

File 494W
Shungate
Road.

**Danube Township
Herkimer County, New York**

Site ID# 6M

Prepared for:

**The United States Environmental Protection Agency
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TABLE OF CONTENTS

1.0 INTRODUCTION

Page

1.1	Site Background/Physical Setting		1
1.2	Previous Investigations		1
1.3	Current Status	3	
1.4	Site Geology/Soils		4
2.0	SITE PREPARATION		
2.1	Personnel Support and Hygiene Facilities		4
2.2	Equipment Decontamination Facility		4
3.0	SCOPE OF WORK		
3.1	Area 1 - Former Farmhouse Septic System		5
3.2	Area 2 - Former Garage/Storage Building		5
3.3	Area 3 - Former Livestock Stable/Stall Barn		6
3.4	Additional Soil Investigation		6
3.5	Groundwater Management		6
4.0	OFF-SITE DISPOSAL OF HAZARDOUS WASTE		7
5.0	SITE RESTORATION PLAN		7
6.0	ANTICIPATED PROJECT SCHEDULE		
7.0	STATE AND LOCAL AGENCY INVOLVEMENT		
8.0	WORKZONE AND COMMUNITY AIR MONITORING		
8.1	Fugitive VOC Emissions		
8.2	Dust Control		
9.0	SITE SPECIFIC REMEDIATION OBJECTIVES/GOALS		

LIST OF APPENDICES

<u>No.</u>	<u>Description</u>
A	Facilty Maps Figure 1 - Site Location Map Figure 2 - Site Plan-Areas of Concern

- B Roy F. Weston Trip Report, dated March 27, 1998
- C Groundwater Management/Treatment Plan
- D Site Restoration Plan
- E Project Schedule
- F Site Specific Remediation Objectives/Goals

1.0 INTRODUCTION

1.1 Site Background/Physical Setting

The Johnny Cake Road Site (JCR) property formerly consisted of approximately 377 acres of farmland along the north and south side of Johnny Cake Road in Danube Township, Herkimer County, New York (see Figure 1). In the late 1980's, the U.S. Marshal's Service seized the property during a drug investigation. After the illegal drugs were recovered from the manufacturing area and throughout the farmhouse, evidence of drug-related solvent dumping was identified in various locations at the property. Subsequent investigations have determined the actual extent of contamination to be confined to a small area (<3-acres) within the southeastern portion of the property (Figure 2).

The area surrounding the JCR are residential dwellings and farms. The JCR site slopes moderately downward from the southern boundary of the property south of the two bay garage, to the north across Johnny Cake Road and further downward to a tributary of Nowadaga Creek. This stream is approximately 500 feet north of the farm house and is topographically down-gradient from the suspected spill areas. The area around the site generally consists of gently rolling topography with a well-defined drainage valley along the northern boundary of the farm property and a steep upwardly sloping hill towards the southern boundary. The Site formerly consisted of a two-story farmhouse, a livestock stable/stall barn, a two-bay garage building and a dairy barn. Volatile organic solvents were stored in drums inside the garage building. These solvents were then used in the cocaine manufacturing/refining process being conducted in the farmhouse basement. Waste solvents generated as a result of this operation were reportedly dumped onto the unpaved garage floor, the house basement floor, driveway surface, and into the site septic tank.

1.2 Previous Removal Actions

On April 19 and 20, 1989, C. T. Male Associates, P. C. performed an initial phase of a subsurface contamination investigation. Soil samples from the garage floor indicated the presence of trace concentrations of methylene chloride, trichloroethene (TCE), tetrachloroethene (PCE). However, during the same investigation soil samples collected just below the water table identified trichloroethene (TCE), tetrachloroethene (PCE), toluene, acetone, and methylene chloride at slightly higher concentrations.

On August 8, 1989, the U.S. Environmental Protection Agency (EPA) Region II Removal Action Branch (RAB) received a request from the U.S. Marshal's and U.S. Attorney's Offices to conduct a removal assessment at the Johnny Cake Road Site. As a result of this request, on August 27, 1990, an Action Memorandum was approved to perform a removal action, which included, the transfer of contents of the septic tank and a 55-gallon drum into secure containers on-site. Subsequently, the U.S. Attorney's Office, the U.S. Marshal's Office and EPA began the process of formally entering into an Interagency Agreement (IAG) for the reimbursement of funds for actions performed by EPA and to conduct further remediation of the site.

