Shaw Environmental & Infrastructure, Inc.

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Shaw The Shaw Group Inc.™

December 16, 2003

Mr. Jeff Dyber, P.E.
Environmental Engineer 2
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Eastern Remedial Action
625 Broadway
Albany, New York 12233

RE: National Heatset Printing
Operation & Maintenance Report, November 2003
1 Adams Boulevard
Farmingdale, New York
NYSDEC Site 1-52-140

Dear Mr. Dyber:

This letter provides an overview of the ongoing operation of the soil vapor extraction (SVE) system for the National Heatset Printing Site in Farmingdale, New York (**Figure 1**) for the reporting period including November 2003. A site visit was performed by Shaw Environmental, Inc. (Shaw) personnel on November 24, 2003 in accordance with our contract with the Department.

System Operation

Operation of SVE system began on September 17, 2002. The SVE system has been operational for the entire reporting period. The system operational data is summarized in **Table 1** and is presented as **Appendix A**.

The SVE system was not operational upon arrival. However, the system was restarted and the following operational data was collected. The SVE blower operated at a flow of approximately 178 cfm and vacuum of 72 inches of water column as observed during the site visit. A flow of 130 cfm and a vacuum of 46 inches of water column were observed at the extraction well. The extraction well and dilution valves were both 50% open. Volatile organic compound (VOC) and tetrachloroethene (PCE) concentrations from the extraction well were observed to be 141 and 125 ppm, respectively. The positioning of the well extraction and dilution air valves will be modified based on continued monitoring of VOC concentrations. The system was shut down temporarily to facilitate the collection of a carbon sample for subsequent characterization by the new carbon regeneration vendor. The system could not be restarted after the carbon sample

collection, likely due to the failure of two blower control components. Replacement components have been ordered and will be installed as soon as possible upon receipt.

No water was collected from the knockout vessel during this reporting period. A small quantity of water has been collected during the previous reporting periods and placed in an accumulation drum for storage until the drum has been filled, at which time proper characterization and disposal procedures will be followed.

VOC concentrations of 261 ppm and a PCE concentration of 200 ppm were observed at the VGAC influent port during the site visit. Non-detect VOC and PCE concentrations were observed from the VGAC mid and effluent sampling ports.

Monitoring Probes

Monitoring of the vapor monitoring points was not performed during the November site visit. Monitoring of the vapor points will resume during future site visits.

PCE Removal

The SVE system removed approximately 179 pounds of PCE from the extraction well during this reporting period and has removed approximately 2,157 pounds of PCE to date. A summary of the estimated PCE mass removal over time is presented in **Table 2**.

Air Discharge Monitoring

Shaw personnel did not collect a sample of the system effluent air for laboratory analyses during the site visit. Sampling of the system effluent air stream will resume during future site visits. Air sample analytical results are presented in **Table 3**.

Field monitoring of the system discharge conducted during the site visit indicated non-detect concentrations of PCE and total VOCs. A summary of the field monitoring and laboratory air discharge monitoring results is presented as **Table 4**.

Conclusions and Recommendations

Based on the data collected from the SVE system during this reporting period, Shaw recommends continued operation of the SVE system at 1 Adams Boulevard. As site conditions change, adjustments will be made to optimize the system operation. The system is currently idle, but will be restarted as soon as possible upon the receipt and installation of replacement blower control components.

Please do not hesitate to contact me at 518-783-1996 with any questions you might have regarding this report.

Sincerely,
Shaw Environmental, Inc.

