

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation

Inactive Hazardous Waste Disposal Report

April 1, 2001

Site Name: Peter Winkelman Company, Inc.		Site Code: 734047	
Class Code: 4	Region: 7	County: Onondaga	EPA Id: NYD986866382
Address: 101 Greenway Avenue		City: Syracuse	Zip: 13217
Latitude: 43 3' 5"	Longitude: 76 7' 21"		
Site Type: Dump		Estimated Size: 0.05 Acres	

Site Owner / Operator Information:

Current Owner(s) Name:	GSI of Virginia, Inc.		
Current Owner(s) Address:	P.O. Box 6549	Syracuse	NY 13217
Owner(s) during disposal:	Peter Winkelman Company, Inc.		
Operator(s) during disposal:	Peter Winkelman Co., Inc.		
Stated Operator(s) Address:	P.O. Box 6549	Syracuse	NY 13217
Hazardous Waste Disposal Period:	From March 1986	To unknown	

Site Description:

Three transformers located next to a warehouse on the Winkelman property leaked PCB oil in 1986. Analysis of soil samples revealed PCBs at levels above 50 ppm. One sample showed a PCB level of 199 ppm. When the PCB oil leak was first discovered, it was estimated that approximately 10 gallons had spilled on the ground, however, the transformers continued to leak after the initial discovery. The transformers were cleaned and serviced following the spill, but no remedial work was done on the contaminated soil. Sampling was done on June 3, 1994, which re-confirmed high levels of PCBs in a section of the old transformer support pad. DEC staff re-investigated the property in the spring of 1997. At the time it was noted that other remaining transformers had been recently broken open in order to remove the valuable copper wire inside them. Once opened, the PCB oil inside spilled over the ground. The total volume of oil in all the transformers was known to be 1575 gallons of PCB oil, but it was not certain as to how much was actually lost. An Interim Remedial Measure (IRM) was quickly begun to clean the site. The IRM consisted of clearing the entire area of vegetation, removing the transformers and fence, pulling up the large concrete pad and disposing everything at an approved disposal facility. Contaminated soil was excavated to about four feet below grade and removed. The area was then backfilled with clean soil and regraded. Contamination of the groundwater by PCBs has been confirmed. Remedial measures were started in the spring of 1998 to remove the PCB contamination from the groundwater. A Remedial Investigation was conducted during the summer of 1999 which involved installation of piezometers. Groundwater sampling showed low level, localized PCB contamination. A no-further remedial action Record of Decision (ROD) was signed on March 31, 2000. The components of the ROD included, continued operation of the oil skimmer and periodic groundwater sampling.

Confirmed Hazardous Waste Disposal:

PCB Oil

Quantity:

unknown

Analytical Data Available for:	Groundwater	Soil
Applicable Standards Exceeded in:	Groundwater	
Geotechnical Information:	Depth to	
Soil/Rock Type: Fill.	Groundwater: Range: 1 to 10 feet.	
Legal Action: Type:	Status:	
Remedial Action: Complete	Nature of action: IRM-Clean & clear site + soil removal.	

Assessment of Environmental Problems:

The Remedial Investigation / Feasibility Study revealed that the source of contamination was removed during the IRM. Residual PCB contamination (low levels) of groundwater remain. Periodic groundwater sampling will continue to determine the effectiveness of the remedy.

Assessment of Health Problems:

The site is on an inactive commercial property. An Interim Remedial Measure was conducted at the site in 1997. The transformers, a concrete pad, and contaminated soils to a depth of four feet were removed from the site. The area was then backfilled and regraded with clean soil. A groundwater oil skimmer has recovering contaminated oils from site groundwater since 1998. All residents and businesses in the area use public water. The potential for human exposure to site related contaminants of concern has been eliminated.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation

Inactive Hazardous Waste Disposal Report

April 1, 2000

Site Name: Peter Winkelman Company, Inc.		Site Code: 734047	
Class Code: 2	Region: 7	County: Onondaga	EPA Id: NYD986866382
Address: 101 Greenway Avenue		City: Syracuse	Zip: 13217
Latitude: 43 3' 5" Longitude: 76 7' 21"			
Site Type: Dump		Estimated Size: 0.05 Acres	

Site Owner / Operator Information:

