Work Plan

Interim Remedial Measures

M. Wallace and Son, Inc. Scrapyard
Cobleskill, New York

March, 1991

NIAGARA MOHAWK

INTERIM REMEDIAL MEASURE WORK PLAN
FOR
M. WALLACE AND SON SCRAPYARD

Cobleskill, New York

Site Number 448003

March 1991

Prepared For:

Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

and

M. Wallace and Son
Cobleskill, New York

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1.0 INTRODUCTION AND CURRENT INFORMATION

Niagara Mohawk Power Corporation (NMPC) and M. Wallace and Son, Inc. (MW&S) have been named as defendants in a lawsuit filed by the State of New York Attorney General over PCB contamination at the M. Wallace and Son, Inc. scrapyard in Cobleskill, New York (Figure 1). This property has been designated as an inactive hazardous waste site by the New York State Department of Environmental Conservation (NYSDEC) and is identified as site number 448003.

A site investigation of the MW&S scrapyard was conducted by O'Brien & Gere (OB&G) through 1989. The site investigation accomplished the following objectives:

(1) Evaluated the locations, extent (including the vertical and lateral limits) and concentrations of oil and grease and PCB's in on-site soils, groundwater, surface water and sediments.

(2) Identified and characterized the potential for off-site migration of PCB's, oil and grease, metals, and NYSDEC Hazardous Substance List.

The final site investigation report was submitted to the Attorney General's office and NYSDEC in June 1990 with the following conclusions based on the data collected:

- Visual observation and grain size analyses of the subsurface soils indicate they consist primarily of silt and clay. These deposits are glaciolacustrine in origin and known to range at least 3.3 to 18 feet in thickness at the site.
- The bedrock underlying the glaciolacustrine deposits is gray Onondaga Limestone from the Lower to Middle Devonian. Fractures, bedding planes, and joints control groundwater movement.

- Soils at the site were found to contain oil and grease and PCB's. Highest concentrations were found in the work area north of the quarry pond.
- Concentrations of PCB's in soils beneath the top 12 inches of soil are lower, below 10 parts per million (ppm), than the concentrations of PCB in the top 12 inches of soil.
- An estimated 700 cubic yards of soil have PCB concentrations of 10 ppm or greater.
- The surface water in the quarry pond and outflow stream contain concentrations of PCB's ranging from 0.12 ppb to 0.72 ppb.
- Sediment samples from the quarry pond and outflow stream contain PCB at concentrations ranging from 3.8 ppm to 28 ppm.
- The upgradient groundwater monitoring well contains lead at 0.22 ppm and PCB at 1.5 ppb.
- Analytical data for downgradient groundwater monitoring wells indicate the parameters tested for are below NYS Class GA standards and guidelines for groundwater. No PCB's were detected.
- Hydraulic conductivity tests conducted on the monitor wells indicate hydraulic conductivity values ranging from $1.7x10^{-5}$ ft/sec (11 gpd/ft^2) to $1.5x10^{-8}$ ft/sec ($9.7x10^{-3}$ gpd/ft^2). Groundwater in the bedrock is flowing to the south-southwest.
- The quarry pond appears to be part of the groundwater system. Groundwater flows into the pond through fractures in the sides and bottom

of the quarry and exits via the outflow stream and possibly fractures on the downgradient (south) side of the quarry.

2.0 RECOMMENDATIONS

Site conditions were evaluated for contaminant impact and remedial measures which would be suitable for managing each operable unit of contaminated media at the site. O'Brien & Gere suggested a number of recommendations which the firm believed would be appropriate to mitigate any potential impact to public health and the environment.

The State submitted comments on the report and the recommendations by O'Brien & Gere. A meeting ensued between the State and defendants and it was agreed upon by all parties involved that NMPC and MW&S would submit a work proposal to address each operable unit considered a PCB contaminant source.

The operable units were defined as follows:

1) Soil in the work area (the north "gut" of the quarry pond)

2) Sediments in the quarry pond

3) Sediments in the outflow stream downstream of the quarry pond

4) Surface water runoff from the quarry pond drainage channel

Additional recommendations to minimize potential impacts from contaminants and further characterize the site include the following:

5) Perimeter of the site will be fully restricted by installation of six foot chain link fence.

6) Monitoring wells will be sampled and analyzed for PCB's.

7) Sediment sampling for PCB's will occur at two locations in the drainage ditch on the opposite side of West Street from Wallace's property - one near the north end of the site and the other south of Route 10 prior to entering

2 more samples at campus for #8 compliance /

drainage channel from quarry pond. Sample locations will be in slow moving water areas and staked.

8) Further downstream sampling and analyses for PCB's will be performed on sediments to determine the extent of off-site migration. A minimum of two sediment samples will be taken and analyzed downstream of SED-6. These samples will be taken in slow moving water areas and staked.

3.0 OPERABLE UNIT DESCRIPTIONS

This section provides a description of each operable unit.

3.1 Soil in the "Gut" Area

The soil sampling strategy primarily focused on areas exhibiting discoloration and/or staining. Sixty-seven surface and near-surface soil samples were collected every 15 feet to identify the lateral extent of oil and grease and PCB contamination at the site (Figure 3). In order to determine the vertical extent of contamination, eight of the 67 samples were collected at a depth of six to twelve inches. The work plan specified these samples to take into account fill material on-site and correlation with sampling and analysis performed in conjunction with the three test borings in the "gut" area.

