QUARTERLY PROGRESS REPORT NO. 4
(April 1 through June 30, 2004)

FULL SCALE IN-SITU SOIL VAPOR EXTRACTION SYSTEM VESTAL AREA 4, VESTAL, NEW YORK

Prepared by:

SEVENSON PRAC TEAM MEMBER
Envirogen/Shaw, Inc.
103 College Ave SE
Grand Rapids, MI 49503

Submitted by:
SEVENSON ENVIRONMENTAL SERVICES, INC.
2749 Lockport Road
Niagara Falls, New York 14305

29 October 2004

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

Sevenson Environmental Services, Inc.

November 2, 2004

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: Quarterly Progress Report No. 4
Contract # DACW41-01-D-001-0006
Vestal Wellfield 1-1, Area 4, Vestal, New York

Sirs:

Enclosed is Quarterly Progress Report No. 4 for the referenced contract. This report covers system operations during April, May, and June 2004. O&M activities for the period as well as sampling activities are summarized in this report. Copies of the analytical data are included.

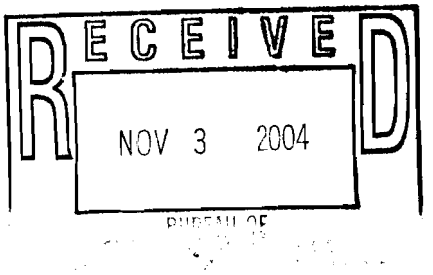
Please email me at cmarshall@sevensonphilly.com or call at 610-388-0721 if you've any questions.

Sincerely,
Sevenson Environmental Services, Inc.

Cassandra T. Marshall
Project Manager

CTM/1

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



(716) 284-0431
2749 Lockport Road, Niagara Falls, New York 14305
An Equal Opportunity Employer

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 10/29/04	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.	TRANSMITTAL NO.
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	DACW-41-01-D-0001 T.O.# 0006	28 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 E USE CODE
				SPEC. PARA. NO.	DRAWING SHEET NO.		
a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*
1.	Quarterly Report No. 4		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.

Cassandra J. Marshall
NAME AND SIGNATURE OF CONTRACTOR
Sevenson Environmental Services Inc

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 ____

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(April 1 through June 30, 2004)

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Prepared by:

SEVENSON PRAC TEAM MEMBER
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103 College Ave SE
Grand Rapids, MI 49503

Submitted by:
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2749 Lockport Road
Niagara Falls, New York 14305

29 October 2004

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1.0 INTRODUCTION

Sevenson Environmental Services, Inc. and their subcontractor (Shaw Environmental and Infrastructure (SHAW), formerly Envirogen, Inc. of Lansing, Michigan), has prepared this Quarterly Report No. 4 for the Full Scale Soil Vapor Extraction System (SVE System or System) at the Vestal Area 4 Site in Vestal, NY (Site). This report was prepared on behalf of the United States Environmental Protection Agency (USEPA) and the United States Army Corp of Engineers (USACE) who are conducting the Remedial Action for the Vestal Area 4 Site. This report was prepared under contract DACA41-01-D-0001-0006. Sevenson's remedial action work is under supervision of the USEPA and USACE. The fourth Quarterly Progress Report is provided and prepared in accordance with the approved Workplan. This report discusses the System operation based on data collected during April, May, and June 2004, and also discusses System operation and maintenance during these months.

Figure 1 (shown at the end of this report) is a Site plan showing the SVE System treatment area, cell distribution buildings, and the main SVE treatment building. Construction of the SVE System began in mid-April 2003 and was completed on June 23, 2003. The remedial action began on June 27, 2003, after completion of a successful start-up sequence. The SVE System is operated in accordance with the approved Workplan, O&M Manual and the Final Design documents.

Figure 1 depicts System and SVE well polarity (withdrawal, active injection or temporarily off-line) following the System installation.

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. Section 5.0 discusses analysis of data specific to the Quarterly Report period between April and June 2004. Section 6.0 discusses problems encountered during the reporting period and their respective corrective measures. Section 7.0 lists anticipated future activities.

2.0 SUMMARY OF ACTIVITIES CONDUCTED DURING THE REPORTING PERIOD

The O&M inspections/site visits were performed on April 5, 23 and 27; May 11, and June 1, 21 and 22, 2004. Air flow and Photo Ionic Detector (PID) readings were measured throughout the System on April 27; May 11; and June 21 and 22, 2004. A full round of process air samples was collected from withdrawal wells on June 21 and 22, 2004.

Samples of process air through the carbon treatment system were collected on April 5 and 27; May 11; and June 1 and 22, 2004.

The system was down for 1-2 days due to a faulty fuse in the injection side heat exchanger, which was repaired on April 23, 2004.

During the week of April 26, Shaw's technicians performed O&M services, which included the cleaning of numerous SVE flow meters (removal of water staining and silts).

The system was down on May 9, 10 and 18 due to lightning strikes and electrical power surges associated with severe thunderstorms. Shaw technicians reset the breakers and started the system after each event.

During the week of May 10, Shaw's technicians performed O&M services, which included the cleaning of numerous SVE flow meters (removal of water staining and silts)

The system was down for parts of June 1, 21 and 22 for monthly operations and maintenance and to rotate the carbon units.

On June 24, 18 drums (approximately 4,000 pounds) of spent carbon were transported to Darlington, PA for regeneration.

Physical monitoring of the System parameters, such as PID readings, temperature, and air flow measurements, along with routine maintenance of the System, was conducted during the April through June reporting period in accordance with the O&M Manual. These O&M measurements and activities were recorded on daily O&M logs, which are provided in Appendix A.

The System operated for 27 days in April, 25 days in May and 28 days during June 2004 bringing the total operational time to approximately 278 days since the June 23, 2003, start-up.

Health and Safety (H&S) monitoring was conducted as outlined in the Health and Safety Plan (HASP). No significant events were observed during this monitoring period.

3.0 SVE SYSTEM MONITORING AND ADJUSTMENTS

This section summarizes monitoring of and adjustments made to the SVE System during the reporting period. Monitoring of the System included pressure/vacuum readings, PID 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, which are provided in Appendix A. The chain-of-custody forms and laboratory data summary sheets are provided in Appendix B. Monitoring and adjustments were performed in accordance with the O&M Manual.

3.1 Pressure/Vacuum Readings

Pressure/vacuum measurements were taken across the air blowers and carbon units, and recorded on the daily log sheets (Appendix A). These measurements were collected on April 4 and 27; May 11; and June 1, 21 and 22, 2004.

3.1.1 Vacuum Blowers

Pressure drops were measured across the vacuum blowers and filter during System operation. The pressure across the vacuum blower and filter ranged between 6 and 9 inches of water (H_2O).

3.1.2 Carbon Units

The total pressure drop across the two carbon units averaged 20 inches of H_2O during the reporting period. This pressure drop includes the carbon units and the connecting piping and fittings.

3.1.3 Well Field

Vacuum flow rate and PID reading for the individual SVE wells on April 27, May 11, and June 21 and 22, 2004, are listed in Table 1. On April 27 vacuum flow rates at the cell distribution buildings ranged from less than 5 to 25 standard cubic feet per minute (scfm) for Cell 1 and less than 5 to 25 scfm for Cell 2. Injection flow rates ranged from 15 to 25 scfm for Cell 1 from less than 5 to 10 in Cell 2.

On May 11, 2004 vacuum flow rates at the cell distribution buildings ranged from less than 5 to 24 scfm for Cell 1 and less than 5 to 25 scfm for Cell 2. Injection flow rates ranged from 10 to 25 scfm for Cell 1 and from less than 5 to 13 scfm in Cell 2.

On June 21 and 22, 2004 (the quarterly monitoring event) vacuum pressures at the cell distribution buildings manifolds ranged from 83 inches of H_2O for Cell 1 to 84 inches of H_2O for Cell 2. Injection pressure was 40 inches of H_2O for both Cell 1 and Cell 2.

3.2 Temperatures

Process air stream temperatures, measured at the discharge of the air blowers and across the carbon treatment system, were recorded on the O&M daily log sheets (Appendix A).

Temperature measurements at the vacuum air blowers did not exceed 180°F, which was below the design settings of 220°F. The temperature at the discharge of the vacuum blower was measured at an average of 183°F, and the temperature at the discharge of the injection blower

was measured at an average of 153°F. Temperature at the vacuum header within the Cell distribution buildings ranged from 50°F to 62°F, and ranged between 50°F and 62°F at the injection header. The carbon treatment system influent air stream temperatures ranged from 68°F to 86°F.

3.3 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 are provided in Table 1 for April 27, May 11, and June 21 and 22, 2004.

3.3.1 Total System Process Air Flow

During the reporting period, air flow throughout the entire System was measured as outlined in the O&M Manual. The air flow through the System was calculated by measuring the pressure drop across the blowers, and using this value to obtain the air flow from the blower curve computer model supplied by the manufacturer. Calculated air flow rates are contained in Table 2. Based on this data, the calculated airflow through the entire System between April and June 2004 averaged 512 scfm. The bypass airflow for April 27, May 11, and June 21 and 22 was 210 scfm (Table 1). The entire system flow is a culmination of the bypass flow and the individual flow rates. Estimated wellfield airflow was 355 scfm.

3.3.2 SVE Well Process Air Flow

Individual SVE withdrawal and injection well process airflow measurements were recorded on April 27, May 11, and June 21 & 22, 2004. This data is contained in Table 1.

Total SVE well air flow on the withdrawal side of the System was 512 scfm April 27, May 11, and June 21 & 22, 2004.

3.4 Process Air VOC Concentrations

Process air samples were collected during the reporting period on April 5 and 27; May 11; and March 1 and 22, 2004. Samples were collected and analyzed in accordance with the O&M Manual. The withdrawal well process air analytical results and the carbon treatment system process air analytical results are contained in Table 2. Quality Assurance/Quality Control (QA/QC) analytical results for the process air samples are also presented in Table 2. The laboratory data summary sheets, chain-of-custody forms, and field sample log book notes are provided in Appendix B.

3.4.1 SVE Withdrawal Wells

Quarterly sampling of the SVE withdrawal wells occurred on June 21 and 22, 2004. Concentrations of total targeted VOCs at individual wells ranged from 1.56 parts per million by volume (ppm_v) in well E2, to 257.53 ppm_v in well E5 (Table 3). Trichloroethene (TCE) and 1,1,1-trichloroethane (1,1,1-TCA) show the highest concentrations. Quality Assurance/Quality Control (QA/QC) analytical results for the wells are also presented in Table 3.

The total targeted VOC concentration contours using the June analytical data are illustrated in Figure 2. Figures 3 and 4 show individual contaminant concentrations of 1,1,1-TCA and TCE, respectively. The highest VOC concentrations were located in the areas of cell 1 between wells B2, C2, and D1; and D4, E3, E4, and E5; and cell 2 of the treatment area in the vicinity of well K3.

3.4.2 Carbon Process Air Control Samples

Carbon treatment system process air control samples were collected from three (3) sample ports identified and illustrated on Figure 5.

Total System VOC samples are collected prior to the combined process air stream entering the carbon treatment system. System samples were labeled "INFLUENT", "MID", and "EFFLUENT".

Total System samples were collected April 5 and 27; May 11; and June 1 and 22, 2004. The total targeted influent VOC concentration averaged 16.11 ppm_v over the reporting period (Table 2). TCE and 1,1,1-TCA constitute the majority of the VOC mass in the process air stream. Concentrations of target VOCs in the total System samples collected since the initial startup of the System in June 2003 are shown in Figure 6.

Between carbon bed ("MID") and after carbon bed ("EFFLUENT") samples were also collected on the same days as the total System sample to evaluate VOC breakthrough and to determine when carbon change-outs should be performed.

3.4.3 QA/QC Process Air Samples

QA/QC process air samples, including duplicates, sample pump blanks, trip blanks, and instrument blanks, were collected during the sampling events. Duplicates of withdrawal well samples E4 and K3 were collected and analyzed for the targeted VOCs. The results of the analysis are show on Table 3. The sample pump blank concentrations of total targeted compounds were below the detection limit (0.05 ppm_v). The trip and instrument blanks concentrations were also below the detection limit for total targeted compounds.

4.0 VOC YIELD

This section details the System VOC yield distribution based on the individual SVE withdrawal well samples collected during the June 21 and 22, 2004 sampling event. Also discussed in this section is the total System VOC yield based on the air flow through the blowers and the composite/total System VOC analytical results.

4.1 SVE Withdrawal Well VOC Yields

The VOC yield rate for each SVE withdrawal well was calculated using the Ideal Gas Law, the average molecular weight of the targeted compounds, the flow rate for each individual withdrawal well, and the total targeted VOC concentration for each well. Table 3 summarizes the yield rate in pounds per day (lbs/day) for each SVE withdrawal well as measured during the June sampling event.

The VOC yield rates varied from non-measurable to 2.79 lbs/day (well E4). No wells had a non-measurable yield because of only low VOC concentration (PID reading less than 10 ppm), and no wells had a non-measurable yield due to only very low air flow (5 scfm or lower) only. Wells B1 and E2 had a non-measurable yield due to both a low VOC concentration and very low airflow. The table below (see below) summarizes the wells with non-measurable VOC yield rates.

