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SHERIDAN WASTE OIL

INACTIVE HAZARDOUS WASTE SITE

MEDFORD, SUFFOLK COUNTY

SITE NO. 152024

PROPOSED REMEDIAL ACTION PLAN

SEPTEMBER 1994

PREPARED BY:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION

PROPOSED REMEDIAL ACTION PLAN

SHERIDAN WASTE OIL
TOWN OF MEDFORD, SUFFOLK COUNTY, NEW YORK
Site No. 152024
September 1994

SECTION 1: PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), is proposing a no-further action remedy for the Sheridan Waste Oil Site.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy and discusses the rationale for this preference. The NYSDEC will select a final remedy for the site only after careful consideration of all comments submitted during the public comment period.

The findings indicate that the site does not pose a threat to human health or the environment. Therefore, the Department proposes to delist the site from the New York State Registry of Inactive Hazardous Waste Sites.

This PRAP is issued by the NYSDEC as an integral component of the citizen participation plan responsibilities provided by the New York State Environmental Conservation Law (ECL), 6 NYCRR 375 and the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. This document is a summary of the information that can be found in greater detail in the Remedial Investigation (RI) Report on file at the document repositories listed below.

The NYSDEC may modify the preferred alternative or select another response action based on new information or public comments. Therefore, the public is encouraged to review and comment on this Proposed Remedial Action Plan.

The public is encouraged to review the documents at the repositories to gain a more comprehensive understanding of the site and the investigations conducted there. The project documents can be reviewed at the following repositories:

New York State Department of Environmental Conservation
Region 1 Headquarters
State University of New York
Building 40, Room 136
Hazardous Waste Remediation Unit
Stony Brook, NY 11790-2356
(516) 444-0249

Patchogue-Medford Library
54-60 East Main Street
Patchogue, NY 11772
Attn: Sara Coorant, Director
Hours: 9:30-9:00 Monday - Friday
9:30-5:30 Saturday
1:00-5:00 Sunday
(516) 654-4700

Town of Brookhaven
Rosemary Wiesner
Brookhaven Public Information Office
32-33 Route 112
Medford, NY 11763
Hours: 9-9:30 Monday - Friday
(516) 451-6260

DATES TO REMEMBER:

Public comment period on RI Report, Proposed Remedial Action Plan, and proposed alternative:

SEPTEMBER 19 - OCTOBER 17, 1994

A public meeting will be conducted on September 27, 1994 at 7:30 pm at the Patchogue-Medford High School, Room 216, Buffalo Ave. (near intersection with Greenport Ave.) Medford, Town of Brookhaven, Suffolk County.

The Citizen Participation (CP) activities are part of DEC's on-going efforts to ensure full, two-way communication with the public on the identification, investigation, and remediation of inactive hazardous waste sites. Previous activities for this site include the development of a site-specific CP plan, creation and maintenance of information repositories and the public contact list, and a public informational meeting held in April 1990 to discuss the RI/FS work plan. Notification was through a meeting invitation/fact-sheet distributed to the contact list, a paid public notice, and notice to the press. Two RI fact sheets, in August 1992 and October 1993 were also distributed.

These efforts to fully communicate with the public culminate with this solicitation of comments regarding the proposed remedial action for this site.

All written comments on the plan should be addressed to:

Ms. Sally Dewes, P.E.
Project Manager
Div. of Hazardous Waste Remediation
50 Wolf Rd.
Albany, NY 12233-7010

Detailed information and comments on the Citizen Participation program and process may be directed to:

Mr. Joshua Epstein, PhD
Citizen Participation Specialist
NYSDEC Region 1
SUNY Building 40
Stony Brook, NY 11790-2356
(516) 444-0249

SECTION 2: SITE LOCATION AND DESCRIPTION

The Sheridan site is approximately 2.7 acres and is located on the south side of Peconic Avenue in Medford, Suffolk County, New York, (Hazardous Waste Site I.D. No. 152024). The ground surface at the site, approximately 80 feet above mean sea level, is mostly level and slopes gradually toward the south. Peconic Avenue is less than a mile south of, and roughly parallel to, the east-west Long Island Railroad tracks and the Long Island Expressway, and is commercially developed. The commercial development on Peconic Avenue east and west of the Sheridan site consists of several extensive metal and motor vehicle recycling yards, some light industry, and a large multimedia recycling facility.

The north side of Peconic Avenue is not residentially developed near the Sheridan site; however, a few residences abut the west side of

the site on the south side of Peconic Avenue, and a large residentially developed area consisting of several subdivisions abuts the south side of the site. The closest public schools are located on Buffalo and Oregon Avenues, within 1 mile of the site. See Figure 1.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Mr. William Sheridan operated the Sheridan Waste Oil Co. at 114 Peconic Avenue in Medford, New York, as a waste oil recycling facility from 1977 to 1983. During this time, unknown quantities of waste oil, solvents, and acids were reported to have been reprocessed and resold.

The facility collected and stored waste oil and separator water in aboveground and subsurface tanks, and operated an oil/water separator. Letters and affidavits state that Sheridan handled solvents and acid products in addition to waste oil at the site. Sheridan operated for several years without a permit, although he had initiated the application process.

3.2: Remedial History

In April 1982, an employee of the Vulcan Fuel Corporation contacted the Suffolk County Department of Health Services (SCDHS), claiming that he was overcome by fumes from a shipment of waste oil that Vulcan had received from Sheridan. As a follow up to this preliminary involvement, SCDHS conducted a hydrogeologic investigation at the Sheridan site to establish the impact of site operations on groundwater quality.

The SCDHS study included sampling and analysis of groundwater in temporary profile wells to depths of 80 feet below ground surface. The study did not detect organic compounds in groundwater upgradient of the site, or in drinking water from residential wells directly downgradient of the site on Eileen Court. However, concentrations of organic chemicals above drinking water guidelines were detected at several SCDHS profile well locations downgradient of the site. Up to 1,100 parts per billion (ppb or ug/L) total volatile organic compounds (VOCs) were found in the groundwater on the property. Off-site VOC concentrations in the groundwater ranged from non-detectable to 1014 ppb. An on-site inspection, conducted in May 1983 as part of the investigation, revealed many areas of surface spillage and discoloration of soil, and soil samples reportedly exhibited organic solvent and petroleum product contamination. On the basis of the 1983 SCDHS hydrogeologic investigation report, the Suffolk County Attorney obtained a court order to close down the Sheridan operations. All aboveground and underground tanks and other types of equipment and structures were removed from the site in 1984. The former Sheridan Waste Oil Co. office and garage building were converted to a multiple-unit residence.

SECTION 4: CURRENT STATUS

The NYSDEC, under the State Superfund Program, initiated a Remedial Investigation/ Feasibility Study (RI/FS) in 1990 to address the contamination at the site. Access was denied to the site by the property owner. The Department worked in conjunction with the Attorney General's office to finally obtain access to the site in July 1992.

4.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI was conducted from July through November 1992. A report entitled Remedial

Investigation Report, Volumes I (April 1994) and II (May 1993) has been prepared describing the field activities and findings of the RI in detail. A summary of the RI follows:

The RI activities consisted of the following:

- A door-to-door residential well survey in the study area to identify groundwater users.
- A geophysical survey to locate any underground tanks and structures.
- A soil gas survey.
- Soil borings and monitoring well borings with collection of soil and groundwater samples.
- Installation and sampling of shallow and deep groundwater monitoring wells.
- Risk assessments, including identification and evaluation of site-specific contaminants of potential concern that may affect public health and ecological receptors.