In April and May, 1990, the U.S. Marshal's Office conducted additional site

investigations in other portions of the property. The results indicated that toluene, TCE, and PCE were present in both the stream and in the ponded area along the eastern property boundary. These contaminants (in the groundwater and surface water) exceeded the New York State Ambient Water Quality Standards and NYSDOH groundwater/drinking water standards and/or guidance value.

In September and November of 1990, the U.S EPA Environmental Response Team (ERT) and its Response Engineering and Analytical Contractor (REAC) contractor, at the request of the U.S. EPA Region II RAB, conducted an extent of contamination investigation by soil gas methods and analyses of groundwater. A seismic refraction survey was also conducted to identify potential pathways for both lateral and vertical migration of contaminants into the bedrock aquifer.

On March 8, 1991, verbal authorization was granted for a removal action restart to complete off-site disposal of the stabilized material transferred from the septic tank and 55-gallon drum on-site.

In May of 1991, ERT/REAC returned to the site to ascertain the specific area of soil contamination for removal purposes, and to determine whether contamination is migrating beyond those areas identified in previous investigations.

The analytical results of this investigation confirmed previous sampling results as to the location of the spill areas at the site, the septic tank, in front of the two-bay garage, the driveway and the west side of the livestock stable/stall barn.

In April of 1993, ERT/REAC returned to the site to perform an ecological assessment. The objectives of the study were to evaluate stream quality based on benthic community structure. Information generated from this assessment indicated that the creek was a possible receptor for the groundwater contamination and recommended corrective actions to avoid or reduce the threats to the creek and the associated ecological resources.

In October 25 -26, 1993, EPA and its Technical Assistance Team (TAT) returned to the Site to resample monitoring and residential wells in order to update the location of the groundwater plume and to identify source areas for remediation. During this investigation, 42 soil borings (at depths of 3 and 6 feet), 20 aqueous samples from 7 monitoring wells, 4 residential wells, the on-site swimming pool, 2 downgradient surface water stream samples, and 4 quality assurance samples (trip, field and cleaning blanks) were analyzed for volatile organic compounds under the Quick Turnaround Method (QTM) program.

The analytical results of this investigation confirmed previous sampling results as to the location of the spill areas at the site, the septic tank, in front of the two-bay garage, the driveway and the west side of the livestock stable/stall barn.

In May and June 1995, as a precautionary measure, EPA returned to the Site to monitor the installation of five (5) deep-aquifer drinking water wells for nearby residents. At each residence, a shallow-tray air stripping unit was installed and groundwater monitored. In each case, both the untreated and treated water was found to be free of site-related contaminants.

In April 2000, EPA returned to the Site to resample eight monitoring wells and four residential wells to determine whether plume migration had expanded. Based upon the data obtained from this sampling event, the plume had remained relatively unchanged. No evidence of impact on the residential wells was identified.

During the last 3-months of 2003, EPA and its contractors returned the Site to conduct additional soil and groundwater investigations. The investigation involved the installation of five additional monitoring wells and 27 soil borings. The objective of this work was to determine the nature and extent of subsurface soil and groundwater contamination as well as determine plume migration. The results of this investigation indicated that the groundwater plume had not changed, however, the extent of soil contamination was deeper than previously identified.

1.3 Current Status

At this time, the Site is inactive. Following the demolition of the farmhouse, garage and several barns in the early 1990's, the Site has revegetated itself naturally. However, in various locations, evidence of concrete foundations and footings are visible. The most recent activities at the Site were conducted by EPA in February/March 2005 and involved the groundwater sampling of all on-site monitoring wells. The analytical results obtained from this event will be utilized to develop/refine the draft groundwater remedy for this Site.

1.4 Site Geology/Soils

According to the U.S. Geological Survey, the area incorporating the Johnny Cake Road site consists of surficial deposits of lacustrine sand, kame moraine and ablation till and ground moraine at south and southwest of the site.

Lacustrine Sand: "Sand, well sorted, stratified, deposited into glacial lakes in a nearshore, shallow-water environment. Variable thickness. Relatively permeable moderate."