At this time, some wells located in areas with high contaminant concentrations (as shown in the Pre-Remediation Geoprobe Sampling Summary Report, Vestal Well 1-1, Operable Unit 2, Area 4, March 21, 2002), currently show low VOC yield rates. Air flow rates and VOC contaminant levels with this off-gas data may be limited by subsurface geologic conditions (silt lenses), preferential air flow patterns, and soil moisture content. These conditions are unpredictable and change with varying Site conditions.

Figure 7 illustrates SVE withdrawal well total targeted VOC yield rate contours for the June sampling event. Figures 8 and 9 show individual contaminant yield rates of 1,1,1- TCA and TCE, respectively. Most of the withdrawal wells in the treatment area indicate a yield of less than 0.10 lbs/day total targeted VOC. Higher yield rates were observed in the vicinity of wells B2, C2, D1, D4, E4, E5, G1, and K3.

SUMMARY OF WELLS WITH LOW YIELD RATES

SVE WELL #	FLOW RATE	PID READINGS	LOW FLOW	LOW PID (<10ppm)	Soil Concentrations	Proposed Actions to improve	Notes/Action List
B1	5	0.3	X	X	Low	None	See paragraph below.
E2	5	0.3	X	X	Medium	None	See paragraph below.

There are no proposed actions to improve the System (Table 6). The new configuration (as of February 9, 2004) of the System focuses on Cell 1. There have been elevated sustained contaminant concentrations and yields for the majority of 'hot spots' in Cell 1. We will monitor the individual wells and recommend action if the concentrations and yields drop substantially for an extended period of time.

4.2 Total System VOC Yield

The total System VOC yield (Table 4) was calculated using the total System air flow rate (Section 3.3.1) and the influent System sample ("INFLUENT") analytical results. Based on these calculations, the System has yielded approximately 1,511 pounds of VOCs through the June 22, 2004 sampling event (Table 5). Therefore, the average yield rate of the System between June 23, 2003 and June 22, 2004, is 5.66 lbs/day. TCE constitutes approximately 46 percent and 1,1,1-TCA approximately 54 percent of the total VOC yield since the beginning of the SVE System operation. The increasing mass of total targeted VOCs removed from the treatment area is illustrated in Figure 10.

5.0 QUARTERLY REPORT No. 4 ANALYSIS OF MONITORING DATA

This section provides additional analysis of operational data collected between April and June 2004. Total System data was evaluated for this time period. The following evaluations were performed: analyses of total targeted VOC concentrations and yield rates vs. time and Total Targeted Contaminate Yield start-up to June 22, 2004.

5.1 Total System

Table 2 summarizes the total System VOC concentrations and Table 4 summarizes the total contaminant yield per day of each VOC within the process air stream. Figure 6 illustrates concentration and daily yield rates of targeted contaminant vs. time, and Figure 10 illustrates total targeted contaminant yield from start-up to June 22, 2004. As expected, the yield rate and concentration trends closely match.

TCA is the dominant compound detected (Table 4), ranging from 46 to 55 percent of the VOC component of the total System process air stream. 1,1,1-TCA ranged from approximately 45 to 54 percent of the total (Table 4).

There is a decrease of the average contaminant yield rate from quarter 3 through quarter 4 (4.53 lbs/day and 4.08 lbs/day, respectively).

After reconfiguration of the SVE well polarity and subsequent reduction of flow rates/vacuum pressure to treatment area number 2 the yield ratio of TCE to 1,1,1-TCA from individual wells has significantly increased (Figure s 8 and 9). This is due to the ability of 1,1,1-TCA to be released from inter soil pore spaces at a faster rate than TCE.

The total System air flow continues at a stable rate (512 scfm), which was within 2 to 3 percent of the target air flow rate of 500 scfm.

6.0 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 fourth quarter.

During this reporting period, some wells were recorded with no air flow. These problems are related to the presence of condensate water in the process piping. Maintenance activities have been performed to remove (increased vacuum to selected wells) and control the amount of water being drawn into the treatment System (closing of selected wells). Should the site soils begin producing substantial quantities of condensate, the pump-out time will be increased in wells constructed with condensate drop legs.

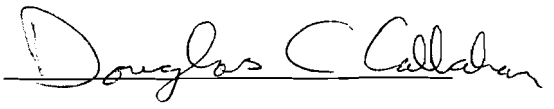
7.0 ANTICIPATED ACTIVITIES

The following activities are anticipated for the next reporting period:

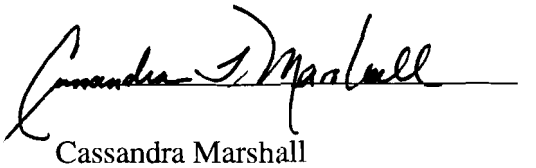
- Continue operations and maintenance of the SVE system,
- Review of SVE well flow patterns and VOC removal (adjustments if necessary),
- The next quarterly sampling event is scheduled for September 2004, and
- A carbon change out is anticipated during the next quarter.

8.0 AUTHOR IDENTIFICATION

This report was prepared and checked by:



Douglas C. Callahan
Project Manager
Envirogen/Shaw, Inc.



Cassandra Marshall
Project Manager
Sevenson Environmental Services, Inc.

FIGURES

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

Edge of Asphalt Parking (Typical)

AREA 4 BOUNDARY

CELL 1 DISTRIBUTION BUILDING

CELL 2 DISTRIBUTION BUILDING

6" Sanitary Sewer

Cleanout

Ditch Flow

12" Corrugated Metal Drainage Pipe

Benchmark
file cut in west
rim of manhole
Elevation = 824.30'

Boundary for 6" Buried Mobil Oil Corporation Gas line

825

824

823

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

LEGEND

A5 ● – INJECTION SVE well

D3 ○ – VACUUM SVE well

D3 ⊕ – Nested VACUUM SVE well

H2 ▷ – SVE well shut off

0 20 40
SCALE IN FEET

NO.	DATE	ISSUED FOR	BY
1	4-26-02	ISSUED FOR CLIENT REVIEW	DC

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

ENVIROGEN
Shaw E&I Engineering of New York, P.C.
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 070833

DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATED	6-22-04

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 10

P:\VESTAL\Autocad Drawings\PH 2 – AREA 4 – Rev 4-23-02\VES-A4-01.DWG PRO. # 68073 DRG. 4/26/02 – 1760

The MATCO Electronics Group
American Board

STATE ROAD

Approximate edge of asphalt

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

AREA 4

Asphalt Parking

Asphalt Parking

Edge of Asphalt Parking (Typical)

Edge of Asphc

6" Sanitary Sewer

Cleanout

Cleanout

Cleanout

Cleanout

14" ± Corrugated Metal Drainage Pipe

CELL 2 DISTRIBUTION BUILDING

CELL 1 DISTRIBUTION BUILDING

AREA 4 BOUNDARY

Benchmark
file cut in west
rim of manhole
Elevation = 824.38'

Boundary for 6" Buried Mobil Oil Corporation Gas line

Overhead Electric Line

825

824

823

A3 NA
B3O 5.69
C3O 2.22
D3O 10.94
E3O NA
F3O NA
G3O 4.19
H3O 13.54
I3O 8.85
J3O 10.08
K3O 88.28
L3O NA
M3O 2.91
N3O NA
A2 NA
B2O 95.83
C2O 48.83
D2O NA
E2O 1.56
F2O NA
G2O 4.19
H2O NA
I2O NA
J2O 2.79
K2O 2.35
L2O 16.84
M2O 10.08
N2O NA
A1 NA
B1O 1.79
C1 NA
D1O 80.83
E1 NA
F1 NA
G1O 13.06
H1O 10.37
I1O 2.85
J1 NA
K1 NA
L1 NA
M1 NA
N1 NA
F4 NA
F5 NA
F6 NA
J4O 3.60
J5 4.06
J6 2.46
K4 NA
K5O 14.63
L4O NA
M4 NA
N4 NA
N2 NA
N3 NA

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

LEGEND

- A5 ● – INJECTION SVE well
- D3 O – VACUUM SVE well
- D3 ◉ – Nested VACUUM SVE well
- D3 ▷ – SVE well shut off
- – Utility pole and overhead line
- – Water main
- – Sanitary sewer line/manhole
- – Natural gas or petroleum line
- – Elevation Contour Line
- 1.27 – TTC Concentration (ppmw)
- NA – Not Available
- – 0–50 (ppmw) TTC Concentration
- – 50–100 (ppmw) TTC Concentration
- – 100–1,000 (ppmw) TTC Concentration
- – >1,000 (ppmw) TTC Concentration

0 20 40
SCALE IN FEET

NO.	DATE	ISSUED FOR	BY
▲	4-26-02	ISSUED FOR CLIENT REVIEW	DC

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

ENVIROGEN
Shaw E&I Engineering of New York, P.C.
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 078823

DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATE	6-30-04

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

TITLE: TOTAL TARGET VOC CONCENTRATION
JUNE 21 & 22, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4– 2
SHEET	2 OF 10

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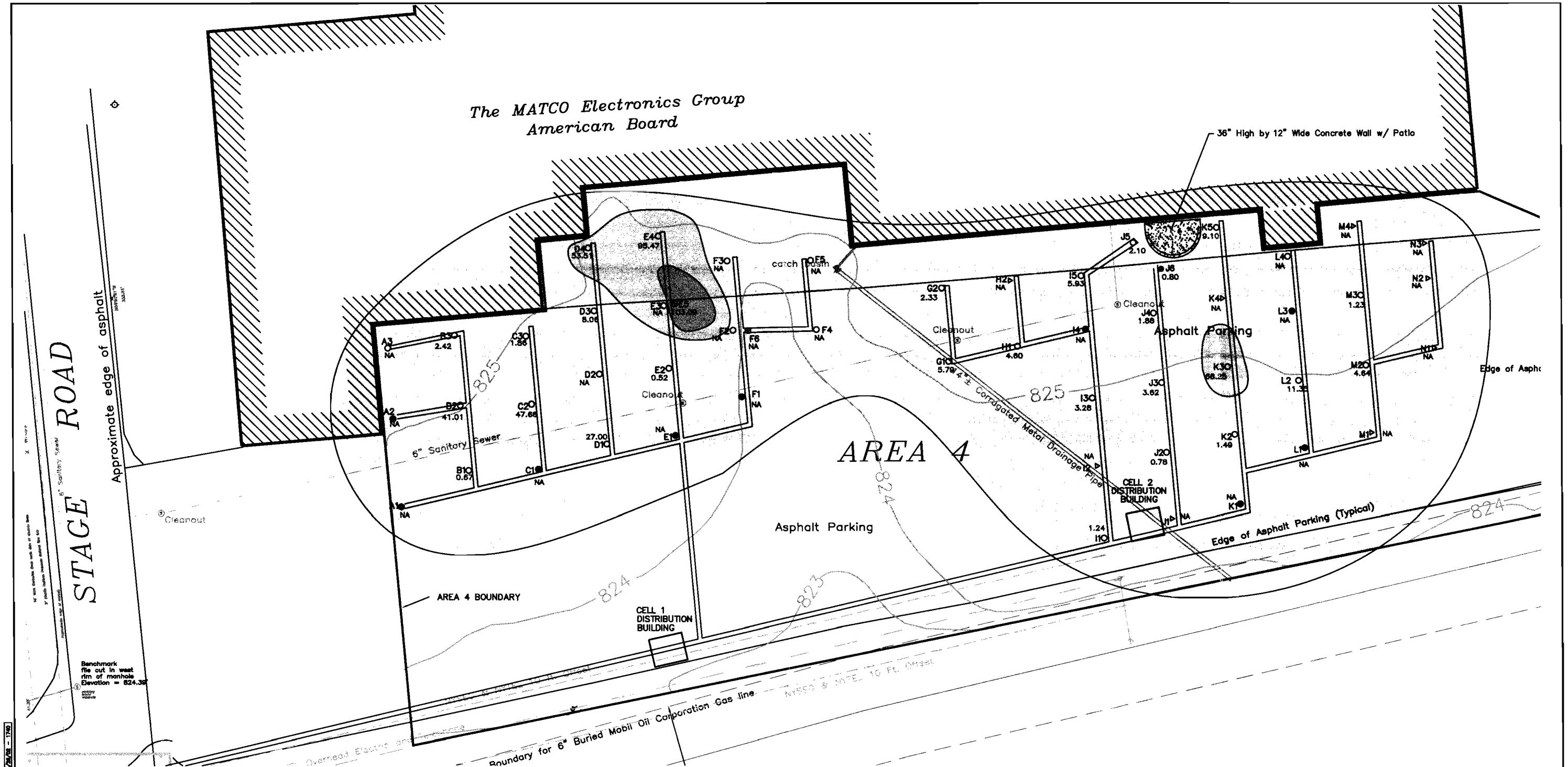

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

LEGEND

- A5 ⊕ – INJECTION SVE well
- D3 ○ – VACUUM SVE well
- D3 ⊕ – Nested VACUUM SVE well
- D3 ▷ – SVE well shut off
- – Utility pole and overhead line
- – Water main
- – Sanitary sewer line/manhole
- – Natural gas or petroleum line
- – Elevation Contour Line
- 1.27 – 1,1,1 TCA Concentration (ppmv)
- NA – Not Available
- – 0–50 (ppmv) 1,1,1 TCA Concentration
- – 50–100 (ppmv) 1,1,1 TCA Concentration
- – 100–1,000 (ppmv) 1,1,1 TCA Concentration
- – >1,000 (ppmv) 1,1,1 TCA Concentration

