Booth Oil
Site #932100
Record of Decision

932100

Department of Environmental Conservation

Division of Environmental Remediation

Amended Record of Decision

Booth Oil Site

Operable Units No. 1 and No. 2

North Tonawanda, Niagara County

Site Number 9-32-100

August 2002

New York State Department of Environmental Conservation

GEORGE E. PATAKI, *Governor* Erin M. Crotty, *Commissioner*

DECLARATION STATEMENT - AMENDED RECORD OF DECISION

Booth Oil Inactive Hazardous Waste Site
Operable Unit Numbers 1 & 2
North Tonawanda, Niagara County, New York
Site No. 9-32-100

Statement of Purpose and Basis

The Amended Record of Decision (ROD) presents the selected remedy for the Booth Oil Class 2 inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law. The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Booth Oil inactive hazardous waste site and upon public input to the Proposed Amended Record of Decision presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the Amended ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this Amended ROD, presents a current or potential significant threat to public health and the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Booth Oil site and the criteria identified for evaluation of alternatives, the NYSDEC has selected excavation with off-site disposal. The components of the remedy are as follows:

- contaminated soil will be excavated down to the naturally occurring clay layer underlying the site;
- storm sewer sediment will be removed from the Robinson Street storm sewer and its catch basins;
- contaminated sediments in the Little River will be excavated and disposed of with the site soils;
- water produced during dewatering of excavations will be treated onsite prior to discharge;
- all contaminated soils and sediments removed during remediation will be disposed of off-site in a permitted disposal facility;
- excavations will be backfilled and graded with clean fill; and
- deed restrictions and a long-term monitoring program will be established to address any residual contamination.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

9-9-02
Date

Dale A. Desnoyers, Acting Director
Division of Environmental Remediation

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SECTION 1: INTRODUCTION

In March of 1992, the New York State Department of Environmental Conservation (NYSDEC) signed a Record of Decision (ROD) for Operable Unit No. 1 at the Booth Oil inactive hazardous waste disposal site. The ROD selected a remedy to address on-site soil, perched groundwater, non-aqueous phase liquids (NAPL), and sediment in the Robinson Street storm sewer. The ROD called for on-site treatment of soils and sediments. A second ROD was signed in March 1993. The ROD for Operable Unit No. 2 (OU-2) addressed contaminated sediment within a portion of the Little River. The 1993 ROD called for removal of sediment from the Little River followed by on-site treatment. The contaminated sediment would be addressed in conjunction with on-site soils and storm sewer sediments generated during the OU-1 remediation.

Since the RODs were signed, the Potentially Responsible Parties (PRP) have organized as the Booth Oil Site Administrative Group (BOSAG). In February 1998, the PRP group submitted a document entitled "Proposed Excavation and Treatment/Disposal Remedial Strategy". This document proposed excavation of contaminated soils and sediments and off-site disposal. The conceptual remedial approach described in this document was the product of post-ROD studies and negotiations between BOSAG and NYSDEC. In a letter dated June 29, 1998, NYSDEC acknowledged that this conceptual remedial approach should allow for the development of a remedial design that would meet the goals intended in the previously issued RODs.

The decision to consider a change from the previously selected remedies to Excavation and Disposal of Contaminated Media, which was evaluated by the earlier Feasibility Study and ROD, represents a fundamental change. The Department is therefore selecting this amendment to the previously issued RODs. The Department believes that the overall protectiveness of public health and the environment provided by the amended remedy would be equivalent to that provided by the original remedies.

The NYSDEC has issued this Amended Record of Decision as a component of the citizen participation plan developed pursuant to the New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in greater detail in the March 1992 ROD, the March 1993 ROD, and the other reports and documents available at the document repositories.

To better understand the site and the investigations conducted, the public is encouraged to review the project documents at the document repositories.

SECTION 2: SUMMARY OF THE AMENDED RECORD OF DECISION

The NYSDEC in consultation with the New York State Department of Health, has selected this remedy to address the significant threat to human health and/or the environment created by the presence of hazardous waste at the Booth Oil class 2 (Operable Units 1 & 2), inactive hazardous waste disposal site. As more fully described in Sections 3 and 4 of this document, frequent spills and poor housekeeping have resulted in the disposal of a number of hazardous wastes, including polychlorinated biphenyls (PCBs) and lead, at the site. Some of these contaminants were released to, or have migrated from the site to surrounding areas, including the Robinson Street storm sewer and the Little River. These disposal activities have resulted in the following significant threats to public health and/or the environment:

- A significant threat to human health associated with PCB and lead contaminated surface soil.
- A significant environmental threat associated with the impacts of contaminants to the Little River branch of the Niagara River.

In order to restore the Booth Oil inactive hazardous waste disposal site to pre-disposal conditions to the extent feasible and authorized by law, but at a minimum to eliminate or mitigate the significant threats to the public health and/or the environment that the hazardous waste disposed at the site has caused, the following remedy was selected:

- Excavation and off-site disposal of contaminated site soil;
- Excavation and off-site disposal of contaminated sediment from the Little River;
- Removal and off-site disposal of contaminated sediment from the Robinson Street storm sewer.

The selected remedy, discussed in detail in Section 8 of this document, is intended to attain the remediation goals selected for this site, in Section 6 of this Amended ROD, in conformity with applicable standards, criteria, and guidance (SCGs).

SECTION 3: SITE LOCATION AND DESCRIPTION

The Booth Oil site is located at 76 Robinson Street in the City of North Tonawanda, Niagara County (Figure 1). Residential areas border the site to the east and north, while commercial and industrial areas are located to the west and south. The site occupies approximately 2.7 acres on three parcels of land, each separated by railroad tracks operated by CSX Transportation Corporation, Inc. (CSXT) and owned by New York Central, LLC (NYC), an affiliate of CSXT. The Booth Oil Company, Inc. (formerly George T. Booth and Son, Inc.) is the property holder of record for most of the eastern parcel of the site. The remainder of the site is owned by NYC and was previously leased to George T. Booth and Son, Inc.

The site is currently crossed by active rail tracks and is covered with soil, ballast, concrete building foundations and sparse vegetation (Figure 2). The western side of the site is bordered by two sets of railroad tracks. These western tracks constitute the Niagara Branch main line and are reportedly the only connection to Canada along this corridor for commuter and freight train traffic.

The remainder of the site is crisscrossed by four freight train tracks. These tracks serve local CSXT customers. Two underground telephone fiber optic lines traverse the site from north to south.

SECTION 4: SITE HISTORY AND CONTAMINATION

4.1: Site History

Waste oils were refined at the Booth Oil site for more than 50 years, until a phased plant closure in the early 1980's. During operation, waste oils were transported to the plant either by tanker truck or rail car. The oil was off-loaded into numerous aboveground and underground tanks throughout the facility until processing of the oil was completed. In addition to the tank facilities, two surface impoundments (man-made ponds) with a total surface area of about one half acre were used to store and treat waste oils on the eastern parcel.

Initial processing of the waste oils consisted of oil/water separation by centrifugation with the resulting sludge being sold for use as road oil. After centrifugation, the concentrate was refined by high temperature distillation, cooling, sulfuric acid cracking and clay contacting. The acid tar residues were transported off-site for landfilling. During plant operation, frequent spills occurred and numerous complaints were made regarding objectionable odors at the site. Oil was also periodically discharged to the Niagara River via surface water run-off through the Robinson Street storm sewer.

Processing of waste oils ceased in the early 1980's when the phased site closure was initiated. Removal of oil sludges and tanks commenced during 1987 and was terminated by the end of 1987 with the removal of the last aboveground storage tank. Other closure activities included the installation of two groundwater draw down wells by Booth Oil to remove a layer of oil floating on the groundwater. Drains were also installed along the railroad tracks to collect surface run-off. The surface impoundments were drained, filled, and the entire eastern parcel covered with clean soil in 1988.

The following is a brief chronology of events from the late 1970's to late 1980's.

September 1978 - The NYSDEC investigated sources of waste oil collected by Booth Oil and concluded that the company had been receiving significant quantities of PCB-contaminated oil.

October 1978 - A Niagara County Health Department (NCHD) inspection report indicated that an oil slick in the Niagara River, identified by the U.S. Coast Guard, was the result of Booth Oil discharges to the storm sewer adjacent to the site.

December 1978 - Sampling performed by NCHD revealed the presence of PCBs at a concentration of 50 parts per million (ppm) in an oil sample collected from the lagoon at the Booth Oil site.

November 1981 - A final closure plan was prepared by Waste Resource Associates, Inc. on behalf of the Booth Oil Company for full site closure. The plan indicated that the lagoon would be backfilled with gravel.

June 1987 - Analysis of a spill sample taken from the Robinson Street storm sewer indicated that this material was ignitable, contained lead at 37.1 ppm, and also contained PCBs. Analysis demonstrated levels of Aroclor 1254 at 113 ppm and Aroclor 1242 at 226 ppm. Although it was determined that the spill originated from the Booth Oil property, the exact source could not be identified.

In 1990, to address contamination remaining at the site, the NYSDEC initiated a Remedial Investigation/Feasibility Study (RI/FS) under the State Superfund Program. The RI was designed to define the nature and extent of any contamination resulting from the previous activities at the site and was implemented in two phases. The first phase was conducted in May through August and the second in November and December, 1990.

4.2: Site Geology and Hydrogeology:

In general, local geology consists of unconsolidated deposits of clay, sand and till. These overburden deposits overlie Camillus Shale bedrock. The unconsolidated deposits consist of Holocene lacustrine material comprised primarily of clay with veins of sand and silt. Most veins are less than 3 inches thick and are discontinuous throughout the area. Depending upon the depth to bedrock, the unconsolidated deposits range in thickness from approximately 18 to 63 feet.

Two distinct aquifers were identified: an overburden aquifer, located approximately from four to ten feet below ground surface, and a shallow bedrock aquifer. Water within the bedrock aquifer flows through joints and fractures within the unit. Regionally, this groundwater moves in a westerly and southerly direction. Groundwater in the shallow bedrock discharges into Tonawanda Creek, Ellicott Creek and the Niagara River. Reports indicate that industrial wells in the bedrock aquifer can yield up to 1,200 gallons per minute. Groundwater in the unconsolidated deposits is found within the clay units and also in the veins of permeable sand. The low vertical permeability of the unconsolidated deposits, which have been reported in the range of 1×10^{-6} to 1×10^{-8} centimeters per second (cm/sec), causes a seasonally perched water table. Shelby tube samples, collected as part of the RI, confirm an average hydraulic conductivity of 5.3×10^{-8} cm/sec within the clay unit. It is believed that the horizontal permeability in this area is orders of magnitude greater than the vertical permeability. Thus, groundwater discharges in the areas of low topography and, eventually, into nearby surface water bodies.

Soil borings installed at and immediately adjacent to the site revealed that the property is underlain with cinder/gravel slag to a depth of approximately 3 feet below ground surface. The cinder/gravel slag layer is discontinuous throughout the site. Beneath the slag is approximately 2 feet of sand and gravel with some silt, followed by a layer of silty clay. The water table at the site ranges from approximately 2 to 6 feet below the ground surface, although some borings drilled on-site did not encounter groundwater until depths in excess of 10 feet. These findings support that the groundwater overlying the clay on-site is in a localized perched condition.

4.3: Nature of Contamination:

As described in the RI Report, soil gas, soil, groundwater and river sediment samples were collected at the site to characterize the nature and extent of contamination. The categories of compounds determined to be present in significant concentrations include volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), semivolatile organic compounds (SVOCs), PCBs and lead. Waste at the site is frequently found in the form of a non-aqueous phase liquid (NAPL).

4.4: Extent of Contamination:

Surface Soil

Although portions of the site have been re-graded with clean fill, investigations revealed significant areas of surface soil with contaminant levels above remediation guidelines. Many surface soil samples obtained from the western portion of the site were found to be contaminated with volatile and semivolatile organic compounds. SVOCs were found to be more widespread in surface soils than VOC compounds. PCBs were found at elevated concentrations in samples collected from both the western parcel and the eastern parcel, in close proximity to the railroad tracks. The most significant concentrations of PCBs were detected in the south central portion of the site. The PCB contamination in surface soil was at a maximum of 110 ppm (ref. Table 1). Lead was detected in surface soils at a maximum of about 2280 ppm.

Subsurface Soil

VOCs were detected to a much greater extent in subsurface soil. Areas of the site with elevated concentrations of VOCs, SVOCs, PCBs and lead are located at the northwest portion of the site (the former location of a number of underground storage tanks), the southwestern area of the site (the location of a high temperature distillation facility and storage tanks), and in the vicinity of the former waste lagoons. The highest levels of VOCs were found in a subsurface soil sample collected in the south-central portion of the site. Additional samples taken from 2 feet and 4 feet into the underlying clay layer indicated the contaminants have not appreciably migrated into the clay and that the clay effectively acts as a vertical barrier to contaminant migration. PCBs and lead were detected at 83 ppm and 27,700 ppm, respectively.

Groundwater

VOCs and SVOCs were detected above NYSDEC Class GA groundwater standards/guidance values in each of the groundwater samples obtained from the on-site monitoring wells, screened in the overburden aquifer, installed as part of the remedial investigation. The highest total concentration exceeding standards/guidance values was found in a monitoring well located in the west-central area of the site. In general, the concentrations of VOCs are highest at the location of the highest groundwater elevation at the site and decrease in a downgradient direction. VOC concentrations are lowest along the easternmost boundary of the site and off-site, adjacent to the western boundary of the site. There is a significant variation in the levels of contamination observed in on-site groundwater wells. This is attributed to the stagnant nature of the perched groundwater underlying the site. The distribution of total SVOCs exceeding NYSDEC Class GA groundwater

standards/guidance values is similar to the distribution of VOCs. PCBs were detected in groundwater samples collected from monitoring wells throughout the site. Concentrations of PCBs were generally two orders of magnitude higher in monitoring wells in the south-central area of the site, which were also found to contain NAPL. Vinyl chloride and lead were detected at 120 ppm and 750 ppb, respectively.

Storm Sewer

Sediment and water samples were collected from the Robinson Street storm water catch basins and manholes located immediately adjacent to the site. VOCs, SVOCs, PCBs and lead were detected in these samples. Based on these samples, sediment removal from the portion of the Robinson Street storm sewer located downgradient of the site was included in the OU-1 ROD.

River Sediment

Sediment samples obtained from the Little River, in the immediate vicinity of the sewer outfall, exhibit the same type of PCBs found both in the sewer system and on the Booth Oil site. Therefore, the storm sewer is a pathway for site contaminants to migrate to the Little River.

Sediment samples were collected from the Little River near the Robinson Street sewer outfall and both upstream and downstream of this outfall. This data showed PCB concentrations in the range of 0.23 to 6.3 ppm immediately adjacent to the outfall. Downstream sediment PCB concentrations ranged from non-detect to 0.46 ppm, while upstream sediments showed PCB concentrations ranging from 0.62 to 3.5 ppm. Aroclor 1248 and 1260 (the aroclors associated with the Booth Oil site) were not identified in the upstream or downstream sediment sample locations. Therefore, the PCBs in upstream and downstream sediments are not believed to be attributable to discharges from the Robinson Street sewer outfall.

SECTION 5: DESIGN RELATED ACTIVITIES

In 1998, BOSAG conducted a pre-design study which included evaluation of potential construction-related air emissions; construction liquids treatment and discharge requirements; and disposal and treatment technology evaluation.

The pre-design study involved excavation of test pits to simulate the excavation component of the remedial action. During the pre-design study, both real-time air monitoring and laboratory sampling was performed in the work zone and along the perimeter of the work zone. Also, to address the potential occurrence of nuisance odors, two odor suppression technologies, an odor suppressant foam and dispersant neutralization agent, were evaluated.

As part of the pre-design work, construction liquids were extracted from the test pits and conveyed to an on-site temporary storage tank. The inflow of construction liquids to the test pits was monitored. Following extraction of the construction liquids to the storage tank, the construction liquids were allowed to separate into phases, then samples were collected from each phase for analysis. The results of the laboratory analysis were used to determine treatment and discharge requirements.

