

**QUARTERLY PROGRESS REPORT NO. 3
(January 1 through March 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

June 21, 2004

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 6/23/04		☒ 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: Severson Environmental Services Inc. 2749 Lockport Rd. Niagara Falls, N.Y. 14302		CONTRACT NO. DACW- 41-01-D-0001 T.O.# 0006		TRANSMITTAL NO. 22 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. <i>a.</i>	DESCRIPTION OF ITEMS SUBMITTED (Type, size, model number, etc.) <i>b.</i>	MFG. OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. (See instruction No. 8) <i>c.</i>	NO. OF COPIES <i>d.</i>	CONTRACT REFERENCE DOCUMENT		VARIATIONS (See instruction No. 6) <i>g.</i>	FOR C E USE CODE <i>h.</i>	
				SPEC. PARA. NO. <i>e.</i>	DRAWING SHEET NO. <i>f.</i>			
1.	Quarterly Report No. 3		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. <i>Severson Environmental Services</i> NAME AND SIGNATURE OF CONTRACTOR 				
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ENG FORM 4025, Oct 84 (ER 415-1-10) EDITION OF JUL 81 IS OBSOLETE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 ____



June 21, 2004

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

Attention: Mr. Nicholas Patsis, P.E.

RE: Quarterly Progress Report No. 3
Contract # DACW41-01-D-001-0006
Vestal Wellfield 1-1, Area 4, Vestal, New York

Sirs:

Enclosed is Quarterly Progress Report No. 3 for the referenced contract. This report covers system operations during January, February, and March 2004. O&M activities for the period as well as sampling activities are summarized in this report. Copies of the analytical data are included.

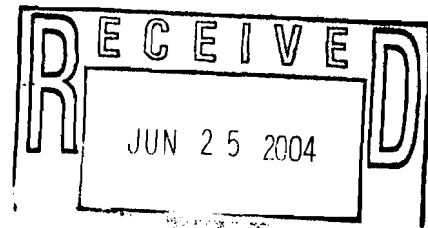
Please email me at cmarshall@sevensonphilly.com or call at 610-388-0721 if you've any questions.

Sincerely,
Sevenson Environmental Services, Inc.


Cassandra T. Marshall
Project Manager

CTM/1

cc: A. LaGreca (Sevenson)
J. Singer (Sevenson)
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B. Buckrucker (USACE)
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M. Dunham (NYSDEC)



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1.0 INTRODUCTION

Sevenson Environmental Services, Inc. and their subcontractor (Shaw Environmental and Infrastructure (SHAW), formerly Envirogen, Inc. of Lansing, Michigan), has prepared this Quarterly Report No. 3 for the Full Scale Soil Vapor Extraction System (SVE System or System) at the Vestal Area 4 Site in Vestal, NY (Site). This report was prepared on behalf of the United States Environmental Protection Agency (USEPA) and the United States Army Corp of Engineers (USACE) who are conducting the Remedial Action for the Vestal Area 4 Site. This report was prepared under contract DACA41-01-D-0001-0006. Sevenson's remedial action work is under supervision of the USEPA and USACE. The third Quarterly Progress Report is provided and prepared in accordance with the approved Workplan. This report discusses the System operation based on data collected during January, February, and March 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 January and March 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 January 14 and 26; February 2, 9, 16 and 24, and March 10, 2004. Air flow and Photo Ionic Detector (PID) readings were measured throughout the System on January 14 and 26; February 9 and 24; and March 8, 9, 10, 15, 16, 17 and 22, 2004. A full round of process air samples was collected from withdrawal wells on March 9 and 10, 2004.

Samples of process air through the carbon treatment system were collected on January 14 and 26; February 9 and 24; and March 10, 2004.

On January 23, the system was shut down due to a high water level fault in the water storage tank.

System process water (approximately 900 gallons per event) was removed on January 26, 2004 and disposed of at the City of Endicott New York wastewater treatment facility.

In an effort to increase contaminant removal rates and alter subsurface airflow patterns the SVE system well polarities were reconfigured during the week of February 9. A discussion of the reconfiguration may be found in Section 3 of this report and in the Second Quarterly Report.

The System was shut down on March 7, 8, and 9 due to a faulty float switch. The unit was replaced on March 9 and restarted.

The System operated approximately 6 days during the time frame of March 12 through March 26. The limited operations were due to excessive soil moisture created by snow melt and spring rain.

System process water (approximately 900 gallons per event) was removed on March 26, 2004 and disposed of at the City of Endicott New York wastewater treatment facility.

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 January through March 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 20 days in January, 21 days in February, and 13 days during March 2004, bringing the total operational time to approximately 199 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 January 14 and 26; February 9 and 24; and March 9 and 10, 2004.

3.1.1 Vacuum Blowers

Pressure drops were measured across the vacuum blowers and filter during System operation. The pressure across the vacuum blower and filter ranged between 6 and 12 inches of water (H₂O).

3.1.2 Carbon Units

The total pressure drop across the two carbon units averaged 23 inches of H₂O 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 January 26, February 9, and March 9 and 10, 2004, are listed in Table 1. On January 26 vacuum flow rates at the cell distribution buildings ranged from less than 5 to 22 standard cubic feet per minute (scfm) for Cell 1 and less than 5 to 13 scfm for Cell 2. Injection flow rates ranged from: less than 5 to 16 scfm for Cell 1 to less than 5 to 10 in Cell 2.

On February 9, 2004 vacuum flow rates at the cell distribution buildings ranged from less than 5 to 25 scfm for Cell 1 and less than 5 to 25 scfm for Cell 2. Injection flow rates ranged from: less than 5 to 25 scfm for Cell 1 and averaged less than 5 scfm in Cell 2.

On March 9 and 10, 2004 (the quarterly monitoring event) vacuum pressures at the cell distribution buildings manifolds ranged from 84 inches of H₂O for Cell 1 to 86 inches of H₂O for Cell 2. Injection pressure was 40 inches of H₂O for both Cell 1 and Cell 2.

As discussed in Quarterly Report No.2, SVE system well polarities were reconfigured during the week of February 9 to increase contaminant removal rates and alter subsurface airflow patterns. Technicians reconfigured the SVE wells to focus the System on the areas of higher contaminant concentration (as shown in the Pre-Remediation Geoprobe Sampling Summary Report, Vestal Well 1-1, Operable Unit 2, Area 4, March 21, 2002). Wells A1, A2, C1, E1, F1, I4, K1, and L1 were changed from vacuum to injection. Wells B2, C2, D2, E2, J2, J4, K2, and M3 were changed from injection to vacuum. Wells H2, I1, I2, J1, K4, M1, M4, N1, N2, and N3 were temporarily shut off. This re-configuration tries to preserve the status of wells that are currently yielding contaminants.

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 154°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 42°F to 50°F, and ranged between 40°F and 51°F at the injection header. The carbon treatment system influent air stream temperatures ranged from 50°F to 70°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 January 26, February 9 and March 9 and 10, 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 January and March 2004 averaged 512 scfm. The bypass airflow for January 26, February 9, and March

and 10 was 215 scfm (Table 1). The entire system flow is a culmination of the bypass flow and the individual flow rates. Estimated wellfield airflow was 357 scfm.

3.3.2 SVE Well Process Air Flow

Individual SVE withdrawal and injection well process airflow measurements were recorded on January 26, February 9, and March 10, 2004. This data is contained in Table 1.

Total SVE well air flow on the withdrawal side of the System was 512 scfm January 26, February 9, and March 10, 2004.

3.4 Process Air VOC Concentrations

Process air samples were collected during the reporting period on January 14 and 26; February 9 and 24; and March 10, 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 3. 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 March 9 and 10, 2004. Concentrations of total targeted VOCs at individual wells ranged from 0.00 parts per million by volume (ppm_v) in wells F5 and J2, to 498.95 ppm_v in well E5 (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 March 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 A3 and B3, E2, E3, E5 and F2; and cell 2 of the treatment area in the vicinity of well K3.

3.4.2 Carbon Process Air Control Samples

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

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

Total System samples were collected January 14 and 26; February 9 and 24; and March 9 and 10, 2004. The total targeted influent VOC concentration averaged 17.85 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 shown 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 March 9 and 10, 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 March sampling event.

The VOC yield rates varied from non-measurable to 3.94 lbs/day (well E5). Wells B1, C2, D1, D4, F5, and J4 had a non-measurable yield because of low VOC concentration (PID reading less than 10 ppm), and well M2 had a non-measurable yield due to very low air flow (5 scfm or lower) only. Wells J2, J3, and J6 had a non-measurable yield due to both a low VOC concentration and very low airflow. The table below (see below) summarizes the wells with non-measurable VOC yield rates.

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

Figure 7 illustrates SVE withdrawal well total targeted VOC yield rate contours for the March sampling event. Figures 8 and 9 show individual contaminant yield rates of 1,1,1- TCA and TCE, respectively. Most of the withdrawal wells in the treatment area indicate a yield of less than 0.10 lbs/day total targeted VOC. Higher yield rates were observed in the vicinity of wells A3, D2, E2, E4, E5, F2, G2 and K3.

SUMMARY OF WELLS WITH LOW YIELD RATES

SVE WELL #	FLOW RATE	PID READINGS	LOW FLOW	LOW PID (<10ppm)	Soil Concentrations	Proposed Actions to Improve	Notes/Action List
B1	24	1.2		X	Low	None	See paragraph below.
C2	21	1.1		X	Low	None	See paragraph below.
D1	25	0.7		X	Medium	None	See paragraph below.
D4	16	0.7		X	Medium	None	See paragraph below.
F5	5	0.4		X	Low	None	See paragraph below.
J2	2	0.3	X	X	Medium	None	See paragraph below.
J3	2	2.5	X	X	High	None	See paragraph below.
J4	10	4.2		X	High	None	See paragraph below.
J6	2	0.3	X	X	High	None	See paragraph below.
M2	2	11.2	X		Low	None	See paragraph below.

There are no proposed actions to improve the System (see also Table 6). The new configuration (as of February 9, 2004) of the System converts Cell 2 to injection and focuses contaminant removal operation on Cell 1. Since the reconfiguration (see monthly reports for March, April, May 2004), there have been elevated sustained contaminant concentrations and yields for the majority of 'hot spots' in Cell 1. We propose to maintain this configuration for as long as Cell 1 yield remains high. Right now, Cell 2 is acting as a "blower", concentrating removal activity on Cell 1. When the Cell 1 yield stabilizes or begins to drop, we would propose to adjust the system to concentrate on contaminant removal on Cell 2.

4.2 Total System VOC Yield

The total System VOC yield (Table 4) was calculated using the total System air flow rate (Section 3.3.1) and the influent System sample ("INFLUENT") analytical results. Based on these calculations, the System has yielded approximately 1,153 pounds of VOCs through the March 10, 2004 sampling event (Table 5). Therefore, the average yield rate of the System between June 23, 2003 and March 10, 2004, is 6.27 lbs/day. TCE constitutes approximately 44 percent and 1,1,1-TCA approximately 56 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. 3 ANALYSIS OF MONITORING DATA

This section provides additional analysis of operational data collected between January and March 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 Contaminant Yield start-up to March 10, 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 March 10, 2004. As expected, the yield rate and concentration trends closely match.

TCA is the dominant compound detected (Table 4), ranging from 44 to 57 percent of the VOC component of the total System process air stream. 1,1,1—TCA ranged from approximately 43 to 56 percent of the total (Table 4).

The combination of SVE well reconfiguration and decrease in precipitation has resulted in an increase of average contaminant yield rate from quarter 2 through quarter 3 (13.05 ppm and 17.85, respectively).

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

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

6.0 PROBLEMS ENCOUNTERED DURING THE REPORTING PERIOD AND RESPECTIVE CORRECTIVE MEASURES

As Discussed in section 2.0 of this report, a float switch within the SVE unit “knockout” tank failed on March 7, 2004. The unit was replaced on March 9, 2004 and the system was restarted.

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

7.0 ANTICIPATED ACTIVITIES

The following activities are anticipated for the next reporting period:

- Continue operations and maintenance of the SVE system,
- Review of SVE well flow patterns and VOC removal (adjustments if necessary),
- The next quarterly sampling event is scheduled for June 2004,
- A carbon change out is anticipated during the next quarter,
- The current SVE System operation expires at the end of July 2004. The total targeted contaminant concentrations for the influent samples taken during this quarter ranged from approximately 6 ppm to approximately 26 ppm. The samples during February and March 2004 were between approximately 18 ppm and approximately 26 ppm (Table 2). Due to this elevated sustained yield, we believe additional SVE Operation is needed before Interim Soil Sampling. We also recommend that no system reconfiguration should be performed at this time. We will continue to monitor monthly influent concentrations. If the concentrations and yields drop substantially for a period of time, we will recommend another System reconfiguration.
- Note that the system operation will be approaching 300 days by the next Quarterly report, requiring the exercise of additional O&M days. We are also at 70% of the line item for water disposal and will need additional funding for this item to continue disposal activities.

