Sevenson
Environmental
Services, Inc.

April 20, 2005

Stephen J. DeNardis, P.E.
Resident Engineer
West Point Area Office
New York District
U.S. Army Corps of Engineers
Building 667A 3rd Floor
West Point, New York 10996

Attention: Mr. Nicholas Patsis, P.E.

RE: March Monthly Progress Report
Contract # DACW41-01-D-001-0006
Vestal Wellfield 1-1, Area 4, Vestal, New York

Sirs:

Enclosed is the March Monthly Progress Report for the referenced contract. This report covers system operations from 1 March 2005 through 31 March 2005. O&M activities for the period as well as sampling activities are summarized in this report. Copies of the analytical data are included.

Please email me at cmarshall@sevensonphilly.com or call at 610-388-0721 if you've any questions.

Sincerely,
Sevenson Environmental Services, Inc.

Cassandra T. Marshall
Project Manager

CTM/1

cc: N. Patsis (USACE)
A. LaGreca (Sevenson)
J. Singer (Sevenson)
D. Callahan (Envirogen)
B. Buckrucker (USACE)
F. Bales (USACE)
S. Trocher (USEPA)
M. Dunham (NYSDEC)

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE (Read Instructions on the reverse side prior to initiating this form)	DATE 4/20/05	X New Submittal ☐ Resubmittal

Section 1 REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the contractor)

TO:	FROM:	CONTRACT NO. DACW-41-01-D-0001 T.O.# 0006	TRANSMITTAL NO. 38
USACE West Point Area Office New York District Building 667A 3rd Floor West Point, New York 10996	Sevenson Environmental Services Inc. 2749 Lockport Rd. Niagara Falls, N.Y. 14302		PREVIOUS TRANS. NO. (If Any)

SPECIFICATION SEC. NO. (Cover only one section with each transmittal)	PROJECT TITLE AND LOCATION: Vestal Well 1-1 Superfund Site, Area 2 Soil Vapor Extraction System, Broome County, New York

ITEM NO.	DESCRIPTION OF ITEMS SUBMITTED (Type, size, model number, etc.)	MFG. OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. (See instruction No. 8)	NO. OF COPIES	CONTRACT REFERENCE DOCUMENT		VARIATIONS (See instruction No. 6)	FOR C USE COD
				SPEC. PARA. NO.	DRAWING SHEET NO.		
a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*
1.	March 2005 Monthly Report		1				

REMARKS:
Sent via Federal Express:
2 copies to CENWK
1 copy to USEPA Region II
1 copy to N.Patsis
1 copy to NYSDEC

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.

Amanda J. Marshall
NAME AND SIGNATURE OF CONTRACTOR
Sevenson Environmental Services

Section II APPROVAL ACTION

INCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

ENG FORM 4025, Oct 84 (ER 415-1-10) EDITION OF JUL 81 IS OBSOLETE
(Proponent: CEEC-CE)

SHEET ____ OF __

C:\Documents and Settings\marshall\My Documents\Vestal\Reports\March Monthly Report\Transmittal to DeNardis March Monthly.wpd

MONTHLY PROGRESS REPORT
(March 1 through March 31, 2005)

IN-SITU SOIL VAPOR EXTRACTION SYSTEM VESTAL WATER SUPPLY WELL 1-1 SUPERFUND SITE, OPERABLE UNIT 2, AREA 4 VESTAL, NEW YORK

Prepared by:

ENVIROGEN/SHAW E&I, Inc.
103 College Ave SE
Grand Rapids, MI 49503

Submitted to:
Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

April 19, 2005

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

Envirogen/Shaw E&I, Inc. has prepared this Monthly Progress Report for the operation of the Soil Vapor Extraction System (SVE system or System) for the Vestal Well 1-1 Superfund Site, Area 4 in Vestal, NY. This report was prepared under a subcontract to Sevenson Environmental Services, Inc, under contract DACA41-01-D-0001-0006. Sevenson's remedial action work is under supervision of the U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE).

Figure 1 is a Site plan showing the SVE System treatment area, comprised of Cells 1 and 2 and other major components of the System. Construction of the SVE System began in early April and was completed in late June 2003. Start-up of the SVE System began on June 23, 2003. The SVE System is operated in accordance the Final Design documents, O&M Manual and subsequent correspondence with the USEPA and USACE. This report covers the time from March 1 to March 31, 2005.

Section 2.0 of this report summarizes general activities conducted during the reporting period. Section 3.0 summarizes System monitoring and adjustments. Section 4.0 discusses volatile organic compound (VOC) contaminant yields based on process air analytical data and flow rates. Section 5.0 discusses problems encountered during the reporting period and their respective corrective measures. Section 6.0 lists anticipated future activities.

2.0 SUMMARY OF ACTIVITIES CONDUCTED DURING THE REPORTING PERIOD

The monthly O&M inspection was performed on March 22 & 23, 2005. Airflow, pressure/vacuum, and PID readings were measured throughout the System on March 22 & 23, 2005. Process air sampling of the System (influent, mid-carbon and effluent) was performed on March 23, 2005.

The SVE System at the Vestal Area 4 Site ran approximately 30 days during the period March 1, 2005 to March 31, 2005.

Physical monitoring of the System parameters, such as vacuum/pressure, temperature, PID readings, and air flow measurements, along with routine maintenance of the System, was conducted during the March reporting period in accordance with the O&M Manual. These O&M measurements and site activities were recorded on daily O&M logs, which are available on-site.

The System was operational approximately 30 days from March 1 to March 31, 2005. This brings the total operational time to approximately 530 days since the June 23, 2003 start-up.

3.0 SVE SYSTEM MONITORING AND ADJUSTMENTS

This section summarizes monitoring of and adjustments to the SVE System during the reporting period. Monitoring of the System included pressure/vacuum and temperature measurements, air flow measurements, and process air sampling and associated VOC analysis. The locations of the SVE wells are illustrated in Figure 1. System parameters were recorded on O&M daily log sheets, available on-site. The chain-of-custody forms and laboratory data summary sheets are provided in Appendix A. All monitoring and/or adjustments were performed in accordance with the O&M Manual.

3.1 Process Air Flows

This section discusses process air flow measurements and balancing throughout the entire System and for the individual SVE wells. Individual SVE withdrawal and injection well process airflow measurements and PID readings were taken on March 22 & 23 and are provided in Table 1.

3.1.1 Total System Process Air Flow

During the reporting period, airflow throughout the entire System was measured as outlined in the O&M Manual. The airflow through the System was calculated by measuring amount of vacuum, temperature, speed of the SVE blower, and elevation, then using these values to obtain the air flow from the blower curve computer model supplied by the manufacturer (Roots Inc.). Based on this data, the calculated airflow through the entire System on March 22 & 23, 2005 averaged 512 cubic feet per minute (cfm). This data is shown in Appendix B. The bypass airflow for March 2005 was approximately 210 scfm.

3.1.2 SVE Well Process Air Flow

Individual SVE withdrawal well process airflow measurements were recorded on March 22 & 23, 2005. In addition, PID readings were recorded when process air samples were taken. During the March 22 & 23, 2005 System sampling event, PID readings were also taken on the individual SVE withdrawal wells. This data is contained in Table 1.

3.2 Process Air VOC Concentrations

Process air samples were collected during the reporting period on March 23, 2005. Samples were collected and analyzed in accordance with the O&M Manual. The system process air analytical results are contained in Appendix A.

4.0 VOC YIELD

This section details the System VOC yield based on System sampling events performed during the March 1 to March 31, 2005 reporting period. Discussed in this section is the estimated Total Targeted Contaminant (TTC) VOC yield, based on the airflow through the blowers and the composite/total system VOC analytical results. Table 2 shows the total target contaminant yield for each sampling period.

4.1 Total System VOC Yield

The total System VOC yield was calculated using the total system airflow rates and contaminant concentrations. Cumulative system contaminant yields for the reporting period are shown in Table 3. Based on these calculations, the System yielded approximately 22.58 pounds of VOCs from February 9, 2005 to March 23, 2005. The average yield rate of the System per operational day between March 1, 2005 and March 31, 2005 is 0.54 lbs/day. TCE constitutes approximately 33 percent and 1, 1, 1-TCA approximately 67 percent of the total VOC yield over the reporting period. The total TTC yield from start-up (June 23, 2003) to March 23, 2005 is 2,071.71 pounds. The mass of TTC VOCs removed from the treatment area is illustrated in Figure 2. The cumulative contaminant yield is calculated utilizing the data and formulas found in Appendix B. Figure 3 graphically depicts cumulative yield over system operational time. As noted in the SVE System analytical data, the percent concentration of TCE within the influent process air remained at 33 percent and the concentration of 1,1,1-TCA remained at 67 percent compared to the February 2005 analytical data.

5.0 PROBLEMS ENCOUNTERED DURING THE REPORTING PERIOD AND RESPECTIVE CORRECTIVE MEASURES

With the exceptions of problems discussed in Section 2.0 and in this section the System operated well throughout the month of March.