Three composite soil samples were collected during the pre-design study for laboratory analysis. These samples were used to represent the three varying degrees of visually impacted soils at the site: trace NAPL; NAPL present; and NAPL saturated. The samples were analyzed for parameters that allowed for an evaluation of landfill disposal in lieu of on-site treatment.

In order to confirm the proposed limits of the sediment removal area, in June 2002 BOSAG conducted a sediment sampling and inspection program. Nine sediment cores were collected from a work boat at the proposed limits of the removal area. This program confirmed that the limits depicted on Figure 4 are appropriate.

SECTION 6: SUMMARY OF NEW INFORMATION

Based on the information gathered during the pre-design studies, off-site disposal emerged as a more practical alternative than on-site treatment. Off-site disposal was evaluated in the original OU-1 ROD and deemed to be a viable alternative. Findings from the pre-design program support that short term impacts could be better managed with off-site disposal in light of the shorter project duration. Also, lead contaminated residue would not remain on-site as it would with the original remedy. Further, the Remedial Action Objectives would be achieved under the off-site disposal option.

The Remedial Action Objectives for the Site, as stated in the OU-1 and OU-2 RODs, include the following:

- Reduce constituent concentrations present in Site soils to eliminate potential risks to human health and the environment and to reduce the potential for off-site migration;
- Remove impacted sediments from the Robinson Street storm sewer system to eliminate additional contaminant migration to the Little River;
- Remove impacted groundwater and the oil layer to eliminate the potential for off-site migration of constituents of concern; and
- Reduce further migration of constituents, and fish and wildlife contact with impacted sediments.

SECTION 7: CHANGES TO THE SELECTED REMEDY

7.1: Summary of the ROD Selected Remedies

The remedy selected by the March 1992 ROD included the following components:

- On-site treatment of the contaminated soils by separation technologies or incineration. The contaminated soils separated from the wastes will be incinerated off-site. Solid residuals will be stabilized if necessary to immobilize heavy metals such as lead and backfilled on-site. A protective soil cover would be placed over the backfilled soils if necessary to prevent contact with elevated heavy metal concentrations;

- Extraction and on-site pretreatment of the contaminated groundwater encountered during excavation, with discharge to the sanitary sewer for final treatment at the North Tonawanda Publicly Owned Treatment Works (POTW). If the POTW is not available at the time the remedy is implemented, a standard physical/chemical wastewater treatment plant would be operated at the site. All residuals and discharges associated with wastewater treatment will be managed under applicable permits;

- The storm sewer system along Robinson Street will be cleaned, and the sediments treated on-site; and

- The nature and extent of contaminated sediments in the Little River, resulting from contaminated storm water discharge, will be defined in consideration of additional remedial measures under a separate operable unit.

The remedy selected by the March 1993 ROD included the following components:

- Excavation of contaminated Little River sediment using a cofferdam. Alternative methods of excavation such as dredging may be evaluated during the design;

- On-site treatment of excavated sediment, along with the on-site soils and sewer sediments (i.e., the OU-1 media); and

- This remedy will be performed in conjunction with the on-site remediation and storm sewer cleaning. The remedy will be sequenced such that all known sources of contamination at the Booth Oil site will be addressed prior to the sediment treatment.

7.2: Changes to the Original Remedy

Based upon the new information available for the site and a re-evaluation of viable alternatives, it has been deemed appropriate that the remedies selected by the March 1992 and the March 1993 RODs be amended to require the excavation and off-site disposal of all excavated soils and sediments. Although many of the components of the previously selected RODs would remain unchanged, contaminated soil and sediments would be disposed of off-site rather than be subject to on-site treatment. Also, the remedial goals that were established in the original OU-1 ROD for on-site soil would be modified to reflect more recent NYSDEC guidance, per an August 1995 letter from NYSDEC to BOSAG. The remedial goals for total VOCs (10 ppm), total SVOCs (500 ppm), and PCBs (1 ppm for surface soil and 10 ppm for subsurface soil) would be made consistent with the more recent soil cleanup objectives given in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046, Determination of Soil Cleanup Objectives and Cleanup Levels (January 24, 1994). The cleanup goals of 500 ppm for lead and 100 ppm total polycyclic aromatic hydrocarbons (PAHs) would remain unchanged from the original OU-1 ROD.

7.3: Evaluation of the Changes

As required, the proposed changes to the March 1992 ROD and March 1993 ROD have been evaluated against the criteria used to assess remedial actions. The proposed changes have been compared to the original remedy. The results of the evaluation are presented below:

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1 Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

The SCGs of concern in this instance are the contravention of the groundwater standards (6NYCRR 700-705) and the NYSDEC TAGM 4046

Under the amended remedy, soils would be managed consistent with Federal requirements for PCBs under 40CFR761.61. Analytical testing during the pre-design indicated that some portion of the soil may contain PCBs at concentrations greater than 50 ppm. These would be managed and disposed as TSCA waste. (TSCA - The Toxic Substances Control Act authorizes EPA to secure information on all new and existing chemical substances and to control any of these substances determined to cause an unreasonable risk to public health or the environment.) Soils analyzed did not exhibit RCRA (RCRA - The Resource Conservation and Recovery Act is a federal law that regulates the transfer, storage and disposal of solid and hazardous waste) characteristics, however, in the event that some soil is determined to exhibit a hazardous characteristic, the soil would be disposed/treated in accordance with applicable rules and regulations.

Both the previously selected remedies and the proposed amended alternative would meet SCGs.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Both off-site disposal, and on-site treatment (e.g. low temperature thermal desorption) would be protective of human health and the environment since contaminated soil would be removed from the site or the contaminants of concern would be destroyed. Accordingly, the amended remedial alternative would be as protective of public health and the environment as the original remedy.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

On-site treatment involves substantial excavation and handling of contaminated soils and sediments which would release vapors and odors. Off-site disposal would result in the same significant short-term impacts associated with the excavation, and would also involve impacts resulting from the transportation of large volumes of contaminated soils and sediments. The off-site disposal

alternative, however, would have a shorter duration and produce less noise, thus fewer impacts would be anticipated. Dust and vapors can also be more readily controlled. Therefore, the excavation and off-site disposal alternative can more effectively satisfy this criterion.

4. Long-term Effectiveness and Permanence This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

As both alternatives entail elimination of the wastes, both satisfy this criterion. The amended alternative is as effective in meeting this criterion as the original remedy. Further, the off-site disposal option would remove the lead contamination thus eliminating the possible need for stabilization/immobilization as required by the earlier ROD.

5. Reduction of Toxicity, Mobility or Volume Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

The amended alternative would be slightly less effective at satisfying this criteria than the original remedy. The treatment alternative would entail destruction of the volatile and semivolatile contaminants present thus reducing the toxicity of the waste. The lead contamination would, however, remain. The off-site disposal option eliminates the potential for contaminant migration, but does not reduce toxicity.

6. Implementability The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

Both on-site treatment and off-site disposal would involve excavation of the contaminated soil. Low Temperature Thermal Desorption (LTTD), for example, would require mobilization of a treatment unit to the site. Additionally, qualified personnel would have to oversee the operation of the treatment unit to keep it running efficiently. Further, LTTD entails very stringent monitoring requirements. For the off-site disposal option the contaminated soil would simply be excavated, characterized, and removed from the site. For these reasons the amended alternative can more easily be implemented.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The cost estimates presented below are based on the results of recent requests for bids to implement the original remedy.

The cost from the previously selected RODs have been reviewed and adjusted to reflect available, more recent treatment costs. For estimating purposes on-site thermal desorption was used as the

treatment technology. The original cost estimates for LTTD and off-site disposal were $15.3-$24.3 million and $12 million, respectively. Using more recent data, the cost to implement the previously selected remedy is $8,500,000. The cost to implement the amended remedy is estimated at $6,000,000.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Amended Record of Decision have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Amended Record of Decision have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised. In general the public comments received were supportive of the selected remedy. Several comments were received, however, pertaining to the use of an enclosure during site remedial activities. The use of an enclosure remains as a possible control for dust/odors generated during excavation. The concern was also raised that an additional public meeting was necessary in order to give the public opportunity to comment on the Proposed Amended ROD. To address this concern the comment period was extended to December 10, 2001.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is selecting excavation with off-site disposal.

The estimated present worth cost to implement the remedy is $6,000,000. The cost to construct the remedy is estimated to be $5,500,000 and the estimated average annual operation and maintenance cost for 10 years is $64,750.

The elements of the selected remedy area as follows:

1. Any uncertainties identified during the previous investigations will be resolved.

2. All contaminated site soil including sludge-like soil, NAPL-saturated soil, and soil which exceeds SCGs, will be excavated and removed from the site to the extent practicable. Regular rail traffic on the lines designated Track Nos. 1 and 2 limit the ability to excavate contaminated soil near and beneath these lines. Figure 3 depicts the approximate limits of the excavation.

3. Storm sewer sediment will be removed from the Robinson Street storm sewer and its catch basins and manholes to remove the potential for contaminant migration to Little River.

4. Contaminated sediments in the Little River will be excavated and disposed of with the contaminated soils excavated from the site. Figure 4 depicts the limits of the sediment removal area.

5. Water produced during dewatering of excavations will be treated on-site and discharged to the publicly-owned treatment works (POTW). NAPL encountered during dewatering will be collected and properly disposed of off-site at a permitted facility.

6. All contaminated soils and sediments removed during remediation will be disposed of in a permitted disposal facility.

7. The top 12 inches of soil will be removed from the area of the site, outside of the limits of excavation, associated with past operations. This soil will then be used to backfill the on site excavation. The balance of the excavation will be backfilled and graded with clean fill. Subsequently, the entire area associated with past operations will be covered with a minimum of 12 inches of clean soil.

8. Prior to backfilling, a high density polyethylene liner will be placed on the excavation walls adjacent to Track Nos. 1 and 2. This liner will segregate clean fill from contaminated soils which remain, and serve as a demarcation barrier should it become possible in the future to address any residual contamination beneath the tracks.

9. Institutional controls such as deed restrictions will be put in place to address any residual contamination which remains (e.g. below Track Nos. 1 and 2).

10. A soils management plan will be developed to address residual contaminated soils excavated at the site during future redevelopment. The plan will require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations.

11. A post remedial groundwater monitoring program will be implemented.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established.

- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.

- A fact sheet announcing the pre-design site work was sent to the mailing list in December 1998.

- A fact sheet announcing additional pre-design site work was sent to the mailing list in July 2001.

- A fact sheet announcing the availability of the Proposed Amended Record of Decision was distributed to the site mailing list in September 2001.

- A public meeting to discuss the Proposed Amended Record of Decision was held in October 2001.

- A letter was distributed to the site mailing list in November 2001 informing the public that the comment period for the Proposed Amended Record of Decision had been extended until December 10, 2001.

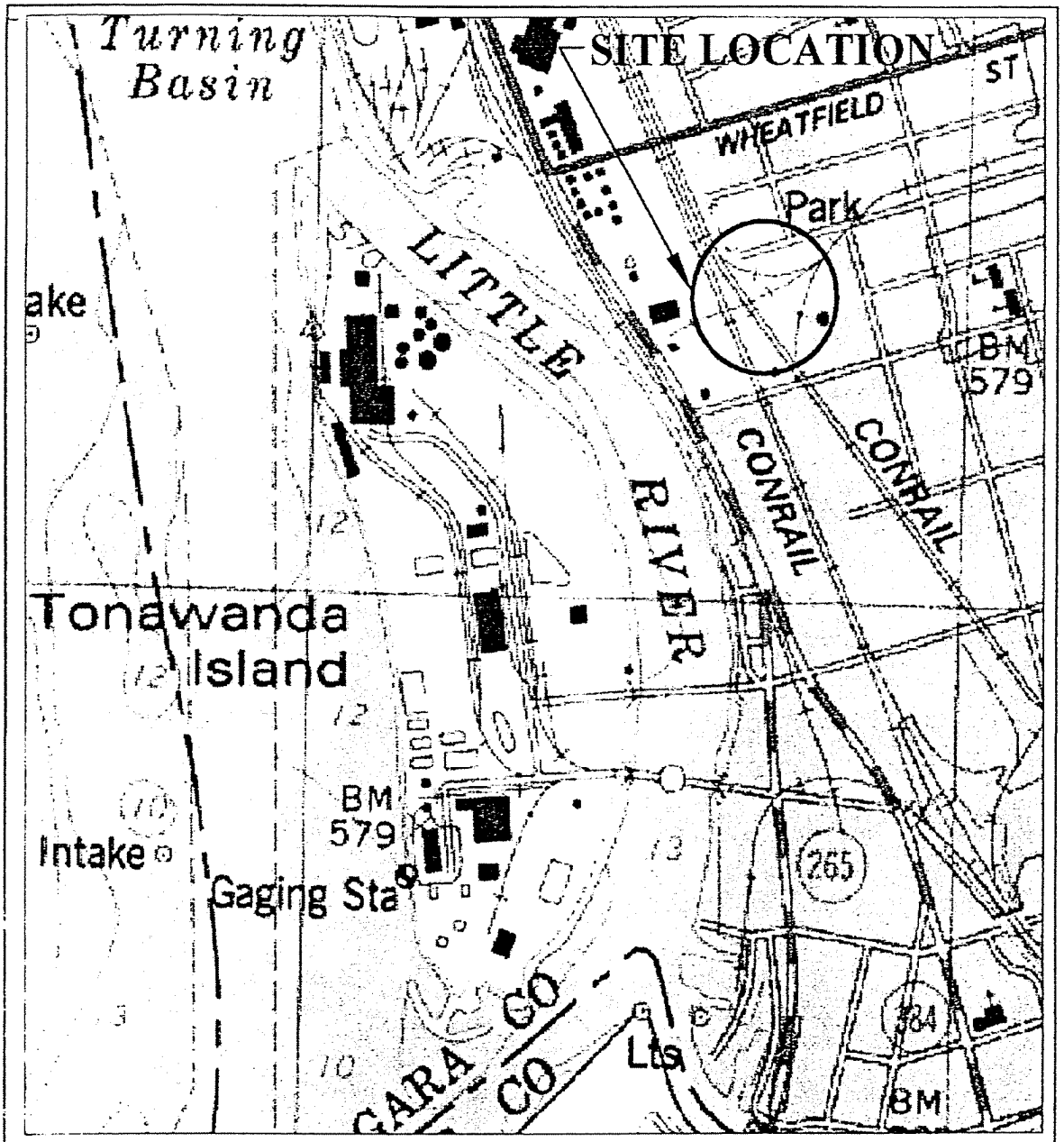
- In July 2002 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period.