Current Owner(s) Name:	GSI of Virginia, Inc.		
Current Owner(s) Address:	P.O. Box 6549	Syracuse	NY 13217
Owner(s) during disposal:	Peter Winkelman Company, Inc.		
Operator(s) during disposal:	Peter Winkelman Co., Inc.		
Stated Operator(s) Address:	P.O. Box 6549	Syracuse	NY 13217
Hazardous Waste Disposal Period:	From March	To unknown	

Site Description:

Flat topography: Industrial/commercial area with some residences nearby. Site is about 300 feet from I-690

Nearest water body: Meadow Brook; about 3000 feet southeast

Three transformers located next to a warehouse on the Winkelman property leaked PCB oil in 1986. Analysis of soil samples revealed PCBs at levels above 50 ppm. One sample showed a PCB level of 199 ppm. When the PCB oil leak was first discovered, it was estimated that approximately 10 gallons had spilled on the ground, however, the transformers continued to leak after the initial discovery. The transformers were cleaned and serviced following the spill, but no remedial work was done on the contaminated soil. Sampling was done on June 3, 1994, which re-confirmed high levels of PCBs in a section of the old transformer support pad. DEC staff re-investigated the property in the spring of 1997. At the time it was noted that other remaining transformers had been recently broken open in order to remove the valuable copper wire inside them. Once opened, the PCB oil inside spilled over the ground. The total volume of oil in all the transformers was known to be 1575 gallons of PCB oil, but it was not certain as to how much was actually lost. An Interim Remedial Measure (IRM) was quickly begun to clean the site. The IRM consisted of clearing the entire area of vegetation, removing the transformers and fence, pulling up the large concrete pad and disposing everything at an approved disposal facility. Contaminated soil was excavated to about four feet below grade and removed. The area was then backfilled in with clean soil and regraded. Contamination of the groundwater by PCBs has been confirmed. Remedial measures were started in the spring of 1998 to remove the PCB contamination from the groundwater. A Remedial Investigation was conducted during the summer of 1999 which involved installation of piezometers. Groundwater sampling showed low level, localized PCB contamination. A no-further action Record of Decision (ROD) was signed on March 31, 2000.

Confirmed Hazardous Waste Disposal:

PCB Oil

Quantity:

unknown

Analytical Data Available for:	Soil
Applicable Standards Exceeded in:	
Geotechnical Information:	Depth to
Soil/Rock Type: Fill.	Groundwater: Range: 1 to 10 feet.

Legal Action: Type:	Status:
Remedial Action:	Nature of action:

Assessment of Environmental Problems:

Soil contamination is evident and contamination of groundwater is possible. Contaminants may be transported off site via surface runoff.

Assessment of Health Problems:

The site is on an inactive commercial property. An Interim Remedial Measure was conducted at the site in 1997. The transformers, a concrete pad, and contaminated soils to a depth of four feet were removed from the site. The area was then backfilled and regraded with clean soil. A groundwater oil skimmer has recovering contaminated oils from site groundwater since 1998. All residents and businesses in the area use public water. The potential for human exposure to site related contaminants of concern has been eliminated.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Hazardous Waste Remediation
Inactive Hazardous Waste Disposal Report

4 / 1 / 1999

Site Name: Peter Winkelman Company, Inc.		Site Code: 734047	
Class Code: 2	Region: 7	County: Onondaga	EPA Id: NYD986866382
Address: 101 Greenway Avenue		City: Syracuse	Zip: 13217
Latitude: 43 3' 5"	Longitude: 76 7' 21"		
Site Type: Dump		Estimated Size: 0.05 Acres	

Site Owner / Operator Information:			
Current Owner(s) Name:	GSI of Virginia, Inc.		
Current Owner(s) Address:	P.O. Box 6549	Syracuse	NY 13217
Owner(s) during disposal:	Peter Winkelman Company, Inc.		
Operator(s) during disposal:	Peter Winkelman Co., Inc.		
Stated Operator(s) Address:	P.O. Box 6549	Syracuse	NY 13217
Hazardous Waste Disposal Period:	From March	To unknown	

Site Description:

Flat topography: Industrial/commercial area with some residences nearby. Site is about 300 feet from I-690