8.0 AUTHOR IDENTIFICATION

This report was prepared and checked by:

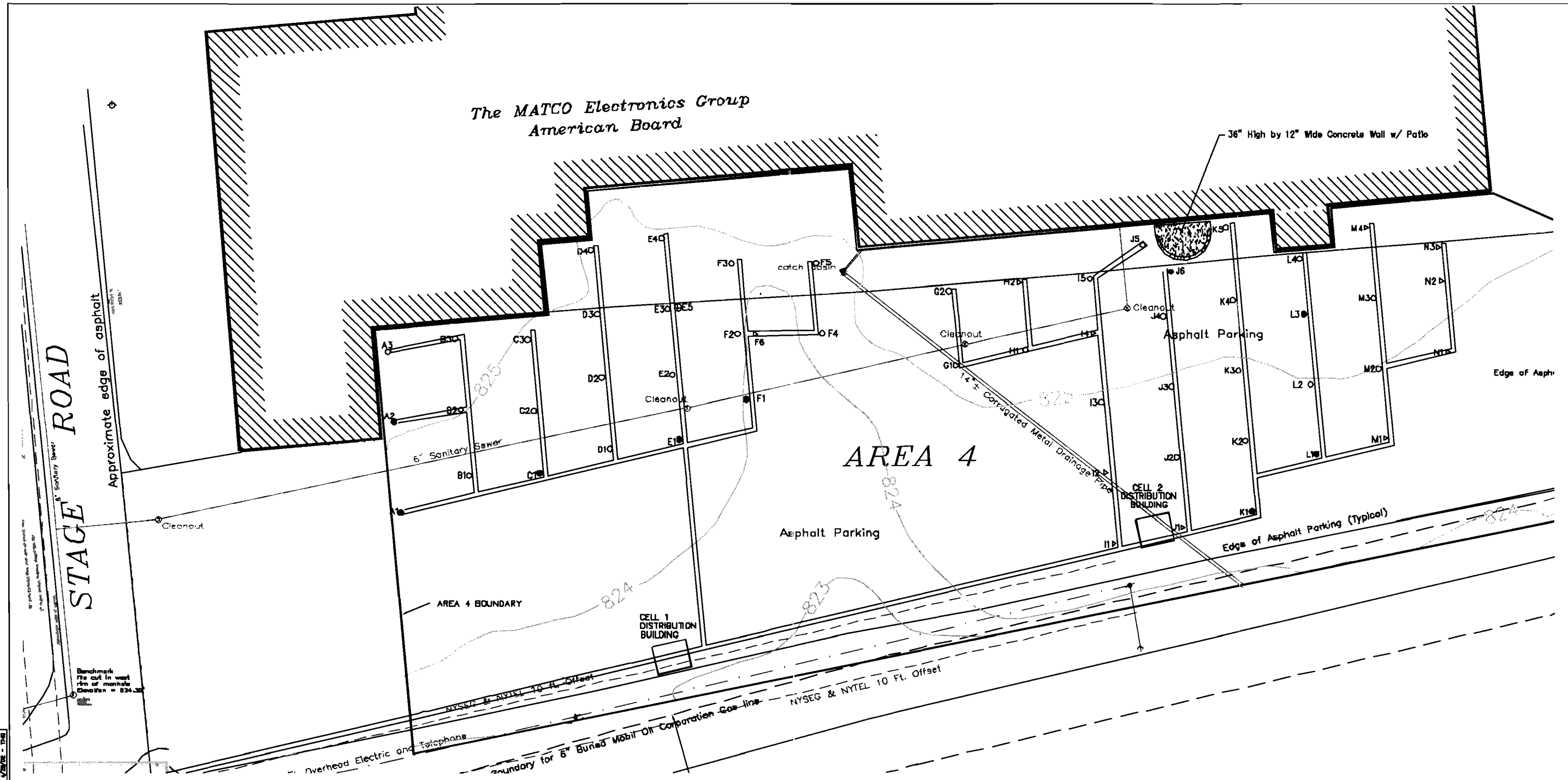


Douglas C. Callahan
Project Manager
Envirogen/Shaw, Inc.



Cassandra T. Marshall
Project Manager
Sevenson Environmental Services, Inc.

FIGURES



BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

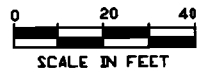
LEGEND

A5 ● - INJECTION SVE well

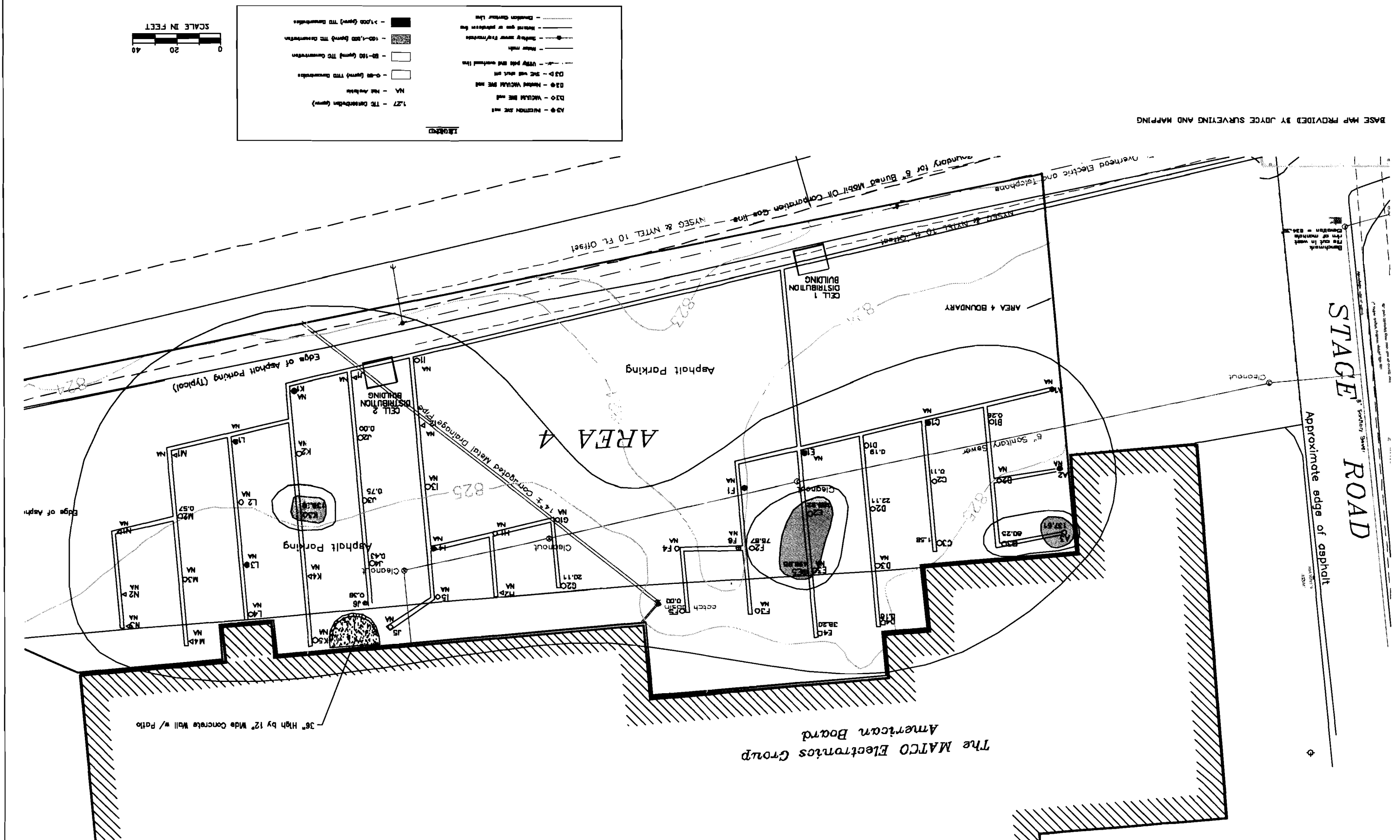
D3 ○ - VACUUM SVE well

D3 ⊕ - Nested VACUUM SVE well

H2 ▷ - SVE well shut off



				 Severson Environmental Services Inc. 1740 LEXINGTON ROAD ROCKY HILL, 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 District Engineer CONTRACT No. DACW41-D1-D-0001		STEWART HARRIS ABRAME NEW YORK PROFESSIONAL ENGINEER LICENSE NUMBER 079833		DRAWN BY: BL CHECKED BY: DC DESIGN ENGINEER: DC APPROVED BY: EA DATE: 3-31-04		SHEET 1 OF 10 TOWN OF VESTAL, BROOME COUNTY, NEW YORK FIGURE 1 Site Plan with SVE System		SCALE: AS SHOWN PROJECT NUMBER: 651085 DRAWING NUMBER: VES A4 - 1	
NO. DATE ISSUED FOR CLIENT REVIEW ISSUED FOR				DC BY													



The MATCO Electronics Group
American Board

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

STAGE ROAD

Approximate edge of asphalt

Cleanout

Benchmark
7'6" cut in west
line of manhole
Elevation = 834.32

AREA 4 BOUNDARY

CELL 1
DISTRIBUTION
BUILDING

Asphalt Parking

AREA 4

Asphalt Parking

CELL 2
DISTRIBUTION
BUILDING

Edge of Asphalt Parking (Typical)

Edge of Asph

Overhead Electric and Telephone
Boundary for 5" Buried Mobil Oil Corporation Gas-line
NYSEG & NYTEL 10 Ft. Offset

BASE MAP PROVIDED BY JOYCE SURVEYING AND MAPPING

- LEGEND**
- AS - INJECTION SWE well
 - D30 - VACUUM SWE well
 - D3 - Nucleated VACUUM SWE well
 - D3P - SWE 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

S Severson
Environmental
Services Inc.
8740 LINDSEY ROAD
LARGO, N.Y. 11763

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

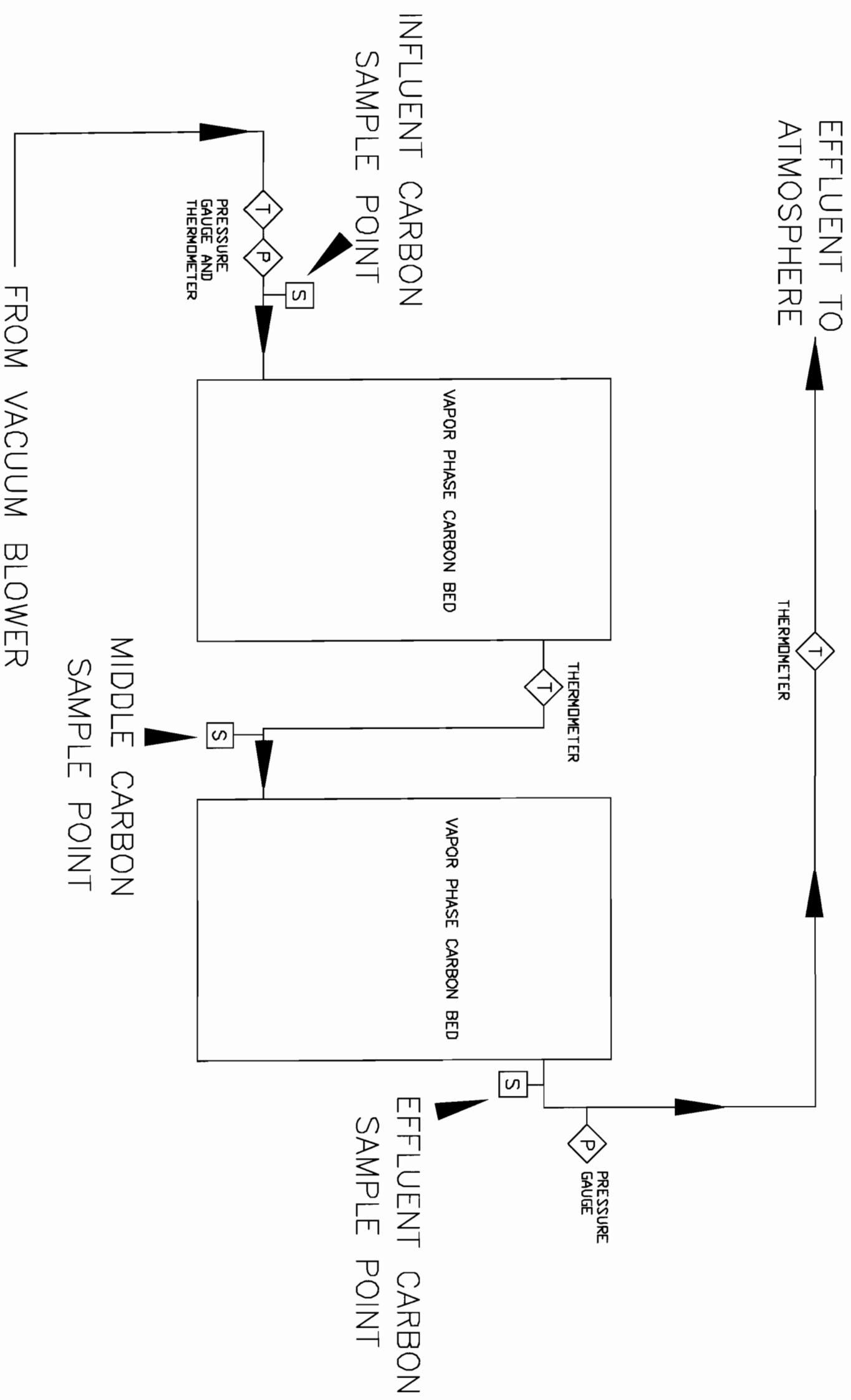
US Army Corps of Engineers
Bureau City District
CONTRACT No. DACW41-D1-D-0001