TABLE 1
Nature and Extent of Contamination
Surface & Subsurface Soil

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	Number of Samples	Number of Exceedances	Maximum Concentration (ppm)	SCG (ppm)
Surface Soil	Volatile Organic Compounds (VOCS)	Benzene	19	2	7.9	0.06
		2-Butanone	19	2	1.1	0.3
		1,1-Dichloroethane	19	1	0.78	0.2
		1,1-Dichloroethene	19	1	8.6	0.4
		1,2-Dichloroethene	19	1	0.5	0.3
		Methylene Chloride	19	3	5.6	0.1
		Toluene	19	1	19	1.5
		Trichloroethene	19	2	6.9	0.7
		Chlorobenzene	19	1	6.7	1.7
Surface Soil	Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthrecene	22	11	6.5	0.224
		Benzo(b)fluoranthene	22	10	13	1.1
		Benzo(k)fluoranthene	22	2	2.7	1.1
		Benzo(a)pyrene	22	14	5.4	0.061
		Chrysene	22	14	6.7	0.4
		bis(2-Ethylhexyl)phthalate	22	1	84	50
		Indeno(1,2,3-cd)pyrene	22	1	3.3	3.2
		2-Methylphenol	22	1	48	0.1
		4-Methylphenol	22	5	360	0.9
		Phenol	22	3	210	0.03
face Soil	PCBs/Metals	PCB-1242	26	1	19	10
		PCB-1254	26	2	82	10
		PCB-1260	26	2	32	10
		PCB-1248	26	2	110	10
		LEAD	26	5	2280	500
MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	Number of Samples	Number of Exceedances	Maximum Concentration (ppm)	SCG (ppm)
Subsurface Soil	Volatile Organic Compounds (VOCs)	Benzene	18	1	3	0.06
		1,1-Dichloroethane	18	1	15	0.2
		1,2-Dichloroethene	18	5	160	0.1
		Ethylbenzene	18	2	75	5.5
		Methylene Chloride	18	6	6.4	0.1
		Tetrachloroethene	18	2	220	1.4
		Toluene	18	3	300	1.5
		1,1,1-Trichloroethane	18	2	22	0.8
Subsurface Soil	Semivolatile Organic Compounds (SVOCs)	Chrysene	16	9	8.4	0.4
		bis(2-ethylhexyl)phthtalate	16	1	64	50
		2-methylnaphthalene	16	2	190	36.4
		Naphthalene	16	4	89	13
		Phenanthrene	16	2	53	50
		Phenol	16	4	520	0.03
		Pyrene	16	1	20	50
Subsurface Soil	PCBs/Metals	PCB-1254	22	2	39	10
		PCB-1260	22	1	13	10
		PCB-1248	22	3	83	10
		PCB-1242	22	3	25	10
		Lead	16	2	27700	500

TABLE 1 (cont.)
Nature and Extent of Contamination
Groundwater

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	Number of Samples	Number of Exceedances	Maximum Concentration (ppb)	SCG (ppb)
Groundwater	Volatile Organic Compounds (VOCS)	Benzene	24	13	310	1
		Chloroform	24	2	340	7
		1,1-Dichloroethane	24	14	1800	5
		1,1-Dichloroethene	24	3	600	5
		1,2-Dichloroethene	24	14	64000	5
		Ethylbenzene	24	5	750	5
		Methylene Chloride	24	9	3400	5
		Tetrachloroethene	24	4	2000	5
		Toluene	24	12	4100	5
		Trichloroethene	24	4	2000	5
		1,1,1-Trichloroethane	24	4	1400	5
		Vinyl Chloride	24	14	120000	2
		Xylene	24	14	4700	5
MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	Number of Samples	Number of Exceedances	Maximum Concentration (ppb)	SCG (ppb)
Groundwater	SemivolatileOrganic Compounds (SVOC)	2,4-Dimethylphenol	12	3	3100	50
		bis(2-Ethylhexyl)phthalate	12	5	130	5
		2-Methylnaphthalene	12	2	370	42
		Naphthalene	12	5	400	10
		Phenanthrine	12	1	73	50
		Phenol	12	2	3800	5
		1,2,4-Trichlorobenzene	12	1	27	5
EDIUM	CATEGORY	CONTAMINANT OF CONCERN	Number of Samples	Number of Exceedances	Maximum Concentration (ppb)	SCG (ppb)
Groundwater	PCBs/Metals	PCB-1242	20	5	350	0.09
		PCB-1254	20	5	79	0.09
		PCB-1260	20	3	340	0.09
		Lead	12	10	759	25



TONAWANDA WEST, N. Y.
N4300-W7852.5/7.5
1980

AREA LOCATION

BOOTH OIL

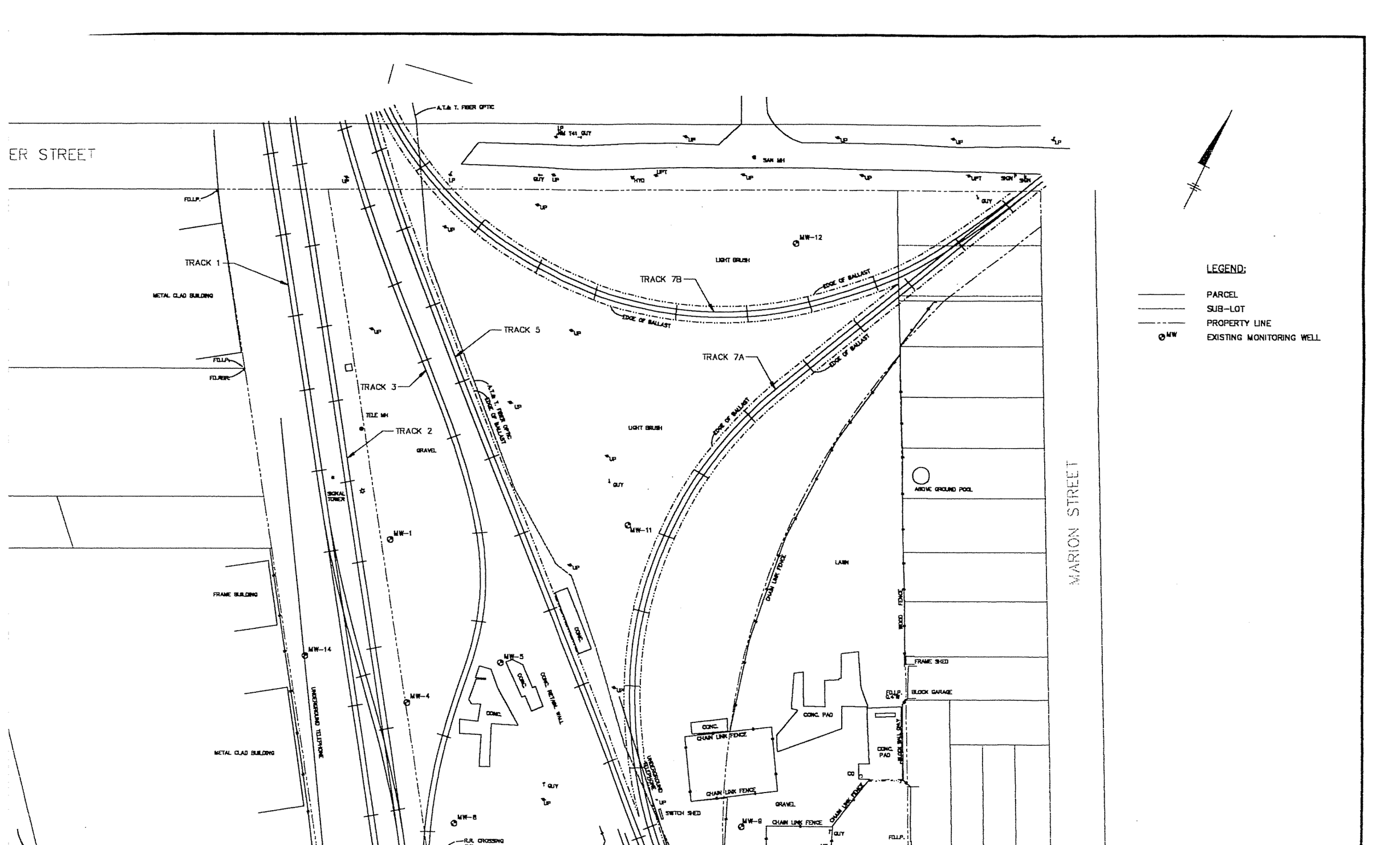
SITE No. 9-32-100

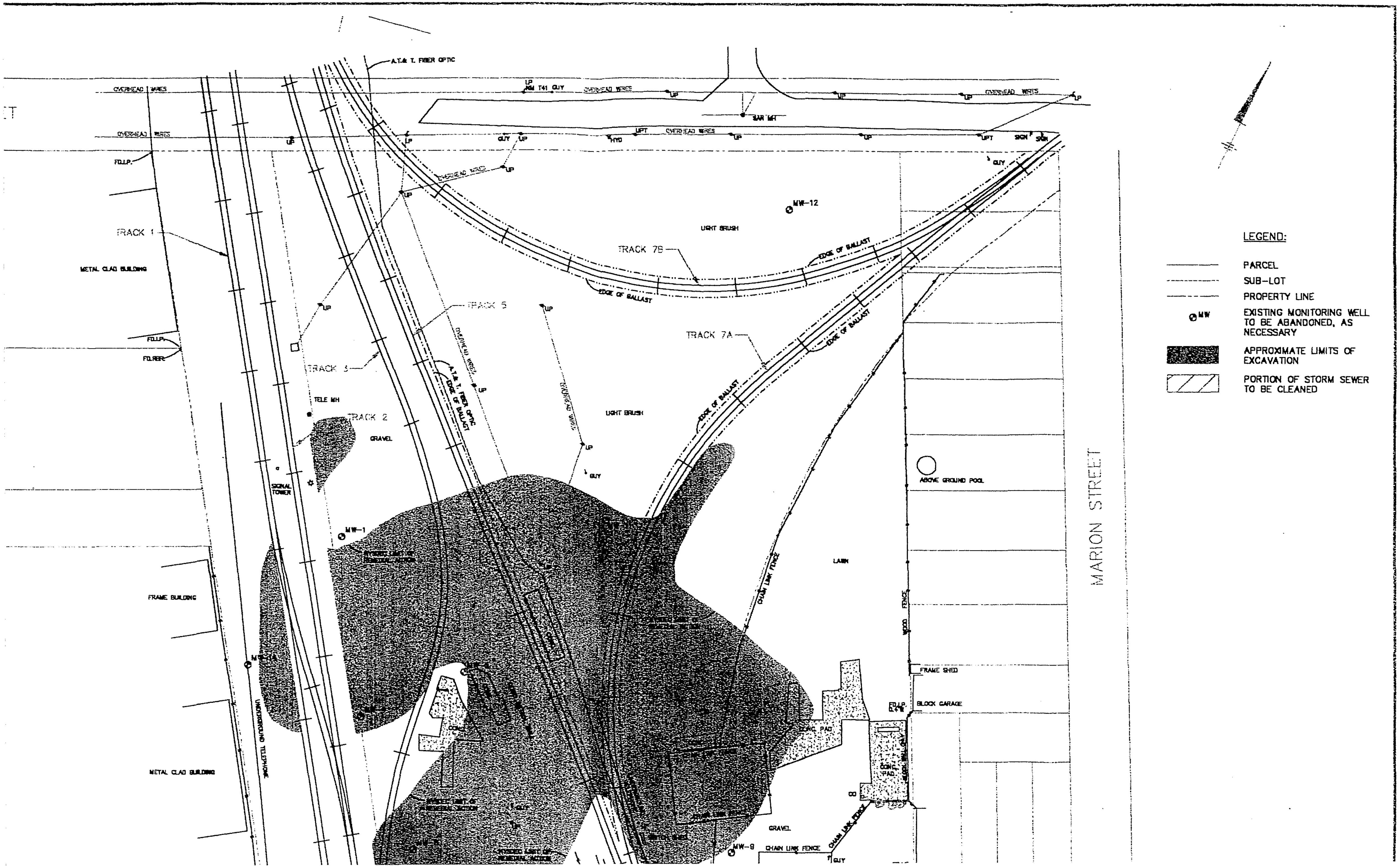
New York State Department of Environmental Conservation

FILE: Site Location.dwg | DRAWING BY: JCC

SITE LOCATION

DATE: 7/11/01 | FIGURE 1


ER STREET
MARION STREET
A.T.& T. FIBER OPTIC
SAN MH
TRACK 1
TRACK 2
TRACK 3
TRACK 5
TRACK 7A
TRACK 7B
METAL CLAD BUILDING
FRAME BUILDING
LIGHT BRUSH
GRAVEL
LAWN
EDGE OF BALLAST
CHAIN LINK FENCE
WOOD FENCE
CONC.
CONC. PAD
CONC. RETAINING WALL
ABOVE GROUND POOL
FRAME SHED
BLOCK GARAGE
SIGNAL TOWER
TELE MH
SWITCH SHED
R.R. CROSSING
UNDERGROUND TELEPHONE
MW-1
MW-4
MW-5
MW-6
MW-8
MW-9
MW-11
MW-12
MW-14
LEGEND:
PARCEL
SUB-LOT
PROPERTY LINE
EXISTING MONITORING WELL



A.T.& T. FIBER OPTIC
OVERHEAD WIRES
SAN MH
HYD
SIGN
GUY
UP
FD.I.P.
FD.REBR.
TRACK 1
TRACK 2
TRACK 3
TRACK 5
TRACK 7B
TRACK 7A
METAL CLAD BUILDING
FRAME BUILDING
LIGHT BRUSH
EDGE OF BALLAST
MW-12
MW-1
MW-9
TELE MH
GRAVEL
SIGNAL TOWER
UNDERGROUND TELEPHONE
LAWN
CHAIN LINK FENCE
WOOD FENCE
ABOVE GROUND POOL
FRAME SHED
BLOCK GARAGE
CONC. PAD
MARION STREET
LEGEND:
PARCEL
SUB-LOT
PROPERTY LINE
EXISTING MONITORING WELL TO BE ABANDONED, AS NECESSARY
APPROXIMATE LIMITS OF EXCAVATION
PORTION OF STORM SEWER TO BE CLEANED

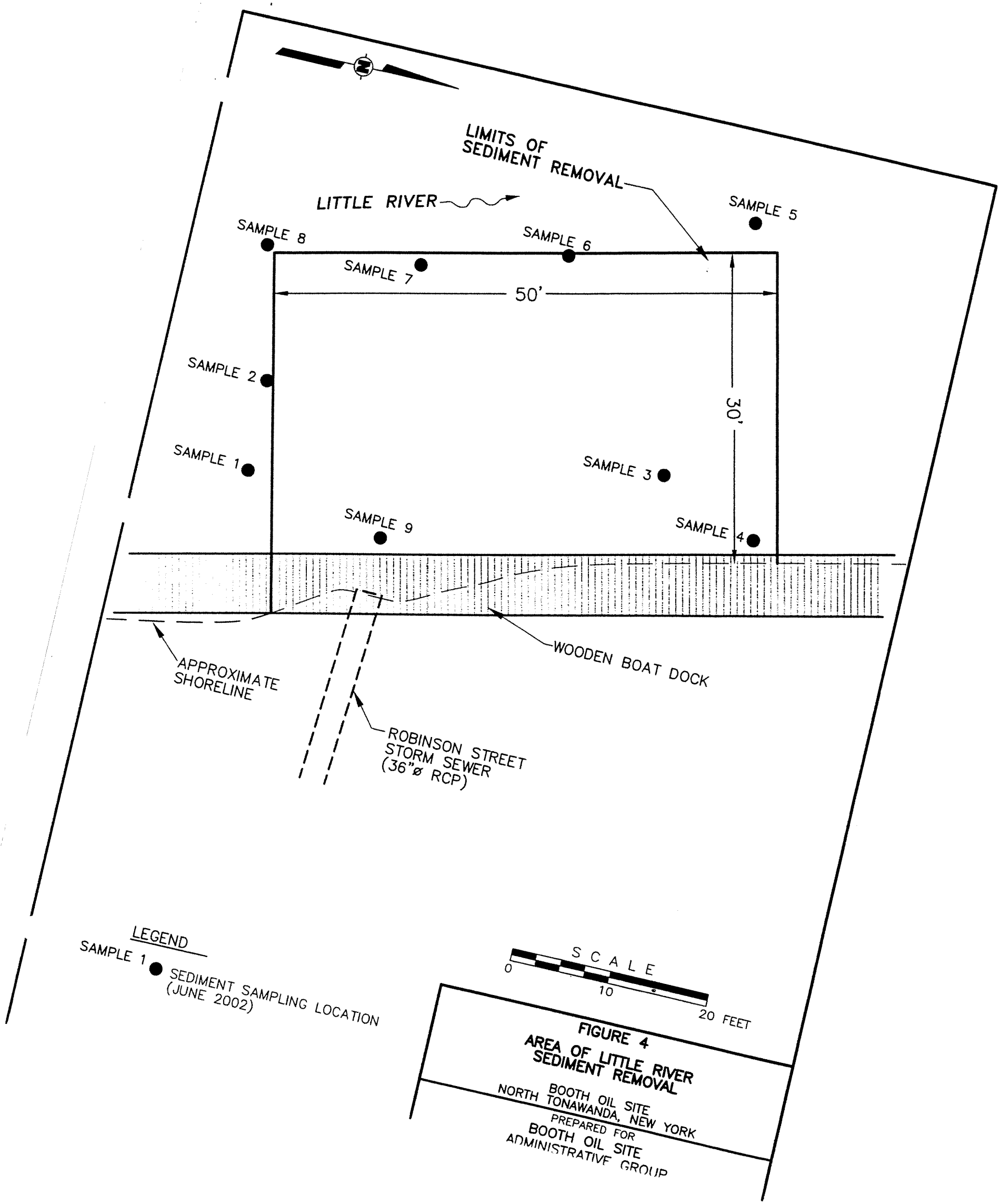


FIGURE 4
AREA OF LITTLE RIVER SEDIMENT REMOVAL
BOOTH OIL SITE
NORTH TONAWANDA, NEW YORK
PREPARED FOR
BOOTH OIL SITE
ADMINISTRATIVE GROUP

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Booth Oil
Proposed Amended Record of Decision
Operable Units 1 & 2
North Tonawanda, Niagara County
Site No. 9-32-100

The Proposed Amended Record of Decision (PAROD) for the Booth Oil site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on September 24, 2001. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil at the Booth Oil site. The preferred remedy is excavation with off-site disposal.