John A. Skaarup
Project Engineer

Cc: File

Attachments: Tables
Figures
Appendix A – Site Visit Documentation

TABLES

TABLE 1

SUMMARY OF SOL VAPOR EXTRACTION SYSTEM READINGS
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

Date	Run Time Meter Reading (hours)	Run Time Since Last Visit (hours) Available		Actual	Operation Time Since Last Visit (%)	Dilution Valve Position (% Open)	Extraction Well MW-F Valve Position (% Open)	Air Flow at Well (scfm)	Vacuum at Well (inches H2O)	Pre-Dilution PID (ppm)	Pre-Dilution PCE (ppm)	Influent SVE					Mid GAC				Effluent GAC			
												Blower Flow (cfm)	Vacuum (inches H2O)	Temp. (°F)	PID (ppm)	PCE (ppm)	Flow (cfm)	Temp. (°F)	PID (ppm)	PCE (ppm)	Flow (cfm)	Temp. (°F)	PID (ppm)	PCE (ppm)
9/18/2002	--	--		--	SVE PILOT TEST STARTUP																			
9/30/2002	304	294	/	294	100%	100	50	34.5	5	2,000	500	256	25	107.2	1,015	--	317	102.3	0	--	290	89.5	0	--
10/14/2002	642	343	/	338	99%	100	50	38	7	1,011	400	258	27	--	75.3	50	--	--	0	--	--	--	0	--
11/19/2002	1508	882	/	866	98%	100	50	49	12	0	0	120	28	106	0	0	209	92	0	--	290	80.3	0	--
12/4/2002	--	368	/	--	--	--	--	--	--	77	200	--	--	--	14.3	10	--	--	15.5	10	--	--	0	0
12/16/2002	2153	294	/	645	98%	100	50	36.5	10	560	200	253	28	92	46.4	50	302	60	3.4	--	340	53.9	0	--
1/21/2003	3016	882	/	863	98%	100	50	--	--	--	--	70	52	98	0	0	220	--	0	--	220	--	0	--
2/10/2003	3496	490	/	480	98%	100	50	38	--	639	400	262	27	102	72	50	266	90	26	10	258	83	3.2	10
3/18/2003	4360	882	/	864	98%	100	50	92	12	125	100	266	25	123	15	10	278	124	0	0	282	117	0	0
4/29/2003	5359	1029	/	999	97%	75	50	75	50	152	50	132	16	118.5	48.2	25	302	96	18.6	10	287	86	0.6	0
5/13/2003	5700	343	/	341	99%	75	50	78	--	127	50	239	48	130	41.8	50	246	108	46	25	245	97	0.6	0
6/30/2003	6850	1176	/	1150	98%	50	50	115	32	82.4	50	140	66	173	36.8	50	198	157	25.1	25	240	150	29.8	100
7/10/2003	6851	245	/	1	0%	50	50	99.5	25	406	400	151	68	156	221	215	260	76	0	0	222	81.9	0	0
7/22/2003	7144	294	/	294	100%	50	50	--	--	127	--	--	--	168	65	--	--	107	0	--	--	106	0	--
8/26/2003	7957	858	/	813	95%	50	50	79	13.5	137	10	186	65	170	51.4	5	291	--	55.4	10	232	--	35.6	10
9/23/2003	8274	686	/	317	46%	50	50	218	33	141	15	194	64	160	55	30	254	124	0	0	210	110	0	0
10/21/2003	8945	686	/	671	98%	50	50	166	45	--	20	158	68	166	37.5	25	214	130	30.7	15	225	112	0	0
11/24/2003	9749	833	/	805	97%	50	50	130	46	141	125	178	72	138	261	200	225	52	0	0	205	51.4	0	0

Notes:
PID = Total VOC concentration measured with photoionization detector
ppm = parts per million (volume/volume basis)
PCE = Tetrachloroethene (PCE) concentration measured with Drager tube of 10-500 ppm range
scfm = standard cubic feet per minute
cfm = cubic feet per minute
Influent SVE = Readings collected between the SVE Blower and the Carbon Units
Mid GAC = Readings collected between the lead and lag carbon units
Effluent GAC = Readings collected after the lag carbon unit
GAC = granular activated carbon unit
-- = measurement not recorded

TABLE 2
PCE
REMOVAL ESTIMATE
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