PCB concentrations in the surface and near-surface soil samples ranged in concentration from non-detectable at several sampling locations to 2100 ppm PCB's. Highest concentrations of PCB's were observed in the vicinity of areas that exhibited staining of the soil. Non-stained and soil samples collected from six to twelve inches below the surface had lower concentrations of PCB's than the stained surface samples.

PCB and oil and grease concentrations were found to be highest in the "gut" area. Figure 4 shows the PCB concentrations at 15 foot intervals and delineates the isopleth estimation for 50 ppm and 10 ppm concentrations. PCB concentrations outside the "gut" area and below the upper one foot of soil were within the EPA Spill Cleanup Policy guidelines of April 2, 1987 (52 Federal Register 10688). Since the soil borings were placed in the "gut" area, the lower concentrations of PCB's indicate vertical migration of

PCB's below one foot is limited.

3.2 Sediments in the Quarry Pond

Sediment samples were collected from four different locations in the on-site quarry pond and analyzed for PCB's and metals (Figure 5). Sediment samples in the pond ranged from non-detectable to 5.8 ppm PCB's.

The depth of water in the quarry pond from surface water to sediments at the bottom of the quarry pond is estimated at 50 feet. Sediment accumulation depth varies at the bottom of the quarry pond, but is estimated from trace amounts to inches at the sampling locations.

3.3 Sediments in Outflow Stream of Quarry Pond

Sediment samples were collected from two different locations in the outflow stream of the quarry pond and analyzed for PCB's and metals.

The sediment sample collected beneath the discharge stream on the south side of Route 10 contained 28 ppm PCB's. PCB's tend to absorb to soil particles, and because of the six foot drop from the drainage ditch in the outflow stream after crossing Route 10, it is believed that the sediments have fallen out of suspension in the water and collected at this point.

The sediment sample collected further downstream adjacent to the railroad tracks contains 5 ppm PCB's. It's believed that these sediments are carryover from the first quarry pond downstream sediment sample, and is mobilized to the surface water runoff from

turbulence encountered when surface water drops into the outflow stream after crossing Route 10.

3.4 Quarry Pond Surface Water Runoff

Four surface water samples were collected for laboratory analyses; two samples from the quarry pond and two samples from the quarry pond outflow stream. Three of the samples were analyzed for the full Target Compound List.

PCB concentrations ranged from 0.12 ppb to 0.72 ppb. Three of the four samples were less than the January 30, 1991 promulgated drinking water standards for PCB's of 0.5 ppb.

4.0 REMEDIAL MEASURES FOR OPERABLE UNITS

This section addresses the specific remedial measures undertaken which would be suitable for managing the contaminants in each operable unit.

4.1 Soil in the "Gut" Area

Figure 2 provides an isopleth estimation for 10 ppm PCB concentrations. Cleanup of this area to 10 ppm PCB's would meet the requirements of the USEPA Spill Clean-up Guidance Policy for residential areas. Sampling and analysis has determined that the primary PCB contamination is found in this "gut" area, which is stained. Samples previously taken have covered the stained area.

In order to provide an additional margin of cleanup assurance and minimize any possibility of long-term environmental impact, additional samples will be taken around the grid previously established. The purpose of these samples will be to establish an isopleth of 1 ppm PCB's. It is believed that sampling a minimum of 36 points for PCB's will reinforce assurance of this 10 ppm PCB isopleth and construct a new 1 ppm PCB boundary area. Soil sampling will be consistent with previous sampling and handling protocol.

PCB analyses will be performed by Niagara Mohawk's Chemistry Lab, a NYSDOH certified laboratory. The objective of establishing this boundary of 1 ppm PCB will be the basis for remediating the first site operable unit of the soil in the "gut" area. The depth of excavation will be 1 foot based on information from the O'Brien and Gere site investigation.

Soil contaminated with PCB's can be remediated by a number of technologies. The

type of technology used is often predicated by the volume of soil which requires remediation. On-site treatment technologies are generally used in situations where large volumes of highly-contaminated soils are present, whereas off-site treatment or containment are the remedial methods of choice when smaller volume or soil with relatively low levels of contamination are present. The latter situation appears to be the case at the site.

Typically, PCB contaminated soils such as those observed at the site are excavated using standard construction techniques and either incinerated or disposed of in a properly designed landfill. The remedial measure of choice is landfilling, which involves the placement of the soils in a TSCA approved landfill designed to contain PCB contaminated materials.

Approvals for disposal will be secured from an appropriately permitted landfill. The soil will be loaded into plastic lined rolloffs and all transportation of contaminated waste will be performed by transporters possessing a NYS Part 364 Transporter Permit. The PCB waste will be removed and disposed of in accordance with all New York State Department of Environmental Conservation, U.S. Department of Transportation, and New York State Environmental Protection Agency regulations.

4.2 Sediments in the Quarry Pond

The sediments will be removed from the quarry pond utilizing a vacuum truck. The end of the vacuum hose will be weighted to assure contact with the bottom of the quarry pond for maximum removal efficiency. The water and sediments will be collected within

the vacuum truck, and sediments removed will be allowed to settle at the bottom of the truck. After sediment settling, the water will be pumped from the truck and returned to the quarry pond. Sediments will then be removed from the vacuum truck and collected for further on-site dewatering. After dewatering, sediment collection will take place in either plastic-lined rolloffs or 55 gallon DOT 17H barrels. Suitable solidification material will be added to the container.