The release of the PAROD was announced via a notice to the mailing list, informing the public of the PAROD's availability.

A public meeting was held on October 17, 2001 which included a presentation of the site history, Remedial Investigation/Feasibility Study Process, and previously selected remedies as well as a discussion of the proposed amended remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the Proposed Amended ROD was to have ended on October 29, 2001. The comment period was extended until December 10, 2001 in response to a letter from a local resident.

The Responsiveness Summary responds to all questions and comments raised at the October 17, 2001 public meeting.

The following are the comments received at the public meeting, with the NYSDEC's responses:

COMMENT 1: You will not be excavating into the backyards?

RESPONSE 1: The main area of contamination appears to be limited to the Booth Oil site, however surface soil on the 124 North Marion property will be removed. Levels of lead exceeding the cleanup level of 500 ppm have been detected in a small area of the backyard. It is believed that surface runoff from the site followed the swale along the train tracks and deposited lead contaminated sediment on the property.

COMMENT 2: How will you be cleaning the sewers?

RESPONSE 2: Sediment within the existing catch basin, manhole, and outfall structures will be removed using a vacuum truck and transported to one of the temporary staging areas. The entire system will then be cleaned using a water jet truck working from the upstream to downstream direction. Upon completion of storm sewer cleaning, the storm sewer system will be inspected using a sewer camera to confirm that accumulated sediment has been removed. Any sections of piping that

still have sediment remaining will be re-cleaned and re-inspected until the accumulated sediment has been removed.

COMMENT 3: Will you have to close any of the roads?

RESPONSE 3: At this time it is too early in the design process to definitively state if any roads will need to be closed or for how long. However, if road closure is necessary it will likely only be for a short period of time.

COMMENT 4: Are they going to use domes to enclose the excavation areas?

RESPONSE 4: At this point, based on data obtained during the pre-design investigations, it does not appear that domes, or enclosures, will be necessary. During the first pre-design study conducted in 1998 various vapor/odor control agents were tested which appeared to perform well. Soil excavation would be conducted in stages, that is the whole site would not be opened up at one time. Should these measures fail to suppress odors, work will be suspended and the use of other technologies (e.g. an enclosure) will be evaluated.

COMMENT 5: Won't the wind carry the stuff over the houses?

RESPONSE 5: To minimize the potential for such occurrences, a comprehensive Community Air Monitoring Plan (CAMP) will be instituted at the site. Also, work will be performed in accordance with Technical and Administrative Guidance Memo No. 4031 "Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites". These documents establish criteria for monitoring and appropriate response/action levels for fugitive dust suppression and particulate monitoring. If particulates are detected, appropriate control measures will be taken.

COMMENT 6: Your first remedy called for enclosing the excavations with domes?

RESPONSE 6: The currently selected remedy proposes using enclosures to control dust and/or emissions only if necessary. A comprehensive air monitoring plan would be put in place during excavation activities. If data from the air monitoring shows that there is a problem, then appropriate steps would be taken immediately to address the situation. Appropriate action may include the use of an enclosure.

COMMENT 7: Your 1992 ROD said you would enclose the excavation areas? Why the change?

RESPONSE 7: The 1992 ROD stated "There is the potential for significant air emissions during the excavation, handling and storage of the contaminated soils. If necessary, these operations would be performed under enclosed structures with air collection and treatment to ensure that vapor emissions do not occur." There is no change from the original remedy in this regard. It's important to note that the amount of soil handling will be significantly reduced if the material is simply excavated and taken off-site. There would be no long-term storage of contaminated material on-site.

COMMENT 8: Your first meeting you said leaving it in place would create less of an air quality problem than excavation would?

RESPONSE 8: Excavation will result in some short-term impacts but overall the removal action is more effective in the long-term. If nothing is done (e.g. no action) the site will remain as a class 2 inactive hazardous waste site. Leaving the contamination in place would not result in air impacts when compared to excavation of the contaminated media. If the contamination is removed, the site would most likely be re-classed to a class 4 which means the site has been remediated and requires only continued monitoring.

COMMENT 9: How are you addressing air quality problems during the excavation?

RESPONSE 9: A comprehensive Community Air Monitoring Plan (CAMP) will be instituted at the site. Air quality will be continuously monitored during working hours. If the air monitoring data indicate that predetermined action levels are being exceeded, then steps will be taken immediately to mitigate the impacts on air quality. For example, odor controlling/neutralizing agents will likely be utilized to prevent impacts to air quality or work will be temporarily shutdown until odors/dust can be controlled.

COMMENT 10: When will work start?

RESPONSE 10: Work will likely begin sometime during the 2002 construction season.

COMMENT 11: If the dust is blowing into my yard, what should I do about it?

RESPONSE 11: With the Community Air Monitoring Plan in place, blowing dust should not be a concern. However, if dust does blow into your yard you should immediately contact the NYSDOH (Matt Forcucci at 716-847-4500), the NYSDEC, or Niagara County Health Department (Paul Dicky at 716-439-7595). The NYSDEC will also have an inspector in-site during working hours who has "stop work" authority should dust or odor conditions arise.

COMMENT 12: What are your controls for dust?

RESPONSE 12: The Community Air Monitoring Plan is left open as to the specific technology to be used for dust suppression. The only requirement is that there is no visible dust, and particulate standards are not exceeded. Typically, water is used to control dust.

COMMENT 13: Where will the air monitoring devices be?

RESPONSE 13: Air monitoring devices (for dust and volatile organics) are placed upwind of the excavation, to obtain background readings, and downwind of the excavation to determine what impact, if any, the excavation is having on air quality. Usually one device is placed upwind of the excavation work and three are placed downwind. The monitoring devices are portable so they can be moved if the wind direction changes.

COMMENT 14: What triggers a different way of excavating the site and controlling dust and odors?

RESPONSE 14: The Community Air Monitoring Plan has detection limits known as action levels. These action levels have been developed to be protective of human health. If the action levels are exceeded, steps will be taken to mitigate the problem. If action levels cannot be met with standard engineering controls (e.g. spraying water to control dust, use of odor controlling agents), work will cease until alternative engineering controls can be implemented (e.g. the use of a sprung/dome structure).

COMMENT 15: There was a tank directly behind my property (116 N. Marion) that caught fire. How come you aren't showing any contamination there?

RESPONSE 15: During the site closure activities, which took place from 1981 to 1987, the above ground storage tanks and some contaminated soils were removed from the site. Also, portions of the site were backfilled/covered with clean fill during site closure activities. The findings of the RI support that when the tank was removed any contaminated soil around it was also removed.

COMMENT 16: Comment from North Tonawanda City Engineer: "You should listen to the residents about using a sprung building."

RESPONSE 16: See responses to comments nos. 6, 7 and 14.

COMMENT 17: What controls are you going to take to keep the contaminants from migrating into the river?

RESPONSE 17: Engineering controls (e.g. hay bales) will be put in place to manage surface runoff during construction and to prevent surface erosion from migrating to the storm sewer.

COMMENTS 18: What routes will the dump trucks take?

RESPONSE 18: It's too early in the process to know what routes the dump trucks might take. However, traffic will be managed to minimize impacts on local residents. This information will be shared with the community once it becomes available.

COMMENT 19: How deep will you be digging?

RESPONSE 19: The depth to the clay layer varies across the site from approximately 3 feet below ground surface to 9 feet below ground surface. Excavation will be conducted to the top of the clay layer which acts as a confining layer for the contamination. Excavations may be slightly deeper based on evaluation of confirmatory soil samples.

COMMENT 20: The people who are doing the work, will they be wearing protective gear?

RESPONSE 20: Workers may be wearing Tyvek coveralls which are typically white or yellow paper like protective clothing. They typically will be working in "level D" protection which also includes work boots, a hard hat, and protective eyewear.

COMMENT 21: How is this better for the environment as a whole? Aren't you just taking the problem from one place and sending it to another place?

RESPONSE 21: The removal of the contaminated soil from the site and disposal at a secure landfill site is considered more environmentally sound due to the control features found at engineered disposal sites.

COMMENT 22: How much longer would it take to use thermal desorption than just excavating the contamination and trucking it off-site?

RESPONSE 22: The estimated time to complete the excavation remedy is four to six months. It's likely that thermal desorption would take as much as 12 to 15 months. Thermal desorption units have been known to experience as much as 50% down time, in large part due to winter weather conditions.

COMMENT 23: Was the proposed amended ROD changed because of residents' concerns?

RESPONSE 23: The Proposed Amended Record of Decision was developed as a result of discussions with the Potentially Responsible Parties (PRPs) and the findings of pre-design investigations which supported offsite disposal as a more viable alternative.

COMMENT 24: Can the property be developed once the contamination is gone?

RESPONSE 24: It is possible that once remediated, the site could be redeveloped, however, there would likely be restrictions as to what could be built on the site and what purpose (e.g. commercial/industrial) the site could be used for.

COMMENT 25: What are the deed restrictions?

RESPONSE 25: Institutional controls such as deed restrictions will be put in place to address any residual contamination which remains (e.g. below Track Nos. 1 and 2). Specific institutional controls will be developed at the completion of the remedial action.

COMMENT 26: What test did you do to develop the drawing that shows the contaminated areas?

RESPONSE 26: The estimated limits of contamination were developed as a result of the Remedial Investigation and subsequent pre-design investigations at the site.

COMMENT 27: How big is the small area at the top of the map? (Referring to the area of remediation on the 124 North Marion street property)

RESPONSE 27: The area to be remediated is approximately six feet by six feet. The limits of the contamination will be confirmed via sampling when the lead contaminated soil is removed.

COMMENTS RECEIVED DURING THE COMMENT PERIOD:

Two letters dated November 13, 2001 and December 11, 2001 were received from Ms. Sonia M. Dusza. Ms. Dusza expressed concern that an additional public meeting was necessary in order to give the public a chance to comment on the Proposed Amended Record of Decision. In response to Ms. Duza's concern the comment period was extended to December 10, 2001. Following the closure of the comment period the following letter was sent to Ms. Dusza.

Dear Ms. Dusza,

RE: Booth Oil Proposed Amended Record of Decision

Thank you for your letter dated November 13, 2001. In response to your concern that an additional public meeting was needed, the Department has taken steps to ensure that the public was afforded enough time and opportunity to express any concerns they may have regarding the Proposed Amended Record of Decision.

In a second letter mailed to a revised contact list which included all the attendees of the October 17th public meeting, the Department extended the Comment Period more than a month to December 10, 2001. The Department also checked the local Document Repository to ensure that the Proposed Amended Record of Decision was available for review. This effort resulted in no additional comments other than your followup letter of December 11, 2001 reiterating your request for an additional public meeting.

This indicates that no major concerns, beyond the one expressed at the public meeting, exist. (The only major concern expressed by residents is that the excavation work should be done within a tent like structure in order to control dust and odors.) Based on comments received during the public meeting, the local community appears to be pleased with the proposed change in the remedy. The change will permit excavation and offsite disposal of the contaminated soils and sediments rather than excavation, onsite treatment and onsite disposal.

In light of the above, we believe it is appropriate to proceed with the Record of Decision amendment and the remedial design. While an additional public meeting will not be scheduled, if you would like to meet with Department representatives to discuss the project, and any concerns you may have regarding the remediation, please contact me to make arrangements.

APPENDIX B

Administrative Record

Administrative Record

for the
Amended Record of Decision
Operable Units 1 & 2

Booth Oil Site
North Tonawanda (C), Niagara County
Site No. 9-32-100

The following documents constitute the Administrative Record for the Booth Oil Inactive Hazardous Waste Disposal Site amended record of decision.

Documents

June 1990: Remedial Investigation and Feasibility Study Work Plan
September 1990: Phase I Remedial Investigation Field Record Report
November 1990: Work Plan Addendum for Second Phase Remedial Investigation
February 1991: Phase I, Remedial Investigation Report
February 1991: Phase I/II Feasibility Study Report
March 1991: Phase II Remedial Investigation Field Record Report
March 1991: Preliminary Baseline Health Risk Assessment
August 1991: Phase I/II Remedial Investigation Report
February 1992: Phase III Feasibility Study Report
February 1992: Proposed Remedial Action Plan
March 1992: Record of Decision (Operable Unit No. 1)
January 1993: Remedial Investigation for Operable Unit No. 2 (Revised March 1993)
January 1993: Feasibility Study for Operable Unit No. 2 (Revised March 1993)
February 1993: Proposed Remedial Action Plan for Operable Unit No. 2
March 1993: Record of Decision (Operable Unit No. 2)
February 1998: Proposed Excavation and Treatment/Disposal Remedial Strategy (Prepared for BOSAG by ERM)
December 1998: Pre-Design Work Plan (Prepared for BOSAG by ERM)
March 2001: Remedial Design/Remedial Action Work Plan (Prepared for BOSAG by BBL)
July 2002: Field Sampling Report Little River Sediment Sampling and Inspection

Booth Oil
Inactive Hazardous Waste Site

North Tonawanda, Niagara County, New York

Site No. 9-32-100

RECORD OF DECISION

March 1992

Prepared by:

New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation

Booth Oil
Inactive Hazardous Waste Site

North Tonawanda, Niagara County, New York

Site No. 9-32-100

RECORD OF DECISION

March 1992

Prepared by:

New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

DECLARATION STATEMENT - RECORD OF DECISION (ROD)

Booth Oil Inactive Hazardous Waste Site
North Tonawanda, Niagara County
Site No. 09-32-100

Statement of Purpose

The Record of Decision (ROD) sets forth the selected Remedial Action Plan for the Booth Oil Inactive Hazardous Waste Site. This Remedial Action Plan was developed in accordance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and the New York State Environmental Conservation Law (ECL). The selected remedial plan complies to the maximum extent practicable with the National Oil and Hazardous Substance Pollution Contingency Plan, 40 CFR Part 300, of 1985.

Statement of Basis

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Booth Oil Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix A of the ROD.

Description of Selected Remedy

The selected remedy for the Booth Oil site includes the on-site treatment of the contaminated soils and sediments. The remedy was selected as it is permanent using on-site treatment technologies. It is most effective in the long-term, and the negative short-term impacts can be minimized with proper engineering controls. The components of the selected remedy are as follows:

- On-site treatment of the contaminated soils by separation technologies or incineration. The contaminated oil separated from the wastes will be incinerated off site. Solid residuals will be stabilized if necessary to immobilize heavy metals such as lead and backfilled on site. A protective cover would be placed over the backfilled soils if necessary to prevent contact with elevated heavy metal concentrations.

- Extraction and on-site pretreatment of the contaminated groundwater with discharge to the sanitary sewer for final treatment at the North Tonawanda Publicly Owned Treatment Works (POTW). If the POTW is not available at the time the remedy is implemented, a standard physical/chemical wastewater treatment plant would be operated at the site. All residuals and discharges associated with wastewater treatment will be managed under applicable permits.

- The storm sewer system along Robinson Street will be cleaned, and the sediments treated on site or properly managed off site under applicable permits.

- The nature and extent of contaminated sediments in the Little River, resulting from contaminated storm water discharge, will be defined in consideration of additional remedial measures under a separate operable unit. The remedial program for the Little River will be implemented with full public participation.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected Remedial Action Plan is protective of human health and the environment. The remedy selected will meet the substantive requirements of the Federal and State laws, regulations and standards that are applicable or relevant and appropriate to the remedial action. A waiver of the hazardous waste landfill requirements of 6NYCRR Part 373 is justifiable to allow the placement of the treated residuals back on site. The remedy will satisfy, to the maximum extent practicable, the statutory preference for remedies that employ treatment that reduce toxicity, mobility or volume as a principal element. This statutory preference is met by reducing the volume of the hazardous wastes by the on-site separation process and reducing the toxicity by the off-site incineration of the separated oil. Should on-site incineration be implemented, both the volume and toxicity of the wastes will be reduced on site. The volume toxicity, and mobility of the contaminated groundwater will be reduced by on-site and off-site treatment.