Date	VOC Influent Concentration* (ppmv)	PCE Influent Concentration* (ppmv)	% PCE of Total VOCs	Extraction Well Flow Rate (cfm)	Elapsed Time Since Last Visit (day)	PCE Removal Since Last Visit (lb)	Cumulative PCE Removal (lb)
9/18/2002	SVE PILOT TEST STARTUP						
9/30/2002	2,000	500	25.0	34.5	12	126	126
10/14/2002	1,011	400	39.6	38	14	129	255
11/19/2002	0	0	--	49	36	116	371
12/16/2002	560	200	35.7	36.5	27	70	441
1/13/2003	485	400	82.5	28.5	28	157	597
1/21/2003	0	0	--	0	8	63	660
2/10/2003	639	400	62.6	38	20	65	725
3/5/2003	263	200	76.0	24.4	23	132	856
3/18/2003	125	100	80.0	92	13	77	934
4/29/2003	152	50	32.9	75	42	109	1,042
5/13/2003	127	50	39.4	78	14	65	1,107
6/30/2003	82.4	50	60.7	115	48	91	1,198
7/22/2003	406	400	98.5	99.5	12	416	1,615
8/26/2003	137	10	7.3	79	35	291	1,906
9/23/2003	141	15	10.6	218	14	30	1,936
10/21/2003	37.5	20	53.3	166	28	42	1,978
11/24/2003	141	125	88.7	130	34	179	2,157

Notes:
* = VOC concentrations of 2,000 ppm and PCE concentrations of 500 ppm are greater than the limit of their respective monitoring device and are to be taken as estimations.

Removal Rate = [(flow(cfm)*influent conc.(ppmv)*MW*12.187)/(273.15+C)]*1 cu. m./35.31 cu. ft*1g/1000 mg*1 lb/453.6 g*60 min/1 hr*24 h *days of operation

Where:
MW = molecular weight
Molecular weight (MW) of PCE is 165.85
C = degrees centigrade, assumed to be 25
lb = pounds
cfm = cubic feet per minute
ppmv = parts per million (volume/volume basis)

TABLE 3

AIR SAMPLE ANALYTICAL RESULTS
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

SVE Influent Concentration (mg/m3)			
Date	**cis-1,2-Dichloroethene**	**Tetrachloroethene (PCE)**	**Trichloroethene**
9/18/2002	5	600E	31
9/30/2002	ND (5)	360E	23
10/14/2002	--	--	--
11/19/2002	--	--	--

VGAC Effluent Concentration (mg/m3)			
Date	**cis-1,2-Dichloroethene**	**Tetrachloroethene (PCE)**	**Trichloroethene**
9/18/2002	--	--	--
9/30/2002	--	--	--
10/14/2002	--	--	--
11/19/2002	--	--	--
12/16/2002	ND (5)	ND (5)	ND (5)
1/21/2003	--	--	--
2/10/2003	ND (5)	8	6
3/18/2003	--	--	--
4/29/2003	--	--	--
5/13/2003	ND (1)	5	ND (1)
6/30/2003	--	--	--
7/22/2003	ND (1)	ND (1)	ND (1)
8/26/2003	ND (5)	29	3.6
9/23/2003	ND (5)	ND (5)	ND (5)
10/21/2003	ND (5)	ND (5)	ND (5)
11/24/2003	--	--	--

Notes:
Only compounds that were detected above the method reporting limit were presented above
ND(5) = Not detected above method reporting limit in parenthesis
E = Concentation exceeded calibration range
SVE = Soil vapor extraction
VGAC = vapor-phase granular activated carbon unit
mg/m3 = milligrams per cubic meter
-- = sample not collected

