing fees for certain technologies, and permit renewal and reporting costs.

Other Costs - This includes all other items which do not fit into any of the above categories.

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Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

Five-Year Review Site Inspection Checklist (Template)

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. SITE INFORMATION

Site name: Old Springfield Landfill	**Date of inspection:** 4/18/03
Location and Region: Springfield, VT	**EPA ID:**
Agency, office, or company leading the five-year review:	**Weather/temperature:**

Remedy Includes: (Check all that apply)

- ☑ Landfill cover/containment
- ☑ Access controls
- ☐ Institutional controls
- ☑ Groundwater pump and treatment
- ☑ Surface water collection and treatment
- ☐ Other _____
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☑ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Jeff Strong (Name) Water + Wastewater Superintendant (Title) 4/18/03 (Date)
   Interviewed ☑ at site ☐ at office ☑ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff** Rick Chamber (Name) Chief Operator, POTW (Title) 4/18/03 (Date)
   Interviewed ☑ at site ☑ at office ☐ by phone Phone no. _____ 7/23/03 via phone
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____
_____

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
   - ☑ O&M manual — ☑ Readily available — ☐ Up to date — ☐ N/A
   - ☑ As-built drawings — ☑ Readily available — ☐ Up to date — ☐ N/A
   - ☑ Maintenance logs — ☑ Readily available — ☑ Up to date — ☐ N/A

   Remarks_____

2. **Site-Specific Health and Safety Plan** — ☑ Readily available — ☐ Up to date — ☐ N/A
   - ☑ Contingency plan/emergency response plan — ☑ Readily available — ☐ Up to date — ☐ N/A

   Remarks_____

3. **O&M and OSHA Training Records** — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks_____

4. **Permits and Service Agreements**
   - ☐ Air discharge permit — ☐ Readily available — ☐ Up to date — ☑ N/A (Air monitoring only)
   - ☑ Effluent discharge — ☐ Readily available — ☐ Up to date — ☐ N/A
   - ☑ Waste disposal, POTW — ☑ Readily available — ☑ Up to date — ☐ N/A
   - ☐ Other permits_____ — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks_____

5. **Gas Generation Records** — ☑ Readily available — ☐ Up to date — ☑ N/A

   Remarks_____

6. **Settlement Monument Records** — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks_____

7. **Groundwater Monitoring Records** — ☑ Readily available — ☑ Up to date — ☐ N/A

   Remarks_____

8. **Leachate Extraction Records** — ☑ Readily available — ☑ Up to date — ☐ N/A

   Remarks_____

9. **Discharge Compliance Records**
   - ☑ Air — ☑ Readily available — ☑ Up to date — ☐ N/A
   - ☑ Water (effluent) — ☑ Readily available — ☑ Up to date — ☐ N/A

   Remarks_____

10. **Daily Access/Security Logs** — ☐ Readily available — ☐ Up to date — ☑ N/A

    Remarks_____

IV. O&M COSTS

1. **O&M Organization**
   - ☐ State in-house
   - ☐ PRP in-house
   - ☐ Federal Facility in-house
   - ☐ Other_____
   - ☐ Contractor for State
   - ☐ Contractor for PRP
   - ☐ Contractor for Federal Facility

2. **O&M Cost Records**
   - ☑ Readily available
   - ☑ Up to date
   - ☑ Funding mechanism/agreement in place
   - Original O&M cost estimate_____ ☐ Breakdown attached

   Total annual cost by year for review period if available

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: None - except slope repair area (lower part of Southern fabriform channel)

V. ACCESS AND INSTITUTIONAL CONTROLS ☐ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☑ Location shown on site map ☐ Gates secured ☐ N/A
   Remarks Fallen tree - outside landfill cap - fell on barbed wire - top of fence damaged

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☑ N/A
   Remarks_____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☑ No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☑ No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) _____
Frequency _____
Responsible party/agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.