6.0 ANTICIPATED ACTIVITIES

The following activities are anticipated for the next reporting period.

- Continue O&M and monitoring of the SVE System in accordance with the O&M Manual and related documents.
- Continue to evaluate and adjust airflow into the SVE unit.
- Re-allocate the amount of by-pass air as Site conditions allow (wetter weather and increased Site air temperatures).

FIGURES AND TABLES

The MATCO Electronics Group
American Board

36" High by 12" Wide Concrete Wall w/ Patio

STAGE ROAD

Approximate edge of asphalt

AREA 4

Asphalt Parking

AREA 4 BOUNDARY

CELL 1 DISTRIBUTION BUILDING

CELL 2 DISTRIBUTION BUILDING

Edge of Asphalt Parking (Typical)

Edge of Asphc

Benchmark
file cut in west
rim of manhole
Elevation = 824.39'

Boundary for 6" Buried Mobil Oil Corporation Gas line

NYSEG & NYSEL 10 Ft. Offset

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

LEGEND

A5 ● – INJECTION SVE well

D3 O – VACUUM SVE well

D3 ⊕ – Nested VACUUM SVE well

H2 ▷ – SVE well shut off

0 20 40
SCALE IN FEET

NO.	DATE	ISSUED FOR	DC BY
1	4-28-05	ISSUED FOR CLIENT REVIEW	

Sevenson Environmental Services Inc.
2749 LOCKPORT ROAD
NIAGARA FALLS, NEW YORK

Shaw®
103 COLLEGE AVE, SE
GRAND RAPIDS, MICHIGAN 49503

US Army Corps of Engineers
Kansas City District

CONTRACT No. DACW41-01-D-0001

STEWART HARRIS ABRAMS
NEW YORK PROFESSIONAL ENGINEER
LICENSE NUMBER 076833

DRAWN	BL
CHECKED BY:	DC
DESIGN ENGR	DC
APPROVED BY:	SA
DATE	3-23-05

SITE: VESTAL AREA 4
TOWN OF VESTAL, BROOME COUNTY, NEW YORK

TITLE: FIGURE 1
Site Plan with SVE System

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4 – 1
SHEET	1 OF 3

D:\VESTAL\Updated Drawings\VH_1 – AREA 4 – Rev 4-28-05\VES-A4-01.DWG PROJ # 681086 DATE 4/28/05 – 17:40

