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LETTER REPORT

VIRGINIA CAROLINA CHEMICAL SITE

Wadesboro, Anson County, North Carolina

TDD. NO. 04-9911-0017

Tetra Tech EM Inc.
Superfund Technical Assessment and Response Team
Region IV

Tetra Tech EM Inc.

Gwinnett Corporate Center ◆ 1750 Corporate Drive, Suite 735 ◆ Norcross, GA 30093 ◆ (770) 935-1542 ◆ FAX (770) 935-9049

February 1, 2000

John Nolen, On-Scene Coordinator
U.S. Environmental Protection Agency Region 4
Emergency Response and Removal Branch
61 Forsyth Street, SW, 11th Floor
Atlanta, Georgia 30303

Subject: **Letter Report**
Virginia Carolina Chemical Site
Wadesboro, Anson County, North Carolina
TDD No. 04-9911-0017

Dear Mr. Nolen:

The Tetra Tech EM Inc., Superfund Technical Assessment and Response Team is submitting the letter report detailing sampling activities conducted at the Virginia Carolina Chemical Site on December 2, 1999. If you have any questions or need additional copies of the report, please contact me at (770) 717-2300 or Neil Daniell at (770) 717-2339.

Sincerely,

for Steve Pierce
START Leader
Tetra Tech EM Inc.

Enclosure

cc: Douglas Thompson, Project Officer (letter only)
Neil Daniell, START Project Manager
START Files

contains recycled fiber and is recyclable

LETTER REPORT
VIRGINIA CAROLINA CHEMICAL SITE
WADESBORO, ANSON COUNTY, NORTH CAROLINA

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 4 Emergency Response and Removal Branch
61 Forsyth Street, SW, 11th Floor
Atlanta, Georgia 30303

TDD No.	:	04-9911-0017
Date Prepared	:	February 1, 2000
Contract No.	:	68-W5-0021
Prepared by	:	Tetra Tech EM Inc.
START Project Manager	:	Neil Daniell
Telephone No.	:	(770) 717-2339
EPA Task Monitor	:	John Nolen
Telephone No.	:	(404) 562-8750

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B Photographic Log
C Table of Witnesses
D Analytical Report

LETTER REPORT
VIRGINIA CAROLINA CHEMICAL SITE
WADESBORO, ANSON COUNTY, NORTH CAROLINA

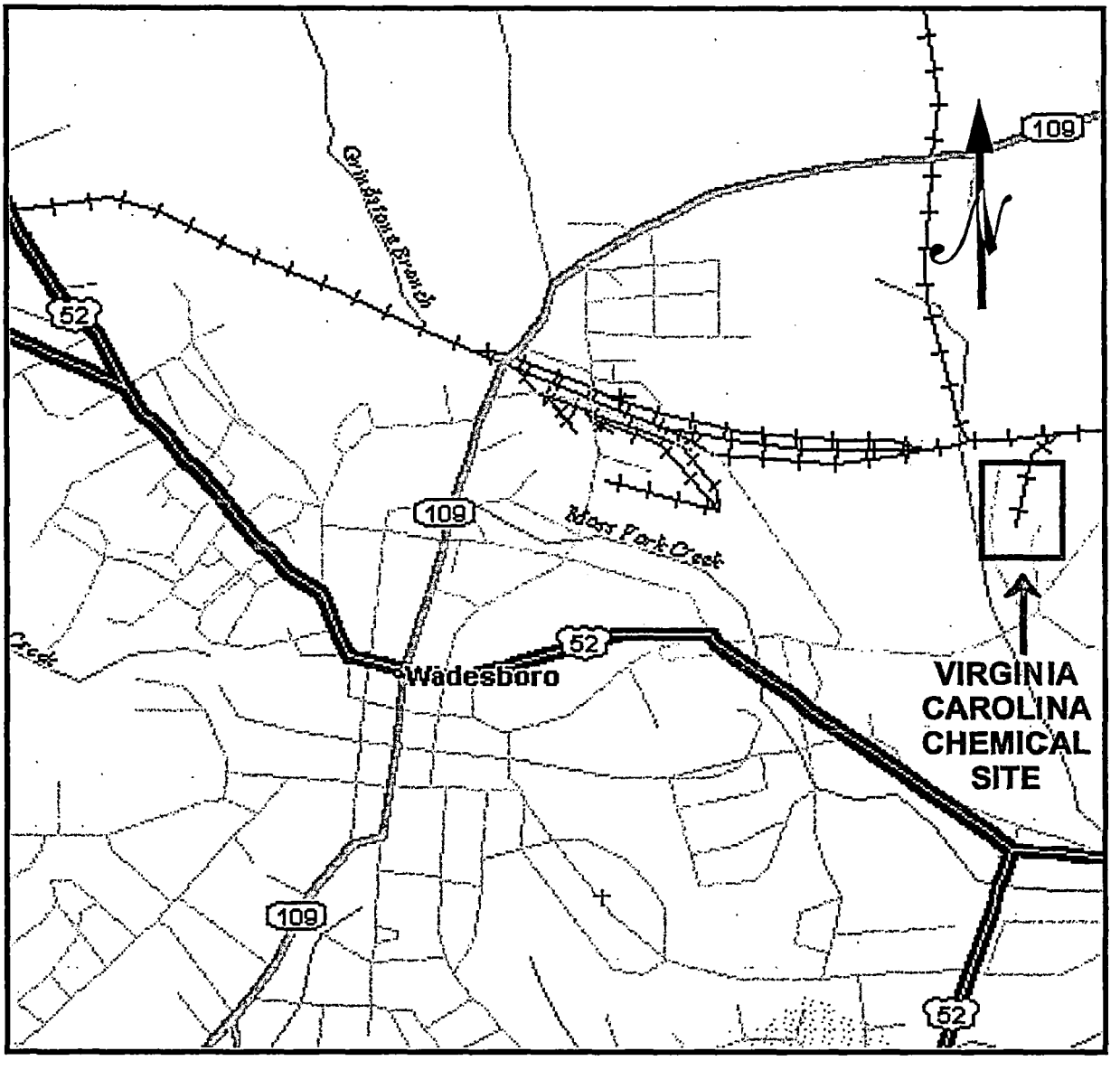
1.0 SITUATION

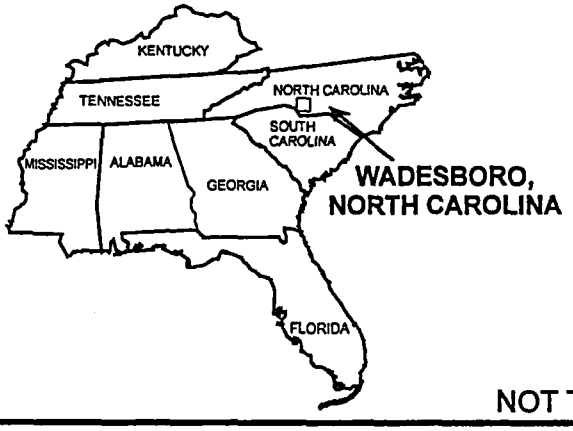
This letter report has been prepared in accordance with the requirements of Technical Direction Document (TDD) No. 04-9911-0017, which the U.S. Environmental Protection Agency (EPA) Region 4 assigned to the Tetra Tech EM Inc. Superfund Technical Assessment and Response Team (START). EPA On-Scene Coordinator (OSC) John Nolen monitored this TDD and requested that START provide sampling support and documentation at the Virginia Carolina Chemical (VCC) site in Wadesboro, Anson County, North Carolina. START was specifically tasked to prepare a sampling plan and a site health and safety plan, perform air monitoring and multimedia sampling, document on-site activities through still photographs and logbook notes, and prepare a letter report. This report discusses the site background and summarizes field activities conducted at the site.

2.0 BACKGROUND

The VCC site is located in Wadesboro, Anson County, North Carolina, on Stanback Ferry Road approximately 0.25 mile from Highway 74 (See Figure 1). The VCC site is a 10.38-acre, unfenced property that operated as a fertilizer manufacturing facility from 1908 to 1945. During that time, VCC used lead-lined, acid chambers to produce super-phosphate fertilizers. The operational history of the site is unknown from 1945 to 1980. The site was purchased by Mr. Carl Weston (the current owner) in 1980, and has been abandoned for approximately 10 years. Local residents have complained that trespassers frequent the site because access is not restricted, and unauthorized dumping has taken place in the area.

In May 1999, the North Carolina Department of Environment and Natural Resources (NCDENR) discovered the VCC site during a routine investigation of another property previously owned and operated by VCC. A preliminary assessment and site investigation revealed magenta-colored soils with elevated levels of lead, arsenic, and copper. Analyses of potable wells in the area did not detect any elevated levels of metals or other compounds.





MODIFIED FROM USGS 7.5
MINUTE QUADRANGLE:
WADESBORO, NORTH CAROLINA 1984

NOT TO SCALE

VIRGINIA CAROLINA CHEMICAL SITE
WADESBORO, ANSON COUNTY, NORTH CAROLINA
TDD No. 04-9911-0017

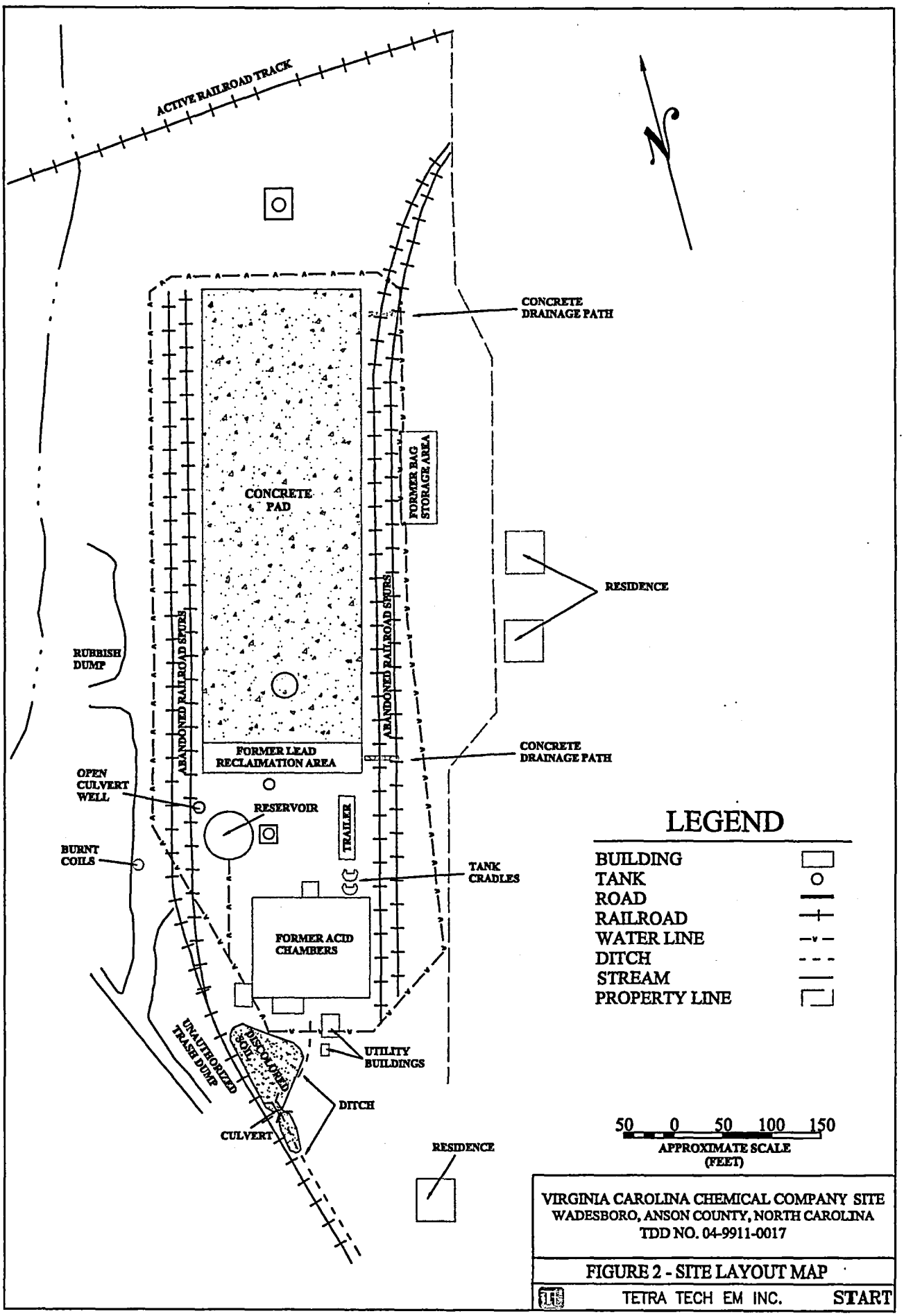
FIGURE 1
GENERAL SITE MAP

3.0 SUMMARY

At the request of EPA, START conducted a site investigation at VCC on December 2, 1999. START, EPA, and NCDENR arrived on site at 1000 hours and performed a reconnaissance of the property. During the reconnaissance, START surveyed the site with a radiation meter, which registered no radiation levels above background. START noted that the property is predominately wooded with no fencing around the site (Figure 2). The tract is located in a mixed residential and commercial area. Two residences border the site to the east, and one borders the site to the south. The southern residence is less than 250 feet from the site, and NCDENR reported that two small children live at the home. START, EPA, and NCDENR noted that the most of the site did not show visual signs of contamination, and the magenta-colored soils appeared to be localized on the southwestern portion of the property. Some magenta-colored soil was present in the drainage ditch that flowed behind the southern residence.

START noted that the site consisted of two principal processing areas located on the central and southern portions of the site. The central process area was comprised of a brick building, two tanks, a fire reservoir, and a concrete pad that was once a large packaging and distribution warehouse. Two utility buildings and a large processing building comprised the southern processing area. Buildings in both areas were in various stages of collapse. NCDENR reported that Mr. Weston used the central processing area for lead reclamation, and VCC operated acid chambers in the southern area.