0 20 40
SCALE IN FEET

NO.	DATE	ISSUED FOR	BY
▲	4-28-02	ISSUED FOR CLIENT REVIEW	DC

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

ENVIROGEN
Shaw E&I Engineering of New York, P.C.
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	6-30-04

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

TITLE: 1,1,1 TCA CONCENTRATION (ppmv)
JUNE 21 & 22, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4- 3
SHEET	3 OF 10

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The MATCO Electronics Group
American Board

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

STATE ROAD

Approximate edge of asphalt

Cleanout

6" Sanitary Sewer

AREA 4

Asphalt Parking

AREA 4 BOUNDARY

CELL 1 DISTRIBUTION BUILDING

CELL 2 DISTRIBUTION BUILDING

4" ± Corrugated Metal Drainage Pipes

Edge of Asphalt Parking (Typical)

Edge of Asphalt

Benchmark
file cut in west
rim of manhole
Elevation = 824.38'

Boundary for 6" Buried Mobil Oil Corporation Gas line

N/SEL & N/EL 10 Ft. Offset

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

LEGEND

- A5● – INJECTION SVE well
- D3○ – VACUUM SVE well
- D3◉ – Nested VACUUM SVE well
- D3▷ – SVE well shut off
- – Utility pole and overhead line
- – Water main
- – Sanitary sewer line/manhole
- – Natural gas or petroleum line
- – Elevation Contour Line
- 1.27 – TCE Concentration (ppmv)
- NA – Not Available
- – 0–50 (ppmv) TCE Concentration
- – 50–100 (ppmv) TCE Concentration
- – 100–1,000 (ppmv) TCE Concentration
- – >1,000 (ppmv) TCE Concentration

0 20 40
SCALE IN FEET

NO.	DATE	ISSUED FOR	BY
1	4-29-02	ISSUED FOR CLIENT REVIEW	DC

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

ENVIROGEN
Shaw E&I Engineering of New York, P.C.
103 COLLEGE AVE SE
GRAND RAPIDS, MICHIGAN 49503

US Army Corps of Engineers
Kansas City District
CONTRACT No. DACW41-01-D-0001

STEWART HARRIS ARMAND
NEW YORK PROFESSIONAL ENGINEER
LICENSE NUMBER 078823

DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATE	6-30-04

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

TITLE: TCE CONCENTRATION (ppmv)
JUNE 21 & 22, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4- 4
SHEET	4 OF 10

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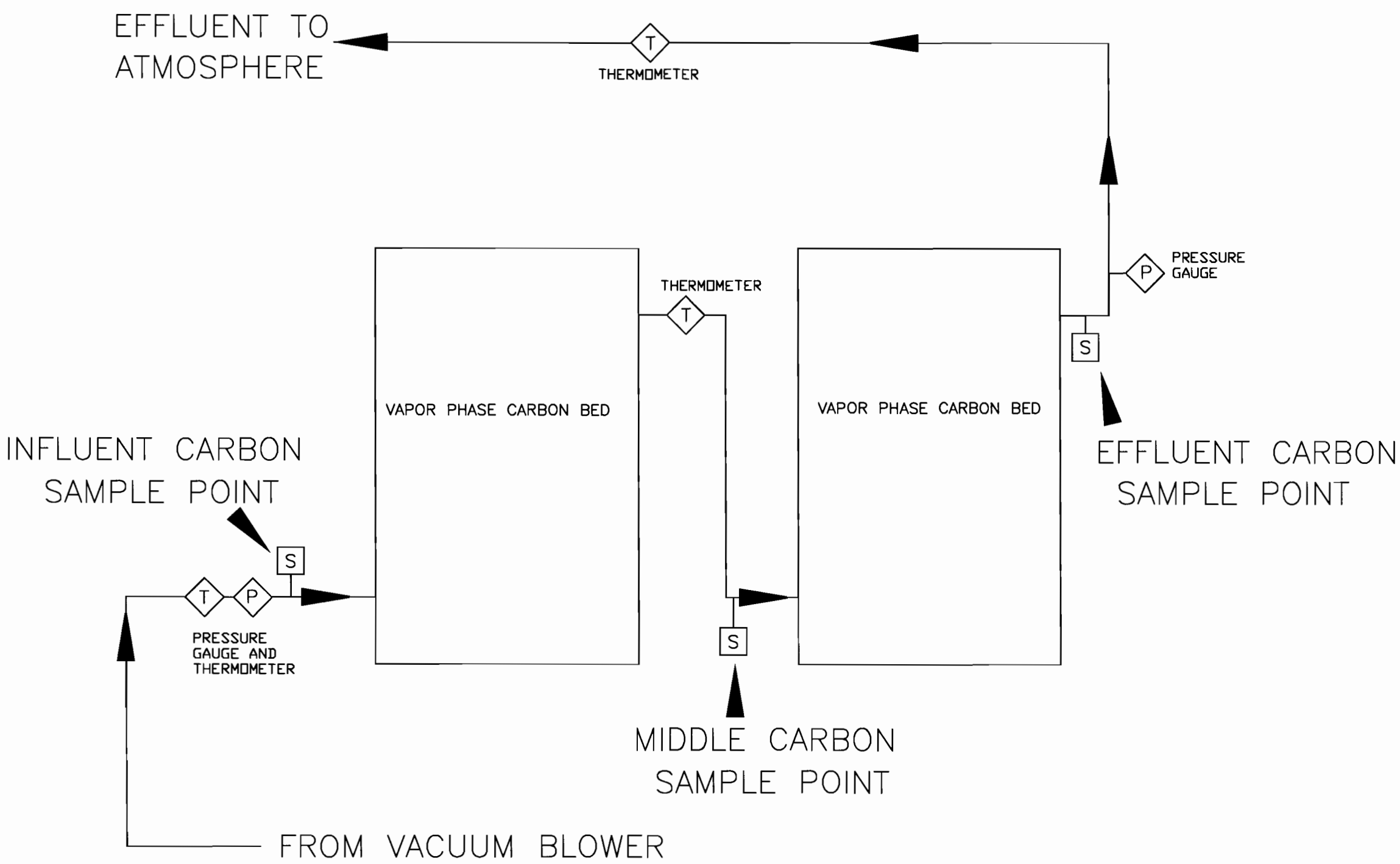

NO.	DATE		BY
1	4-29-02	ISSUED FOR CLIENT REVIEW	DC
		ISSUED FOR	

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

ENVIROGEN
Shaw E&I Engineering of New York, P.C.
103 COLLEGE AVE SE
WYOMING, MI 49503

US Army Corps of Engineers
Kansas City District
CONTRACT No. DACW41-01-D-0001

STEWART HARRIS ABRAMS
NEW YORK PROFESSIONAL ENGINEER
LICENSE NUMBER 079833

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CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATED	6-22-04

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

TITLE: CARBON SYSTEM SAMPLING DIAGRAM

SCALE	AS SHOWN
REVISION	AS BUILT
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4- 5
SHEET	5 OF 10

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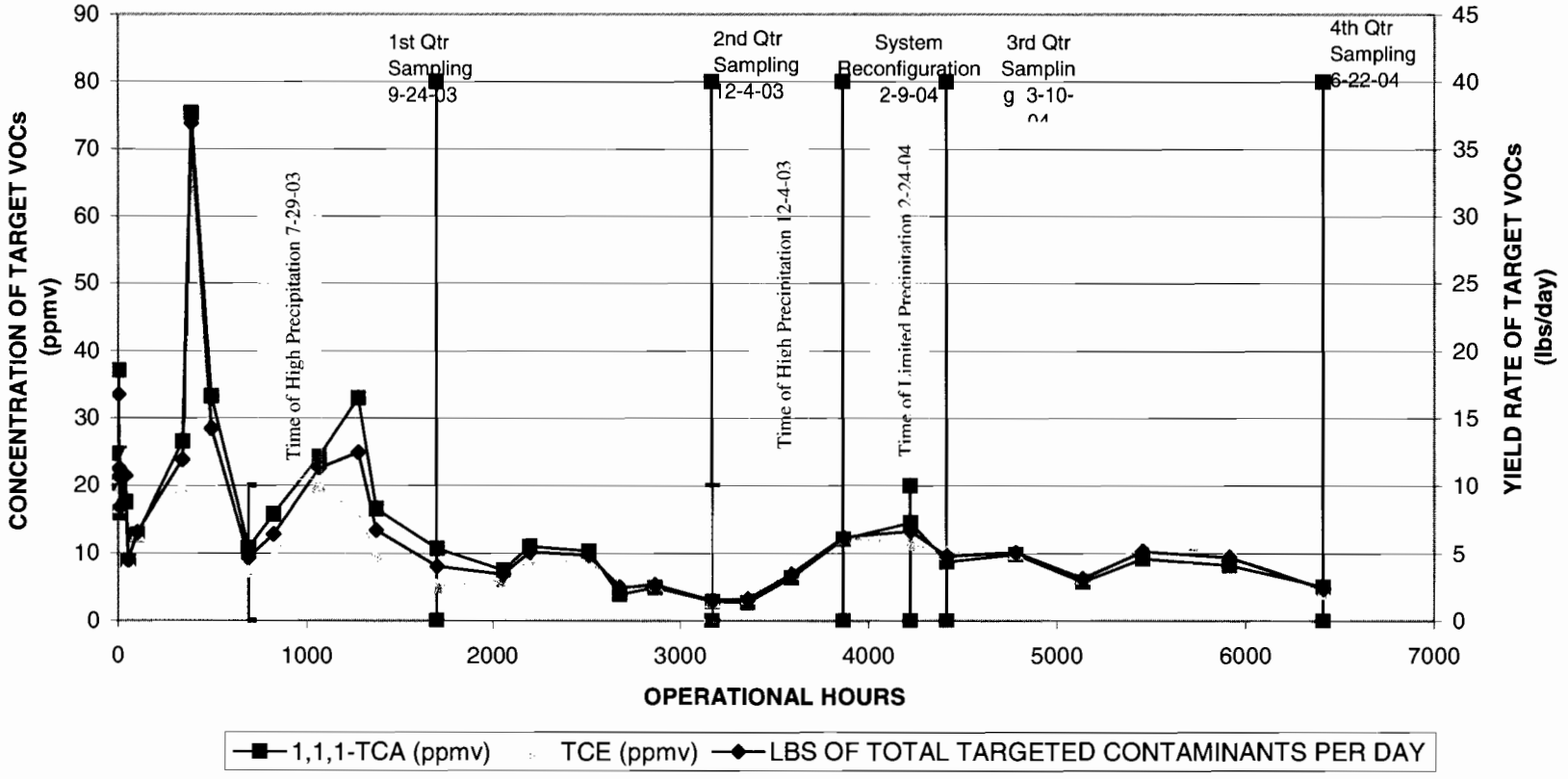
FIGURE 6
CONCENTRATION (ppmv) AND YIELD RATE (lbs/day)
OF TOTAL TARGET VOCs Vs. TIME
TOTAL SYSTEM SAMPLE
VESTAL AREA 4



The MATCO Electronics Group
American Board

STAGE ROAD

Approximate edge of asphalt

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

AREA 4

Asphalt Parking

Asphalt Parking

Edge of Asphalt Parking (Typical)

Edge of Asphalt

Cleanout

Cleanout

Cleanout

Cleanout

6" Sanitary Sewer

Corrugated Metal Drainage Pipe

CELL 2 DISTRIBUTION BUILDING

CELL 1 DISTRIBUTION BUILDING

AREA 4 BOUNDARY

Benchmark
file cut in west
rim of manhole
Elevation = 824.38

Boundary for 6" Buried Mobil Oil Corporation Gas line

NYSEG & NYTEL 3' Ft. Offset

825

824

823

A3 NA
B3 0.01
C3 0.01
D3 0.03
F3 NA
catch basin
E5 NA
F4 NA
F2 NA
F6 NA
D2 NA
E2 0.00
F1 NA
A2 NA
C2 9.27
B2 0.00
C1 NA
E1 NA
A1 NA
B1 0.00
G2 0.05
H2 NA
I5 0.03
J5 0.01
K5 0.04
J6 0.01
L4 NA
M4 NA
N3 NA
K4 NA
L3 NA
M3 0.01
N2 NA
H1 NA
H3 0.03
J4 0.01
L2 0.04
M2 0.02
N1 NA
I3 0.02
J3 0.02
K3 0.11
K2 0.01
L1 NA
M1 NA
J2 0.01
I2 NA
J1 NA
K1 NA
I1 0.01

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

LEGEND

- A5 ● – INJECTION SVE well
- D3 O – VACUUM SVE well
- D3 ● – Heated VACUUM SVE well
- D3 ▷ – SVE well shut off
- – Utility pole and overhead line
- – Water main
- – Sanitary sewer line/manhole
- – Natural gas or petroleum line
- – Elevation Contour Line
- 1.27 – 1,1,1 TCA Yield (lbs/day)
- NA – Not Available
- – 0–0.05 (lbs/day) 1,1,1 TCA Yield
- – 0.05–0.10 (lbs/day) 1,1,1 TCA Yield
- – 0.10–1.0 (lbs/day) 1,1,1 TCA Yield
- – >1.0 (lbs/day) 1,1,1 TCA Yield