Reporting is up-to-date ☐ Yes ☐ No ☐ N/A
Reports are verified by the lead agency ☐ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☑ Yes ☐ No ☐ N/A
Violations have been reported ☐ Yes ☑ No ☐ N/A
Other problems or suggestions: ☐ Report attached

_____
_____
_____
_____

2. **Adequacy** ☑ ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks_____
_____
_____

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☑ No vandalism evident
Remarks_____
_____

2. **Land use changes on site** ☑ N/A
Remarks_____
_____

3. **Land use changes off site** ☑ N/A
Remarks_____
_____

VI. GENERAL SITE CONDITIONS

A. Roads ☑ Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map ☑ Roads adequate ☐ N/A
Remarks_____
_____

B. Other Site Conditions

Remarks

VII. LANDFILL COVERS ☑ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) (off cap) ☐ Location shown on site map ☐ Settlement not evident
   Areal extent ____ Depth ____
   Remarks Slight settlement on slope below detention basin (see previous reports); off cap.

2. **Cracks** ☐ Location shown on site map ☑ Cracking not evident
   Lengths ____ Widths ____ Depths ____
   Remarks

3. **Erosion** ☐ Location shown on site map ☑ Erosion not evident
   Areal extent ____ Depth ____
   Remarks

4. **Holes** ☑ Location shown on site map ☐ Holes not evident
   Areal extent up to 2 ft. wide Depth ____
   Remarks Holes caused by rodent activity.

5. **Vegetative Cover** ☑ Grass ☑ Cover properly established ☑ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks some ruts in grass due to rode holes especially lower half of landfill surface

6. **Alternative Cover (armored rock, concrete, etc.)** ☑ N/A
   Remarks

7. **Bulges** ☐ Location shown on site map ☑ Bulges not evident
   Areal extent ____ Height ____
   Remarks

8. **Wet Areas/Water Damage** ☑ Wet areas/water damage not evident
- ☐ Wet areas ☐ Location shown on site map Areal extent_____
- ☐ Ponding ☐ Location shown on site map Areal extent_____
- ☑ Seeps ☐ Location shown on site map Areal extent_____
- ☐ Soft subgrade ☐ Location shown on site map Areal extent_____

Remarks detention pond - Infiltration of water through GCL is causing wet area / sidewall blowout - southwest corner

9. **Slope Instability** ☐ Slides ☐ Location shown on site map ☑ No evidence of slope instability
Areal extent_____
Remarks_____

B. Benches ☑ Applicable ☐ N/A The benches were not designed to convey runoff.
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff ~~and intercept and convey the runoff to a lined channel.~~)

1. **Flows Bypass Bench** ☐ Location shown on site map ☑ N/A or okay
Remarks_____

2. **Bench Breached** ☐ Location shown on site map ☑ N/A or okay
Remarks_____

3. **Bench Overtopped** ☐ Location shown on site map ☑ N/A or okay
Remarks_____

C. Letdown Channels ☐ Applicable ☑ N/A See Perimeter ditch section, below
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement
Areal extent_____ Depth_____
Remarks_____

2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation
Material type_____ Areal extent_____
Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion
Areal extent_____ Depth_____
Remarks_____

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☑ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☑ Passive
☑ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☑ Needs Maintenance
☐ N/A
Remarks Concrete floors to be added in gas vent sheds later in 2003 to reduce rodent problems.

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☑ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☑ Good condition (some - no locks)
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells** except LSE-3
☐ Properly secured/locked ☑ Functioning ☐ Routinely sampled ☑ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks At time of inspection - pump was not functioning in LSE-3; replacement of pump was planned by end of April 2003.

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☑ N/A
Remarks_____

E. Gas Collection and Treatment ☐ Applicable ☑ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____

2. **Gas Collection Wells, Manifolds and Piping**
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ☐ Good condition ☐ Needs Maintenance ☐ N/A
   Remarks_____

F. Cover Drainage Layer ☑ Applicable ☐ N/A

1. **Outlet Pipes Inspected** ☑ Functioning ☐ N/A
   Remarks some have no flow (4/18/03)

2. **Outlet Rock Inspected** ☐ Functioning ☑ N/A
   Remarks_____

G. Detention/Sedimentation Ponds ☑ Applicable ☐ N/A

1. **Siltation** Areal extent 30 Sq. ft. Depth_____ ☐ N/A
   ☐ Siltation not evident
   Remarks failure of slope on west sidewall at southwest corner of sed. pond.