Sediments from the quarry pond will be managed similarly to the soils from the "gut" area. The sediments will be landfilled for disposal after removal.

4.3 Sediments in Outflow Stream

Prior to removal of the PCB containing sediments found in the outflow stream, recommendation number 8 requiring sediment sampling and analysis will be performed. This will provide an off-site downstream migration determination for the extent of PCB containing sediments and minimize sediment transport to downstream locations prior to sampling.

Consistent with the cleanup effectiveness of the "gut" area, sediments containing over 1 ppm will be removed. Removal of the sediments from the outflow stream will be accomplished utilizing manpower with shovels in order to minimize drainage ditch disturbance and accumulation of drainage ditch water.

The sediments in the stream are primarily soil particles and removal will be roughly one inch in depth and the width of the stream. Removal will begin at Route 10 and extend to where PCB containing material is less than 1 ppm. Several sediment samples may be

taken to define this area better.

Sediment samples will be dewatered on-site and will be placed in either a plastic-lined rolloff or 55 gallon DOT 17H barrels. Suitable solidification material will be added to the container. Sediments from the quarry pond will be managed similarly to the soils from the "gut" area. The sediments will be landfilled for disposal after removal.

4.4 Quarry Pond Surface Water Runoff

PCB concentrations of the surface water in the quarry pond currently meet the USEPA January 30, 1991 drinking water standard for PCB's of 0.5 ppb. The State cleanup guidance level is 0.065 ppb PCB's for waters of the State. In order to meet the State cleanup guidance criteria for this operable unit, defendants propose to treat the water as it exits the quarry pond. Access restriction to the site by fencing will minimize any perceived environmental impact from the water inside the quarry pond.

Carbon adsorption is the treatment technology of choice for removal of PCB's from water. Activated carbon filters will be used to treat the water as it leaves the quarry pond through the drainage channel. The drainage channel flow is buffered by water accumulation within the quarry pond, resulting in a steady state flow through the drainage channel.

Normal maximum water flow from the drainage channel would be expected during the month of May. A flow estimate will be established, and sizing of the carbon filter would be estimated, and if feasible, will include a 10-year flood volume in the sizing. Addition of the carbon filter would treat the runoff to State cleanup guidance concentration

and mitigate any perceived environmental impact.

5.0 POST REMEDIAL MEASURE VERIFICATION

This section addresses the specific sampling and analysis undertaken at each operable unit to verify the effectiveness of remedial measures performed.

5.1 Soil in the "Gut" Area

Excavation of soil in the "gut" area will be performed vertically to a depth of one foot and laterally to the estimated 1 ppm PCB isopleth. After excavation, the zone will be roped off to define the area of remediation.

The now excavated boundary adjacent to the perimeter of the remediated area will be sampled at 10 points, composited into one sample, and analyzed for PCB's. PCB concentration over 1 ppm will trigger additional remedial measures lateral to the perimeter of the excavated area. This procedure will occur until the PCB concentration is less than 1 ppm.

Post cleanup sampling will occur within the excavated area. Ten random sampling points will be composited within the excavated area and analyzed for PCB's. PCB concentration over 1 ppm will trigger additional remedial measures within the excavated area. This procedure will occur until the PCB concentration is less than 1 ppm PCB. Fill material will be added to the "gut" area and graded appropriately after cleanup effectiveness is determined.

5.2 Sediments in the Quarry Pond

Vacuuming of the quarry pond is the most effective method for permanent removal

of the source in this operable unit. In addition, removal of the soil in the "gut" area will minimize any runoff of additional sediment back into the quarry pond. Due to the difficulty in evaluating the effectiveness of vacuum cleanup within the pond, it is recommended that monitoring of cleanup effectiveness be measured downstream of the quarry pond.

Installation of the carbon filter adsorption system at the quarry pond drainage channel will serve a dual purpose. It will effectively treat the surface water as it discharges the quarry pond, and immobilize the sediment from moving into the drainage channel once contact occurs in the filter system.

To determine the effectiveness of minimizing downstream transport of sediment from the quarry pond, a total suspended solids sample will be taken at the discharge of the carbon filter system after a steady state startup is implemented. A sample for total suspended solids will be grabbed at the same interval as the PCB water sample at this point.

In an effort to establish some type of conformance criteria, consistency with State Pollutant Discharge Elimination System Permit requirements of 50 mg/liter will be considered effective remedial verification for the carbon filter system treatment of sediment.

5.3 Sediments in the Outflow Stream

Removal of the three upstream sources from each operable unit - soils in the "gut" area, sediments in the quarry pond and surface water runoff treatment from the quarry pond filters, in addition to the mechanical removal of sediment in the outflow stream - will

ensure that all potential environmental impacts will be mitigated.

In order to measure the effectiveness of the mechanical cleanup in the outflow stream, a composite sample for PCB analysis consisting of 4 sampling points will be performed. PCB concentration over 1 ppm will trigger additional sediment removal within the outflow stream area. Sediment removal measures will occur until the composite sediment sample analyzed concentration is less than 1 ppm PCB.

5.4 Quarry Pond Surface Water Runoff

Water samples will be grabbed at the discharge of the carbon filter system. Carbon adsorption is the most effective treatment technology for treatment of water containing PCB's. Cleanup effectiveness will be assumed with meeting the 0.065 ppb PCB level.