Abandoned railroad spurs defined the northeastern and southwestern borders of the site. Between the southwestern railroad spur and the distribution warehouse, a concrete drainage path flowed from the northeast to the southwestern end of the building. At the southwestern end, a cast-iron pipe (oriented north-south) intersected the path as it turned 90 degrees and flowed off site beneath the southwestern spur. The northeastern railroad spur is a prominent site feature. Elevated approximately 20 feet above the surrounding area, the spur's height was consistent with the height of on-site buildings. The spur initially slopes off site to the northeast then gradually changes to a southerly direction toward the spur's northeastern margin. START observed concrete drainage paths perpendicular to the northeastern railroad spur. The drainage paths appeared to be gutters used to channel water from the roof of the distribution warehouse on the central portion of the site.

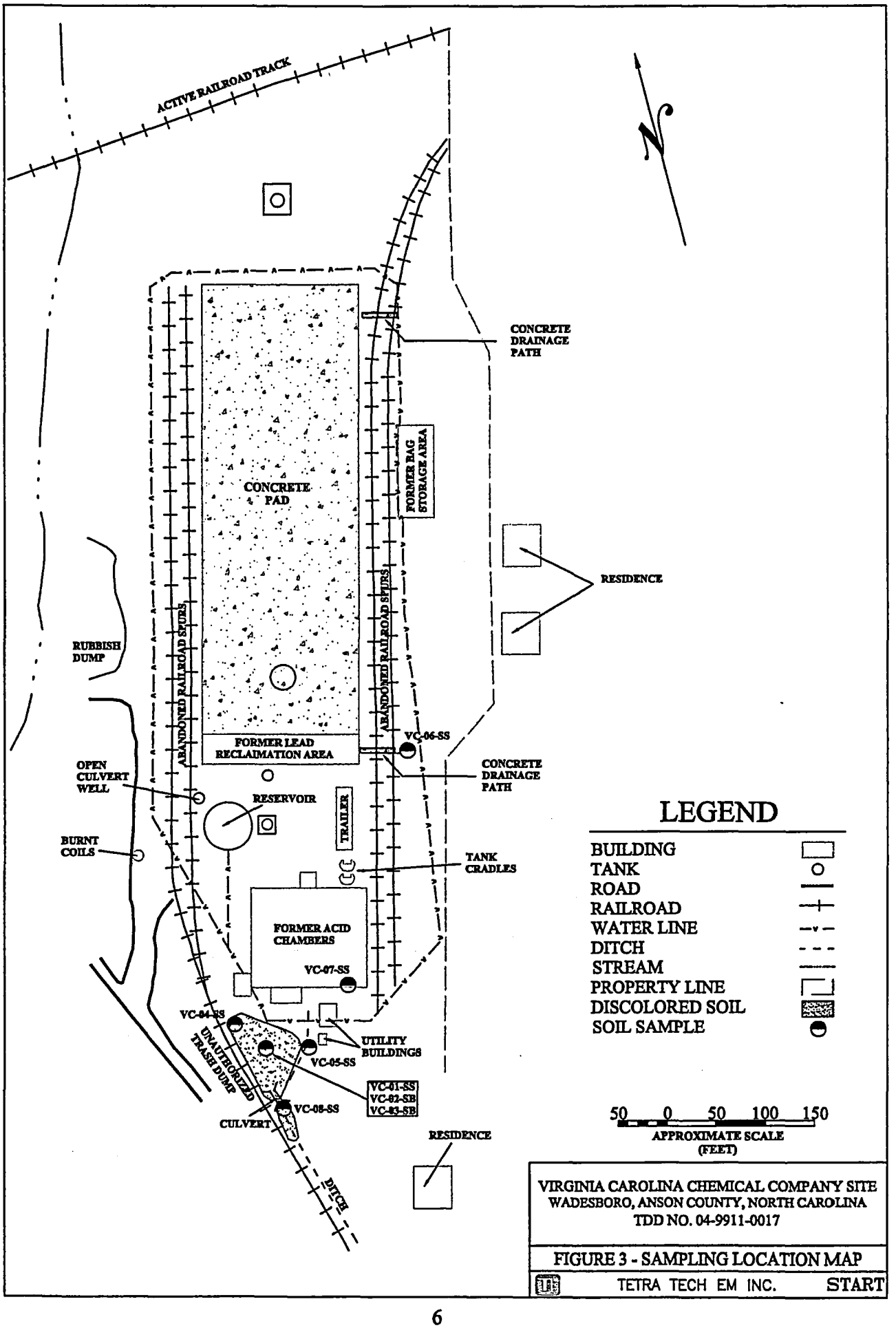

ACTIVE RAILROAD TRACK
CONCRETE DRAINAGE PATH
CONCRETE PAD
FORMER BAG STORAGE AREA
RESIDENCE
RUBBISH DUMP
ABANDONED RAILROAD SPURS
ABANDONED RAILROAD SPURS
FORMER LEAD RECLAIMATION AREA
CONCRETE DRAINAGE PATH
OPEN CULVERT WELL
RESERVOIR
TRAILER
BURNT COILS
TANK CRADLES
FORMER ACID CHAMBERS
UNAUTHORIZED TRASH DUMP
DISCOLORED SOIL
UTILITY BUILDINGS
DITCH
CULVERT
RESIDENCE
LEGEND
BUILDING
TANK
ROAD
RAILROAD
WATER LINE
DITCH
STREAM
PROPERTY LINE
50 0 50 100 150
APPROXIMATE SCALE (FEET)
VIRGINIA CAROLINA CHEMICAL COMPANY SITE
WADESBORO, ANSON COUNTY, NORTH CAROLINA
TDD NO. 04-9911-0017
FIGURE 2 - SITE LAYOUT MAP
TETRA TECH EM INC.
START

Sampling locations were randomly chosen to define suspect soils based on visual observation and potential source information from NCDENR. All sampling techniques were in accordance with EPA's Science and Ecosystems Support Division Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EISOPQAM)(1996). START contracted CompuChem, Inc., of Cary, North Carolina, to analyze the samples for metals, pesticides, polychlorinated biphenyls (PCB), volatile organic compounds (VOC), and semivolatile organic compounds (SVOC).

START began sampling by collecting samples from the discolored soil area on the southwestern part of the site (Figure 3). Samples were collected using a stainless-steel spoon, 2-ounce glass jars, and an 8-ounce glass container. START collected eight samples (six surface soil and two subsurface soil) from six locations. Designations for surface soil samples were VC-01-SS, and VC-04-SS through VC-08-SS. Subsurface soil samples, designated VC-02-SB and VC-03-SB, were collected by augering down at sampling location VC-01-SS. START collected grab samples VC-01-SS, VC-02-SB, and VC-03-SB from depths of 6, 18, and 30 inches below ground surface, respectively. Samples VC-01-SB and VC-03-SB contained black greasy organic matter that appeared to be a layer of wood mulch. Sampling activities were completed on December 2, 1999.

CompuChem, Inc., analyzed the samples from the VCC site and reported the results to START. The analytical results showed a range of metals concentrations and low levels of pesticides, SVOCs, and VOCs. Pesticides were detected primarily in sample VC-07-SS collected near the right entrance of the southern process building. SVOCs were detected mainly in sample VC-06-SS collected along the northeastern railroad spur. VOCs were detected only in subsurface samples VC-02-SB and VC-03-SB. However, the detected VOC levels were low, and one of the compounds was carbon disulfide, which is commonly produced through the breakdown of organic matter.

A variety of metals were detected in all samples, yet only lead, arsenic, and mercury were detected at levels above risk-based concentrations developed by EPA Region III. Lead was present in all samples, at concentrations ranging from 29,700 parts per million (ppm) to 230 ppm. The highest lead concentration was detected in sample VC-04-SS (29,700 ppm), and concentrations were consistent with depth in the auger samples (samples VC-01-SB, VC-02-SB, VC-03-SB). Samples collected from effluent locations


ACTIVE RAILROAD TRACK
CONCRETE DRAINAGE PATH
FORMER BAG STORAGE AREA
CONCRETE PAD
RESIDENCE
RUBBISH DUMP
ABANDONED RAILROAD SPURS
ABANDONED RAILROAD SPURS
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TRAILER
BURNT COILS
TANK CRADLES
FORMER ACID CHAMBERS
VC-07-SS
VC-04-SS
UNAUTHORIZED TRASH DUMP
UTILITY BUILDINGS
VC-05-SS
VC-01-SS
VC-02-SB
VC-03-SB
VC-08-SS
CULVERT
RESIDENCE
DITCH
LEGEND
BUILDING
TANK
ROAD
RAILROAD
WATER LINE
DITCH
STREAM
PROPERTY LINE
DISCOLORED SOIL
SOIL SAMPLE
50 0 50 100 150
APPROXIMATE SCALE (FEET)
VIRGINIA CAROLINA CHEMICAL COMPANY SITE
WADESBORO, ANSON COUNTY, NORTH CAROLINA
TDD NO. 04-9911-0017
FIGURE 3 - SAMPLING LOCATION MAP
TETRA TECH EM INC.
START

(VC-08-SS and VC-06-SS) had lead levels of 230 ppm and 1,940 ppm, respectively. Arsenic was detected in all samples, but was most prevalent in samples VC-01-SS, VC-04-SS, VC-05-SS, VC-07-SS, and VC-08-SS. The highest arsenic level (965 ppm) was detected in an on-site drainage ditch near the utility buildings on the southern end of the site. All samples contained mercury, but only sample VC-02-SB contained mercury at a level greater than or equal to 5 ppm. The complete laboratory analytical report is provided in Appendix D and is summarized in Table 1.

4.0 CONCLUSION

Under the direction of the OSC, START provided air monitoring, sampling support, and documentation for the site assessment at the VCC site on December 2, 1999. START documented on-site activities with written log notes, diagrams, and still photographs. The site consisted of two principal processing areas located on the central and southern portions of the site. NCDENR reported that the central processing was used area for lead reclamation, and VCC operated acid chambers in the southern area. Abandoned railroad spurs define the northeastern and southwestern borders of the site. The northeastern railroad spur is elevated approximately 20 feet above the surrounding area. Concrete drainage paths are perpendicular to the southwestern railroad spur and appear to be gutters used to channel water from the roof of the distribution warehouse.

Sampling locations were randomly chosen to define suspect soils based on visual observation and potential source information from NCDENR. All sampling techniques were in accordance with EPA's Science and Ecosytems Support Division EISOPQAM (1996). START collected eight samples (six surface soil and two subsurface soil) from six locations. Subsurface soil samples were collected at sampling location VC-01-SS. START collected grab samples VC-01-SS, VC-02-SB, and VC-03-SB from depths of 6, 18, and 30 inches below ground surface, respectively. Sampling activities were completed on December 2, 1999, and all samples were sent to CompuChem, Inc., in Cary, North Carolina, for analysis.

CompuChem, Inc., analyzed the samples for metals, pesticides, PCBs, VOCs, and SVOCs. The analytical results showed a range of metals concentrations and low levels of pesticides, SVOCs, and VOCs. Pesticides were detected primarily in sample VC-07-SS, and SVOCs were predominant in

sample VC-06-SS. VOCs were detected mainly in samples VC-02-SB and VC-03-SB; however, the levels were low and one of the compounds was carbon disulfide, a VOC commonly produced through the breakdown of organic matter.

A variety of metals were detected in all samples, yet only lead, arsenic, and mercury were detected at levels elevated above risk-based concentrations developed by EPA Region III. Lead concentrations ranged from 29,700 ppm to 230 ppm, and the highest level was detected in sample VC-04-SS. Lead concentrations were consistent with depth in the auger samples (samples VC-01-SS, VC-02-SB, and VC-03-SB). Surface soil samples collected from runoff locations (VC-08-SS and VC-06-SS) identified lead at concentrations of 230 ppm and 1,940 ppm, respectively. Arsenic was detected in all samples but was most prevalent in samples VC-01-SS, VC-04-SS, VC-05-SS, VC-07-SS, and VC-08-SS. The highest arsenic level (965 ppm) was detected in sample VC-05-SS. All samples contained mercury, but only sample VC-02-SB contained mercury at a concentration greater than the risk-based concentration of 5 ppm. Further action at the VCC site is to be determined by EPA.

Table 1. Summary of Analytical Data for the Virginia Carolina Chemical site.