Nearest water body: Meadow Brook; about 3000 feet southeast

Three transformers located next to a warehouse on the Winkelman property leaked PCB oil in 1986. Analysis of soil samples revealed PCBs at levels above 50 ppm. One sample showed a PCB level of 199 ppm. When the PCB oil leak was first discovered, it was estimated that approximately 10 gallons had spilled on the ground, however the transformers continued to leak after the initial discovery. The transformers were cleaned and serviced following the spill, but no remedial work was done on the contaminated soil. DEC staff took several soil samples outside the fenced perimeter of the transformer area on October 26, 1993. The analytical results were inconclusive so additional sampling was done on June 3, 1994, which re-confirmed high levels of PCBs in a section of the old transformer support pad. DEC staff re-investigated the property in the spring of 1997. At the time it was noted that other remaining transformers had been recently broken open in order to remove the valuable copper wire inside them. Once opened, the PCB oil inside spilled over the ground. The total volume of oil in all the transformers was known to be 1575 gallons of PCB oil, but it was not certain as to how much was actually lost. An Interim Remedial Measure (IRM) was quickly begun to clean the site. The IRM consisted of clearing the entire area of vegetation, removing the transformers and fence, pulling up the large concrete pad and disposing everything at an approved disposal facility. Contaminated soil was excavated to about four feet below grade and removed. The area was then backfilled in with clean soil and regraded. Contamination of the groundwater by PCBs has been confirmed. Remedial measures were started in the spring of 1998 to remove the PCB contamination from the groundwater.

Confirmed Hazardous Waste Disposal:

PCB Oil

Quantity:

unknown

Analytical Data Available for:	Soil
Applicable Standards Exceeded in:	
Geotechnical Information:	Depth to
Soil/Rock Type: Filled land	Groundwater: Less than 10 feet.
Legal Action: Type:	Status:
Remedial Action:	Nature of action:

Assessment of Environmental Problems:

Soil contamination is evident and contamination of groundwater is possible. Contaminants may be transported off site via surface runoff.

Assessment of Health Problems:

The site is on an inactive commercial property. Access to PCB-contaminated soil in the transformer area is restricted by a fence. All residents and businesses in the area use public water.

OPERATION AND MAINTENANCE PLAN

**PETER WINKELMAN CO.
INACTIVE HAZARDOUS WASTE SITE
Site No. 7-34-047**

June 2000

TABLE OF CONTENTS

SECTION 1: BACKGROUND	1
1.1 Site Description	1
1.2 Site History	1
SECTION 2: OIL SKIMMER	3
2.1 Operation	3
2.2 Monitoring	3
2.3 Maintenance	4
SECTION 3: GROUNDWATER MONITORING	4
3.1 Frequency	4
3.2 Groundwater Removal Alternatives	4
SECTION 4: HEALTH & SAFETY	6
4.1 Training Requirements	6
4.2 Chemical Hazards	6
4.3 Personal Protection	7
4.4 Handling of Samples	7

SECTION 1: BACKGROUND

1.1 Site Description

The Peter Winkelman Co. is located in a mixed commercial and industrial area of Syracuse, New York. The Peter Winkelman property comprises 4.9 acres located at 101-113 & 102 Greenway Avenue of which 0.05 acres are listed as a class 2 site. The property is situated approximately 600' north of the intersection of Divine Street and Erie Boulevard East and is bordered to the north by Interstate Route 690, and to the east by the Former Syracuse Rigging site. The 0.05 acre site is a former transformer area which is situated in an alcove along the east side of a large building. Currently the building is abandoned and the surrounding area has been used as a dumping area for assorted debris (i.e., yard waste, old tires).

1.2 Site History

1.2.1 Operating History

Peter Winkelman Co., was a construction company that owned the site until 1991 when the site was conveyed to GSI of Virginia. While the site was owned by Peter Winkelman Co, Inc. various businesses occupied buildings not used by the construction company. Due to a power outage caused by a power surge, one or more of the three transformers on Peter Winkelman's property malfunctioned. Subsequently an unknown quantity of transformer oil leaked from the transformers.