Kame Moraines: "Ice-contact, poorly sorted to moderately well-sorted deposits of sand and gravel that may also contain considerable amounts of silt, clay and boulders. Relative permeability low to moderate but generally high in coarse, well-sorted beds."

Ablation Till: Ablation till typically is loose and uncompacted and, therefore, much more permeable than till moraine or ground moraine. Permeability is also enhanced by the general absence of the silt and clay fraction, which was carried off by meltwater.

Ground Moraine: "Ice-contact, unsorted, unstratified mixture of clay, silt, sand, gravel, and boulders deposits beneath advancing glacial ice. Relatively impermeable with moderate to large clay content. Tends to be sandy and thus, more permeable in areas underlain by igneous and metamorphic rock."

The area incorporating the Johnny Cake Road site typically contains soils denoted as the Lansing series, which have been described by the U.S. Soil Conservation Service, as follows():

"The Lansing series consists of deep, well-drained medium-texture soils that formed in calcareous glacial till derived mainly from shale, limestone, sandstone and siltstone. These soils are nearly level to steep and are on upland till plains. They are medium in lime.

In a representative profile the surface layer is dark grayish-brown silt loam about 9 inches thick. It is underlain by a leached subsurface layer of dark yellowish brown, medium acid, very friable gravel silt loam that extends to a depth of about 16 inches. Between depths of 16 and 31 inches, the upper part of the subsoil is brown to dark-brown, medium acid friable gravelly silt loam. The lower part of the subsoil is mottled, brown to dark-brown gravelly very fine sandy loam about 11 inches thick that is friable and medium acid. The dense till substratum begins at a depth of about 42 inches. It consists of firm, mottled, brown to dark-brown gravelly silt loam to a depth of 50 or more inches, that is neutral to a depth of about 47 inches and calcareous below.

The water table in Lansing soils is normally at a depth of more than 30 inches, but in places it is perched on the slowly or very slowly permeable substratum and being within 24 to 30 inches of the surface in spring and during wet period."

2.0 SITE PREPARATION

Site preparation will include all activities necessary to prepare the Site for soil excavation work . This work will primarily involve site clearing, installing access roads and removal of debris/remains of former structures. All activities will be conducted in such a manner as to protect on-site monitoring wells.

2.1 Personnel Support and Hygiene Facilities

At the commencement of the project, the contractor will mobilize all personnel support and hygiene facilities as specified in the Health and Safety Plan (HASP), and OSHA 29 CFR Part 1910, as instructed by the OSC. Facilities to be established at the Site include:

- a. personnel hygiene supplies/emergency medical supplies;
- b. EPA/contractor's field trailer; and
- c. support/storage areas.

The above facilities are demarcated on Figure in Appendix A. Any changes to the proposed facility plan must be approved by the EPA OSC before such changes are implemented.

2.2 Equipment Decontamination Facility

Equipment and transportation vehicles used during the remediation will be decontaminated prior to leaving the Site. An alternate approach for the loading of contaminated material may be developed based upon field limitations (i.e.- rolloff, loading in un-contaminated areas, etc.). All wash water generated as a result of decontamination will be containerized for on-site treatment. A high-pressure cleaner will be used to decontaminate equipment involved in the actual handling of contaminated soil prior to leaving the Site.

3.0 SCOPE OF WORK

The following sections describe the areas of concern, composition of contamination and the removal activities which will be taken to remediate these areas. The location of each area is depicted on Figure in Appendix A.

During cleanup activities, contractor personnel will adhere to the protocols recommended in the approved Health and Safety Plan (HASP) for this Site. A copy of the HASP will be maintained on-site at all times by the Health and Safety Officer (HSO). However, please note that the activities described below may not be conducted in the order outlined in the Workplan.

During soil remediation activities, all post-excavation samples collected for TCL VOA analysis will adhere to EPA/ERT Soil Sampling SOP No. 2012 and No. 2006 (Sampling Equipment Decontamination Procedures). Throughout the entire soil excavation program, organic vapors will be monitored within the workzone and soil samples screened utilizing a calibrated Photoionization Detector (PID) and Flame Ionization Detector (FID). Use of these instruments will assist in determining the horizontal and vertical extent of excavation activities.