STEWART HARRIS AIRMAN
NEW YORK PROFESSIONAL ENGINEER
LICENSE NUMBER 0706123

DESIGNED BY: DC
DESIGN ENGINEER: DC
APPROVED BY: SA
DATE: 3-31-04

PROJECT: VESTAL AREA 4
TOWN OF VESTAL, BROOME COUNTY, NEW YORK
TITLE: 1,1,1 TCA CONCENTRATION (ppmv)
MARCH 9 & 10, 2004

SCHD: AS SHOWN
REVISION:
PROJECT NUMBER: 661086
DRAWING NUMBER: VES A4- 3
SHEET: 3 OF 10



MIDDLE CARBON SAMPLE POINT

FROM VACUUM BLOWER

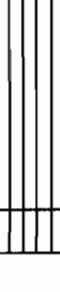
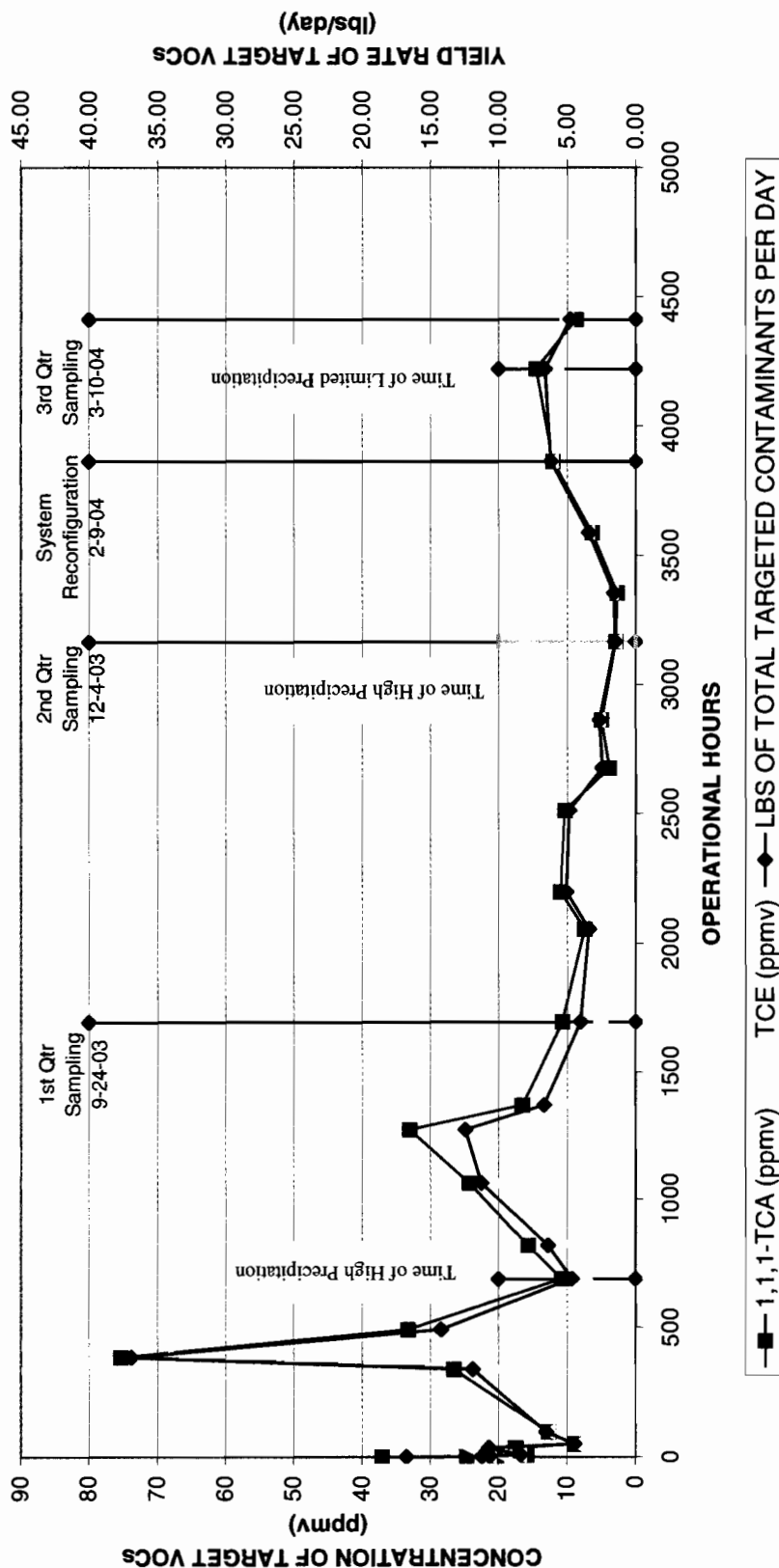
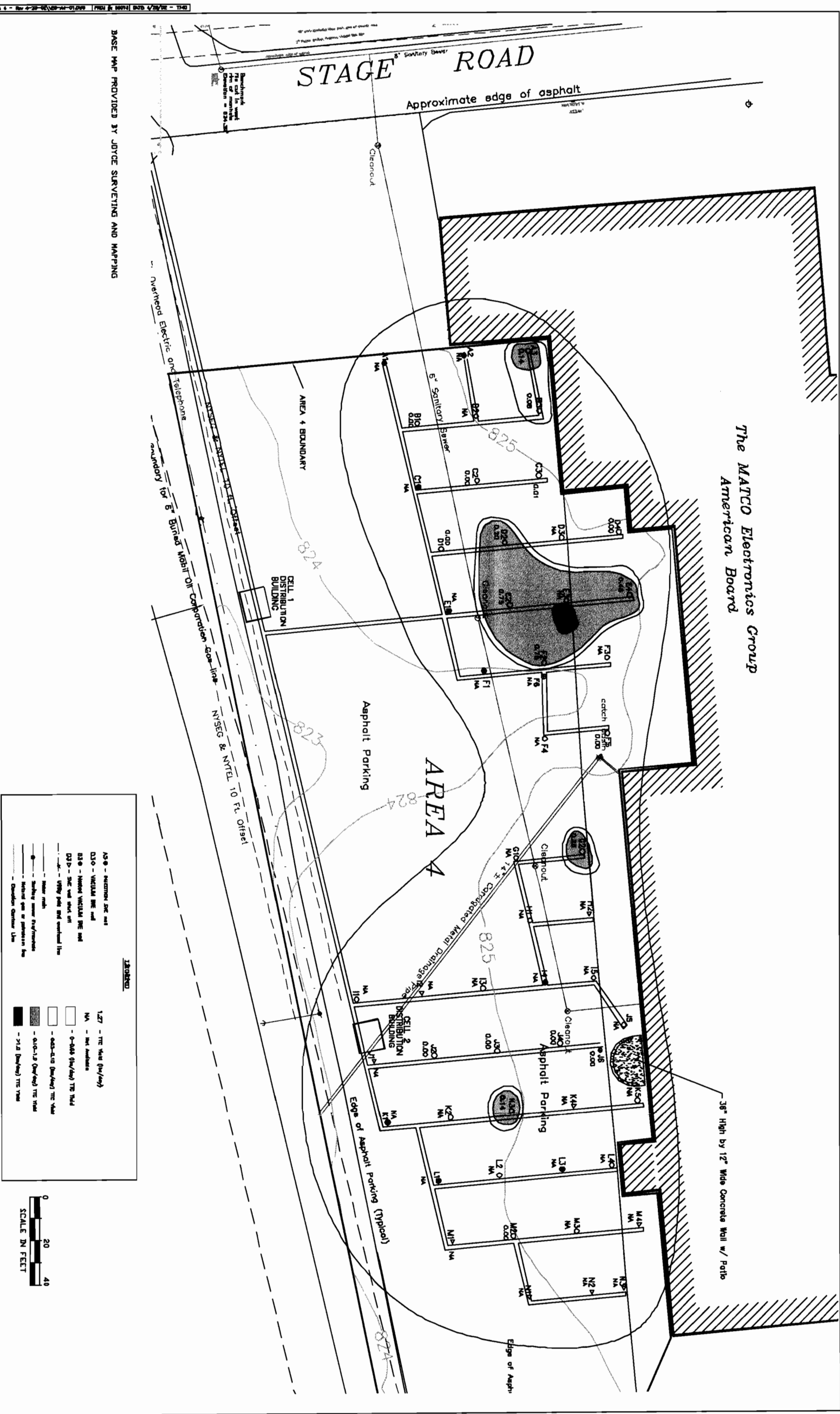
 Svenson Environmental Services Inc. 2700 LEXINGTON AVENUE NEW YORK, NY 10017		 ENVIROGEN Shaw Edl Engineering of New York, P.C. 100 DOLLAR AVE E WYCKOFF, NJ 07480		 US Army Corps of Engineers Kansas City District CONTRACT No. DACW41-01-D-0001	
STANDARD DRAWING NUMBER		DRAWING		SHEET	
DESIGNED BY		CHECKED BY		DATE	
DRAWN BY		DC		3-31-04	
APPROVED BY		SA		3-31-04	
TOWN OF VESTAL, BROOME COUNTY, NEW YORK		TITLE		CARBON SYSTEM SAMPLING DIAGRAM	
SCALE		AS SHOWN		SHEET	
PROJECT NUMBER		VES A4- 5		SHEET	
SHEET		5		OF	
10		10		10	

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





DATE	DESIGNED BY	CHECKED BY	INCHES	FEET
4-22-03	JOYCE SURVEYING AND MAPPING	JOYCE SURVEYING AND MAPPING	1/8" = 1'	1" = 10'

S Savenson Environmental Services Inc.
PHILADELPHIA, PA 19104
TEL: 215-381-1000

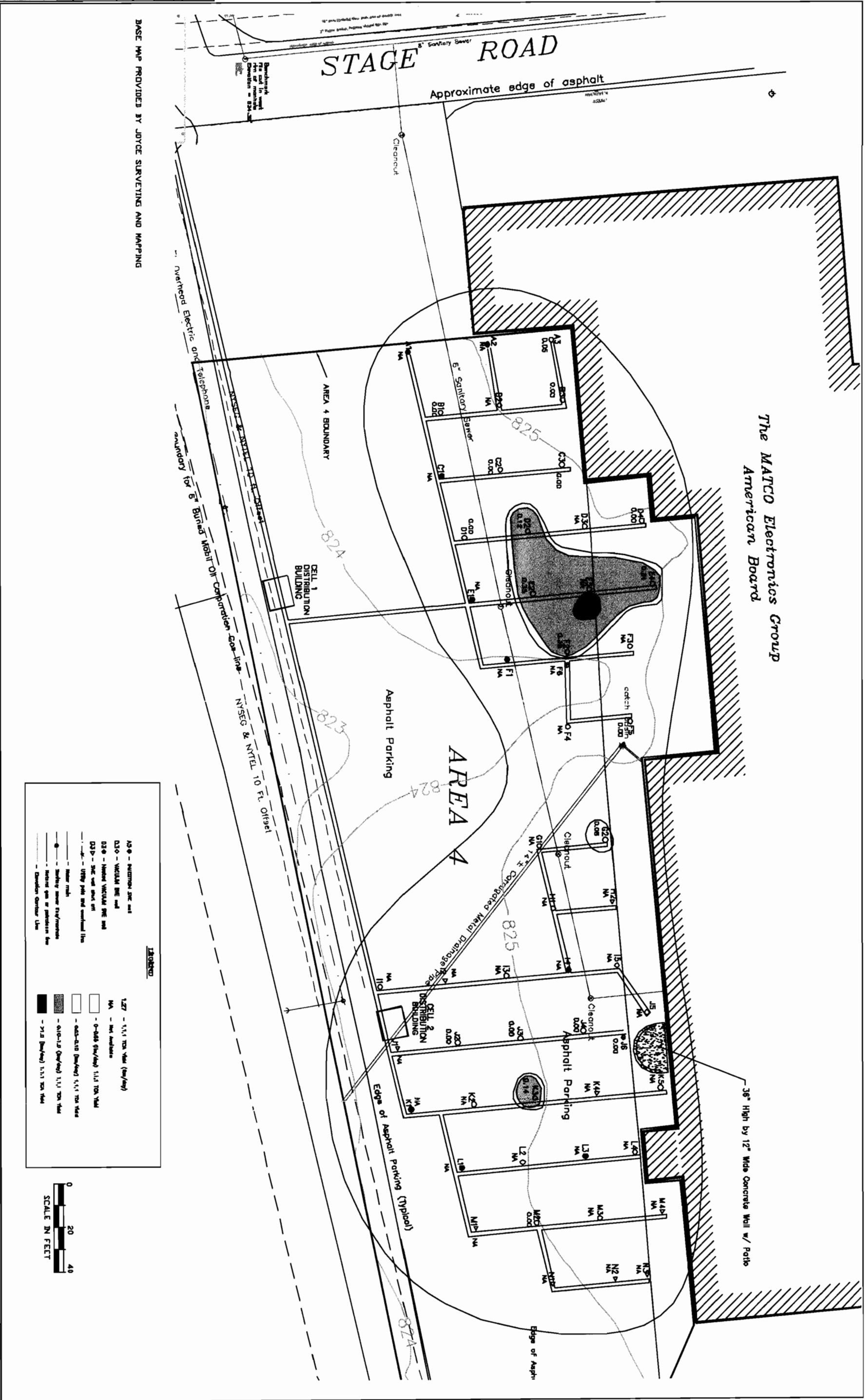
ENVIROGEN
Show E&I Engineering
of New York, P.C.
100 CALDER AVE. SE
CANTON, OHIO 44705