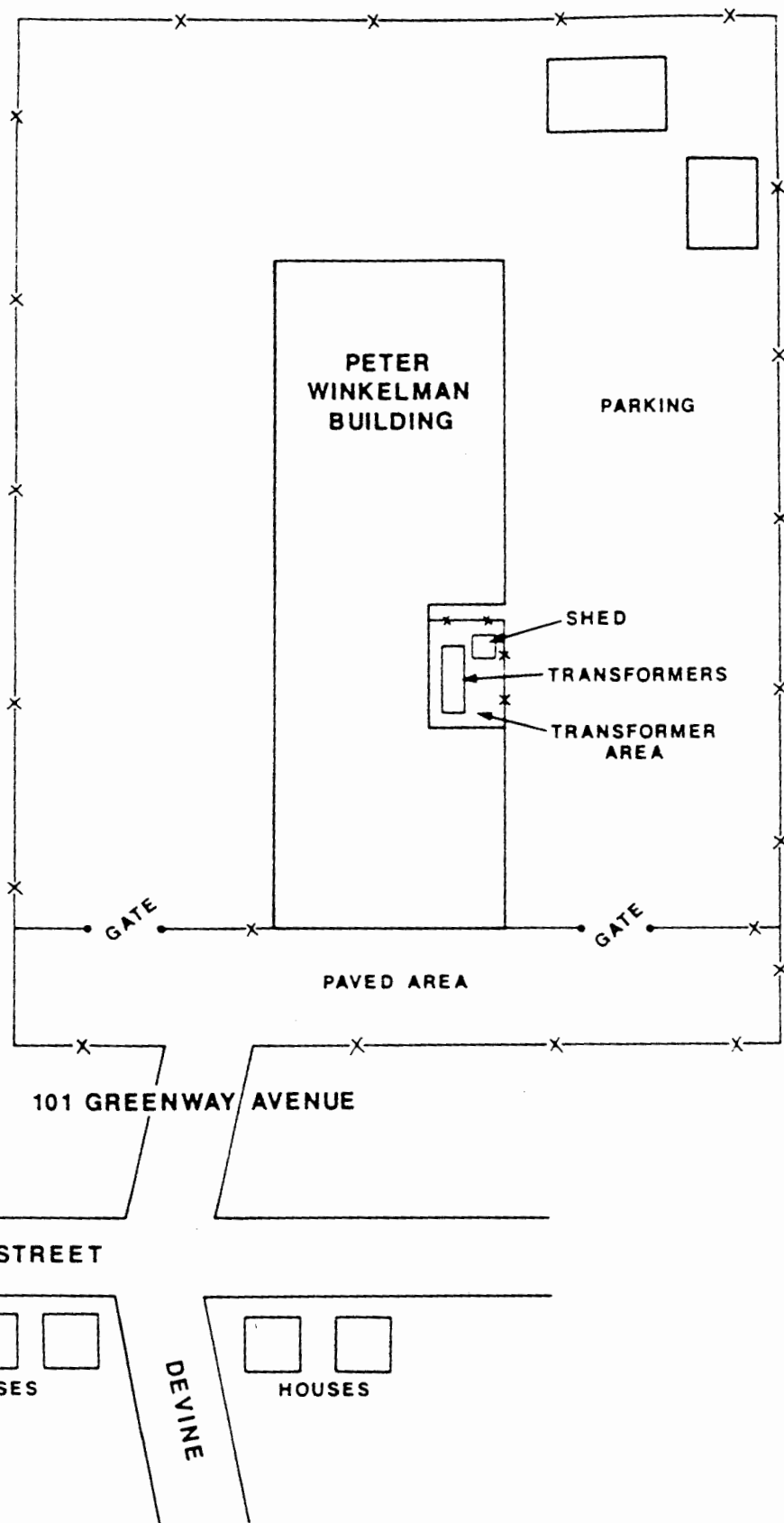
1.2.2 Remedial History

In March of 1986 the transformer oil spill was discovered by the Syracuse Fire Department. Soil sample analysis showed PCB levels as high as 199 ppm. On one or more occasions in 1986, the Peter Winkelman Company was informed by the NYSDEC of the company's legal responsibility to remediate the transformer oil spill.

In July of 1987 the NYSDEC informed Winkelman that if the site was not cleaned up by August of the same year, it would be included on the registry of Inactive Hazardous Waste Sites, and litigation would be commenced.

In June of 1994 additional sampling was conducted at the site. PCB concentrations of up to 120 ppm were detected in the soil.

In April of 1997 it was observed that the oil from the three transformers had been emptied on to the ground as a result of someone scavenging the copper from the transformers. PCB levels of over 300 ppm were detected in residual oil sampled from all three transformers.



SITE MAP

PETER WINKELMAN CO., INC., SYRACUSE, N.Y.

NOT TO SCALE

FIGURE 2





PETER WINKELMAN SITE
Syracuse, Onondaga County, New York
Site No. 7-34-047
New York State Department of
Environmental Conservation
FILE: DRABT DVC DRAWING: JFC

SITE MAP

DATE: 10/20/99

FIGURE 1

PETER WINKELMAN CO.

ROUTE

WATERLATE

GREENWAY AVE.