0 20 40
SCALE IN FEET

NO.	DATE	ISSUED FOR	BY
1	4-26-02	ISSUED FOR CLIENT REVIEW	DC

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

ENVIROGEN
Shaw E&I Engineering of New York, P.C.
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 076933

DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATE	6-30-04

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

TITLE: TOTAL TARGET VOC YIELD (lbs/day)
JUNE 21 & 22, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4- 7
SHEET	7 OF 11

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The MATCO Electronics Group
American Board

STAGE ROAD

Approximate edge of asphalt

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

Asphalt Parking

AREA 4

AREA 4 BOUNDARY

CELL 1 DISTRIBUTION BUILDING

CELL 2 DISTRIBUTION BUILDING

Edge of Asphalt Parking (Typical)

Edge of Asphc

6" Sanitary Sewer

± Corrugated Metal Drainage Pipe

catch basin

Cleanout

Benchmark
file cut in west
rim of manhole
Elevation = 824.39

Boundary for 6" Buried Mobil Oil Corporation Gas line

NYSEG & NITEL 1.5 Ft. Offset

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

LEGEND

- A5● – INJECTION SVE well
- D3○ – VACUUM SVE well
- D3◉ – Nested VACUUM SVE well
- D3▷ – SVE well shut off
- – Utility pole and overhead line
- – Water main
- – Sanitary sewer line/manhole
- – Natural gas or petroleum line
- – Elevation Contour Line
- 1.27 – 1,1,1 TCA Yield (lbs/day)
- NA – Not Available
- – 0–0.05 (lbs/day) 1,1,1 TCA Yield
- – 0.05–0.10 (lbs/day) 1,1,1 TCA Yield
- – 0.10–1.0 (lbs/day) 1,1,1 TCA Yield
- – >1.0 (lbs/day) 1,1,1 TCA Yield

0 20 40
SCALE IN FEET

NO.	DATE	ISSUED FOR	BY
▲	4-26-02	ISSUED FOR CLIENT REVIEW	DC

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

ENVIROGEN
Shaw E&I Engineering of New York, P.C.
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	6-30-04

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

TITLE: 1,1,1 TCA YIELD (lbs/day)
JUNE 21 & 22, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681066
DRAWING NUMBER	VES A4- 8
SHEET	8 OF 11

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The MATCO Electronics Group
American Board

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

STAGE ROAD

Approximate edge of asphalt

6" Sanitary Sewer

Cleanout

AREA 4

Asphalt Parking

Corrugated Metal Drainage Pipe

CELL 2 DISTRIBUTION BUILDING

CELL 1 DISTRIBUTION BUILDING

AREA 4 BOUNDARY

Edge of Asphalt Parking (Typical)

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

Boundary for 6" Buried Mobil Oil Corporation Gas line

NYSEG & NYTEL 10 Ft. Offset

Overhead Electric and Telephone

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

LEGEND

- A5● – INJECTION SVE well
- D3○ – VACUUM SVE well
- D3◉ – Heated VACUUM SVE well
- D3▷ – SVE well shut off
- – Utility pole and overhead line
- – Water main
- – Sanitary sewer line/manhole
- – Natural gas or petroleum line
- – Elevation Contour Line

- 1.27 – 1,1,1 TCA Yield (lbs/day)
- NA – Not Available
- – 0–0.05 (lbs/day) 1,1,1 TCA Yield
- – 0.05–0.10 (lbs/day) 1,1,1 TCA Yield
- – 0.10–1.0 (lbs/day) 1,1,1 TCA Yield
- – >1.0 (lbs/day) 1,1,1 TCA Yield

0 20 40
SCALE IN FEET

NO.	DATE	ISSUED FOR	BY
1	4-28-02	ISSUED FOR CLIENT REVIEW	DC

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

ENVIROGEN
Shaw E&I Engineering of New York, P.C.
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 075833

DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATED	6-30-04

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

TITLE
TCE YIELD (lbs/day)
JUNE 21 & 22, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4– 9
SHEET	9 OF 11

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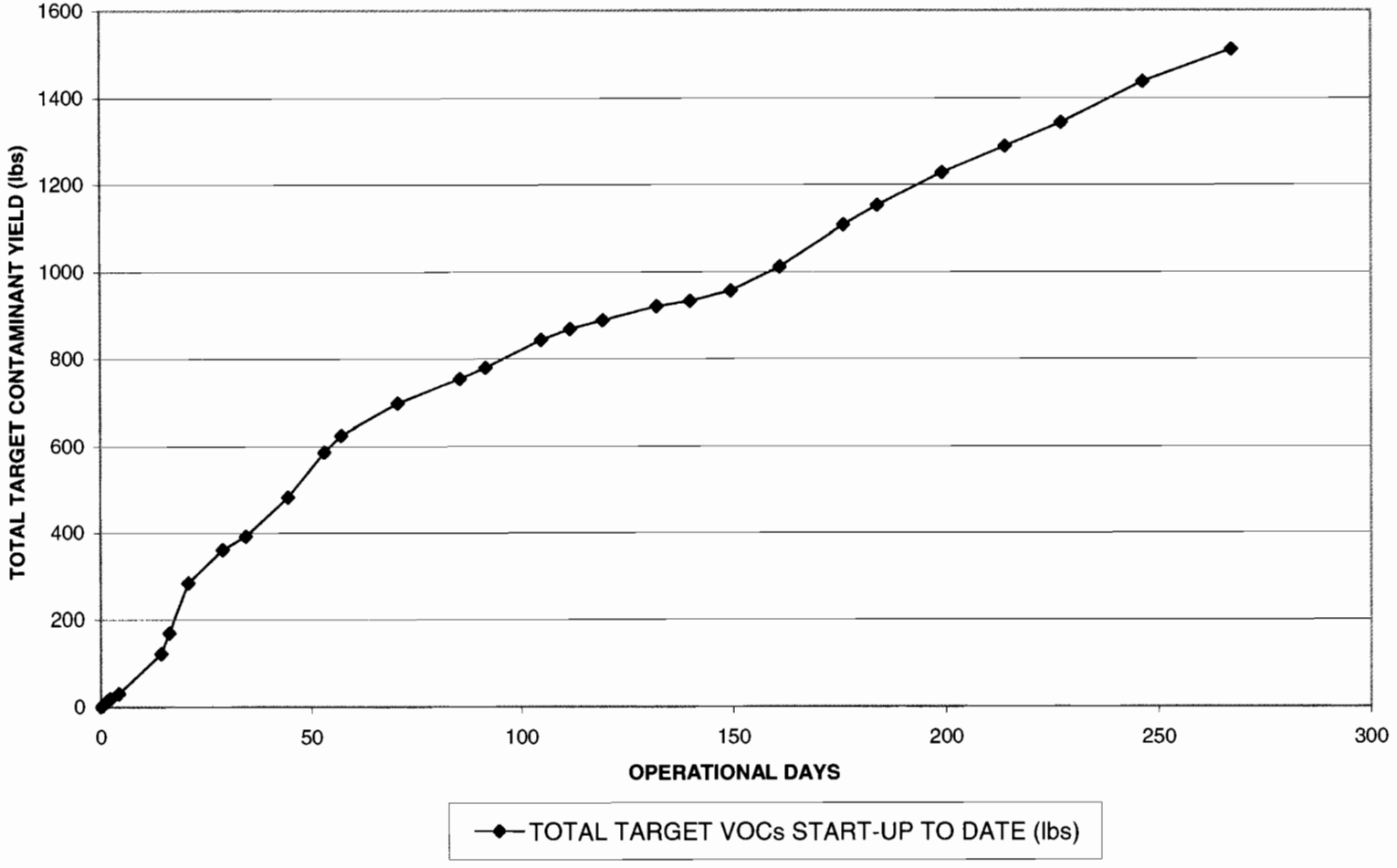
FIGURE 10
TOTAL TARGET CONTAMINANT YIELD START-UP TO DATE (lbs) Vs. TIME
TOTAL SYSTEM SAMPLE
VESTAL, AREA 4



TABLES

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
April 27, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			215			
INFLUENT			512		5.0	
MIDDLE			512		0.4	
EFFLUENT			512		0.2	
A1		X	25	OPEN	NA	LOW
A2		X	15	OPEN	1.1	LOW
A3	X		<5	LF	14.5	LOW
B1	X		22	OPEN	1.3	LOW
B2	X		NA	WATER	NA	LOW
B3	X		<5	LF	8.7	LOW
C1		X	21	OPEN	NA	LOW
C2	X		5	NA	1.8	MEDIUM
C3	X		5	OPEN	2.3	MEDIUM
D1	X		NA	OPEN	NA	LOW
D2	X		5	NA	22.1	MEDIUM
D3	X		5	LF	7.4	HIGH
D4	X		25	OPEN	2.3	HIGH
E1		X	16	OPEN	NA	LOW
E2	X		5	NA	109.0	MEDIUM
E3	X		NA	WATER	NA	HIGH
E4	X		25	OPEN	8	HIGH
E5	X		6	OPEN	128.0	HIGH
F1		X	23	OPEN	NA	LOW
F2	X		8	OPEN	18.7	MEDIUM
F3	X		NA	WATER	NA	MEDIUM
F4	X		NA	WATER	NA	LOW
F5	X		25	OPEN	0.6	LOW
F6	X		5	LF	2.6	LOW
G1	X		25	OPEN	3.6	LOW
G2	X		25	OPEN	8.7	LOW
H1	X		5	LF	9.2	LOW
H2			NA	OFF	NA	LOW
I1	X		<5	LF	3	LOW
I2			NA	OFF	NA	LOW
I3	X		NA	WATER	NA	MEDIUM
I4		X	<5	NA	NA	MEDIUM
I5	X		18	OPEN	16.2	HIGH
J1			NA	OFF	NA	LOW
J2	X		<5	LF	0.4	MEDIUM
J3	X		<5	LF	1.9	HIGH
J4	X		10	OPEN	4.1	HIGH
J5	X		<5	WATER	NA	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
April 27, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J6	X		<5	LF	0.5	HIGH
K1		X	<5	NA	NA	LOW
K2	X		<5	WATER	NA	LOW
K3	X		<5	LF	3.1	MEDIUM
K4			NA	OFF	NA	MEDIUM
K5	X		10	LF	20.2	HIGH
L1		X	<5	NA	NA	LOW
L2	X		<5	WATER	NA	HIGH
L3		X	10	NA	NA	LOW
L4	X		5	LF	NA	LOW
M1			NA	OFF	NA	LOW
M2	X		<5	LF	9.2	LOW
M3	X		<5	WATER	NA	LOW
M4			NA	OFF	NA	LOW
N1			NA	OFF	NA	LOW
N2			NA	OFF	NA	LOW
N3			NA	OFF	NA	LOW

NOTE: During the change-over, the wells had too much water to record a PID reading. This will change once the wells dry out.

LF= limited airflow

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

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
May 11, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			210			
INFLUENT			512		13.4	
MIDDLE			512		0.7	
EFFLUENT			512		0.3	
A1		X	20	OPEN	2.1	LOW
A2		X	14	OPEN	1.1	LOW
A3	X		<5	LF	12.0	LOW
B1	X		20	OPEN	3.2	LOW
B2	X		NA	WATER	NA	LOW
B3	X		<5	LF	6.9	LOW
C1		X	25	OPEN	8.0	LOW
C2	X		<5	LF	1.8	MEDIUM
C3	X		7	OPEN	2.0	MEDIUM
D1	X		NA	OPEN	NA	LOW
D2	X		8	OPEN	16.4	MEDIUM
D3	X		<5	LF	5.8	HIGH
D4	X		20	OPEN	1.1	HIGH
E1		X	10	OPEN	NA	LOW
E2	X		<5	LF	115.6	MEDIUM
E3	X		NA	WATER	NA	HIGH
E4	X		20	OPEN	10.3	HIGH
E5	X		8	OPEN	117.2	HIGH
F1		X	24	OPEN	8.2	LOW
F2	X		6	OPEN	15.0	MEDIUM
F3	X		NA	WATER	NA	MEDIUM
F4	X		<5	LF	1.3	LOW
F5	X		20	OPEN	0.5	LOW
F6	X		<5	LF	1.8	LOW
G1	X		20	OPEN	2.9	LOW
G2	X		25	OPEN	7.6	LOW
H1	X		<5	LF	10.4	LOW
H2			NA	OFF	NA	LOW
I1	X		<5	LF	3.0	LOW
I2			NA	OFF	NA	LOW
I3	X		NA	WATER	NA	MEDIUM
I4		X	<5	NA	NA	MEDIUM
I5	X		20	OPEN	14.9	HIGH
J1			NA	OFF	NA	LOW
J2	X		<5	LF	0.6	MEDIUM
J3	X		<5	LF	2.4	HIGH
J4	X		11	OPEN	3.6	HIGH
J5	X		<5	LF	8.2	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
May 11, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J6	X		<5	LF	0.3	HIGH
K1		X	<5	LF	0.9	LOW
K2	X		<5	WATER	NA	LOW
K3	X		5	LF	2.6	MEDIUM
K4			NA	OFF	NA	MEDIUM
K5	X		9	LF	17.8	HIGH
L1		X	<5	NA	NA	LOW
L2	X		<5	WATER	NA	HIGH
L3		X	13	OPEN	3.0	LOW
L4	X		<5	LF	NA	LOW
M1			NA	OFF	NA	LOW
M2	X		<5	LF	10.5	LOW
M3	X		<5	WATER	NA	LOW
M4			NA	OFF	NA	LOW
N1			NA	OFF	NA	LOW
N2			NA	OFF	NA	LOW
N3			NA	OFF	NA	LOW

NOTE: During the change-over, the wells had too much water to record a PID reading. This will change once the wells dry out.