TABLE 4

AIR DISCHARGE MONITORING
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

		Field Monitoring			Laboratory Results		Discharge based on Field Monitoring		Discharge based on Laboratory Results			
Date	System Effluent Flow Rate (cfm)	PCE System Effluent Concentration (ppmv)	System Effluent VOC Concentration (ppmv)	Elapsed Time (day)	PCE (mg/cu m.)	TCE (mg/cu m.)	PCE Discharge Since Last Visit (lb/hr)	PCE Discharge Since Last Visit (lb)	PCE Discharge Since Last Visit: lb/hr	PCE Discharge Since Last Visit (lb)	TCE Discharge Since Last Visit (lb/hr)	TCE Discharge Since Last Visit (lb)
9/18/2002	SVE PILOT TEST STARTUP											
9/30/2002	290	--	0	12	--	--	--	--	--	--	--	--
10/14/2002	--	--	0	14	--	--	--	--	--	--	--	--
11/19/2002	290	--	0	36	--	--	--	--	--	--	--	--
12/16/2002	340	--	0	27	ND (5)	ND (5)	--	--	0.00	0.00	0.00	0.00
1/13/2003	45	0	--	28	--	--	0.0000	0.00	--	--	--	--
1/21/2003	220	--	0	8	--	--	--	--	--	--	--	--
2/10/2003	258	10	3.2	20	8.0	6.0	0.0654	31.40	0.008	3.71	0.006	2.78
3/5/2003	305	--	0	23	--	--	--	--	--	--	--	--
3/18/2003	282	0	0	13	--	--	0.0000	0.00	--	--	--	--
4/29/2003	287	0	0.6	42	--	--	0.0000	0.00	--	--	--	--
5/13/2003	245	0	0.6	14	5.0	ND (1)	0.0000	0.00	0.005	1.54	0.00	0.00
6/30/2003	240	100	29.8	48	--	--	0.3043	350.56	--	--	--	--
7/22/2003	222	--	0	12	ND (1)	ND (1)	--	--	0.00	0.00	0.00	0.00
8/26/2003	232	10	35.6	35	29.0	3.6	0.0588	49.42	0.025	21.17	0.003	2.63
9/23/2003	210	0	0	28	ND (5)	ND (5)	0.0000	0.00	0.000	0.00	0.000	0.00
10/21/2003	225	0	0	28	ND (5)	ND (5)	0.0000	0.00	0.000	0.00	0.000	0.00
11/24/2003	205	0	0	34	--	--	0.0000	0.00	--	--	--	--
Totals:								431.38		26.42		5.41

Notes:
-- = Measurement not recorded
*: Total VOC Discharge = PCE lab result + TCE lab result

Discharge Rate (Field Monitoring, lb/hr) = [(flow(cfm)*influent conc.(ppmv)*MW*12.187)/(273.15+C)]*1 cu. m./35.31 cu. ft*1g/1000 mg*1 lb/453.6 g*60 min/1 hr
Discharge (lb) = Discharge Rate (lb/hr) * # of days*24hours/day*60 minutes/hr

Discharge Rate (Lab Results, lb/hr) = flow (cfm)*effluent conc. (mg/cu. m.)*1g/1000mg*1lb/453.6g*1cu. m./35.31cu. ft*60min/1 hr
Discharge (lb) = Discharge Rate (mg/cu. m) * # of days*24hours/day*60 minutes/hr

Where:
MW = molecu
Molecular weight (MW) of PCE is 165.85, Molecular weight (MW) of TCE is 131.4
C = degrees centigrade, assumed to be 25
cfm = cubic feet per minute
mg/cu. m = milligrams per cubic meter
ppmv = parts per million (volume/volume basis)
lb = pounds
hr = hours

Permit Limit		
	lb/hr	lb/yr
PCE	0.031	270
TCE	0.014	120

FIGURES

IMAGE	X-REF	OFFICE	DRAWING NUMBER
---	---	ALBANY, NY	802901B35

MW-8
MW-7
MW-6
A
B
ELECTRICAL
MW-1
PILOT TEST ENCLOSURE
NO ACCESS
VP-2
C
E
VAPOR EXTRACTION POINT
F
G
VP-1
FORMER VP-3
VP-3
DIRECTION OF GROUNDWATER FLOW
RAMP
RAMP
VENT
VP-4
VP-5
VP-6
MW-9
MW-4A
MW-5
VENT
VENT
FLAMMABLE STORAGE AREA
VENT
VENT
RAMP
RAMP
MW-3A
MW-10
MW-2A
ADAMS BLVD.
H
FILL PIPES (3)

LEGEND:

- TRAIN TRACK
- VAPOR MONITORING POINT
- DEEP MONITORING WELL (>30')
- SHALLOW MONITORING WELL (<30')
- MANHOLE OR ACCESS POINT
- FENCE LINE
- ES — ELECTRIC LINE
- G — GAS LINE
- S — SANITARY SEWER
- PROPERTY LINE
- INTERIOR BUILDING WALL (DIVIDES WAREHOUSE)

SCALE
0 50 100 FEET

REV	DATE	BY	CHK'D	APR'VD	DESCRIPTION/ISSUE
4	6/9/03	SSH			UPDATE DRAWING
3	4/17/03	SSH			UPDATE DRAWING
2	1/16/03	SSH			ADD FORMER VP-3 TO DRAWING
1	12/3/02	SSH			UPDATE DRAWING

FIGURE 1

Shaw E&I Engineering of New York, P.C.