2. **Erosion** Areal extent on plan Depth_____
   ☐ Erosion not evident ~ 30 Sq. ft.
   Remarks Approx. 12 ft. wide (see siltation, above)

3. **Outlet Works** ☑ Functioning ☐ N/A
   Remarks_____

4. **Dam** ☐ Functioning ☑ N/A
   Remarks_____

H. Retaining Walls ☐ Applicable ☑ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
Horizontal displacement_____ Vertical displacement_____
Rotational displacement_____
Remarks_____

5. **Degradation** (Fabriform) ☑ Location shown on site map ☐ Degradation not evident
Remarks Seam in FabriForm in south letdown channel at west end - channel is cracked above det. pond.

I. Perimeter Ditches/Off-Site Discharge ☑ Applicable ☐ N/A (Fabri Form Ditches)

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
Areal extent_____ Depth_____
Remarks_____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
☐ Vegetation does not impede flow
Areal extent_____ Type_____
Remarks_____

3. **Erosion** ☑ Location shown on site map ☐ Erosion not evident
Areal extent ~1 sq. ft. Depth 1 ft.
Remarks cavity next to split in southern Fabri form ditch - water flowing into cavity from off-cap is undermining ditch.

4. Lower basin/culvert ~~**Discharge Structure**~~ ☑ Functioning ☐ N/A
Remarks Basin at bottom of Fabriform ditches (where they converge) - some minor sedimentation + leaf debris.

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☑ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
Areal extent_____ Depth_____
Remarks_____

2. **Performance Monitoring** Type of monitoring_____
☐ Performance not monitored
Frequency_____ ☐ Evidence of breaching
Head differential_____
Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks Not Viewed

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks Not viewed ; meters switched annually ; pipes cleaned (to remove fouling) annually.

3. **Spare Parts and Equipment**
☑ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks

B. Surface Water Collection Structures, Pumps, and Pipelines ☒ Applicable ☐ N/A

1. **Collection Structures, Pumps, and Electrical**
☒ Good condition ☐ Needs Maintenance
Remarks French drain pump/meter vaults opened. Appeared to be in good condition.

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks Not viewed directly. As discussed during interview all French Drain pipes will eventually be converted to plastic.

3. **Spare Parts and Equipment** NA
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks

xtraction well
not visible
r inspection
nterview +
& m records
dicate
:W-1 + EW2
erating
s expected,
ut EW-3 (SC
needs new
pump.

→ French Drains

C. Treatment System ☑ Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)
   - ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   - ☑ Air stripping ☑ Carbon adsorbers
   - ☑ Filters
   - ☐ Additive (*e.g.*, chelation agent, flocculent) none needed - iron settles out in clarifyer.
   - ☐ Others
   - ☑ Good condition ☐ Needs Maintenance
   - ☐ Sampling ports properly marked and functional
   - ☑ Sampling/maintenance log displayed and up to date
   - ☑ Equipment properly identified
   - ☐ Quantity of groundwater treated annually
   - ☐ Quantity of surface water treated annually
   - Remarks change air stripper tower media every 6 months. Air stripper media changed Spring 2003; activated carbon drums changed out on April 18, 2003

2. **Electrical Enclosures and Panels** (properly rated and functional)
   - ☐ N/A ☑ Good condition ☐ Needs Maintenance
   - Remarks

3. **Tanks, Vaults, Storage Vessels**
   - ☐ N/A ☑ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
   - Remarks

4. **Discharge Structure and Appurtenances**
   - ☐ N/A ☑ Good condition ☐ Needs Maintenance
   - Remarks

5. **Treatment Building(s)**
   - ☐ N/A ☑ Good condition (esp. roof and doorways) ☐ Needs repair
   - ☑ Chemicals and equipment properly stored
   - Remarks

6. **Monitoring Wells** (pump and treatment remedy)
   - ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   - ☐ All required wells located ☐ Needs Maintenance ☐ N/A
   - Remarks See Sect. D - cover penetrations