FIGURE 2
CONCENTRATION (ppmv) AND YIELD RATE (lbs/day) OF TOTAL TARGET VOCs Vs. TIME TOTAL SYSTEM SAMPLE VESTAL AREA 4

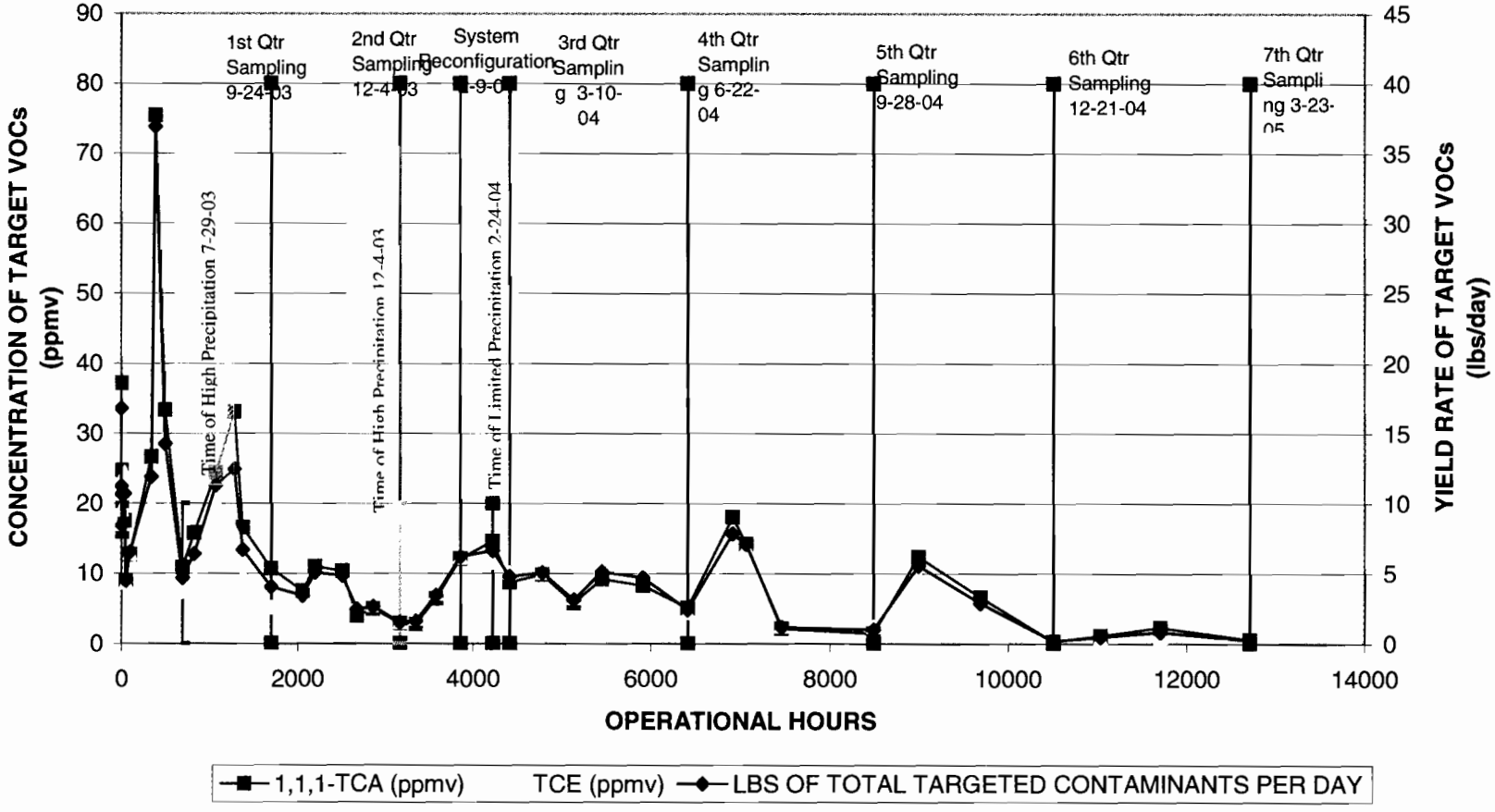


FIGURE 3
TOTAL TARGET CONTAMINANT YIELD START-UP TO DATE (lbs) Vs. TIME
TOTAL SYSTEM SAMPLE
VESTAL, AREA 4

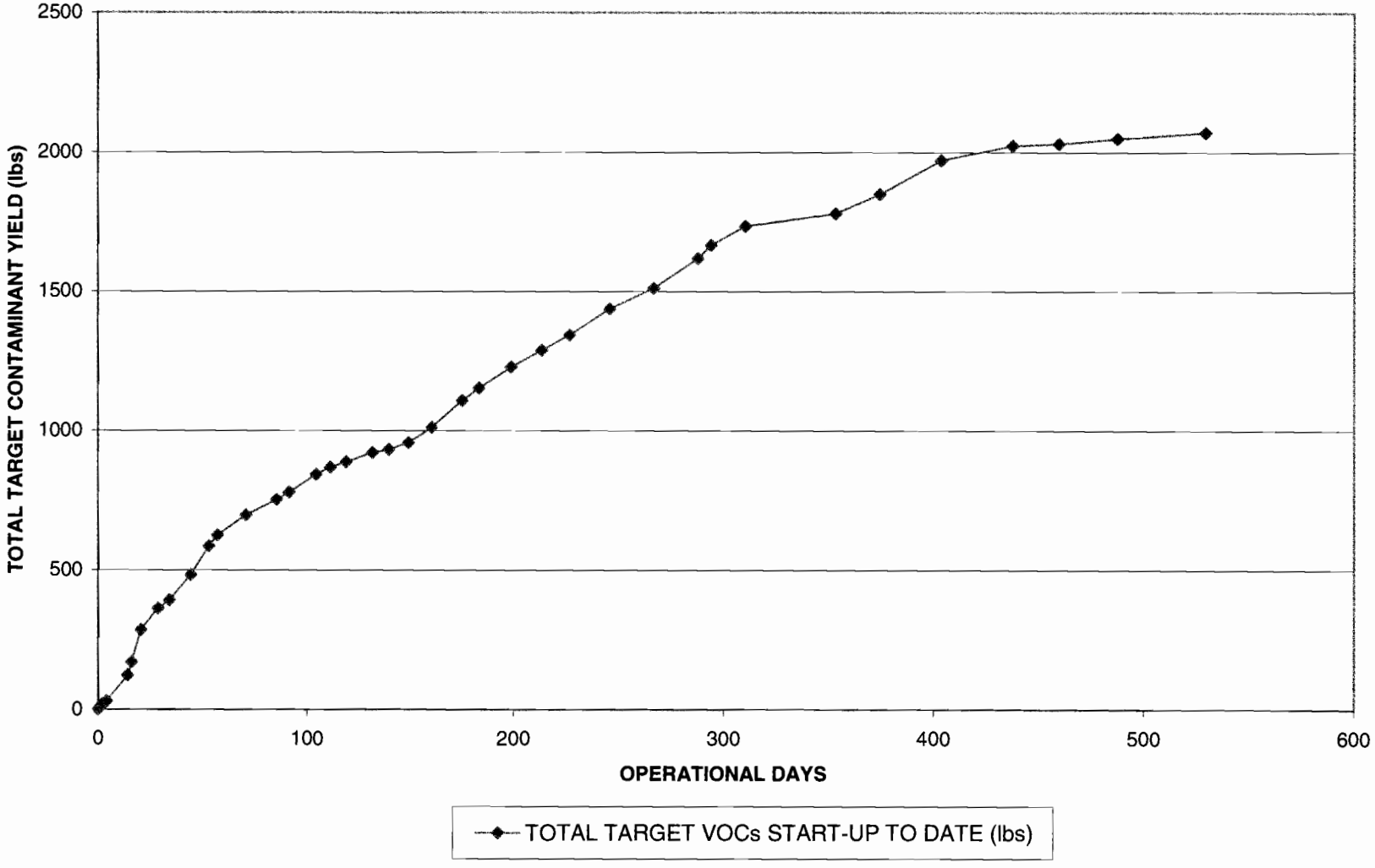


TABLE 1
SVE WELL STATUS
VESTAL AREA 4
March 22 & 23, 2005

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			210			
INFLUENT			512		9.6	
MIDDLE			512		0.6	
EFFLUENT			512		0.6	
A1		X	9	OPEN	NA	LOW
A2		X	6	OPEN	NA	LOW
A3	X		5	OPEN	15.4	LOW
B1	X		NA	WATER	NA	LOW
B2	X		5	OPEN	7.5	LOW
B3	X		5	OPEN	20.1	LOW
C1		X	10	OPEN	NA	LOW
C2	X		5	OPEN	0.9	MEDIUM
C3	X		5	OPEN	6.2	MEDIUM
D1	X		5	OPEN	1.3	LOW
D2		X	9	OPEN	NA	MEDIUM
D3		X	<5	OPEN	NA	HIGH
D4	X		NA	WATER	NA	HIGH
E1	X		5	OPEN	1.2	LOW
E2		X	NA	OPEN	NA	MEDIUM
E3	X		20	OPEN	3.2	HIGH
E4	X		25	OPEN	6.4	HIGH
E5	X		NA	WATER	NA	HIGH
F1	X		8	OPEN	1.0	LOW
F2		X	NA	WATER	NA	MEDIUM
F3	X		NA	WATER	NA	MEDIUM
F4	X		5	OPEN	4.4	LOW
F5	X		<5	LF	1.8	LOW
F6	X		NA	WATER	NA	LOW
G1	X		5	OPEN	17.4	LOW
G2	X		25	OPEN	21.1	LOW
H1	X		5	OPEN	5.8	LOW
H2			NA	OFF	NA	LOW
I1	X		5	OPEN	4.6	LOW
I2			NA	OFF	NA	LOW
I3	X		5	OPEN	9.8	MEDIUM
I4			NA	OFF	NA	MEDIUM
I5	X		5	OPEN	19.1	HIGH
J1			NA	OFF	NA	LOW
J2	X		5	OPEN	2.0	MEDIUM
J3	X		5	OPEN	15.5	HIGH
J4	X		5	OPEN	13.3	HIGH
J5	X		5	OPEN	7.2	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
March 22 & 23, 2005

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J6	X		NA	WATER	NA	HIGH
K1		X	5	OPEN	NA	LOW
K2	X		5	OPEN	12.3	LOW
K3	X		5	OPEN	4.5	MEDIUM
K4	X		5	OPEN	1.7	MEDIUM
K5	X		5	OPEN	1.8	HIGH
L1		X	5	OPEN	NA	LOW
L2	X		5	OPEN	1.9	HIGH
L3		X	<5	OPEN	NA	LOW
L4	X		NA	WATER	NA	LOW
M1			NA	OFF	NA	LOW
M2	X		5	OPEN	1.9	LOW
M3	X		NA	WATER	NA	LOW
M4			NA	OFF	NA	LOW
N1			NA	OFF	NA	LOW
N2			NA	OFF	NA	LOW
N3			NA	OFF	NA	LOW

NOTE: Total System Flow calculated by Roots Blower program with climate variables of the day of sampling.

LF= limited airflow

TABLE 2

TARGET CONTAMINANT YIELD
VESTAL AREA 4

SAMPLE DATE	SAMPLE NUMBER	WELL NUMBER	1,1,1 TCA (lbs/day)	TCE (lbs/day)	TOTAL TARGET VOCs (lbs/day)
6/23/2003	VS-SS-INFL-062303-0	INF	9.58	7.18	16.76
6/23/2003	VS-SS-INFL-062303-1	INF	6.37	4.85	11.22
	INFLUENT AVG PER DAY FOR PERIOD		7.98	6.02	13.99
	TOTAL YIELD (lbs) FOR PERIOD (6/23-6/23)				0.56
6/23/2003	VS-SS-INFL-062303-1	INF	6.37	4.85	11.22
6/23/2003	VS-SS-INFL-062303-4	INF	5.23	5.42	10.66
	INFLUENT AVG PER DAY FOR PERIOD		5.80	5.14	10.94
	TOTAL YIELD (lbs) FOR PERIOD (6/23-6/23)				1.42
6/23/2003	VS-SS-INFL-062303-4	INF	5.23	5.42	10.66
6/23/2003	VS-SS-INFL-062303-8	INF	4.10	4.33	8.43
	INFLUENT AVG PER DAY FOR PERIOD		4.67	4.88	9.55
	TOTAL YIELD (lbs) FOR PERIOD (6/23-6/23)				1.62
6/23/2003	VS-SS-INFL-062303-8	INF	4.10	4.33	8.43
6/24/2003	VS-SS-INF-062403	INF	4.52	6.18	10.70
	INFLUENT AVG PER DAY FOR PERIOD		4.31	5.26	9.57
	TOTAL YIELD (lbs) FOR PERIOD (6/23-6/24)				11.19
6/24/2003	VS-SS-INF-062403	INF	4.52	6.18	10.70
6/25/2003	VS-SS-INF-062503	INF	2.28	2.21	4.48
	INFLUENT AVG PER DAY FOR PERIOD		3.40	4.20	7.59
	TOTAL YIELD (lbs) FOR PERIOD (6/24-6/25)				4.40
6/25/2003	VS-SS-INF-062503	INF	2.28	2.21	4.48
6/27/2003	VS-SVE-INF-062703	INF	3.28	3.26	6.53
	INFLUENT AVG PER DAY FOR PERIOD		2.78	2.74	5.51
	TOTAL YIELD (lbs) FOR PERIOD (6/25-6/27)				10.79
6/27/2003	VS-SVE-INF-062703	INF	3.28	3.26	6.53
7/7/2003	VS-SVE-INF-070703-0001	INF	6.87	5.04	11.91
	INFLUENT AVG PER DAY FOR PERIOD		5.08	4.15	9.22
	TOTAL YIELD (lbs) FOR PERIOD (7/27-7/7)				92.57
7/7/2003	VS-SVE-INF-070703-0001	INF	6.87	5.04	11.91
7/9/2003	VS-SVE-INF-070903-0006	INF	19.45	17.96	36.92
	INFLUENT AVG PER DAY FOR PERIOD		13.16	11.50	24.42
	TOTAL YIELD (lbs) FOR PERIOD (7/7-7/9)				47.85
7/9/2003	VS-SVE-INF-070903-0006	INF	19.45	17.96	36.92
7/17/2003	VS-SVE-INF-071703-0011	INF	8.60	5.65	14.25
	INFLUENT AVG PER DAY FOR PERIOD		14.03	11.81	25.59
	TOTAL YIELD (lbs) FOR PERIOD (7/9-7/17)				114.11
7/17/2003	VS-SVE-INF-071703-0011	INF	8.60	5.65	14.25
7/29/2003	VS-SVE-INF-072903-0016	INF	2.70	1.88	4.67
	INFLUENT AVG PER DAY FOR PERIOD		5.65	3.77	9.46