Compound[a] (parts per million)	Sampling Location							
	VC-01-SS	VC-02-SB	VC-03-SB	VC-04-SS	VC-05-SS	VC-06-SS	VS-07-SS	VC-08-SS
4,4'-DDT (p,p'-DDT)	ND[b]	ND	ND	ND	ND	0.033	0.013	ND
alpha-BHC	ND	ND	0.0046	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND	ND	0.0029	ND
Endosulfan i (alpha)	ND	ND	ND	ND	ND	ND	0.0029	ND
Endosulfan ii (beta)	ND	ND	ND	ND	ND	ND	0.014	ND
Endosulfan sulfate	ND	ND	ND	ND	ND	0.012	0.054	ND
Endrin	ND	ND	ND	ND	ND	ND	0.017	ND
Endrin ketone	ND	ND	ND	ND	ND	ND	0.023	ND
Fluoranthene	ND	ND	ND	ND	ND	0.5	ND	ND
Pyrene	ND	ND	ND	ND	ND	0.69	ND	ND
Bis (2-ethylhexyl) phthalate	0.82	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	0.53	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND	0.6	ND	ND
Benzo (b) fluoranthene	ND	ND	ND	ND	ND	0.48	ND	ND
2-Butanone	ND	0.12	0.026	ND	ND	ND	ND	ND
Carbon disulfide	ND	0.034	ND	ND	ND	ND	ND	ND
Aluminum	1,050	4,100	1,830	810	4,620	17,800	14,600	5,640
Antimony	11.1	139	11.3	22.0	8.4	ND	ND	2.7
Arsenic	19.9	4.0	11.5	43.4	965	10.3	23.8	42.6
Barium	599	374	1,060	659	359	86.4	110	229
Calcium	323	6,170	1,650	196	494	65,700	975	459
Chromium	1.9	6.8	5.5	0.98	7.7	34.0	37.1	9.7
Cobalt	4.1	4.6	4.2	4.5	9.8	3.2	1.6	2.0
Copper	63.2	1,520	585	99.3	599	39.5	139	105
Iron	43,700	14,600	60,600	89,800	45,300	11,900	45,200	26,900
Lead	1,560	1,080	1,790	29,700	8,490	230	1,150	1,940
Magnesium	ND	ND	ND	ND	933	1,110	944	482
Manganese	12.6	26.4	8.9	22.3	65.0	169	85.2	33.3

Note: [a] Compounds listed in Table 1 represent values that were not designated by the laboratory with the following qualifiers: J (estimated value), U (not detected above specified value), B (blank contamination or between reporting detection limit and instrument detection limit), and NJ (tentatively identified compound and estimated value)

[b] ND = Not detected above the reporting detection limit

Table 1. Summary of Analytical Data for the Virginia Carolina Chemical site. (continued)

Compound[a] (parts per million)	Sampling Location							
	VC-01-SS	VC-02-SB	VC-03-SB	VC-04-SS	VC-05-SS	VC-06-SS	VS-07-SS	VC-08-SS
Mercury	0.43	5.0	2.1	1.3	1.2	0.28	0.12	0.35
Nickel	1.6	4.1	1.6	1.8	4.0	6.2	6.0	2.4
Potassium	491	ND	360	336	599	1,710	1,780	581
Selenium	3.9	20.6	17.8	8.1	3.4	ND	2.4	4.4
Silver	6.8	45.5	12.9	20.7	6.2	ND	ND	3.0
Sodium	1040	ND	2,710	5,510	615	691	ND	582
Thallium	3.3	ND	3.7	5.6	6.8	ND	2.0	1.7
Vanadium	5.1	ND	4.7	5.9	21.9	34.2	58.3	15.0
Zinc	352	2,630	839	134	308	75.7	86.9	77.1

Note: [a] Compounds listed in Table 1 represent values that were not designated by the laboratory with the following qualifiers: J (estimated value), U (not detected above specified value), B (blank contamination or between reporting detection limit and instrument detection limit), and NJ (tentatively identified compound and estimated value)

[b] ND = Not detected above reporting detection limit

APPENDIX A

LOGBOOK NOTES

(5 Sheets)

CONTENTS

PAGE	REFERENCE	DATE
1	SITE ACTIVITIES/MAP	12/02/99
6	PHOTOLOG	12/02/99
9	SITE ACTIVITIES	12/02/99

12/02/99

12/02/99

0915 START N. DANIELL AND OSC JOHN NOLEN MEET AND DISCUSS THE SITE.

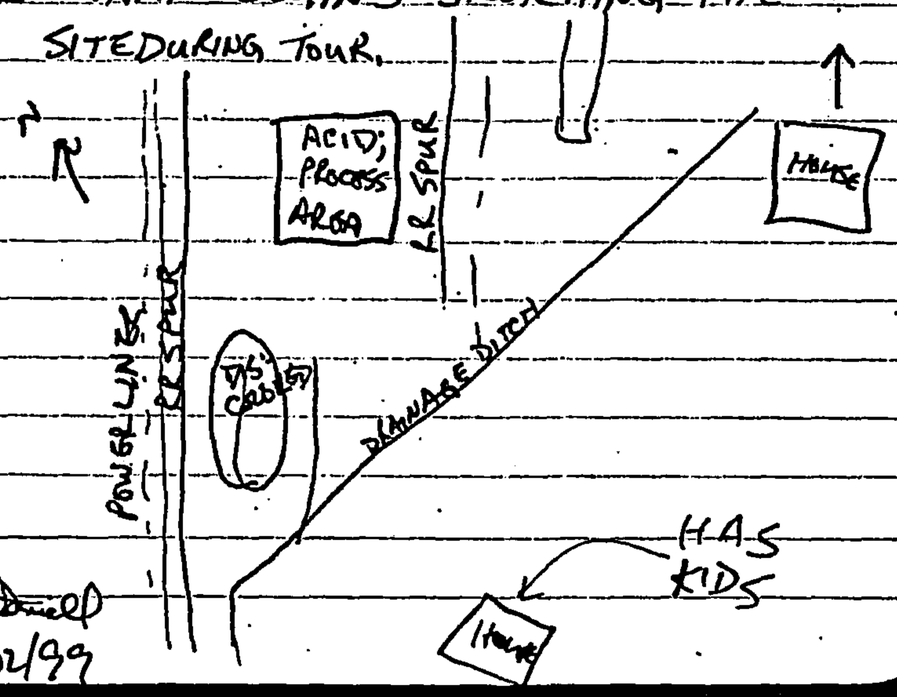
0945 SCOTT RYLAS FROM NCDEHR MEETS WITH EPA AND START. GROUP DEPARTS FOR SITE.

1000 START, EPA, AND NCDEHR ARRIVE ONSITE. START CONDUCTS A BRIEF HEALTH AND SAFETY MEETING. ALL PARTIES SIGN H+S PLAN.

WEATHER: CLEAR; COLD; NO WIND; SUNNY; APPROXIMATELY 35°F

1005 GROUPS DOES A BRIEF RECON OF SITE. START SURVEYS W/ RAD. METER; NO HITS.

1100 START BEGINS SKETCHING THE SITE DURING TOUR.



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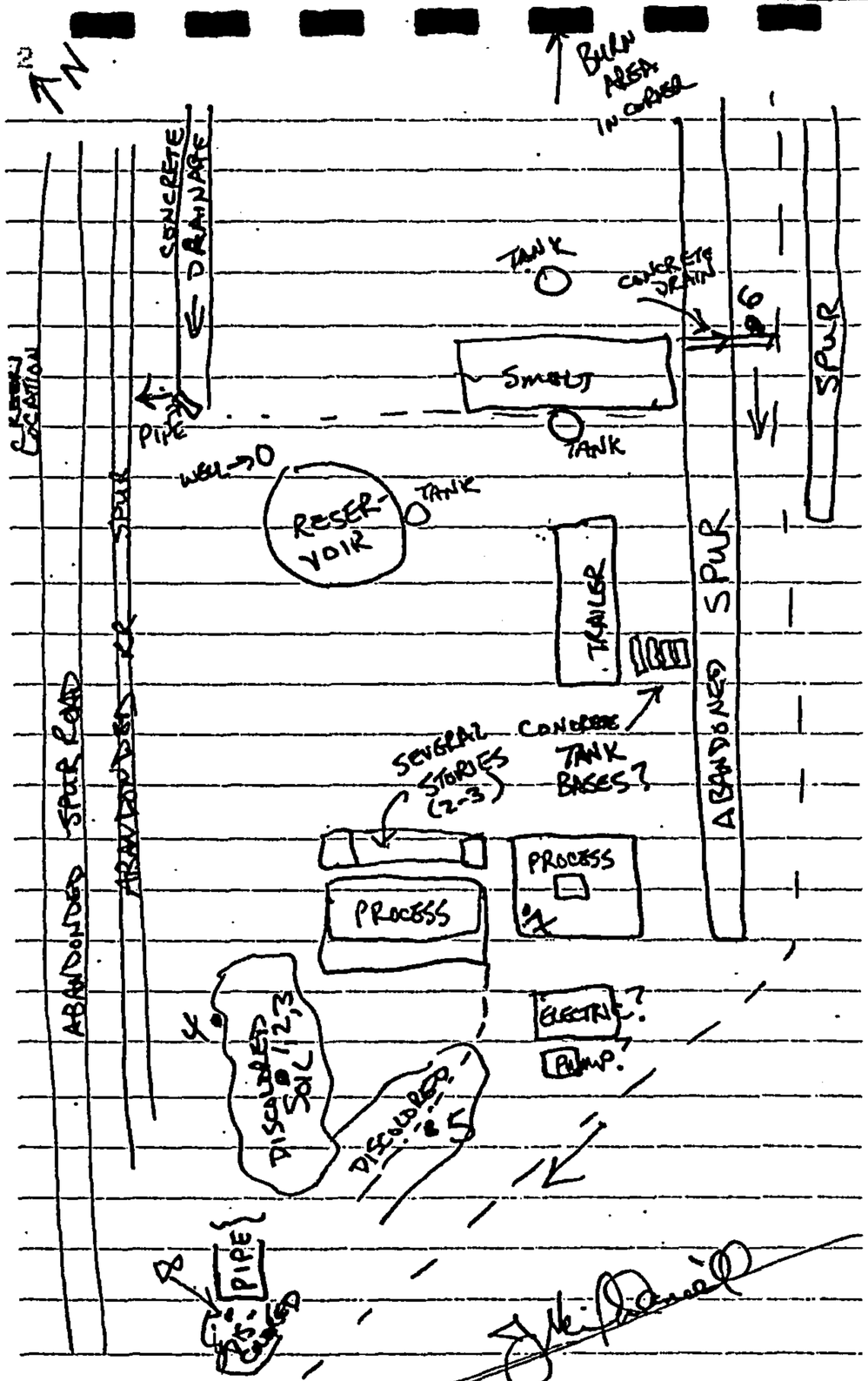


12/02/99

1155 START BEGINS SAMPLING

1205 LOCATION IS DISCOLORED SOIL AREA; CENTER

VC-01-SS MAGENTA COLORED 0-6" SOIL; SOME WHITE; CLAY WITH A SULFUR ODOR; WET

1220 LOCATION IS DISCOLORED SOIL AREA, CENTER

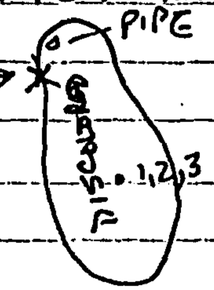
VC-02-SB (WET) TOP 1/2" IS MAGENTA SOIL; REMAINING 5.5" IS BLACK OILY-LOOKING WASTEWOOD MATERIAL; 12-18"; SULFUR ODOR

1235 LOCATION IS DISCOLORED SOIL AREA, CENTER

VC-03-SB MAGENTA COLORED SOIL/WOOD MIX. 24-30"; WET

1250 LOCATION: EDGE ON DISCOLORED SOIL NEAR PIPE (VERTICAL ~1.5" PIPE; 12" ABOVE GROUND; NW CORNER)

VC-04-SS

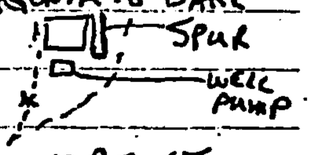


SAMPLE IS SANDY SOIL MAGENTA IN COLOR; COLOR DEEPENS WITH DEPTH (BECOMES DARKER)

12/02/99

1300 LOCATION IS IN DRAINAGE DITCH NEAR "WELL PUMP BUILDING"

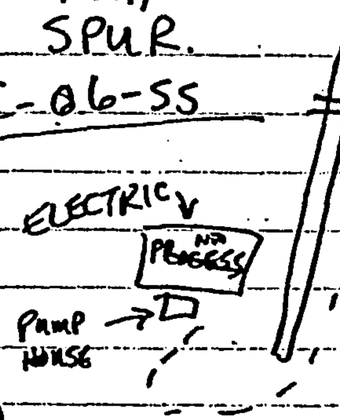
VC-05-SS SAMPLE IS MAGENTA TO DARK BROWN CLAYEY SAND;



1310 LOCATION: END OF CONCRETE DRAINAGE OFF RAILROAD SPUR.

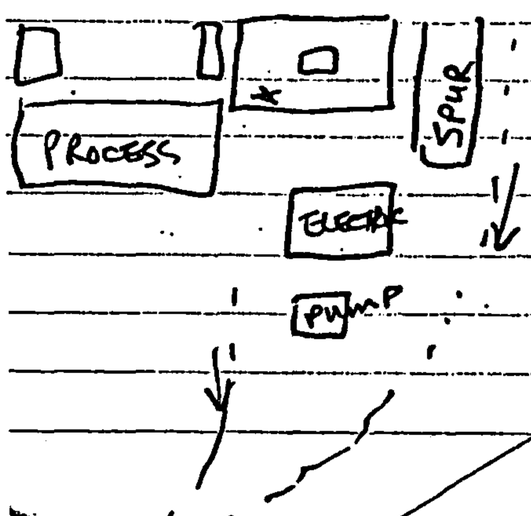
VC-06-SS

SAMPLE: DARK, ORGANIC RICH; BLACK SANDY SOIL



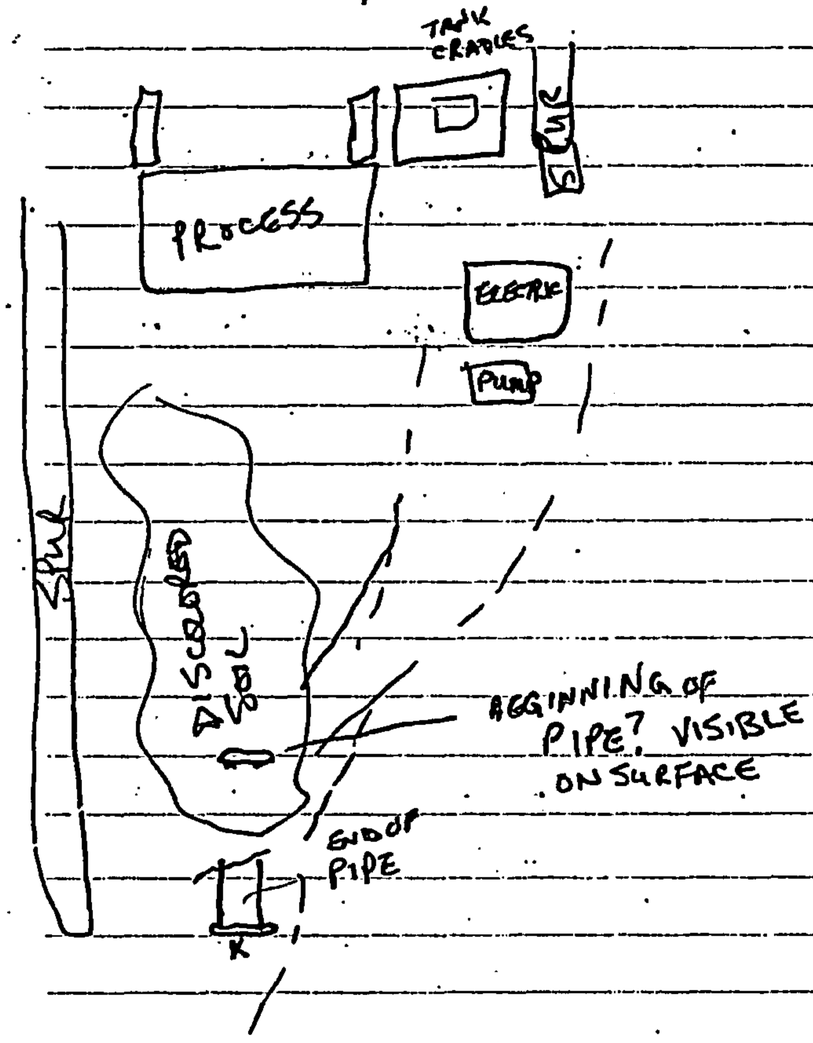
1330 LOCATION: INNER EDGE OF PROCESS BUILDING (HAS CHUTE IN TOP)