The analytical data obtained from the RI was compared to applicable Standards, Criteria, and Guidance values (SCGs) in determining remedial alternatives. Groundwater, drinking water, and surface water SCGVs identified for the Sheridan Waste Oil Site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of the New York State (NYS) Sanitary Code. For the evaluation and interpretation of soil analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background levels, and risk-based remediation criteria were used to develop remediation goals for soil.

Groundwater

Sheridan Waste Oil is above the Upper Glacial Aquifer, an unconfined, sandy layer that is 150-200 feet thick. The depth to groundwater at the site is approximately 30 feet from the surface. Below the Upper Glacial Aquifer is the Magothy Aquifer, a thicker unit (anywhere from 400-900 feet thick). The Magothy is the most widely used aquifer for public water supply in Suffolk County.

The SCDHS study conducted in 1983 included sampling and analysis of groundwater in the Upper Glacial Aquifer downgradient of the Sheridan Site. The analytical parameters included: freon 113; methylene chloride; 1,1,1-trichloroethane (1,1,1-TCA); trichloroethylene (TCE); perchloroethylene (PCE); cis 1,2-dichloroethylene (cis 1,2-DCE); 1,1-dichloroethane (1,1-DCA); 1,2-dichloroethane (1,2-DCA); 1,2-dichloroethylene (1,2-DCE); methyl ethyl ketone; methyl isobutyl ketone; and chloroform. All of these compounds were detected in groundwater from on-site and off-site wells. Trace amounts of TCE and PCE ($<$5ppb) were detected in shallow groundwater from one background exploration upgradient of the site. The level of data quality for these samples was not evaluated, therefore, these data are viewed as qualitative indicators of groundwater quality in 1983.

During the 1992 NYSDEC Remedial Investigation, on-site analytical instruments were used to analytically screen 167 groundwater samples collected from 17 borings in the field. Twelve volatile organic compounds were analyzed. Of those twelve compounds, seven were detected at some level in the groundwater: toluene, xylene, PCE, TCE, cis-1,2-DCE, 1,1,1-TCA, and 1,1-DCA. Only two compounds, were detected above NYS Groundwater Standards of 5 ppb; toluene was found in one boring up to 64 ppb and cis-1,2-DCE was found in a different boring at 7.5 ppb.

The above screening data was used to decide at what depth to set the wells. At four boring locations, monitoring well pairs (one deep, one shallow) were installed. At eleven boring sites, single monitoring wells were installed and at the remaining two boring locations, no wells were installed. Two rounds of samples were taken from each of the 19 new monitoring wells. The results are shown on Table 1. Groundwater standards are also shown in Table 1 for comparison. Six samples from each round were tested for pesticides and inorganics. One round of samples were taken from four homeowners wells and were analyzed for volatile and semivolatile organic compounds. See Figure 2 and Table 3.

Seven of the monitoring wells are on site. Of these seven wells, only one organic compound was found above drinking water standards: One round of sampling in MW-7B had PCE at a concentration of 7.6 ppb. The groundwater standard is 5 ppb. No semivolatile compounds, polychlorinated biphenyls (PCBs), or pesticides were detected in any of the other samples. See Figure 3.

Eight of the wells were placed to reflect conditions downgradient of the site (the other four wells are upgradient of the site). No volatile organics, semivolatile organics, pesticides, or PCBs were detected in these wells above drinking water standards. See Figure 4.

Antimony, iron, manganese, sodium, thallium, and zinc were found on and off site at levels higher than groundwater standards. However, levels of these metals found upgradient to the site are comparable to those on the site and downgradient and therefore are not attributable to the site.

The Department expected to find much higher levels of groundwater contamination during this investigation than were found based on historical data from the SCDHS 1983 investigation.

Although some contaminants are found in the groundwater at the site and downgradient, the levels are very low. Only one well contained an organic compound above the drinking water standard: PCE was found at 7.6 ppb. The standard is 5 ppb. None of the homeowners' wells showed organic contamination above standards. Homeowners' well data is shown in Figure 5 and Table 3.

The hazardous constituents that were present during the operations of the waste oil facility have dispersed in the environment with time. This is due to the fact that the contaminants at the site are volatile by nature and the geology of the region consists of sandy soils; this has encouraged natural attenuation. The contaminant levels that are present now are below those levels that would cause the Department to initiate any remedial action.

Nine active public water supply well fields are located within three miles of the Sheridan site. See Figure 6. The downgradient well field nearest the site is on Maple Avenue, located approximately 6,000 feet to the southwest. There are two wells at the Maple Avenue location (Suffolk County Water Authority (SCWA) wells Nos. S-71785 and S-82422). SCWA well S-71785 is screened from 294 to 358 feet below ground surface in the Magothy aquifer. The bottom of the well screen in SCWA well S-82422 is also in the Magothy Aquifer, at a depth of 372 feet. The latter was temporarily shut down due to detection of chlorobenzene above drinking water standards. A carbon filtration system was installed and operated on this well until late 1992, when the detection of chlorobenzene ceased. This contamination is not related to the Sheridan Site.

Surface and Subsurface Soil

Six soil samples were taken at depths less than two feet to characterize the possible surface contamination at the site. Thirty subsurface soil

samples were taken from 2 to 38 feet deep within the confines of the site to characterize the soil below the surface.

Organics were found by both the on-site analytical equipment and off-site laboratory analyses. Among those compounds found are polyaromatic hydrocarbons, petroleum hydrocarbons, pesticides, and PCBs.

For all contaminants except lead, the contamination is well below (several orders of magnitude) the soil clean-up objectives established by the Department for remedial projects. A summary of soil data can be found in Table 2. The complete data set is in the RI Report. Seven of the thirty-six samples exceed the clean-up objective of 30 mg/kg for lead.

4.2 Interim Remedial Measures:

An Interim Remedial Measure (IRM) was initially considered by the Department to remove contaminated soil in the northeast corner of the property. This was discussed in the October 1993 Fact Sheet sent out by the Department. Upon further consideration of the data, the Department has decided that an IRM is not necessary. This decision is based on the fact that concentrations of contaminants in the soil do not indicate that there is an unacceptable risk to human receptors.

4.3 Summary of Human Exposure Pathways:

In the RI report, possible contaminant migration pathways were investigated and evaluated.

The site is currently divided between a commercially used lot and a smaller lot with an occupied multi-family residence. The commercial portion is used for tractor trailer storage. The area surrounding the site is mixed residential and commercial. Probable future uses of the entire site include both commercial and residential. To provide a conservative estimate of exposure, both future commercial and residential land use scenarios were evaluated. Groundwater beneath the site flows south toward residential areas where some private drinking water wells are in use. The following exposure scenarios were developed to evaluate those receptors most likely to be exposed.

The receptors evaluated were: adult resident, child resident, off-site resident, site trespasser, site worker, utility worker, and construction worker. Pathways for migration of contaminants are ingestion of drinking water and soil, dermal contact with soil and water, inhalation of volatile organic compounds (VOCs) while showering, inhalation of VOCs while handling soil, and ingestion of homegrown vegetables.

Exposure to site-related contaminants in surface soils and groundwater result in risk estimates within or below the USEPA target risk range of $1x10^{-6}$ to $1x10^{-4}$. These scenarios are based on long-term repetitive exposure to the maximum detected or 95 per cent upper confidence limit contaminant concentration. These risk estimates are based on numerous conservative assumptions and the actual risks posed by this site are expected to be lower than those estimated in the RI Report.