If the 0.065 ppb PCB level is not met, two items will be addressed. First, due to potential matrix interferences, the possibility exists that it would be difficult to achieve this level of detectability. If this occurs, split water samples will be taken and distributed to another NYSDOH certified laboratory for confirmation analysis. If laboratory confirmation indicates the charcoal filter treatment technology not to be effective, further charcoal filter system engineering design work will be evaluated.

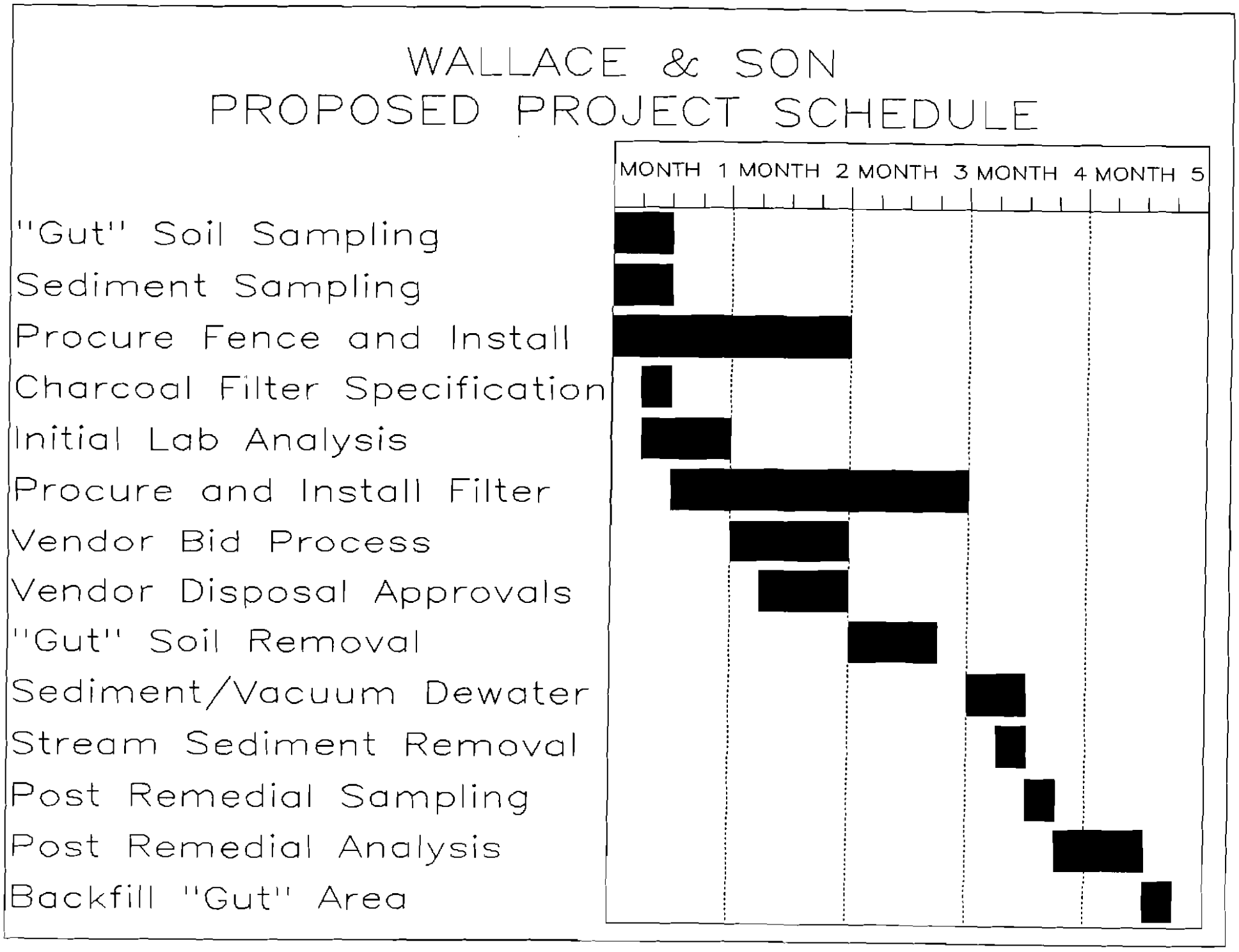
6.0 LONG-TERM MONITORING

The post remedial measures verification of cleanup effectiveness will provide a basis for negotiating a long-term monitoring format. A meeting will be held between the State and defendants to discuss strategy for a long-term monitoring program to ensure non existence of environmental threat to public health or the environment.