US Army Corps of Engineers
Vestal Area 4
CONTRACT NO. DACW41-01-D-0001

DESIGNED BY	BL	DATE
JOYCE SURVEYING AND MAPPING	DC	4-22-03

PROJECT NAME	VESTAL AREA 4
PROJECT NUMBER	1.1.1 TCA YIELD (lbs/day)
PROJECT DATE	MARCH 9 & 10, 2004

SCALE	AS SHOWN
PROJECT NUMBER	VES A4-8
PROJECT DATE	8-10



LEGEND

1.27 - 1.1 TCA YIELD (lbs/day)

MA - 1st Area

MA - 2nd Area

MA - 3rd Area

MA - 4th Area

MA - 5th Area

MA - 6th Area

MA - 7th Area

MA - 8th Area

MA - 9th Area

MA - 10th Area

MA - 11th Area

MA - 12th Area

MA - 13th Area

MA - 14th Area

MA - 15th Area

MA - 16th Area

MA - 17th Area

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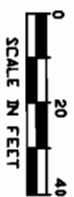
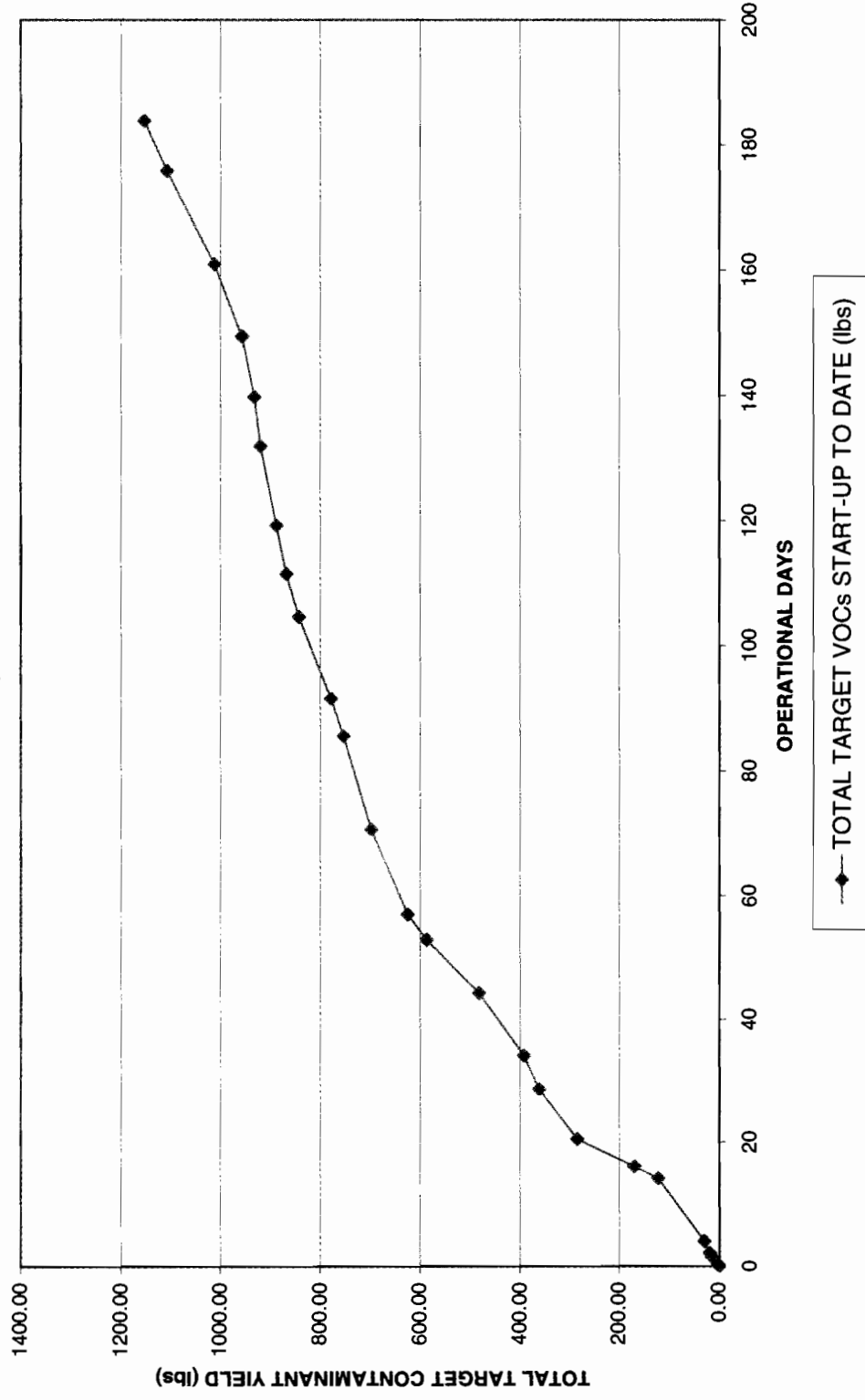


FIGURE 10
TOTAL TARGET CONTAMINANT YIELD START-UP TO DATE (lbs) Vs. TIME
TOTAL SYSTEM SAMPLE
VESTAL, AREA 4



TABLES

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
JANUARY 26, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			215			
INFLUENT			512		12.9	
MIDDLE			512		0.4	
EFFLUENT			512		0.3	
A1	X		19	OPEN	4.1	LOW
A2	X		17	OPEN	2.2	LOW
A3	X		FULL	WATER	NA	LOW
B1	X		19	OPEN	1.5	LOW
B2		X	<5	NA	NA	LOW
B3	X		5	LF	69.2	LOW
C1	X		13	OPEN	5.9	LOW
C2		X	16	NA	NA	MEDIUM
C3	X		7	LF	117.6	MEDIUM
D1	X		8	LF	81.0	LOW
D2		X	<5	NA	NA	MEDIUM
D3	X		FULL	WATER	NA	HIGH
D4	X		<5	LF	3.5	HIGH
E1	X		12	OPEN	13.7	LOW
E2		X	16	NA	NA	MEDIUM
E3	X		FULL	WATER	NA	HIGH
E4	X		7	LF	6.0	HIGH
E5	X		FULL	WATER	NA	HIGH
F1	X		22	OPEN	2.3	LOW
F2	X		5	LF	6.8	MEDIUM
F3	X		<5	LF	9.4	MEDIUM
F4	X		9	OPEN	58.3	LOW
F5	X		14	OPEN	23.6	LOW
F6	X		FULL	WATER	NA	LOW
G1	X		10	OPEN	34.6	LOW
G2	X		6	OPEN	10.8	LOW
H1	X		5	LF	5.9	LOW
H2	X		8	LF	12.3	LOW
I1	X		FULL	WATER	NA	LOW
I2	X		7	LF	15.5	LOW
I3	X		6	LF	20.2	MEDIUM
I4		X	<5	NA	NA	MEDIUM
I5	X		<5	LF	9.8	HIGH
J1	X		5	LF	13.9	LOW
J2		X	8	NA	NA	MEDIUM
J3	X		<5	LF	120.1	HIGH
J4		X	<5	NA	NA	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
JANUARY 26, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J5	X		13	OPEN	14.1	HIGH
J6	X		<5	OPEN	1.6	HIGH
K1	X		5	LF	15.9	LOW
K2		X	9	NA	NA	LOW
K3	X		<5	LF	24.2	MEDIUM
K4		X	<5	NA	NA	MEDIUM
K5	X		6	LF	1.3	HIGH
L1	X		<5	LF	10.1	LOW
L2	X		8	LF	6.7	HIGH
L3		X	10	NA	NA	LOW
L4	X		<5	LF	3.9	LOW
M1	X		<5	LF	18.3	LOW
M2	X		9	LF	4.5	LOW
M3		X	<5	NA	NA	LOW
M4	X		FULL	WATER	NA	LOW
N1	X		<5	LF	14.2	LOW
N2	X		<5	LF	21.1	LOW
N3	X		7	LF	7.5	LOW

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

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
February 9, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			215			
INFLUENT			512		21.3	
MIDDLE			512		2.1	
EFFLUENT			512		0.3	
A1		X	20	OPEN	NA	LOW
A2		X	18	OPEN	NA	LOW
A3	X		<5	LF	NA	LOW
B1	X		25	OPEN	NA	LOW
B2	X		<5	NA	NA	LOW
B3	X		<5	LF	NA	LOW
C1		X	24	OPEN	NA	LOW
C2	X		25	NA	NA	MEDIUM
C3	X		<5	LF	NA	MEDIUM
D1	X		<5	LF	25.3	LOW
D2	X		<5	NA	NA	MEDIUM
D3	X		<5	LF	NA	HIGH
D4	X		<5	OPEN	NA	HIGH
E1		X	20	OPEN	NA	LOW
E2	X		25	NA	NA	MEDIUM
E3	X		<5	LF	0.6	HIGH
E4	X		25	LF	NA	HIGH
E5	X		15	OPEN	NA	HIGH
F1		X	25	OPEN	NA	LOW
F2	X		8	OPEN	0.8	MEDIUM
F3	X		<5	OPEN	NA	MEDIUM
F4	X		20	OPEN	5.8	LOW
F5			NA	OFF	NA	LOW
F6	X		<5	LF	7.2	LOW
G1	X		25	OPEN	NA	LOW
G2	X		25	OPEN	NA	LOW
H1	X		6	LF	NA	LOW
H2			NA	OFF	NA	LOW
I1	X		<5	LF	NA	LOW
I2			NA	OFF	NA	LOW
I3	X		<5	LF	NA	MEDIUM
I4		X	<5	NA	NA	MEDIUM
I5	X		18	OPEN	NA	HIGH
J1			NA	OFF	NA	LOW
J2	X		<5	LF	NA	MEDIUM
J3	X		<5	LF	NA	HIGH
J4	X		8	OPEN	NA	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
February 9, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J5	X		12	OPEN	NA	HIGH
J6	X		<5	OPEN	NA	HIGH
K1		X	<5	NA	NA	LOW
K2	X		8	OPEN	NA	LOW
K3	X		<5	LF	NA	MEDIUM
K4			NA	OFF	NA	MEDIUM
K5	X		<5	LF	NA	HIGH
L1		X	<5	NA	NA	LOW
L2	X		7	OPEN	NA	HIGH
L3		X	<5	NA	NA	LOW
L4	X		5	LF	NA	LOW
M1			NA	OFF	NA	LOW
M2	X		<5	LF	NA	LOW
M3	X		7	LF	NA	LOW
M4			NA	OFF	NA	LOW
N1			NA	OFF	NA	LOW
N2			NA	OFF	NA	LOW
N3			NA	OFF	NA	LOW

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

LF= limited airflow

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

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
March 9 & 10, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
Bypass Flow Rate			215			
INFLUENT			512		10.3	
MIDDLE			512		1.3	
EFFLUENT			512		0.3	
A1		X	20	OPEN	NA	LOW
A2		X	18	OPEN	NA	LOW
A3	X		<5	LF	13.3	LOW
B1	X		24	OPEN	1.2	LOW
B2	X		NA	WATER	NA	LOW
B3	X		<5	LF	9.1	LOW
C1		X	24	OPEN	NA	LOW
C2	X		21	NA	1.1	MEDIUM
C3	X		10	OPEN	1.1	MEDIUM
D1	X		25	OPEN	0.7	LOW
D2	X		18	NA	23.6	MEDIUM
D3	X		NA	WATER	NA	HIGH
D4	X		16	OPEN	0.7	HIGH
E1		X	20	OPEN	NA	LOW
E2	X		8	NA	116.0	MEDIUM
E3	X		NA	WATER	NA	HIGH
E4	X		25	OPEN	6.2	HIGH
E5	X		16	OPEN	113.0	HIGH
F1		X	25	OPEN	NA	LOW
F2	X		20	OPEN	23.9	MEDIUM
F3	X		NA	WATER	NA	MEDIUM
F4	X		NA	WATER	NA	LOW
F5	X		5	LF	0.4	LOW
F6	X		NA	WATER	NA	LOW
G1	X		NA	WATER	NA	LOW
G2	X		25	OPEN	10.0	LOW
H1	X		NA	WATER	NA	LOW
H2			NA	OFF	NA	LOW
I1	X		NA	WATER	NA	LOW
I2			NA	OFF	NA	LOW
I3	X		NA	WATER	NA	MEDIUM
I4		X	<5	NA	NA	MEDIUM
I5	X		NA	WATER	NA	HIGH
J1			NA	OFF	NA	LOW
J2	X		<5	LF	0.3	MEDIUM
J3	X		<5	LF	2.5	HIGH
J4	X		10	OPEN	4.2	HIGH