D. Monitoring Data

1. Monitoring Data
   - ☑ Is routinely submitted on time ☑ Is of acceptable quality

2. Monitoring data suggests:
   - ☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining decreasing trend in MW-52

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☒ N/A
Remarks_____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

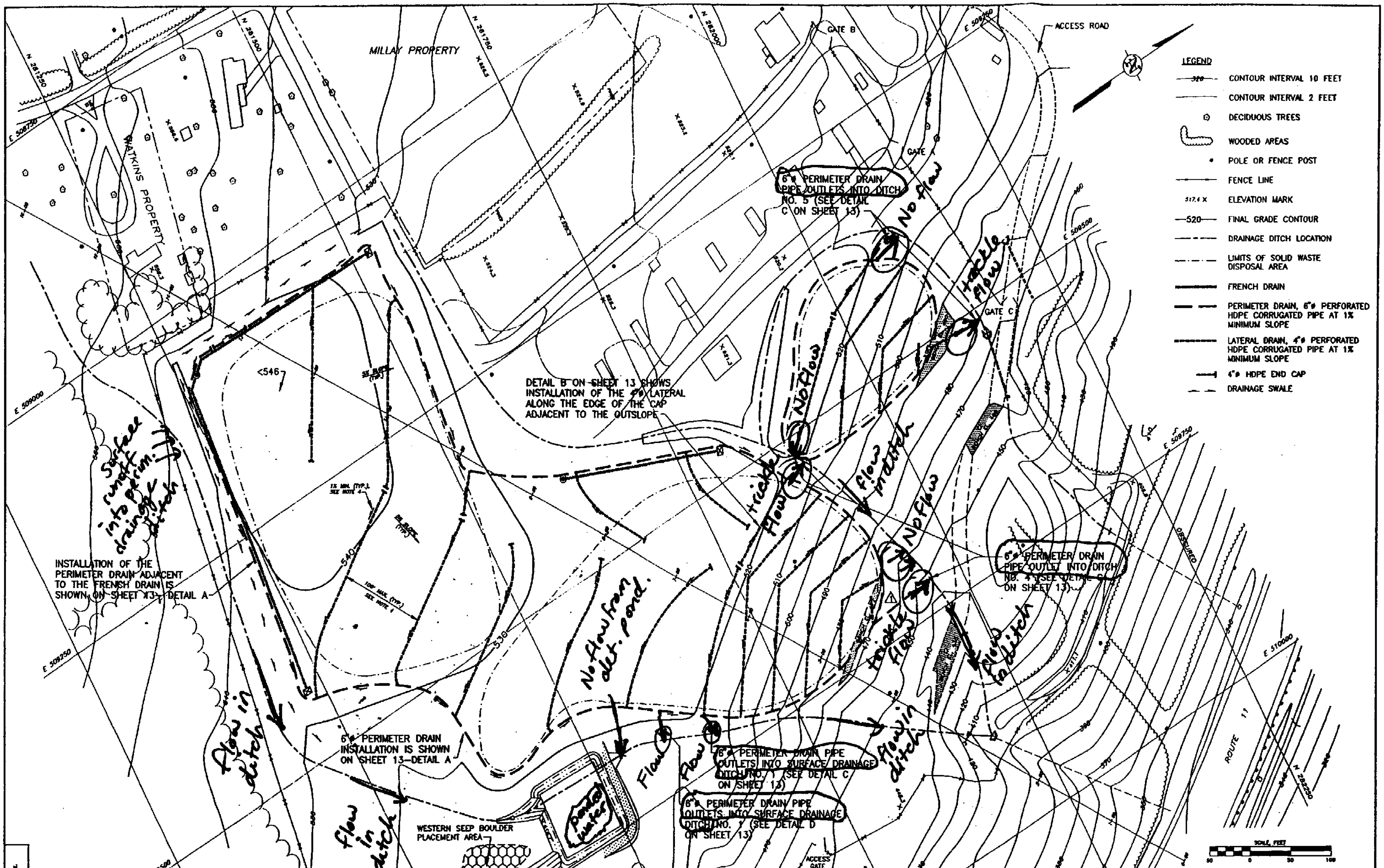
A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Control of rodents / burrowing animals needs improvement. Should have exterminator or animal control professional involved. Burrowing animals can penetrate cap liner exposing wastes and allow water to infiltrate, producing leachate and contributing to G.W. contamination. Ground water elevations should be determined in extraction wells whenever monitoring wells are sounded as part of regular O&M Activities.