VC-07-SS - SAMPLE IS ORANGE TO BLACK CLAY SOIL



12/02/99

1340 LOCATION: END OF LARGE PIPE FLOWING OFF WSW EDGE OF PROPERTY



VC-08-SS - SAMPLE IS MAGENTA COLORED CLAYEY SOIL/SEDIMENT; WET; EXTENDS FOR AT LEAST 4-6"; COLOR HAS NOT DISAPPEARED AT 4-6" DEPTH

12/02/99

PHOTOLOG	PLACE	DESCR.	DIR.	PH.	W
1	VC CHEMICAL;	PHOTO OF PIPE FLOWING OFF SITE WITH SAMPLE ON TOP (VC-08-SS)	ENE;	ND;	JN
1435					
2	VC CHEMICAL;	PHOTO OF RESIDENCE; WITH PIPE IN FOREGROUND	SSE;	ND;	JN
1436					
3	VC CHEMICAL;	PHOTO OF DISCOLORED AREA AND SAMPLES COLLECTED AT VARIOUS DEPTHS FROM AUGER HOLE VC-01-SS VC-02-SB VC-03-SB	NNE;	ND,	JN
1441					
	VC CHEMICAL;	PHOTO OF DISCOLORED SOIL AREA ~~AND~~ WHERE ND SAMPLE VC-04-SS WAS COLLECTED	NNW;	ND;	JN
1450					
5	VC CHEMICAL;	PHOTO OF ~~NATIVE~~ ELEMENTAL SULFUR FOUND IN DISCOLORED AREA NEAR CENTER	W;	ND;	JN
1455					

Jeffrey Daniell 12/02/99

6	VC CHEMICAL;	PHOTO OF SMALL DRAINAGE DITCH FLOWING SSW TOWARD DISCOLORED AREA FROM PROCESS BLD. (VC-05-SS)	NNE;	ND;	JN
1500					
7	VC CHEMICAL;	WELL PUMP HOUSE;	E,	ND;	JN
1501					
8	VC CHEMICAL;	ELECTRICITY BLDING;	E;	ND;	JN
1504					
9	VC CHEMICAL;	PROCESS BLDING;	N;	ND;	JN
1506					
10	VC CHEMICAL;	PHOTO OF PROCESS BLDING (RIGHT SIDE); VC-07-SS; CHUTE IS IN CEILING	WNW;	ND;	JN ~~150~~ ND
1507					
11	VC CHEMICAL;	PHOTO OF RESIDENCES; LOCATED EAST OF EASTERN RR SPUR.	E;	ND;	JN
1508					
12	VC CHEMICAL;	PHOTO OF REAR OF PROCESS BLD; TAKEN FROM EASTERN RR SPUR	WSW;	ND;	JN
1510					
13	VC CHEMICAL;	PHOTO OF BLDING USED FOR SMELTING?	NNW;	ND;	JN
1512					

Jeffrey Daniell 12/02/99

14 VC CHEMICAL; PHOTO OF DRAINAGE; ESE; ND JN
1517 ACROSS EASTERN
R.R. SPUR; VC-06-SS

15 VC CHEMICAL; SAME AS 14; ESE; ND, JN
1518 ABOVE BELT FROM
TOP OF SPUR

16 VC CHEMICAL; PHOTO OF BURNED; WNW; ND; JN
1535 COILS TO?; ON
WEST SIDE NEAR RAIL
ROAD SPUR

17 VC CHEMICAL; PHOTO OF TRAILER AND; E; ND; JN
1536 TANK (RESERVOIR IN
FOREGROUND)

18 VC CHEMICAL; OPEN WELL; N; ND; JN 1536

~~18~~ND 19 VC CHEMICAL; SMELT BLDING; NE; ND, JN 1538

20 VC CHEMICAL; CONCRETE CHANNEL; N; ND; JN
1540 W/ WEIRS; NNW
SIDE OF WAREHOUSE

21 VC CHEMICAL; CAST IRON; NE; ND; JN
1541 PIPE

Neil Daniel
12/02/99

1600 START BEGINS CLEANUP
1630 START DEPARTS SITE; CLOSES
GATE

Neil Daniel
12/02/99

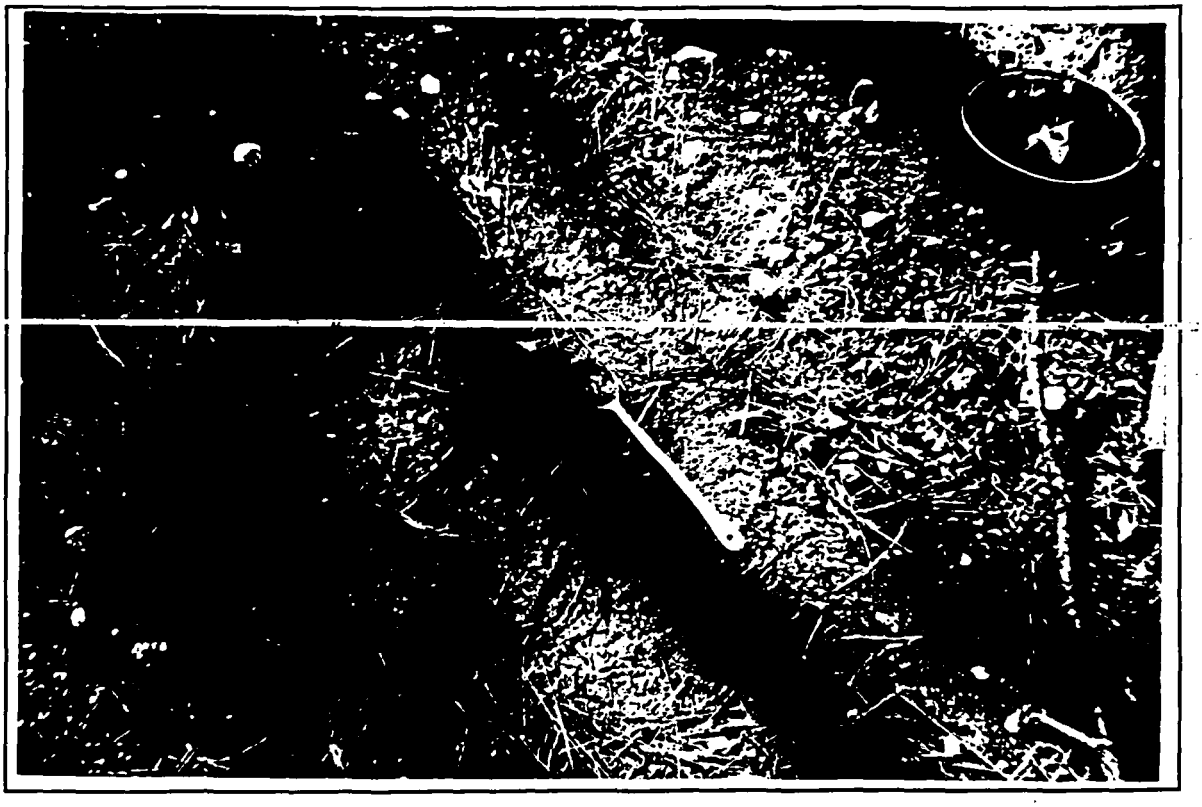
APPENDIX B

PHOTOGRAPHIC LOG

(17 Sheets)

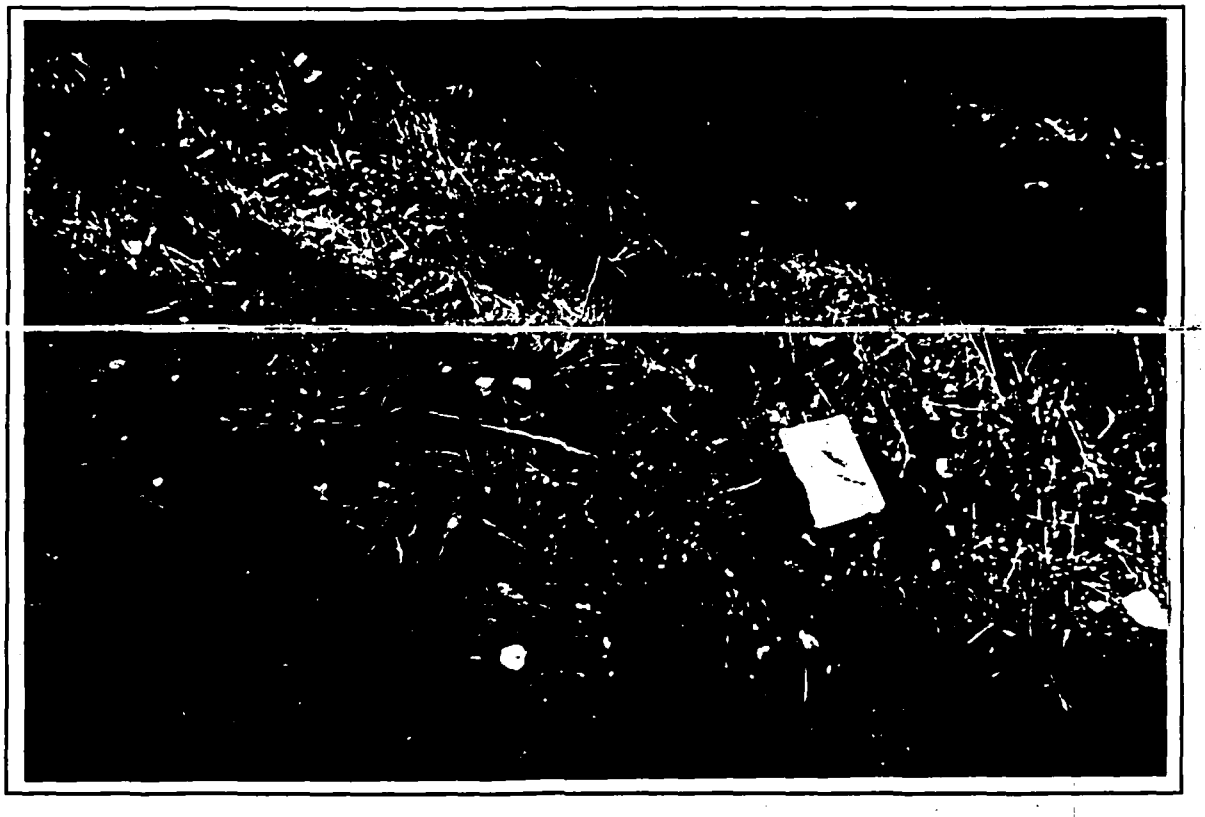
OFFICIAL PHOTOGRAPH No. 1
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	South-southwest side of site and sampling location for VC-01-SS, VC-02-SB, and VC-03-SB (center of discolored soil)		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	Northeast		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA



OFFICIAL PHOTOGRAPH No. 2
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Magenta-colored soil on the south-southwest side of site		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	North		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA



OFFICIAL PHOTOGRAPH No. 3
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Discolored soil with elemental sulfur located in the south-southwest portion of site; the elemental sulfur location is in the left central portion of photo no. 1		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	North		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

OFFICIAL PHOTOGRAPH No. 4
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Sampling location VC-04-SS situated on the south-southwest side of site; note the vertical pipe at right, central portion of site.		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	North		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