7.0 PROPOSED PROJECT SCHEDULE

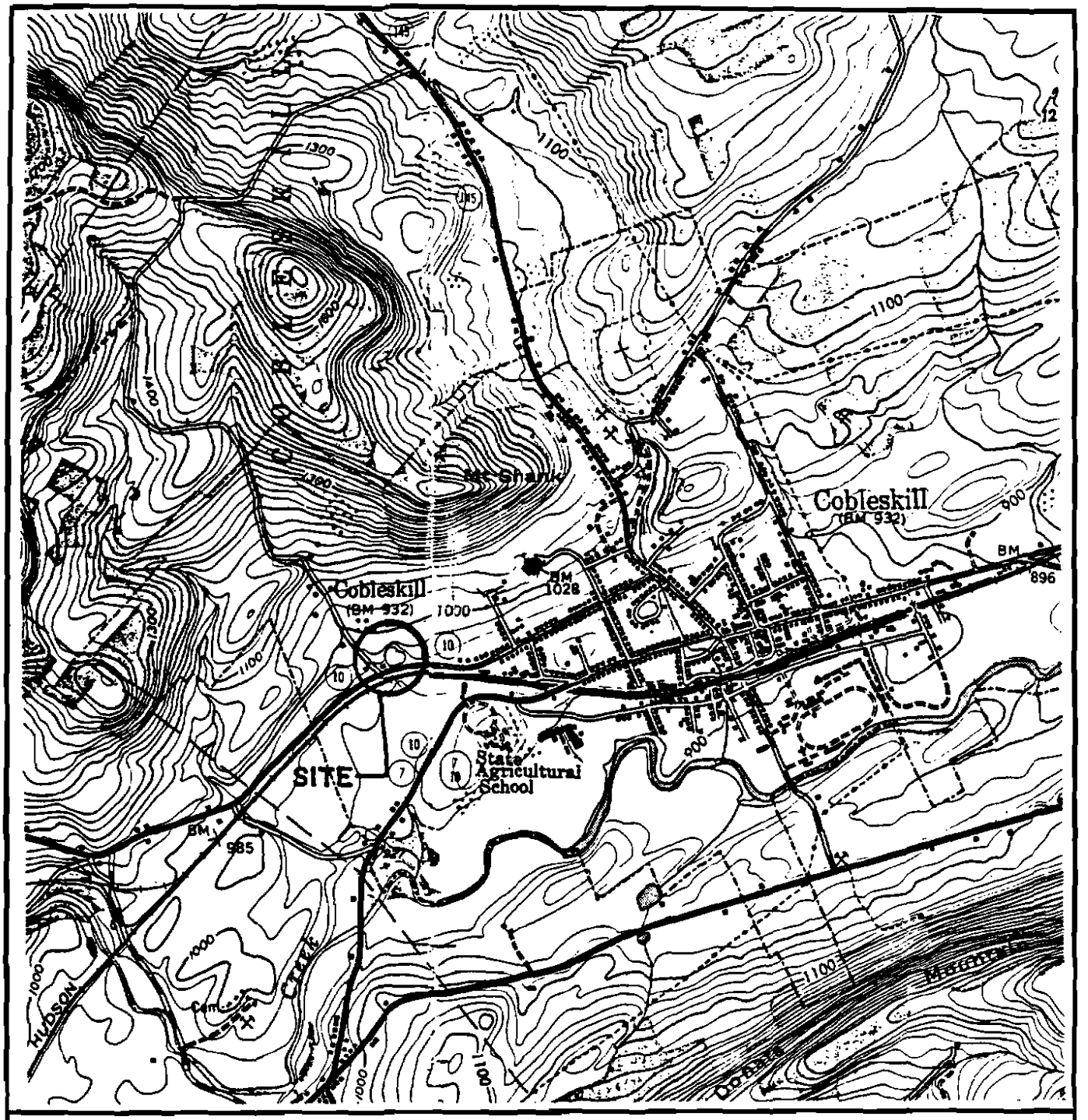
The proposed project schedule is initiated upon receipt of written approval from the State. It is anticipated that approval will be received by May 1, 1991. May would then begin as Month 1 on the schedule.

WALLACE & SON
PROPOSED PROJECT SCHEDULE



Figures

FIGURE 1



M. WALLACE AND SON, INC. SCRAPYARD
COBLESKILL, NEW YORK

QUADRANGLE LOCATION

SITE LOCATION MAP

0 2000 4000

SCALE IN FEET

ADAPTED FROM U.S.G.S. COBLESKILL, & RICHMONDVILLE, N.Y. QUAD.