April 18, 2003

NOTES:

1. THE CAP DRAINAGE LAYER AND PIPE NETWORK ARE INSTALLED DIRECTLY OVER THE FLEXIBLE MEMBRANE LINER (FML).
2. 4" DIAMETER LATERALS ARE PLACED DIRECTLY ON THE FML.
3. FINAL GRADING OF THE CAP IS SHOWN ON THIS PLAN. THE BASE OF THE CAP DRAINAGE LAYER AND PIPE NETWORK ARE APPROXIMATELY 1 FOOT HIGHER THAN THE CAP SUBGRADE (THIS FOLLOWING INSTALLATION OF THE GAS VENTING LAYER, THE LOW-PERMEABILITY LAYER AND THE FML ON THE PREPARED SUBGRADE).
4. THE PIPE NETWORK MAY NOT FOLLOW THE EXACT LAYOUT SHOWN. THE PIPE LAYOUT MAY HAVE BEEN SLIGHTLY ALTERED WHILE THE MINIMUM SLOPES AND MAXIMUM 100' SPACINGS WERE MAINTAINED.

REV.	DESCRIPTION
1	RELOCATED 6"Ø PERIMETER DRAIN PIPE, DETENTION POND MODIFICATION CONNECTIONS

REFERENCES:

1. EASTERN MAPPING COMPANY, 1990, TOPOGRAPHIC MAPPING, OLD SPRINGFIELD LANDFILL, MAP No. 13H205F, SCALE: 1"=50', AERIAL PHOTOGRAPHY DATED: 4/24/90.
2. "AS-BUILT" TOPOGRAPHY HAS BEEN DEVELOPED FROM 1993 CONSTRUCTION GRADING SURVEYS.