3.1 Area 1 - Former Farmhouse Septic Tank

Area 1 is the location of the former concrete septic tank which was used for the disposal of both sanitary and chemical wastes generated during the drug manufacturing/refining. The 4-foot wide by 6-feet deep tank is located approximately 8-feet east of the former farmhouse foundation wall (Figure __). No septic system leach field was identified during subsurface investigations of this area. The contents of the tank were removed in the early 1990's, however elevated concentrations volatile organic compounds surrounding the tank were postponed until sufficient information regarding the extent of the contamination could be investigated.

Based upon historical analytical results from this area, the extent of the contamination is anticipated to have been confined to an area approximately 40-feet wide by 40-feet long and 10-feet in depth. The actual dimensions of this excavation will be field determined based upon screening instrumentation utilized during removal activities.

It should be noted that the extent of Area 1 excavation activities may also be limited by the presence of the former farmhouse foundation to the west, the drainage swale to the east and the filled in in-ground pool to the south.

Remedial Action Objectives
o identify & evaluate all pathways including all pathways
o remove all soil contaminated in excess of TACM 4046.

3.2 Area 2 - Former Garage/Storage Building

Area 2 is located approximately 40-feet south of the former farmhouse location (Figure __). The now demolished two-door steel building was utilized for the storage and

o collect, treat & discharge all water during remediation to meet 6 NYCRR Part 201 o collect

disposal of solvents used in the manufacturing/refining of illegal drugs. In the early 1990's, EPA personnel directed the sampling and removal of all 55-gallon drums and other containers from within this building.

Since that time, EPA has conducted several subsurface soil investigations within this area which have confirmed the presence of significant concentrations of volatile organic compounds. Based upon the historical analytical results from this area, the extent of the contamination is anticipated to be confined to an area approximately 30-feet wide by 30-feet long and 10-feet in depth. The actual dimensions of this excavation will be field determined based upon screening instrumentation utilized during excavation activities.

It should be noted that the extent of Area 2 excavation activities may also be limited by the presence of the former farmhouse foundation to the north and may extend into the driveway portion of the Site. It may include an area within the footprint of the former farmhouse.

3.3 Area 3 - Former Livestock Stable/Stall Barn

Area 3 is located approximately 10-feet north of Johnny Cake Road and directly downgradient of the former farmhouse location (Figure ___). The now demolished building was also utilized for the storage and disposal of solvents used in the manufacturing/refining of illegal drugs. In the early 1990's, EPA personnel directed the sampling and removal of all 55-gallon drums and other containers from within this building.

Since that time, EPA has conducted several subsurface soil investigations within this area which have confirmed the presence of significant concentrations of volatile organic compounds. Based upon the historical analytical results from this area, the extent of the contamination is anticipated to be confined to an area approximately 30-feet wide by 30-feet long and 10-feet in depth. The actual dimensions of this excavation will be field determined based upon screening instrumentation utilized during excavation activities.

3.4 Additional Soil Investigations

Location Intervals
Depth below water table

Concurrent to Site remediation activities, EPA will initiate a subsurface soil investigation within the following areas:

- : along the drainage swale located (just east of the former septic system); and
- : along the roadside drainage ditch.

The objective of this investigation will be to determine whether soil remediation is warranted in these portions of the Site, and if identified, whether the concentrations represent a significant threat to public health or the environment. The analytical results obtained will also be utilized in the development of the groundwater remedy plan. Previous investigations in each of these areas have revealed low concentrations of volatile organic compounds.

3.5 Groundwater Management

During the completion of the soil remediation activities, it is anticipated that daily excavation dewatering will be necessary. The extent of dewatering will be dependent upon seasonal fluctuations and the actual start date of activities. The water generated during dewatering operations will be treated prior to discharge into the unnamed drainage swale along the eastern property boundary. The exact discharge point will be determined based upon conditions encountered in the field. Treatment objectives will be accomplished through the use of portable activated-carbon units. A complete description of the system which will be used is provided in Appendix ___.