TABLE 2

TARGET CONTAMINANT YIELD
VESTAL AREA 4

SAMPLE DATE	SAMPLE NUMBER	WELL NUMBER	1,1,1 TCA (lbs/day)	TCE (lbs/day)	TOTAL TARGET VOCs (lbs/day)
	TOTAL YIELD (lbs) FOR PERIOD (7/17-7/29)				76.91
7/29/2003	VS-SVE-INF-072903-0016	INF	2.70	1.88	4.67
8/12/2003	VS-SVE-INF-081203-0026	INF	4.07	2.34	6.40
	INFLUENT AVG. PER DAY FOR PERIOD		3.39	2.11	5.54
	TOTAL YIELD (lbs) FOR PERIOD (7/29-8/12)				30.33
8/12/2003	VS-SVE-INF-081203-0026	INF	4.07	2.34	6.40
8/25/2003	VS-SVE-INF-082503-0031	INF	6.23	5.06	11.28
	INFLUENT AVG. PER DAY FOR PERIOD		5.15	3.70	8.84
	TOTAL YIELD (lbs) FOR PERIOD (8/12-8/25)				90.08
8/25/2003	VS-SVE-INF-082503-0031	INF	6.23	5.06	11.28
9/3/2003	VS-SVE-INF-090303-0036	INF	8.45	4.01	12.46
	INFLUENT AVG. PER DAY FOR PERIOD		7.34	4.54	11.87
	TOTAL YIELD (lbs) FOR PERIOD (8/25-9/3)				103.74
9/3/2003	VS-SVE-INF-090303-0036	INF	8.45	4.01	12.46
9/8/2003	VS-SVE-INF-090803-0041	INF	4.23	2.46	6.70
	INFLUENT AVG. PER DAY FOR PERIOD		6.34	3.24	9.58
	TOTAL YIELD (lbs) FOR PERIOD (9/3-9/8)				38.51
9/8/2003	VS-SVE-INF-090803-0041	INF	4.23	2.46	6.70
9/24/2003	VS-SVE-INF-092403-0099	INF	2.74	1.30	4.04
	INFLUENT AVG. PER DAY FOR PERIOD		3.48	1.88	5.37
	TOTAL YIELD (lbs) FOR PERIOD (9/8-9/24)				72.89
9/24/2003	VS-SVE-INF-092403-0099	INF	2.74	1.30	4.04
10/9/2003	VS-SVE-INF-100903-0109	INF	1.91	1.51	3.42
	INFLUENT AVG. PER DAY FOR PERIOD		2.32	1.40	3.73
	TOTAL YIELD (lbs) FOR PERIOD (9/24-10/9)				55.77
10/9/2003	VS-SVE-INF-100903-0109	INF	1.91	1.51	3.42
10/15/2003	VS-SVE-INF-101503-0114	INF	2.82	2.26	5.08
	INFLUENT AVG. PER DAY FOR PERIOD		2.37	1.89	4.25
	TOTAL YIELD (lbs) FOR PERIOD (10/9-10/15)				25.50
10/15/2003	VS-SVE-INF-101503-0114	INF	2.82	2.26	5.08
10/28/2003	VS-SVE-INF-102803-0119	INF	2.65	2.21	4.86
	INFLUENT AVG. PER DAY FOR PERIOD		2.74	2.24	4.97
	TOTAL YIELD (lbs) FOR PERIOD (10/15-10/28)				64.91
10/28/2003	VS-SVE-INF-102803-0119	INF	2.65	2.21	4.86
11/11/2003	VS-SVE-INF-111103-0124	INF	0.99	1.46	2.45
	INFLUENT AVG. PER DAY FOR PERIOD		1.82	1.84	3.66
	TOTAL YIELD (lbs) FOR PERIOD (10/28-11/11)				25.11
11/11/2003	VS-SVE-INF-111103-0124	INF	0.99	1.46	2.45
11/19/2003	VS-SVE-INF-111903-0129	INF	1.27	1.39	2.65
	INFLUENT AVG. PER DAY FOR PERIOD		1.13	1.43	2.55
	TOTAL YIELD (lbs) FOR PERIOD (11/11-11/19)				19.74
11/19/2003	VS-SVE-INF-111103-0124	INF	1.27	1.39	2.65
12/4/2003	VS-SVE-INF-111903-0129	INF	0.74	0.76	1.50
	INFLUENT AVG. PER DAY FOR PERIOD		1.01	1.08	2.08
	TOTAL YIELD (lbs) FOR PERIOD (11/19-12/4)				32.56

TABLE 2

TARGET CONTAMINANT YIELD
VESTAL AREA 4

SAMPLE DATE	SAMPLE NUMBER	WELL NUMBER	1,1,1 TCA (lbs/day)	TCE (lbs/day)	TOTAL TARGET VOCs (lbs/day)
12/4/2003	VS-SVE-INF-111903-0129	INF	0.74	0.76	1.50
1/14/2004	VS-SVE-INF-011404-0197	INF	0.69	0.90	1.59
	INFLUENT AVG. PER DAY FOR PERIOD		0.72	0.83	1.55
	TOTAL YIELD (lbs) FOR PERIOD (12/4-1/14)				12.13
1/14/2004	VS-SVE-INF-011404-0197	INF	0.69	0.90	1.59
1/26/2004	VS-SVE-INF-012604-0202	INF	1.63	1.79	3.42
	INFLUENT AVG. PER DAY FOR PERIOD		1.16	1.35	2.51
	TOTAL YIELD (lbs) FOR PERIOD (1/14-1/26)				24.17
1/26/2004	VS-SVE-INF-012604-0202	INF	1.63	1.79	3.42
2/9/2004	VS-SVE-INF-020904-0207	INF	3.09	3.10	6.20
	INFLUENT AVG. PER DAY FOR PERIOD		2.36	2.45	4.81
	TOTAL YIELD (lbs) FOR PERIOD (1/26-2/9)				55.27
2/9/2004	VS-SVE-INF-020904-0207	INF	3.09	3.10	6.20
2/24/2004	VS-SVE-INF-022404-0212	INF	3.72	2.91	6.63
	INFLUENT AVG. PER DAY FOR PERIOD		3.41	3.01	6.42
	TOTAL YIELD (lbs) FOR PERIOD (2/9-2/24)				95.58
2/24/2004	VS-SVE-INF-022404-0212	INF	3.72	2.91	6.63
3/10/2004	VS-SVE-INF-031004-0262	INF	2.23	2.54	4.78
	INFLUENT AVG. PER DAY FOR PERIOD		2.98	2.73	5.71
	TOTAL YIELD (lbs) FOR PERIOD (2/24-3/10)				45.58
3/10/2004	VS-SVE-INF-031004-0262	INF	2.23	2.54	4.78
4/5/2004	VS-SVE-INF-040504-0267	INF	2.51	2.56	5.07
	INFLUENT AVG. PER DAY FOR PERIOD		2.37	2.55	4.93
	TOTAL YIELD (lbs) FOR PERIOD (3/10-4/5)				75.11
4/5/2004	VS-SVE-INF-040504-0267	INF	2.51	2.56	5.07
4/27/2004	VS-SVE-INF-042704-0272	INF	1.47	1.64	3.11
	INFLUENT AVG. PER DAY FOR PERIOD		1.99	2.10	4.09
	TOTAL YIELD (lbs) FOR PERIOD (4/5-4/27)				60.45
4/27/2004	VS-SVE-INF-042704-0272	INF	1.47	1.64	3.11
5/11/2004	VS-SVE-INF-051104-0277	INF	2.35	2.77	5.12
	INFLUENT AVG. PER DAY FOR PERIOD		1.91	2.21	4.12
	TOTAL YIELD (lbs) FOR PERIOD (4/27-5/11)				54.36
5/11/2004	VS-SVE-INF-051104-0277	INF	2.35	2.77	5.12
6/1/2004	VS-SVE-INF-060104-0282	INF	2.10	2.59	4.69
	INFLUENT AVG. PER DAY FOR PERIOD		2.23	2.68	4.91
	TOTAL YIELD (lbs) FOR PERIOD (5/11-6/1)				94.18
6/1/2004	VS-SVE-INF-060104-0282	INF	2.10	2.59	4.69
6/22/2004	VS-SVE-INF-062204-0332	INF	1.30	1.11	2.40
	INFLUENT AVG. PER DAY FOR PERIOD		1.70	1.85	3.55
	TOTAL YIELD (lbs) FOR PERIOD (6/1-6/22)				73.91