A qualitative comparison of detected concentrations to applicable, relevant, and appropriate requirements indicate contamination to be below NYSDEC Recommend Cleanup Levels. Tetrachloroethene (PCE) and thallium were detected in groundwater at concentrations in excess of their respective state and federal Maximum Contaminant Levels (MCLs). PCE was found at 7.6 ppb with a groundwater standard of 5 ppb and thallium was found at 5.4 ppb with a groundwater guidance value of 4 ppb. However, PCE and thallium were detected in only one of 14 and one of 20 samples, respectively, in excess of their standards.

Actual exposure concentrations are likely to be lower than assumed in this evaluation.

Surface soil contaminant concentrations at Sheridan were screened against the NYSDEC Recommended Soil Clean-up Levels. These data are presented in Table 2. Average and maximum contaminant concentrations were below the NYSDEC recommended clean-up levels for all contaminants except lead. Lead was detected at a maximum concentration of 123 mg/kg versus the recommended clean-up level of 30 mg/kg or site background concentration. However, exposure dose levels of lead based on the USEPA Uptake/Biokinetic model were below levels considered to present a health risk. Therefore, based on NYSDEC guidance, exposure to surface soils at the Sheridan site is not considered to present an unacceptable health risk to human receptors, and no further action for surface soil contamination is required.

The results of the quantitative and qualitative risk evaluation do not indicate a significant risk to human health. Therefore, remedial actions to reduce potential health risks are not warranted at the Sheridan site for any potential use, including residential.

4.4 Summary of Environmental Exposure Pathways:

There is no significant habitat for fish or wildlife on or in the vicinity of the site. Based on this fact, the potential exposure of wildlife to site contamination was assumed negligible.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRP) for the remediation of this hazardous waste site include: William Sheridan, former owner and operator of Sheridan Waste Oil and Adam Flood, current owner of the property.

The PRPs did not agree to implement the RI/FS at the site when requested by the NYSDEC. Therefore, New York State Superfund monies were used to conduct the Remedial Investigation. The PRPs are subject to legal actions by the State for recovery of all costs the State has incurred.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR 375-1.10. These goals are established under the guideline of meeting all Standards, Criteria, and Guidance values (SCGs) and protecting human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

Typical goals selected for the remediation of a hazardous waste site are:

- Reduce, control, or eliminate the contamination present within the soils on site.
- Eliminate the potential for direct human or animal contact with the contaminated soils on site.
- Mitigate the impacts of contaminated groundwater to the environment.
- Prevent, to the extent practicable, migration of contaminants to groundwater.

The remedy should also consider the following factors: short-term and long-term effectiveness,

reduction of toxicity, mobility, and volume of hazardous waste, implementability, and community acceptance.

In this instance, the current condition of the site is such that no action is necessary to achieve the aforementioned goals. The goals have been met.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Due to the lack of significant contamination of the soils at the site and the lack of contaminated groundwater, there is no need to evaluate further potential remedial alternatives for the Sheridan Waste Oil site at this time. Although a Feasibility Study (FS), a study to evaluate and compare remedial technologies, was originally included in the budget, the Department has determined that the FS is no longer necessary.

Community Acceptance - Concerns of the community regarding the RI report and the Proposed Remedial Action Plan will be evaluated. A " Responsiveness Summary" will be prepared that describes public comments received and how the Department will address the concerns raised. If the final remedy selected differs significantly from this proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

SECTION 8: SUMMARY OF THE PREFERRED REMEDY

Upon completion of the RI, it was found that:

- Monitoring well groundwater quality standards are not exceeded for site contaminants except in one sample.
- Soil clean-up objectives were not exceeded for site contaminants except for one compound.
- The risk assessment demonstrates that there is no significant risk to human health or the environment from exposure to site contaminants.

Based upon the results of the RI, the NYSDEC is proposing the no-action alternative as the preferred remedy for this site. The Department also intends to delist the site from the New York State Registry of Inactive Hazardous Waste Sites. This selection complies with federal and State requirements that are legally applicable or relevant and appropriate to the remedial action and is cost effective. The selection is protective of public health and the environment and is in compliance with NYS Standards, Criteria, and Guidance values (SCGs). As discussed previously, groundwater and soil were not significantly impacted above standards from site related contamination.

TABLE 1
SHERIDAN WASTE OIL
SUMMARY OF MONITORING WELL GROUNDWATER RESULTS (ug/L)

	NYS	MW-1	MW-1	MW-2A	MW-2A	MW-2B	MW-2B	MW-3	MW-3	MW-4A	MW-4A	MW-4B	MW-4B	MW-5A	MW-5A	MW-5B	MW-5B	MW-6	MW-6	MW-7A
	Groundwater																			
	Standards (ug/L)	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1
VOLATILES																				
11 dichloroethane	5	--	--	--	--	--	--	--	--	--	--	0.7	--	--	--	--	--	--	--	--
12 dichloroethene	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
chloroform	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
111 trichloroethane	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
tetrachloroethene	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEMI VOLATILES																				
diethylphthalate	50	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-ethylhexyl)phthalate	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PESTICIDES		na	na	--	--	--	--	na	na	--	--	--	--	na	na	na	na	--	--	na
METALS																				
Al	-	47.6	1250	--	--	146	193	580	1950	--	--	288	274	--	--	1970	1320	--	65.1	47.7
Sb	3(G)	--	--	42.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba	1000	31.3	39.1	59.4	49.2	53.2	45.4	108	163	31.3	25.2	60.5	70.7	77.2	75.2	169	186	48	46.8	65.7
Cd	10	--	--	--	--	5.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ca	-	3060	3190	7480	6720	4650	3960	12600	14200	5580	4880	5930	6450	5340	4910	8610	7450	6750	6010	6520
Cr	50	--	--	--	--	--	--	8.2	11.2	5.6	--	7.1	--	--	--	12.8	9.8	--	--	--
Co	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.7	6	--	--	--
Cu	200	--	4.9	--	--	--	--	7.6	10.8	--	--	4.6	--	--	--	12.2	8.1	--	--	--
Fe	300*	185	2390	--	--	89.8	68.5	9.5	3790	--	--	103	--	--	--	3080	1920	--	43.2	52.6
Pb	25	--	3.1	--	--	--	--	--	5.6	--	--	--	--	--	--	3.9	3.2	--	--	--
Magnesium	35000(G)	1400	1700	2850	2510	1210	--	2600	3020	5500	4930	2290	2820	2310	2180	3100	2950	2870	2650	2820
Manganese	300*	--	266	--	13.6	--	91.2	607	841	--	8.6	448	531	--	42.4	659	602	--	45.7	--
Ni	-	--	--	--	21.7	--	21.7	--	--	--	--	--	--	--	--	--	28.5	--	--	--
K	-	--	891	1870	891	1650	1030	2520	2580	1220	1170	1950	2040	1830	1150	2110	1920	1260	1710	1710
Ag	50	--	--	4.4	--	--	--	--	--	10.6	--	--	--	--	--	--	--	--	--	--
Na	20000	8240	7750	22300	17200	2460	1770	15200	18400	11900	9400	5680	5480	33600	32800	8910	10200	18800	15700	29000
Th	4(G)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
V	-	--	--	--	--	--	--	--	8.9	--	--	--	--	--	--	--	--	--	6.2	--
Zn	300	--	6.3	--	--	--	86.7	--	20.1	--	--	--	--	--	--	--	31.4	--	--	--

na - not analyzed

* sum of Fe and Mn > 300 ug/L

G - guidance value

TABLE 1
SHERIDAN WASTE OIL
SUMMARY OF MONITORING WELL GROUNDWATER RESULTS (ug/L)

