QUARTERLY PROGRESS REPORT NO. 6
(October 1 through December 31, 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

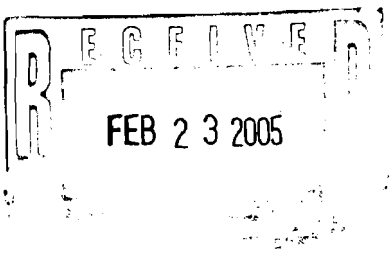
Submitted by:
Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, New York 14305

February 17, 2005

Sevenson
Environmental
Services, Inc.

February 22, 2005

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



Attention: Mr. Nicholas Patsis, P.E.

RE: Quarterly Progress Report No. 6
Contract # DACW41-01-D-001-0006
Vestal Wellfield 1-1, Area 4, Vestal, New York

Sirs:

Enclosed is Quarterly Progress Report No. 6 for the referenced contract. This report covers system operations during October, November, and December 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)

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 2/22/05	X New Submittal ☐ Resubmittal

Section 1	REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the contractor)		
TO: USACE West Point Area Office New York District Building 667A 3rd Floor West Point, New York 10996	FROM: Sevenson Environmental Services Inc. 2749 Lockport Rd. Niagara Falls, N.Y. 14302	CONTRACT NO. DACW-41-01-D-0001 T.O.# 0006	TRANSMITTAL NO. 34 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. a.	DESCRIPTION OF ITEMS SUBMITTED (Type, size, model number, etc.) b.	MFG. OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. (See instruction No. 8) c.	NO. OF COPIES d.	CONTRACT REFERENCE DOCUMENT SPEC. PARA. NO. e.	CONTRACT REFERENCE DOCUMENT DRAWING SHEET NO. f.	VARIATIONS (See instruction No. 6) g.	FOR C E USE CODE h.
1.	Quarterly Report No. 6		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. Sevenson Environmental Services NAME AND SIGNATURE OF CONTRACTOR Cassandra J. Marshall

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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(October 1 through December 31, 2004)

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2749 Lockport Road
Niagara Falls, New York 14305

February 17, 2005

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

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. 6 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 DACW41-01-D-0001-0006. Sevenson's remedial action work is under supervision of the USEPA and USACE. The sixth Quarterly Progress Report is provided and prepared in accordance with the approved Workplan. This report discusses the System operation based on data collected during October, November, and December 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 October and December 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 October 19, November 17, and December 7, 8, and 21, 2004. Air flow and Photo Ionic Detector (PID) readings were measured throughout the System on October 19; November 17; and December 7, 8, and 21, 2004. A full round of process air samples was collected from withdrawal wells on December 7, 8, and 21, 2004.

Samples of process air through the carbon treatment system were collected on October 19; November 17; and December 21, 2004.

The SVE System at the Vestal Area 4 Site ran approximately 29 days during the period 10/1/04 to 10/31/04. The system was down for part of two days for normal monthly sampling and O&M and to confirm September analytical results. Due to decreased precipitation, the Site dried out, causing a higher influent concentration during the 10/19/04 system sampling.

The SVE System at the Vestal Area 4 Site ran approximately 28 days during the period 11/1/04 to 11/30/04.

On November 17, 2004, approximately 2,000 pounds of spent carbon were containerized and replaced.

The SVE System at the Vestal Area 4 Site ran approximately 29 days during the period 12/1/04 to 12/31/04. The quarterly sampling occurred on December 7 and 8. One cooler, containing the System samples, was lost during transit. Due to lab scheduling, Shaw technicians re-sampled the lost air samples on December 21.

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 October through December 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 29 days in October, 28 days in November and 29 days during December 2004 bringing the total operational time to approximately 444 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 October 19; November 17; and December 7, 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 3 and 8 inches of water (H_2O).

3.1.2 Carbon Units

The total pressure drop across the two carbon units averaged 6 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 October 19, November 17, and December 7, 8, and 21, 2004, are listed in Table 1. On October 19 vacuum flow rates at the cell distribution buildings ranged from 5 to 24 standard cubic feet per minute (scfm) for Cell 1 and less than 5 to 20 scfm for Cell 2. Injection flow rates ranged from 12 to 18 scfm for Cell 1 from less than 5 to 6 in Cell 2.

On November 17, 2004 vacuum flow rates at the cell distribution buildings ranged from less than 5 to 20 scfm for Cell 1 and less than 5 to 11 scfm for Cell 2. Injection flow rates ranged from 10 to 15 scfm for Cell 1 and from less than 5 to 6 scfm in Cell 2.

On December 7, 8, and 21, 2004 (the quarterly monitoring event) vacuum pressures at the cell distribution buildings manifolds remained at 66 inches of H_2O for Cell 1 and Cell 2. Injection pressure ranged from 74 inches of H_2O for Cell 1 and 76 inches of H_2O for 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 173°F, and the temperature at the discharge of the injection blower was measured at an average of 133°F. Temperature at the vacuum header within the Cell distribution buildings ranged from 50°F to 56°F, and ranged between 50°F and 54°F at the injection header. The carbon treatment system influent air stream temperatures ranged from 64°F to 74°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 October 19, November 17 and December 7, 8, and 21, 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 October and December 2004 averaged 512 scfm. The bypass airflow for October 19, November 17 and December 7, 8, and 21 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 392 scfm.

3.3.2 SVE Well Process Air Flow

Individual SVE withdrawal and injection well process airflow measurements were recorded on October 19, November 17 and December 7, 8, and 21, 2004. This data is contained in Table 1.

Total SVE well air flow on the withdrawal side of the System was 512 scfm October 19, November 17 and December 7, 8, and 21, 2004.

3.4 Process Air VOC Concentrations

Process air samples were collected during the reporting period on October 19; November 17; and December 21, 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 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 December 7, 8, and 21, 2004. Concentrations of total targeted VOCs at individual wells ranged from non-measurable in wells D2, I1, J5, K2, and M3, to 919.23 ppm_v in well D1 (Table 3). Trichloroethene (TCE) and 1,1,1-trichloroethane (1,1,1-TCA) show the highest concentrations.

The total targeted VOC concentration contours using the December 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 C2 and D1.

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 on October 19, November 17 and December 21, 2004. The total targeted influent VOC concentration averaged 11.34 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 December 7, 8, and 21, 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 September sampling event.

The VOC yield rates varied from non-measurable to 0.91 lbs/day (well D1). Well J5 had a non-measurable yield because of only low VOC concentration (PID reading less than 10 ppm), and wells A3, B3, G1, I5, J3, J4, J6, K5, L2, and M2 had a non-measurable yield due to only very low air flow (5 scfm or lower) only. Wells C3, D2, I1, J2, K2, and M3 had a non-measurable yield due to a low VOC concentration and low flow. 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 September 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 0.05 lbs/day total targeted VOC. A higher yield rate was observed in the vicinity of well D4.

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**
A3	2	35.1	X		Low	None	See paragraph below.
B3	2	21.2	X		Low	None	See paragraph below.
C3	2	2.3	X	X	Medium	None	See paragraph below.
D2	2	1.3	X	X	Medium	None	See paragraph below.
G1	2	18.8	X		Low	None	See paragraph below.
I1	2	2.2	X	X	Low	None	See paragraph below.
I5	2	14.5	X		High	None	See paragraph below.
J2	2	3.8	X	X	Medium	None	See paragraph below.
J3	2	17.9	X		High	None	See paragraph below.
J4	2	43.3	X		High	None	See paragraph below.
J5	12	2.8		X	High	None	See paragraph below.
J6	2	19.4	X		High	None	See paragraph below.
K2	2	1.6	X	X	Low	None	See paragraph below.
K5	2	13.7	X		High	None	See paragraph below.
L2	2	15.4	X		High	None	See paragraph below.
M2	2	18.4	X		Low	None	See paragraph below.
M3	2	2.3	X	X	Low	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 2,023 pounds of VOCs through the

December 21, 2004 sampling event (Table 5). Therefore, the average yield rate of the System between June 23, 2003 and December 21, 2004, is 4.62 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. 6 ANALYSIS OF MONITORING DATA

This section provides additional analysis of operational data collected between October and December 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 December 21, 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.

1,1,1 – TCA is the dominant compound detected (Table 4), ranging from 37 to 58 percent of the VOC component of the total System process air stream. TCE ranged from approximately 42 to 63 percent of the total (Table 4).

There is a decrease of the average contaminant yield rate from quarter 5 through quarter 6 (4.45 lbs/day and 3.01 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 (Figures 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 fifth quarter.

During this reporting period, some wells were recorded with limited 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

We will be closely evaluating the system for additional reconfiguration opportunities to maximize contaminant removal as well as planning for and implementing an interim sampling event. We will also need to provide an assessment of the removal productivity in order to make a recommendation to the USEPA on whether or not to extend the system operation beyond June 2005. To that end, the following activities are anticipated for the next reporting period:

- Review of all system specific data regarding flow rates, contaminate concentrations and weather conditions at the site, make adjustments as deemed necessary;
- Recommendation of and implementation of reconfiguration of individual SVE airflow polarities (if warranted based on site specific data), early March 2005;
- Target the execution of an Interim Soil Sampling event (based air sample results or need of additional soil contaminant information), in late January or early February 2005 as weather permits;
- Develop report of the Interim Soil Sampling results, making recommendations of additional system operation time (beyond the current and last 150 day cycle in the task order); and/or recommendations of further system reconfiguration to USACE and USEPA, based upon soil sampling data;
- Continue operations and maintenance of the SVE system;
- The next quarterly sampling event is scheduled for March 2005; and

- A carbon change out is anticipated during the next quarter.