3-25-92

DATE

Edward O. Sullivan
Deputy Commissioner

TABLE OF CONTENTS

Section

SECTION 1: SITE DESCRIPTION

The Booth Oil Inactive Hazardous Waste site is located at 76 Robinson Street in the City of North Tonawanda, New York. A site vicinity map is provided in Figure 1. Residential areas border the site to the east and north, while commercial/light-industrial areas are located to the west and south.

The site occupies approximate 2.7 acres on three parcels of land each separated by railroad tracks operated by Consolidated Rail Corporation. The eastern parcel occupies 1.9 acres, the northwestern parcel .5 acres and the southwestern parcel .3 acres. Most of the eastern parcel of the site is owned by the site operator, George T. Booth and Son, Inc., while the remainder of the site is owned by Conrail and was leased to George T. Booth and Son, Inc.

SECTION 2: SITE HISTORY

Waste oils were refined at the Booth Oil site for more than 50 years, until the phased plant closure in the early 1980's. During operation, waste oils were transported to the plant either by tanker truck or rail car. The oil was off-loaded into numerous aboveground and underground tanks throughout the facility until processing of the oil was completed. In addition to the tank facilities, two surface impoundments (man-made ponds) with a total surface area of about a half acre were used to store and treat waste oils on the eastern parcel.

Initial processing of the waste oils consisted of oil/water separation by centrifugation with the resulting sludge being sold for use as road oil. After centrifugation, the concentrate was refined by high temperature distillation, cooling, sulfuric acid cracking, and clay contacting. The acid tar residues were transported off site for landfilling. During plant operation, frequent spills occurred and numerous complaints were made regarding objectionable odors at the site. Oil was also periodically discharged to the Niagara River via surface water run-off through the Robinson Street storm sewer.

Processing of waste oils ceased in the early 1980's when the phased site closure was initiated. Removal of oil sludges and tanks commenced during 1987 and was terminated by the end of 1987 with the removal of the last aboveground storage tank. Other closure activities included the installation of two groundwater drawdown wells by Booth Oil to remove oil from a layer floating on the groundwater. Drains were also installed along the railroad tracks to collect surface run-off. The surface impoundments were drained, filled, and the entire eastern parcel covered with clean soil in 1988.

SECTION 3: CURRENT STATUS

In early 1990, to address contamination remaining at the site the NYSDEC initiated a Remedial Investigation/Feasibility Study (RI/FS) under the State Superfund Program.

3.1: SUMMARY OF THE REMEDIAL INVESTIGATION

The RI was designed to define the nature and extent of any contamination resulting from the previous activities at the site and was implemented in two phases. The first phase was conducted in May through August and the second in November and December, 1990. The details of the results from these investigations are contained in the report entitled "*Phase I/Phase II Remedial Investigation Report*" August, 1991. A summary of the RI follows:

The Phase I/II RI consisted of the following activities:

- aerial photography and topographic mapping;
- geophysical survey to identify buried metallic objects; and,
- sampling and analysis of surface and subsurface soils, sewer and river sediments, underground pipe oils, groundwater, ambient air, and soil gas.

The analytical data obtained from the RI was compared to various Standards, Criteria, and Guidelines (SCGs) to determine the need for remediation. Groundwater and surface water SCGs identified for the Booth Oil site were based on NYSDEC Ambient Water Quality Standards and Guidance Values. The NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation guidelines for soil.

Based upon the results of the remedial investigation in comparison to the SCGs, certain areas and media of the site require remediation. Areas of surface soils, subsurface soils, groundwater and storm sewer sediments in exceedence of the remediation guidelines have been identified.

Surface Soil: The extent of surface soils exceeding the remediation guidelines is depicted in Figure 2. In general, the surface soils were found to be contaminated with volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), semi-volatile organic compounds, (SVOCs), polychlorinated biphenyls (PCBs) and lead. The remediation guidelines were most consistently exceeded for PCBs, with lesser exceedences for lead. The guidelines for the remaining organic compound groups were only occasionally exceeded. The PCB contamination in surface soil averaged about 40 ppm with a maximum of about 100 ppm. Lead was detected in on-site surface soils at a maximum of about 2000 ppm with an average of nearly 800 ppm.

Subsurface Soils: The extent of subsurface soils exceeding the remediation guidelines is depicted in Figure 3. Volatile organic compounds (VOCs) were detected to a much greater extent in subsurface soils relative to surface soil at the site. Areas of the site with elevated concentrations of volatile and semi-volatile organic compounds, PCBs and lead are located in the northwest portion of the site which is the location of former underground storage tanks, the southwestern area at the location of the former distillation operation, and in the eastern parcel in the vicinity of the former lagoons. Organic and inorganic contamination in subsurface soils was a maximum in the lagoon area with a VOC concentration in excess of 1300 ppm, a SVOC concentration nearly 900 ppm, and lead contamination at 27,000 ppm. The

distribution of subsurface PCB contamination was similar to the surface soils with an average of 20 ppm and a maximum of 100 ppm.

Groundwater: The extent of contamination in the upper perched groundwater zone is depicted in Figure 4. This contamination is limited to the upper zone, as the site is underlain by a very low permeability clay soil. Significant migration of contamination off site has not been identified. However, much of the perched groundwater on site is highly contaminated with volatile organic compounds (VOCs), with maximum concentration of nearly 200 ppm and an average of nearly 40 ppm. Other compounds, such as semi volatile organics (SVOC), polycyclic aromatic hydrocarbons (PAH), PCBs and lead were also detected in the groundwater, but may be partially attributed to suspended particulate in the water.

An oil layer floating on top of the groundwater has been identified in the southwestern portion of the site. This oil layer is at most four-feet thick with PCB concentration slightly in excess of 1000 ppm.

Storm Sewers: With regard to sediment samples and water obtained from storm water catch basins and manholes located immediately adjacent to the site, volatile and semi-volatile organic compounds, PCBs, and lead were found in significant concentrations. Sediment samples obtained from the Little River to which the storm water drainage discharges exhibit the same contaminants found both in the sewer system and on the Booth Oil site. Therefore, the storm sewer is a pathway for site contaminants to migrate to the Little River.

The contaminated River sediments are not addressed by this proposed remedy. Additional investigations are necessary to define the nature and extent of the contaminated River sediments before a remedy can be planned. These additional investigations will begin in the spring of 1992, as a separate operable unit for the site.

Summary: The composite area of soil, groundwater and sewer system exceeding remediation criteria and, therefore, requiring remediation, is depicted in Figure 5. Approximately 30,000 cubic yards of soil must be addressed as part of the remedy.

3.2 SUMMARY OF THE HEALTH RISK ASSESSMENT

The "Preliminary Baseline Human Health Risk Assessment (HRA)" evaluated the risks posed by the site in its existing condition. The HRA evaluated the potential health risks to children, resident, commercial populations and unprotected remedial workers exposed to contamination at and emanating from the site. Specifically the following exposure scenarios were evaluated to determine if any elevated risk existed:

- Children exposed to contamination during recreational activities on site. Exposure pathways including ingestion of soil, skin contact with soil and inhalation of dust and vapors.

- Nearby residential and commercial populations exposed to contamination through inhalation of dust and vapors from the site.

- Unprotected construction workers exposed to contamination through direct contact and inhalation.

Overall, the data indicated that unacceptable risks would result if children played in the highly contaminated areas of the site. This risk is based on a conservative estimate of an exposure of three hours per day, 75 days per year for eight years between the ages of 10 - 18 years old. The major contributions to the health risk were from ingestion and skin exposure to PCBs, polycyclic aromatic hydrocarbons (PAHs) and lead. No significant potential health threats were identified for the residents and commercial population near the site.

SECTION 4: ENFORCEMENT STATUS

The Potential Responsible Parties (PRP) for the site include the site owner/operator, George T. Booth and Son, Inc; the other site owner, Consolidated Rail Corporation; and, numerous generators who shipped waste to the site including; FN Burt, General Motors, General Electric, Allied Signal (Bendix), GTE, and Union Carbide.

The PRPs failed to implement the RI/FS at the site when requested by the NYSDEC. After the remedy is selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the NYSDEC will continue with the project using State monies. The PRPs will be subject to legal actions by the State to recover costs incurred by the State on the remedial program.

SECTION 5: GOALS FOR THE REMEDIAL ACTION

Goals for the remedial program are established under the broad guidelines of meeting all standard, criteria, and guidances (SCGs) and protecting human health and the environment.

The media of concern identified for the Booth Oil site are contaminated soils and groundwater on site and contaminated sediments in the storm sewer system. The contaminated sediments in the Little River will be further investigated under a separate action. The remedial action objectives for the site are as follows:

- Reduce contamination present in site soils to eliminate potential risks to human health and the environment and to reduce the potential for off-site migration. The primary remediation goals are 10 ppm for PCBs, 1 ppm for VOCs, and 500 ppm for lead.

- Remove contaminated sediments from the storm sewer system to eliminate additional contaminant migration to the Little River; and,

- Remove contaminated groundwater and the oil layer to eliminate the potential of off-site migration of contamination.

SECTION 6: DESCRIPTION OF REMEDIAL ALTERNATIVES

Potential remedial alternatives for the Booth Oil site were identified, screened and evaluated in a three-phase Feasibility Study. This study is described in two reports entitled "Phase I/II Feasibility Study Report (February 1991)" and "Phase III Feasibility Study Report (February 1992)". A summary of the detailed analysis follows:

The potential remedies for the contaminated soil are on-site treatment, off-site treatment, off-site disposal, and on-site containment. Applicable on-site treatment technologies include incineration, thermal separation and solvent extraction. Off-site options include treatment by incineration and disposal in a secure landfill. The on-site containment alternatives consist of various combinations of containment structures such as low permeability caps and slurry walls.

Alternatives for groundwater treatment were not evaluated in detail as the North Tonawanda Publicly Owned Treatment Works (POTW) has the capacity to treat the contaminated groundwater. Under this scenario, the groundwater would be pretreated on-site to meet the POTW's standards and then discharged into the sanitary sewer for final treatment at the plant. On-site pretreatment is anticipated to consist of oil/water separation. However, additional treatment by filtration, flocculation, and/or carbon absorption may be performed if necessary to meet the POTW standards. If treatment at the POTW is not available at the time the remedy is implemented, a standard physical/chemical wastewater treatment plant would be operated on-site.

Each alternative discussed below includes the cleaning and restoration of the storm sewer system on Robinson Street. All sediments will be removed from the sewer by conventional cleaning techniques. All contaminated water and sediments will be collected for treatment on site or at an off site permitted facility.

No Action

The no-action alternative, which involves only continued monitoring, was evaluated in the FS as a statutory requirement. This is an unacceptable alternative as the site would remain in its present condition, and human health and the environment would not be adequately protected.

On-Site Incineration

Present Worth - $12.7 - $20.9 mil.
Capital Cost - $11.5 - $19.8 mil.
Annual O & M - $ 0.8 mil.
Time to Implement - 1.8 - 3 years

On-site incineration involves the thermal destruction of the organic contaminants in the soil. A transportable incinerator would be set up on the site and would process contaminated soils after they are excavated. The residuals from the incinerator would be stabilized if necessary to immobilize heavy metals such as lead.

There is the potential for significant air emissions during the excavation, handling and storage of the contaminated soils. If necessary, these operations would be performed

under enclosed structures with air collection and treatment to ensure that vapor emissions do not occur.

An extensive air monitoring program would also be implemented on site and at the perimeter to monitor the effectiveness of the emission control procedures.

The incinerator would be designed and operated under all applicable regulations for hazardous waste and PCB incinerators. Air pollution control devices would treat the gaseous emissions from the incinerator so that no pollutants are emitted at unacceptable levels.

On-Site Thermal Separation

Present Worth - $15.3 - $24.3 mil.
Capital Cost - $14.1 - $20.1 mil.
Annual O & M - $ 0.8 mil.
Time to Implement - 1.7 - 2.1 years

On-site thermal separation involves the thermal separation of the organic contaminants from the soil. The contaminated soils would be excavated and heated in the treatment unit to evaporate the organic contaminants. The evaporated organics would be collected as an oily liquid and shipped off site for incineration at a permitted facility.

The treated soils would be stabilized if necessary to immobilize heavy metals, such as lead, and backfilled on site. Any uncondensed combustion gases would be recirculated through the unit, with a small portion treated by activated carbon and vented to the atmosphere.

The excavation emission control measures and ambient air monitoring provisions discussed for on-site incineration would also be implemented under this alternative.

On-Site Solvent Extraction

Present Worth - $11.8 - $12.9 mil.
Capital Cost - $10.6 - $13.7 mil.
Annual O & M - $ 0.8 mil.
Time to Implement - 2 years

On-site solvent extraction involves the separation of the organic contaminants from the soils using a solvent. The contaminated soils would be excavated and mixed in a reactor with a solvent. The solvent would dissolve the organic contaminants and separate them from the soils. The solvent would then be separated from the oily contaminates and recycled for reuse in the process. The oily wastes would be collected and shipped off site for incineration at a permitted facility. The treated soils would be stabilized if necessary to immobilize the heavy metals, such as lead, and backfilled on site.

The excavation emission control measures and ambient air monitoring provisions discussed for on-site incineration would also be implemented under this alternative.

Off-Site Incineration

Present Worth - $65 mil.
Capital Cost - $65 mil.
Annual O & M - $0
Time to Implement - 1 year

Off-site incineration involves excavating the contaminated soils and transporting them off site for incineration at a permitted facility.

The ash residues from the incinerator would be disposed at a permitted landfill.

The excavation emission control measures and ambient air monitoring provisions discussed for on-site incineration, would also be implemented under this alternative.

Off-Site Land Disposal

Present Worth - $12 mil.
Capital Costs - $12 mil.
Annual O & M - $0
Time to Implement - 1 year

In this alternative, the contaminated soils would be excavated and transported off site for disposal in a permitted landfill.

The excavation emission control measures and ambient air monitoring provisions discussed for on-site incineration, would also be implemented under this alternative.

On-Site Containment

Present Worth - $4.2 mil.
Capital Costs - $2.6 mil.
Annual O & M - $0.1 mil.
Time to Implement - 1.5 years

In the on-site containment options, the contaminated soils would remain on site in the present condition. Containment structures including a low permeability cap and a slurry wall would be constructed to prevent off site migration of contamination. The low permeability cap would reduce direct exposures and minimize the infiltration of precipitation and the slurry wall would inhibit the off site migration of groundwater. The site would be periodically monitored and inspected to insure that the containment features remain functional. Access to the site and future use would be restricted to protect the containment structures.

SECTION 7: EVALUATION OF REMEDIAL ALTERNATIVES

The remedial alternatives have been compared against the criteria identified in the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4030, "Selection of Remedial Actions at Inactive Hazardous Waste Sites". A detailed discussion of the

evaluation criteria and comparative analysis is contained in the report entitled "Phase III Feasibility Study" (FS). The following is a brief summary of the comparative analysis contained in the FS.

The first two evaluation criteria are termed threshold criteria, indicating that each alternative evaluated at this stage must satisfy the criteria.

1. Protection of Human Health and the Environment. This criterion is an overall assessment of protection based on a composite of all the other evaluation criteria. Each of the alternatives, except no-action, would be protective of human health and the environment.

2. Compliance with Applicable Standards, Criteria, and Guidelines (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance. Each of the alternatives, except no-action, would meet the SCGs with the application of the following waivers. TAGM 4030 "Selection of Remedial Actions at Inactive Hazardous Waste Sites" allows an SCG to be waived under the six provisions of CERCLA/SARA. All of the alternatives which involve on-site treatment with backfilling of the treated soils on site must comply with the requirements of 6NYCRR Part 373 for the disposal of hazardous waste, in the absence of a waiver.