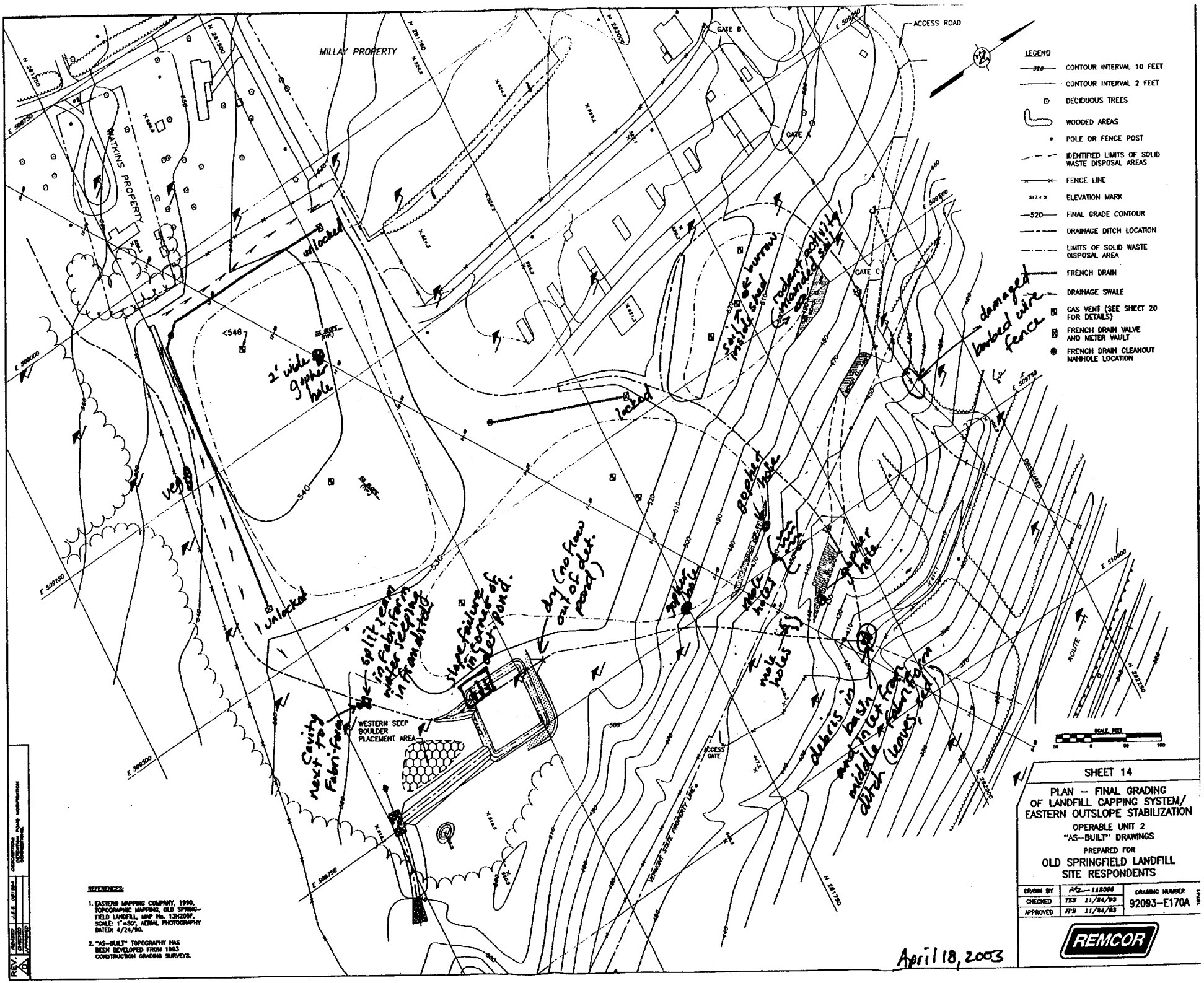
SHEET 12

PLAN
LANDFILL CAPPING SYSTEM
DRAINAGE LAYER PIPE NETWORK

OPERABLE UNIT 2
"AS-BUILT" DRAWINGS
PREPARED FOR
OLD SPRINGFIELD LANDFILL
SITE RESPONDENTS

DRAWN BY	[illegible]	DRAWING NUMBER 92093-E198A
CHECKED	TES 11/24/94	
APPROVED	JPB 11/24/94	

REMCOR



REFERENCES:

1. EASTERN MAPPING COMPANY, 1990, TOPOGRAPHIC MAPPING, OLD SPRINGFIELD LANDFILL, MAP No. 1392099, SCALE: 1"=30', AERIAL PHOTOGRAPHY DATED: 4/24/90.
2. "AS-BUILT" TOPOGRAPHY HAS BEEN DEVELOPED FROM 1993 CONSTRUCTION GRADING SURVEYS.

April 18, 2003

SHEET 14

PLAN - FINAL GRADING OF LANDFILL CAPPING SYSTEM/ EASTERN OUTSLOPE STABILIZATION

OPERABLE UNIT 2

"AS-BUILT" DRAWINGS

PREPARED FOR

OLD SPRINGFIELD LANDFILL SITE RESPONDENTS

DRAWN BY	AG 118393	DRAWING NUMBER
CHECKED	TSB 11/24/93	92093-E170A
APPROVED	JPB 11/24/93	

REMCOR

Attachment 2

Inspection Photographs
April 18, 2003

Semi-Annual/Five-Year Inspection Report
Old Springfield Landfill
Springfield, Vermont

Photo 1: Landfill cover over waste area No. 4, facing south.
Photo 2: Landfill slope on east side of waste area No. 2, facing southeast.
Photo 3: South Fabri-Form ditch at slope repair area.
Photo 4: South Fabri-Form ditch at top of landfill/south end of waste area No. 4.
Photo 5: Middle Fabri-Form ditch, facing west.
Photo 6: Crack at seam in south Fabri-Form ditch above detention basin.
Photo 7: Cavity next to south Fabri-Form ditch near crack in ditch.
Photo 8: Sediment and leaf debris at base of middle Fabri-Form ditch (left) and basin.
Photo 9: Animal burrow in northwest portion of waste area No. 4.
Photo 10: Gas vent shed with 1-foot deep soil inside (from gopher) on waste area No. 2.
Photo 11: Seep/erosion problem on western sidewall of detention basin, facing north.
Photo 12: Close-up of water flowing north through eroded detention basin sidewall.
Photo 13: Damaged barbed wire fence near north Fabri-Form ditch, east of Gate C.
Photo 14: Access road and gas vent shed near north end of waste area No. 2.