Typically, we would expect to evaluate system removal trends for two months or so after a reconfiguration to assess the need for the interim sampling event. Since we will need to make recommendations for system operations beyond the second 150 day period by late March or early April, we are accelerating this soil sampling event.

8.0 AUTHOR IDENTIFICATION

This report was prepared and checked by:

Douglas C. Callahan
Project Manager
Shaw Environmental (Envirogen)

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

Asphalt Parking

Edge of Asphalt Parking (Typical)

AREA 4 BOUNDARY

CELL 1 DISTRIBUTION BUILDING

CELL 2 DISTRIBUTION BUILDING

Benchmark
file cut in west
rim of manhole
Elevation = 824.36'

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 O – 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	4-28-02	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 075803

DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATE	12-21-04

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

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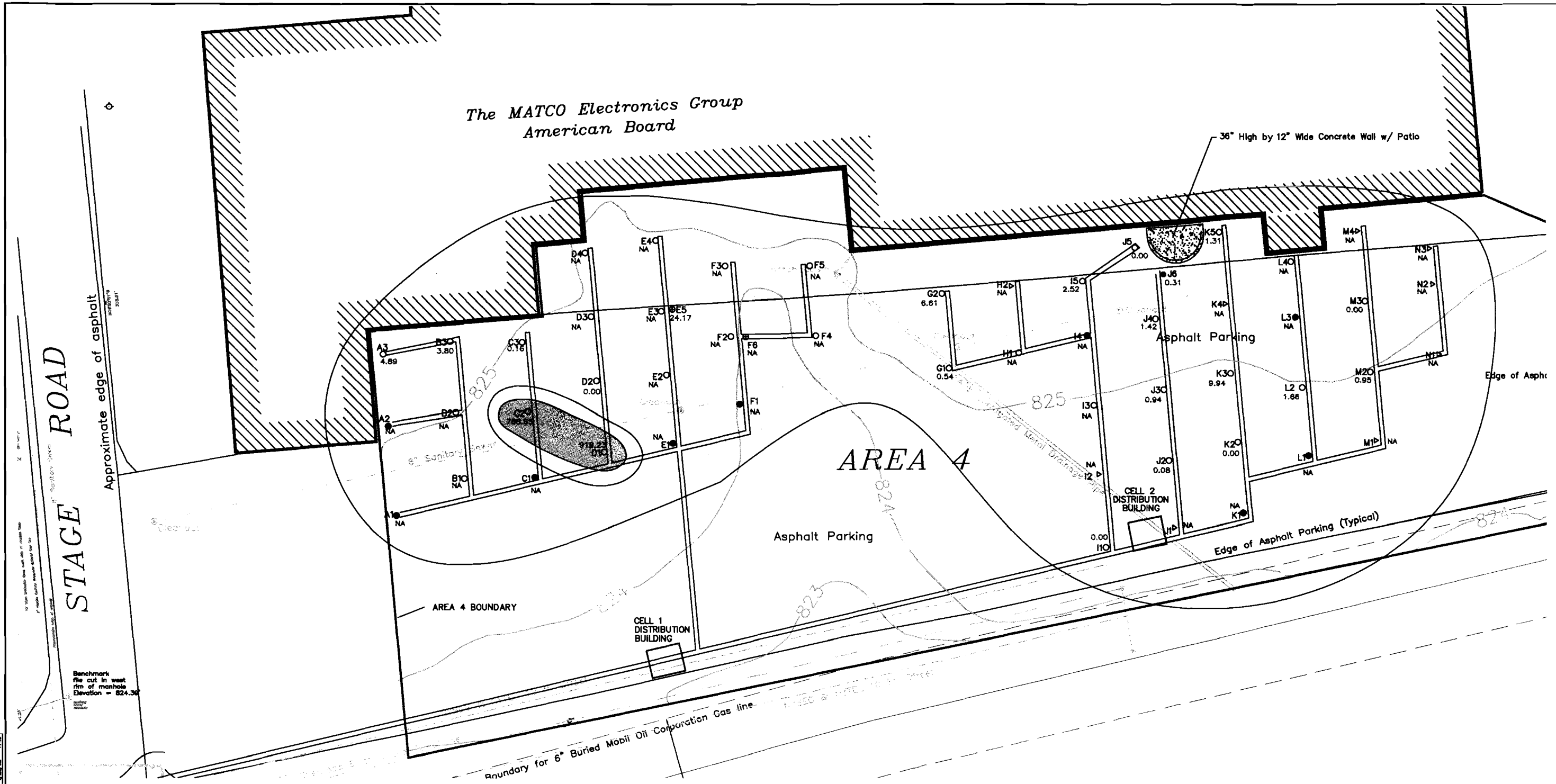

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

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 – TTC Concentration (ppmw)
- NA – Not Available
- – 0–50 (ppmw) TTTC 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
1	4-28-02	ISSUED FOR CLIENT REVIEW	DC

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Sevenson Environmental Services Inc.
6749 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	12-21-04

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

TITLE: TOTAL TARGET VOC CONCENTRATION
DECEMBER 7, 8, & 21, 2004

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

The MATCO Electronics Group
American Board

STAGE ROAD

Approximate edge of asphalt

AREA 4

Asphalt Parking

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

Edge of Asphalt Parking (Typical)

AREA 4 BOUNDARY

CELL 1 DISTRIBUTION BUILDING

CELL 2 DISTRIBUTION BUILDING

Benchmark
file cut in west
rim of manhole
Elevation = 824.38

Boundary for 6" Buried Mobil Oil Corporation Gas line

825

824

823

A3 2.71 B3O 1.96 C3O 0.08 D3O NA E4O NA B4O NA E3O NA E5 5.21 F3O NA F5 NA F2O NA F6 NA F4 NA D2O 0.00 E2O NA F1 NA A2 NA B2O NA B1O NA C1O NA E1O NA D1O NA A1 NA

G2O 3.51 H2O NA I5O 1.32 G1O 0.32 H1O NA I4O NA I3O NA I2O NA I1O 0.00 J5 0.00 J6 0.12 J4O 1.21 J3O 0.67 J2O 0.08 K5O 0.71 K4O NA K3O 9.14 K2O 0.00 K1O NA L4O NA L3O NA L2O 0.83 L1O NA M4O NA M3O 0.00 M2O 0.58 M1O NA N3O NA N2O NA N1O NA

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

LEGEND

- A5 ● – INJECTION SVE well
- D3 ○ – VACUUM SVE well
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- 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
1	4-28-02	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 075853

DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATE	12-21-04

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

TITLE: 1,1,1 TCA CONCENTRATION (ppmv)
DECEMBER 7, 8, & 21, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681088
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

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

8" Sanitary Sewer

Benchmark
file cut in west
rim of manhole
Elevation = 824.36'

Boundary for 6" Buried Mobil Oil Corporation Gas line

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 – 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	4-26-02	ISSUED FOR CLIENT REVIEW	DC

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

ENVIROGEN
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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 078833

DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATE	12-21-04

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

TITLE: TCE CONCENTRATION (ppmv)
DECEMBER 7, 8, & 21, 2004

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

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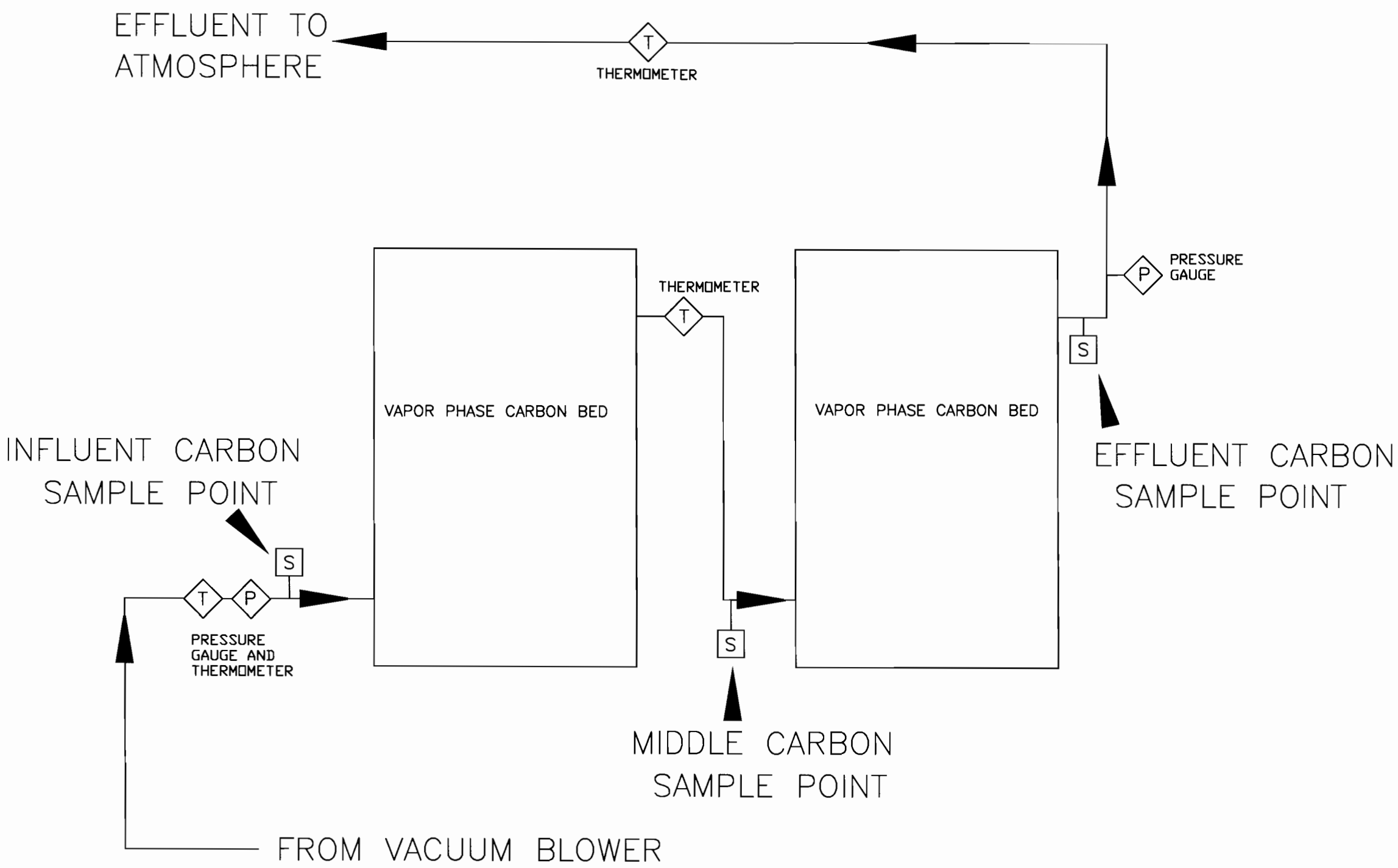