TABLE 1
SVE WELL STATUS
VESTAL AREA 4
March 9 & 10, 2004

SVE WELL #	VAC WELL	INJ WELL	FLOW RATE	STATUS	PID READINGS	SOIL CONCENTRATION
J5	X		NA	WATER	NA	HIGH
J6	X		<5	LF	0.3	HIGH
K1		X	<5	NA	NA	LOW
K2	X		NA	WATER	NA	LOW
K3	X		<5	LF	3.7	MEDIUM
K4			NA	OFF	NA	MEDIUM
K5	X		NA	WATER	NA	HIGH
L1		X	<5	NA	NA	LOW
L2	X		NA	WATER	NA	HIGH
L3		X	<5	NA	NA	LOW
L4	X		5	LF	NA	LOW
M1			NA	OFF	NA	LOW
M2	X		<5	LF	11.2	LOW
M3	X		NA	WATER	NA	LOW
M4			NA	OFF	NA	LOW
N1			NA	OFF	NA	LOW
N2			NA	OFF	NA	LOW
N3			NA	OFF	NA	LOW

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

LF= limited airflow

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

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

SAMPLE DATE	SAMPLE NUMBER	WELL NUMBER	FLOW RATE (SCFM)	PID READINGS (ppm)	1,1,1 TCA (ppmv)	TCE (ppmv)	TOTAL TARGET VOCs (ppmv)
1/14/2004	VS-SVE-INF-011404-0197	INF	512	7.7	2.71	3.57	6.28
1/14/2004	VS-SVE-MID-011404-0198	MID	512	0.4	0.00	0.00	0.00
1/14/2004	VS-SVE-EFF-011404-0199	EFF	512	0.4	0.00	0.00	0.00
1/14/2004	VS-SVE-TB-011404-0201	TB	NA	0.3	0.00	0.00	0.00
1/26/2004	VS-SVE-INF-012604-0202	INF	512	12.9	6.39	7.13	13.52
1/26/2004	VS-SVE-MID-012604-0203	MID	512	0.4	0.00	0.00	0.00
1/26/2004	VS-SVE-EFF-012604-0204	EFF	512	0.3	0.00	0.00	0.00
1/26/2004	VS-SVE-TB-012603-0206	TB	NA	0.3	0.00	0.00	0.00
2/9/2004	VS-SVE-INF-020904-0207	INF	512	21.3	12.11	12.34	24.45
2/9/2004	VS-SVE-MID-020904-0208	MID	512	2.1	3.46	0.00	3.46
2/9/2004	VS-SVE-EFF-020904-0209	EFF	512	0.3	0.00	0.00	0.00
2/9/2004	VS-SVE-TB-020904-0211	TB	NA	0.3	0.00	0.00	0.00
2/24/2004	VS-SVE-INF-022404-0212	INF	512	19.5	14.57	11.56	26.13
2/24/2004	VS-SVE-MID-022404-0213	MID	512	11.2	10.96	7.08	18.04
2/24/2004	VS-SVE-EFF-022404-0214	EFF	512	0.6	0.00	0.00	0.00
2/24/2004	VS-SVE-TB-022404-0216	TB	NA	0.3	0.00	0.00	0.00
3/10/2004	VS-SVE-INF-031004-0262	INF	512	10.3	8.74	10.12	18.86
3/10/2004	VS-SVE-MID-031004-0263	MID	512	1.3	19.23	0.00	19.23
3/10/2004	VS-SVE-EFF-031004-0264	EFF	512	0.3	0.00	0.00	0.00
3/10/2004	VS-SVE-TB-031004-0266	TB	NA	0.3	0.00	0.00	0.00

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

TCE= Trichloroethene

NA = Not Applicable

INF= Influent

MID= Middle Carbon

EFF= Effluent

TB= Trip Blank

NOTE 2:

TABLE 3

CONTAMINANT CONCENTRATIONS AND YIELDS

MARCH 9 & 10, 2004**VESTAL, AREA 4**[illegible]

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

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
	INFLUENT AVG PER DAY FOR PERIOD		5.65	3.77	9.46
	TOTAL YIELD (lbs) FOR PERIOD (7/17-7/29)				76.91
7/29/2003	VS-SVE-INF-072903-0016	INF	2.70	1.88	4.67
8/12/2003	VS-SVE-INF-081203-0026	INF	4.07	2.34	6.40
	INFLUENT AVG. PER DAY FOR PERIOD		3.39	2.11	5.54
	TOTAL YIELD (lbs) FOR PERIOD (7/29-8/12)				30.33
8/12/2003	VS-SVE-INF-081203-0026	INF	4.07	2.34	6.40
8/25/2003	VS-SVE-INF-082503-0031	INF	6.23	5.06	11.28
	INFLUENT AVG. PER DAY FOR PERIOD		5.15	3.70	8.84
	TOTAL YIELD (lbs) FOR PERIOD (8/12-8/25)				90.08
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

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)
11/11/2003	VS-SVE-INF-111103-0124	INF	0.99	1.46	2.45
	INFLUENT AVG. PER DAY FOR PERIOD		1.82	1.84	3.66
	TOTAL YIELD (lbs) FOR PERIOD (10/28-11/11)				25.11
11/11/2003	VS-SVE-INF-111103-0124	INF	0.99	1.46	2.45
11/19/2003	VS-SVE-INF-111903-0129	INF	1.27	1.39	2.65
	INFLUENT AVG. PER DAY FOR PERIOD		1.13	1.43	2.55
	TOTAL YIELD (lbs) FOR PERIOD (11/11-11/19)				19.74
11/19/2003	VS-SVE-INF-111103-0124	INF	1.27	1.39	2.65
12/4/2003	VS-SVE-INF-111903-0129	INF	0.74	0.76	1.50
	INFLUENT AVG. PER DAY FOR PERIOD		1.01	1.08	2.08
	TOTAL YIELD (lbs) FOR PERIOD (11/19-12/4)				32.56
12/4/2003	VS-SVE-INF-111903-0129	INF	0.74	0.76	1.50
1/14/2004	VS-SVE-INF-011404-0197	INF	0.69	0.90	1.59
	INFLUENT AVG. PER DAY FOR PERIOD		0.72	0.83	1.55
	TOTAL YIELD (lbs) FOR PERIOD (12/4-1/14)				12.13
1/14/2004	VS-SVE-INF-011404-0197	INF	0.69	0.90	1.59
1/26/2004	VS-SVE-INF-012604-0202	INF	1.63	1.79	3.42
	INFLUENT AVG. PER DAY FOR PERIOD		1.16	1.35	2.51
	TOTAL YIELD (lbs) FOR PERIOD (1/14-1/26)				24.17
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
TOTAL YIELD TO REPORTED DATE					1153.30

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

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

TABLE 6
SVE WELL PROPOSED CHANGES
VESTAL AREA 4

CURRENT STATUS					PROPOSED CHANGES	
SVE WELL #	VAC WELL	INJ WELL	OFF	FLOW STATUS	PROPOSED FLOW CHANGES	REASON
INFLUENT						
MIDDLE						
EFFLUENT						
A1		X		OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
A2		X		OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
A3	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
B1	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
B2	X			WATER	None	Leave in the current configuration to focus on the area in Cell 1.
B3	X			LF	None	Leave in the current configuration to focus on the area in Cell 1.
C1		X		OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
C2	X			NA	None	Leave in the current configuration to focus on the area in Cell 1.
C3	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
D1	X			OPEN	None	Leave in the current configuration to focus on the area in Cell 1.
D2	X			NA	None	Leave in the current configuration to focus on the area in Cell 1.
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: 1/14/04 ARRIVAL TIME: 0930 FAULT LIGHTS ON (list): _____

REASON FOR VISIT: MONTHLY QUARTERLY OTHER
OTHER (define): Pull Samples FROM CARBON BEDS.

TASK PERFORMED: EMPTIED KO TANK AND VACUUM LINE
Full of Sample.

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ☒ CONTROL BOX LOCKED ☒ CONTROL DOOR LOCKED

HOUR METER: SVE UNIT 3348.4

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130° F
INJECTION BLOWER TEMP SETTING: 220° F
PRESSURE AFTER INJECTION BLOWER 11" "H2O" HEC

VACUUM BLOWER TEMP: 160° F
VACUUM BLOWER TEMP SETTING: 220° F
VACUUM AFTER FILTER 9" "H2O" HEC
PRESSURE AFTER VACUUM BLOWER: 10" "H2O"

GREASE SEALS CHECKED: ☒ DATE OF LAST GREASE: _____

OIL LEVEL CHECKED: ☒ DATE OF LAST OIL CHANGE: 11-19-03

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 1/12/04

PAGE 2

CARBON BED SYSTEM

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

PRESSURE BEFORE GAC UNIT 1
TEMPERATURE BEFORE GAC 1

28"
70° F "H2O

PRESSURE BETWEEN GAC UNIT 1 AND 2

22" "H2O

PRESSURE AFTER GAC UNIT 2
TEMPERATURE AFTER GAC 2

4"
50° F "H2O

WATER STORAGE UNIT

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

VOLUME OF WATER IN STORAGE TANK: 700 GALLONS
WATER IN CONTAINMENT VESSEL: YES NO ✓ AMOUNT: 0 INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H₂O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H₂O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 4

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H₂O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H₂O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

PAGE 5

CHECK AND NOTE CONDITION OF SITE: _____

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: _____

SUMMARY OF PROCESS AIR SAMPLING: Fuller 06 Sampled. From
INFLUENT, 1113 CARGO, & EFFLUENT

SUMMARY OF OTHER ACTIVITIES: EMPTIED WATER FROM KO TANK AND
VAC - LINRO -

COMMENTS: _____

SIGNATURE OF OPERATIONS TECHNICIAN(S): _____

M.P. McJannet

Fixed - 1-19-04

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 1/19/04 ARRIVAL TIME: 0930 FAULT LIGHTS ON (list): "None"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER

OTHER (define): CHECK TRVE SYSTEM

TASK PERFORMED: _____

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ☒ CONTROL BOX LOCKED ☒ CONTROL DOOR LOCKED

HOUR METER: SVE UNIT 3451.0

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130 F
INJECTION BLOWER TEMP SETTING: 220 F
PRESSURE AFTER INJECTION BLOWER 8" ~~"H2O"~~ MORRIS H6

VACUUM BLOWER TEMP: 130 F
VACUUM BLOWER TEMP SETTING: 220 F
VACUUM AFTER FILTER 6" ~~"H2O"~~ MORRIS H6
PRESSURE AFTER VACUUM BLOWER: 8" ~~"H2O"~~

GREASE SEALS CHECKED: ☒ DATE OF LAST GREASE: 1-14-04

OIL LEVEL CHECKED: ☒ DATE OF LAST OIL CHANGE: 11-5-03

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

(H2O) 40" - INFLUENT
30" - MID-CARB
14" EFFLUENT

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ "H₂O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H₂O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 4

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: _____ "H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

PAGE 5

CHECK AND NOTE CONDITION OF SITE: _____

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: _____

SUMMARY OF PROCESS AIR SAMPLING: _____

SUMMARY OF OTHER ACTIVITIES: Pumped liquid from HO TANK. Checked
switches (pump) took PID Read. on influent.
Checked Cells (Flows) Cut Back Flows on Sump Water
to 15/20 CFM.

COMMENTS: SOME HOSES TO FLAW WATER PIPES FULL OF
SAND. Cut Back SOME OF THE FLOWS IN CELL #1
LUBRICATED ISOLATED MOTORS.

SIGNATURE OF OPERATIONS TECHNICIAN(S): _____

M.P. McQuinn

FAXED - 1/23/04

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 1/23/04 ARRIVAL TIME: 0900 FAULT LIGHTS ON (list): "NONE"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER

OTHER (define): CHECK SVE SYSTEM -

TASK PERFORMED: _____

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ☒ CONTROL BOX LOCKED ☒ CONTROL DOOR LOCKED

HOUR METER: SVE UNIT 3546.3 HRS.