AVENUE

31

PEAT

EAST

BOLIVARD

STREET

DIVINE

STREET

17121

ENC

SCALE: 1" = 100'

31

In June of 1997 the transformers were removed by a NYSDEC Spills contractor. Collection of free product from the excavation of the concrete transformer pad and removal of contaminated soil was carried out.

In June of 1997, in response to the presence of PCBs, the transformers were removed from the site and transported for disposal. The concrete pad was broken up and removed along with the contaminated soil. No soil was removed below four feet. The excavation remained open for six days. Booms and pads were placed in the excavation during this time to absorb as much of the PCB oil present as possible. Two slotted culvert pipes were placed vertically in the excavation and surrounded with stone. Ten mil poly was placed over the stone and bentonite around the culverts. Then two feet of crusher run was placed to bring the site up to grade. In August 1997 a mobile oil skimmer was installed in the culvert that exhibited the highest level of PCB contamination. The oil skimmer makes use of the differences in specific gravity and surface tension between oil and water. These physical characteristics allow the unit's continuous belt to attract floating oil in the well. After picking up the oil, the belt travels through tandem wiper blades which scrape the oil off both sides of the belt and discharge it to a 55 gallon drum.

SECTION 2: OIL SKIMMER

2.1 Operation

The oil skimmer will be operated by turning on the power. Prior to operation the belt will be inspected for signs of wear. The belt will also be checked to make sure a portion of it is below the water table. The 55 gallon drum used to contain contaminated water will also be inspected and replaced if necessary. The oil skimmer should only be operated from April to November of each year. Figure 3 shows the current oil skimmer location.

2.1.2 Operating Temperature

Since the groundwater at the site is located approximately four feet below the ground surface the oil skimmer will not be able to operate if the water in the extraction well freezes. For this reason the oil skimmer should not be operated during the winter months.

2.2 Monitoring

Monitoring the oil skimmer will consist of periodic measurements to establish the rate of water and oil removal. Once this rate is established a schedule will be developed for the removal of the contaminated water/oil collected by the system.

2.2.1 Field Measurements

The following field measurements will be made daily during the first weeks of operation, weekly during subsequent month of operation:

Oil Skimmer - Field Measurements

- * Water/Oil level in the 55 gallon drum
- * Time water level was measured.

2.2.2 Data Usage

The oil skimmer monitoring data will be used to determine the rate at which water/oil is being removed from the well and how often the collection drum will have to emptied.

2.3 Maintenance

Maintenance of the oil Skimmer will be required to ensure that the system is operating properly and remediation is occurring as expected. Maintenance checks of the oil skimmer will be made when the 55 gallon drum is emptied.

SECTION 3: GROUNDWATER MONITORING

3.1 Frequency

In accordance with the ROD groundwater monitoring will be conducted in six month intervals. The groundwater will be analyzed for PCBs. If PCB contamination is detected in piezometers other than P-1 and P-6 further action will be required. If concentrations of PCBs in the impacted piezometers drops below drinking water levels for two consecutive sampling events the monitoring program will be discontinued and the site will be considered for removal from the New York State Registry of Inactive Hazardous Waste Disposal Sites. Piezometer locations are shown in Figure 3.

3.2 Groundwater Removal Alternatives

The site should be periodically evaluated to determine if another, more aggressive, means of collecting the remaining contaminated groundwater would be appropriate. For example, if it becomes apparent that the oil skimmer is not recovering appreciable amounts of oil and contamination above SCGs still exists in the piezometers then a vacuum truck could be used to pump the contaminated groundwater from the extraction wells, allowing the wells to recharge, then pumping them again.

TABLE 1

Subsurface Soil Results		
Sample Location	Sample Depth	PCB Concentration
SB-1	1'-2'	204 PPB
SB-1	4'-5'	217 PPB
SB-2	2'-4'	ND
SB-2	4'-5'	ND
SB-3	4'-5'	ND
SB-3	7'-8'	ND
SB-4	3'-4'	292 PPB
SB-4	4'-5'	11089 PPB
SB-5	3'-4'	ND
SB-5	4'-5'	ND
SB-6	4'-5'	ND
SB-7	4'-5'	ND
SB-8	3'-4'	ND
SB-8	4'-5'	ND

TABLE 2

Groundwater Results	
Sample Location	PCB Concentration
P-1	70 PPB
P-2	ND
P-3	ND
P-4	ND
P-5	ND
P-6	0.89 PPB
P-7	ND
P-8	ND

SECTION 4: HEALTH & SAFETY

4.1 Training Requirements

All personnel conducting field activities on site are required to be certified in health and safety practices for hazardous waste operations as specified in the Federal OSHA Regulations (29 CFR 1910.120) (revised March 6, 1990). Paragraph (e) (2) of the above-referenced regulations requires that each employee, at the time of job assignment, receive a minimum of 40 hours of initial instruction off the site, and a minimum of three days of supervised field experience.