NO.	DATE	ISSUED FOR	BY
1	4-26-02	ISSUED FOR CLIENT REVIEW	DC

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
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 070633

DRAWN	BL
CHECKED BY:	DC
DESIGN ENGR:	DC
APPROVED BY:	SA
DATE	12-21-04

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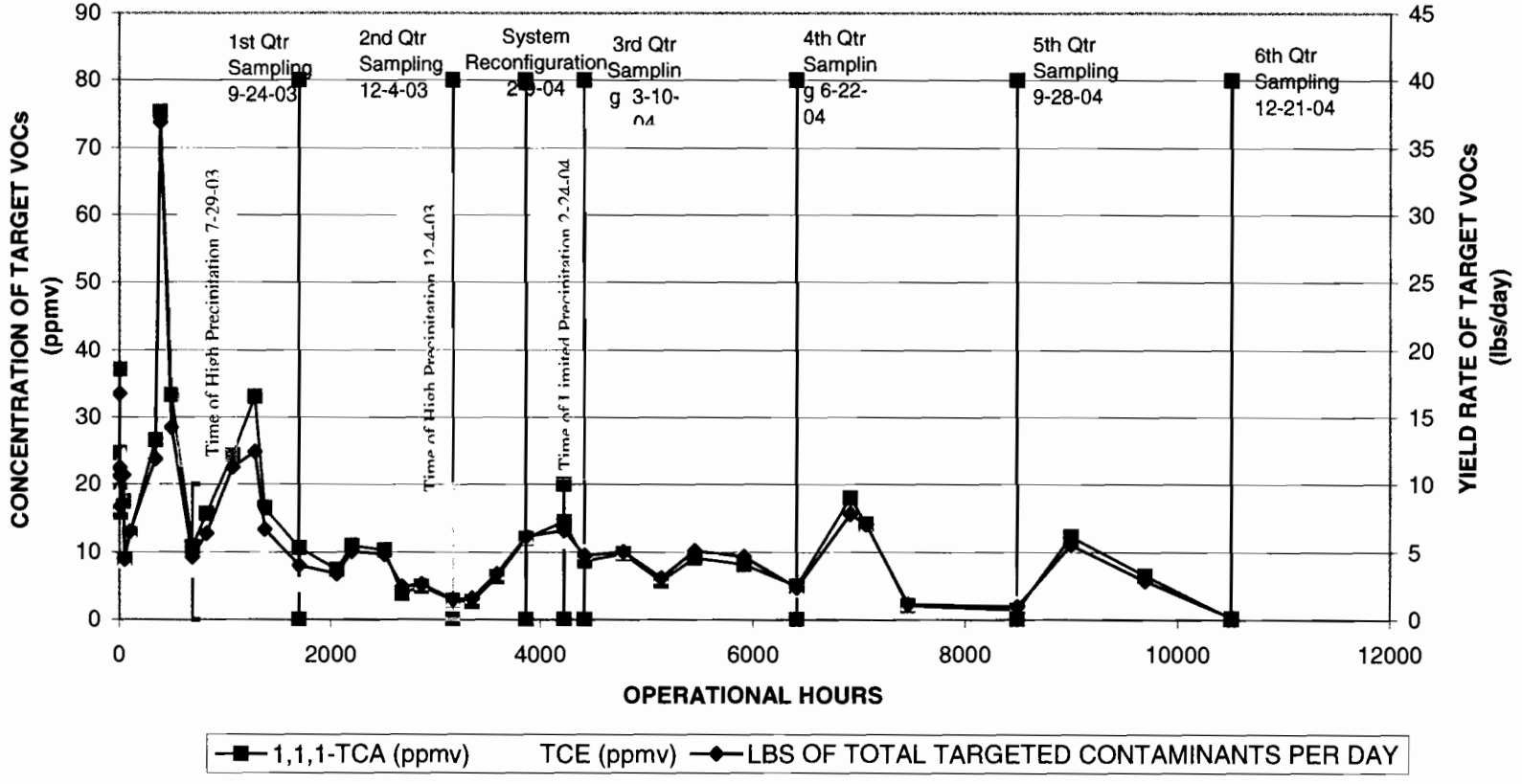
FIGURE 6
CONCENTRATION (ppmv) AND YIELD RATE (lbs/day)
OF TOTAL TARGET VOCs Vs. TIME
TOTAL SYSTEM SAMPLE
VESTAL AREA 4



The MATCO Electronics Group
American Board

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

STAGE ROAD

Approximate edge of asphalt

AREA 4

Asphalt Parking

AREA 4 BOUNDARY

CELL 1 DISTRIBUTION BUILDING

CELL 2 DISTRIBUTION BUILDING

Edge of Asphalt Parking (Typical)

Edge of Asphc

6" Sanitary Sewer

Benchmark
file cut in west
rim of manhole
Elevation = 824.39

Boundary for 6" Buried Mobil Oil Corporation Gas line

825
824
823

A3 0.00 B3 0.00 C3 0.00 D4 NA E4 NA F3 NA F5 NA
D3 NA E3 NA E5 0.02 F2 NA F6 NA F4 NA
A2 NA B2 NA C2 0.76 D2 0.00 E2 NA F1 NA
0.91 D1 NA E1 NA
B1 NA C1 NA
A1 NA

G2 0.08 H2 NA I5 0.00 J5 0.00 K5 0.00 L4 NA M4 NA N3 NA
G1 0.00 H1 NA I4 NA J6 0.00 K4 NA L3 NA M3 0.00 N2 NA
J4 0.00 K3 0.01 L2 0.00 M2 0.00 N1 NA
I3 NA J3 0.00 K2 0.00 L1 NA M1 NA
I2 NA J2 0.00 K1 NA
0.00 I1 NA J1 NA

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 079823

DRAWN	BL
CHECKED BY:	DC
DESIGN ENGR	DC
APPROVED BY:	SA
DATE	12-21-04

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

TITLE: TOTAL TARGET VOC YIELD (lbs/day)
DECEMBER 7, 8, & 21, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4– 7
SHEET	7 OF 10

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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

AREA 4

Asphalt Parking

AREA 4 BOUNDARY

CELL 1 DISTRIBUTION BUILDING

CELL 2 DISTRIBUTION BUILDING

Edge of Asphalt Parking (Typical)

Edge of Asphc

6" Sanitary Sewer

Boundary for 6" Buried Mobil Oil Corporation Gas line

Benchmark
file cut in west
rim of manhole
Elevation = 824.36'

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	4-26-02	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 078626

DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATE	12-21-04

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

TITLE: 1,1,1 TCA YIELD (lbs/day)
DECEMBER 7, 8, & 21, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4- 8
SHEET	8 OF 10

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The MATCO Electronics Group
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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

Benchmark
file cut in west
rim of manhole
Elevation = 824.36

Boundary for 6" Buried Mobil Oil Corporation Gas line

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

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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 078823