OFFICIAL PHOTOGRAPH No. 5
U.S. ENVIRONMENTAL PROTECTION AGENCY

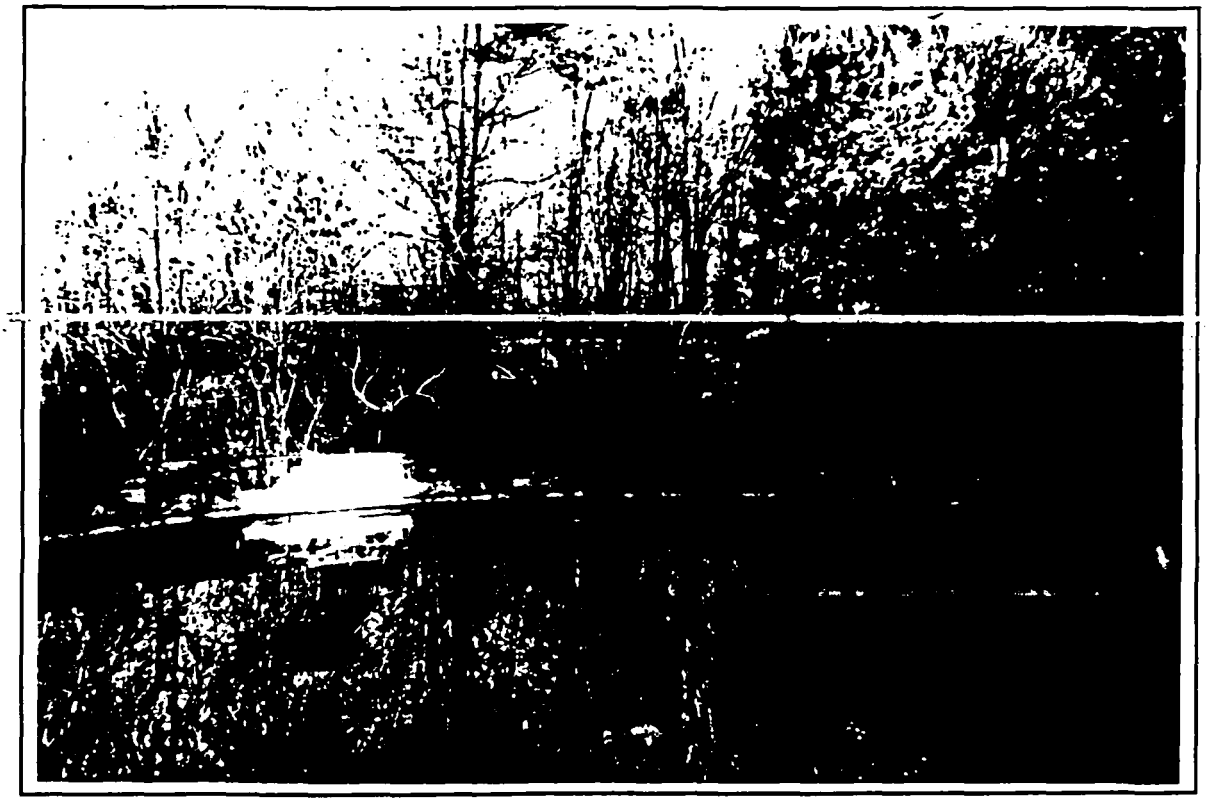
Subject:	Former acid process building (also shown in background of photograph no. 1)		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	East		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

OFFICIAL PHOTOGRAPH No. 6
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Ditch and sampling location VC-05-SS (center); the building shown in the upper left portion of the photo is can also be seen in photograph no. 5; a small utility building is shown to the right		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	East		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

OFFICIAL PHOTOGRAPH No. 7
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Utility buildings located on south-southwest portion of site; ditch shown in bottom portion of the photograph (dark area in bottom center) flows left to right. (Note: ditch is visible in photograph no. 6, also.)		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	East		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

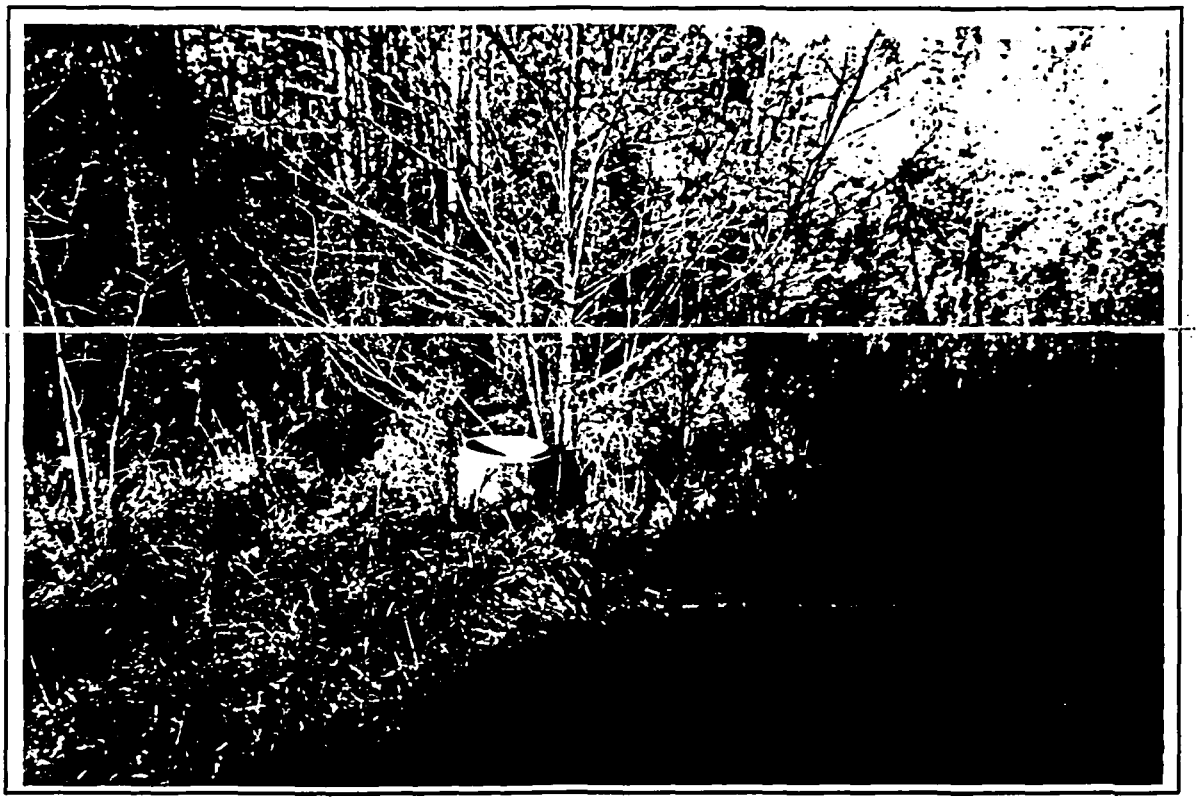


OFFICIAL PHOTOGRAPH No. 8
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Site reservoir with an abandoned trailer in background		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	East Southeast		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

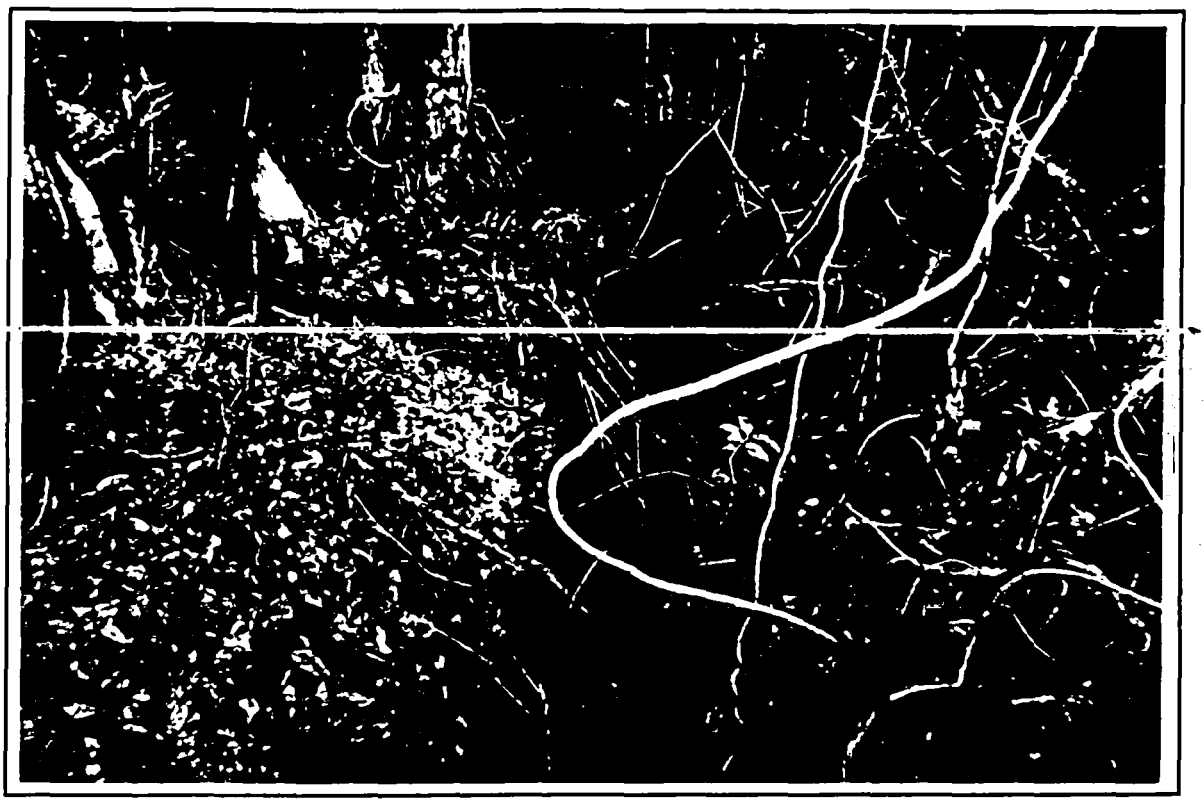
OFFICIAL PHOTOGRAPH No. 9
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Process building located on the central portion of the site. Reservoir identified in photograph no. 8 is located immediately outside of bottom right corner of photo		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	Northeast		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA



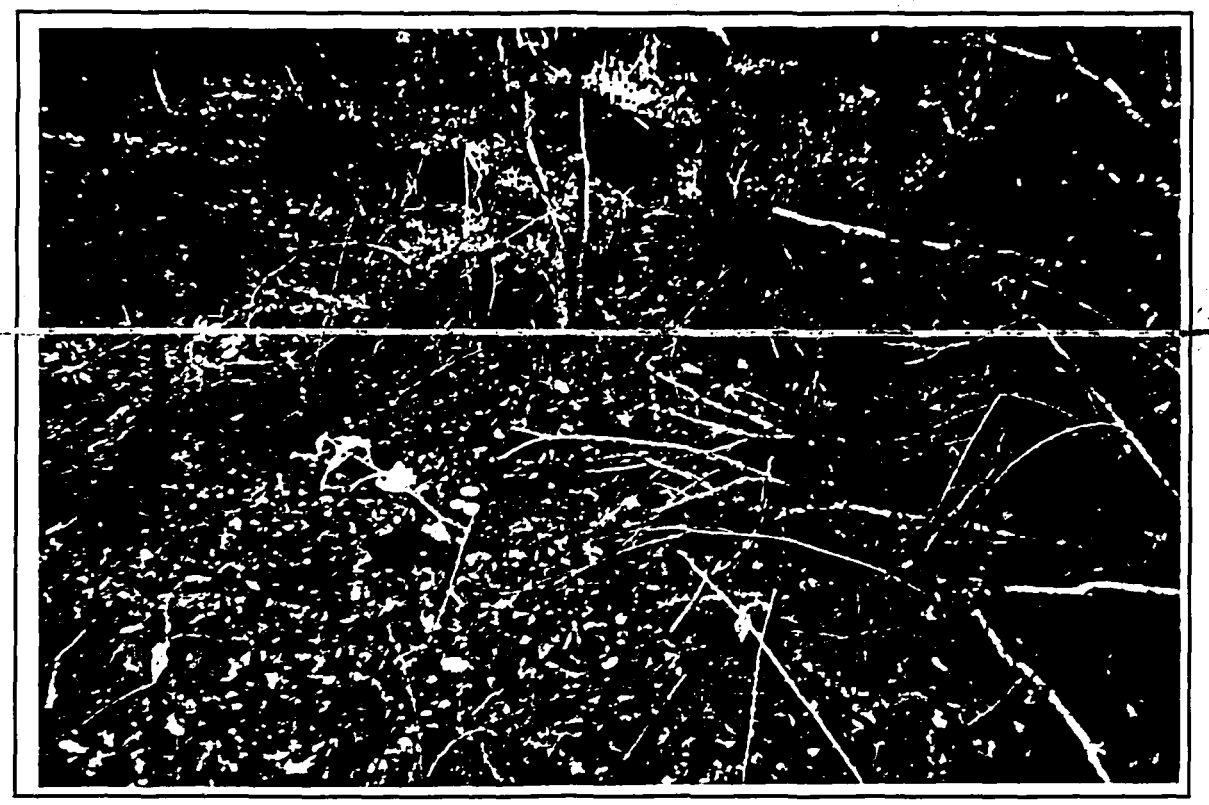
OFFICIAL PHOTOGRAPH No. 10
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Open culvert well located in central portion of site immediately north of site reservoir		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	North northeast		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA



OFFICIAL PHOTOGRAPH No. 11
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Open concrete drainage path flowing from process building (central portion of site) and across railroad spurs on eastern side of site		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	East		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