Paragraph (e) (3) of the above-referenced regulations requires that all onsite management and supervisory personnel directly responsible for, or who supervise employees engaged in hazardous waste operations, must initially receive eight hours of additional training. Management and supervisory training must emphasize health and safety practices related to managing hazardous waste work.

Paragraph (e)(8) of the above-referenced regulations requires that workers and supervisors receive eight hours of refresher training annually on the items specified in paragraph (e)(1) and/or (e)(3).

4.2 Chemical Hazards

The primary chemical of concern on site is Aroclor 1260 (PCB). The health and safety characteristics and occupational exposure values of this chemical are summarized in Table XX. The risk of exposure to these contaminants can be by the dermal or respiratory route, depending on the type of compound and activity being conducted.

4.3 Personal Protection

Since personnel working on site may be exposed to chemical contaminants during sampling or maintenance of the oil skimmer gloves should be worn during sampling and maintenance activities.

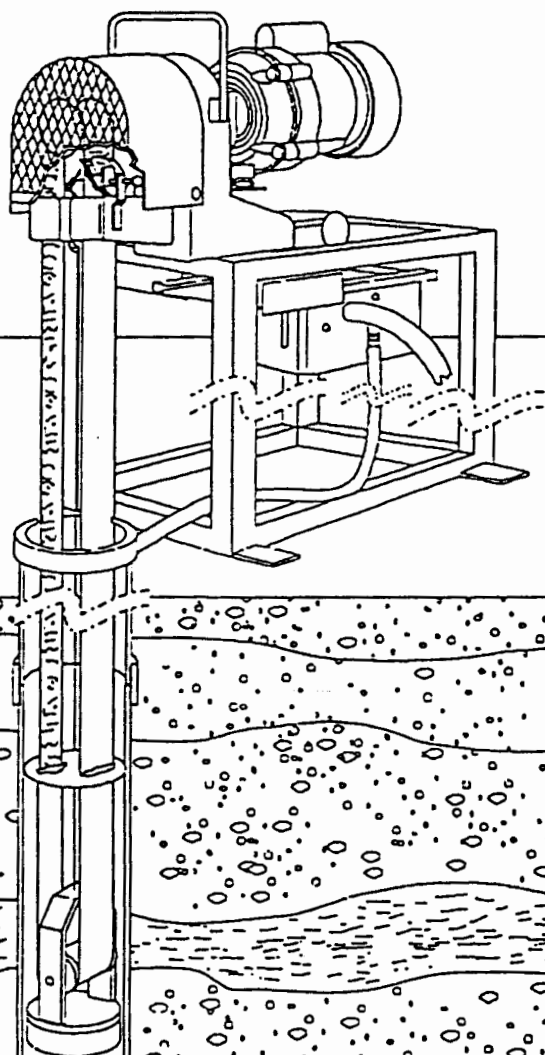
4.4 Handling of Samples

The collection and analysis of environmental samples will require caution, not only to ensure safety of site sampling and support personnel, but also to ensure accuracy of the results. To minimize hazards to lab personnel, samples volumes will be no larger than necessary, and the outside of all sample containers will be wiped clean prior to shipment. Gloves should also be changed between samples to prevent cross contamination.

FIGURES

ABANAKI - OPTION #2

PetroXtractor™ — Well Oil Skimmer



Oil Skimming for Wells and Other Small Openings

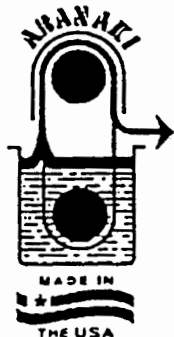
- Ideal for removal of floating oil and other hydrocarbon liquids from existing remediation or monitoring wells
- Can be installed in well casings as small as 2 in. ID
- Elevates skimmed oil 100 feet or more for easy discharge into 55 gallon drum
- Removes up to 12 gph of oil from water

General Description

The Abanaki PetroXtractor™ is a dependable and cost effective means of removing oil, fuel, and other floating hydrocarbons from water where access to the fluid surface is limited. It provides efficient remediation of groundwater contaminated by oil, using existing recovery and monitoring wells. Often, the PetroXtractor™ working alone will reduce oil or fuel content to an acceptable E.P.A. level. Models are available for two inch, four inch, and six inch ID well casings, with removal rates up to 12 gph. Depths of 100 feet or more can be accommodated without the use of pumps.