	NYS	MW-7A	MW-7B	MW-7B	MW-8	MW-8	MW-9	MW-9	MW-10	MW-10	MW-11	MW-11	MW-12	MW-12	MW-13	MW-13	MW-14	MW-14	MW-17	MW-17
Groundwater																				
Standards (ug/L)		Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2
VOLATILES																				
11 dichloroethane	5	--	1.4	--	0.9	--	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--
12 dichloroethene	5	--	0.6	--	4.6	4.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
chloroform	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	--	--
111 trichloroethane	5	--	2.4	1.4	--	--	--	--	--	--	1.5	--	--	--	--	--	--	--	--	--
tetrachloroethene	5	--	7.6	4.2	1.3	1.3	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--
SEMI VOLATILES																				
diethylphthalate	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-ethylhexyl)phthalate	50	--	--	--	11	--	22	--	--	--	--	--	--	--	15	--	--	--	--	--
PESTICIDES		na	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
METALS																				
Al	-	119	105	325	--	--	--	--	--	--	418	435	3600	2590	186	2960	1090	1260	1390	2740
Sb	3(G)	--	--	--	--	--	--	--	--	--	--	--	47.1	--	--	--	--	--	--	--
Ba	1000	58.6	--	--	64.7	68.6	73	81.8	102	1.4	111	115	178	180	41.7	44.2	158	173	234	258
Cd	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ca	-	6340	34700	24600	8320	8090	5320	4510	11900	11800	8470	8320	7150	6980	6620	6290	9260	9550	7620	7570
Cr	50	--	7.5	--	7.5	--	--	--	5.6	--	7.9	--	28.4	14.8	5.2	14	13.4	9.8	13.4	10.5
Co	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cu	200	--	6.1	7.2	--	--	--	--	--	--	--	--	16.1	14.4	--	18.8	7.7	13.5	--	9
Fe	300*	87.4	372	1060	--	--	--	--	--	--	--	--	7260	4240	--	4740	1810	2020	1410	2770
Pb	25	--	--	--	--	--	--	--	--	--	--	--	4.9	3.6	--	4	--	--	--	--
Magnesium	35000(G)	2730	5250	3270	3440	3440	4880	5090	3140	3350	3540	3590	3490	3270	2240	2400	2550	2780	2520	2870
Manganese	300*	11.8	396	255	--	53.5	--	6.5	--	19.6	436	437	713	526	--	341	443	447	450	517
Ni	-	--	--	--	--	--	--	--	--	--	--	24.4	--	--	--	--	--	--	--	23.1
K	-	1970	6120	5280	2540	1670	1710	1230	2660	3330	1890	6060	2850	2050	--	--	5350	6230	4540	4460
Ag	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Na	20000	31300	9250	8520	13900	12500	9120	9270	28100	27500	20000	21200	11900	1120	5230	4790	6520	7710	9960	11600
Th	4(G)	--	--	--	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--	--	--
V	-	--	--	5.4	--	--	--	--	--	--	--	--	12.6	8.7	--	--	5.7	--	--	--
Zn	300	--	--	12.3	--	--	--	--	--	--	--	--	--	18.6	--	56.4	--	16.9	--	47.7

na - not analyzed

* sum of Fe and Mn > 300 ug/L

G - guidance value

TABLE 2
COMPARISON OF SURFACE SOIL CHEMICALS OF POTENTIAL CONCERN (CPCs) CONCENTRATIONS TO RECOMMENDED SOIL CLEANUP OBJECTIVES [a]

SHERIDAN WASTE OIL CO. SITE
MEDFORD, NY

CPC	CONCENTRATION MEAN	CONCENTRATION MAXIMUM	RECOMMENDED SOIL CLEANUP OBJECTIVE [a]
VOLATILE ORGANICS (µg/kg)			
Tetrachloroethene	4.9	2	1400
SEMIVOLATILE ORGANICS (µg/kg)			
2-Methylnaphthalene	223	180	36,400
Acenaphthene	140	140	50,000
Benzo (a) anthracene	160	79	220
Benzo (k) fluoranthene	158	68	1,100
Butylbenzylphthalate	182	81	50,000
Carbazole	188	4	NA
Chrysene	184	200	400
Diethylphthalate	198	54	7,100
Di-n-butylphthalate	708	2,600	8,100
Di-n-octylphthalate	119	41	50,000
Fluoranthene	163	97	50,000
Naphthalene	193	28	13,000
N-nitrosodiphenylamine	192	26	NA
Phenanthrene	94	53	50,000
Pyrene	111	130	50,000
PESTICIDES/PCBs (µg/kg)			
4,4'-DDD	3.5	1	2,900
4,4'-DDE	5.4	11	2,100
4,4'-DDT	6.8	13	2,100
alpha-Chlordane	9	36	540
Aroclor-1260	85	360	1,000
gamma-Chlordane	7.3	28	540
Heptachlor epoxide	1.7	5	20

NOTES:

[a] From NYSDEC, 1992. "Recommended Soil Cleanup Objectives"; Division of Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels; Nov. 16, 1992.

NA – no recommended objective available, no HQ calculated.

mg/kg – milligrams per kilogram
µg/kg – micrograms per kilogram

TABLE 3
SUMMARY OF LABORATORY ANALYTICAL RESULTS
GROUNDWATER – DOMESTIC WELLS

SHERIDAN WASTE OIL CO. SITE
MEDFORD, NEW YORK

COMPOUND	DW-1D (1) 75 -90' bgs	DW-1 (1) 75 -90' bgs	DW-2 (2) 90' bgs	DW-3 (3) 80' bgs	DW-4 (4) not known
VOLATILE ORGANICS (µg/L)					
Tetrachloroethene	4.0	3.2	--	--	--
Trichloroethene	--	0.6	--	--	--
SEMIVOLATILE ORGANICS (µg/L)					
2,4-Dinitrotoluene	--	--	--	1 JJ	--
4-Chloro-3-Methylphenol	--	--	--	1 JJ	--
4-Nitrophenol	--	--	--	2 JJ	--
Acenaphthene	--	--	--	1 JJ	--
Pentachlorophenol	--	--	--	2 JJ	--
Pyrene	--	--	--	1 JJ	--
PESTICIDES/PCBs (µg/L)					
	NA	NA	NA	NA	NA
METALS (µg/L)					
Barium	104 []	103 []	18.8 []	17.7 []	40.7 []
Calcium	7670	7560	6930	2770 []	15300
Copper	16.6 []	16.8 []	53.4	28.2	79.4
Iron	1730	1530	221	61.9 []	53.6 []
Lead	--	--	--	--	3.2
Magnesium	2820 []	2740 []	3740 []	1800 []	6840
Potassium	3720 []	4290 []	--	1240 []	1910 []
Sodium	14000	13900	13600	17700	23200
Zinc	1440 J	1320 J	--	712 J	--

NOTES:

µg/L – micrograms per liter

bgs – Below Ground Surface

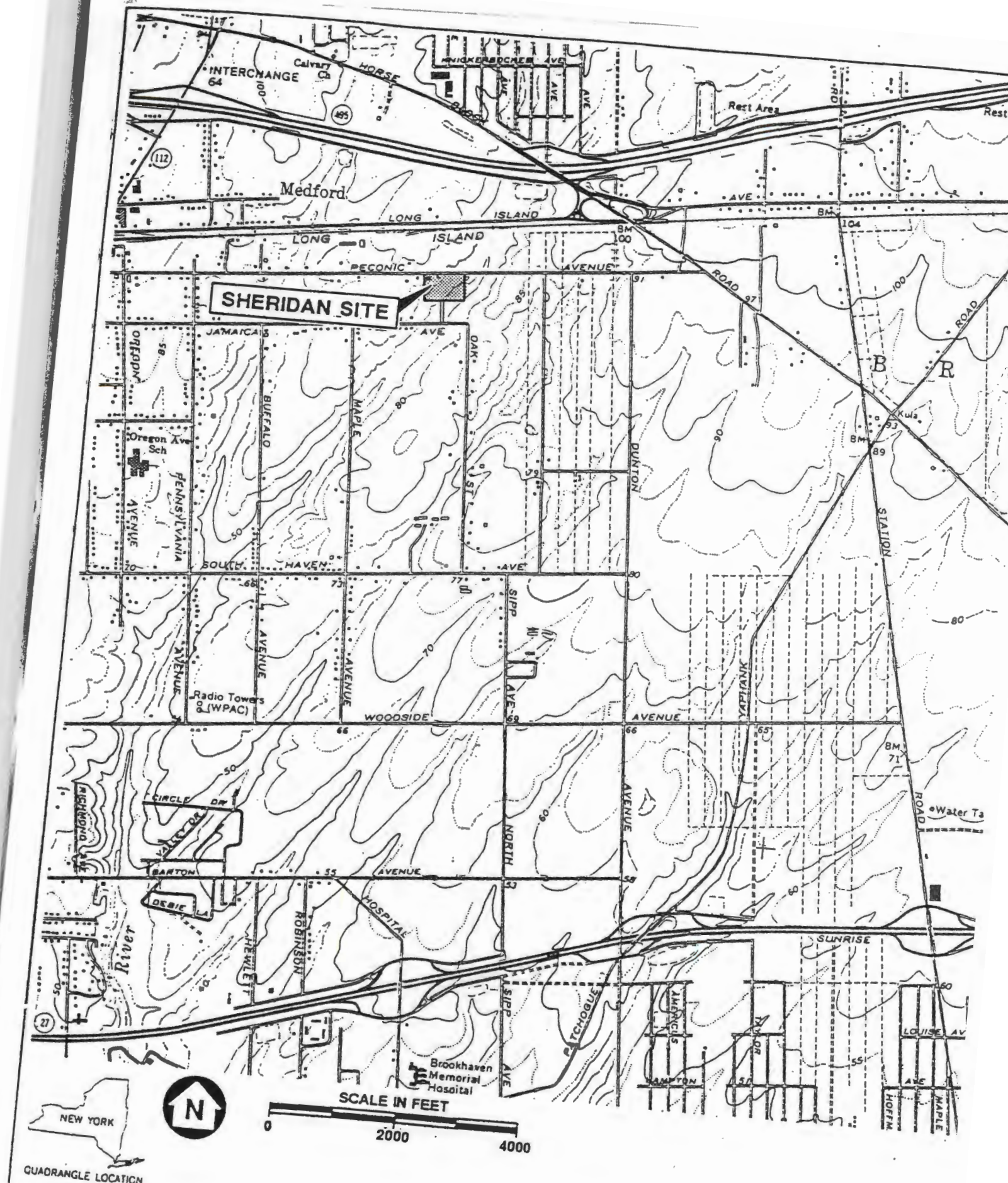
-- – Not detected.

J – Estimated value

JJ – Estimated value below the Contract Required Quantitation Limit

[] – Estimated value below the Contract Required Detection Limit

NA – Not analyzed



SOURCE: U.S.G.S. MAP BELLPORT, N.Y. DATED 1967

FIGURE 1
SITE LOCATION MAP
SHERIDAN WASTE OIL CO. SITE
ABB Environmental Services