Photo 1: Landfill cover over waste area No. 4, facing south.

Photo 2: Landfill slope on east side of waste area No. 2, facing southeast.

Photo 3: South Fabri-Form ditch at slope repair area.

Photo 4: South Fabri-Form ditch at top of landfill/south end of waste area No. 4.

Photo 5: Middle Fabri-Form ditch, facing west.

Photo 6: Crack at seam in south Fabri-Form ditch above detention basin.

Photo 7: Cavity next to south Fabri-Form ditch near crack in ditch.

Photo 8: Sediment and leaf debris at base of middle Fabri-Form ditch (left) and basin.

Photo 9: Animal burrow in northwest portion of waste area No. 4.

Photo 10: Gas vent shed with 1-foot deep soil inside (from gopher) on waste area No. 2.

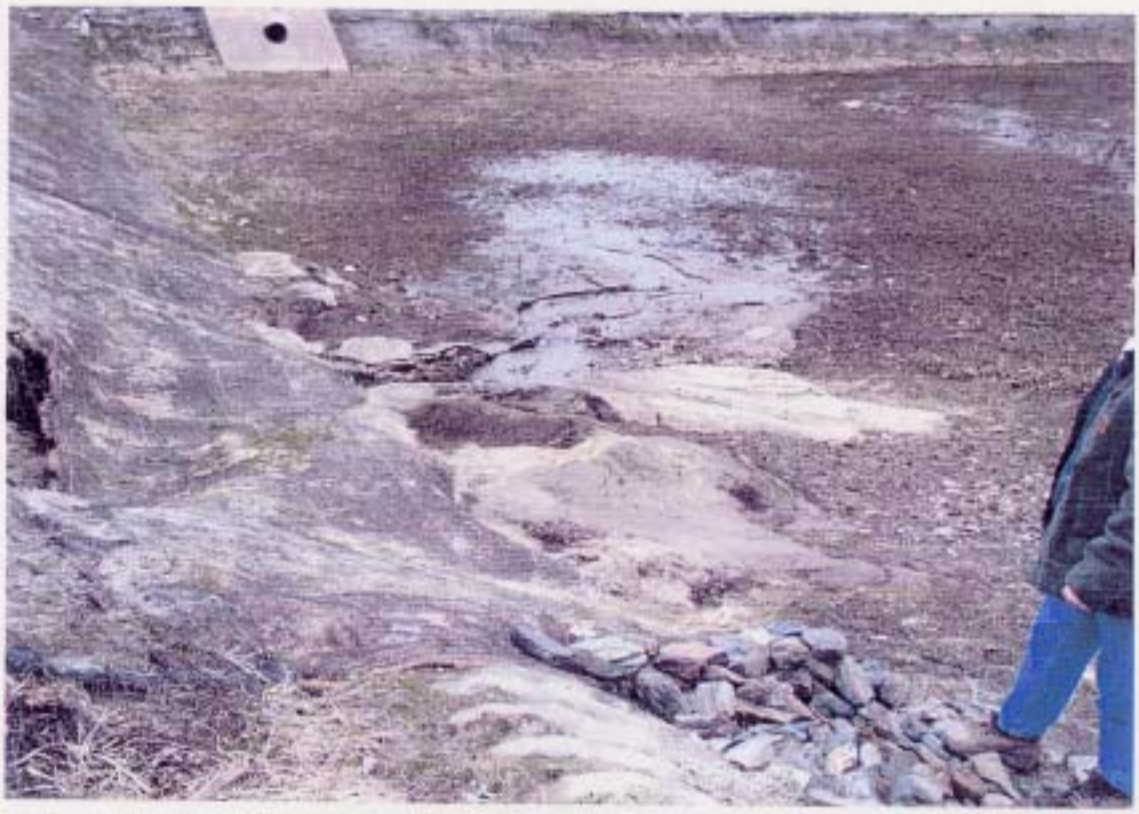


Photo 11: Seep/erosion problem on western sidewall of detention basin, facing north.