NATIONAL HEATSET PRINTING
FARMINGDALE, NEW YORK

SOIL VAPOR EXTRACTION
PILOT TEST LOCATION MAP

DESIGNED BY	J. SKAARUP	10/23/02	CHECKED BY		
DRAWN BY	CA/HMD/SSH	10/23/02	APPROVED BY		
SCALE: AS SHOWN	DRAWING NO. 802901B35		SHEET NO.	REVISION NO. 4	

L:\project\802901\802901B35.dwg
Plot Date/Time: 06/09/03 09:31am
Format Revised: 12/15/99
Image: .
Xref: .

APPENDIX A

SITE VISIT DOCUMENTATION

* Collect VGAC sample from lead GAC Unit and ship to * Calgon (using Calgon sample containers) for pre-shipment acceptance.

National Heatset Printing

1 Adams Boulevard, Farmingdale, New York

Shaw Environmental, Inc. Job/Task Number 802901/06010000

Personnel: R. Hyde
Weather: Sunny w/Clouds.
Time: 1400
Date: 11/24/03

System Status:

Arrival: Down / Thermal Tripped SVE
Departure: ~~Running~~ down due to part need
Run Timer Reading: 9749.29
Electric Meter Reading: ~~49~~ 4624

System Data:

Extraction Well F Gate Valve: 50 % Open
Dilution Valve: 50 % Open

Pre-Bleed Air (Extraction Well):

Flow: 130 CFM
Vacuum: ~~28~~ 46 "H2O
PID Reading: 141 PPM
Draeger Tube: ~125 PPM
Temperature: 63 °F

Post-Bleed Air (SVE Influent):

Flow: 128 CFM
Vacuum: 72 "H2O
PID Reading: 261 PPM
Draeger Tube: 200 PPM
Temperature: 138 °F

Carbon Monitoring:

Mid:	0.0	PPM	225	CFM	52	Temp. (°F)	0.0 PPM (Drager)
Effluent:	0.0	PPM	205	CFM	51.4	Temp. (°F)	0.0 PPM (Drager)

Carbon effluent air sample collected & shipped to lab? ~~YES~~ no, due to restart issues

Knockout Tank Drained? NO
Gallons: 0
Purge water drums on-site: 0

Monitoring Well Gauging / Vapor Point Monitoring:

Well/V.P. ID:	MW-C	MW-E	MW-F	MW-G	VP-1	VP-2	VP-3	VP-4	VP-5	VP-6
DTW (ft):										
Vac. (" H2O):	–	–	–	–						

Comments:

Collected Carbon Lead Sample To go To Calgon

replacement parts { thermal overload relay: 193EA1HC
motor starter: 100-37 * 06 10HP, 34,230VAC, 12-37A

CHAIN OF CUSTODY RECORD

Customer Name	Carbon Acceptance No.	ANALYSES
Shaw Environmental		
Site Description	**Sampler:** *(Signature)*	
HEATSET		
City & State	**Sampling Information:**	
Fairming Dale WV.	Date: 11/24/03 Time: 1500	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	Pre-Shipment / Acceptance						REMARKS
Used Carbon	11/24/03	1500		Carbon	X						

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
	11/24/03	1600			
Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
Relinquished by: *(Signature)*	Date	Time	Received for Laboratory: *(Signature)*	Date	Time
Sample Disposal Method:	Disposed of by: *(Signature)*			Date	Time

Calgon Carbon Corporation
P.O. Box 717
Pittsburgh, PA 15230-0717

ANALYTICAL LABORATORY

9151

166-F 01/94

White, Yellow - Lab