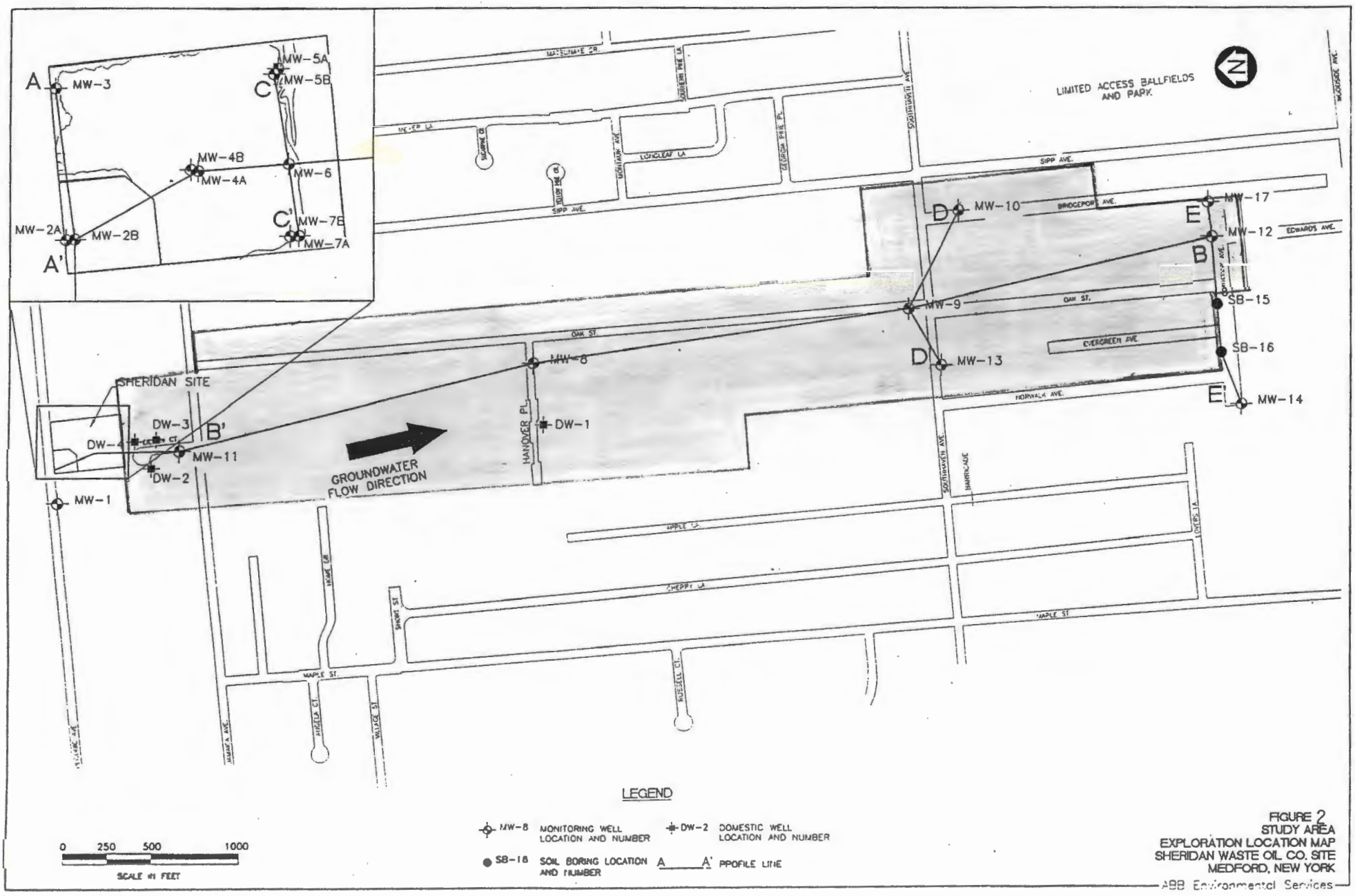
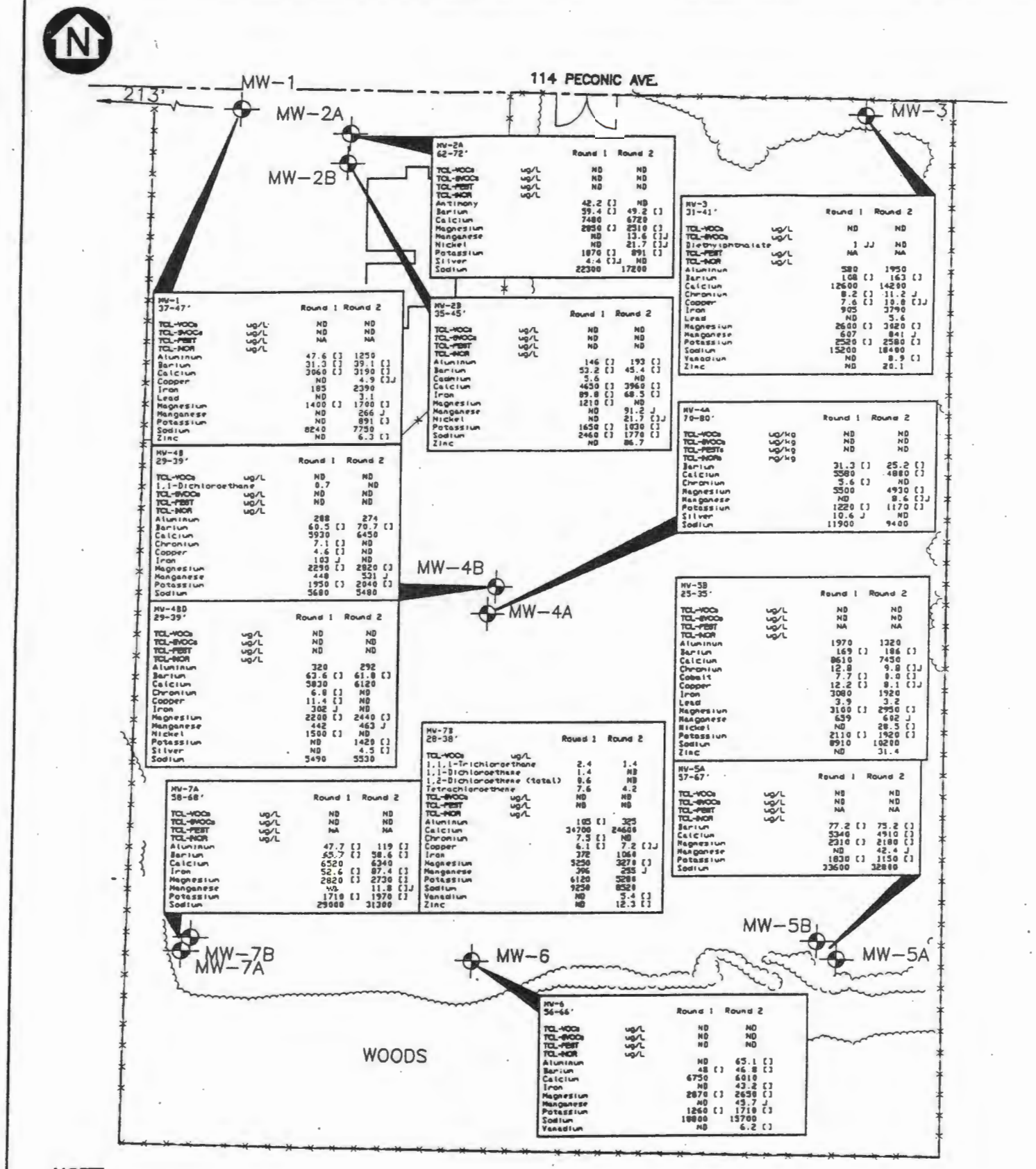


FIGURE 2
STUDY AREA
EXPLORATION LOCATION MAP
SHERIDAN WASTE OIL CO. SITE
MEDFORD, NEW YORK

ABB Environmental Services



NOTE

ALL DATA QUALIFIERS AND ABBREVIATIONS ARE DEFINED IN TABLE 3-10.

LEGEND

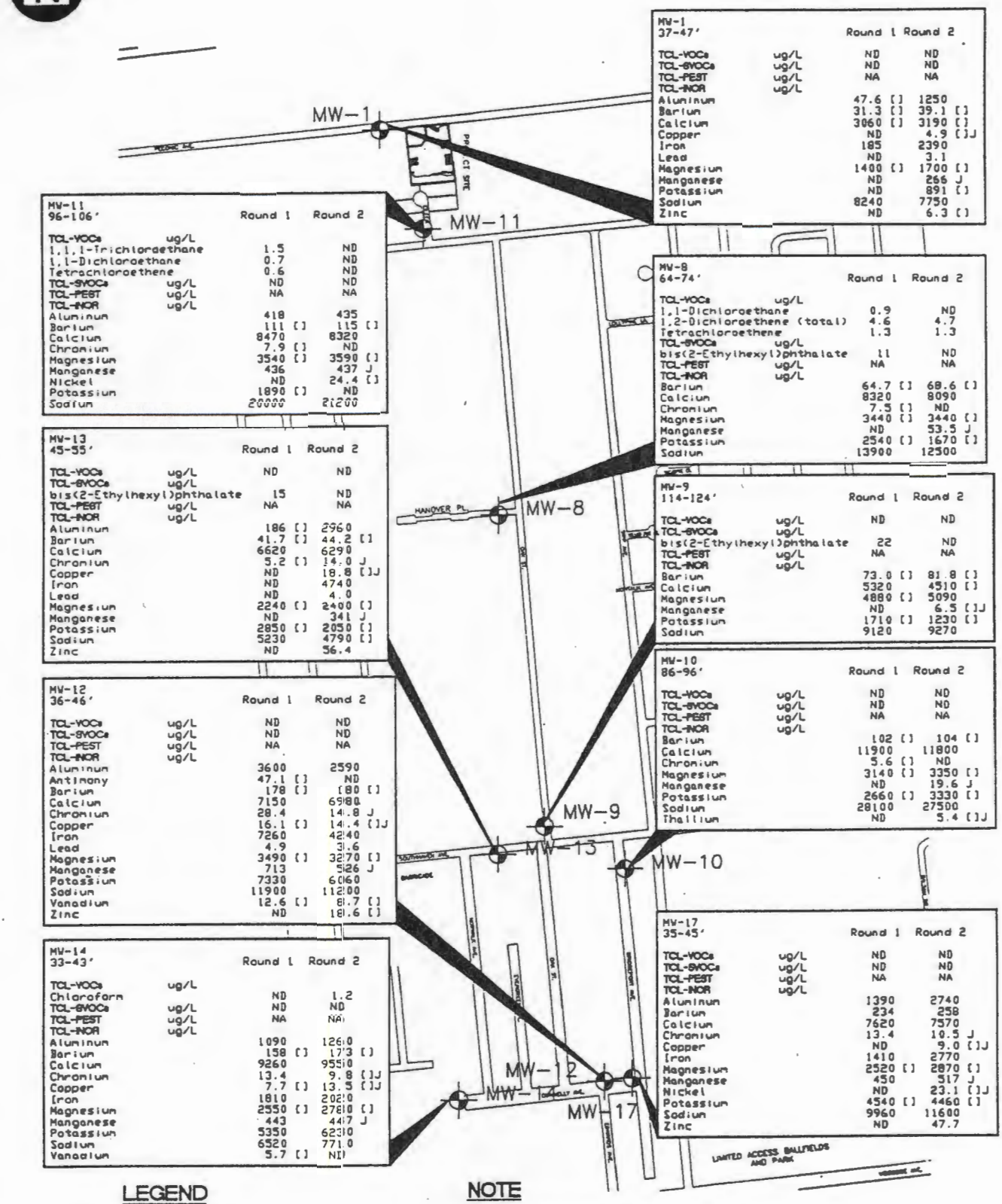
MW-6 MONITORING WELL

0 25 50 100

SCALE IN FEET

FIGURE 3
ON-SITE GROUNDWATER ANALYTICAL RESULTS
SHERIDAN WASTE OIL CO. SITE
MEDFORD, NEW YORK

ABB Environmental Services



MW-1
37-47'