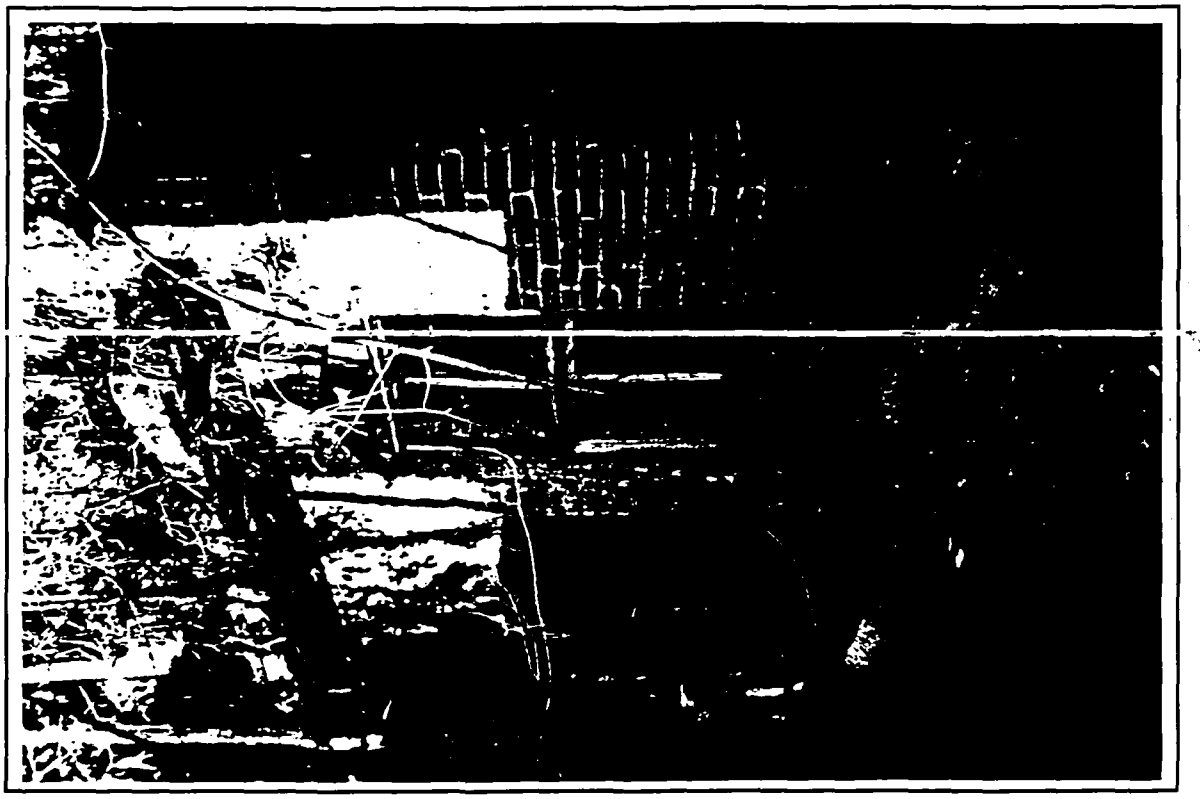


OFFICIAL PHOTOGRAPH No. 12
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Sampling location VC-06-SS (center) located at the eastern outfall of the drainage path identified in photograph no. 11; note ditch in top left portion of photograph		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	South		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

OFFICIAL PHOTOGRAPH No. 13
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Residences located along the eastern boundary of the site		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	Northeast		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

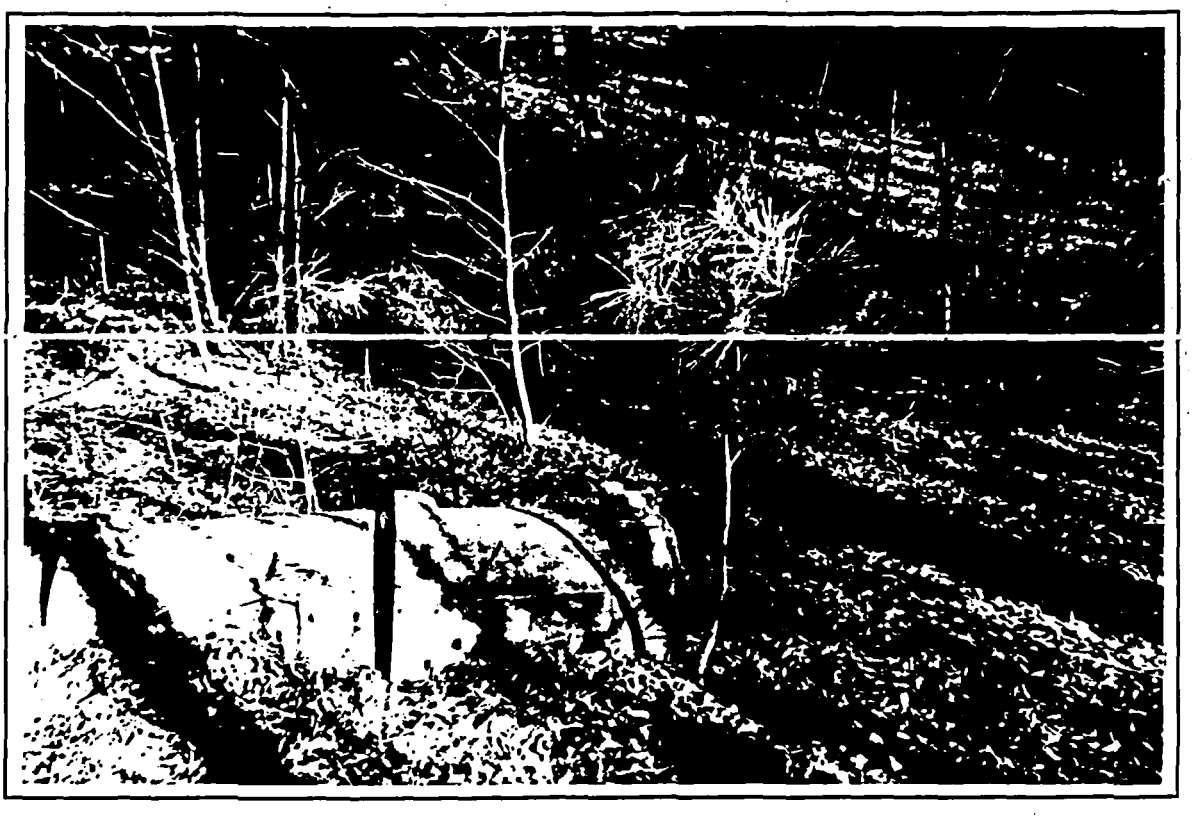


OFFICIAL PHOTOGRAPH No. 14
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Sampling location VC-07-SS situated near the far right entrance of the process building on the south-southwest portion of the site.		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	South		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

OFFICIAL PHOTOGRAPH No. 15
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Culvert located at southwestern edge of the site; drainage pathway flows off site (from left to right) toward residence shown in background		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	South		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA



OFFICIAL PHOTOGRAPH No. 16
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Sampling location VC-08-SS at the egress of the culvert		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	East		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

OFFICIAL PHOTOGRAPH No. 17
U.S. ENVIRONMENTAL PROTECTION AGENCY

Subject:	Burnt coils assumed to be ancillary equipment associated with the facility processes		
Location:	Virginia Carolina Chemical Site Wadesboro, Anson County, North Carolina		
Orientation:	North		
TDD Number:	04-9911-0017	**Date:**	December 2, 1999
Photographer:	Neil Daniell, START	**Witness:**	John Nolen, EPA

APPENDIX C

TABLE OF WITNESSES

(1 Sheet)

TABLE OF WITNESSES
Virginia Carolina Chemical Site Investigation
Wadesboro, Anson County, North Carolina

John Nolen, On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4
Emergency Response and Removal Branch
61 Forsyth Street, SW, 11th Floor
Atlanta, Georgia 30303
(404) 562-8750

Neil Daniell, START Project Manager
Superfund Technical Assessment and Response Team, Region 4
Tetra Tech EM Inc.
1750 Corporate Drive, Suite 735
Norcross, Georgia 30093
(770) 717-2339

Scott Ryals, Environmental Chemist II
North Carolina Department of Environment and Natural Resources
1601 MSC
Raleigh, North Carolina 27699-1601
(919) 733-4996, ext. 316

APPENDIX D

ANALYTICAL REPORT

(20 Sheets)

Tetra Tech EM Inc.

Gwinnett Corporate Center ◆ 1750 Corporate Drive, Suite 735 ◆ Norcross, GA 30093 ◆ (770) 935-1542 ◆ FAX (770) 935-9049

January 31, 2000

Mr. John Nolen
On-Scene Coordinator
U.S. Environmental Protection Agency
61 Forsyth Street, SW
11th Floor
Atlanta, GA 30303

Subject: Data Validation Report
V.C. Chemical Site, Wadesboro, North Carolina
Technical Directive Document No. 04-9911-0018
CompuChem, Cary, North Carolina
Case Number 34687, Sample Delivery Group Number 00001

Metals, volatile organic compounds, semivolatile organic compounds, pesticides and polychlorinated biphenyls: Soil/8

Dear Mr. Nolen:

Data review was performed on the analytical data for eight soil samples collected by Tetra Tech EM Inc. (Tetra Tech) at the V.C. Chemical site in Wadesboro, North Carolina. The samples were analyzed for metals, volatile organic compounds (VOC), semivolatile organic compounds (SVOC), pesticides, and polychlorinated biphenyls (PCB) under case number 34687, sample delivery group number 00001, by CompuChem, Cary, North Carolina using U.S. Environmental Protection Agency (EPA) SW-846 methods. The data were evaluated in general accordance with the "U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review" dated February 1994, and were based on the following parameters:

- Data completeness
- Holding times
- Gas chromatography and mass spectrometry (GC/MS) instrument performance check
- Blanks
- Surrogate recoveries
- Laboratory control samples (LCS)

Enclosure 1 contains the data tables, and Enclosure 2 contains the data as presented by the laboratory. Tentatively identified compound results for the VOC and the SVOC analysis can be found in Enclosure 2.

1.0 DATA COMPLETENESS

The data package was complete for all required documentation.

2.0 HOLDING TIMES

The holding times were met for the samples.

contains recycled fiber and is recyclable

3.0 GC/MS INSTRUMENT PERFORMANCE CHECK

All GC/MS instrument performance checks for the VOC and SVOC analyses met the acceptance criteria.

4.0 BLANKS

The method blanks were free of target analytes except for those discussed in this section. For VOC analysis, methylene chloride (0.2 micrograms per kilograms [µg/kg]) and acetone (4 µg/kg) were reported for the method blank analyzed on December 9, 1999; methylene chloride (4 µg/kg) and acetone (3 µg/kg) was reported for the method blank analyzed on December 11, 1999; methylene chloride (2 µg/kg) and acetone (7 µg/kg) was reported for the method blank analyzed on December 14, 1999; and acetone only (2 µg/kg) was reported for the method blank analyzed on December 15, 1999.

Sample VC-01-SS, associated with the VOC method blank analyzed on December 9, 1999, had methylene chloride reported at 1 µg/kg. Acetone has been reported at 14 µg/kg. Both these analytes have been qualified as nondetect (U) at the sample-reporting limit.

Field samples VC-06-SS, VC-07-SS, and VC-08-SS were associated with the VOC method blank analyzed on December 11, 1999. Sample VC-06-SS had methylene chloride (11 µg/kg) at less than 10 times the blank concentration and acetone (18 µg/kg) at less than 10 times the blank concentration but above the reporting limit. Methylene chloride has been qualified as nondetect (U) at the sample reporting limits and acetone has been qualified as nondetect (U) at the concentration reported. Sample VC-07-SS had methylene chloride reported at 7 µg/kg and acetone at 17 µg/kg. Methylene chloride has been qualified as nondetect (U) at the sample reporting limit and acetone has been qualified as nondetect (U) at the concentration reported. Sample VC-08-SS had methylene chloride reported at 8 µg/kg and acetone reported at 8 µg/kg. Both analytes have been qualified as nondetect (U) at the sample reporting limit.

Field samples VC-03-SB and VC-04-SS were associated with the VOC method blank analyzed on December 14, 1999. For sample VC-03-SB, methylene chloride has been qualified as nondetect (U) at the sample reporting limit. Acetone result for this sample has been qualified as nondetect (U) at the concentration reported (84 µg/kg) based on an action level 163 µg/kg that was adjusted for the percent solids in sample VC-03-SB. Methylene chloride (3 µg/kg), reported for sample VC-04-SS, has been qualified as nondetect (U) at the sample reporting limit.

Field samples VC-02-SB and VC-05-SS were associated with the method blank analyzed on December 15, 1999. Acetone was reported for sample VC-02-SB (410 µg/kg). No qualification has been applied to the acetone result for this sample because the concentration reported is greater than ten times the blank concentration adjusted for percent solids in sample VC-02-SB. Sample VC-05-SS was nondetect for all target analytes and therefore no qualifications were required.

For SVOC analysis, bis(2-ethylhexyl)phthalate (47 µg/kg) was reported for the method blank extracted on December 9, 1999, and analyzed on December 10, 1999, associated with all samples. This analyte has been qualified as nondetect (U) for samples VC-03-SB, VC-04-SS, VC-05-SS, VC-06-SS, and VC-08-SS at the sample reporting limit because the concentrations reported are less than 10 times the blank concentration adjusted for percent solids and sample mass. In addition, bis(2-ethylhexyl)phthalate was reported for samples VC-01-SS (820 µg/kg) and VC-02-SB (490 µg/kg). No qualification has been applied to sample VC-01-SS because the concentration reported is greater than 10 times the blank

concentration adjusted for percent solids and sample mass in sample VC-01-SS. Bis(2-ethylhexyl)phthalate for sample VC-02-SB (490 µg/kg) has been qualified as nondetect (U) at the sample reporting limit because the concentration is less than 10 times the blank concentration adjusted for percent solids and sample mass for sample VC-02-SB. This analyte was reported as nondetect for sample VC-07-SS and therefore no qualifications were required.

For pesticide analysis, four target analytes that met the dual column confirmation criteria have been reported for the method blank, extracted on December 9, 1999, and analyzed on December 14, 1999. This method blank applies to all the samples. Of the four analytes, delta-BHC (0.38 µg/kg) and alpha-chlordane (0.15 µg/kg) met the criteria for definite identification with less than 25 percent difference between the two columns. Beta-BHC (1.9 µg/kg) and gamma-BHC (0.22 µg/kg) are estimated because of the greater than 25 percent, but less than 100 percent difference, between the two columns. Other analytes were detected in this method blank but they did not meet the dual column confirmation criteria. Hence, their results were not used to qualify any sample data. In addition, the SDG narrative for pesticides states that the lower value of the two columns has been reported for detected analytes in the field samples. Therefore, for consistency, the lower of the two columns' values for the four analytes discussed have been used for the purpose of data qualification. The blank contamination rule has been applied to all four analytes and the detected results have been qualified as discussed below.