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130°/130° F

INJECTION BLOWER TEMP SETTING: 220 F

PRESSURE AFTER INJECTION BLOWER 8.15" H₂O

VACUUM BLOWER TEMP: 130° F (150°-CUT FLOW)

VACUUM BLOWER TEMP SETTING: 220 F TO 220

VACUUM AFTER FILTER 6 H₂O "H₂O 6 H₂O

PRESSURE AFTER VACUUM BLOWER: 10 H₂O "H₂O 10 H₂O

GREASE SEALS CHECKED: ☒ DATE OF LAST GREASE: 1-19-'04

OIL LEVEL CHECKED: ☒ DATE OF LAST OIL CHANGE: 11-19-03

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

Low VAP Req = 12" H₂O

PID Req. on INFLUENT = 13.7 ppm

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 1/23/04

PAGE 2

CARBON BED SYSTEM

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

PRESSURE BEFORE GAC UNIT 1
TEMPERATURE BEFORE GAC 1

36 "H2O
65 F

PRESSURE BETWEEN GAC UNIT 1 AND 2

26 "H2O

PRESSURE AFTER GAC UNIT 2
TEMPERATURE AFTER GAC 2

13 "H2O
54 F

WATER STORAGE UNIT

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

VOLUME OF WATER IN STORAGE TANK: 750

GALLONS

WATER IN CONTAINMENT VESSEL: YES NO ✓

AMOUNT: INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ "H2O *P*

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O *P*

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 4

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ "H₂O *P*

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H₂O *P*

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

PAGE 5

CHECK AND NOTE CONDITION OF SITE: _____

GOOD (FROZEN)

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: _____

SUMMARY OF PROCESS AIR SAMPLING: _____

SUMMARY OF OTHER ACTIVITIES: _____

CHECKED OUT SYSTEM. CUT BACK ON VAC. TO CELL #2. PUMPED WATER FROM KO TANK (1/2 FULL). CHECKED CELLS, FLOWS NOT VERY STRONG BUT FLOWING. CUT BACK FLOW ON VAC TO 200. AT BLOWER

COMMENTS: _____

SIGNATURE OF OPERATIONS TECHNICIAN(S): _____

R.P. McFune

FAXED - 2-2-04

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 2/2/04 ARRIVAL TIME: 0900 FAULT LIGHTS ON (list): "None"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER

OTHER (define): CHECK ON SVE SYSTEM & SITE

TASK PERFORMED: _____

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ☒ CONTROL BOX LOCKED ☒ CONTROL DOOR LOCKED

HOUR METER: SVE UNIT 3754.5

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130 F
INJECTION BLOWER TEMP SETTING: 220 F
PRESSURE AFTER INJECTION BLOWER 12 "H₂O" 46

VACUUM BLOWER TEMP: 160 F
VACUUM BLOWER TEMP SETTING: 220 F
VACUUM AFTER FILTER 9 "H₂O" 46
PRESSURE AFTER VACUUM BLOWER: 12 "H₂O" 46

GREASE SEALS CHECKED: ☒ DATE OF LAST GREASE: 1-26-04

OIL LEVEL CHECKED: ☒ DATE OF LAST OIL CHANGE: 11-19-03

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

LOW VAC. = 10" H₂O

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 2/2/04

PAGE 2

CARBON BED SYSTEM

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

PRESSURE BEFORE GAC UNIT 1
TEMPERATURE BEFORE GAC 1

37 °H2O
60 F

PRESSURE BETWEEN GAC UNIT 1 AND 2

28 °H2O

PRESSURE AFTER GAC UNIT 2
TEMPERATURE AFTER GAC 2

14 °H2O
60 F

WATER STORAGE UNIT

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS 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

*Storage Tank was pumped out
By ACTION TECH. ON MON - 1-26-04*

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: 34 "H2O

TEMP AT INJECTION MANIFOLD: 50 F

VACUUM AT VACUUM MANIFOLD: 96 "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

PAGE 4

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: 0 "H₂O

TEMP AT INJECTION MANIFOLD: 50 F

VACUUM AT VACUUM MANIFOLD: 86 "H₂O

TEMP AT VACUUM MANIFOLD: 46 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

PAGE 5

CHECK AND NOTE CONDITION OF SITE: NEEDS SOME SNOW BLOWING?

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: ☐

SUMMARY OF PROCESS AIR SAMPLING: _____

SUMMARY OF OTHER ACTIVITIES: TRIED TO CLEAN OUT A FEW OF THE
FLOW METERS. CHANGED A COUPLE WELL HOSES (PACKED FULL
OF SAND. TRIED TO USE A SNAKE ON SOME OF THE WELLS
(NOT VERY SUCCESSFUL)

COMMENTS: _____

SIGNATURE OF OPERATIONS TECHNICIAN(S): _____

M.P. McQuinn

FAXED-2-9-04

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 2/9/04 ARRIVAL TIME: 0900 FAULT LIGHTS ON (list): "NONE"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER

OTHER (define): CHECK SVE SYSTEM - Sample Carbon BEDS -
GET FLOW RATES AND PID - VAC. WELLS.
INF/MID CARBON / EFF.

TASK PERFORMED: _____

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ☒ CONTROL BOX LOCKED ☒ CONTROL DOOR LOCKED
HOUR METER: SVE UNIT 3862.6 HRS.

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 140° F
INJECTION BLOWER TEMP SETTING: 220 F
PRESSURE AFTER INJECTION BLOWER 6.16" H₂O

VACUUM BLOWER TEMP: 150° F
VACUUM BLOWER TEMP SETTING: 220 F
VACUUM AFTER FILTER 6.16" H₂O
PRESSURE AFTER VACUUM BLOWER: 7.16" H₂O

GREASE SEALS CHECKED: ☒ DATE OF LAST GREASE: 2-4-04
OIL LEVEL CHECKED: ☒ DATE OF LAST OIL CHANGE: 11-19-03
BELTS CHECKED FOR WEAR: ☒ BELT GUARD IN PLACE: ☒

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 219101

PAGE 2

CARBON BED SYSTEM

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

PRESSURE BEFORE GAC UNIT 1
TEMPERATURE BEFORE GAC 1

38" "H2O
63 F

PRESSURE BETWEEN GAC UNIT 1 AND 2

28" "H2O

PRESSURE AFTER GAC UNIT 2
TEMPERATURE AFTER GAC 2

14" "H2O
60 F

WATER STORAGE UNIT

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

VOLUME OF WATER IN STORAGE TANK: _____
WATER IN CONTAINMENT VESSEL: YES _____ NO X

GALLONS

AMOUNT: 0 INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

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: 35 "H2O

TEMP AT INJECTION MANIFOLD: 51 F

VACUUM AT VACUUM MANIFOLD: 95 "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

PAGE 4

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: 28 "H2O

TEMP AT INJECTION MANIFOLD: 50 F

VACUUM AT VACUUM MANIFOLD: 84 "H2O

TEMP AT VACUUM MANIFOLD: 48 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

PAGE 5

CHECK AND NOTE CONDITION OF SITE:

SNOW COVERED

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: ☐

SUMMARY OF PROCESS AIR SAMPLING:

ANALYSIS OF SAMPLES FROM
INFLUENT, MID CARBON, EFFLUENT.

SUMMARY OF OTHER ACTIVITIES:

MEASURED FLOWS ON ALL WELLS,
TOOK PID REQS ON ALL VAP. WELLS,
EMPTIED WATER FROM RO TANK AND MAIN LINES.

COMMENTS:

SIGNATURE OF OPERATIONS TECHNICIAN(S):

FIXED - 2-16-'04

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 2/16/04 ARRIVAL TIME: 0900 FAULT LIGHTS ON (list): "None"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER

OTHER (define): CHECK SVE SYSTEM & Pump out RO TANK

TASK PERFORMED: _____

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ☒ CONTROL BOX LOCKED ☐ CONTROL DOOR LOCKED

HOUR METER: SVE UNIT 4028.5 Hrs

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 130 F
INJECTION BLOWER TEMP SETTING: 220 F
PRESSURE AFTER INJECTION BLOWER 6.46 "H₂O"

VACUUM BLOWER TEMP: 170 F
VACUUM BLOWER TEMP SETTING: 220 F
VACUUM AFTER FILTER 6.46 "H₂O"
PRESSURE AFTER VACUUM BLOWER: 8.46 "H₂O"

Low VAC 10" H₂O

GREASE SEALS CHECKED: ☒ DATE OF LAST GREASE: 2-15-04

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

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 2/6/04

PAGE 2

CARBON BED SYSTEM

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

PRESSURE BEFORE GAC UNIT 1
TEMPERATURE BEFORE GAC 1

30 "H2O
54 F

PRESSURE BETWEEN GAC UNIT 1 AND 2

28 "H2O

PRESSURE AFTER GAC UNIT 2
TEMPERATURE AFTER GAC 2

14 "H2O
64 F

WATER STORAGE UNIT

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

VOLUME OF WATER IN STORAGE TANK: 100 GALLONS
WATER IN CONTAINMENT VESSEL: YES NO ✓ AMOUNT: 2 INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: 18 "H₂O

TEMP AT INJECTION MANIFOLD: 40 F

VACUUM AT VACUUM MANIFOLD: 98 "H₂O

TEMP AT VACUUM MANIFOLD: 42 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

PAGE 4

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: 86 "H₂O

TEMP AT INJECTION MANIFOLD: 40 F

VACUUM AT VACUUM MANIFOLD: 92 "H₂O

TEMP AT VACUUM MANIFOLD: 42 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

PAGE 5

CHECK AND NOTE CONDITION OF SITE: SNOW COVERED

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: ☐

SUMMARY OF PROCESS AIR SAMPLING: _____

SUMMARY OF OTHER ACTIVITIES: PUMPED LIQUID FROM KD TANK.
CHECKED CELLS 1 & 2 CUT BACK FLOW ON VAC.
WELLS O/S

COMMENTS: _____

SIGNATURE OF OPERATIONS TECHNICIAN(S): R.P. McQuinn

FAXED TO GR - 1050442. 2/24

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 2/24/04 ARRIVAL TIME: 0900 FAULT LIGHTS ON (list): "NONE"

REASON FOR VISIT: MONTHLY QUARTERLY OTHER:

OTHER (define): CARBON BED O/S SAMPLING. ISSUE S/SYST. MAINT

TASK PERFORMED:

PUED O/S SAMPLES FROM INFLUENT,
MID CARBON AND EFFLUENT- EMPTIED WATER FROM
KO-TANK, GREASED FITTINGS, TOOK RDS AT CA'S AND
BLOWER MOTORS, CHECKED COWS #1, & #2.

MAIN EQUIPMENT BUILDING

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

4220.7 HRS.

SVE PUMPING UNIT

INJECTION BLOWER TEMP: 150° F
INJECTION BLOWER TEMP SETTING: 220 F
PRESSURE AFTER INJECTION BLOWER 12.16 "H₂O

VACUUM BLOWER TEMP: 175° F
VACUUM BLOWER TEMP SETTING: 220 F
VACUUM AFTER FILTER 10.16 "H₂O
PRESSURE AFTER VACUUM BLOWER: 12.16 "H₂O

GREASE SEALS CHECKED: ☒ DATE OF LAST GREASE: 2-20-04

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

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 2/24/04

PAGE 2

CARBON BED SYSTEM

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

PRESSURE BEFORE GAC UNIT 1
TEMPERATURE BEFORE GAC 1

32 "H2O
62° F

PRESSURE BETWEEN GAC UNIT 1 AND 2

24 "H2O

PRESSURE AFTER GAC UNIT 2
TEMPERATURE AFTER GAC 2

12 "H2O
65° F

WATER STORAGE UNIT

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

VOLUME OF WATER IN STORAGE TANK: 100?

GALLONS

WATER IN CONTAINMENT VESSEL: YES NO ✓

AMOUNT: ? INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

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: _____ "H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 4

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: _____ "H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: N/A "Hg

WATER PUMP PRESSURE RELIEF SETTING: N/A psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

PAGE 5

CHECK AND NOTE CONDITION OF SITE:

SNOW COVERED / 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: ☐

SUMMARY OF PROCESS AIR SAMPLING:

TOOK 06 SAMPLES FROM
INFLUENT, MID CARBON AND EFFLUENT.

SUMMARY OF OTHER ACTIVITIES:

TOOK ROBS AT CARBON BEDS. BLOWN MOTORS,
MANIFOLDS. LUBRICATED FITTINGS ON POWER MOTORS. EMPTIED WATER
FROM KO-TANK. CHECKED BEETS, OIL, ETC. ALL OK!

COMMENTS:

SNOW COVER IS SLIGHTLY MELTING. TEMPS. ARE RISING
SOMEWHAT. PULLING LESS WATER.

SIGNATURE OF OPERATIONS TECHNICIAN(S):

M.P. McQuinn

PID-Readings-

19.5 ppm INF.
11.2 ppm MID.
0.6 ppm EFF.

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 3/8/04 ARRIVAL TIME: 0900 FAULT LIGHTS ON (list): "NONE"

REASON FOR VISIT: MONTHLY ☒ QUARTERLY ☐ OTHER ☐

OTHER (define): CHECK TSVE SYSTEM

TASK PERFORMED: Remove Paper Work For Shipping
OF SPENT CARBON (From 11-17-03) TOMORROW 3-9-04.
CHECK OVER TSVE SYSTEM.

MAIN EQUIPMENT BUILDING

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

4380.0

SVE PUMPING UNIT

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

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

GREASE SEALS CHECKED: ☒ DATE OF LAST GREASE: 3-24-04
OIL LEVEL CHECKED: ☒ DATE OF LAST OIL CHANGE: 2-12-04
BELTS CHECKED FOR WEAR: ☒ BELT GUARD IN PLACE: ☒

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: __/__/__

PAGE 2

CARBON BED SYSTEM

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

PRESSURE BEFORE GAC UNIT 1
TEMPERATURE BEFORE GAC 1

_____"H2O
_____"F

PRESSURE BETWEEN GAC UNIT 1 AND 2

_____"H2O

PRESSURE AFTER GAC UNIT 2
TEMPERATURE AFTER GAC 2

_____"H2O
_____"F

WATER STORAGE UNIT

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

VOLUME OF WATER IN STORAGE TANK: _____ GALLONS
WATER IN CONTAINMENT VESSEL: YES _____ NO _____ AMOUNT: _____ INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H₂O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H₂O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 4

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H₂O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H₂O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

PAGE 5

CHECK AND NOTE CONDITION OF SITE: Snow Pick (Gone)

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: ☐

SUMMARY OF PROCESS AIR SAMPLING: _____

SUMMARY OF OTHER ACTIVITIES: Pumped water from KO TANK.
LUBRICATED SYSTEM, CHECKED OUT CELLS
#1 AND #2.