   The landfill disposal requirements of 6NYCRR Part 373 are applicable to this action because the treated residuals from the on-site processes would still meet the definition of a hazardous waste by application of the "derived from" rule of 6NYCRR Part 371.1(d)(4). Much of the contaminated media at the Booth Oil site is a listed hazardous waste as B002, B003, and B007 under Part 371 as PCB contaminated petroleum oil, soils, solids, and sludges on site with concentration in excess of 50 ppm. Other PCB contaminated petroleum oil, soils, solids, and sludges with less than 50 ppm are also considered a hazardous waste since they were generated as a spill residue from materials with greater than 50 ppm of PCBs.

   Since the material to be treated in the on-site system is a hazardous waste, the treated soils will also be a hazardous waste by the "derived from" rule although nearly all of the toxic components would be removed or destroyed. In consideration of the detoxified nature of the treated residuals and the specific site characteristics, the NYSDEC is waiving the design and operating requirement for a hazardous waste landfill to allow the return of the treated residuals to the excavated areas of the site.

   The NYSDEC is waiving the land disposal requirements for hazardous waste of 6NYCRR Part 373 based on the provisions of "Equivalent Standard of Performance" and "Fund Balancing" as provided in TAGM 4030 and CERCLA/SARA. Considering the inert nature of the treated residuals, the very low solubility of any remaining trace contaminants, the low permeability of the underlying natural clay unit and the perched nature of the groundwater, the potential for off-site migration of hazardous constituents in sufficient amounts

to impact human health or the environment is essentially equivalent to the protection provided by a hazardous waste landfill. The additional costs associated with designing, constructing, and operating a hazardous waste landfill is not warranted since no added protection of human health and the environment would result.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Impacts and Effectiveness. The adverse impacts to the community, remedial workers, and the environment resulting from the implementation of each remedy are compared. Also, the estimated time necessary to implement each remedy is considered in comparing the time periods associated with the adverse impacts.

   The on-site treatment alternatives are not the most effective in meeting this criterion. On-site treatment involves substantial excavation and handling of contaminated soils which would release vapors and odors. Engineering and operational controls would be necessary to address these emissions. Although on-site containment would involve some excavation, the air emission, and thus the short-term impacts, would be less severe. Off-site disposal and off-site incineration would result is the same significant short-term impacts associated with the excavation, and would also involve the impacts resulting from the transportation of large volumes of contaminated soils.

4. Long-term Effectiveness and Permanence. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

   The on-site treatment alternatives, are the most effective in meeting these criteria. The organic contaminants would either be destroyed on site or separated on site and destroyed off site. The inorganic contaminants would be permanently immobilized by stabilization if necessary to reduce the mobility of heavy metals such as lead.

   The on-site containment options are less effective in the long-term and are not permanent. The wastes would remain on site and the containment structures would require frequent inspections and maintenance to remain effective. Restrictions on the use of the site in the future would also be necessary.

   Off-site disposal by landfilling or incineration are nearly as effective in meeting these criteria as the on-site alternatives. However, the on-site treatment alternatives are slightly more desirable and are preferred over off-site actions as discussed in TAGM 4030.

5. Reduction of Toxicity, Mobility or Volume. In the remedy selection process, preference is given to alternatives that permanently reduce the toxicity, mobility or volume of the wastes at the site. All of the treatment options, including the

preferred on-site actions, result in the permanent reduction in the toxicity and mobility of the wastes. Although on-site containment and off- site disposal reduce the mobility of the wastes, these options are not permanent and would require frequent monitoring and maintenance.

6. Implementability. This criterion compares the technical and administrative difficulties in implementing each alternative.

   The on-site treatment alternatives are slightly more difficult to implement than the other options because of the technical complications associated with excavation of the contamination and the operation of the treatment equipment. However, neither technical nor administrative difficulties would significantly inhibit the implementation of any alternative.

7. Cost. The total cost for each alternative are compare on a present-worth basis. The present worth costs include capital costs and operational maintenance (O&M) costs. Initial estimates for the range of costs for the on-site treatment alternatives are from $12 - 22 million.

   On site containment is the least expensive at $4.2 million and off site incineration is the most expensive at $65 million.

SECTION 8: SUMMARY OF THE SELECTED ALTERNATIVE

The remedy selected for the site by the NYSDEC was developed in accordance with the New York State Environmental Conservation Law (ECL) and is consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42USC Section 9601 et.seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) the NYSDEC has selected on-site treatment of the contaminated soils and groundwater as the primary component of the remedy for the Booth Oil site. The treatment technologies were selected as they are permanent on-site remedies. The components of the selected remedy are as follows:

- On-site treatment of the contaminated soils by separation technologies or incineration. The contaminated soil separated from the wastes will be incinerated off site. Solid residuals will be stabilized if necessary to immobilize heavy metals such as lead and backfilled on site. a protective soil cover would be placed over the backfilled soils if necessary to prevent contact with elevated heavy metal concentrations.

- Extraction and on-site pretreatment of the contaminated groundwater with discharge to the sanitary sewer for final treatment at the North Tonawanda Publicly Owned Treatment Works (POTW). If the POTW is not available at the time the remedy is implemented, a standard physical/chemical wastewater treatment plant would be operated at the site. All residuals and discharges

associated with wastewater treatment will be managed under applicable permits.

- The storm sewer system along Robinson Street will be cleaned, and the sediments treated on site.

- The nature and extent of contaminated sediments in the Little River, resulting for contaminated storm water discharge, will be defined in consideration of additional remedial measures under a separate operable unit.

The performance standards for the implementation of the remedy include the following:

- All contaminated soils resulting from operations at the Booth Oil site in excess of the following criteria shall be remediated:

  - PCBs in surface soils (0-12 inches deep) greater than 1-2 ppm shall be removed or covered with 12 inches of clean soil.

  - PCBs in subsurface soils (greater than 12 inches deep) greater than 10 ppm.

  - Total lead greater than 500 ppm.

  - Total Polynuclear Aromatic Hydrocarbons (PAHs) greater than 100 ppm.

  - Total base neutrals or acid extractables (BNAs) greater than 10 ppm.

  - Total volatile organic compounds (VOCs) greater than 1 ppm.

  - Any additional soil determined by the NYSDEC to pose a potential risk to human health or the environment.

- Any treated residuals backfilled on site must meet the remediation guidelines with the following exceptions:

  - Total PCBs must be less than 2 ppm in all treated residuals;

  - There is no limit on total lead but all inorganic contaminates must be less than the leachability levels for a characteristic hazardous waste as determine by the applicable test under New York State regulations at the time of implementation; and

  - Any additional restrictions determined by the NYSDEC as necessary to prevent potential threats to human health or the environment.

- The remedy shall be implemented to prevent to the maximum extent practical any nuisance odors or noise from adversely impacting the surrounding neighborhood;

- Enclosed structures shall be used as necessary to prevent unacceptable degradation of air quality in the surrounding neighborhood including nuisance odors;

- All necessary and appropriate air monitoring be performed to assure that the air quality in the surrounding neighborhoods is not adversely impacted. A contingency plan shall be in place to protect local residents in the event that air emissions become unacceptable;

- Only wastes on the Booth Oil site or resulting from migration off the site shall be treated in the on-site unit;

- An environmental monitoring program be performed during and after the remedy to evaluate the performance of the remedial program; and

- Deed restrictions, or other appropriate measures shall be instituted to prohibit future use as residential and to inform future owners of the conditions.

SECTION 9: STATUTORY DETERMINATIONS

The following discussion describes how the remedy complies with the decision criteria in the Law and regulations.

1. Protection of Human Health and the Environment:

   The selected remedy will eliminate potential threats to human health and the environment by significantly and permanently reducing the toxicity, mobility and volume of hazardous wastes and associated contamination at the site. The on-site separation processes will remove nearly all of the organic contaminants from the soil for off-site destruction. If on-site incineration is employed, the organic contaminants will be destroyed on site. The treated residuals will be stabilized if necessary to permanently reduce the mobility of the inorganic contaminants. All of the contaminated groundwater will be removed for treatment either on site or off site.

2. Compliance with Standards, Criteria, and Guidelines (SCGs):

   The implementation of the remedy will result in the attainment of the SCGs with the exception of the hazardous waste land disposal requirements of 6NYCRR Part 373 for the on-site disposal of the treated residuals. The NYSDEC has waived these requirements as described in Section 7 of this ROD.

3. Cost Effectiveness:

Of the permanent alternatives evaluated for this site the selected remedy has the lowest cost. Although other alternatives are cheaper, they are not permanent solutions.

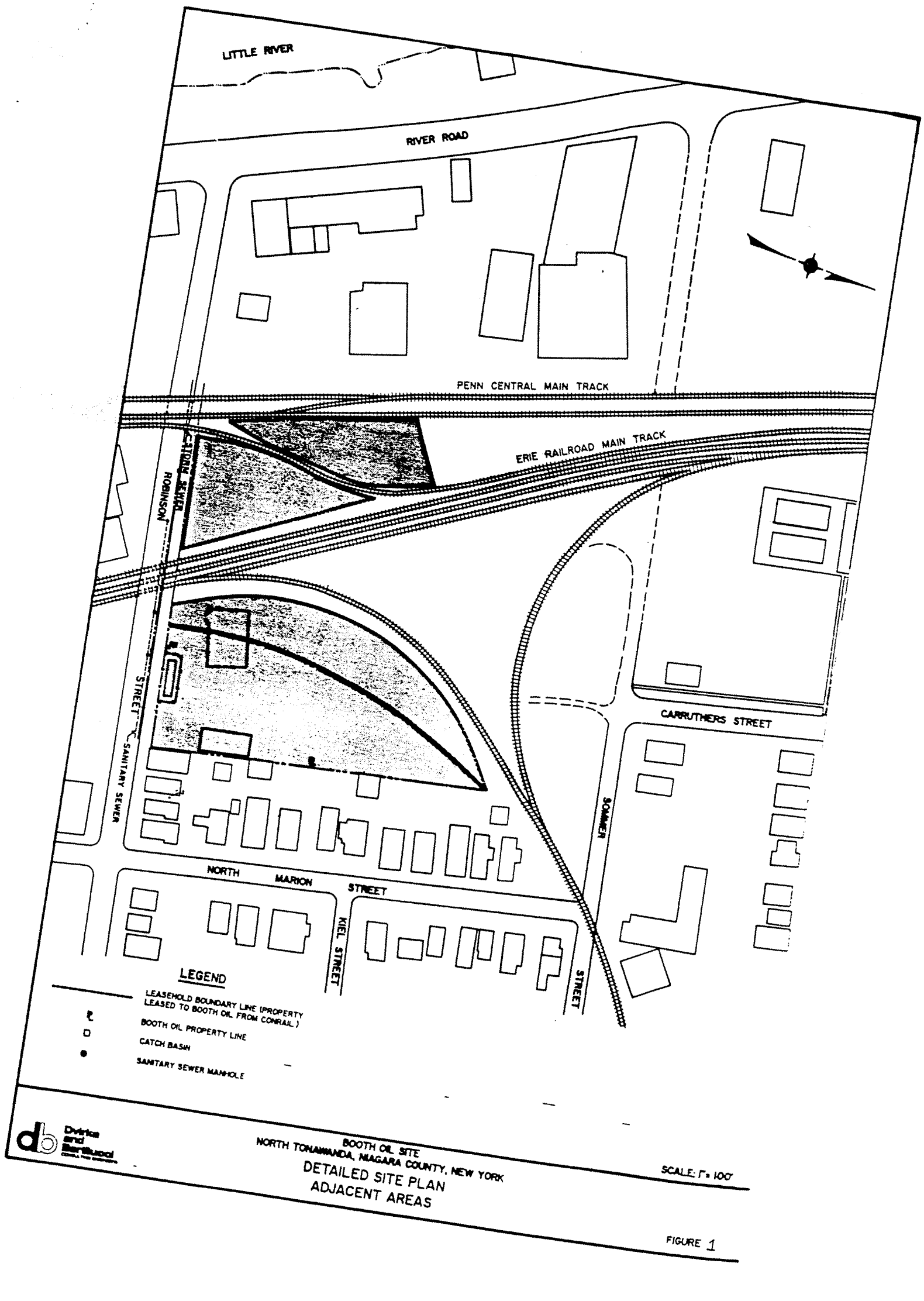
4. Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practical:

The selected alternative represents the maximum extent to which permanent, on-site treatment technologies can be used in a cost-effective manner.

5. Preference for Treatment as a Principle Element:

The preference for treatment is met by the selected remedy as the soils and groundwater will be treated primarily on site with some off-site treatment. Alternatives involving on-site containment or off-site disposal were rejected as non-permanent solutions.

FIGURES

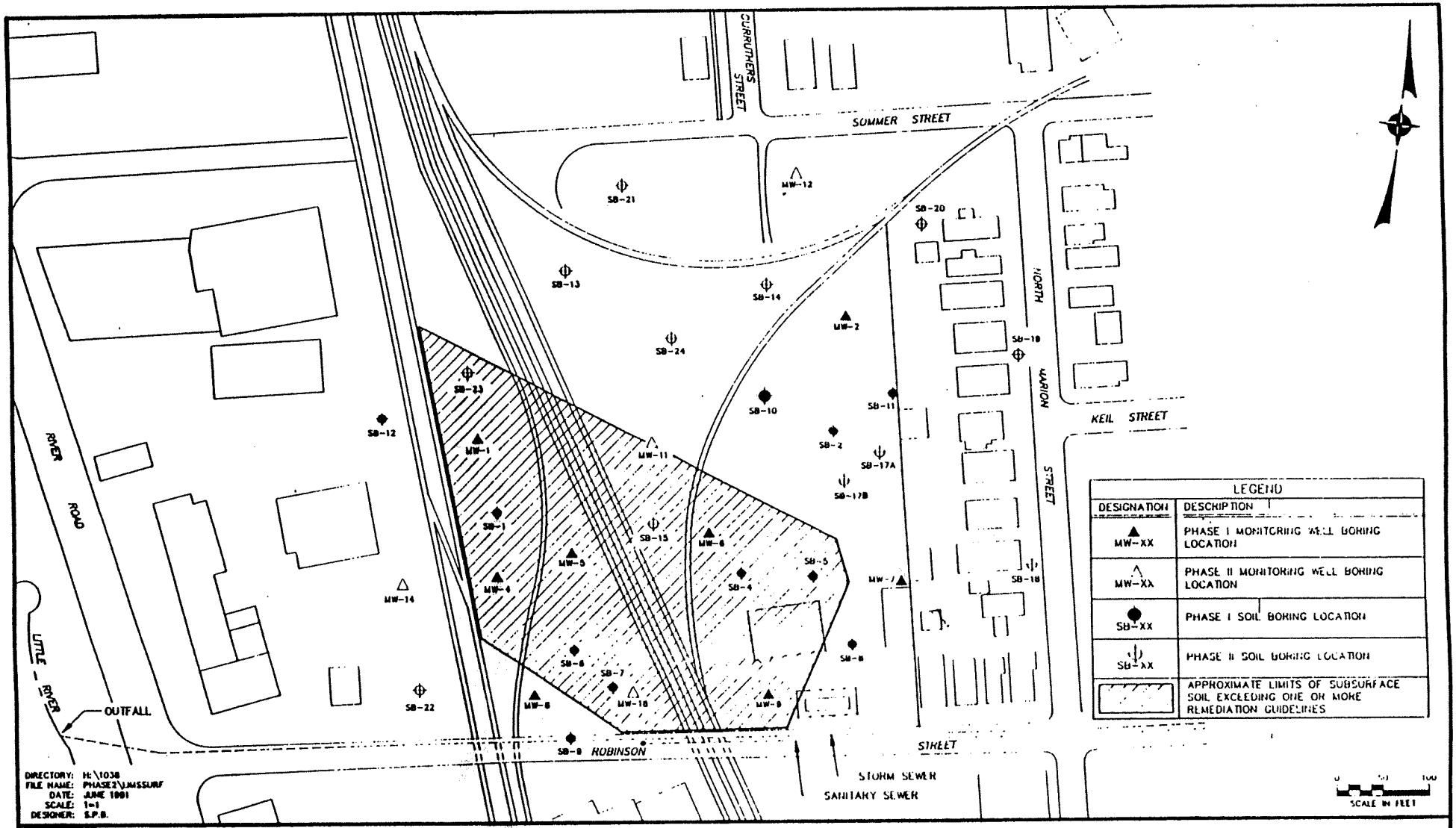


Dvirka and Bartilucci

BOOTH OIL SITE
NORTH TONAWANDA, NIAGARA COUNTY, NEW YORK
DETAILED SITE PLAN
ADJACENT AREAS

SCALE: 1" = 100'