Delta-BHC has been reported as confirmed (less then 25 percent difference between two columns) or less than 100 percent difference between two columns for three samples, which are VC-04-SS, VC-05-SS, and VC-06-SS, and with less than five times the blank concentration adjusted for percent solids and other factors. Beta-BHC has been qualified as nondetect (U) in these samples at sample reporting limits.

Gamma-BHC has been reported as confirmed (less then 25 percent difference between two columns) or less than 100 percent difference between two columns for four samples, which are VC-01-SS, VC-02-SB, VC-04-SS, and VC-05-SS, and with less than five times the blank concentration adjusted for percent solids and other factors. Gamma-BHC has been qualified as nondetect (U) in these samples at sample reporting limits

Beta-BHC has been reported as less than 100 percent difference between two columns for sample VC-03-SB (13 µg/kg). Beta-BHC for this sample has been qualified as nondetect (U) at the concentration reported because it is less than the blank concentration adjusted for percent solids and other factors.

Alpha-chlordane has been reported as less than 100 percent difference between two columns for samples VC-06-SS (1.6 µg/kg) and VC-08-SS (1.5 µg/kg). Alpha-chlordane has not been qualified for sample VC-06-SS because the concentration reported is greater than five times the blank concentration adjusted for percent solids and other factors. For sample VC-08-SS, this analyte has been qualified as nondetect (U) at the sample reporting limit because the concentration reported is less than five times the blank concentration adjusted for percent solids and other factors.

The four pesticides discussed above have been reported for other samples but did not meet the two column confirmation criteria. No qualifications have been applied to these results.

Blank results for the metals analyses were not reviewed.

5.0 SURROGATE RECOVERIES

Surrogate recoveries were within the specified control limits except for those discussed in this section. VOC surrogate recovery for 1,2-dichloroethane-d4 did not meet the 70 to 139 percent quality control (QC) criteria for the matrix spike sample VC-06-SSMS (145 percent). However, surrogate recoveries for all the field samples were in control. No qualifications, therefore, have been applied.

Pesticide surrogate recovery for decachlorobiphenyl did not meet the 30 percent to 150 percent QC criteria for column number one for samples VC-06-SS (232 percent) and VC-07-SS (250 percent). This surrogate did not meet the 30 percent to 150 percent QC criteria for column number two for samples VC-06-SS (209 percent) and VC-02-SB (226 percent). All positive pesticide / PCB results in these samples were qualified as estimated (J).

The surrogate retention time limits used by the laboratory were plus or minus 0.30 minutes for both tetrachloro-m-xylene (TCX) and decachlorobiphenyl (DCB). These limits are more lenient than those given in the National Functional Guidelines (plus or minus 0.05 minutes for TCX and plus or minus 0.10 minutes for DCB). All sample and standard surrogate retention times met the laboratory limits, but a few sample DCB retention times did not fall within the National Functional Guideline limits. No qualifications were applied to the data, however.

6.0 LABORATORY CONTROL SAMPLES

The results obtained for the target analytes in the analysis of the LCSs were within control limits except for those discussed in this section. For VOC analysis, tetrachloroethene at 154 percent recovery did not meet the upper QC recovery limit of 150 percent for LCS VLCS66. Also, for VOC analyses, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone had high recoveries for LCS VLCS63. The positive results for these analytes in the samples were flagged as estimated (J).

For SVOC analysis, 2-methylphenol (42 percent), 2,4,5-trichlorophenol (36 percent), 2,4-dinitrophenol (36 percent), and 4,6-dinitro-2-methyphenol (45 percent) did not meet the lower QC limit of 50 percent recovery. These analytes, reported as nondetects for all the samples, have been qualified as estimated nondetect (UJ) because they are likely to be biased low and may represent false negative results.

LCS recoveries for pesticides and metals were in control.

7.0 OVERALL ASSESSMENT OF DATA

For the pesticides and PCB analyses, the lower of the values generated from the two columns were reported for each detected analyte.

The overall quality of this data package was acceptable based on the parameters reviewed. LCS recoveries of four SVOC phenolic analytes were below the lower QC limit. Phenolic compounds sometimes are difficult to extract and a low bias is possible in results reported. The nondetected results for these four analytes have been qualified as estimated for all SVOC samples. In the VOC analyses, data qualifications due to out-of-control LCS results were also applied.

Pesticide results were qualified due to out-of-control surrogate results. Pesticides, SVOC, and VOC results were qualified due to the presence of blank contamination.

For pesticides, the target analytes that do not meet the dual column confirmation criteria have been reported in the data submitted by the laboratory. Such data have been included in the summary data table attached. The qualifications applied by the laboratory have not been altered unless required based on the parameters reviewed in this report. Because the pesticide data have not been reviewed against compound identification criteria, the potential exists for false positive results.

If you have any questions or need further information, please contact the undersigned at (913) 495-3918.

Sincerely,

John Schendel

for Kirit Bhatt
Data Validation Chemist
Enclosures (2)

ENCLOSURE 1

DATA SUMMARY TABLES

(14 Sheets)

TABLE 1

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-01-SS	VC-02-SB	VC-03-SB	VC-04-SS
	discolored area; center	discolored area; center	discolored area; center	discolored area; NW corner
Metal (mg/kg)[a]				
Aluminum	1,050	4,100	1,830	810
Antimony	11.1	139	11.3	22.0
Arsenic	19.9	4.0	11.5	43.4
Barium	599	374	1,060	659
Beryllium	0.03 U[b]	0.07 J[c]	0.07 J	0.04 J
Cadmium	1.2	12.2	4.2	1.2
Calcium	323	6,170	1,650	196
Chromium	1.9	6.8	5.5	0.98
Cobalt	4.1	4.6	4.2	4.5
Copper	63.2	1,520	585	99.3
Iron	43,700	14,600	60,600	89,800
Lead	1,560	1,080	1,790	29,700
Magnesium	80.0 J	184 J	88.6 J	70.2 J
Manganese	12.6	26.4	8.9	22.3
Mercury	0.43	5.0	2.1	1.3
Nickel	1.6	4.1	1.6	1.8
Potassium	491	99.5 J	360	336
Selenium	3.9	20.6	17.8	8.1
Silver	6.8	45.5	12.9	20.7
Sodium	1,040	194 U	2,710	5,510

TABLE 1 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-01-SS	VC-02-SB	VC-03-SB	VC-04-SS
	discolored area; center	discolored area; center	discolored area; center	discolored area; NW corner
Metal (mg/kg) (Continued)				
Thallium	3.3	0.74 U	3.7	5.6
Vanadium	5.1	1.7 J	4.7	5.9
Zinc	352	2,630	839	134
Volatile Organic Compound (µg/kg)[d]				
Acetone	14 U	410	84 U	13 U
Benzene	14 U	30 U	23 U	13 U
Bromodichloromethane	14 U	30 U	23 U	13 U
Bromoform	14 U	30 U	23 U	13 U
Bromomethane	14 U	30 U	23 U	13 U
2-Butanone	14 U	120 J	26 J	13 U
Carbon disulfide	14 U	34	2 J	13 U
Carbon Tetrachloride	14 U	30 U	23 U	13 U
Chlorobenzene	14 U	30 U	0.9 J	13 U
Chloroethane	14 U	30 U	23 U	13 U
Chloroform	14 U	30 U	23 U	13 U
Chloromethane	14 U	30 U	23 U	13 U
cis-1,2-Dichloroethene	14 U	30 U	23 U	0.3 J
cis-1,3-Dichloropropene	14 U	30 U	23 U	13 U
Dibromochloromethane	14 U	30 U	23 U	13 U
1,1-Dichloroethane	14 U	30 U	23 U	13 U
1,1-Dichloroethene	14 U	30 U	23 U	13 U

TABLE 1 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-01-SS	VC-02-SB	VC-03-SB	VC-04-SS
	discolored area; center	discolored area; center	discolored area; center	discolored area; NW corner
Volatile Organic Compound (µg/kg) (Continued)				
1,2-Dichloroethane	14 U	30 U	23 U	13 U
1,2-Dichloropropane	14 U	30 U	23 U	13 U
Ethylbenzene	14 U	1 J	23 U	0.6 J
2-Hexanone	14 U	30 U	23 U	13 U
4-Methyl-2-pentanone	14 U	30 U	23 U	13 U
Methylene chloride	14 U	9 J	23 U	13 U
Styrene	14 U	30 U	23 U	0.6 J
Tetrachloroethene	14 U	30 U	23 U	13 U
Toluene	0.3 J	4 J	1 J	0.7 J
trans-1,2-Dichloroethene	14 U	30 U	23 U	13 U
trans-1,3-Dichloropropene	14 U	30 U	23 U	13 U
1,1,1-Trichloroethane	14 U	30 U	23 U	13 U
1,1,2,2-Tetrachloroethane	14 U	30 U	0.5 J	0.7 J
1,1,2-Trichloroethane	14 U	30 U	23 U	13 U
Tetrachloroethene	14 U	3 J	2 J	1 J
Vinyl chloride	14 U	30 U	23 U	13 U
Xylene (total)	14 U	30 U	23 U	13 U
Semivolatile Organic Compound (µg/kg)				
Phenol	460 U	980 U	760 U	430 U
bis (2-Chloroethyl) ether	460 U	980 U	760 U	430 U
2-Chlorophenol	460 U	980 U	760 U	430 U
1,3-Dichlorobenzene	460 U	980 U	760 U	430 U

TABLE 1 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-01-SS	VC-02-SB	VC-03-SB	VC-04-SS
	discolored area; center	discolored area; center	discolored area; center	discolored area; NW corner
Semivolatile Organic Compound (µg/kg) (Continued)				
1,4-Dichlorobenzene	460 U	980 U	760 U	430 U
1,2-Dichlorobenzene	460 U	980 U	760 U	430 U
2-Methylphenol	460 UJ[e]	980 UJ	760 UJ	430 UJ
2,2'-oxybis (1-Chloropropane)	460 U	980 U	760 U	430 U
4-Methylphenol	460 U	980 U	760 U	430 U
N-Nitroso-di-N-propylamine	460 U	980 U	760 U	430 U
Hexachloroethane	460 U	980 U	760 U	430 U
Nitrobenzene	460 U	980 U	760 U	430 U
Isophorone	460 U	980 U	760 U	430 U
2-Nitrophenol	460 U	980 U	760 U	430 U
2,4-Dimethylphenol	460 U	980 U	760 U	430 U
bis (2-Chloroethoxy) methane	460 U	980 U	760 U	430 U
2,4-Dichlorophenol	460 U	980 U	760 U	430 U
1,2,4-Trichlorobenzene	460 U	980 U	760 U	430 U
Naphthalene	460 U	980 U	760 U	430 U
4-Chloroaniline	460 U	980 U	760 U	430 U
Hexachlorobutadiene	460 U	980 U	760 U	430 U
4-Chloro-3-methylphenol	460 U	980 U	760 U	430 U
2-Methylnaphthalene	460 U	980 U	760 U	430 U
Hexachlorocyclopentadiene	460 U	980 U	760 U	430 U
2,4,6-Trichlorophenol	460 U	980 U	760 U	430 U
2,4,5-Trichlorophenol	460 UJ	980 UJ	760 UJ	430 UJ
2-Chloronaphthalene	460 U	980 U	760 U	430 U
2-Nitroaniline	920 U	2000 U	1500 U	870 U
Dimethyl phthalate	460 U	980 U	760 U	430 U
2,6-Dinitrotoluene	460 U	980 U	760 U	430 U
Acenaphthylene	460 U	980 U	50 J	430 U

TABLE 1 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-01-SS	VC-02-SB	VC-03-SB	VC-04-SS
	discolored area; center	discolored area; center	discolored area; center	discolored area; NW corner
Semivolatile Organic Compound (μg/kg) (Continued)				
3-Nitroaniline	920 U	2000 U	1500 U	870 U
Acenaphthene	460 U	980 U	760 U	430 U
2,4-Dinitrophenol	920 UJ	2000 UJ	1500 UJ	870 UJ
4-Nitrophenol	920 U	2000 U	1500 U	870 U
2,4-Dinitrotoluene	460 U	980 U	760 U	430 U
Dibenzofuran	460 U	980 U	760 U	430 U
Diethylphthalate	460 U	980 U	760 U	430 U
4-Chlorophenyl-phenylether	460 U	980 U	760 U	430 U
Flourene	460 U	980 U	760 U	430 U
4-Nitroaniline	920 U	2000 U	1500 U	870 U
4,6-Dinitro-2-methylphenol	920 UJ	2000 UJ	1500 UJ	870 UJ
N-nitrosodiphenylamine	460 U	980 U	760 U	430 U
4-Bromophenyl-phenylether	460 U	980 U	760 U	430 U
Hexachlorobenzene	460 U	980 U	760 U	430 U
Pentachlorophenol	920 U	2000 U	1500 U	870 U
Phenanthrene	460 U	980 U	160 J	430 U
Anthracene	460 U	980 U	59 J	430 U
Carbazole	460 U	980 U	760 U	430 U
Di-n-butylphthalate	460 U	980 U	760 U	430 U
Fluoranthene	460 U	74 J	280 J	430 U
Pyrene	460 U	86 J	280 J	430 U
Butylbenzylphthalate	460 U	980 U	760 U	430 U
3,3'-Dichlorobenzidine	460 U	980 U	760 U	430 U
bis (2-Ethylhexyl) phthalate	820	980 U	760 U	430 U
Benzo (a) anthracene	460 U	980 U	160 J	430 U
Chrysene	90 J	100 J	240 J	430 U
Di-n-octylphthalate	460 U	980 U	760 U	430 U
Benzo (b) fluoranthene	110 J	84 J	170 J	430 U