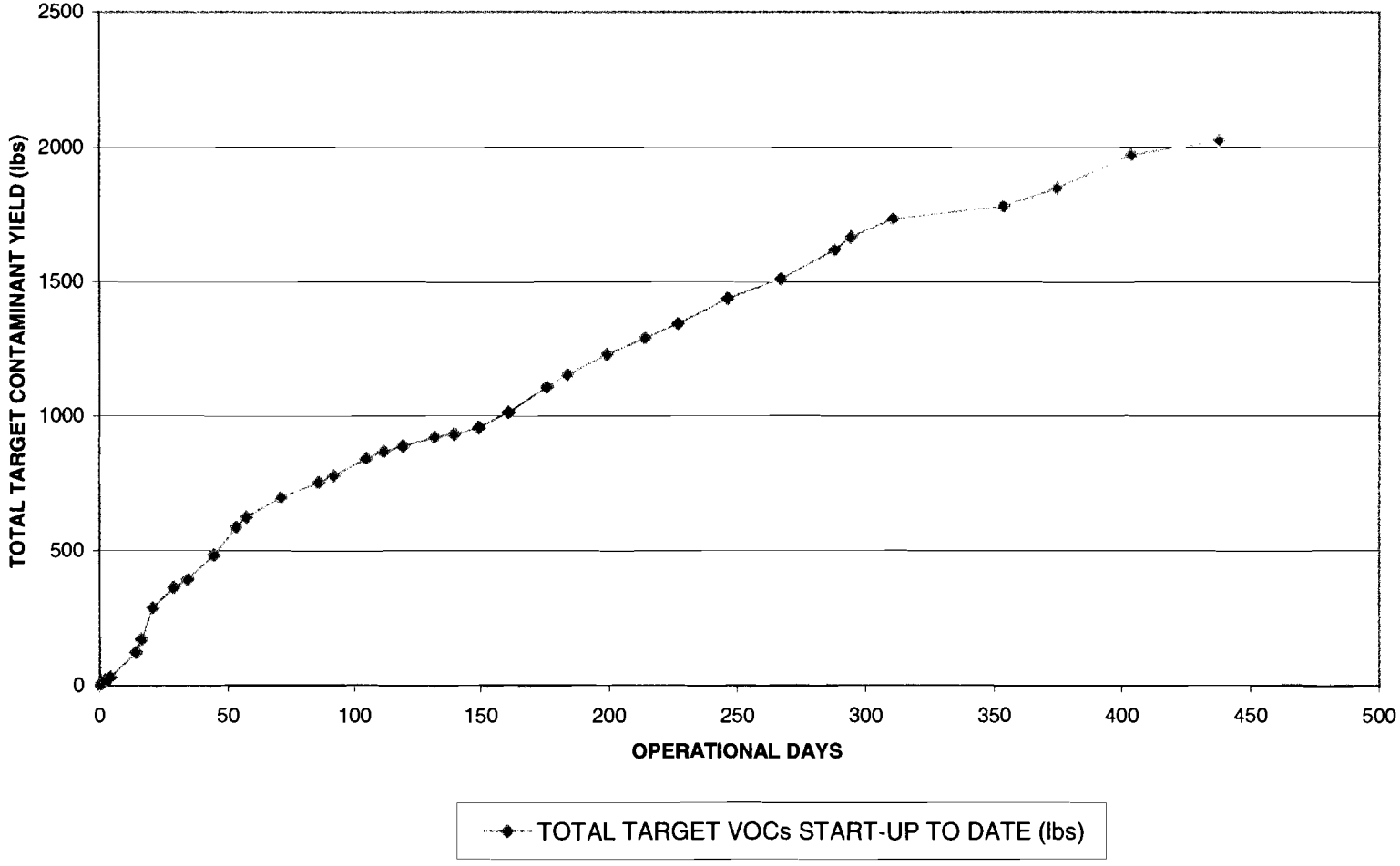
DRAWN	BL
CHECKED BY	DC
DESIGN ENGR	DC
APPROVED BY	SA
DATE	12-21-04

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

TITLE: TCE YIELD (lbs/day)
DECEMBER 7, 8, & 21, 2004

SCALE	AS SHOWN
REVISION	
PROJECT NUMBER	681086
DRAWING NUMBER	VES A4– 9
SHEET	9 OF 10

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
October 19, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			210			
INFLUENT			512		66.9	
MIDDLE			512		4.0	
EFFLUENT			512		1.5	
A1		X	12	OPEN	5.3	LOW
A2		X	15	OPEN	4.9	LOW
A3	X		5	OPEN	2.0	LOW
B1	X		6	OPEN	2.5	LOW
B2	X		5	OPEN	4.1	LOW
B3	X		6	OPEN	8.3	LOW
C1		X	18	OPEN	7.4	LOW
C2	X		6	OPEN	4.2	MEDIUM
C3	X		7	OPEN	1.9	MEDIUM
D1	X		5	OPEN	2.9	LOW
D2	X		NA	WATER	NA	MEDIUM
D3	X		6	OPEN	2.9	HIGH
D4	X		22	OPEN	18.6	HIGH
E1		X	18	OPEN	10.7	LOW
E2	X		5	OPEN	6.5	MEDIUM
E3	X		NA	OPEN	9.6	HIGH
E4	X		24	OPEN	3.6	HIGH
E5	X		6	OPEN	8.5	HIGH
F1		X	18	OPEN	14.2	LOW
F2	X		11	OPEN	4.1	MEDIUM
F3	X		7	OPEN	1.1	MEDIUM
F4	X		5	OPEN	3.2	LOW
F5	X		6	OPEN	2.3	LOW
F6	X		NA	WATER	NA	LOW
G1	X		11	OPEN	3.6	LOW
G2	X		20	OPEN	2.8	LOW
H1	X		NA	WATER	NA	LOW
H2			NA	OFF	NA	LOW
I1	X		6	OPEN	3.4	LOW
I2			NA	OFF	NA	LOW
I3	X		NA	WATER	NA	MEDIUM
I4		X	<5	LF	1.5	MEDIUM
I5	X		NA	WATER	NA	HIGH
J1			NA	OFF	NA	LOW
J2	X		5	OPEN	1.5	MEDIUM
J3	X		5	OPEN	2.1	HIGH
J4	X		5	OPEN	1.9	HIGH
J5	X		6	OPEN	1.5	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
October 19, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J6	X		5	OPEN	1.5	HIGH
K1		X	<5	LF	2.0	LOW
K2	X		5	OPEN	1.9	LOW
K3	X		6	OPEN	1.4	MEDIUM
K4			NA	OFF	NA	MEDIUM
K5	X		5	OPEN	2.2	HIGH
L1		X	<5	LF	5.6	LOW
L2	X		5	OPEN	6.2	HIGH
L3		X	6	OPEN	1.7	LOW
L4	X		<5	LF	3.9	LOW
M1			NA	OFF	NA	LOW
M2	X		<5	OPEN	6.8	LOW
M3	X		5	OPEN	1.1	LOW
M4			NA	OFF	NA	LOW
N1			NA	OFF	NA	LOW
N2			NA	OFF	NA	LOW
N3			NA	OFF	NA	LOW

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

LF= limited airflow

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
November 17, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			210			
INFLUENT			512		47.9	
MIDDLE			512		5.2	
EFFLUENT			512		1.6	
A1		X	10	OPEN	NA	LOW
A2		X	11	OPEN	NA	LOW
A3	X		6	OPEN	20.5	LOW
B1	X		<5	OPEN	6.7	LOW
B2	X		6	OPEN	9.2	LOW
B3	X		7	OPEN	7.0	LOW
C1		X	15	OPEN	NA	LOW
C2	X		9	OPEN	5.3	MEDIUM
C3	X		10	OPEN	10.3	MEDIUM
D1	X		6	OPEN	9.9	LOW
D2	X		NA	WATER	NA	MEDIUM
D3	X		9	OPEN	11.9	HIGH
D4	X		17	OPEN	20.7	HIGH
E1		X	13	OPEN	NA	LOW
E2	X		6	OPEN	11.6	MEDIUM
E3	X		10	OPEN	9.6	HIGH
E4	X		16	OPEN	3.9	HIGH
E5	X		8	OPEN	7.3	HIGH
F1		X	15	OPEN	NA	LOW
F2	X		20	OPEN	5.5	MEDIUM
F3	X		5	OPEN	1.9	MEDIUM
F4	X		<5	OPEN	3.7	LOW
F5	X		6	OPEN	6.1	LOW
F6	X		9	OPEN	8.2	LOW
G1	X		10	OPEN	3.1	LOW
G2	X		11	OPEN	4.6	LOW
H1	X		6	OPEN	2.7	LOW
H2			NA	OFF	NA	LOW
I1	X		7	OPEN	3.1	LOW
I2			NA	OFF	NA	LOW
I3	X		9	OPEN	6.6	MEDIUM
I4		X	5	OPEN	NA	MEDIUM
I5	X		5	OPEN	5.3	HIGH
J1			NA	OFF	NA	LOW
J2	X		6	OPEN	2.3	MEDIUM
J3	X		5	OPEN	1.5	HIGH
J4	X		6	OPEN	3.8	HIGH
J5	X		5	OPEN	9.7	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
November 17, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J6	X		5	OPEN	6.4	HIGH
K1		X	<5	LF	NA	LOW
K2	X		6	OPEN	2.0	LOW
K3	X		6	OPEN	3.4	MEDIUM
K4			NA	OFF	NA	MEDIUM
K5	X		5	OPEN	2.5	HIGH
L1		X	5	OPEN	NA	LOW
L2	X		7	OPEN	5.4	HIGH
L3		X	6	OPEN	NA	LOW
L4	X		<5	LF	7.5	LOW
M1			NA	OFF	NA	LOW
M2	X		5	OPEN	6.5	LOW
M3	X		5	OPEN	4.3	LOW
M4			NA	OFF	NA	LOW
N1			NA	OFF	NA	LOW
N2			NA	OFF	NA	LOW
N3			NA	OFF	NA	LOW