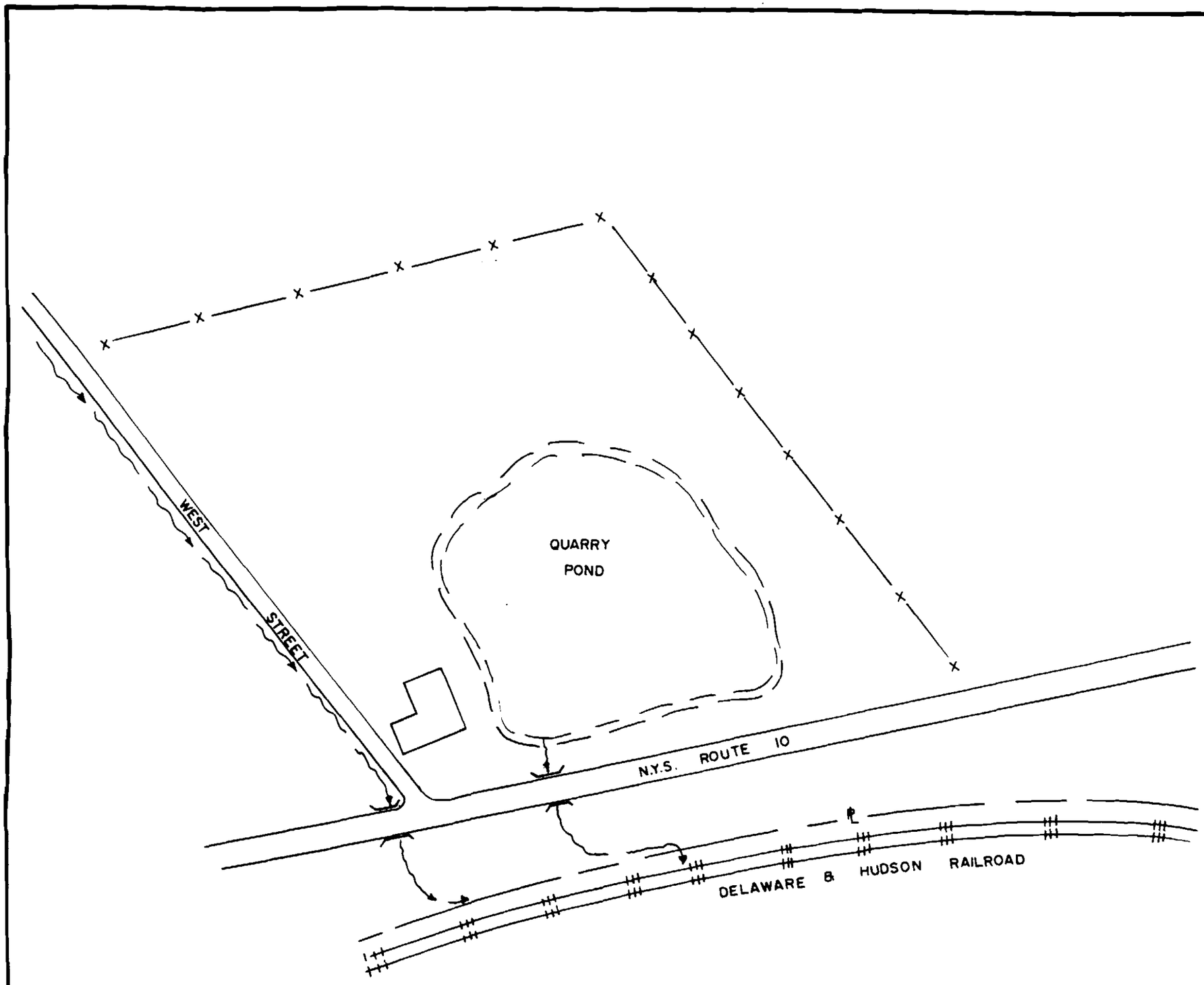
1118.023.131 Y22/90

8.5X11

FIGURE 2

SITE INVESTIGATION
M. WALLACE AND SON, INC.
SCRAPYARD
COBLESKILL, NEW YORK

SITE MAP



LEGEND

SYMBOL FOR STREAMS

0' 100' 200'