4.0 OFF-SITE DISPOSAL OF HAZARDOUS WASTE

The transportation and off-site disposal of hazardous waste will be accomplished by the contractor(s) three bid selection process as specified by the ERRS Contract requirements. Waste materials generated during the excavation activities will be evaluated based on the criteria cited under the Resource Conservation and Recovery Act (40 CFR Part 260 et. Seq.) and the Toxic Substances Control Act (40 CFR Part 761 et. Seq.). Off-site disposal will comply with the CERCLA Off-site Policy. Land Disposal Restrictions (LDR's), if required, will be thoroughly reviewed in connection with all off-site disposal activities.

All disposal activities from analysis review, waste profile submittals, selection, to final acceptance will be subjected to review by EPA personnel prior to final disposition of the waste.

Pre-remediation soil volume estimates indicated that 1,260 cubic yards of soil will be generated. Actual disposal volumes will depend upon waste classification samples results and field screening results. In some cases, non-contaminated overburden materials may be used as backfill.

Storage staging *Water management*

5.0 SITE RESTORATION

Based upon receipt of post-excavation sampling results demonstrating the effectiveness of the removal, the excavation will be backfilled. Backfilling to grade will be accomplished through a series of lifts to allow for proper compaction. Following the compaction, final grading of the disturbed areas and allowing sufficient time for any settling, flora consistent with the surrounding area will be planted. If significant settling is observed prior to planting, additional backfill materials will be installed in these areas.

6.0 ANTICIPATED PROJECT SCHEDULE

Completion of the soil removal activities at the Johnny Cake Road Site is anticipated to be completed within 45 calendar days. The schedule provided below includes the task number, task description and duration of the activity:

01	Site Mobilization - personnel, equip., support facilities, site clearing/prep	Week 1
02	Soil Excavation - Areas 1 & 2, Soil Investigation Sampling	Week 2
	Soil Excavation - Area 3, Soil Investigation Sampling - Excavation Backfilling/Grading	Week 3-4
03	Soil Disposal - Loading and manifesting for off-site disposal - Excavation Backfilling/Grading	Week 4-5
04	Site Restoration - Final Grading and Planting	Week 5-6
05	Miscellaneous Tasks - Site Security Measures, Mapping	Week 6

7.0 STATE AND LOCAL AGENCY INVOLVEMENT

Throughout the implementation of Site remediation activities, both the State and local entities will be welcomed to visit the Site. In addition, EPA will prepare a Site-specific Fact Sheet and weekly update documents (POLREP's) which will be forwarded to both State and local government officials. In order to keep the public informed of Site activities, an Administrative Index will be prepared for Site. This document will be maintained at the local library.

In addition, representatives from the NYSDEC were involved in the preparation of this document. Specific comments and clarifications have been addressed and incorporated into the sections above.

8.0 WORKZONE AND COMMUNITY AIR MONITORING

8.1 Fugitive VOC Emissions

During soil excavation activities, on-site personnel will monitor the air quality within the workzone and at the property boundary. Direct-reading instrumentation will be used to insure that personnel within the workzone are being properly protected from the contaminants present. To insure that no significant levels of fugitive VOC emissions are escaping the workzone and into the local community, additional air-monitoring will occur along the property

boundary. A daily log of the boundary readings will be available for interested parties. However, should boundary readings exceed the acceptable level, ALL excavation activities are to STOP immediately in order to allow the emission to dissipate. Should this problem persist, the use of vapor suppressing foams may be incorporated into the excavation program.

8.2 Dust Control

Dust control measures will be implemented as required to prevent the generation of dust during excavation and handling operations. If necessary, non-potable grade water will be used for dust control, when required. Dust control measures consist of watering down access roads on-site and/or spraying a fine mist over areas being excavated.

9.0 SITE SPECIFIC REMEDIATION OBJECTIVES/GOALS

The Site Specific Remediation Objectives for this Site which will be used to demonstrate the effectiveness of remediation activities are provided as Appendix ---. In summary, during cleanup activities, EPA will utilize those remediation goals specified by the NYSDEC's Technical and Administrative Guidance Memorandum #4046 (TAGM).

10.0 REMOVAL ACTION REPORT

Following the completion of the activities described in this document, a Removal Action Report (RAR) will be prepared. The RAR will include all information pertinent to the completion of the RAW, including laboratory results, field screening results, photographs, maps, field notes and disposal documentation.

REMOVAL ACTION WORKPLAN

JOHNNY CAKE ROAD SITE