TABLE 2

TARGET CONTAMINANT YIELD
VESTAL AREA 4

SAMPLE DATE	SAMPLE NUMBER	WELL NUMBER	1,1,1 TCA (lbs/day)	TCE (lbs/day)	TOTAL TARGET VOCs (lbs/day)
6/22/2004	VS-SVE-INF-062204-0332	INF	1.30	1.11	2.40
7/13/2004	VS-SVE-INF-071304-0337	INF	4.61	3.23	7.84
	INFLUENT AVG. PER DAY FOR PERIOD		2.96	2.17	5.12
	TOTAL YIELD (lbs) FOR PERIOD (6/22-7/13)				107.37
7/13/2004	VS-SVE-INF-071304-0337	INF	4.61	3.23	7.84
7/22/2004	VS-SVE-INF-072204-0342	INF	3.63	3.46	7.09
	INFLUENT AVG. PER DAY FOR PERIOD		4.12	3.35	7.47
	TOTAL YIELD (lbs) FOR PERIOD (7/13-7/22)				46.95
7/22/2004	VS-SVE-INF-072204-0342	INF	3.63	3.46	7.09
8/16/2004	VS-SVE-INF-081604-0347	INF	0.54	0.63	1.17
	INFLUENT AVG. PER DAY FOR PERIOD		2.09	2.05	4.13
	TOTAL YIELD (lbs) FOR PERIOD (7/22-8/16)				68.02
8/16/2004	VS-SVE-INF-081604-0347	INF	0.54	0.63	1.17
9/28/2004	VS-SVE-INF-092804-0423	INF	0.37	0.62	0.98
	INFLUENT AVG. PER DAY FOR PERIOD		0.46	0.63	1.08
	TOTAL YIELD (lbs) FOR PERIOD (8/16-9/28)				46.06
9/28/2004	VS-SVE-INF-092804-0423	INF	0.37	0.62	0.98
10/19/2004	VS-SVE-INF-101904-0428	INF	3.15	2.40	5.56
	INFLUENT AVG. PER DAY FOR PERIOD		1.76	1.51	3.27
	TOTAL YIELD (lbs) FOR PERIOD (9/28-10/19)				68.67
10/19/2004	VS-SVE-INF-101904-0428	INF	3.15	2.40	5.56
11/17/2004	VS-SVE-INF-111704-0433	INF	1.69	1.20	2.89
	INFLUENT AVG. PER DAY FOR PERIOD		2.42	1.80	4.23
	TOTAL YIELD (lbs) FOR PERIOD (10/19-11/17)				122.53
11/17/2004	VS-SVE-INF-111704-0433	INF	1.69	1.20	2.89
12/21/2004	VS-SVE-INF-122104-0493	INF	0.07	0.12	0.19
	INFLUENT AVG. PER DAY FOR PERIOD		0.88	0.66	1.54
	TOTAL YIELD (lbs) FOR PERIOD (11/17-12/21)				52.22
12/21/2004	VS-SVE-INF-122104-0493	INF	0.07	0.12	0.19
1/12/2005	VS-SVE-INF-011205-0498	INF	0.29	0.20	0.49
	INFLUENT AVG. PER DAY FOR PERIOD		0.18	0.16	0.34
	TOTAL YIELD (lbs) FOR PERIOD (12/21-1/12)				7.49
1/12/2005	VS-SVE-INF-011205-0498	INF	0.29	0.20	0.49
2/9/2005	VS-SVE-INF-020905-0503	INF	0.58	0.24	0.82
	INFLUENT AVG. PER DAY FOR PERIOD		0.44	0.22	0.66
	TOTAL YIELD (lbs) FOR PERIOD (1/12-2/9)				18.29

TABLE 2

TARGET CONTAMINANT YIELD
VESTAL AREA 4

SAMPLE DATE	SAMPLE NUMBER	WELL NUMBER	1,1,1 TCA (lbs/day)	TCE (lbs/day)	TOTAL TARGET VOCs (lbs/day)
2/9/2005	VS-SVE-INF-020905-0503	INF	0.58	0.24	0.82
3/23/2005	VS-SVE-INF-032305-0551	INF	0.14	0.12	0.25
	INFLUENT AVG. PER DAY FOR PERIOD		0.36	0.18	0.54
	TOTAL YIELD (lbs) FOR PERIOD (2/9-3/23)				22.46
TOTAL YIELD TO REPORTED DATE					2071.38

Note 1: Beginning and ending period influent yields are averaged and then multiplied by the number of operational days during the reporting period.

Note 2: 1,1,1 TCA= 1,1,1-Trichloroethane
TCE= Trichloroethene

Note 3: INF= Influent

TABLE 3
TOTAL TARGET CONTAMINANT YIELD TO DATE
VESTAL AREA 4

SAMPLE DATE	1,1,1 TCA (lbs)	TCE (lbs)	TOTAL TARGET VOCs (lbs)
6/23/2003	0.00	0.00	0.00
6/23/2003	0.33	0.25	0.58
6/23/2003	1.06	0.89	1.95
6/23/2003	1.84	1.71	3.54
6/24/2003	6.87	7.83	14.70
6/25/2003	8.85	10.28	19.13
6/27/2003	14.28	15.63	29.92
7/7/2003	65.21	57.31	122.52
7/9/2003	90.98	79.35	170.33
7/17/2003	153.51	130.86	284.38
7/29/2003	199.85	161.45	361.30
8/12/2003	218.64	172.99	391.63
8/25/2003	271.09	210.67	481.76
9/3/2003	335.21	250.27	585.48
9/8/2003	360.71	263.28	623.99
9/24/2003	408.05	288.83	696.88
10/9/2003	442.85	309.83	752.68
10/15/2003	457.04	321.14	778.18
10/28/2003	492.69	350.33	843.02
11/11/2003	505.20	362.94	868.14
11/19/2003	513.95	373.96	887.91
12/4/2003	529.68	390.80	920.48
1/14/2004	535.30	397.32	932.62
1/26/2004	546.51	410.29	956.80
2/9/2004	573.66	438.42	1012.08
2/24/2004	624.45	483.19	1107.65
3/10/2004	648.24	504.97	1153.22
4/5/2004	684.38	543.87	1228.25
4/27/2004	713.77	574.92	1288.69
5/11/2004	739.02	604.07	1343.09
6/1/2004	781.81	655.48	1437.29
6/22/2004	817.27	693.97	1511.24
7/13/2004	879.24	739.47	1618.71
7/22/2004	905.17	760.52	1665.69
8/16/2004	939.55	794.17	1733.72
9/28/2004	959.14	820.79	1779.93
10/19/2004	996.13	852.47	1848.60
11/17/2004	1066.51	904.73	1971.24
12/21/2004	1096.44	927.00	2023.44

TABLE 3
TOTAL TARGET CONTAMINANT YIELD TO DATE
VESTAL AREA 4

SAMPLE DATE	1,1,1 TCA (lbs)	TCE (lbs)	TOTAL TARGET VOCs (lbs)
1/12/2005	1100.43	930.44	2030.87
2/9/2005	1112.63	936.50	2049.13
3/23/2005	1127.81	943.89	2071.71

NOTE 1: 1,1,1 TCA= 1,1,1-Trichloroethane
TCE= Trichloroethene

APPENDIX A
Sampling and Analytical Data

QA/QC Report for Vestal Samples
(Sample Date: 3/22/05)

1. Sample Receipt

The samples arrived at the lab were carefully packed in coolers. All of the sample bags in the coolers arrived intact and the labels on the bags were found to be complete. The information on the sample labels agreed with the information on the chain-of-custody forms placed inside the shipping coolers.

2. Sample Holding Times

The required holding times were met according to the lab SOP.

3. Instrument Blank Analysis

The instrument blank analysis indicated the instruments did not contain any target compounds.

4. Lab Duplicate Analysis

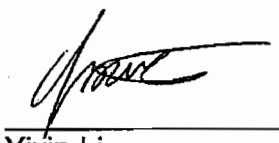
Vestal Duplicate Sample RPD Report					
Sample ID: VS-SVE-B2-032205-0511					
Sample Date	Analytes	Data1	Data2	RPD (%)	RPD Acceptable?
3/22/05	TCE	0.915	0.845	8.0	YES
3/22/05	1,1,1-TCA	0.943	0.917	2.8	YES

5. GC Calibrations

The instruments performed target compound standards calibration check each analysis day, or re-run the standards. The results met the requirement in the lab SOP.

6. Lab Authentication Statement

I certify, to the best of my knowledge, that the information in this QA/QC report is true, accurate and complete.



Yixin Li
Chemist
Shaw E & I
14155 Farmington Rd.
Livonia, MI 48154

QA/QC Report for Vestal Samples
(Sample Date: 3/23/05)

1. Sample Receipt

The samples arrived at the lab were carefully packed in coolers. All of the sample bags in the coolers arrived intact and the labels on the bags were found to be complete. The information on the sample labels agreed with the information on the chain-of-custody forms placed inside the shipping coolers.

2. Sample Holding Times

The required holding times were met according to the lab SOP.

3. Instrument Blank Analysis

The instrument blank analysis indicated the instruments did not contain any target compounds.

4. Lab Duplicate Analysis

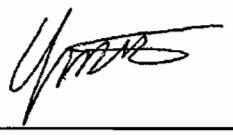
Vestal Duplicate Sample RPD Report					
Sample ID: VS-SVE-E5-120704-0458					
Sample Date	Analytes	Data1	Data2	RPD (%)	RPD Acceptable?
3/23/05	TCE	0.907	0.997	9.5	YES
3/23/05	1,1,1-TCA	2.359	2.348	0.5	YES

5. GC Calibrations

The instruments performed target compound standards calibration check each analysis day, or re-run the standards. The results met the requirement in the lab SOP.