		Round 1	Round 2
TCL-VOCs	ug/L	ND	ND
TCL-SVOCs	ug/L	ND	ND
TCL-PEST	ug/L	NA	NA
TCL-INOR	ug/L		
Aluminum		47.6 []	1250
Barium		31.3 []	39.1 []
Calcium		3060 []	3190 []
Copper		ND	4.9 [] J
Iron		185	2390
Lead		ND	3.1
Magnesium		1400 []	1700 []
Manganese		ND	266 J
Potassium		ND	891 []
Sodium		8240	7750
Zinc		ND	6.3 []

MW-11
96-106'

		Round 1	Round 2
TCL-VOCs	ug/L		
1,1,1-Trichloroethane		1.5	ND
1,1-Dichloroethane		0.7	ND
Tetrachloroethene		0.6	ND
TCL-SVOCs	ug/L	ND	ND
TCL-PEST	ug/L	NA	NA
TCL-INOR	ug/L		
Aluminum		418	435
Barium		111 []	115 []
Calcium		8470	8320
Chromium		7.9 []	ND
Magnesium		3540 []	3590 []
Manganese		436	437 J
Nickel		ND	24.4 []
Potassium		1890 []	ND
Sodium		20000	21200

MW-8
64-74'

		Round 1	Round 2
TCL-VOCs	ug/L		
1,1-Dichloroethene		0.9	ND
1,2-Dichloroethene (total)		4.6	4.7
Tetrachloroethene		1.3	1.3
TCL-SVOCs	ug/L		
bis(2-Ethylhexyl)phthalate		11	ND
TCL-PEST	ug/L	NA	NA
TCL-INOR	ug/L		
Barium		64.7 []	68.6 []
Calcium		8320	8090
Chromium		7.5 []	ND
Magnesium		3440 []	3440 []
Manganese		ND	53.5 J
Potassium		2540 []	1670 []
Sodium		13900	12300

MW-13
45-55'

		Round 1	Round 2
TCL-VOCs	ug/L	ND	ND
TCL-SVOCs	ug/L		
bis(2-Ethylhexyl)phthalate		15	ND
TCL-PEST	ug/L	NA	NA
TCL-INOR	ug/L		
Aluminum		186 []	2960
Barium		41.7 []	44.2 []
Calcium		6620	6290
Chromium		5.2 []	14.0 J
Copper		ND	18.8 [] J
Iron		ND	4740
Lead		ND	4.0
Magnesium		2240 []	2400 []
Manganese		ND	341 J
Potassium		2850 []	2050 []
Sodium		5230	4790 []
Zinc		ND	36.4

MW-9
114-124'

		Round 1	Round 2
TCL-VOCs	ug/L	ND	ND
TCL-SVOCs	ug/L		
bis(2-Ethylhexyl)phthalate		22	ND
TCL-PEST	ug/L	NA	NA
TCL-INOR	ug/L		
Barium		73.0 []	81.8 []
Calcium		5320	4510 []
Magnesium		4880 []	5090
Manganese		ND	6.5 [] J
Potassium		1710 []	1230 []
Sodium		9120	9270

MW-12
36-46'

		Round 1	Round 2
TCL-VOCs	ug/L	ND	ND
TCL-SVOCs	ug/L	ND	ND
TCL-PEST	ug/L	NA	NA
TCL-INOR	ug/L		
Aluminum		3600	2590
Antimony		47.1 []	ND
Barium		178 []	180 []
Calcium		7150	6980
Chromium		28.4	14.8 J
Copper		16.1 []	14.4 [] J
Iron		7260	4240
Lead		4.9	3.6
Magnesium		3490 []	3270 []
Manganese		713	526 J
Potassium		7330	6060
Sodium		11900	11200
Vanadium		12.6 []	8.7 []
Zinc		ND	18.6 []

MW-10
86-96'

		Round 1	Round 2
TCL-VOCs	ug/L	ND	ND
TCL-SVOCs	ug/L	ND	ND
TCL-PEST	ug/L	NA	NA
TCL-INOR	ug/L		
Barium		102 []	104 []
Calcium		11900	11800
Chromium		5.6 []	ND
Magnesium		3140 []	3350 []
Manganese		ND	19.6 J
Potassium		2660 []	3330 []
Sodium		28100	27500
Thallium		ND	5.4 [] J

MW-14
33-43'

		Round 1	Round 2
TCL-VOCs	ug/L		
Chloroform		ND	1.2
TCL-SVOCs	ug/L	ND	ND
TCL-PEST	ug/L	NA	NA
TCL-INOR	ug/L		
Aluminum		1090	1260
Barium		158 []	173 []
Calcium		9260	9550
Chromium		13.4	9.8 [] J
Copper		7.7 []	13.5 [] J
Iron		1810	2020
Magnesium		2550 []	2780 []
Manganese		443	447 J
Potassium		5350	6230
Sodium		6520	7710
Vanadium		5.7 []	ND

MW-17
35-45'

		Round 1	Round 2
TCL-VOCs	ug/L	ND	ND
TCL-SVOCs	ug/L	ND	ND
TCL-PEST	ug/L	NA	NA
TCL-INOR	ug/L		
Aluminum		1390	2740
Barium		234	258
Calcium		7620	7570
Chromium		13.4	10.5 J
Copper		ND	9.0 [] J
Iron		1410	2770
Magnesium		2520 []	2870 []
Manganese		450	517 J
Nickel		ND	23.1 [] J
Potassium		4540 []	4460 []
Sodium		9960	11600
Zinc		ND	47.7

LEGEND

MONITORING WELL

NOTE

ALL DATA QUALIFIERS AND ABBREVIATIONS ARE DEFINED IN TABLE 3-10.