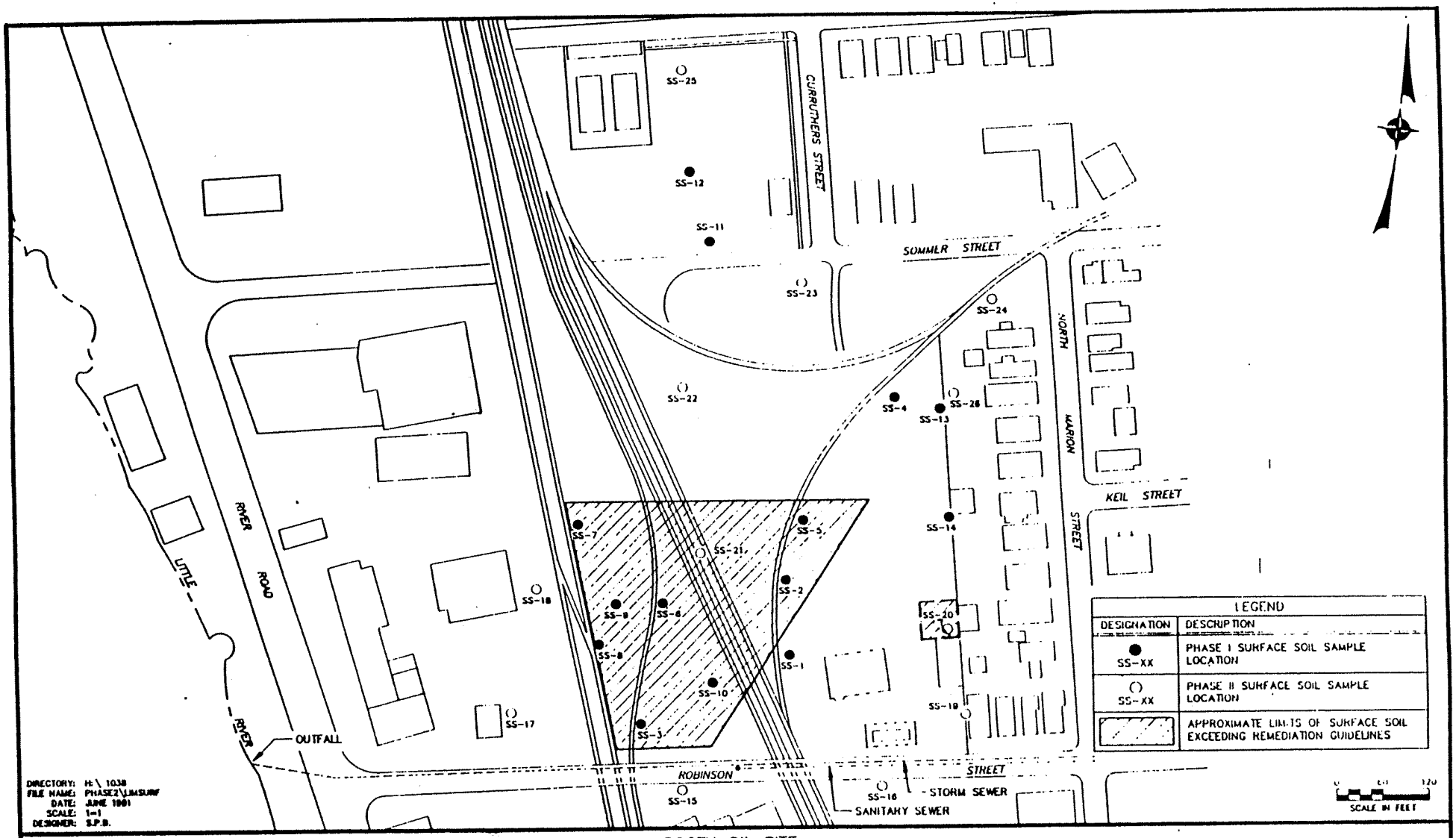
FIGURE 1



Dvirka and Bartilucci CONSULTING ENGINEERS

BOOTH OIL SITE
NORTH TONAWANDA, NIAGARA COUNTY, NEW YORK
APPROXIMATE LIMITS OF SUBSURFACE SOIL
EXCEEDING ONE OR MORE REMEDIATION GUIDELINES

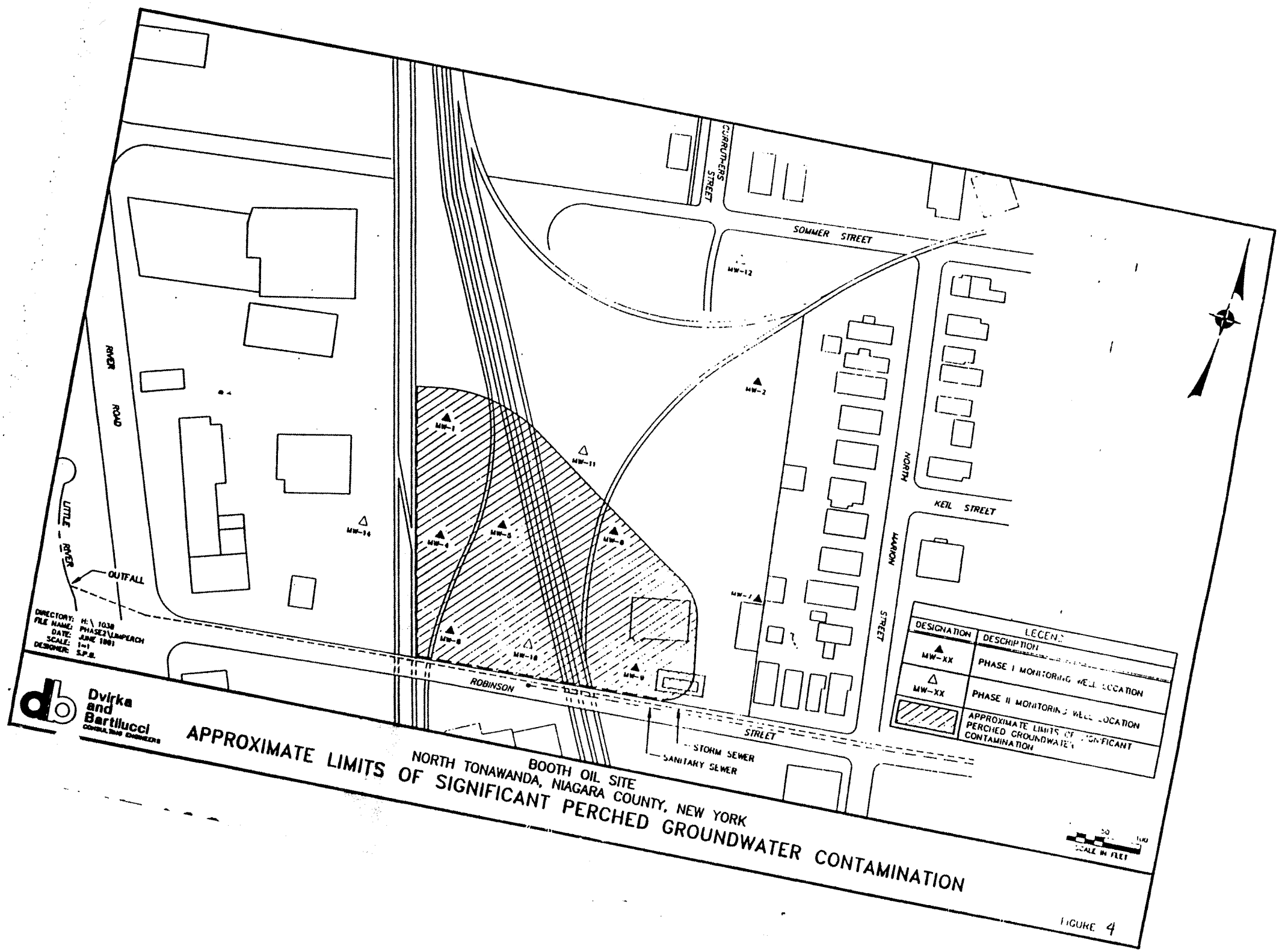
FIGURE 3



Dvirka and Bartilucci
CONSULTING ENGINEERS

BOOTH OIL SITE
NORTH TONAWANDA, NIAGARA COUNTY, NEW YORK
APPROXIMATE LIMITS OF SURFACE SOIL
EXCEEDING ONE OR MORE REMEDIATION GUIDELINES

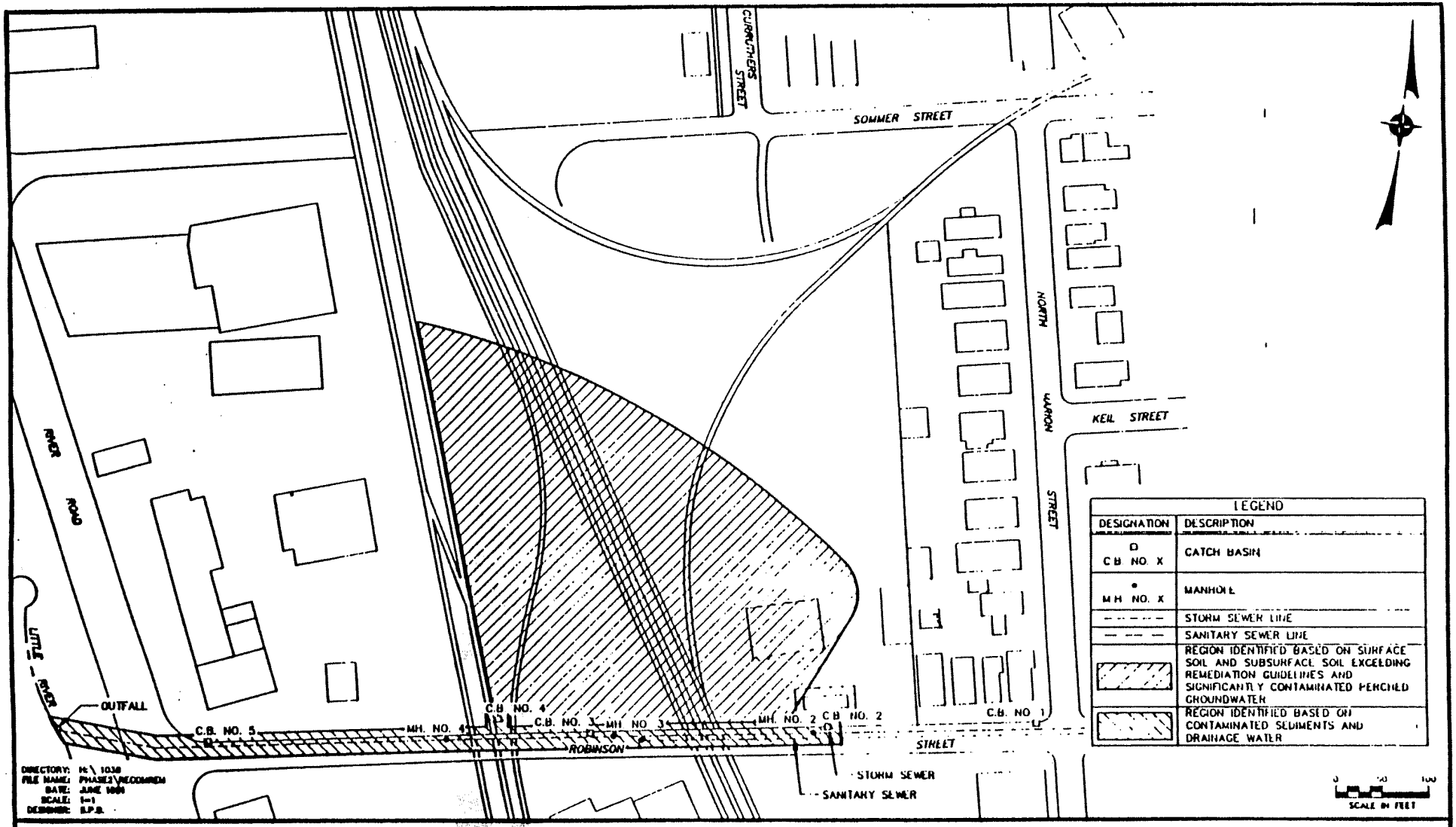
FIGURE 2



BOOTH OIL SITE
NORTH TONAWANDA, NIAGARA COUNTY, NEW YORK

APPROXIMATE LIMITS OF SIGNIFICANT PERCHED GROUNDWATER CONTAMINATION

FIGURE 4



Dvirka and Bartilucci CONSULTING ENGINEERS

BOOTH OIL SITE
NORTH TONAWANDA, NIAGARA COUNTY, NEW YORK
AREAS OF BOOTH OIL SITE
RECOMMENDED FOR REMEDIAL ACTION CONSIDERATION

FIGURE 5

APPENDIX B

Responsiveness Summary

Booth Oil Inactive Hazardous Waste Site Site No. 9-32-100

RESPONSIVENESS SUMMARY

March 1992

Prepared by:
New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation

Index to Comments

Item No.	Commentor	Subject
1	Mr. Edward Kuczkowski	Time to Implement Remedy
2	Mr. Edward Kuczkowski	Containment of Remedy
3	Mr. Edward Kuczkowski	PCB Treatment Effectiveness
4	Mr. William Heine	Time to Implement Remedy
5	Mr. William Heine	Risks to Neighbors
6	Ms. Sonia Dusza	Evacuation
7	Mr. Mario Forzi	Source of PCBs
8	Mr. Frank DiPillo	Trespassing On Site
9	Ms. Sonia Dusza	Little River
10	Mr. William Heine	Time to Implement Remedy
11	Mr. William Heine	Off Site Disposal
12	Ms. Sonia Dusza	Health Effects
13	Mr. Leonard Wydyka	Off Site Disposal
14	Mr. Leonard Wydyka	Use of POTW
15	Mr. Leonard Wydyka	Cost Estimates
16	Ms. Sonia Dusza	Playground Health Risks
17	Ms. Sonia Dusza	MW-7 and MW-12 Results
18	Ms. Sonia Dusza	Rezoning
19	Mrs. Miller	NYSDOH Contact with Children
20	Mr. Leonard Wydyka	Remedy Containment
21	Mr. Leonard Wydyka	Remedy Containment
22	Mr. Leonard Wydyka	Health Survey
23	Mr. William Heine (et.al.)	Containment of Remedy
24	Mr. William Heine	Other Wastes
25	Mr. William Heine	Air Monitoring
26	Mr. William Heine	Contingency Planning
27	Ms. Francine Whiton	Health Survey
28	Ms. Francine Whiton	Health Survey
29	Ms. Francine Whiton	Air Monitoring
30	Ms. Sonia Dusza	Public Comment Period
31	Ms. Sonia Dusza	Document Availability
32	Ms. Sonia Dusza	Health Survey
33	Ms. Sonia Dusza	Cost/Benefit Ratio
34	Ms. Sonia Dusza	Remedy Selection
35	Ms. Sonia Dusza	Condition of Lagoons
36	Ms. Sonia Dusza	Explosions at site
37	Ms. Sonia Dusza	Land Use
38	Ms. Sonia Dusza	Little River
39	Mr. Edward Kuczkowski	Health Survey
40	Mr. David Roach	Hazardous Determination
41	Mr. David Roach	Health Risks
42	Mr. David Roach	Problems Overstated
43	Mr. David Roach	Costs/Bioremediation

The following issues were raised at the public meeting/hearing for the Proposed Remedial Action Plan (PRAP) held in North Tonawanda on February 27, 1992:

Commentor: Edward Kuczkowski:

1. **How long will this project take?**

   RESPONSE: It is estimated that the treatment unit will be operated for approximately two years, assuming 8 hrs/day, 5 days/week operation. The part-time operation (less than 24 hrs/day, 7 days/week) was selected to minimize disturbances on the surrounding community.