6. Lab Authentication Statement

I certify, to the best of my knowledge, that the information in this QA/QC report is true, accurate and complete.



Yixin Li
Chemist
Shaw E & I
14155 Farmington Rd.
Livonia, MI 48154

SAMPLE DATE	SAMPLE ID	1,1,1-TCA (ppm)	TCE (ppm)	Detection Limits (ppm)
22-Mar-05	INSTRUMENT BLANK	0.00	0.00	0.05
22-Mar-05	VS-SVE-TB-1-032205-0513	0.00	0.00	0.05
22-Mar-05	VS-SVE-TB-2-032205-0521	0.00	0.00	0.05
22-Mar-05	VS-SVE-TB-3-032205-0528	0.00	0.00	0.05
23-Mar-05	INSTRUMENT BLANK	0.00	0.00	0.05
23-Mar-05	VS-SVE-TB-4-032305-0538	0.00	0.00	0.05
23-Mar-05	VS-SVE-TB-5-032305-0547	0.00	0.00	0.05
23-Mar-05	VS-SVE-TB-6-032305-0555	0.00	0.00	0.05

Notes: 0.00 indicates below detection limit.

Shaw E & I Lab Analytical Results

Client: Sevenson/USACE ***Client Code: 681086***
Analysis Date: 3/23/2005 ***Sample Date: 3/22/2005***
Detection Limit: See below ***Units: ppmv***
Analyst: YL ***Project Manager: D. Callahan***

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-E1-032205-0508	0.12	0.00	0.05
VS-SVE-C2-032205-0509	0.00	0.12	0.05
VS-SVE-F1-032205-0510	0.22	0.00	0.05
VS-SVE-B2-032205-0511	0.66	0.62	0.05
VS-SVE-TB-1-032205-0513	0.00	0.00	0.05
VS-SVE-D1-032205-0514	0.00	0.06	0.05
VS-SVE-E4-032205-0516	0.81	0.75	0.05
VS-SVE-E4-D-032205-0517	0.96	0.83	0.05
VS-SVE-F4-032205-0518	0.00	0.00	0.05
VS-SVE-F5-032205-0519	0.00	0.00	0.05
VS-SVE-TB-2-032205-0521	0.00	0.00	0.05
VS-SVE-C3-032205-0522	0.00	0.00	0.05
VS-SVE-B3-032205-0523	0.00	0.00	0.05
VS-SVE-A3-032205-0524	0.00	0.00	0.05
VS-SVE-TB-3-032205-0528	0.00	0.00	0.05
VS-SVE-PB-1-032205-0529	0.00	0.00	0.05

Notes:
[1] TVOC: estimated value. TVOC was calculated by the average response factor of the known contaminants.
[2] 0.00 indicates BELOW DETECTION LIMIT. (For TVOC, the Detection Limit is 1.0 ppmv.)
[3] DL = Detection Limit.

Shaw E & I Lab Analytical Results

Client: Sevenson/USACE ***Client Code: 681086***
Analysis Date: 3/24/2005 ***Sample Date: 3/23/05***
Detection Limit: See below ***Units: ppmv***
Analyst: YL ***Project Manager: D. Callahan***

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-J4-032305-0530	1.70	0.66	0.05
VS-SVE-J2-032305-0531	0.00	0.00	0.05
VS-SVE-L2-032305-0532	0.14	0.00	0.05
VS-SVE-K5-032305-0533	0.07	0.00	0.05
VS-SVE-K4-032305-0534	0.06	0.06	0.05
VS-SVE-K2-032305-0535	3.27	2.15	0.05
VS-SVE-K3-032305-0536	6.59	0.13	0.05
VS-SVE-K3-D-032305-0537	5.89	0.08	0.05
VS-SVE-TB-4-032305-0538	0.00	0.00	0.05
VS-SVE-M2-032305-0539	0.00	0.00	0.05
VS-SVE-J3-032305-0541	0.00	0.00	0.05
VS-SVE-G1-032305-0542	0.00	0.00	0.05
VS-SVE-I5-032305-0543	0.00	0.00	0.05
VS-SVE-G2-032305-0544	0.14	0.25	0.05
VS-SVE-I3-032305-0545	0.00	0.00	0.05
VS-SVE-H1-032305-0546	0.00	0.00	0.05
VS-SVE-TB-5-032305-0547	0.00	0.00	0.05
VS-SVE-J5-032305-0548	0.00	0.00	0.05
VS-SVE-I1-032305-0549	0.00	0.00	0.05
VS-SVE-INF-032305-0551	0.54	0.46	0.05
VS-SVE-MID-032305-0552	1.23	0.00	0.05
VS-SVE-EFF-032305-0553	0.31	0.00	0.05

Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Client Code: 681086
Analysis Date: 3/24/2005
Sample Date: 3/23/05
Detection Limit: See below
Units: ppmv
Analyst: YL
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-PB-2-032305-0554	0.00	0.00	0.05
VS-SVE-TB-6-032305-0555	0.00	0.00	0.05

Notes:
[1] TVOC: estimated value. TVOC was calculated by the average response factor of the known contaminants.
[2] 0.00 indicates BELOW DETECTION LIMIT. (For TVOC, the Detection Limit is 1.0 ppmv.)
[3] DL = Detection Limit.

Cooler #1
UPS-Tracking #
1Z 6V4 567 32 1000 2327

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 12687.2 HRS

Client: Sevenson / USACE Client Code: #691086

Flow Meter- Type : _____ Range (cfm): _____

Site Address: 210 Stage Rd., Vestal, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. Callahan

Injection blower - Vacuum: _____ Pressure: _____

System Status : "Operating"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm) PID	Analysis Requested	Notes
1	VS-SVE-0508	3-22-05	1015	~~-5~~	~~1.2~~ ppm	TO4, A	WEAK FLOW E-1 * 3/17 NEW
2	VS-SVE-0509		1021	-5	~~0.9~~ ppm		C-2
3	VS-SVE-0510		1027	8	~~1.0~~ ppm		F-1 * 3/17 NEW
4	VS-SVE-0511		1032	-5	~~7.5~~ ppm		B-2
5	VS-SVE-0512		N/S H20	O/S H20	~~H20~~		N/S D-4 H20
6	VS-SVE0513		—	—	—		TB #1
7							
8							
9							
10							
11							
12							

Collected By: Colaiuda / McGuire Date: 3-22-05 Time: 0900

Delivered By: _____ Date: _____ Time: _____

Received By: VR Date: 3/23/05 Time: 9:30

Remarks: _____

Envirogen, Inc.
New Solutions to Hazardous Waste Problems
5126 West Grand River, Lansing, Michigan. 48906
Phone # : (517) 886-5600 Fax #: (517) 886-5700

White copy = Laboratory Yellow copy = Technical Analyst Pink copy = Operation Technicians

Cooler #2

UPS Tracking # 1Z 6VA 567 22 1000 2336

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 12687.2 + 42.1

Client: Sensus / USACE Client Code: #66086

Flow Meter- Type : _____ Range (cfm): _____

Site Address: 210 Stage Rd, Vestal, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. Callahan

Injection blower - Vacuum: _____ Pressure: _____

System Status : "OPERATING"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm) PID	Analysis Requested	Notes
1	VS-SVE-0514	3-22-05	1041	-5	1.3 ppm	TO14, A	D-1
2	VS-SVE-0515		N/S ~~1046~~	20	3.2 ppm		WEAK FLOW E-3 N/S PLUGGED
3	VS-SVE-0516		1048	25 O/S	6.4 ppm		E-4
4	VS-SVE-0517		1050	—	6.4 ppm		E-4-D
5	VS-SVE-0518		1056	-5	4.4 ppm		F-4
6	VS-SVE-0519		1103	N/R	1.8 ppm		WEAK FLOW F-5
7	VS-SVE-0520		N/S (H20)	-5	N/R (H20)		WEAK FLOW F-6 N/S H20
8	VS-SVE-0521		—	—	—		TB #2
9							
10							
11							
12							

Collected By: Colasurdo / McGuire Date: 3-22-05 Time: 0900

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 3/23/05 Time: 9:30

Remarks: _____

Envirogen, Inc.

New Solutions to Hazardous Waste Problems

5126 West Grand River, Lansing, Michigan. 48906

Phone # : (517) 886-5600 Fax #: (517) 886-5700

White copy = Laboratory Yellow copy = Technical Analyst Pink copy = Operation Technicians

Cooler #3
UPS TRACKING #
1Z6V4567 22/1000 2318

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 12697.2 HRS

Client: SAIC/USACE Client Code: #69086

Flow Meter- Type : _____ Range (cfm): _____

Site Address: 210 STAGE RD., VESTAL, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. CAHAHAN

Injection blower - Vacuum: _____ Pressure: _____

System Status : "OPERATING"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm)	Analysis Requested	Notes
1	VS-SVE-0522	3-22-05	1155	-5		TO14A	C-3
2	VS-SVE-0523		1201	-5			B-3
3	VS-SVE-0524		1207	-5			A-3
4	VS-SVE-0525		N/R H2O	Disc.			B-1 N/R H2O
5	VS-SVE-0526		N/R H2O	13			E-5 N/R H2O
6	VS-SVE-0527		N/R H2O	13			F-3 N/R H2O
7	VS-SVE-0528		—	—	—		TB #3
8	VS-SVE-0529		—	—	—		SAMPLE PUMP
9							
10							
11							
12							

Collected By: COLBURN / MCGUIRE Date: 3-22-05 Time: 0900

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 3/23/05 Time: 9:30

Remarks: _____

Envirogen, Inc.