0 500 1000 2000

SCALE IN FEET

FIGURE 4
OFF-SITE GROUNDWATER ANALYTICAL RESULTS
SHERIDAN WASTE OIL CO. SITE
MEDFORD, NEW YORK

ABB Environmental Services

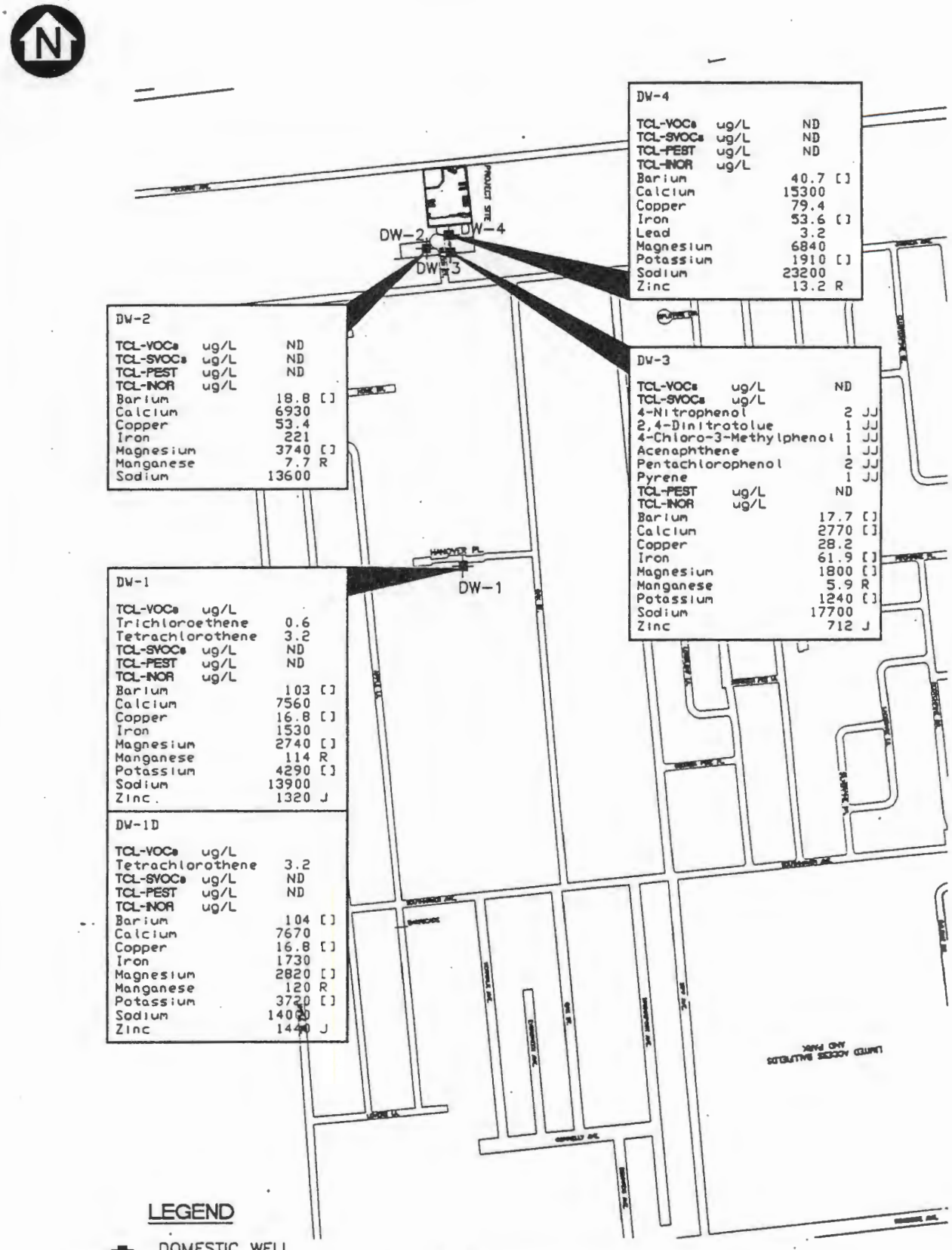


FIGURE 5
DOMESTIC WELL
ANALYTICAL RESULTS
SHERIDAN WASTE OIL CO. SITE
MEDFORD, NEW YORK

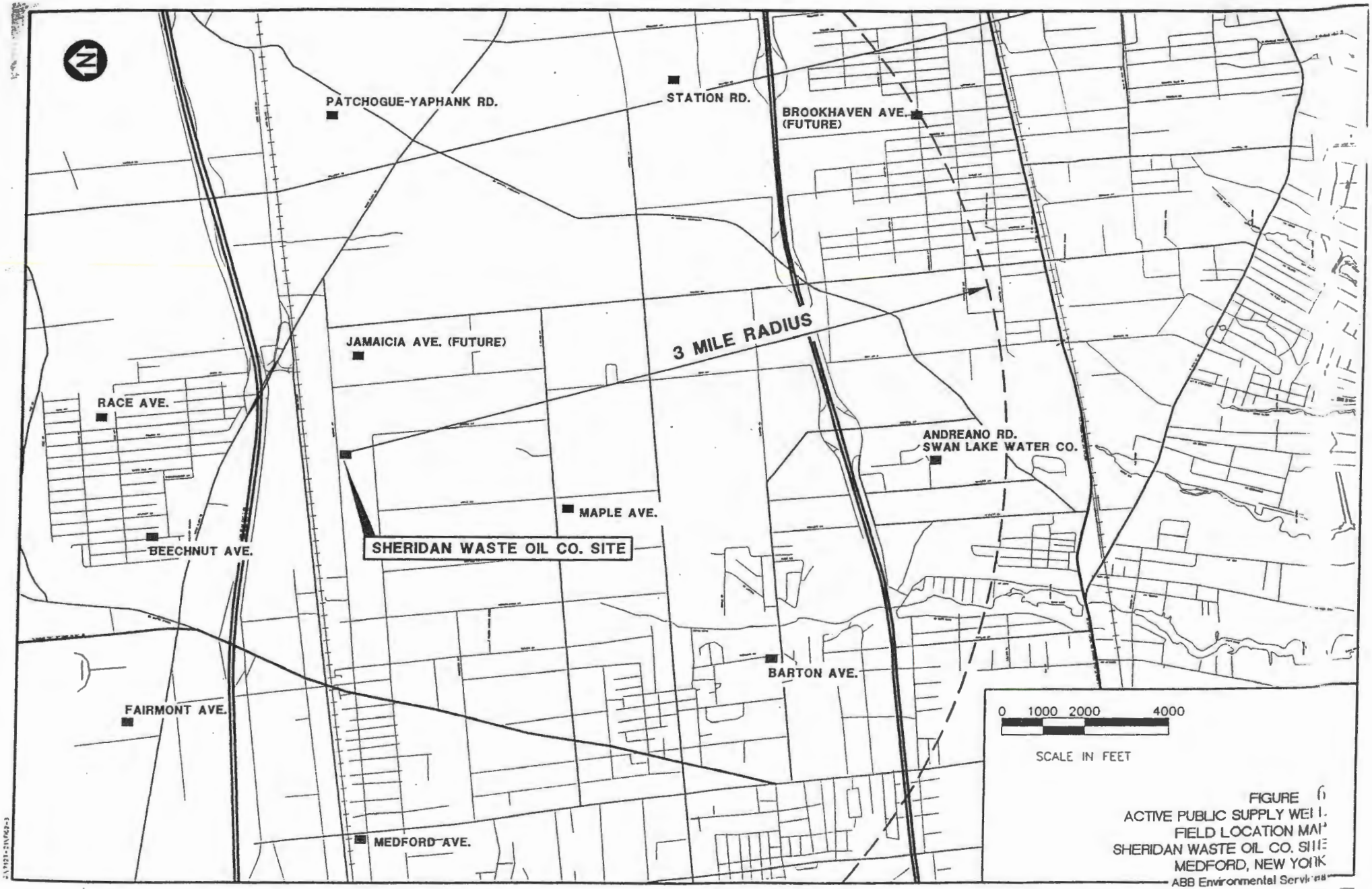


FIGURE 6
ACTIVE PUBLIC SUPPLY WELL
FIELD LOCATION MAP
SHERIDAN WASTE OIL CO. SITE
MEDFORD, NEW YORK
ABB Environmental Services