COMMENTS: _____

SIGNATURE OF OPERATIONS TECHNICIAN(S): _____

N.P. McFarlane

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 3/9/04 ARRIVAL TIME: 0900 FAULT LIGHTS ON (list): _____

REASON FOR VISIT: MONTHLY QUARTERLY OTHER

OTHER (define): _____

TASK PERFORMED: SHIPPED CARBON AND O6 Sampling 1ST HALF
SHIPPED 10 DRUMS OF SPENT CARBON TO P. ON SITE DOUG COLLAMON,
AND REP. FROM SEVENSON AND THE US ARMY CORPS OF ENG.

MAIN EQUIPMENT BUILDING

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

4398.5

SVE PUMPING UNIT

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

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

GREASE SEALS CHECKED: _____ DATE OF LAST GREASE: _____

OIL LEVEL CHECKED: _____ DATE OF LAST OIL CHANGE: _____

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: __/__/__

PAGE 2

CARBON BED SYSTEM

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

PRESSURE BEFORE GAC UNIT 1
TEMPERATURE BEFORE GAC 1

_____"H2O
_____"F

PRESSURE BETWEEN GAC UNIT 1 AND 2

_____"H2O

PRESSURE AFTER GAC UNIT 2
TEMPERATURE AFTER GAC 2

_____"H2O
_____"F

WATER STORAGE UNIT

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

VOLUME OF WATER IN STORAGE TANK: _____ GALLONS

WATER IN CONTAINMENT VESSEL: YES _____ NO _____ AMOUNT: _____ INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 4

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H₂O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H₂O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

PAGE 5

CHECK AND NOTE CONDITION OF SITE: _____

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: ____

SUMMARY OF PROCESS AIR SAMPLING: Runed 06 Samples From 1/2 of
THE Vacuum Wells. AND SENT THEM TO THE LAB
IN LIVONIA, MI.

SUMMARY OF OTHER ACTIVITIES: SHIPPED 10 DRUMS OF SPENT CARBON TO
DARLINGTON, PA.

COMMENTS: _____

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 3/10/04 ARRIVAL TIME: 0900 FAULT LIGHTS ON (list): _____

REASON FOR VISIT: MONTHLY QUARTERLY OTHER

OTHER (define): _____

TASK PERFORMED: OG Sampling - 2ND HALF

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL _____ CONTROL BOX LOCKED _____ CONTROL DOOR LOCKED

HOUR METER: SVE UNIT 4412.5

SVE PUMPING UNIT

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

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

GREASE SEALS CHECKED: _____ DATE OF LAST GREASE: _____

OIL LEVEL CHECKED: _____ DATE OF LAST OIL CHANGE: _____

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: __/__/__

PAGE 2

CARBON BED SYSTEM

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

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

PRESSURE BETWEEN GAC UNIT 1 AND 2 _____ "H2O

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

WATER STORAGE UNIT

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

VOLUME OF WATER IN STORAGE TANK: _____ GALLONS
WATER IN CONTAINMENT VESSEL: YES _____ NO _____ AMOUNT: _____ INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 4

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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H2O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H2O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

PAGE 5

CHECK AND NOTE CONDITION OF SITE: _____

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: _____

SUMMARY OF PROCESS AIR SAMPLING: Failed 06 Samples From The
2nd Half Of Vacuum Wells And Sent To The Lab
In Litchfield, ME.

SUMMARY OF OTHER ACTIVITIES: _____

COMMENTS: _____

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

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: 3/22/04 ARRIVAL TIME: 0800 FAULT LIGHTS ON (list): _____

REASON FOR VISIT: MONTHLY QUARTERLY OTHER

OTHER (define): MEET ELECTRICIAN TO WORK ON SWITCHES FOR PUMP ON RO TANK.

TASK PERFORMED: TOP SWITCH NOW FUNCTIONS AS PUMP SWITCH. HOWEVER NOW THERE IS NO SHUT DOWN SWITCH AT KNOCKOUT TANK. WATER LEVEL HITS TOP SWITCH. SYSTEM SHUTS DOWN, PUMPS OUT AND RE-STARTS. BT BACK THE ORIGINAL WAY, PER D. CAULHAN. NEEDS KILL SWITCH. 1

MAIN EQUIPMENT BUILDING

MAIN CONTROL PANEL ☒ CONTROL BOX LOCKED ☒ CONTROL DOOR LOCKED

HOUR METER: SVE UNIT 4446.0

SVE PUMPING UNIT

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

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

GREASE SEALS CHECKED: ☒ DATE OF LAST GREASE: _____

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

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

RESTARTED AT 1215 HRS — 4447.1
TOM 315-575-1913

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

DATE: __/__/__

PAGE 2

CARBON BED SYSTEM

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

PRESSURE BEFORE GAC UNIT 1
TEMPERATURE BEFORE GAC 1

_____"H2O
_____"F

PRESSURE BETWEEN GAC UNIT 1 AND 2

_____"H2O

PRESSURE AFTER GAC UNIT 2
TEMPERATURE AFTER GAC 2

_____"H2O
_____"F

WATER STORAGE UNIT

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

VOLUME OF WATER IN STORAGE TANK: _____ GALLONS
WATER IN CONTAINMENT VESSEL: YES _____ NO _____ AMOUNT: _____ INCHES

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 3

CELL 1 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H₂O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H₂O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

PAGE 4

CELL 2 DISTRIBUTION CENTER

CHECK ALL ABOVE-GROUND PIPING, VALVES, FITTINGS AND OTHER COMPONENTS FOR CRACKS OR LEAKS AND ADEQUACY 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: _____ F

PRESSURE AT INJECTION MANIFOLD: _____ "H₂O

TEMP AT INJECTION MANIFOLD: _____ F

VACUUM AT VACUUM MANIFOLD: _____ "H₂O

TEMP AT VACUUM MANIFOLD: _____ F

VACUUM AT KNOCKOUT TANK: _____ "Hg

WATER PUMP PRESSURE RELIEF SETTING: _____ psi

VESTAL AREA 4 SITE INSPECTION AND OPERATION/MAINTANCE LOG

GENERAL SITE OBSERVATIONS

PAGE 5

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: ☐

SUMMARY OF PROCESS AIR SAMPLING: _____

SUMMARY OF OTHER ACTIVITIES: _____

COMMENTS: _____

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

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)

Shaw E & I Lab Analytical Results

*Client: Severson/USACE
Analysis Date: 1/15/2004
Detection Limit: See below
Analyst: YL*

*Client Code: 681086
Sample Date: 1/14/04
Units: ppmv
Project Manager: D. Callahan*

<i>SAMPLE ID</i>	<i>1,1,1-TCA</i>	<i>TCE</i>	<i>DL</i>
VS-SVE-INF-011404-0197	2.71	3.57	0.05
VS-SVE-MID-011404-0198	0.00	0.00	0.05
VS-SVE-EFF-011404-0199	0.00	0.00	0.05
VS-SVE-SP-011404-0200	0.00	0.00	0.05
VS-SVE-TB-011404-0201	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: 3355.7 Client: SEVENSON/USACE Client Code: 681086
 Flow Meter- Type: Range (cfm): Site Address: 210 STAGE B - VESTAL, NY
 Withdrawl blower - Vacuum: Pressure: Project Manager: D. CAULAHAN
 Injection blower - Vacuum: Pressure: System Status: "OPERATIONAL"

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm)	Analysis Requested	Notes
1 VS-SVE-0197	1-14-04	1110		7.7ppm	TO14, A	INFLUENT
2 VS-SVE-0198		1125		0.4ppm		MID CATALYST
3 VS-SVE-0199		1140		0.4ppm		EFFLUENT
4 VS-SVE-0200		1100		0.3ppm		PUMP BLANK
5 VS-SVE-0201		Trip Blank		0.3ppm		TRIP BLANK
6						
7						
8						
9						
10						
11						
12						

Collected By: COLASANDRO/MEGUINE Date: 1-14-04 Time: 1100 **Envirogen, Inc.**

Delivered By: UPS Date: 1-15-04 Time: New Solutions to Hazardous Waste Problems

Received By: MR. Li Date: 1/15/04 Time: 9:15 5126 West Grand River, Lansing, Michigan. 48906

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

Shaw E & I Lab Analytical Results

*Client: Severson/USACE
Analysis Date: 1/28/2004
Detection Limit: See below
Analyst: YL*

*Client Code: 681086
Sample Date: 1/26/04
Units: ppmv
Project Manager: D. Callahan*

<i>SAMPLE ID</i>	<i>1,1,1-TCA</i>	<i>TCE</i>	<i>DL</i>
VS-SVE-INF-012604-0202	6.39	7.13	0.05
VS-SVE-MID-012604-0203	0.00	0.00	0.05
VS-SVE-EFF-012604-0204	0.00	0.00	0.05
VS-SVE-SP-012604-0205	0.00	0.00	0.05
VS-SVE-TB-012604-0206	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: 3587.2 Client: SEVENSON/USACE Client Code: #691086
 Flow Meter- Type: _____ Range (cfm): _____ Site Address: 210 STAGE RD., WESTAR, NY 13450
 Withdrawal blower - Vacuum: _____ Pressure: _____ Project Manager: D. Capelano
 Injection blower - Vacuum: _____ Pressure: _____ System Status: "Operational"

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide PPM (ppm) PPD	Analysis Requested	Notes
490						
VS-VE-0202	1-26-'04	1040		12.9 ppm	1, 014, A	INFLUENT
VS-VE-0203		1050		0.4 ppm		MID CARBON
VS-VE-0204		1110		0.3 ppm		EFFLUENT
VS-VE-0205		1020		0.3 ppm		PUMP BLANK
VS-VE-0206		Trip Blank		0.3 ppm		Trip BLANK

Collected By: Chas Moore / MSURE Date: 1/26/04 Time: 1020 **Envirogen, Inc.**

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

Received By: AP Date: 1/28/04 Time: 9:00 5126 West Grand River, Lansing, Michigan. 48906

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

Shaw E & I Lab Analytical Results

Client: Severson/USACE
Analysis Date: 2/10/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 2/9/04
Units: ppmv
Project Manager: D. Callahan

<i>SAMPLE ID</i>	<i>1,1,1-TCA</i>	<i>TCE</i>	<i>DL</i>
VS-SVE-INF-020904-0207	12.11	12.34	0.05
VS-SVE-MID-020904-0208	3.46	0.00	0.05
VS-SVE-EFF-020904-0209	0.00	0.00	0.05
VS-SVE-SP-020904-0210	0.00	0.00	0.05
VS-SVE-TB-020904-0211	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: 3863.0
 Flow Meter- Type: _____ Range (cfm): _____
 Withdrawal blower - Vacuum: _____ Pressure: _____
 Injection blower - Vacuum: _____ Pressure: _____
 Client: Benson/USACE Client Code: 681086
 Site Address: 210 STATE ST, WESTAC, NY 13850
 Project Manager: D. Caporaso
 System Status: "OPERATIONAL"

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide PPD (ppm) PPD	Analysis Requested	Notes
1 VS-SVE-0207	2-9-04	1145		21.3 ppm	T014, A	INFLUENT
2 VS-SVE-0208		1200		2.1 ppm		MID-CARBON
3 VS-SVE-0209		1220		0.3 ppm		EFFLUENT
4 VS-SVE-0210		1130		avg. 0.3 ppm		pump blank
5 VS-SVE-0211		TRIP BLANK		avg. 0.3 ppm		TRIP BLANK
6						
7						
8						
9						
10						
11						
12						

Collected By: Caporaso/MS GURKE Date: 2-9-04 Time: 1130 **Envirogen, Inc.**

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

Received By: MR Date: 2/10/04 Time: 9:30 5126 West Grand River, Lansing, Michigan. 48906

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

Shaw E & I Lab Analytical Results

*Client: Severson/USACE
Analysis Date: 2/25/2004
Detection Limit: See below
Analyst: YL*

*Client Code: 681086
Sample Date: 2/24/04
Units: ppmv
Project Manager: D. Callahan*

<i>SAMPLE ID</i>	<i>1,1,1-TCA</i>	<i>TCE</i>	<i>DL</i>
VS-SVE-INF-022404-0212	14.57	11.56	0.05
VS-SVE-MID-022404-0213	10.96	7.08	0.05
VS-SVE-EFF-022404-0214	0.00	0.00	0.05
VS-SVE-SP-022404-0215	0.00	0.00	0.05
VS-SVE-TB-022404-0216	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: 4220.7

Client: SEVEN USA Client Code: 6006

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

Site Address: 210 Stage Rd., West, NY 1380

Withdrawl blower - Vacuum: _____ Pressure: _____

Project Manager: D. Callahan

Injection blower - Vacuum: _____ Pressure: _____

System Status: "Operational"