New Solutions to Hazardous Waste Problems

5126 West Grand River, Lansing, Michigan. 48906

Phone # : (517) 886-5600 Fax #: (517) 886-5700

White copy = Laboratory Yellow copy = Technical Analyst Pink copy = Operation Technicians

COOLER #4

tracking # 1Z 6V4 567 22 1000 2283

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 12710.4 HRS

Client: SEVERSON / USACE Client Code: #681086

Flow Meter- Type : _____ Range (cfm): _____

Site Address: 210 STOCK RD, VESTAL, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. COLLAHAN

Injection blower - Vacuum: _____ Pressure: _____

System Status : "OPERATING"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide PID (ppm) FI	Analysis Requested	Notes
1	VS-SVE-0530	3-23-'05	1010	-5	13.3 ppm	TO14, A	J-4
2	VS-SVE-0531		1014	-5	2.0		J-2
3	VS-SVE-0532		1019	-5	1.9		L-2
4	VS-SVE-0533		1025	-5	1.8		K-5
5	VS-SVE-0534		1029	-5	1.7		K-4
6	VS-SVE-0535		1041	-5	12.3		K-2
7	VS-SVE-0536		1045	-5	4.5		K-3
8	VS-SVE-0537		1047	—	4.5		K-3-D
9	VS-SVE-0538		—	—	0.9 AMB.		TB#4
10							
11							
12							

Collected By: COLASURDO / MCGUIRE Date: 3-23-05 Time: 0930

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 3/24/05 Time: 9:30

Remarks: _____

Envirogen, Inc.

New Solutions to Hazardous Waste Problems

5126 West Grand River, Lansing, Michigan. 48906

Phone # : (517) 886-5600 Fax #: (517) 886-5700

White copy = Laboratory Yellow copy = Technical Analyst Pink copy = Operation Technicians

Cooler #5
1Z6V4567 22 1000 229 2

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 12710.9 HRS

Client: SEVENSON/USACE Client Code: #681086

Flow Meter- Type : _____ Range (cfm): _____

Site Address: 210 STAGE RD, VESTAL, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. COLLAHAN

Injection blower - Vacuum: _____ Pressure: _____

System Status : OPERATING

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide FID (ppm) PID	Analysis Requested	Notes
1	VS-SVE-0539	3-23-'05	1055	-5	1.9 ppm	TO14, A	H-2
2	VS-SVE-0540		N/R - H20	-5	N/R - H20		J-6 N/R #2°
3	VS-SVE-0541		1102	-5			J-3
4	VS-SVE-0542		1108	-5			G-1
5	VS-SVE-0543		1113	-5			I-5
6	VS-SVE-0544		1120	0/5			G-2
7	VS-SVE-0545		1125	-5			I-3
8	VS-SVE-0546		1136	-5			H-1
9	VS-SVE-0547		—	—	—		TB #5
10							
11							
12							

Collected By: COLASURDO / McGUIRE Date: 3-23-'05 Time: 0930

Delivered By: _____ Date: _____ Time: _____

Received By: _____ Date: 3/24/05 Time: 9:30

Remarks: J-6 NOT A LOT OF WATER - BUT MOISTURE (AFFECTED PID)

Envirogen, Inc.

New Solutions to Hazardous Waste Problems

5126 West Grand River, Lansing, Michigan. 48906

Phone # : (517) 886-5600 Fax #: (517) 886-5700

White copy = Laboratory Yellow copy = Technical Analyst Pink copy = Operation Technicians

Cooler #6
126V4567221/000 2309

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 12710.4 HRS

Client: SEVERN/USAGE Client Code: #681086

Flow Meter- Type : _____ Range (cfm): _____

Site Address: 210 STAGE RD, VESTAL, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. CALLAHAN

Injection blower - Vacuum: _____ Pressure: _____

System Status : OPERATING

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide PID (ppm) PID	Analysis Requested	Notes
1	VS-SVE-0548	3-23-05	1150	-5		TO14, A	J-5
2	VS-SVE-0549		1156	-5			I-1
3	VS-SVE-0550		N/S H20	-5			M-3 N/S H2O
4	VS-SVE-0551		1210				INFLUENT
5	VS-SVE-0552		1218				MID-CARBON
6	VS-SVE-0553		1229				EFFLUENT
7	VS-SVE-0554		—	—	—		SAMPLE PUMP
8	VS-SVE-0555		—	—	—		TRIP BLANK #6
9							
10							
11							
12							

Collected By: CLASURDO/MCGUIRE Date: 3-23-05 Time: 0930

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 3/24/05 Time: 9:30

Remarks: _____

Envirogen, Inc.
New Solutions to Hazardous Waste Problems
5126 West Grand River, Lansing, Michigan. 48906
Phone # : (517) 886-5600 Fax #: (517) 886-5700

White copy = Laboratory Yellow copy = Technical Analyst Pink copy = Operation Technicians

APPENDIX B
Summary of Operation Data/ Contaminant Yield Calculation

Appendix B

Summary of Operation Data

Vestal, Area 4

SAMPLE DATE	SAMPLE ID	REPORT SAMPLE ID	FLOW (CFM)	1,1,1-TCA (ppmv)	TCE (ppmv)	TOTAL TARGETED CONTAMINANTS (ppmv)	LBS OF 1,1,1-TCA per day	LBS OF TCE per day	LBS OF TOTAL TARGETED CONTAMINANTS PER DAY	OPERATION DAYS	STATION HOUR METER	NUMBER OF DAYS IN PERIOD
6/27/03	INF	VS-SVE-INF-062703	517	12.70	12.83	25.53	3.28	3.26	6.53	4.04	97.0	1.96
7/7/2003	INF	VS-SVE-INF-070703-0001	517	26.62	19.87	46.49	6.87	5.04	11.91	14.08	338	10.04
7/9/2003	INF	VS-SVE-INF-070903-0006	517	75.42	68.79	144.21	19.45	17.46	36.92	16.04	385	1.96
7/17/2003	INF	VS-SVE-INF-071703-0011	517	33.34	22.24	55.58	8.60	5.65	14.25	20.50	492	4.46
7/29/2003	INF	VS-SVE-INF-072903-0016	517	10.83	7.39	18.22	2.79	1.88	4.67	28.63	687.2	8.13
8/12/2003	INF	VS-SVE-INF-081203-0026	517	15.77	9.20	24.97	4.07	2.34	6.40	34.11	818.7	5.48
8/25/2003	INF	VS-SVE-INF-082503-0031	512	24.37	20.12	44.49	6.23	5.06	11.28	44.30	1063.3	10.19
9/3/2003	INF	VS-SVE-INF-090303-0036	512	33.08	15.94	49.02	8.45	4.01	12.46	53.0	1273	8.74
9/8/2003	INF	VS-SVE-INF-090803-0041	512	16.57	9.80	26.37	4.23	2.46	6.70	57.1	1369.5	4.02
9/24/2003	INF	VS-SVE-INF-092403-0099	512	10.72	5.16	15.88	2.74	1.30	4.04	70.6	1695.5	13.58
10/15/2003	INF	VS-SVE-INF-101503-0114	512	11.02	8.98	20.00	2.82	2.26	5.07	91.6	2,198.6	20.96
10/15/2003	INF	VS-SVE-INF-101503-0114	512	11.02	8.98	20.00	2.82	2.26	5.07	91.6	2198.6	0.00
10/28/2003	INF	VS-SVE-INF-102803-0119	512	10.36	8.80	19.16	2.65	2.21	4.86	104.7	2512.0	13.06
11/11/2003	INF	VS-SVE-INF-111103-0124	512	3.89	5.81	9.70	0.99	1.46	2.45	111.5	2,676.9	6.87
11/19/2003	INF	VS-SVE-INF-111903-0129	512	4.96	5.51	10.47	1.27	1.39	2.65	119.3	2,862.7	7.74
12/4/2003	INF	VS-SVE-INF-120403-0187	512	2.89	3.03	5.92	0.74	0.76	1.50	132.0	3167.2	15.69
1/14/2004	INF	VS-SVE-INF-011404-0197	512	2.71	3.57	6.28	0.69	0.90	1.59	139.8	3,355.7	7.85
1/26/2004	INF	VS-SVE-INF-012604-0202	512	6.39	7.13	13.52	1.63	1.79	3.42	149.5	3,587.2	9.65
2/9/2004	INF	VS-SVE-INF-020904-0207	512	12.11	12.34	24.45	3.09	3.10	6.20	161.0	3,863.0	11.49
2/24/2004	INF	VS-SVE-INF-022404-0212	512	14.57	11.56	26.13	3.72	2.91	6.63	175.9	4,220.7	14.90
3/10/2004	INF	VS-SVE-INF-031004-0262	512	8.74	10.12	18.86	2.23	2.54	4.78	183.9	4,412.5	7.99
4/5/2004	INF	VS-SVE-INF-040504-0267	512	9.82	10.18	19.99	2.51	2.56	5.07	199.1	4778.4	15.25
4/27/2004	INF	VS-SVE-INF-042704-0272	512	5.76	6.54	12.30	1.47	1.64	3.11	213.9	5133	14.78
5/11/2004	INF	VS-SVE-INF-051104-0277	512	9.21	11.02	20.23	2.35	2.77	5.12	227.1	5,450.0	13.21
6/1/2004	INF	VS-SVE-INF-060104-0282	512	8.24	10.29	18.53	2.10	2.59	4.69	246.3	5,910.7	19.20
6/22/2004	INF	VS-SVE-INF-062204-0332	512	5.08	4.40	9.48	1.30	1.11	2.40	267.1	6,411.0	20.85
7/13/2004	INF	VS-SVE-INF-071304-0337	512	18.05	12.86	30.91	4.61	3.23	7.84	288.1	6,914.3	20.97
7/22/2004	INF	VS-SVE-INF-072204-0342	512	14.22	13.76	27.98	3.63	3.46	7.09	294.4	7,065.3	6.29
8/16/2004	INF	VS-SVE-INF-081604-0347	512	2.13	2.49	4.63	0.54	0.63	1.17	310.9	7,460.5	16.47
9/28/2004	INF	VS-SVE-INF-092804-0423	512	1.45	2.45	3.89	0.37	0.62	0.98	353.7	8,489.0	42.85
10/19/2004	INF	VS-SVE-INF-101904-0428	512	12.35	9.55	21.90	3.15	2.40	5.56	374.7	8,993.0	21.00
11/17/2004	INF	VS-SVE-INF-111704-0433	512	6.63	4.76	11.39	1.69	1.20	2.89	403.8	9,690.0	29.04
12/21/2004	INF	VS-SVE-INF-122104-0493	512	0.29	0.46	0.74	0.07	0.12	0.19	437.7	10,503.8	33.91