The PetroXtractor™ is an oil skimmer that makes use of the differences in specific gravity and surface tension between oil and water. These physical characteristics allow the unit's continuous belt to attract floating oil in the well. After picking up the oil, the belt travels over the head pulley on the drive unit and through tandem wiper blades. The oil is then scraped off both sides of the belt and discharged through a 1-1/4" ID hose. The unique bearingless design of the tail pulley (immersed in the well water) with its tapered frame allows it to perform three important functions: it keeps proper tension on the belt, prevents accidental loss down the well, and keeps the belt centered in the casing.

The PetroXtractor™ can be installed in existing wells by mounting it on a flat surface above the well casing. Skimmer operation consists of merely lowering the belt and tail pulley into the casing until the pulley is fully immersed, placing the discharge hose in a container, and switching the unit on.

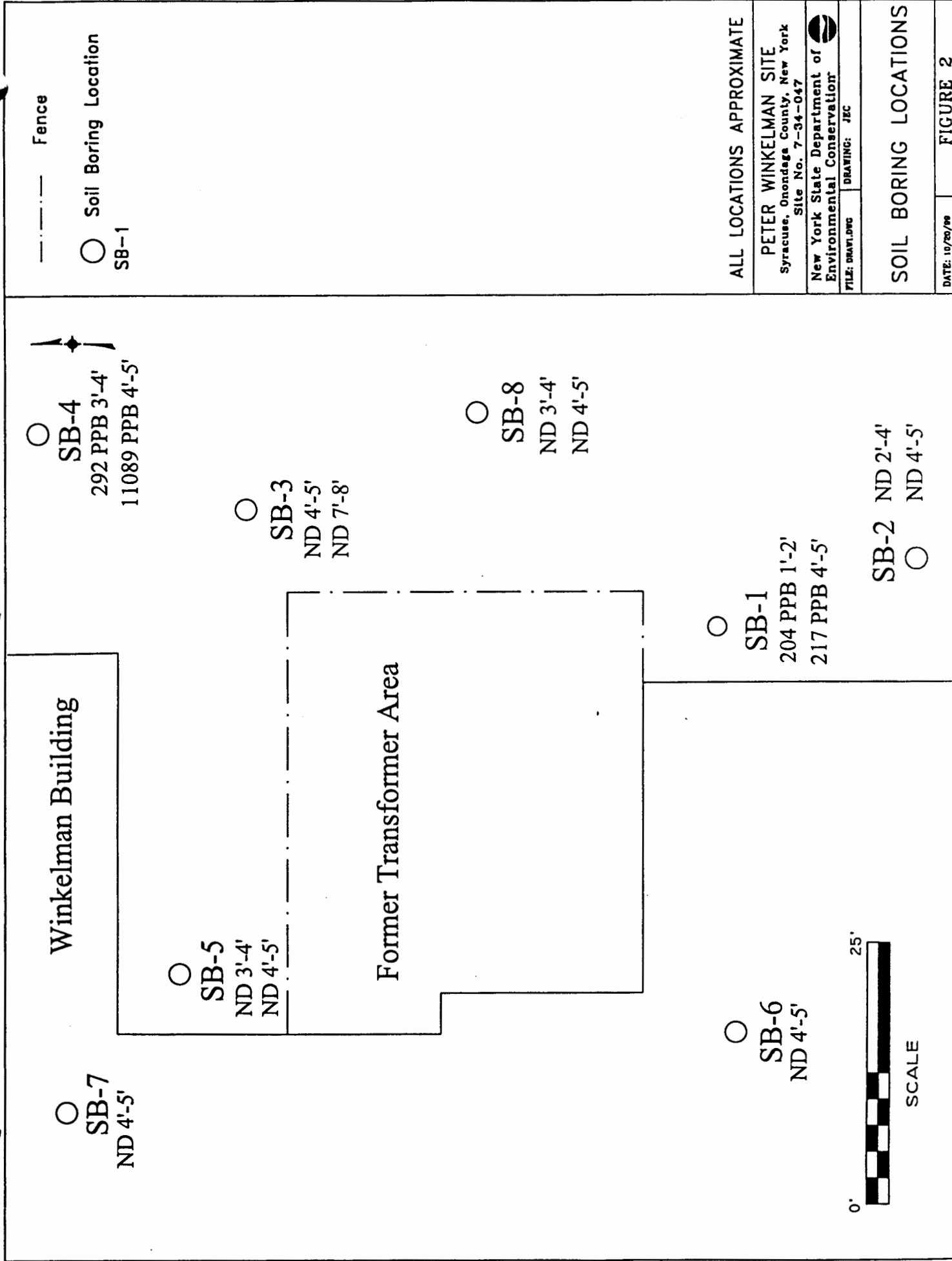


ABANAKI
CORPORATION
OIL SKIMMER DIVISION

17387 Munn Road
Chagrin Falls, OH 44023
Telephone: 800-358-7546
Fax: 216-543-7404

The PetroXtractor Advantages

- Allows existing monitoring wells to be used as recovery wells
- Portable — can be easily hand-carried from site to site
- A single unit separates oil and elevates it up to 100 feet without a pump
- Skims very little water (unlike other skimmers and torpedo pumps)
- Maintains skimming efficiency with fluctuating water level
- Tail pulley is tethered to the frame to prevent accidental loss of belt and tail pulley in the well casing
- Easy mounting, fast cleaning with minimal maintenance
- Belt materials to fit any application



ALL LOCATIONS APPROXIMATE

PETER WINKELMAN SITE
Syracuse, Onondaga County, New York
Site No. 7-34-047

New York State Department of