APPROXIMATE SCALE IN FEET

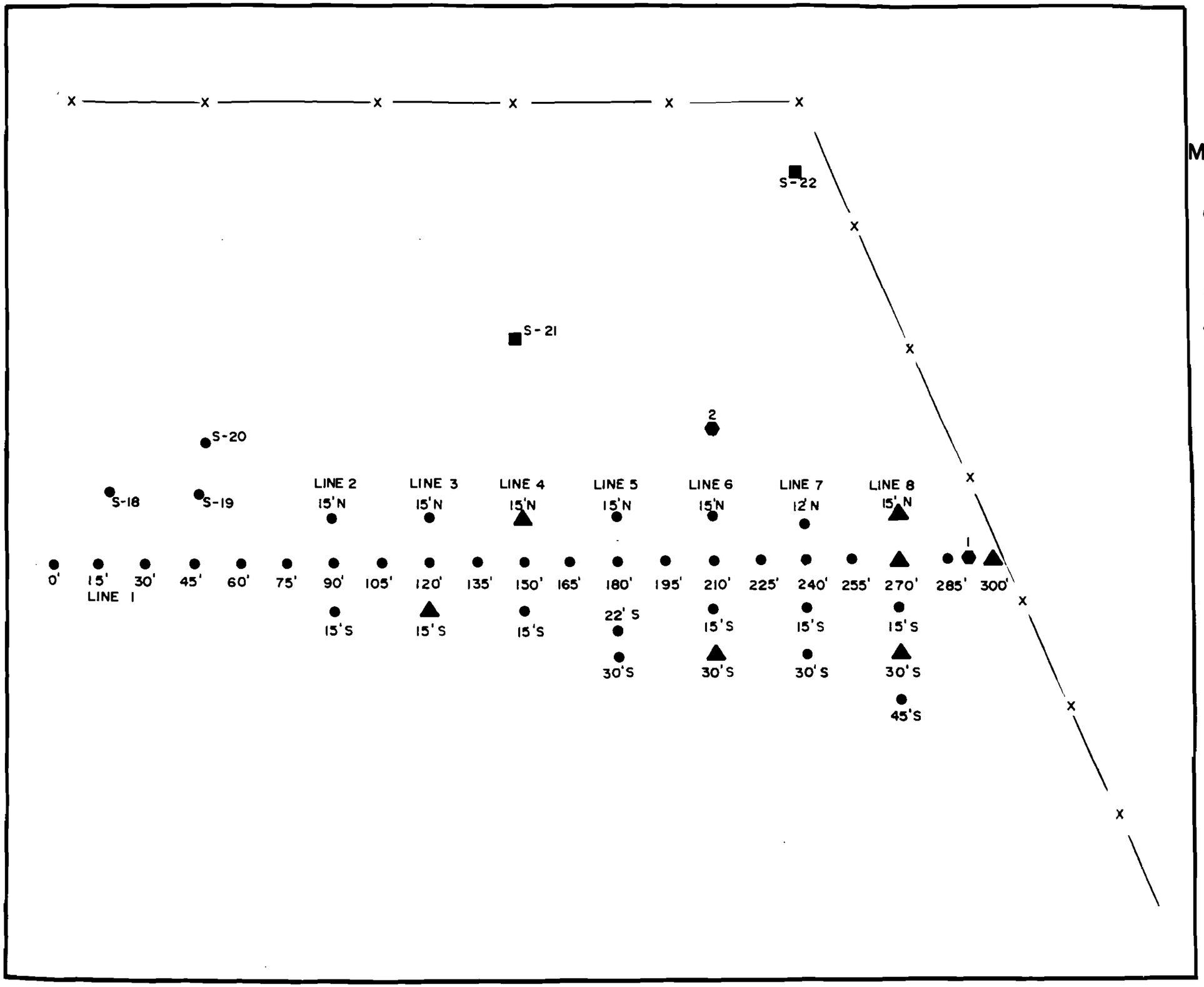
NOTE: SITE FEATURES MAY NOT BE TO SCALE

FIGURE 3

SITE INVESTIGATION

M. WALLACE AND SON, INC.
SCRAP YARD
COBLESKILL, NEW YORK

DETAIL OF SURFACE AND NEAR-SURFACE SOIL SAMPLING AND AIR SAMPLING LOCATIONS



LEGEND

- AIR SAMPLING LOCATION
- SOIL SAMPLE 0-6" DEEP (STAINED)
- SOIL SAMPLE 6-12" DEEP (STAINED)
- SOIL SAMPLE 0-6" DEEP (UNSTAINED)

0' 30' 60'