LF= limited airflow

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

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
June 21 & 22, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			210			
INFLUENT			512		7.7	
MIDDLE			512		0.6	
EFFLUENT			512		0.3	
A1		X	18	OPEN	4.2	LOW
A2		X	15	OPEN	3	LOW
A3	X		5	WATER	NA	LOW
B1	X		5	OPEN	0.3	LOW
B2	X		5	OPEN	47.3	LOW
B3	X		5	OPEN	8.1	LOW
C1		X	25	OPEN	7.2	LOW
C2	X		5	OPEN	52.4	MEDIUM
C3	X		5	OPEN	0.3	MEDIUM
D1	X		5	OPEN	19.8	LOW
D2	X		5	WATER	NA	MEDIUM
D3	X		5	OPEN	17.1	HIGH
D4	X		25	OPEN	22.9	HIGH
E1		X	12	OPEN	5.9	LOW
E2	X		5	LF	0.3	MEDIUM
E3	X		NA	WATER	NA	HIGH
E4	X		25	OPEN	95.7	HIGH
E5	X		8	OPEN	101.4	HIGH
F1		X	25	OPEN	10.6	LOW
F2	X		5	WATER	NA	MEDIUM
F3	X		NA	WATER	NA	MEDIUM
F4	X		NA	WATER	NA	LOW
F5	X		NA	WATER	NA	LOW
F6	X		5	WATER	NA	LOW
G1	X		25	OPEN	10.3	LOW
G2	X		25	OPEN	12.5	LOW
H1	X		5	LF	9.0	LOW
H2			NA	OFF	NA	LOW
I1	X		5	LF	7.2	LOW
I2			NA	OFF	NA	LOW
I3	X		5	OPEN	9.6	MEDIUM
I4		X	<5	NA	NA	MEDIUM
I5	X		5	OPEN	11.5	HIGH
J1			NA	OFF	NA	LOW
J2	X		5	OPEN	0.7	MEDIUM
J3	X		5	OPEN	9.5	HIGH
J4	X		5	OPEN	7.8	HIGH
J5	X		5	OPEN	8.0	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
June 21 & 22, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J6	X		5	OPEN	4.7	HIGH
K1		X	<5	LF	1.0	LOW
K2	X		5	OPEN	6.6	LOW
K3	X		5	OPEN	5.9	MEDIUM
K4			NA	OFF	NA	MEDIUM
K5	X		5	OPEN	6.8	HIGH
L1		X	<5	WATER	NA	LOW
L2	X		5	OPEN	6.9	HIGH
L3		X	6	OPEN	4.3	LOW
L4	X		5	OPEN	2.4	LOW
M1			NA	OFF	NA	LOW
M2	X		5	OPEN	10.1	LOW
M3	X		5	OPEN	4.2	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

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

TABLE 2
ANALYTICAL RESULTS OF CONCENTRATIONS OF TARGET COMPOUNDS
VESTAL AREA 4

SAMPLE DATE	SAMPLE NUMBER	WELL NUMBER	FLOW RATE (SCFM)	PID READINGS (ppm)	1,1,1 TCA (ppmv)	TCE (ppmv)	TOTAL TARGET VOCs (ppmv)
4/5/2004	VS-SVE-INF-040504-0267	INF	512	11.9	9.82	10.18	19.99
4/5/2004	VS-SVE-MID-040504-0268	MID	512	0.8	0.00	0.00	0.00
4/5/2004	VS-SVE-EFF-040504-0269	EFF	512	0.3	0.00	0.00	0.00
4/5/2004	VS-SVE-TB-040504-0271	TB	NA	0.3	0.00	0.00	0.00
4/27/2004	VS-SVE-INF-042704-0272	INF	512	5.0	5.76	6.54	12.30
4/27/2004	VS-SVE-MID-042704-0273	MID	512	0.4	7.42	0.00	7.42
4/27/2004	VS-SVE-EFF-042704-0274	EFF	512	0.2	0.00	0.00	0.00
4/27/2004	VS-SVE-TB-042704-0276	TB	NA	0.3	0.00	0.00	0.00
5/11/2004	VS-SVE-INF-051104-0277	INF	512	13.4	9.21	11.02	20.23
5/11/2004	VS-SVE-MID-051104-0278	MID	512	0.7	7.83	0.10	7.93
5/11/2004	VS-SVE-EFF-051104-0279	EFF	512	0.3	0.00	0.08	0.08
5/11/2004	VS-SVE-TB-051104-0281	TB	NA	0.3	0.00	0.00	0.00
6/1/2004	VS-SVE-INF-060104-0282	INF	512	14.8	8.24	10.29	18.53
6/1/2004	VS-SVE-MID-060104-0283	MID	512	2.7	5.38	0.81	6.19
6/1/2004	VS-SVE-EFF-060104-0284	EFF	512	0.6	5.37	0.00	5.37
6/1/2004	VS-SVE-TB-060104-0286	TB	NA	0.3	0.00	0.00	0.00
6/22/2004	VS-SVE-INF-062204-0332	INF	512	7.7	5.08	4.40	9.48
6/22/2004	VS-SVE-MID-062204-0333	MID	512	0.6	0.00	0.00	0.00
6/22/2004	VS-SVE-EFF-062204-0334	EFF	512	0.3	0.00	0.00	0.00
6/22/2004	VS-SVE-TB-6-062204-0336	TB	NA	0.3	0.00	0.00	0.00

NOTE 1: 1,1,1 TCA= 1,1,1-Trichloroethane
TCE= Trichloroethene
NA = Not Applicable

NOTE 2: INF= Influent
MID= Middle Carbon
EFF= Effluent
TB= Trip Blank

TABLE 3

CONTAMINANT CONCENTRATIONS AND YIELDS

JUNE 21 & 22, 2004

VESTAL, AREA 4

SAMPLE DATE	SAMPLE ID	FLOW (CFM)	PID READING	1,1,1-TCA (ppmv)	TCE (ppmv)	TOTAL TARGETED CONTAMINANTS (ppmv)	LBS OF 1,1,1-TCA	LBS OF TCE	LBS OF TOTAL TARGETED CONTAMINANTS PER DAY
6/21/2004	C2	5	52.4	47.66	61.08	108.75	0.12	0.15	0.27
6/21/2004	E2	5	0.3	0.52	1.04	1.56	0.00	0.00	0.00
6/21/2004	B2	5	47.3	41.01	54.52	95.53	0.10	0.13	0.24
6/21/2004	D4	25	22.9	53.51	54.23	107.74	0.67	0.67	1.33
6/21/2004	D3	5	17.1	8.06	2.88	10.94	0.02	0.01	0.03
6/21/2004	TB-1	NA	0.3	0.00	0.00	0.00	0.00	0.00	0.00
6/21/2004	D1	5	19.8	27.00	33.83	60.83	0.07	0.08	0.15
6/21/2004	E4	25	95.7	95.47	130.33	225.80	1.19	1.60	2.79
6/21/2004	E4-D	25	95.7	93.43	129.98	223.41	1.17	1.60	2.76
6/21/2004	TB-2	NA	0.3	0.00	0.00	0.00	0.00	0.00	0.00
6/21/2004	C3	5	0.3	1.86	0.36	2.22	0.00	0.00	0.01
6/21/2004	B3	5	8.1	2.42	3.28	5.69	0.01	0.01	0.01
6/21/2004	B1	5	0.3	0.67	1.07	1.73	0.00	0.00	0.00
6/21/2004	E5	8	101.4	103.09	154.44	257.53	0.41	0.61	1.02
6/21/2004	TB-3	NA	0.3	0.00	0.00	0.00	0.00	0.00	0.00
6/21/2004	PB-1	NA	0.3	0.00	0.00	0.00	0.00	0.00	0.00
6/22/2004	J4	5	7.8	1.88	1.71	3.60	0.00	0.00	0.01
6/22/2004	J2	5	0.7	0.78	2.02	2.79	0.00	0.00	0.01
6/22/2004	L2	5	6.9	11.35	5.50	16.84	0.03	0.01	0.04
6/22/2004	K5	5	6.8	9.10	5.53	14.63	0.02	0.01	0.04
6/22/2004	K2	5	6.6	1.49	0.86	2.35	0.00	0.00	0.01
6/22/2004	K3	5	5.9	68.25	0.00	68.25	0.17	0.00	0.17

TABLE 3

CONTAMINANT CONCENTRATIONS AND YIELDS

JUNE 21 & 22, 2004

VESTAL, AREA 4

SAMPLE DATE	SAMPLE ID	FLOW (CFM)	PID READING	1,1,1-TCA (ppmv)	TCE (ppmv)	TOTAL TARGETED CONTAMINANTS (ppmv)	LBS OF 1,1,1-TCA	LBS OF TCE	LBS OF TOTAL TARGETED CONTAMINANTS PER DAY
6/22/2004	K3-D	5	5.9	69.79	0.00	69.79	0.17	0.00	0.17
6/22/2004	TB-4	NA	0.3	0.00	0.00	0.00	0.00	0.00	0.00
6/22/2004	M2	5	10.1	4.64	5.45	10.08	0.01	0.01	0.02
6/22/2004	J6	5	4.7	0.80	1.66	2.46	0.00	0.00	0.01
6/22/2004	J3	5	9.5	3.62	6.47	10.08	0.01	0.02	0.02
6/22/2004	G1	25	10.3	5.79	7.27	13.06	0.07	0.09	0.16
6/22/2004	I5	5	11.5	5.93	7.60	13.54	0.01	0.02	0.03
6/22/2004	G2	25	12.5	2.33	1.86	4.19	0.03	0.02	0.05
6/22/2004	I3	5	9.6	3.28	5.37	8.65	0.01	0.01	0.02
6/22/2004	H1	5	9.0	4.60	5.77	10.37	0.01	0.01	0.03
6/22/2004	TB-5	NA	0.3	0.00	0.00	0.00	0.00	0.00	0.00
6/22/2004	J5	5	8.0	2.10	1.96	4.06	0.01	0.00	0.01
6/22/2004	I1	5	7.2	1.24	1.61	2.85	0.00	0.00	0.01
6/22/2004	M3	5	4.2	1.23	1.68	2.91	0.00	0.00	0.01
6/22/2004	INF	512	7.7	5.08	4.40	9.48	1.30	1.11	2.40
6/22/2004	MID	512	0.6	0.00	0.00	0.00	0.00	0.00	0.00
6/22/2004	EFF	512	0.3	0.00	0.00	0.00	0.00	0.00	0.00
6/22/2004	PB-2	NA	0.3	0.00	0.00	0.00	0.00	0.00	0.00
6/22/2004	TB-6	NA	0.3	0.00	0.00	0.00	0.00	0.00	0.00

Note: Flows of less than 5 CFM were recorded as 2.

TABLE 4

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
	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

TABLE 4

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)
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
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

TABLE 4

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)
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
TOTAL YIELD TO REPORTED DATE					1511.31

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 5
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

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

TABLE 6
SVE WELL PROPOSED CHANGES
VESTAL AREA 4

CURRENT STATUS					PROPOSED CHANGES	
SVE WELL #	VAC WELL	INJ WELL	OFF	FLOW STATUS	PROPOSED FLOW CHANGES	REASON
INFLUENT						
MIDDLE						
EFFLUENT						
A1		X		OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
A2		X		OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
A3	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
B1	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
B2	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
B3	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
C1		X		OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
C2	X			NA	None	Leave in the current configuration to focus on the area in Cell 1.
C3	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
D1	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
D2	X			NA	None	Leave in the current configuration to focus on the area in Cell 1.

TABLE 6
SVE WELL PROPOSED CHANGES
VESTAL AREA 4

CURRENT STATUS					PROPOSED CHANGES	
SVE WELL #	VAC WELL	INJ WELL	OFF	FLOW STATUS	PROPOSED FLOW CHANGES	REASON
D3	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
D4	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
E1		X		OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
E2	X			NA	None	Leave in the current configuration to focus on the area in Cell 1.
E3	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
E4	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
E5	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
F1		X		OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
F2	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
F3	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
F4	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
F5	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
F6	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.

TABLE 6
SVE WELL PROPOSED CHANGES
VESTAL AREA 4

CURRENT STATUS					PROPOSED CHANGES	
SVE WELL #	VAC WELL	INJ WELL	OFF	FLOW STATUS	PROPOSED FLOW CHANGES	REASON
G1	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
G2	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
H1	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
H2			X	OFF	None	Leave in the current configuration to focus on the area in Cell 1.
I1	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
I2			X	OFF	None	Leave in the current configuration to focus on the area in Cell 1.
I3	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
I4		X		NA	None	Leave in the current configuration to focus on the area in Cell 1.
I5	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
J1			X	OFF	None	Leave in the current configuration to focus on the area in Cell 1.
J2	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
J3	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
J4	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.