Environmental Conservation

FILE: DRAW1.DWG DRAWING: JEC

SOIL BORING LOCATIONS

DATE: 10/20/99

FIGURE 2

Winkelman Building

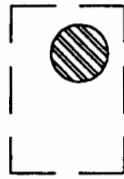
○
P-7
ND

○
P-5
ND

Inverted Culvert



Former Transformer Area



Current Oil Skimmer Location

○
P-6
0.89 PPB

○
P-1
70 PPB



SCALE

○
P-4
ND

○
P-3
ND

○
P-8
ND

○
P-2
ND

○ Piezometer Location
P-1

● Inverted Culvert

--- Fence

ALL LOCATIONS APPROXIMATE

PETER WINKELMAN SITE
Syracuse, Onondaga County, New York
Site No. 7-34-047

New York State Department of
Environmental Conservation

FILE: DRAT1.DWG DRAWING: JEC

PIEZOMETER LOCATIONS

DATE: 10/20/99

FIGURE 3

APPENDIX A

Emergency Contact List

A. EMERGENCY PLANNING

HOSPITAL: Upstate Medical Center, 750 Adams Street (315-473-4240)

AMBULANCE: Syracuse Fire Department Rescue Squad (315-471-1161 or 911)

POLICE: 911

FIRE: 911

POISON CONTROL CENTER: Onondaga County Health Department (315-476-7529)

D.E.C. REGIONAL CONTACT: Charles Branagh (315-426-7551)

B. ROUTE TO HOSPITAL

Exit site, take Devine Ave. to Erie Blvd. (Rt. 5) take right, travel west to RT 81 on ramp. Take 81 south to exit 18. Adams Street Hospital is on 750 Adams Street. (SEE MAP)

C. SITE CONTACTS

<u>SITE CONTACT</u>	<u>PHONE NUMBER</u>
James Candiloro, NYSDEC Project Engineer	518-457-4343
Robert Schick, NYSDEC Section Chief	518-457-4343
Charles Branagh, NYSDEC Region 7	315-426-7551
Dan Geraghty, NYSDOH	518-402-7890

Directions	miles
1. Start out going Southwest on ramp towards I-690 W.	0.1
2. Merge onto I-690 W.	1.0
3. Take the TOWNSEND ST exit	0.1
4. Turn LEFT onto N TOWNSEND ST.	0.1
5. Turn RIGHT onto RT 5.	0.1
6. Turn LEFT onto US-11.	0.6
7. Turn LEFT onto E ADAMS ST.	0.4



Full Route



Destination

APPENDIX B

Piezometer Logs

MC = Macro Core Sample Lenth 4'

MC = Macro Core Sample Length 4'

MC = Macro Core Sample Lenth 4'

MC = Macro Core Sample Length 4'