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

LF= limited airflow

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
December 7, 8, & 21, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			210			
INFLUENT			512		9.9	
MIDDLE			512		15.7	
EFFLUENT			512		1.2	
A1		X	8	OPEN	NA	LOW
A2		X	7	OPEN	NA	LOW
A3	X		<5	LF	35.1	LOW
B1	X		NA	WATER	NA	LOW
B2	X		NA	WATER	NA	LOW
B3	X		<5	LF	21.2	LOW
C1		X	12	OPEN	NA	LOW
C2	X		<5	LF	93.7	MEDIUM
C3	X		<5	LF	2.3	MEDIUM
D1	X		<5	LF	106.7	LOW
D2	X		<5	LF	1.3	MEDIUM
D3	X		<5	LF	76.6	HIGH
D4	X		25	OPEN	3.0	HIGH
E1		X	12	OPEN	NA	LOW
E2	X		NA	WATER	NA	MEDIUM
E3	X		NA	WATER	NA	HIGH
E4	X		NA	WATER	NA	HIGH
E5	X		<5	LF	19.1	HIGH
F1		X	17	OPEN	NA	LOW
F2	X		NA	WATER	NA	MEDIUM
F3	X		NA	WATER	NA	MEDIUM
F4	X		NA	WATER	NA	LOW
F5	X		NA	WATER	NA	LOW
F6	X		NA	WATER	NA	LOW
G1	X		<5	LF	18.8	LOW
G2	X		25	OPEN	46.8	LOW
H1	X		NA	WATER	NA	LOW
H2			NA	OFF	NA	LOW
I1	X		<5	LF	2.2	LOW
I2			NA	OFF	NA	LOW
I3	X		NA	WATER	NA	MEDIUM
I4		X	6	OPEN	NA	MEDIUM
I5	X		<5	LF	14.5	HIGH
J1			NA	OFF	NA	LOW
J2	X		<5	LF	3.8	MEDIUM
J3	X		<5	LF	17.9	HIGH
J4	X		<5	LF	43.3	HIGH
J5	X		12	OPEN	2.8	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
December 7, 8, & 21, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J6	X		<5	LF	19.4	HIGH
K1		X	5	OPEN	NA	LOW
K2	X		<5	LF	1.6	LOW
K3	X		<5	LF	12.5	MEDIUM
K4			NA	OFF	NA	MEDIUM
K5	X		<5	LF	13.7	HIGH
L1		X	5	OPEN	NA	LOW
L2	X		<5	LF	15.4	HIGH
L3		X	6	OPEN	NA	LOW
L4	X		NA	WATER	NA	LOW
M1			NA	OFF	NA	LOW
M2	X		<5	OPEN	18.4	LOW
M3	X		<5	OPEN	2.3	LOW
M4			NA	OFF	NA	LOW
N1			NA	OFF	NA	LOW
N2			NA	OFF	NA	LOW
N3			NA	OFF	NA	LOW

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

LF= limited airflow

TABLE 2
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)
10/19/04	VS-SVE-INF-101904-0428	INF	512	66.9	12.35	9.55	21.90
10/19/04	VS-SVE-MID-101904-0429	MID	512	4.0	0.92	0.12	1.05
10/19/04	VS-SVE-EFF-101904-0430	EFF	512	1.5	0.00	0.00	0.00
10/19/04	VS-SVE-TB-101904-0432	TB	NA	0.3	0.00	0.00	0.00
11/17/04	VS-SVE-INF-111704-0433	INF	512	47.9	6.63	4.76	11.39
11/17/04	VS-SVE-MID-111704-0434	MID	512	5.2	0.38	0.12	0.50
11/17/04	VS-SVE-EFF-111704-0435	EFF	512	1.6	0.00	0.00	0.00
11/17/04	VS-SVE-TB-111704-0437	TB	NA	1.5	0.00	0.00	0.00
12/21/04	VS-SVE-INF-122104-0493	INF	512	9.9	0.29	0.46	0.74
12/21/04	VS-SVE-MID-122104-0494	MID	512	15.7	0.31	0.11	0.42
12/21/04	VS-SVE-EFF-122104-0495	EFF	512	1.2	0.00	0.00	0.00
12/21/04	VS-SVE-TB-6-122104-0497	TB	NA	NA	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
DECEMBER 7, 8, & 21, 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
12/07/04	D2	2	1.3	0.00	0.00	0.00	0.00	0.00	0.00
12/07/04	C2	2	93.7	448.84	319.81	768.65	0.45	0.31	0.76
12/07/04	TB-1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
12/07/04	D1	2	106.7	563.31	355.92	919.23	0.56	0.35	0.91
12/07/04	TB-2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
12/07/04	C3	2	2.3	0.06	0.10	0.16	0.00	0.00	0.00
12/07/04	B3	2	21.2	1.96	1.84	3.80	0.00	0.00	0.00
12/07/04	A3	2	35.1	2.71	2.18	4.89	0.00	0.00	0.00
12/07/04	E5	2	19.1	6.21	17.96	24.17	0.01	0.02	0.02
12/07/04	TB-3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
12/07/04	PB-1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
12/08/04	J4	2	43.3	1.21	0.22	1.42	0.00	0.00	0.00
12/08/04	J2	2	3.8	0.08	0.00	0.08	0.00	0.00	0.00
12/08/04	L2	2	15.4	0.83	0.83	1.66	0.00	0.00	0.00
12/08/04	K5	2	13.7	0.71	0.60	1.31	0.00	0.00	0.00
12/08/04	K2	2	1.6	0.00	0.00	0.00	0.00	0.00	0.00
12/08/04	K3	2	12.5	9.14	0.79	9.94	0.01	0.00	0.01
12/08/04	K3-D	2	12.5	14.07	0.94	15.01	0.01	0.00	0.01
12/08/04	TB-4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
12/08/04	M2	2	18.4	0.59	0.36	0.95	0.00	0.00	0.00
12/08/04	J6	2	19.4	0.12	0.19	0.31	0.00	0.00	0.00
12/08/04	J3	2	17.9	0.67	0.27	0.94	0.00	0.00	0.00
12/08/04	G1	2	18.8	0.32	0.22	0.54	0.00	0.00	0.00
12/08/04	I5	2	14.5	1.32	1.20	2.52	0.00	0.00	0.00
12/08/04	G2	25	46.8	3.51	3.10	6.61	0.04	0.04	0.08
12/08/04	TB-5	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

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
12/21/04	J5	12	2.8	0.00	0.00	0.00	0.00	0.00	0.00
12/21/04	I1	2	2.2	0.00	0.00	0.00	0.00	0.00	0.00
12/21/04	M3	2	2.3	0.00	0.00	0.00	0.00	0.00	0.00
12/21/04	INF	512	9.9	0.29	0.46	0.74	0.07	0.12	0.19
12/21/04	MID	512	15.7	0.31	0.11	0.42	0.08	0.03	0.11
12/21/04	EFF	512	1.2	0.00	0.00	0.00	0.00	0.00	0.00
12/21/04	PB-2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
12/21/04	TB-6	NA	NA	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

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

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)
1/14/2004	VS-SVE-INF-011404-0197	INF	0.69	0.90	1.59
1/26/2004	VS-SVE-INF-012604-0202	INF	1.63	1.79	3.42
	INFLUENT AVG. PER DAY FOR PERIOD		1.16	1.35	2.51
	TOTAL YIELD (lbs) FOR PERIOD (1/14-1/26)				24.17
1/26/2004	VS-SVE-INF-012604-0202	INF	1.63	1.79	3.42
2/9/2004	VS-SVE-INF-020904-0207	INF	3.09	3.10	6.20
	INFLUENT AVG. PER DAY FOR PERIOD		2.36	2.45	4.81
	TOTAL YIELD (lbs) FOR PERIOD (1/26-2/9)				55.27
2/9/2004	VS-SVE-INF-020904-0207	INF	3.09	3.10	6.20
2/24/2004	VS-SVE-INF-022404-0212	INF	3.72	2.91	6.63
	INFLUENT AVG. PER DAY FOR PERIOD		3.41	3.01	6.42
	TOTAL YIELD (lbs) FOR PERIOD (2/9-2/24)				95.58
2/24/2004	VS-SVE-INF-022404-0212	INF	3.72	2.91	6.63
3/10/2004	VS-SVE-INF-031004-0262	INF	2.23	2.54	4.78
	INFLUENT AVG. PER DAY FOR PERIOD		2.98	2.73	5.71
	TOTAL YIELD (lbs) FOR PERIOD (2/24-3/10)				45.58
3/10/2004	VS-SVE-INF-031004-0262	INF	2.23	2.54	4.78
4/5/2004	VS-SVE-INF-040504-0267	INF	2.51	2.56	5.07
	INFLUENT AVG. PER DAY FOR PERIOD		2.37	2.55	4.93
	TOTAL YIELD (lbs) FOR PERIOD (3/10-4/5)				75.11
4/5/2004	VS-SVE-INF-040504-0267	INF	2.51	2.56	5.07
4/27/2004	VS-SVE-INF-042704-0272	INF	1.47	1.64	3.11
	INFLUENT AVG. PER DAY FOR PERIOD		1.99	2.10	4.09
	TOTAL YIELD (lbs) FOR PERIOD (4/5-4/27)				60.45
4/27/2004	VS-SVE-INF-042704-0272	INF	1.47	1.64	3.11
5/11/2004	VS-SVE-INF-051104-0277	INF	2.35	2.77	5.12
	INFLUENT AVG. PER DAY FOR PERIOD		1.91	2.21	4.12
	TOTAL YIELD (lbs) FOR PERIOD (4/27-5/11)				54.36
5/11/2004	VS-SVE-INF-051104-0277	INF	2.35	2.77	5.12
6/1/2004	VS-SVE-INF-060104-0282	INF	2.10	2.59	4.69
	INFLUENT AVG. PER DAY FOR PERIOD		2.23	2.68	4.91
	TOTAL YIELD (lbs) FOR PERIOD (5/11-6/1)				94.18
6/1/2004	VS-SVE-INF-060104-0282	INF	2.10	2.59	4.69
6/22/2004	VS-SVE-INF-062204-0332	INF	1.30	1.11	2.40
	INFLUENT AVG. PER DAY FOR PERIOD		1.70	1.85	3.55
	TOTAL YIELD (lbs) FOR PERIOD (6/1-6/22)				73.91
6/22/2004	VS-SVE-INF-062204-0332	INF	1.30	1.11	2.40
7/13/2004	VS-SVE-INF-071304-0337	INF	4.61	3.23	7.84
	INFLUENT AVG. PER DAY FOR PERIOD		2.96	2.17	5.12
	TOTAL YIELD (lbs) FOR PERIOD (6/22-7/13)				107.37
7/13/2004	VS-SVE-INF-071304-0337	INF	4.61	3.23	7.84
7/22/2004	VS-SVE-INF-072204-0342	INF	3.63	3.46	7.09
	INFLUENT AVG. PER DAY FOR PERIOD		4.12	3.35	7.47
	TOTAL YIELD (lbs) FOR PERIOD (7/13-7/22)				46.95