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide P.D (ppm)	Analysis Requested	Notes
1 V5-SVE-0212	2-24-04	1030		19.5 ppm	1,014-14	Influent
2 V5-SVE-0213		1035		11.2 ppm		Mid Section
3 V5-SVE-0214		1100		0.6 ppm		Effluent
4 V5-SVE-0215		1200		0.3 ppm		Pump Blank
5 V5-SVE-0216		Trip Blank		0.3 ppm		Trip Blank
6						
7						
8						
9						
10						
11						
12						

Collected By: Calasquero / McQuinn Date: 2-24-04 Time: 1200 **Envirogen, Inc.**

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

Received By: PR Date: 2/25/04 Time: 9:30 5126 West Grand River, Lansing, Michigan. 48906

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

Shaw E & I Lab Analytical Results

Client: Severson/USACE
Analysis Date: 3/10/2004
Detection Limit: See below
Analyst: YL

Client Code: 681086
Sample Date: 3/9/04
Units: ppmv
Project Manager: D. Callahan

<i>SAMPLE ID</i>	<i>1,1,1-TCA</i>	<i>TCE</i>	<i>DL</i>
VS-SVE-D2-030904-0217	13.70	8.41	0.12
VS-SVE-C2-030904-0218	0.00	0.11	0.05
VS-SVE-E2-030904-0219	88.54	101.38	0.25
VS-SVE-D4-030904-0221	0.18	0.00	0.05
VS-SVE-TB-1-030904-0223	0.00	0.00	0.05
VS-SVE-D1-030904-0224	0.12	0.07	0.05
VS-SVE-F2-030904-0226	35.39	40.48	0.12
VS-SVE-E4-030904-0227	24.89	11.31	0.05
VS-SVE-E4-D-030904-0228	24.12	11.12	0.05
VS-SVE-F5-030904-0230	0.00	0.00	0.05
VS-SVE-TB-2-030904-0232	0.00	0.00	0.05
VS-SVE-C3-030904-0233	0.46	1.12	0.05
VS-SVE-B3-030904-0234	32.05	47.75	0.12
VS-SVE-A3-030904-0235	51.51	86.00	0.12
VS-SVE-B1-030904-0236	0.09	0.17	0.05
VS-SVE-E5-030904-0237	190.13	308.82	0.63
VS-SVE-TB-3-030904-0239	0.00	0.00	0.05
VS-SVE-PB-1-030904-0240	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: Severson/USACE
Analysis Date: 3/11/2004
Detection Limit: See below
Analyst: YL*

*Client Code: 681086
Sample Date: 3/10/04
Units: ppmv
Project Manager: D. Callahan*

<i>SAMPLE ID</i>	<i>1,1,1-TCA</i>	<i>TCE</i>	<i>DL</i>
VS-SVE-J4-031004-0241	0.25	0.18	0.05
VS-SVE-J2-031004-0242	0.00	0.00	0.05
VS-SVE-K3-031004-0247	139.39	0.00	0.25
VS-SVE-K3-D-031004-0248	143.08	0.00	0.25
VS-SVE-TB-4-031004-0249	0.00	0.00	0.05
VS-SVE-M2-031004-0250	0.41	0.16	0.05
VS-SVE-J6-031004-0251	0.14	0.25	0.05
VS-SVE-J3-031004-0252	0.57	0.18	0.05
VS-SVE-G2-031004-0255	6.64	13.47	0.05
VS-SVE-TB-5-031004-0258	0.00	0.00	0.05
VS-SVE-INF-031004-0262	8.74	10.12	0.05
VS-SVE-MID-031004-0263	19.23	0.00	0.05
VS-SVE-EFF-031004-0264	0.00	0.00	0.05
VS-SVE-PB-2-031004-0265	0.00	0.00	0.05
VS-SVE-TB-6-031004-0266	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.*

Cool #1

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 4398.5 Client: SEASON/USAC Client Code: 601096
Flow Meter- Type: _____ Range (cfm): _____ Site Address: 210 SAGE RD, WESTON, NY
Withdrawal blower - Vacuum: _____ Pressure: _____ Project Manager: D. CANNON
Injection blower - Vacuum: _____ Pressure: _____ System Status: - OPERATIONAL -

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm)	Analysis Requested	Notes
1 VS-SVE-0217	3-9-04	0905	18.0	23.6	TOTAL A	D-2
2 VS-SVE-0218		0910	21.0	1.1		C-2
3 VS-SVE-0219		0914	8.0	116.0		E-2
4 VS-SVE-0220		0920	NA	NA (WATER)		B-2
5 VS-SVE-0221		0925	16.0	0.7		D-4
6 VS-SVE-0222		—	NA	NA (WATER)		D-3
7 VS-SVE-0223		—		0.03		Tap Blank #1
8						
9						
10						
11						
12						

Collected By: CANNON/CLASOR Date: 3-9-04 Time: 0900 **Envirogen, Inc.**
Delivered By: _____ Date: _____ Time: _____ New Solutions to Hazardous Waste Problems
Received By: UR Date: 3/10/04 Time: 9:30 5126 West Grand River, Lansing, Michigan. 48906
Remarks: _____ Phone #: (517) 886-5600 Fax #: (517) 886-5700

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

6-Samples + TB (7)

cooler #2

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 4398.5 Client: SEVENSON/USACE Client Code: #684096
Flow Meter- Type: Range (cfm): Site Address: 210 Stage B, Vestal, NY
Withdrawal blower - Vacuum: Pressure: Project Manager: D. Caruthers
Injection blower - Vacuum: Pressure: System Status: OPERATIONAL

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm)	Analysis Requested	Notes
15-SVE-0224	3-9-04	0930	5.0	0.7	TOTAL	D-1
15-SVE-0225		N/S-420	5.0	NA. (water)		E-3
15-SVE-0226		0939	20.0	23.9		F-2
15-SVE-0227		0943	25.0	6.2		E-4
15-SVE-0228		0948	25.0	5.7		E-4-D
15-SVE-0229		N/S-420	NA	NA. (water)		F-4
15-SVE-0230		0954	5.0	0.4		F-5
15-SVE-0231		N/S-420	LEAKS 5.0	NA. (water)		F-6
15-SVE-0232		---	TAP BLANK			TAP BLANK #2
10						
11						
12						

Collected By: Caruthers / Chasupco Date: 3-9-04 Time: 0900 **Envirogen, Inc.**
Delivered By: Date: Time: New Solutions to Hazardous Waste Problems
Received By: WR Date: 3/10/04 Time: 9:30 5126 West Grand River, Lansing, Michigan. 48906
Remarks: Phone #: (517) 886-5600 Fax #: (517) 886-5700

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

7 Samples - 1 DUPE - 1 TB (2)

COLEMAN #3

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 4398.5

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

Withdrawal blower - Vacuum: _____ Pressure: _____

Injection blower - Vacuum: _____ Pressure: _____

Client: SEVENSON/USACE Client Code: #681096

Site Address: 210 STAGE B, VESTAL, NY 13850

Project Manager: D. CRUHAN

System Status: OPERATIONAL

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm)	Analysis Requested	Notes
1 VS-SE-0233	3-9-04	1000	LESS 5.0	1.1	TOX, A	C-3
2 VS-SE-0234		1005	LESS 5.0	9.1		B-3
3 VS-SE-0235		1009	LESS 5.0	13.3		A-3
4 VS-SE-0236		1014	24.0	1.2		B-1
5 VS-SE-0237		1020	16.0	113.0		E-5
6 VS-SE-0238		N/S- H2O	N/A.	WATER		F-3
7 VS-SE-0239		Tap Blank				TR#3
8 VS-SE-0240		Sample Pump				SP
9						
10						
11						
12						

Collected By: CRUHAN/CRUHAN

Date: 3-9-04 Time: 0900

Envirogen, Inc.

Delivered By: _____

Date: _____ Time: _____

New Solutions to Hazardous Waste Problems

Received By: CR

Date: 3/10/04 Time: 9:30

5126 West Grand River, Lansing, Michigan. 48906

Remarks: _____

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

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

6-Samples + SP + TR#3 - (8)

Cooler #4

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 447.5Client: Seaton/USACE Client Code: 681086

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

Site Address: 210 STATE RD, WESTON, NY 13850

Withdrawal blower - Vacuum: _____ Pressure: _____

Project Manager: D. Casanova

Injection blower - Vacuum: _____ Pressure: _____

System Status: OPERATIONAL

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (PPM)	Analysis Requested	Notes
1 VS-SVE-0241	3-10-04	0930	10	4.2 ppm	TO14.A	J-4
2 VS-SVE-0242		0935	LESS-5	0.3		J-2
3 VS-SVE-0243		—	10	N/S - H2O		L-2
4 VS-SVE-0244		—	10	N/S - H2O		K-5
5 VS-SVE-0245		—	OFF	OFF		K-4
6 VS-SVE-0246		—	8	N/S - H2O		K-2
7 VS-SVE-0247		0940	LESS-5	3.7		K-3
8 VS-SVE-0248		0942	—	3.7		K-3-D
9 VS-SVE-0249		—	—	0.3 ppm		TB #4
10						
11						
12						

Collected By: Colby CDO/USACEDate: 3-10-04 Time: 0930

Envirogen, Inc.

Delivered By: _____

Date: _____

New Solutions to Hazardous Waste Problems

Received By: AKDate: 3/11/04Time: 10:30

5126 West Grand River, Lansing, Michigan. 48906

Remarks: _____

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

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

7-Sampler 1-DUPE 1-TB - (92)

Cole #5

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 4412.5 Client: SEVENSON/USAGE Client Code: #69006
 Flow Meter- Type: _____ Range (cfm): _____ Site Address: 210 STAGE RD VESTAL NY 13850
 Withdrawal blower - Vacuum: _____ Pressure: _____ Project Manager: D. CAMPBELL
 Injection blower - Vacuum: _____ Pressure: _____ System Status: OPERATIONAL

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm)	Analysis Requested	Notes
1 K5S/E-0250	3-10-04	1000	685-5	11.2 ppm	1014A	M-2
2 K5S/E-0251		1006	685-5	0.3		J-6
3 K5S/E-0252		1010	685-5	2.5		J-3
4 K5S/E-0253			25 9/5	N/S-H2O		G-1
5 K5S/E-0254			18	N/S-H2O		I-5
6 K5S/E-0255		1019	25 9/5	10.0		G-2
7 K5S/E-0256			685-5	N/S-H2O		I-3
8 K5S/E-0257			685-5	N/S-H2O		H-1
9 K5S/E-0258				0.3 ppm		Tap Blank #5
10						
11						
12						

Collected By: Campbell/MS6URGE Date: 3-10-04 Time: 0930 **Envirogen, Inc.**

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

Received By: MR Date: 3/11/04 Time: 1030 5126 West Grand River, Lansing, Michigan. 48906

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

COLEMAN #6

CHAIN - OF - CUSTODY for AIR SAMPLES

Hour Meter: 4412.5 Client: SEVENSON/USACE Client Code: 48906
Flow Meter- Type: _____ Range (cfm): _____ Site Address: 210 STAGE RD., WESTAL, NY 13050
Withdrawal blower - Vacuum: _____ Pressure: _____ Project Manager: D. CAMPBELL
Injection blower - Vacuum: _____ Pressure: _____ System Status: OPERATIONAL

Sample ID.	Date	Time	Indicated Flow (cfm)	Carbon Dioxide (ppm)	Analysis Requested	Notes
1 VS-SVE-0259	3-10-04	—	25.05	N/S-H2O	T-14, A	J-5
2 VS-SVE-0260		—	485.5	N/S-H2O		I-1
3 VS-SVE-0261		—	485.5	N/S-H2O		M-3
4 VS-SVE-0262		1045		10.3 ppm		INFLUENT
5 VS-SVE-0263		1100		1.3 ppm		MID CARBON
6 VS-SVE-0264		1110		0.3 ppm		EFFLUENT
7 VS-SVE-0265		—		0.3		SAMPLE PUMP
8 VS-SVE-0266		—		0.3 ppm		TRIP BLANK #6
9						
10						
11						
12						

Collected By: Coleman/McGuire Date: 3-10-04 Time: 0930 **Envirogen, Inc.**

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

Received By: YR Date: 3/11/04 Time: 10:30 5126 West Grand River, Lansing, Michigan. 48906

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

1-Sample - 1-Sample - 1TB - (8)

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 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	2.8150038	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	2,198.6	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

Appendix C

Example Calculations

Vestal, Area 4

Example: 8/25/03
1,1,1 TCA (ppm) to 1,1,1 TCA (lbs/day)
 $0.00000374(\text{conversion constant}) * 24.37(\text{ppm}) * 512(\text{flow}) * 133.4(\text{molecular weight}) = 6.23 \text{ lbs}$

Example: 8/12/03 to 8/25/03 'Total Target VOCs'
$$\frac{[6.40 (8/12) + 11.28 (8/25)]}{2} = 8.84 \text{ avg. lbs per day for the period}$$
$$8.84 (\text{lbs per day}) * 10.19 (\text{days}) = 90.08 \text{ pounds per reporting period}$$

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 PRESSURE (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