TABLE 1 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-01-SS	VC-02-SB	VC-03-SB	VC-04-SS
	discolored area; center	discolored area; center	discolored area; center	discolored area; NW corner
Semivolatile Organic Compound (μg/kg) (Continued)				
Benzo (k) fluoranthene	64 J	64 J	170 J	430 U
Benzo (a) pyrene	460 U	980 U	140 J	430 U
Indeno (1,2,3-c,d) pyrene	22 J	41 J	120 J	430 U
Dibenzo (a,h) anthracene	460 U	980 U	61 J	430 U
Benzo (g,h,i) perylene	460 U	980 U	110 J	430 U
Pesticide / Polychlorinated Biphenyl (μg/kg)				
4,4'-DDD (p,p'-DDD)	9.2 U	20 U	3.0 J	0.50 J
4,4'-DDE (p,p'-DDE)	4.7 U	10 U	1.4 J	0.85 J
4,4'-DDT (p,p'-DDT)	0.69 J	1.4 J	2.1 J	1.1 J
Aldrin	2.3 U	0.16 J	0.11 J	0.37 J
alpha-BHC	2.3 U	0.59 J	4.6	2.2 U
Alpha-chlordane	4.7 U	0.090 J	0.082 J	1.0 J
beta-BHC	0.12 J	10 U	13 U	1.2 J
delta-BHC	2.3 U	0.12 J	1.2 J	2.2 U
Dieldrin	4.7 U	10 U	0.37 J	4.5 U
Endosulfan I	4.7 U	0.25 J	0.38 J	4.5 U
Endosulfan II	9.2 U	20 U	0.39 J	8.7 U
Endosulfan sulfate	9.2 U	20 U	0.67 J	0.35 J
Endrin	9.2 U	1.3 J	0.20 J	0.97 J
Endrin aldehyde	9.2 U	20 U	0.67 J	0.29 J
Endrin ketone	23 U	50 U	6.0 J	0.057 J
gamma-BHC (lindane)	2.3 U	5.2 U	4.2	2.2 U
Gamma-chlordane	2.3 U	0.47 J	0.46 J	0.21 J
Heptachlor	2.3 U	2.6 J	0.12 J	0.17 J
Heptachlor epoxide	2.3 U	5.0 U	1.8 J	0.20 J
Methoxychlor	23 U	50 U	14 J	1.2 J
PCB-1016 (Aroclor 1016)	180 U	390 U	300 U	170 U
PCB-1221 (Aroclor 1221)	240 U	520 U	400 U	220 U

TABLE 1 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-01-SS	VC-02-SB	VC-03-SB	VC-04-SS
	discolored area; center	discolored area; center	discolored area; center	discolored area; NW corner
Pesticide / Polychlorinated Biphenyl (µg/kg) (Continued)				
PCB-1232 (Aroclor 1232)	180 U	390 U	300 U	170 U
PCB-1242 (Aroclor 1242)	120 U	270 U	210 U	120 U
PCB-1248 (Aroclor 1248)	120 U	270 U	210 U	120 U
PCB-1254 (Aroclor 1254)	120 U	270 U	210 U	120 U
PCB-1260 (Aroclor 1260)	180 U	390 U	300 U	170 U
Toxaphene	230 U	500 U	390 U	220 U

CompuChem performed the sample analyses.

Notes:
[a] mg/kg Milligram per kilogram
[b] U Analyte not detected above sample reporting limit
[c] J Analyte concentration is estimated
[d] µg/kg Microgram per kilogram
[e] UJ Analyte not detected above sample reporting limit, which is estimated

TABLE 2

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-05-SS	VC-06-SS	VS-07-SS	VC-08-SS
	drainage ditch; pump house	drainage ditch; RR spur	process building; right	drainage ditch; 24" pipe
Metal (mg/kg)[a]				
Aluminum	4,620	17,800	14,600	5,640
Antimony	8.4	1.4 J[c]	0.38 J	2.7
Arsenic	965	10.3	23.8	42.6
Barium	359	86.4	110	229
Beryllium	0.08 J	0.61 J	0.21 J	0.10 J
Cadmium	0.94	3.0	0.47 J	0.40 J
Calcium	494	65,700	975	459
Chromium	7.7	34.0	37.1	9.7
Cobalt	9.8	3.2	1.6	2.0
Copper	599	39.5	139	105
Iron	45,300	11,900	45,200	26,900
Lead	8,490	230	1,150	1,940
Magnesium	933	1,110	944	482
Manganese	65.0	169	85.2	33.3
Mercury	1.2	0.28	0.12	0.35
Nickel	4.0	6.2	6.0	2.4
Potassium	599	1,710	1,780	581
Selenium	3.4	0.53 J	2.4	4.4
Silver	6.2	0.19 J	0.17 J	3.0
Sodium	615	691	259 U[b]	582

TABLE 2 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-05-SS	VC-06-SS	VS-07-SS	VC-08-SS
	drainage ditch; pump house	drainage ditch; RR spur	process building; right	drainage ditch; 24" pipe
Metal (mg/kg) (Continued)				
Thallium	6.8	0.36 U	2.0	1.7
Vanadium	21.9	34.2	58.3	15.0
Zinc	308	75.7	86.9	77.1
Volatile Organic Compound (µg/kg)[d]				
Acetone	13 U	18 U	17 U	18 U
Benzene	13 U	14 U	14 U	18 U
Bromodichloromethane	13 U	14 U	14 U	18 U
Bromoform	13 U	14 U	14 U	18 U
Bromomethane	13 U	14 U	14 U	18 U
2-Butanone	13 U	14 U	14 U	18 U
Carbon disulfide	13 U	2 J	1 J	1 J
Carbon Tetrachloride	13 U	14 U	14 U	18 U
Chlorobenzene	13 U	14 U	14 U	18 U
Chloroethane	13 U	14 U	14 U	18 U
Chloroform	13 U	14 U	14 U	18 U
Chloromethane	13 U	14 U	14 U	18 U
cis-1,2-Dichloroethene	13 U	14 U	14 U	18 U
cis-1,3-Dichloropropene	13 U	14 U	14 U	18 U
Dibromochloromethane	13 U	14 U	14 U	18 U
1,1-Dichloroethane	13 U	14 U	14 U	18 U
1,1-Dichloroethene	13 U	14 U	14 U	18 U

TABLE 2 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-05-SS	VC-06-SS	VS-07-SS	VC-08-SS
	drainage ditch; pump house	drainage ditch; RR spur	process building; right	drainage ditch; 24" pipe
Volatile Organic Compound (µg/kg) (Continued)				
1,2-Dichloroethane	13 U	14 U	14 U	18 U
1,2-Dichloropropane	13 U	14 U	14 U	18 U
Ethylbenzene	13 U	14 U	14 U	18 U
2-Hexanone	13 U	14 U	14 U	18 U
4-Methyl-2-pentanone	13 U	14 U	14 U	18 U
Methylene chloride	13 U	14 U	14 U	18 U
Styrene	13 U	1 J	14 U	18 U
Tetrachloroethene	13 U	14 U	14 U	18 U
Toluene	13 U	14 U	14 U	18 U
trans-1,2-Dichloroethene	13 U	14 U	14 U	18 U
trans-1,3-Dichloropropene	13 U	14 U	14 U	18 U
1,1,1-Trichloroethane	13 U	14 U	14 U	18 U
1,1,2,2-Tetrachloroethane	13 U	14 U	14 U	18 U
1,1,2-Trichloroethane	13 U	14 U	14 U	18 U
Tetrachloroethene	13 U	14 U	14 U	18 U
Vinyl chloride	13 U	14 U	14 U	18 U
Xylene (total)	13 U	14 U	14 U	18 U
Semivolatile Organic Compound (µg/kg)				
Phenol	440 U	480 U	4500 U	580 U
bis (2-Chloroethyl) ether	440 U	480 U	4500 U	580 U
2-Chlorophenol	440 U	480 U	4500 U	580 U
1,3-Dichlorobenzene	440 U	480 U	4500 U	580 U

TABLE 2 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-05-SS	VC-06-SS	VS-07-SS	VC-08-SS
	drainage ditch; pump house	drainage ditch; RR spur	process building; right	drainage ditch; 24" pipe
Semivolatile Organic Compound (μg/kg) (Continued)				
1,4-Dichlorobenzene	440 U	480 U	4500 U	580 U
1,2-Dichlorobenzene	440 U	480 U	4500 U	580 U
2-Methylphenol	440 UJ[e]	480 UJ	4500 UJ	580 UJ
2,2'-oxybis (1-Chloropropane)	440 U	480 U	4500 U	580 U
4-Methylphenol	440 U	480 U	4500 U	580 U
N-Nitroso-di-N-propylamine	440 U	480 U	4500 U	580 U
Hexachloroethane	440 U	480 U	4500 U	580 U
Nitrobenzene	440 U	480 U	4500 U	580 U
Isophorone	440 U	480 U	4500 U	580 U
2-Nitrophenol	440 U	480 U	4500 U	580 U
2,4-Dimethylphenol	440 U	480 U	4500 U	580 U
bis (2-Chloroethoxy) methane	440 U	480 U	4500 U	580 U
2,4-Dichlorophenol	440 U	480 U	4500 U	580 U
1,2,4-Trichlorobenzene	440 U	480 U	4500 U	580 U
Naphthalene	440 U	480 U	4500 U	580 U
4-Chloroaniline	440 U	480 U	4500 U	580 U
Hexachlorobutadiene	440 U	480 U	4500 U	580 U
4-Chloro-3-methylphenol	440 U	480 U	4500 U	580 U
2-Methylnaphthalene	440 U	480 U	4500 U	580 U
Hexachlorocyclopentadiene	440 U	480 U	4500 U	580 U
2,4,6-Trichlorophenol	440 U	480 U	4500 U	580 U
2,4,5-Trichlorophenol	440 UJ	480 UJ	4500 UJ	580 UJ
2-Chloronaphthalene	440 U	480 U	4500 U	580 U
2-Nitroaniline	880 U	950 U	9000 U	1200 U
Dimethyl phthalate	440 U	480 U	4500 U	580 U
2,6-Dinitrotoluene	440 U	480 U	4500 U	580 U
Acenaphthylene	440 U	43 J	4500 U	580 U

TABLE 2 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-05-SS	VC-06-SS	VS-07-SS	VC-08-SS
	drainage ditch; pump house	drainage ditch; RR spur	process building; right	drainage ditch; 24" pipe
Semivolatile Organic Compound (μg/kg) (Continued)				
3-Nitroaniline	880 U	950 U	900 U	1200 U
Acenaphthene	440 U	480 U	4500 U	580 U
2,4-Dinitrophenol	880 UJ	950 UJ	9000 UJ	1200 UJ
4-Nitrophenol	880 U	950 U	9000 U	1200 U
2,4-Dinitrotoluene	440 U	480 U	4500 U	580 U
Dibenzofuran	440 U	480 U	4500 U	580 U
Diethylphthalate	440 U	480 U	4500 U	580 U
4-Chlorophenyl-phenylether	440 U	480 U	4500 U	580 U
Flourene	440 U	480 U	4500 U	580 U
4-Nitroaniline	880 U	950 U	9000 U	1200 U
4,6-Dinitro-2-methylphenol	880 UJ	950 UJ	9000 UJ	1200 UJ
N-nitrosodiphenylamine	440 U	480 U	4500 U	580 U
4-Bromophenyl-phenylether	440 U	480 U	4500 U	580 U
Hexachlorobenzene	440 U	480 U	4500 U	580 U
Pentachlorophenol	880 U	950 U	9000 U	1200 U
Phenanthrene	440 U	140 J	4500 U	23 J
Anthracene	440 U	51 J	4500 U	140 J
Carbazole	440 U	480 U	4500 U	580 U
Di-n-butylphthalate	440 U	480 U	4500 U	580 U
Fluoranthene	440 U	500	300 J	100 J
Pyrene	440 U	690	4500 U	92 J
Butylbenzylphthalate	440 U	480 U	4500 U	580 U
3,3'-Dichlorobenzidine	440 U	480 U	4500 U	580 U
bis (2-ethylhexyl) phthalate	440 U	480 U	4500 U	580 U
Benzo (a) anthracene	440 U	410 J	1800 J	57 J
Chrysene	440 U	530	4500 U	150 J
Di-n-octylphthalate	440 U	600	4500 U	580 U
Benzo (b) fluoranthene	440 U	480	440 J	180 J

TABLE 2 (Continued)

V.C. CHEMICAL SITE, WADESBORO, NORTH CAROLINA
ANALYTICAL DATA

Soil Samples 12/2/99

Parameter	Sample Identification, Location			
	VC-05-SS	VC-06-SS	VS-07-SS	VC-08-SS
	drainage ditch; pump house	drainage ditch; RR spur	process building; right	drainage ditch; 24" pipe
Pesticide / Polychlorinated Biphenyl (µg/kg) (Continued)				
PCB-1232 (Aroclor 1232)	170 U	94 U	89 U	230 U
PCB-1242 (Aroclor 1242)	120 U	65 U	62 U	160 U
PCB-1248 (Aroclor 1248)	120 U	65 U	62 U	160 U
PCB-1254 (Aroclor 1254)	120 U	65 U	62 U	160 U
PCB-1260 (Aroclor 1260)	170 U	94 U	89 U	230 U
Toxaphene	220 U	120 U	110 U	290 U

CompuChem performed the sample analyses.

Notes:
[a] mg/kg Milligram per kilogram
[b] U Analyte not detected above sample reporting limit
[c] J Analyte concentration is estimated
[d] µg/kg Microgram per kilogram
[e] UJ Analyte not detected above sample reporting limit, which is estimated