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)
7/22/2004	VS-SVE-INF-072204-0342	INF	3.63	3.46	7.09
8/16/2004	VS-SVE-INF-081604-0347	INF	0.54	0.63	1.17
	INFLUENT AVG. PER DAY FOR PERIOD		2.09	2.05	4.13
	TOTAL YIELD (lbs) FOR PERIOD (7/22-8/16)				68.02
8/16/2004	VS-SVE-INF-081604-0347	INF	0.54	0.63	1.17
9/28/2004	VS-SVE-INF-092804-0423	INF	0.37	0.62	0.98
	INFLUENT AVG. PER DAY FOR PERIOD		0.46	0.63	1.08
	TOTAL YIELD (lbs) FOR PERIOD (8/16-9/28)				46.06
9/28/2004	VS-SVE-INF-092804-0423	INF	0.37	0.62	0.98
10/19/2004	VS-SVE-INF-101904-0428	INF	3.15	2.40	5.56
	INFLUENT AVG. PER DAY FOR PERIOD		1.76	1.51	3.27
	TOTAL YIELD (lbs) FOR PERIOD (9/28-10/19)				68.67
10/19/2004	VS-SVE-INF-101904-0428	INF	3.15	2.40	5.56
11/17/2004	VS-SVE-INF-111704-0433	INF	1.69	1.20	2.89
	INFLUENT AVG. PER DAY FOR PERIOD		2.42	1.80	4.23
	TOTAL YIELD (lbs) FOR PERIOD (10/19-11/17)				122.53
11/17/2004	VS-SVE-INF-111704-0433	INF	1.69	1.20	2.89
12/21/2004	VS-SVE-INF-122104-0493	INF	0.07	0.12	0.19
	INFLUENT AVG. PER DAY FOR PERIOD		0.88	0.66	1.54
	TOTAL YIELD (lbs) FOR PERIOD (11/17-12/21)				52.22
	TOTAL YIELD TO REPORTED DATE				2023.13

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
7/13/2004	879.24	739.47	1618.71
7/22/2004	905.17	760.52	1665.69
8/16/2004	939.55	794.17	1733.72
9/28/2004	959.14	820.79	1779.93
10/19/2004	996.13	852.47	1848.60
11/17/2004	1066.51	904.73	1971.24
12/21/2004	1096.44	927.00	2023.44

TABLE 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.
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.

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
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.
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.
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.

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
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.
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: 10/19/04 ARRIVAL TIME: 0900 FAULT LIGHTS ON (list): "NONE"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): Carbon Bed OE Sampling - Site Maint.

TASK PERFORMED: Pulled OE Samples From Influent, Mid-Carbon, and Effluent. Greased Blower Motors. Changed Oil in Blower Motors - 80/90wt Gear Oil. 26ozs Each Motor. Cut Back on Inj. to Cell #1 (Manifold). (Bubbles)

MAIN EQUIPMENT BUILDING

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

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130° F
INJECTION BLOWER TEMP SETTING: 230° F
PRESSURE AFTER INJECTION BLOWER 5 "H2O

VACUUM BLOWER TEMP: 180° F
VACUUM BLOWER TEMP SETTING: 230° F
VACUUMAFTER FILTER 4 "H2O
PRESSURE AFTER VACUUM BLOWER: 3 "H2O

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 9-27-04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 9-9-04

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 10/19/04

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	8 "H2O
TEMPERATURE BEFORE GAC 1	70° F
PRESSURE BETWEEN GAC UNIT 1 AND 2	6" "H2O
PRESSURE AFTER GAC UNIT 2	3" "H2O
TEMPERATURE AFTER GAC 2	60° 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: 74 "H2O

TEMP AT INJECTION MANIFOLD: 50° F

VACUUM AT VACUUM MANIFOLD: 70 "H2O

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

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: 25 "H2O

TEMP AT INJECTION MANIFOLD: 50° F

VACUUM AT VACUUM MANIFOLD: 25 "H2O

TEMP AT VACUUM MANIFOLD: 52° 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: Called Of Samples From Influent, Mid-Carbon and Effluent.

SUMMARY OF OTHER ACTIVITIES: Greased Blower Motors. Changed Oil in Blower Motors - Exhaust Gear oil - 2 bolts on motor. Cut back # on Inf. To Cell #1.

COMMENTS: Site Looks Good. - Buried Animal Woodchuck Found Dead in the Driveway. (02)

SIGNATURE OF OPERATIONS TECHNICIAN(S): LP Lefurgey

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 11/17/04 ARRIVAL TIME: 0800 FAULT LIGHTS ON (list): "NONE"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): PULL 06 SAMPLES FROM CARBON BEDS AND SHIP SPENT CARBON FROM 8-6-'04

TASK PERFORMED: MEET BUTTONS IND (TRANSP) AND NICK P OF USALF ON-SITE TO SHIP 9-DRUMS (8000LBS) OF SPENT CARBON TO DARLINGTON, PA. (ENVIROTROL)

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 9690.0

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130° F
INJECTION BLOWER TEMP SETTING: 230° F
PRESSURE AFTER INJECTION BLOWER 8 "~~H20~~ H6

VACUUM BLOWER TEMP: 160° F
VACUUM BLOWER TEMP SETTING: ~~230°~~ F
VACUUMAFTER FILTER 6 "~~H20~~ H6
PRESSURE AFTER VACUUM BLOWER: 5 "~~H20~~ H6

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 10-19-'04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 10-19-04

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 11/17/04

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	64° F
PRESSURE BETWEEN GAC UNIT 1 AND 2	7 "H20
PRESSURE AFTER GAC UNIT 2	4 "H2O
TEMPERATURE AFTER GAC 2	54° 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: 73 "H2O

TEMP AT INJECTION MANIFOLD: 50 F

VACUUM AT VACUUM MANIFOLD: 68 "H2O

TEMP AT VACUUM MANIFOLD: 52 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: 78 "H2O

TEMP AT INJECTION MANIFOLD: 52° F

VACUUM AT VACUUM MANIFOLD: 70 "H2O

TEMP AT VACUUM MANIFOLD: 54 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 Condition

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 OC Samples From Influent, Mid Carbon and Effluent. Took PID Readings of Carbon Beds. PID Read = INF 41.9 ppm Mid Carb 5.2ppm Eff. 1.6ppm.

SUMMARY OF OTHER ACTIVITIES: Checked Site. Pulled OC Samples. Shipped Spent Carbon Via Autumn Industries to Sarling for Pa NYD-980763767 PAH095500 9 Drums/2000lbs ea. / Total 18000 LBS. Spent Act. Carbon

COMMENTS: _____

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 12/7/04 ARRIVAL TIME: 0800 FAULT LIGHTS ON (list): "NONE"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): QTRLY. 06 SAMPLING EVENT.

TASK PERFORMED: PULLED 06 SAMPLES FROM VAC. WELLS IN CELL #1 12/7
PULLED 06 SAMPLES FROM GARBON BEDS AND 1 VAC WELLS IN CELL #2 12/8
ACES GOT SAMPLES FROM E-3/E-4 CELL #1 LF COMPANY GET 12/7.

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ✓ CONTROL BOX LOCKED ✓ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 10169.8 HRS 12/7

SVE PUMPING UNIT 10193.5 HRS 12/8

INJECTION BLOWER TEMP: 140° F
INJECTION BLOWER TEMP SETTING: 230 F
PRESSURE AFTER INJECTION BLOWER 11 ~~"H20~~ "H6

VACUUM BLOWER TEMP: 180 F
VACUUM BLOWER TEMP SETTING: 230 F
VACUUMAFTER FILTER 8 ~~"H20~~ "H6
PRESSURE AFTER VACUUM BLOWER: 7 ~~"H20~~ "H6

GREASE SEALS CHECKED: ✓ DATE OF LAST GREASE: 11-17-'04

OIL LEVEL CHECKED: ✓ DATE OF LAST OIL CHANGE: 10-19-'04

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE 12/7/04

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	70° F
PRESSURE BETWEEN GAC UNIT 1 AND 2	8 "H20
PRESSURE AFTER GAC UNIT 2	4 "H2O
TEMPERATURE AFTER GAC 2	70° 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: 55 F

PRESSURE AT INJECTION MANIFOLD: 74 "H2O

TEMP AT INJECTION MANIFOLD: 50° F

VACUUM AT VACUUM MANIFOLD: 66 "H2O

TEMP AT VACUUM MANIFOLD: 53° 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: 55° F

PRESSURE AT INJECTION MANIFOLD: 76 "H2O

TEMP AT INJECTION MANIFOLD: 54° F

VACUUM AT VACUUM MANIFOLD: 66 "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

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: _____

COMMENTS: _____

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: 10/19/04)

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

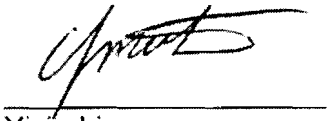
Vestal Duplicate Sample RPD Report					
Sample ID: VS-SVE-MID-101904-0429					
Sample Date	Analytes	Data1	Data2	RPD (%)	RPD Acceptable?
10/19/04	TCE	0.163	0.169	3.6	YES
10/19/04	1,1,1-TCA	1.072	1.283	17.9	YES

5. GC Calibrations

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

6. Lab Authentication Statement

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



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

QA/QC Report for Vestal Samples
(Sample Date: 11/17/04)

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

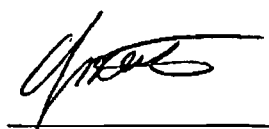
Vestal Duplicate Sample RPD Report					
Sample ID: VS-SVE-MID-111704-0434					
Sample Date	Analytes	Data1	Data2	RPD (%)	RPD Acceptable?
11/17/04	TCE	0.16	0.134	17.7	YES
11/17/04	1,1,1-TCA	0.531	0.517	2.7	YES

5. GC Calibrations

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

6. Lab Authentication Statement

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



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

QA/QC Report for Vestal Samples
(Sample Date: 12/7/04)

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, except that the sample date on the chain-of-custody was wrong. The correct sample date should be 12/7/04.