TABLE 6
SVE WELL PROPOSED CHANGES
VESTAL AREA 4

CURRENT STATUS					PROPOSED CHANGES	
SVE WELL #	VAC WELL	INJ WELL	OFF	FLOW STATUS	PROPOSED FLOW CHANGES	REASON
J5	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
J6	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
K1		X		NA	None	Leave in the current configuration to focus on the area in Cell 1.
K2	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
K3	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
K4			X	OFF	None	Leave in the current configuration to focus on the area in Cell 1.
K5	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
L1		X		NA	None	Leave in the current configuration to focus on the area in Cell 1.
L2	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
L3		X		NA	None	Leave in the current configuration to focus on the area in Cell 1.
L4	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
M1			X	OFF	None	Leave in the current configuration to focus on the area in Cell 1.
M2	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.

TABLE 6
SVE WELL PROPOSED CHANGES
VESTAL AREA 4

CURRENT STATUS					PROPOSED CHANGES	
SVE WELL #	VAC WELL	INJ WELL	OFF	FLOW STATUS	PROPOSED FLOW CHANGES	REASON
M3	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
M4			X	OFF	None	Leave in the current configuration to focus on the area in Cell 1.
N1			X	OFF	None	Leave in the current configuration to focus on the area in Cell 1.
N2			X	OFF	None	Leave in the current configuration to focus on the area in Cell 1.
N3			X	OFF	None	Leave in the current configuration to focus on the area in Cell 1.

APPENDIX A
Operation and Maintenance Data
(Including Daily O&M Records, Routine Maintenance and Inspection Forms, and Field Notes)

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 4/27/04 ARRIVAL TIME: 0830 FAULT LIGHTS ON (list): "Low"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): Carbon Bed 06 Sampling (End of Mth.)

TASK PERFORMED: Pulled 06 Samples From - Influent, Mid Carbon - and Effluent.

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 5133.0 hrs.

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130° F
INJECTION BLOWER TEMP SETTING: 220° F
PRESSURE AFTER INJECTION BLOWER 7" ~~H20~~ Hg

VACUUM BLOWER TEMP: 180° F
VACUUM BLOWER TEMP SETTING: 220° F
VACUUMAFTER FILTER 7" ~~H20~~ Hg
PRESSURE AFTER VACUUM BLOWER: 6" ~~H20~~ Hg

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 4-5-04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 2-12-04

BELTS CHECKED FOR WEAR: ✓ BELT GUARD IN PLACE: ✓

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 4/27/04

CARBON BED SYSTEM

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

PRESSURE BEFORE GAC UNIT 1	9" "H2O
TEMPERATURE BEFORE GAC 1	68° F
PRESSURE BETWEEN GAC UNIT 1 AND 2	6" "H2O
PRESSURE AFTER GAC UNIT 2	4" "H2O
TEMPERATURE AFTER GAC 2	66° F

WATER STORAGE UNIT

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

VOLUME OF WATER IN STORAGE TANK: 0 GALLONS
WATER IN CONTAINMENT VESSEL: YES ____ NO ✓ AMOUNT: 0 INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 50 F

PRESSURE AT INJECTION MANIFOLD: 14 "H2O

TEMP AT INJECTION MANIFOLD: 54 F

VACUUM AT VACUUM MANIFOLD: 56 "H2O

TEMP AT VACUUM MANIFOLD: 56 F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 50 F

PRESSURE AT INJECTION MANIFOLD: 74 "H2O

TEMP AT INJECTION MANIFOLD: 50 F

VACUUM AT VACUUM MANIFOLD: 82 "H2O ~~80"~~

TEMP AT VACUUM MANIFOLD: 50 F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

CHECK AND NOTE CONDITION OF SITE: Ready For Mowing.

FIELD ACTIVITY CHECKLIST

SVE WELLHEAD AIR FLOWS MEASURED: ____YES ____ NO
SVE WELLS SAMPLED: ____ YES ____ NO
CARBON CHANGEOUT PERFORMED: ____
WATER REMOVAL PERFORMED: ____
EXTERIOR OF MAIN AND CELL BUILDINGS INSPECTED: ____
INSPECT MAIN POWER AND TELEPHONE LINE: ____

SUMMERY OF PROCESS AIR SAMPLING: Pulled 05 Samples From Influent, Mid Carbon and Effluent.

SUMMARY OF OTHER ACTIVITIES: Took Readings at Carbon Bed.

COMMENTS:

SIGNATURE OF OPERATIONS TECHNICIAN(S): M.P. McGuire

PID Readings

INF - 5.0 ppm
MID - 0.4 ppm
EFF - 0.3 ppm

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 4/27/04

PAGE 2

CARBON BED SYSTEM

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 4/27/04 ARRIVAL TIME: 0830 FAULT LIGHTS ON (list): "Low"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): CARBON BED 06 Sampling (END OF MTH.)

TASK PERFORMED: PULLED 06 SAMPLED FROM INFLUENT, MID CARBON AND EFFLUENT

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 5,133.0 hrs

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130° F
INJECTION BLOWER TEMP SETTING: 220° F
PRESSURE AFTER INJECTION BLOWER 1" ~~H20~~ Hg

VACUUM BLOWER TEMP: 180° F
VACUUM BLOWER TEMP SETTING: 220° F
VACUUMAFTER FILTER 7" ~~H20~~ Hg
PRESSURE AFTER VACUUM BLOWER: 6" ~~H20~~ Hg

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 4-6-04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 2-12-04

BELTS CHECKED FOR WEAR ✓ FILTER CHANGED IN PLACE

APR-27-2004 11:35 AM VESTAL-NEW-YORK 6077579966 P.01

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 4/27/04 ARRIVAL TIME: 0830 FAULT LIGHTS ON (list): "Low"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): Carbon Bed OE Sampling (End of Mth.)

TASK PERFORMED: Pulled OE. Sampled From Influent, Mid Carbon and Effluent

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 5,133.0 hrs

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130° F
INJECTION BLOWER TEMP SETTING: 220° F
PRESSURE AFTER INJECTION BLOWER 1" ~~H20~~ Hg

VACUUM BLOWER TEMP: 180° F
VACUUM BLOWER TEMP SETTING: 220° F
VACUUMAFTER FILTER 7" ~~H20~~ Hg
PRESSURE AFTER VACUUM BLOWER: 6" ~~H20~~ Hg

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 4-6-04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 2-12-04

BELTS CHECKED FOR WEAR: ✓

APR-27-2004 11:40 AM VESTAL-NEW-YORK 6077579966 P.01

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 4/7/04 ARRIVAL TIME: 0830 FAULT LIGHTS ON (list): "Low E"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): Carbon Bed OG Sampling (End of Mth.)

TASK PERFORMED: Pulled OG. Sampled From - Influent, Mid Carbon - and Effluent.

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 5133.0 hrs.

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130° F
INJECTION BLOWER TEMP SETTING: 220° F
PRESSURE AFTER INJECTION BLOWER 1" ~~H20~~ Hg

VACUUM BLOWER TEMP: 180° F
VACUUM BLOWER TEMP SETTING: 220° F
VACUUMAFTER FILTER 7" ~~H20~~ Hg
PRESSURE AFTER VACUUM BLOWER: 6" ~~H20~~ Hg

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 4-5-04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 2-12-04

BELTS CHECKED FOR WEAR ✓

APR-27-2004 11:38 AM VESTAL.NEW.YORK 6077579966 P.01

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 4/27/04

CARBON BED SYSTEM

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

PRESSURE BEFORE GAC UNIT 1	9" "H2O
TEMPERATURE BEFORE GAC 1	60° F
PRESSURE BETWEEN GAC UNIT 1 AND 2	6" "H2O
PRESSURE AFTER GAC UNIT 2	4" "H2O
TEMPERATURE AFTER GAC 2	66° F

WATER STORAGE UNIT

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

VOLUME OF WATER IN STORAGE TANK: 0 GALLONS
WATER IN CONTAINMENT VESSEL: YES ____ NO ✓ AMOUNT: 0 INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 5/11/'04 ARRIVAL TIME: 0830 FAULT LIGHTS ON (list): "SHUT DOWN"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): Bi-Weekly Carbon Bed OC Sampling

TASK PERFORMED: ISVE System was Down upon arrival - Shut Down at approx 0200 hrs. Tues 5-11-04. Severe T-Storms in the area last night. Power was knocked out for 1-2 hrs.

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 5450.0

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 170 F
INJECTION BLOWER TEMP SETTING: 220 F
PRESSURE AFTER INJECTION BLOWER 10 ~~"H20~~ HG

VACUUM BLOWER TEMP: 200 F
VACUUM BLOWER TEMP SETTING: 220 F
VACUUMAFTER FILTER 28 ~~"H20~~ HG
PRESSURE AFTER VACUUM BLOWER: 7 ~~"H20~~ HG

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 5-4-'04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 2-12-'04

BELTS CHECKED FOR WEAR: ✓ BELT GUARD IN PLACE: ✓

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 5/11/04

CARBON BED SYSTEM

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. _____

~~PRESSURE BEFORE GAC UNIT 1~~	10 "H2O
TEMPERATURE BEFORE GAC 1	86 F
PRESSURE BETWEEN GAC UNIT 1 AND 2	9 "H2O
PRESSURE AFTER GAC UNIT 2	4 "H2O
TEMPERATURE AFTER GAC 2	78 F

WATER STORAGE UNIT

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

VOLUME OF WATER IN STORAGE TANK: 0 GALLONS
WATER IN CONTAINMENT VESSEL: YES ____ NO ✓ AMOUNT: 0 INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 50 F

PRESSURE AT INJECTION MANIFOLD: 92 "H2O

TEMP AT INJECTION MANIFOLD: 62 F

VACUUM AT VACUUM MANIFOLD: 70 "H2O 72"

TEMP AT VACUUM MANIFOLD: 60 F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 6/1/04 ARRIVAL TIME: 0830 FAULT LIGHTS ON (list): "NONE"

REASON FOR VISIT: MONTHLY QUARTERLY, OTHER
OTHER (define): Carbon Bed 06 Sampling

TASK PERFORMED: Pulled 06 Samples From INF, MID, AND EFF. Put Spare Carbon Bed on Line in #2 Pos. Changed Oil in Blower Motor. Mowed The Site & Trimmed. Took A Full Round of Readings.

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 5910.7 HRS

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 160 F
INJECTION BLOWER TEMP SETTING: ~~220~~ F
PRESSURE AFTER INJECTION BLOWER 7 "H2O ~~46~~

VACUUM BLOWER TEMP: 170 F
VACUUM BLOWER TEMP SETTING: ~~220~~ F
VACUUMAFTER FILTER 6 "H2O ~~46~~
PRESSURE AFTER VACUUM BLOWER: 5 "H2O ~~46~~

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 5-13-04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 2-12-04

BELTS CHECKED FOR WEAR: ✓ BELT GUARD IN PLACE: ✓

INF. - 14.8 ppm
MID - 2.7 ppm
EFF. - 0.6 ppm

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 6/1/04

CARBON BED SYSTEM

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

~~PRESSURE BEFORE GAC UNIT 1~~	10 "H2O
TEMPERATURE BEFORE GAC 1	80 F
PRESSURE BETWEEN GAC UNIT 1 AND 2	(8) 8 "H20
PRESSURE AFTER GAC UNIT 2	4 "H2O
TEMPERATURE AFTER GAC 2	76 F

WATER STORAGE UNIT

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

VOLUME OF WATER IN STORAGE TANK: 0 GALLONS
WATER IN CONTAINMENT VESSEL: YES ___ NO ✓ AMOUNT: 2 INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 45 F

PRESSURE AT INJECTION MANIFOLD: 83 "H2O

TEMP AT INJECTION MANIFOLD: 60° F

VACUUM AT VACUUM MANIFOLD: 66 "H2O

TEMP AT VACUUM MANIFOLD: 62° F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 45 F

PRESSURE AT INJECTION MANIFOLD: 64 "H2O

TEMP AT INJECTION MANIFOLD: 60° F

VACUUM AT VACUUM MANIFOLD: 64 "H2O

TEMP AT VACUUM MANIFOLD: 62° F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

CHECK AND NOTE CONDITION OF SITE: Site Looks Good.

FIELD ACTIVITY CHECKLIST

SVE WELLHEAD AIR FLOWS MEASURED: ____YES ____ NO
SVE WELLS SAMPLED: ____ YES ____ NO
CARBON CHANGEOUT PERFORMED: ____
WATER REMOVAL PERFORMED: ____
EXTERIOR OF MAIN AND CELL BUILDINGS INSPECTED: ✓
INSPECT MAIN POWER AND TELEPHONE LINE: ____

SUMMERY OF PROCESS AIR SAMPLING: Pulled 06 Samples From Influent, Mid Carbon and Effluent.

SUMMARY OF OTHER ACTIVITIES: Changed Influent to B&O* Put Same Bed on Line in Second Pos. (Mid Carbon) Changed oil in Blower Motor. Mowed & Trimmed the Site. Took Readings.

COMMENTS: ____

SIGNATURE OF OPERATIONS TECHNICIAN(S): M. P. McGuire

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 6/10/04 ARRIVAL TIME: 0830 FAULT LIGHTS ON (list): None

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): Carbon Changeout - 2-Beds (#2 + #3)

TASK PERFORMED: EnviroTrol on Site for Carbon Bed Changeout. Changed Carbon in Beds #2 + #3. Mowed + Trimmed the Site. Greased Blower Motors.