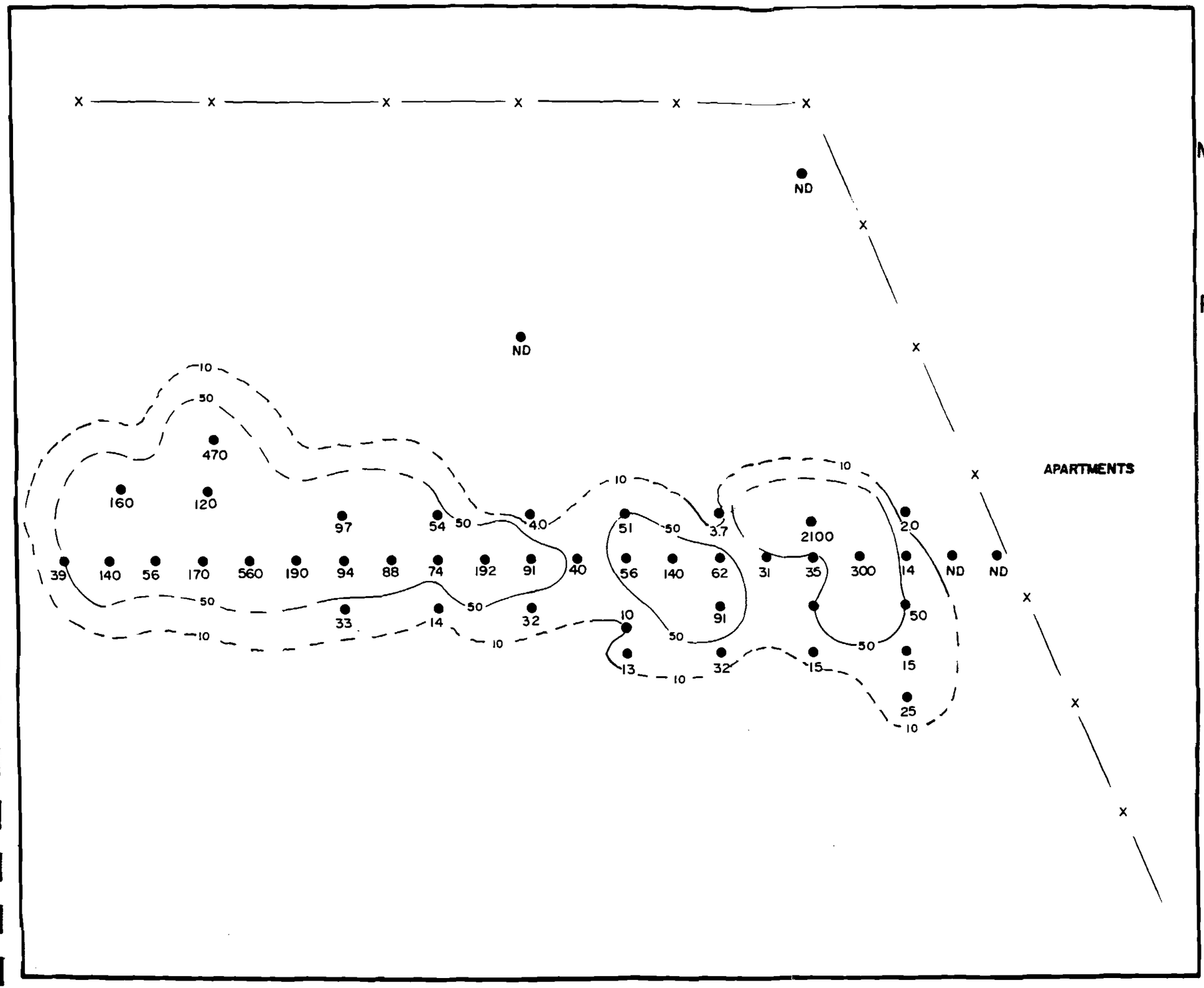
APPROXIMATE SCALE IN FEET

061982

FIGURE 4

SITE INVESTIGATION
M. WALLACE AND SON, INC.
SCRAP YARD
COBLESKILL, NEW YORK

PCB CONCENTRATION CONTOUR MAP



CONTOUR LEVEL
50 ppm
10 ppm

LEGEND

- ● SOIL SAMPLE WITH P.C.B CONTAMINANT LEVEL (P.P.M.)
- — — — INFERRED CONTOUR LINE
- ND NONDETECTED

0' 30' 60'

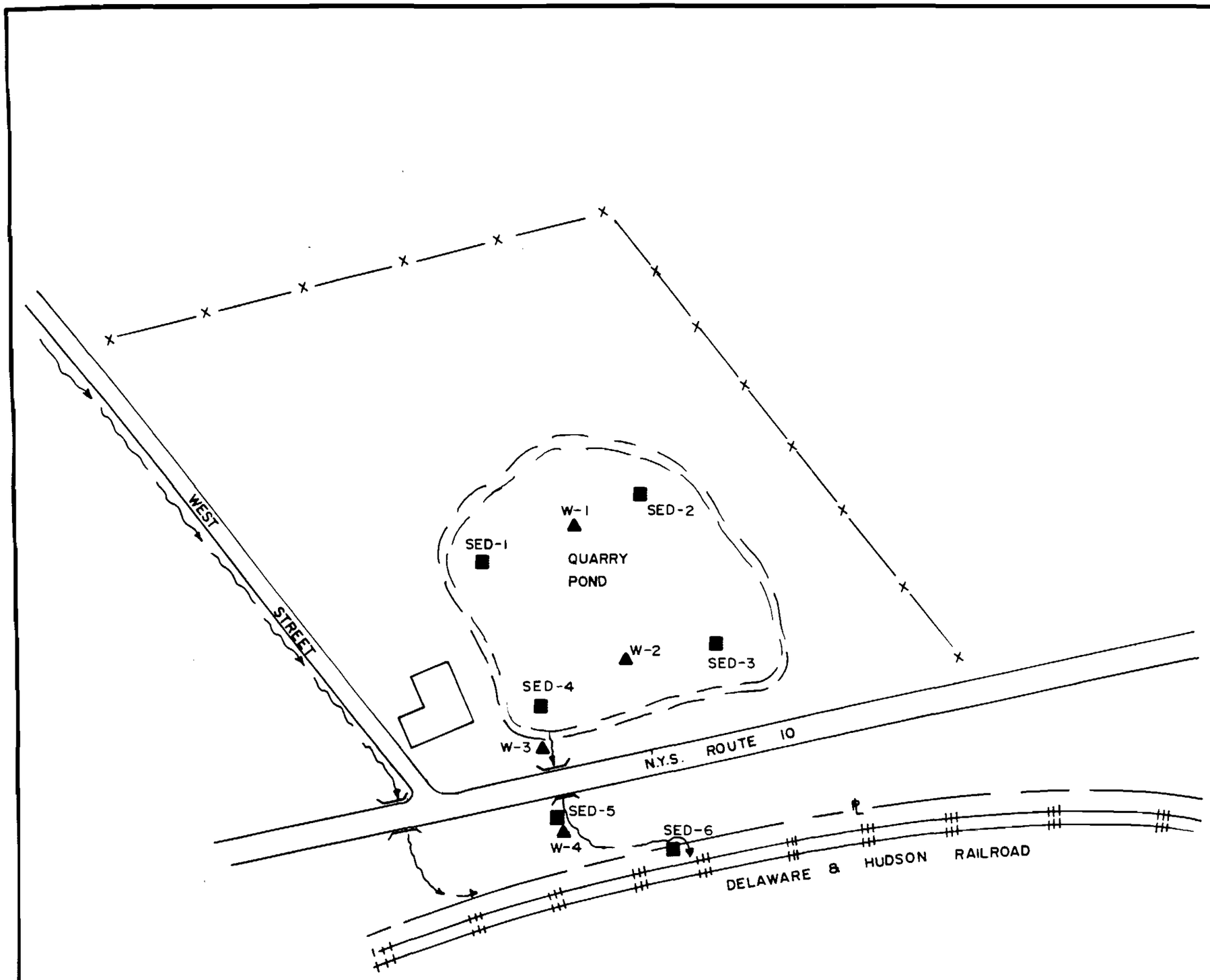
APPROXIMATE SCALE IN FEET

FIGURE 5

SITE INVESTIGATION
M. WALLACE AND SON, INC.
SCRAPYARD

COBLESKILL, NEW YORK

SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS



LEGEND

- ▲ SURFACE WATER SAMPLE
- ■ SEDIMENT SAMPLE
- SYMBOL FOR STREAMS

0' 100' 200'

APPROXIMATE SCALE IN FEET

NOTE: SITE FEATURES MAY NOT BE TO SCALE