2. Sample Holding Times

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

3. Instrument Blank Analysis

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

4. Lab Duplicate Analysis

Vestal Duplicate Sample RPD Report					
Sample ID: VS-SVE-E5-120704-0458					
Sample Date	Analytes	Data1	Data2	RPD (%)	RPD Acceptable?
12/7/04	TCE	22.861	24.535	7.1	YES
12/7/04	1,1,1-TCA	7.972	8.63	7.9	YES

5. GC Calibrations

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

6. Lab Authentication Statement

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

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

QA/QC Report for Vestal Samples
(Sample Date: 12/8/04)

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

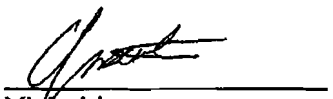
Vestal Duplicate Sample RPD Report					
Sample ID: VS-SVE-G2-120804-0476					
Sample Date	Analytes	Data1	Data2	RPD (%)	RPD Acceptable?
12/8/04	TCE	4.232	4.064	4.1	YES
12/8/04	1,1,1-TCA	4.875	4.42	9.8	YES

5. GC Calibrations

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

6. Lab Authentication Statement

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



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

QA/QC Report for Vestal Samples
(Sample Date: 12/21/04)

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-INF-122104-0493					
Sample Date	Analytes	Data1	Data2	RPD (%)	RPD Acceptable?
12/21/04	TCE	0.628	0.547	13.8	YES
12/21/04	1,1,1-TCA	0.396	0.425	7.1	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)
19-Oct-04	INSTRUMENT BLANK	0.00	0.00	0.05
19-Oct-04	VS-SVE-TB-101904-0432	0.00	0.00	0.05
17-Nov-04	INSTRUMENT BLANK	0.00	0.00	0.05
17-Nov-04	VS-SVE-TB-111704-0437	0.00	0.00	0.05
07-Dec-04	INSTRUMENT BLANK	0.00	0.00	0.05
07-Dec-04	VS-SVE-TB-1-120704-0444	0.00	0.00	0.05
07-Dec-04	VS-SVE-TB-2-120704-0453	0.00	0.00	0.05
07-Dec-04	VS-SVE-TB-3-120704-0460	0.00	0.00	0.05
08-Dec-04	INSTRUMENT BLANK	0.00	0.00	0.05
08-Dec-04	VS-SVE-TB-4-120804-0470	0.00	0.00	0.05
08-Dec-04	VS-SVE-TB-5-120804-0479	0.00	0.00	0.05
21-Dec-04	INSTRUMENT BLANK	0.00	0.00	0.05
21-Dec-04	VS-SVE-TB-6-122104-0497	0.00	0.00	0.05

Notes: 0.00 indicates below detection limit.

Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Analysis Date: 10/20/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 10/19/04
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-INF-101904-0428	12.35	9.55	0.05
VS-SVE-MID-101904-0429	0.92	0.12	0.05
VS-SVE-EFF-101904-0430	0.00	0.00	0.05
VS-SVE-SP-101904-0431	0.00	0.00	0.05
VS-SVE-TB-101904-0432	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: 8993.0 HRS.

Client: SEVENSON / USACE Client Code: #691086

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

Site Address: 210 STAGE RD, WESTOE, 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 (ppm)*	*Analysis Requested*	*Notes*
1	VS-SVE-0428	10-19-04	0955		66.9 -ppm	TO14, A	INFLUENT
2	VS-SVE-0429		1012		4.0 -ppm		MID CARBON
3	VS-SVE-0430		1028		1.5 -ppm		EFFLUENT
4	VS-SVE-0431		0915		1.3 -ppm		PUMP BLANK
5	VS-SVE-0432		TRIP BLANK		1.3 -ppm		TRIP BLANK
6							
7							
8							
9							
10							
11							
12							

Collected By: CRAGWOOD / MCGUIRE Date: 10-19-04 Time: 0915

Delivered By: _____ Date: _____ Time: _____

Received By: VR Date: 10/20/04 Time: 9:45

Remarks: _____

Envirogen, Inc.

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5126 West Grand River, Lansing, Michigan. 48906

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Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Analysis Date: 11/18/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 11/17/04
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-INF-111704-0433	6.63	4.76	0.05
VS-SVE-MID-111704-0434	0.38	0.12	0.05
VS-SVE-EFF-111704-0435	0.00	0.00	0.05
VS-SVE-SP-111704-0436	0.00	0.00	0.05
VS-SVE-TB-111704-0437	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: 9690.0 HRS

Client: SEVENSON/USACE Client Code: #681096

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	US-SVE-0433	11-17-04	1045		47.9 - ppm	TO4, D	INFLUENT
2	US-SVE-0434		1105		5.2 - ppm		MID CARBON
3	US-SVE-0435		1117		1.6 - ppm		EFFLUENT
4	US-SVE-0436		1230		1.5 - ppm		SAMPLE PUMP
5	US-SVE-0437		—		1.5 / DUP - ppm		TRIP BLANK
6							
7							
8							
9							
10							
11							
12							

Collected By: CALABRESE/MCGUIRE Date: 11-17-04 Time: 1230

Delivered By: _____ Date: _____ Time: _____

Received By: _____ Date: 11/18/04 Time: 9:30

Remarks: _____

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Shaw E & I Lab Analytical Results

Client: Sevenson/USACE
Analysis Date: 12/8/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 12/7/04
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-D2-120704-0438	0.00	0.00	0.05
VS-SVE-C2-120704-0439	448.84	319.81	0.63
VS-SVE-TB-1-120704-0444	0.00	0.00	0.05
VS-SVE-D1-120704-0445	563.31	355.92	1.25
VS-SVE-TB-2-120704-0453	0.00	0.00	0.05
VS-SVE-C3-120704-0454	0.06	0.10	0.05
VS-SVE-B3-120704-0455	1.96	1.84	0.05
VS-SVE-A3-120704-0456	2.71	2.18	0.05
VS-SVE-E5-120704-0458	6.21	17.96	0.05
VS-SVE-TB-3-120704-0460	0.00	0.00	0.05
VS-SVE-PB-1-120704-0461	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: 12/9/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 12/8/2004
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-J4-120804-0462	1.21	0.22	0.05
VS-SVE-J2-120804-0463	0.08	0.00	0.05
VS-SVE-L2-120804-0464	0.83	0.83	0.05
VS-SVE-K5-120804-0465	0.71	0.60	0.05
VS-SVE-K2-120804-0467	0.00	0.00	0.05
VS-SVE-K3-120804-0468	9.14	0.79	0.05
VS-SVE-K3-D-120804-0469	14.07	0.94	0.05
VS-SVE-TB-4-120804-0470	0.00	0.00	0.05
VS-SVE-M2-120804-0471	0.59	0.36	0.05
VS-SVE-J6-120804-0472	0.12	0.19	0.05
VS-SVE-J3-120804-0473	0.67	0.27	0.05
VS-SVE-G1-120804-0474	0.32	0.22	0.05
VS-SVE-I5-120804-0475	1.32	1.20	0.05
VS-SVE-G2-120804-0476	3.51	3.10	0.05
VS-SVE-TB-5-120804-0479	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: 12/22/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 12/21/2004
Units: ppmv
Project Manager: D. Callahan

SAMPLE ID	*1,1,1-TCA*	*TCE*	*DL*
VS-SVE-J5-122104-0490	0.00	0.00	0.05
VS-SVE-I1-122104-0491	0.00	0.00	0.05
VS-SVE-M3-122104-0492	0.00	0.00	0.05
VS-SVE-INF-122104-0493	0.29	0.46	0.05
VS-SVE-MID-122104-0494	0.31	0.11	0.05
VS-SVE-EFF-122104-0495	0.00	0.00	0.05
VS-SVE-PB-2-122104-0496	0.00	0.00	0.05
VS-SVE-TB-6-122104-0497	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.