Summary of Operation Data

Vestal, Area 4

SAMPLE DATE	SAMPLE ID	REPORT SAMPLE ID	FLOW (CFM)	1,1,1-TCA (ppmv)	TCE (ppmv)	TOTAL TARGETED CONTAMINANTS (ppmv)	LBS OF 1,1,1-TCA per day	LBS OF TCE per day	LBS OF TOTAL TARGETED CONTAMINANTS PER DAY	OPERATION DAYS	STATION HOUR METER	NUMBER OF DAYS IN PERIOD
1/12/2005	INF	VS-SVE-INF-011205-0498	512	1.13	0.79	1.92	0.29	0.20	0.49	459.7	11,032.5	22.03
2/9/2005	INF	VS-SVE-INF-020905-0503	512	2.29	0.94	3.23	0.58	0.24	0.82	487.6	11,702.8	27.93
3/23/2005	INF	VS-SVE-INF-032305-0551	512	0.54	0.46	1.00	0.14	0.12	0.25	529.6	12,710.4	41.98

Appendix B

Example Calculations

Vestal, Area 4

Example: 8/25/03
1,1,1 TCA (ppm) to 1,1,1 TCA (lbs/day)

0.00000374(conversion constant)* 24.37(ppm)* 512(flow)* 133.4(molecular weight) = 6.23 lbs

Example: 8/12/03 to 8/25/03 'Total Target VOCs'

[6.40 (8/12) + 11.28 (8/25)] / 2 = 8.84 avg. lbs per day for the period
8.84 (lbs per day) * 10.19 (days) = 90.08 pounds per reporting period

Calculated Flow Rate:
Vacuum Pressure (inches Hg) = 6
Blower Speed (RPM) = 2000
Temperature (degrees F) = 72
Elevation = 1200 feet
Based on proprietary Roots, Inc flow rate software for Roots 68 blower,
the CFM for these parameters is 512 on 8/25/03

Appendix B

Influent Sample Parameters

Vestal, Area 4

SAMPLE DATE	SAMPLE ID	VACUUM PRESURE (inches Hg)	RPM	TEMPERATURE (degrees F)	FLOW (cfm)	PID	OPERATION DAYS	STATION HOUR METER
6/27/03	VS-SVE-INF-062703	6	2000	68	517	34.0	4.0	97.0
7/7/2003	VS-SVE-INF-070703-0001	6	2000	72	517	153.4	14.1	338
7/9/2003	VS-SVE-INF-070903-0006	6	2000	75	517	87.0	16.0	385
7/17/2003	VS-SVE-INF-071703-0011	6	2000	80	517	79.5	20.5	492
7/29/2003	VS-SVE-INF-072903-0016	6	2000	75	517	20.3	28.6	687.2
8/12/2003	VS-SVE-INF-081203-0026	6	2000	73	517	45.6	34.1	818.7
8/25/2003	VS-SVE-INF-082503-0031	6	2000	72	512	27.5	44.3	1063.3
9/3/2003	VS-SVE-INF-090303-0036	6	2000	70	512	21.3	53.0	1273.0
9/8/2003	VS-SVE-INF-090803-0041	6	2000	70	512	22.8	57.1	1369.5
9/24/2003	VS-SVE-INF-092403-0099	6	2000	70	512	12.6	70.6	1695.5
10/15/2003	VS-SVE-INF-101503-0114	6	2000	62	512	14.2	91.6	2,198.6
10/15/2003	VS-SVE-INF-101503-0114	6	2000	68	512	13.7	91.6	2198.6
10/28/2003	VS-SVE-INF-102803-0119	6	2000	65	512	16.4	104.7	2512.0
11/11/2003	VS-SVE-INF-111103-0124	6	2000	54	512	7.9	111.5	2676.9
11/19/2003	VS-SVE-INF-111903-0129	6	2000	50	512	12.1	119.3	2862.7
12/4/2003	VS-SVE-INF-120403-0187	6	2000	48	512	7.7	132.0	3167.2
1/14/2004	VS-SVE-INF-011404-0197	6	2000	50	512	7.7	139.8	3,355.7
1/26/2004	VS-SVE-INF-012604-0202	6	2000	50	512	12.9	149.5	3,587.2
2/9/2004	VS-SVE-INF-020904-0207	6	2000	40	512	21.3	161.0	3,863.0
2/24/2004	VS-SVE-INF-022404-0212	6	2000	45	512	19.5	175.9	4,220.7
3/10/2004	VS-SVE-INF-031004-0262	6	2000	48	512	10.3	183.9	4,412.5
4/5/2004	VS-SVE-INF-040504-0267	6	2000	66	512	11.9	199.1	4778.4
4/27/2004	VS-SVE-INF-042704-0272	6	2000	68	512	5.0	213.9	5133
5/11/2004	VS-SVE-INF-051104-0277	6	2000	64	512	13.4	227.1	5,450.0
6/1/2004	VS-SVE-INF-060104-0282	6	2000	62	512	14.8	246.3	5,910.7
6/22/2004	VS-SVE-INF-062204-0332	6	2000	68	512	7.7	267.1	6,411.0
7/13/2004	VS-SVE-INF-071304-0337	6	2000	76	512	15.4	288.1	6,914.3
7/22/2004	VS-SVE-INF-072204-0342	6	2000	80	512	16.1	294.4	7,065.3
8/16/2004	VS-SVE-INF-081604-0347	6	2000	75	512	5.4	310.9	7,460.5
9/28/2004	VS-SVE-INF-092804-0423	6	2000	60	512	17.4	353.7	8,489.0
10/19/2004	VS-SVE-INF-101904-0428	6	2000	50	512	66.9	374.7	8,993.0
11/17/2004	VS-SVE-INF-111704-0433	6	2000	51	512	47.9	403.75	9,690.0
12/21/2004	VS-SVE-INF-122104-0493	6	2000	54	512	9.9	437.7	10,503.8

Influent Sample Parameters

Vestal, Area 4

SAMPLE DATE	SAMPLE ID	VACUUM PRESURE (inches Hg)	RPM	TEMPERATURE (degrees F)	FLOW (cfm)	PID	OPERATION DAYS	STATION HOUR METER
1/12/2005	VS-SVE-INF-011205-0498	6	2000	50	512	10.9	459.7	11,032.5
2/9/2005	VS-SVE-INF-020905-0503	6	2000	52	512	12.3	487.6	11,702.8
3/23/2005	VS-SVE-INF-032305-0551	6	2000	60	512	9.6	529.6	12,710.4