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 6125.3 HRS.

SVE PUMPING UNIT

INJECTION BLOWER TEMP: _____ F
INJECTION BLOWER TEMP SETTING: 220 F
PRESSURE AFTER INJECTION BLOWER _____ "H2O

VACUUM BLOWER TEMP: _____ F
VACUUM BLOWER TEMP SETTING: 220 F
VACUUMAFTER FILTER _____ "H2O
PRESSURE AFTER VACUUM BLOWER: _____ "H2O

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 6-1-04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 6-1-04

BELTS CHECKED FOR WEAR: ✓ BELT GUARD IN PLACE: ✓

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 6/10/'04

CARBON BED SYSTEM

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

PRESSURE BEFORE GAC UNIT 1	_____"H2O
TEMPERATURE BEFORE GAC 1	_____F
PRESSURE BETWEEN GAC UNIT 1 AND 2	_____"H20
PRESSURE AFTER GAC UNIT 2	_____"H2O
TEMPERATURE AFTER GAC 2	_____F

WATER STORAGE UNIT

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION. ✓

VOLUME OF WATER IN STORAGE TANK: 0 GALLONS

WATER IN CONTAINMENT VESSEL: YES ____ NO ✓ AMOUNT: 0 INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 50 F

PRESSURE AT INJECTION MANIFOLD: _____ "H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 50 F

PRESSURE AT INJECTION MANIFOLD: _____ "H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

CHECK AND NOTE CONDITION OF SITE: Looks Good

FIELD ACTIVITY CHECKLIST

SVE WELLHEAD AIR FLOWS MEASURED: ____YES ____ NO
SVE WELLS SAMPLED: ____ YES ____ NO
CARBON CHANGEOUT PERFORMED: ✓
WATER REMOVAL PERFORMED: ____
EXTERIOR OF MAIN AND CELL BUILDINGS INSPECTED: _____
INSPECT MAIN POWER AND TELEPHONE LINE: _____

SUMMERY OF PROCESS AIR SAMPLING: _____

SUMMARY OF OTHER ACTIVITIES: Changed Carbon in Beds #2 + #3. Made Bed #1 (Influent) Bed #2 (Inside) #3 (Spare). Mowed + Trimmed Around The Site.

COMMENTS: _____

SIGNATURE OF OPERATIONS TECHNICIAN(S): M.P. McGuire

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 6/22/04 ARRIVAL TIME: 0830 FAULT LIGHTS ON (list): - NONE -

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): Qtrly. 06 Sampling Event

TASK PERFORMED: Pulled 06 Samples From Carbon Beds AND Vacuum Wells 1/2 on 6/21 - 1/2 on 6/22. Took Flow Rdgs AND PID Rdgs. on all Vac Wells.

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 6411.0

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 160 F
INJECTION BLOWER TEMP SETTING: 220 F
PRESSURE AFTER INJECTION BLOWER 8 "~~H20~~ ~~46~~

VACUUM BLOWER TEMP: 180 F
VACUUM BLOWER TEMP SETTING: 220 F
VACUUMAFTER FILTER 6 "~~H20~~ ~~46~~
PRESSURE AFTER VACUUM BLOWER: 5 "~~H20~~ ~~46~~

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 6-10-04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 6-1-04

BELTS CHECKED FOR WEAR: ✓ BELT GUARD IN PLACE: ✓

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 6/22/04

CARBON BED SYSTEM

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION._____

PRESSURE BEFORE GAC UNIT 1	10 "H2O
TEMPERATURE BEFORE GAC 1	90 F
PRESSURE BETWEEN GAC UNIT 1 AND 2	1 "H20
PRESSURE AFTER GAC UNIT 2	3 "H2O
TEMPERATURE AFTER GAC 2	86 F

WATER STORAGE UNIT

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION._✓_

VOLUME OF WATER IN STORAGE TANK: 0 GALLONS

WATER IN CONTAINMENT VESSEL: YES ____ NO ✓ AMOUNT: 0 INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 50 F

PRESSURE AT INJECTION MANIFOLD: 94 "H2O

TEMP AT INJECTION MANIFOLD: 66 F

VACUUM AT VACUUM MANIFOLD: 68 "H2O

TEMP AT VACUUM MANIFOLD: 68 F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 58 F

PRESSURE AT INJECTION MANIFOLD: 81 "H2O

TEMP AT INJECTION MANIFOLD: 64 F

VACUUM AT VACUUM MANIFOLD: 66 "H2O

TEMP AT VACUUM MANIFOLD: 68 F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

CHECK AND NOTE CONDITION OF SITE: Looks Good

FIELD ACTIVITY CHECKLIST

SVE WELLHEAD AIR FLOWS MEASURED: ✓ YES ___ NO
SVE WELLS SAMPLED: ✓ YES ___ NO
CARBON CHANGEOUT PERFORMED: ___
WATER REMOVAL PERFORMED: ___
EXTERIOR OF MAIN AND CELL BUILDINGS INSPECTED: ✓
INSPECT MAIN POWER AND TELEPHONE LINE: ✓

SUMMERY OF PROCESS AIR SAMPLING: Purged 06 Samples from VAE Wells and Carbon Beds.

SUMMARY OF OTHER ACTIVITIES: Checked Oil in Blower Motors and Cubed Motors.

COMMENTS:

SIGNATURE OF OPERATIONS TECHNICIAN(S): M. P. McGinnis

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 6/24/04 ARRIVAL TIME: 0830 FAULT LIGHTS ON (list): NONE

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): SHIP 18 DRUMS OF SPENT ACTIVATED CARBON TO ENVIROTROL, IN DARLINGTON PA.

TASK PERFORMED: _____

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 6458.5

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 180° F
INJECTION BLOWER TEMP SETTING: 220 F
PRESSURE AFTER INJECTION BLOWER 7 ~~"H20~~ "Hg

VACUUM BLOWER TEMP: 180° F 160°
VACUUM BLOWER TEMP SETTING: 220 F
VACUUMAFTER FILTER 6 ~~"H20~~ "Hg
PRESSURE AFTER VACUUM BLOWER: 5 ~~"H20~~ "Hg

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 6-21-04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 6-1-04

BELTS CHECKED FOR WEAR: ✓ BELT GUARD IN PLACE: ✓

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 6/24/04

CARBON BED SYSTEM

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION._____

PRESSURE BEFORE GAC UNIT 1 _____"H2O
TEMPERATURE BEFORE GAC 1 _____F

PRESSURE BETWEEN GAC UNIT 1 AND 2 _____"H20

PRESSURE AFTER GAC UNIT 2 _____"H2O
TEMPERATURE AFTER GAC 2 _____F

WATER STORAGE UNIT

CHECK ALL ABOVE-GROUND PIP[ING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS; CHECK CARBON BEDS CONNECTIONS AND ASSOCIATED INSTRUMENTATION._____

VOLUME OF WATER IN STORAGE TANK:_____ GALLONS
WATER IN CONTAINMENT VESSEL: YES ____ NO____ AMOUNT:_____ INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ____ OFF ____ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ____

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ____

ELECTRICAL HEATER THERMOSTAT SETTING: 50 F

PRESSURE AT INJECTION MANIFOLD: _____"H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____"H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONETS FOR CRACKS OR LEAKS AND ADIQUCY OF SEALS.

CONTROL BOX DISCONNECT ON: ✓ 240-VOLT DISCONNECT ON ✓

SELECTOR SWITCH: MANUAL ___ OFF ___ AUTO ✓

VACUUM STATUS LIGHT: ON ✓ OFF ___

CONTROL BOX LOCKED ✓

ELECTRICAL HEAT BREAKER: ON ✓ OFF ___

ELECTRICAL HEATER THERMOSTAT SETTING: 50 F

PRESSURE AT INJECTION MANIFOLD: _____ "H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

CHECK AND NOTE CONDITION OF SITE: Good

FIELD ACTIVITY CHECKLIST

SVE WELLHEAD AIR FLOWS MEASURED: ____YES ____ NO
SVE WELLS SAMPLED: ____ YES ____ NO
CARBON CHANGEOUT PERFORMED: ____
WATER REMOVAL PERFORMED: ____
EXTERIOR OF MAIN AND CELL BUILDINGS INSPECTED: _____
INSPECT MAIN POWER AND TELEPHONE LINE: _____

SUMMERY OF PROCESS AIR SAMPLING: _____

SUMMARY OF OTHER ACTIVITIES: Cleaned Flow Meters in Both Cells.

COMMENTS: Trucker was on Site when we Arrived. Loaded 18 Barrels of Spent Activated Carbon. Manifest was signed at 1:20 pm.

SIGNATURE OF OPERATIONS TECHNICIAN(S): M. P. McGuire

APPENDIX B
Sampling and Analytical Data — Process Air Data

(Including QC Data, Laboratory Data Summary Sheets, Chain of Custody Forms, Field Sample Log Book Notes)

QA/QC Report for Vestal Samples
(Sample Date: 6/21/04--6/22/04)

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-E4-D-062104-0298					
Sample Date	Analytes	Data1	Data2	RPD (%)	RPD Acceptable?
6/21/04	TCE	71.026	69.807	1.7	YES
6/21/04	1,1,1-TCA	51.908	52.451	1.0	YES

Vestal Duplicate Sample RPD Report					
Sample ID: VS-SVE-H1-062204-0327					
Sample Date	Analytes	Data1	Data2	RPD (%)	RPD Acceptable?
6/22/04	TCE	7.884	7.737	1.9	YES
6/22/04	1,1,1-TCA	6.394	6.34	0.8	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

SAMPLE DATE	SAMPLE ID	1,1,1-TCA (ppm)	TCE (ppm)	Detection Limits (ppm)
05-Apr-04	INSTRUMENT BLANK	0.00	0.00	0.05
05-Apr-04	VS-SVE-TB-040504-0271	0.00	0.00	0.05
27-Apr-04	INSTRUMENT BLANK	0.00	0.00	0.05
27-Apr-04	VS-SVE-TB-042704-0276	0.00	0.00	0.05
11-May-04	INSTRUMENT BLANK	0.00	0.00	0.05
11-May-04	VS-SVE-TB-051104-0281	0.00	0.00	0.05
01-Jun-04	INSTRUMENT BLANK	0.00	0.00	0.05
01-Jun-04	VS-SVE-TB-060104-0286	0.00	0.00	0.05
21-Jun-04	INSTRUMENT BLANK	0.00	0.00	0.05
21-Jun-04	VS-SVE-TB-1-062104-0293	0.00	0.00	0.05
21-Jun-04	VS-SVE-TB-2-062104-0302	0.00	0.00	0.05
21-Jun-04	VS-SVE-TB-3-062104-0309	0.00	0.00	0.05
22-Jun-04	INSTRUMENT BLANK	0.00	0.00	0.05
22-Jun-04	VS-SVE-TB-4-062204-0319	0.00	0.00	0.05
22-Jun-04	VS-SVE-TB-5-062204-0328	0.00	0.00	0.05
22-Jun-04	VS-SVE-TB-6-062204-0336	0.00	0.00	0.05

Notes: 0.00 indicates below detection limit.

Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Analysis Date: 4/6/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 4/5/04
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-INF-040504-0267	9.82	10.18	0.05
VS-SVE-MID-040504-0268	0.00	0.00	0.05
VS-SVE-EFF-040504-0269	0.00	0.00	0.05
VS-SVE-SP-040504-0270	0.00	0.00	0.05
VS-SVE-TB-040504-0271	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.

05/10/2004 10:30 FAX 17345249611 SHAW E&I/EMCON/OWT → GRAND RAPIDS 002

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 4778.4

Client: SEVERN/USACE 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 : "OPERATIONAL"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm) PID	PID	Analysis Requested	Notes
1	VS-SVE-0267	4-5-04	1040		5.0	11.9	TO14, A	INFLUENT
2	VS-SVE-0268		1050		0.5	0.8		MID CARBON
3	VS-SVE-0269		1110		0.3	0.3		EFFLUENT
4	VS-SVE-0270		1020					PUMP BLANK
5	VS-SVE-0271		TRIP BLANK					TRIP BLANK
6								
7								
8								
9								
10								
11								
12								

Collected By: COLASURDO / MCGUIRE Date: 4-5-04 Time: 1000

Delivered By: _____ Date: _____ Time: _____

Received By: _____ Date: 4/6/04 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

Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Analysis Date: 4/28/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 4/27/04
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-INF-042704-0272	5.76	6.54	0.05
VS-SVE-MID-042704-0273	7.42	0.00	0.05
VS-SVE-EFF-042704-0274	0.00	0.00	0.05
VS-SVE-SP-042704-0275	0.00	0.00	0.05
VS-SVE-TB-042704-0276	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.