Cook-up #1 AMBIENT 1.3 ppm

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 10169.8 hrs. Client: EVENSON / USACE Client Code: #691086

Flow Meter- Type : _____ Range (cfm): _____ Site Address: 210 STAGE B., VESTAL, NY

Withdrawl blower - Vacuum : _____ Pressure: _____ Project Manager: D. OSULLIVAN

Injection blower - Vacuum: _____ Pressure: _____ System Status : "OPERATING

	Sample ID.	Date	Time	Indicated Flow (cfm)	~~Carbon Dioxide~~ PID (ppm) PID	Analysis Requested	Notes
1	US-SVE-0438	12-17-04	0950	Less-5	1.3 ppm	TO-14, A	D-2
2	US-SVE-0439		1005	Less-5	93.7 ppm		C-2
3	US-SVE-0440		N/S	Less-5	H2O		E-2 H2O
4	US-SVE-0441		N/S	Less-5	H2O		B-2 H2O
5	US-SVE-0442		N/S	O/S	3.0 ppm		D-4 RUPTURED
6	US-SVE-0443		N/S	Less-5	76.6 ppm		D-3 H2O
7	US-SVE-0444	↓	—	—	—	↓	TB-#1
8							
9							
10							
11							
12							

Collected By: MACGUADD / McGUIRE Date: 12-17-04 Time: 0930

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 12/8/04 Time: 9:10

Remarks: _____

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Cooler #2

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 10169.8 HRS. 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 : "OPERATING"

	Sample ID.	Date	Time	Indicated Flow (cfm)	~~Carbon Dioxide~~ PID (ppm) PID	Analysis Requested	Notes
1	VS-SVE-0445	12-17-04	1015	Less-5	106.7 ppm	TO14, A	D-1
2	VS-SVE-0446		N/S	Less-5	H20		E-3 H20
3	VS-SVE-0447		N/S	8	H20		F-2 H20
4	VS-SVE-0448		N/S	O/S	H20		E-4 H20
5	VS-SVE-0449		N/S	—	H20		E-4-D H20
6	VS-SVE-0450		N/S	Less-5	H20		F-4 H20
7	VS-SVE-0451		N/S	Less-5	H20		F-5 H20
8	VS-SVE-0452		N/S	Less-5	H20		F-6 H20
9	VS-SVE-0453		—		—		TB-#2
10							
11							
12							

Collected By: CALABRESE / McGUIRE Date: 12/7/04 Time: 0930

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 12/8/04 Time: 9:10

Remarks: _____

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Cooler #3

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 10169.8 HRS

Client: SEVERN/USACE Client Code: 691086

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

Site Address: 210 STAGE RD., VESTAL, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. CALLAHAN

Injection blower - Vacuum: _____ Pressure: _____

System Status : "OPERATING"

	Sample ID.	Date	Time	Indicated Flow (cfm)	~~Carbon Dioxide~~ (ppm)	Analysis Requested	Notes
1	US-SVE-0454	12-17-04	1043	LESS-5	2.3 ppm	TO14, A	C-3
2	US-SVE-0455		1049	LESS-5	21.2 ppm		B-3
3	US-SVE-0456		1105	LESS-5	35.1 ppm		A-3
4	US-SVE-0457		N/S	O/S	H2O		B-1 H2O
5	US-SVE-0458		1117	LESS-5	19.1 ppm		E-5
6	US-SVE-0459		N/S	13	H2O		F-3 H2O
7	US-SVE-0460		—	—	—		TB-#3
8	US-SVE-0461	12-17-04	—	—	—	TO14, A	SAMPLE PUMP
9							
10							
11							
12							

Collected By: CABUERDO / McGUIRE Date: 12-17-04 Time: 0930

Delivered By: _____ Date: _____ Time: _____

Received By: [illegible] Date: 12/8/04 Time: 9:10

Remarks: _____

Envirogen, Inc.

New Solutions to Hazardous Waste Problems

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Cooler #4 AMBIENT - 1.1 ppm

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 10193.5 HRS

Client: SEVENSON/USACE Client Code: #691086

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

Site Address: 210 STAGE RD., VESTAL, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. COLLAHAN

Injection blower - Vacuum: _____ Pressure: _____

System Status : "OPERATING"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm) PID	Analysis Requested	Notes
1	VS-SVE-0462	12-8-04	0920	LESS-5	43.3 ppm	TO14, A	J-4
2	VS-SVE-0463		0926	LESS-5	3.8 ppm		J-2
3	VS-SVE-0464		0930	LESS-5	15.4 ppm		L-2
4	VS-SVE-0465		0938	LESS-5	13.7 ppm		K-5
5	VS-SVE-0466		—	LOFF —	—		K-4 (OFF) ?
6	VS-SVE-0467		0945	LESS-5	1.6 ppm		K-2
7	VS-SVE-0468		0950	LESS-5	12.5 ppm		K-3
8	VS-SVE-0469		0952	—	—		K-3-D
9	VS-SVE-0470		—	—	—		TB #4
10							
11							
12							

Collected By: COLBURDO / McGUIRE Date: 12/8/04 Time: 0850

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 12/9/04 Time: 9:15

Remarks: _____

Envirogen, Inc. SHAW ENCON

New Solutions to Hazardous Waste Problems

103 COLLEGE RD, SE

~~5126 West Grand River, Lansing, Michigan 48906~~

GRAND RAPIDS, MI 49503

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

616-774-3522

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

COOLER #5 AMBIENT 1.3 ppm

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 10193.5 HRS. Client: SEVENSON/USACE Client Code: #681086

Flow Meter- Type : _____ Range (cfm): _____ Site Address: 210 STAGER, VESTAL, NY

Withdrawl blower - Vacuum : _____ Pressure: _____ Project Manager: D. CALLAHAN

Injection blower - Vacuum: _____ Pressure: _____ System Status : "OPERATING"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm) PID	Analysis Requested	Notes
1	VESVE-0471	12-8-04	1010	LESS-5	18.4 ppm	TO14, A	M-2
2	VSSVE-0472		1016	LESS-5	19.4 ppm		J-6
3	VSSVE-0473		1021	LESS-5	17.9 ppm		J-3
4	VS-SVE-0474		1030	LESS-5	18.8 ppm		G-1
5	VSSVE-0475		1037	LESS-5	14.5 ppm		I-5
6	VS-SVE-0476		1043	0/S	46.8 ppm		G-2
7	VS-SVE-0477		N/S	0/S	2.0 ppm		I-3 (H2O)
8	VSSVE-0478		N/S	0/S	N/S - H2O		H-1 (H2O)
9	VSSVE-0479			—			TB #5
10							
11							
12							

Collected By: CALABRESE/McGUIRE Date: 12/8/04 Time: 0950 ~~Envirogen, Inc.~~ STEARNS EMCON

Delivered By: _____ Date: _____ Time: _____ New Solutions to Hazardous Waste Problems

Received By: _____ Date: 12/9/04 Time: 9:15 ~~5126 West Grand River, Lansing, Michigan 48906~~

Remarks: _____ Phone # : ~~(517) 886-5600 Fax #~~: (517) 886-5700

103 COLLEGE AVE, SE
GRAND RAPIDS, MI 49503
616-774-3522

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

AMBIENT 1.1 ppm — 825

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 10503.8 HRS.

Client: SEVENSON / USACE Client Code: #681086

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

Site Address: 210 STAGE RD., VESTAL, NY

Withdrawl blower - Vacuum : _____ Pressure: _____

Project Manager: D. CALLAHAN

Injection blower - Vacuum: _____ Pressure: _____

System Status : "OPERATING"

	Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide PID (ppm) FID	Analysis Requested	Notes
1	US-SVE-0490	12-21-04	1005	12	2.8 ppm	TO14, A	J-5
2	US-SVE-0491		1011	LOSS-5	2.2 ppm		I-1
3	US-SVE-0492		1016	LOSS-5	2.3 ppm		M-3
4	US-SVE-0493		1030		9.9 ppm		INFLUENT
5	US-SVE-0494		1045		15.7 ppm		MID-CARBON
6	US-SVE-0495		1100		1.2 ppm		EFFLUENT
7	US-SVE-0496		—	—	—		SAMPLE PUMP
8	US-SVE-0497		—	—	—		TRIP BLANK
9							
10							
11							
12							

Collected By: COLABURDO / MCGUIRE Date: 12/21/04 Time: 1000

Delivered By: _____ Date: _____ Time: _____

Received By: [signature] Date: 12/22/04 Time: 9:15

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
7/13/2004	INF	VS-SVE-INF-071304-0337	512	18.05	12.86	30.91	4.61	3.23	7.84	288.1	6,914.3	20.97
7/22/2004	INF	VS-SVE-INF-072204-0342	512	14.22	13.76	27.98	3.63	3.46	7.09	294.4	7,065.3	6.29
8/16/2004	INF	VS-SVE-INF-081604-0347	512	2.13	2.49	4.63	0.54	0.63	1.17	310.9	7,460.5	16.47
9/28/2004	INF	VS-SVE-INF-092804-0423	512	1.45	2.45	3.89	0.37	0.62	0.98	353.7	8,489.0	42.85
10/19/2004	INF	VS-SVE-INF-101904-0428	512	12.35	9.55	21.90	3.15	2.40	5.56	374.7	8,993.0	21.00
11/17/2004	INF	VS-SVE-INF-111704-0433	512	6.63	4.76	11.39	1.69	1.20	2.89	403.8	9,690.0	29.04
12/21/2004	INF	VS-SVE-INF-122104-0493	512	0.29	0.46	0.74	0.07	0.12	0.19	437.7	10,503.8	33.91

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
7/13/2004	VS-SVE-INF-071304-0337	6	2000	76	512	15.4	288.1	6,914.3
7/22/2004	VS-SVE-INF-072204-0342	6	2000	80	512	16.1	294.4	7,065.3
8/16/2004	VS-SVE-INF-081604-0347	6	2000	75	512	5.4	310.9	7,460.5
9/28/2004	VS-SVE-INF-092804-0423	6	2000	60	512	17.4	353.7	8,489.0
10/19/2004	VS-SVE-INF-101904-0428	6	2000	50	512	66.9	374.7	8,993.0
11/17/2004	VS-SVE-INF-111704-0433	6	2000	51	512	47.9	403.75	9,690.0
12/21/2004	VS-SVE-INF-122104-0493	6	2000	54	512	9.9	437.7	10,503.8