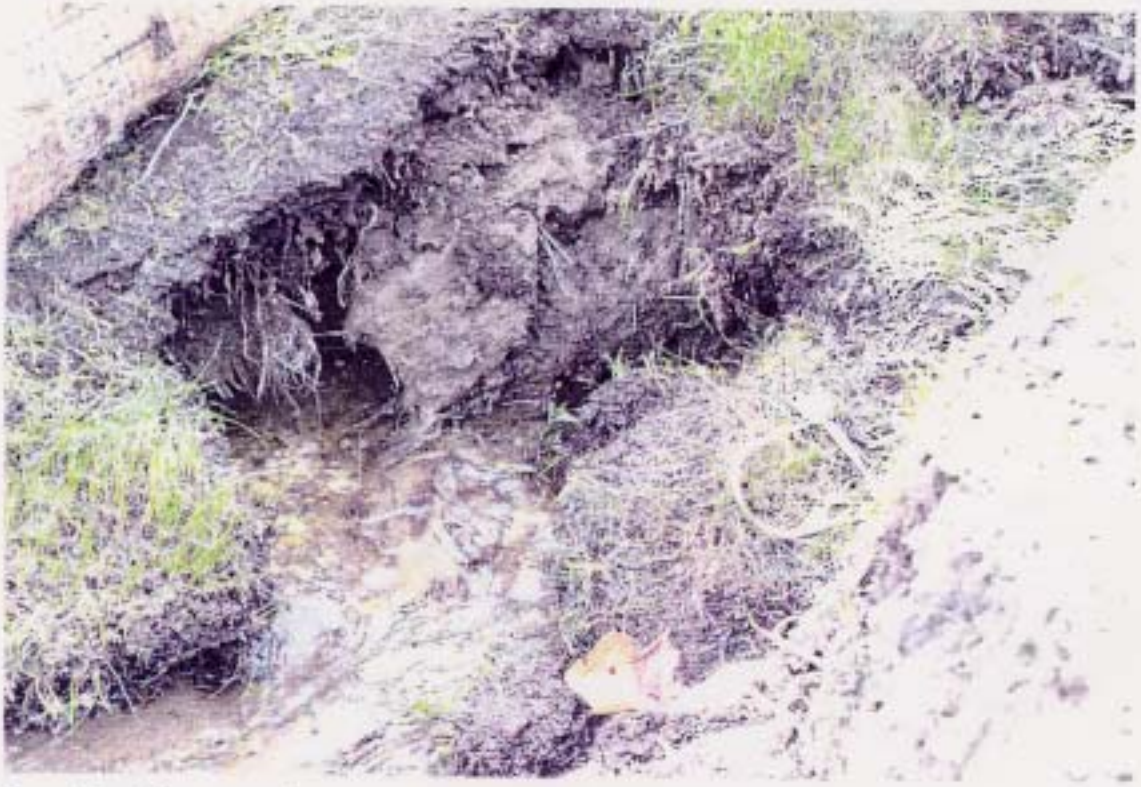


Photo 12: Close-up of water flowing north through eroded detention basin sidewall.

Photo 13: Damaged barbed wire fence near north Fabri-Form ditch, east of Gate C.

Photo 14: Access road and gas vent shed near north end of waste area No. 2.

ATTACHMENT 6

PLAN SHOWING NEARBY POTABLE WATER SUPPLY LINE

Dufresne-Henry North Springfield, Vermont Tel. (802)886-2261 www.dufresne-henry.com	SITE PLAN OF OLD SPRINGFIELD LANDFILL VERMONT SPRINGFIELD,	Proj. No. 4030002 Proj. Mgr. FDD Scale NOT TO SCALE Date JUNE 2003 A SP1