05/10/2004 10:30 FAX 17345249611 SHAW E&I/EMCON/OWT → GRAND RAPIDS 003

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 5133.0 HRS

Client: SEVERN/USACE Client Code: #691086

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

Site Address: 210 STAGE RD., VESTAL, NY 13850

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-0272	4-27-'04	0950		5.0 ppm	TO14A	INFLUENT
2	VS-SVE-0273		1020		0.4 ppm		MID-CARBON
3	VS-SVE-0274		1045		0.2 ppm		EFFLUENT
4	VS-SVE-0275		0930		0.3 ppm		PUMP BLANK
5	VS-SVE-0276		—		0.3 ppm		TRIP BLANK
6							
7							
8							
9							
10							
11							
12							

Collected By: COLASURDO/MCGUIRE Date: 4-27-04 Time: 0830

Delivered By: _____ Date: _____ Time: _____

Received By: _____ Date: 4/28/04 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

Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Client Code: 681086
Analysis Date: 5/12/2004
Sample Date: 5/11/04
Detection Limit: See below
Units: ppmv
Analyst: YL
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-INF-051104-0277	9.21	11.02	0.05
VS-SVE-MID-051104-0278	7.83	0.10	0.05
VS-SVE-EFF-051104-0279	0.00	0.08	0.05
VS-SVE-SP-051104-0280	0.00	0.00	0.05
VS-SVE-TB-051104-0281	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.

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 5450.0 HRS

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

Withdrawl blower - Vacuum : _____ Pressure: _____

Injection blower - Vacuum: _____ Pressure: _____

Client: SEVERSON / USACE Client Code: #681086

Site Address: 210 STAGE RD, VESTAL, NY

Project Manager: D. CALLAHAN

System Status : OPERATING

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide PID (ppm) PID	Analysis Requested	Notes
1	VS-SVE-0277	5-11-09	1115		13.4 ppm	TO14A	INFLUENT
2	VS-SVE-0278		1140		0.7 ppm		MID CARBON
3	VS-SVE-0279		1210		0.3 ppm		EFFLUENT
4	VS-SVE-0280		1105		0.3 ppm		SAMPLE PUMP
5	VS-SVE-0281		TRIP BLANK		0.3 ppm		TRIP BLANK
6							
7							
8							
9							
10							
11							
12							

Collected By: COLORADO / MCGUIRE Date: 5-11-09 Time: 1105

Delivered By: _____ Date: _____ Time: _____

Received By: VL Date: 5/12/04 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

Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Analysis Date: 6/2/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 6/1/04
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-INF-060104-0282	8.24	10.29	0.05
VS-SVE-MID-060104-0283	5.38	0.81	0.05
VS-SVE-EFF-060104-0284	5.37	0.00	0.05
VS-SVE-SP-060104-0285	0.00	0.00	0.05
VS-SVE-TB-060104-0286	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.

07/07/2004 09:10 FAX 17345249611 SHAW E&I/EMCON/OWT → GRAND RAPIDS 002

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 5910.7 HRS.

Client: SEVERSON/USACE Client Code: 69086

Flow Meter- Type : Range (cfm): _____

Site Address: 210 STATE 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	0282	6-1-04	0945		14.8 ppm	TO14A	INFLUENT
2	0283		1005		2.7 ppm		MID CARBON
3	0284		1030		0.6 ppm		EFFLUENT
4	0285		0910		0.3 ppm		PUMP BLANK
5	0286		TRIP BLANK				TRIP BLANK
6							
7							
8							
9							
10							
11							
12							

Collected By: CALABRESE/MCGUIRE Date: 6-1-04 Time: 0910

Delivered By: _____ Date: _____ Time: _____

Received By: _____ Date: 6/2/04 Time: 9:30

Remarks: _____

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Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Analysis Date: 6/22/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 6/21/04
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-C2-062104-0288	47.66	61.08	0.12
VS-SVE-E2-062104-0289	0.52	1.04	0.05
VS-SVE-B2-062104-0290	41.01	54.52	0.12
VS-SVE-D4-062104-0291	53.51	54.23	0.05
VS-SVE-D3-062104-0292	8.06	2.88	0.05
VS-SVE-TB-1-062104-0293	0.00	0.00	0.05
VS-SVE-D1-062104-0294	27.00	33.83	0.05
VS-SVE-E4-062104-0297	95.47	130.33	0.12
VS-SVE-E4-D-062104-0298	93.43	129.98	0.12
VS-SVE-TB-2-062104-0302	0.00	0.00	0.05
VS-SVE-C3-062104-0303	1.86	0.36	0.05
VS-SVE-B3-062104-0304	2.42	3.28	0.05
VS-SVE-B1-062104-0306	0.67	1.07	0.05
VS-SVE-E5-062104-0307	103.09	154.44	0.63
VS-SVE-TB-3-062104-0309	0.00	0.00	0.05
VS-SVE-PB-1-062104-0310	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
Analysis Date: 6/23-24/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 6/22/04
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-J4-062204-0311	1.88	1.71	0.05
VS-SVE-J2-062204-0312	0.78	2.02	0.05
VS-SVE-L2-062204-0313	11.35	5.50	0.05
VS-SVE-K5-062204-0314	9.10	5.53	0.05
VS-SVE-K2-062204-0316	1.49	0.86	0.05
VS-SVE-K3-062204-0317	68.25	0.00	0.12
VS-SVE-K3-D-062204-0318	69.79	0.00	0.12
VS-SVE-TB-4-062204-0319	0.00	0.00	0.05
VS-SVE-M2-062204-0320	4.64	5.45	0.05
VS-SVE-J6-062204-0321	0.80	1.66	0.05
VS-SVE-J3-062204-0322	3.62	6.47	0.05
VS-SVE-G1-062204-0323	5.79	7.27	0.05
VS-SVE-I5-062204-0324	5.93	7.60	0.05
VS-SVE-G2-062204-0325	2.33	1.86	0.05
VS-SVE-I3-062204-0326	3.28	5.37	0.05
VS-SVE-H1-062204-0327	4.60	5.77	0.05
VS-SVE-TB-5-062204-0328	0.00	0.00	0.05
VS-SVE-J5-062204-0329	2.10	1.96	0.05
VS-SVE-I1-062204-0330	1.24	1.61	0.05
VS-SVE-M3-062204-0331	1.23	1.68	0.05
VS-SVE-INF-062204-0332	5.08	4.40	0.05
VS-SVE-MID-062204-0333	0.00	0.00	0.05

Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Analysis Date: 6/23-24/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 6/22/04
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-EFF-062204-0334	0.00	0.00	0.05
VS-SVE-PB-2-062204-0335	0.00	0.00	0.05
VS-SVE-TB-6-062204-0336	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.

Copy of 1

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 6388.5

Client: SEVERSON/USACE Client Code: #68096

Flow Meter- Type : Range (cfm):

Site Address: 210 STAGE B - 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 FID (ppm) FID	Analysis Requested	Notes
1	USSVE-0287	6-21-04	n/e-H20	-5	n/e- H20	T.014-A	D-2
2	USSVE-0288		0945	-5	52.4 ppm		C-2
3	USSVE-0289		0952	-5	0.3 ppm		B-2
4	USSVE-0290		0956	-5	47.3 ppm		A-2
5	USSVE-0291		1003	25%	22.9 ppm		D-4
6	USSVE-0292		1008	-5	17.1 ppm		D-3
7	USSVE-0293		—	—	0.3 ppm		TB-#1
8							
9							
10							
11							
12							

Collected By: COLBURN/MCGUIRE Date: 6-21-04 Time: 0930

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 6/22/04 Time: 11:00

Remarks: _____

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06/29/2004 15:52 FAX 17345249611 SHAW E&I/EMCON/OWT → GRAND RAPIDS 002

Cooler #2

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 6388.5

Client: Stevenson/USACE Client Code: #69096

Flow Meter- Type : Range (cfm):

Site Address: 210 Stage A - Lockport 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) FID	Analysis Requested	Notes
1	VS-SVE-0294	6-21-04	1013	-5	19.8 ppm	TO14, A	D-1
2	VS-SVE 0295		N/R Plugged	-5	N/R plugged		W E-3 P
3	VS-SVE 0296		N/R H20	-5	N/R H20		F-2 W
4	VS-SVE 0297		1021	25 o/s	95.7 ppm		E-4
5	VS-SVE 0298		1023	25 o/s	95.7 ppm		E-4-D
6	VS-SVE 0299		N/R plugged	-5	N/R plugged		W F-4 Cleaned Purged out H20
7	VS-SVE 0300		N/R plugged	-5	N/R plugged		F-5 Cleaned Purged out H20
8	VS-SVE 0301		N/R plugged	-5	N/R plugged		W F-6
9	VS-SVE 0302		—	—	0.3 ppm		TB #2
10							
11							
12							

Collected By: Colasurdo / McGuire Date: 6-21-04 Time: 0930

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 6/22/04 Time: 1120

Remarks: _____

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Co-Ep-3

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 6388.5

Client: SEVENSON / USACE Client Code: #69096

Flow Meter- Type : Range (cfm):

Site Address: 210 STAGE RD, ITHACA, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. QUIGLEY

Injection blower - Vacuum: _____ Pressure: _____

System Status : OPERATING

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (PID) (ppm) (PID)	Analysis Requested	Notes
1	USSVE-0303	6-21-04	1035	-5	0.3 ppm	TO14, A	C-3
2	USSVE 0304		1043	-5	8.1 ppm		B-3
3	USSVE 0305		N/R - H20	-5	N/R #20		A-3
4	USSVE 0306		1050	-5	0.3 ppm		B-1
5	USSVE 0307		1055	8	191.4 ppm		E-5
6	USSVE 0308		N/R H20	-5	N/R #20		E-3
7	USSVE 0309		TB #3	—	0.3 ppm		TB-#3
8	USSVE 0310		SP	—	0.3 ppm		SP
9							
10							
11							
12							

Collected By: COLBURN / MCGUIRE Date: 6-21-04 Time: 0930

Delivered By: _____ Date: _____ Time: _____

Received By: _____ Date: 6/22/04 Time: 11:00

Remarks: _____

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Cooley #4

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 6411.0

Client: Stevenson / USACE Client Code: #681086

Flow Meter- Type : Range (cfm): ____

Site Address: J-5 Stage Rd, Alcona, MI

Withdrawl blower - Vacuum : ____ Pressure: ____

Project Manager: D. Cousineau

Injection blower - Vacuum: ____ Pressure: ____

System Status : "Operating"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm) PID	Analysis Requested	Notes
1	VS-SVE-0311	6-22-04	0950	-5	7.8 ppm	TO14, D	J-4
2	VS-SVE-0312		0956	-5	0.7 ppm		J-2
3	VS-SVE-0313		1012	-5	6.9 ppm		" L-2
4	VS-SVE-0314		1017	-5	6.8 ppm		" K-5
5	VS-SVE-0315		OFF	[illegible]	OFF		OFF K-4
6	VS-SVE-0316		1026	-5	6.6 ppm		" K-2
7	VS-SVE-0317		1031	-5	5.9 ppm		K-3
8	VS-SVE-0318		1033	-5	5.9 ppm		K-3-D
9	VS-SVE-0319		TRIP BLANK	—	0.3 ppm		TB #4
10							
11							
12							

Collected By: Colburn / McGuire Date: 6-22-04 Time: 0900

Delivered By: ____ Date: ____ Time: ____

Received By: [signature] Date: 6/23/04 Time: 10:00

Remarks: ____

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Coolers

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 6411.0

Client: Shaw E&I / USACE Client Code: #681086

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

Site Address: 318 State St. Vestal, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. Coughlin

Injection blower - Vacuum: _____ Pressure: _____

System Status : "Operating"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm) PID	Analysis Requested	Notes
1	VS-SVE-0320	6-22-04	1045	-5	10.1 ppm	TO14, A	M-2
2	VS-SVE-0321		1051	-5	4.7 ppm		J-6
3	VS-SVE-0322		1055	-5	9.5 ppm		J-3
4	VS-SVE-0323		1102	25 s/s	10.3 ppm		" G-1
5	VS-SVE-0324		1106	-5	11.5 ppm		" I-5
6	VS-SVE-0325		1111	25 s/s	12.5 ppm		G-2
7	VS-SVE-0326		1117	-5	9.6 ppm		" I-3
8	VS-SVE-0327		1122	-5	9.0 ppm		" H-1
9	VS-SVE-0328		Trip Blank	—	0.3 ppm		TB #5
10							
11							
12							

Collected By: Colasurdo / McGuire Date: 6-22-04 Time: 0900

Delivered By: _____ Date: _____ Time: _____

Received By: VR Date: 6/23/04 Time: 10:00

Remarks: _____

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006 → GRAND RAPIDS SHAW E&I/EMCON/OWT 06/29/2004 15:54 FAX 17345249611

Cooley #6

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 6411.0

Client: Shenson/USACE Client Code: ~~#681086~~

Flow Meter- Type : _____ Range (cfm):

Site Address: 315 Stake Rd, Vestal, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. Cannon

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-0329	6-22-04	1127	-5	8.0 ppm	TO14A	J-5
2	VS-SVE-0330		1131	-5	7.2 ppm		I-1
3	VS-SVE-0331		1137	-5	4.2 ppm		M-3
4	VS-SVE-0332		1145	—	7.7 ppm		INF.
5	VS-SVE-0333		1156	—	0.6 ppm		MID.
6	VS-SVE-0334		1210	—	0.3 ppm		EFF.
7	VS-SVE-0335		Pump Blank	—	0.3 ppm		SP
8	VS-SVE-0336		Trip Blank	—	0.3 ppm		TB #6
9							
10							
11							
12							

Collected By: Colburdo / McGuire Date: 6-22-04 Time: 0900

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 6/23/04 Time: 10200

Remarks: _____

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APPENDIX C
Summary of Operation Data/Contaminant Yield Calculation

Appendix C

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

Appendix C

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 C

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