2. **He is intrigued by the containment of the treatment units shown in the slides. Do all companies do this? Will this happen at this site?**

   RESPONSE: The structures depicted on the slides can be used for most treatment options. These types of sprung structures are anticipated to be used during the Booth Oil project to control air emissions during excavation, handling and storage of contaminated soils prior to treatment. They can also be used to cover the treatment units and the treated soil stockpile. The use of or need for structures in this manner will be evaluated upon selection of the specific treatment method to be used during the remediation.

3. **Will PCBs be treated on site? How effective will the treatment be?**

   RESPONSE: In all cases, treatment of the soils to remove the PCBs below clean-up levels will be at the Booth Oil site. For on-site solvent extraction and on-site thermal separation, the PCBs will be separated from the soils and destroyed at an off-site permitted incinerator. For on-site incineration, the PCBs will be destroyed on site. For each treatment option, the levels of PCBs in the treated soils to be backfilled on the site will be limited to no greater than 1-2 ppm.

Commentor: William Heine

4. **Do the two years for remediation include all seasons, seven days/week?**

   RESPONSE: The two-year estimate for completing remediation assumes 8 hrs/day, 5 days/week throughout the year performing the remediation. A factor of 80 percent on-line availability is included to accommodate maintenance. The part-time operation (less than 24 hrs/day, 7 days/week) was selected to minimize disturbances on the community.

5. **Regarding the health risk on pages 4 and 5 of the PRAP, what risks are posed to neighbors who are in their yards and houses near the site, particularly to his wife who is three months pregnant.**

   RESPONSE: In the Preliminary Baseline Health Risk Assessment (HRA), it was assumed that local residents would be exposed to airborne vapors and dust from the

site in its present condition for 15 hours/day for 30 years. Based upon this scenario, no significant risks were calculated for any of the neighborhoods around the site. The estimated risk to local residents in their yards is much less than the estimated health risk from on-site exposures presented on pages 4 and 5 of the PRAP. Also, please see response to Comment 16.

Commentor: Sonia Dusza

6. **This commentor demanded that those adjacent to the site be evacuated during remediation**

RESPONSE: There is no situation presently existing or expected to occur during remediation which would require the relocation of residents near the site. The remedy will be implemented in a manner such that nearby residential and commercial populations will not be exposed to contaminants that would impact their health. A comprehensive monitoring plan will be implemented during remediation to assure that unacceptable levels of toxic air contaminants are not released.

Commentor: Mario Forzi

7. **What exactly is a PCB and where does it come from? Does it come from crude oil? Was it used in hydraulic oil? Is it still in use? How did PCBs get on site? What are acceptable levels of PCBs and other chemicals?**

RESPONSE: PCBs are polychlorinated biphenyls; generally an oily material used in electrical equipment such as transformers and capacitors, hydraulic oil, and heat transfer fluid. PCBs are a manufactured chemical and are not found in crude oil. PCBs are no longer manufactured but they are still in use in some of the original equipment. The type of PCBs found on site are typically associated with transformers. The Booth Oil Company, Inc. was not permitted or approved to handle or dispose of PCBs at the site.

There are no universally acceptable levels of PCBs or the other site contaminants. An "acceptable level" is set for each specific instance depending on how the contaminant can impact human health or the environment. For the Booth Oil site, the Record of Decision (ROD) sets an acceptable level for PCBs of 1-2 ppm in surface soils and 10 ppm in subsurface soils. By comparison, the Food and Drug Administration (FDA) has set an acceptable level of 2 ppm of PCBs in fish sold for human consumption. The other primary clean-up goals for the site are 1 ppm of volatile organic compounds (VOCs) and 500 ppm for lead.

Commentor: Frank DiPillo

8. **What about children who play and walk on the site? There are only signs on Robinson Street.**

RESPONSE: The New York State Department of Environmental Conservation (NYSDEC) decided that fencing of the entire site was not feasible considering all the

railroad tracks that cross the site. Posted signs were placed around the entire site, but some have been vandalized or stolen. Some of the site had been covered with clean soil by the past operator and revegetated with grass. This reduces the likelihood of contact with the contaminated soils in this area. The NYSDEC will replace the signs. The NYSDEC recommends that all people cease trespassing on the site so that any possible exposures to the chemicals are avoided.

Commentor: Sonia Dusza

9. **Will the public be informed of the upcoming investigations on the Little River before a remedy for the site is selected. She also wants the responsible parties to be held liable.**

RESPONSE: It is anticipated that the contamination in the Little River will be investigated in the spring and summer of 1992. The public will be informed of the results of these investigations and will have the opportunity to comment on the remedy for the River. The remedy for the site will proceed on its own course regardless of the outcome of the River investigations. It is possible that the contaminated River sediments would be incorporated into the remedy for the site.

The NYSDEC will continue, as required by law, to attempt to secure the cooperation of the potential responsible parties in implementing the remedy and will take appropriate steps to recover State costs for the Remedial Investigation/Feasibility Study (RI/FS).

Commentor: William Heine

10. **When do you propose to implement the remedy?**

RESPONSE: It is difficult to predict exactly when the remedy will be implemented. The timing will depend on the upcoming negotiations with the Potential Responsible Parties (PRPs). As a rough estimate, on-site operations could begin in the spring of 1994.

11. **It seems to the commentor that the State is set on incineration. Why not use off-site disposal? It is the cheapest and creates jobs because people have to haul it away.**

RESPONSE: The selected remedy provides for on-site treatment by solvent separation, thermal separation or incineration. Off-site disposal was not selected because it is not a permanent remedy and involves only the relocation of the contamination. Off-site disposal is not the cheapest alternative and is estimated at $12 million. Please refer to the "Phase III Feasibility Study" for a complete comparison of off-site disposal with the selected alternative.

Commentor Sonia Dusza

12. **This commentor feels that a medical condition she has may be related to the site.**

RESPONSE: The New York State Department of Health (NYSDOH) has been in contact with this resident and is following up on her specific medical concern.

Commentor: Leonard Wydyka

13. **Why would the on-site treatment alternatives be better than off-site disposal?**

RESPONSE: The on-site treatment alternatives offer a permanent remedy for the Booth Oil site. Off-site disposal does not reduce the toxicity or volume of hazardous wastes. The wastes are simply relocated to another area. Please refer the "Phase III Feasibility Study Report" for a more detailed comparison of the alternatives.

14. **Would the State or the PRPs compensate the City for use of the Public Owned Treatment Works (POTW).**

RESPONSE: Yes.

15. **How are the costs of each alternative estimated. Compared to the Gratwick Park project which is much larger, the Booth Oil costs are high.**

RESPONSE: The costs of each activity of the remedy are estimated using construction industry standards, past experiences with hazardous waste sites, and data supplied by the various technology vendors.

The cost estimates for remediating Gratwick Park are similar to Booth Oil even though Gratwick Park is some 50 acres and Booth Oil is 4 acres. The primary reason the costs are similar for sites of such different size is the Gratwick Park remedy does not provide for permanent on-site treatment as proposed for Booth Oil. If feasible, a comparable permanent treatment remedy for Gratwick Park would cost hundreds of millions of dollars. The NYSDEC has determined through the Feasibility Study that the selected remedy for Booth Oil is an appropriate, cost effective remedy.

Commentor: Sonia Dusza

16. **I noticed from the HRA that an unacceptable risk to children in the playground is calculated for both carcinogenic and non-carcinogenic effects.**

RESPONSE: As calculated in the Preliminary HRA which is in the document repositories, an increased risk was calculated for children at the playground for both carcinogenic and non-carcinogenic effects. The total carcinogenic risk was calculated at 4.32×10^{-6} for pica children. This indicates that given the assumptions of the HRA, four children in one million could develop cancer if exposed over eight years for three to four hours per day, 75 days per year. This scenario assumes that the children will exhibit pica behavior (intentionally eating the soil).

The primary exposure is dermal contact with a secondary contribution from ingestion. The primary chemicals contributing to the risk are PCBs and polycyclic aromatic hydrocarbons (PAHs). Similarly, the non-carcinogenic hazard is primarily attributable

to dermal contact and ingestion of organic lead.

The NYSDOH has determined that although these calculated risks exceed established guidelines, children using the playground are not subjected to significantly increased health risks. This determination is based on the fact that the types and levels of contamination at the playground are typical in city/suburban areas and do not represent any significant contribution from the Booth Oil site. The increased risks calculated in the HRA are more attributable to the conservative nature of the assessment than to any significant contamination at the playground.

The following conservative assumption employed in the HRA which have led to the overestimating of the actual risks to children in the playground:

- The dermal exposure routes from contaminants in soil are not well quantified and are extremely conservative dose estimations were employed;

- Surrogate concentrations for a contaminants are sometimes used to account for the detection limit of a particular compound. For instance, although PCBs were not detected in the playground during the first phase of the RI, an elevated risk for these compounds was still calculated using the conservative approach of a surrogate concentration at the analytical detection limit.

- The major contributor to non-carcinogenic risk was calculated assuming that all of the lead was in an organic form. There are presently uncertainties associated with risks to lead. Although the lead content in the playground soils is typical in a city/suburban setting, an increased risk was still calculated.

In summary, the levels of contaminates in the playground soils are typical of this setting. The risk values calculated in the HRA are overestimated and are not considered to indicative of actual risks to children using the playground.

17. What were the results for subsurface soils at monitoring well MW-12 and MW-7?

RESPONSE: The results for the subsurface soils analyses performed at these locations are:

Subsurface Soil

	MW-7 (5-7 ft) (ppm)	MW-12
VOC	.05	no samples
PAH	5.1	
SSOC	.8	
PCB	2.3	
Lead	90.0	

Groundwater

	MW-7 (ppb)			MW-12 (ppb)
	Phase 1	Phase 2		Phase 2
VOC	236	106	VOC	83
PAH	ND	NA	PAH	ND
SSOC	ND	NA	SSOC	ND
PCB	3	ND	PCB	ND
Lead	47	NA	Lead	113

The above results indicate that the soil in these areas is virtually unaffected by contamination from the site. In both locations, VOCs were detected in groundwater, primarily 1,1-Dichloroethylene (1,1-DCE). The groundwater guidance value for 1,1-DCE is 50 ppb. The groundwater standard for lead is 25 ppb. This level of contamination does not exceed the groundwater guidance value for 1,1-DCE but the standard for lead is exceeded.

18. **She is suspicious that a proposal by the City to rezone the neighborhood in the vicinity of the site from residential to manufacturing indicates that the area around the site is not habitable and the contamination is worse than reported.**

RESPONSE: While conducting the investigations or selecting the remedy, the NYSDEC did not consider in any way the current or proposed zoning for the site. Zoning determinations are a local decision on what is considered appropriate or best use of an area. The remedial investigation results have adequately defined the nature and extent of the contamination. Based on these results, off-site contamination is minimal with only slightly elevated levels of lead in some of the backyards of the residences on North Marion Street. The levels found are within the range normally found in urban areas and are not of an immediate public health concern. Additional sampling for one of the yards is planned for the spring. Also see response to Comment 19.

Commentor: Mrs. Miller

19. **Her children are concerned for their health after reading letters from NYSDEC recommending that children keep off the site. The NYSDOH promised to write letters or talk to her children but never did. Why? Will they do this? Also, what were results of additional sampling done in her yard.**

RESPONSE: Regarding the additional sampling, slightly elevated levels of site contaminants, (PCBs and Lead) were found in her yard. The NYSDOH has determined that these levels do not indicate an immediate threat to human health. The NYSDEC will perform additional sampling in the spring of 1992 to confirm the findings. The report on the fall 1991 sampling is being finalized and is expected to be released in April.

NYSDOH has talked to this resident regarding her concerns and are working with her to address her children's concerns. As a point of clarification it should be noted that it was the City of North Tonawanda that advised local residents that children be kept away from the site's contaminated area. NYSDOH agrees with this recommendation as the site cannot be completely fence due to the numerous railroad tracks crossing the site. Also see response to Comment 8.

The following issues were raised by Leonard J. Wudyka, Alderman, City of North Tonawanda, in a letter dated March 13, 1992. (Attachment 1).

20. **The on-site treatment alternative seems to be the direction NYSDEC is considering; treatment under a spring loaded structure (bubble-type enclosure) is a must. This would prevent human health, and further environmental problems. It would also minimize excessive odors, vapors, and dust which would otherwise affect the area.**

RESPONSE: The selected remedy contains provisions for using enclosed structures for controlling odors, vapors and dusts which might be generated during the remediation. The two primary operations which could generate significant air emissions are excavation and soil handling/storage prior to treatment. These operations would be conducted within an enclosed structure if necessary to eliminate adverse impacts on the surrounding community.

21. **Cleaning up the site is estimated to take between 1-1/2 to 2 years to complete. We want to make sure that this on-site clean-up facility, erected for the Booth Oil site, is not to be used for the cleaning of any other hazardous waste hauled in from other nearby contaminated areas. What assurances will the State make that this will not happen?**

RESPONSE: The selected remedy applies only to wastes and associated contamination from the Booth Oil site. The only off-site material which might be treated on site is the contaminated sediments in the sewer and Little River resulting from past site operations. Section 8 of the Record of Decision specifically states this restriction.

22. **The baseline Human Health Risk Assessment (H.R.A.) evaluated the risk proposed by the site in its existing condition. The evaluation revealed the unacceptable risks would result if any children played in the highly contaminated areas of the site. The assessment goes on the state that no significant potential health threats were identified for the residents and commercial population near the site.**

We are not certain what human health risk the Booth Oil contaminated site might already have on nearby residents. We request that NYSDEC make arrangements to give these residents physical medical examinations if they desire. This would be an incidental cost, when compared to the overall project costs, and would have a profound effect on the morale and well being of the residents adjacent to the site. This would also renew confidence that the NYSDEC and NYSDOH are there to protect the residents, giving proper assurances that no significant health risks exist.

RESPONSE: As stated at the February 27th, 1992 public meeting, the NYSDOH will be sending out an exposure survey to area residents. This survey will assist in evaluating the type and extent of exposures residents may have experienced. The questionnaire will attempt to identify persons in the surrounding community who believe they were exposed to contamination from the Booth Oil site in the past, and whether they have health effects that they attribute to the site. This information will be used along with the environmental data to guide the Department in developing a plan for health related follow-up activities.

The following issues were raised by Mr. William Heine, Jr. in his letter of March 10, 1992 (attachment 2) and other residents of North Tonawanda signing the Petition dated March 4, 1992 (Attachment 3).

23. **On site clean-up would be acceptable providing the site be enclosed in a "Greenhouse" type structure as to protect the residents from airborne contaminants that would arise from construction.**

RESPONSE: The selected remedy contains provisions for using enclosed structures for controlling odors, vapors and dusts which might be generated during remediation. The two primary operations which could generate significant air emissions are excavation and soil handling/storage prior to treatment. These operations would be conducted under an enclosed structure as necessary to prevent adverse impacts in the surrounding community from air emissions.

24. **That the portable incinerator would remain just that, portable. It would be removed upon completion of remediation at the Booth Oil site and that no other waste be brought to the Booth site for treatment.**

RESPONSE: The selected remedy applies only to wastes and associated contamination from the Booth Oil site. The only off-site material which might be treated on site is the contaminated sediments in the sewer and Little River resulting from site operations. Section 8 of the ROD specifically states this restriction.

25. **Strict health monitoring be done throughout the remediation process.**

RESPONSE: Extensive air monitoring of the treatment operation within the site and at the boundaries will be conducted to ensure that airborne contaminants are not adversely impacting the surrounding community.

26. **A plan for daytime relocation of "at risk residents" be drafted in case such conditions arise that poses a threat to public health.**

RESPONSE: Prior to implementation of the remedy, a Health and Safety Plan will be developed which will contain procedures for the evacuation of nearby residents should an emergency arise. Although the possibility of an emergency situation is remote, the Health and Safety Plan will contain all necessary procedures to protect the public during site remediation.

The following issues were raised by Ms. Francine Whiton, 137 Sommer Street, North Tonawanda in a letter dated March 15, 1992 (Attachment 4).

27. **A Health Evaluation Study is needed for residents living in the immediate area of the site.**

RESPONSE: See response to Comment 22.

28. **The toxic chemicals at the site may have unknown synergistic, commutative, chronic effects. A Health Survey and blood test should be performed.**

RESPONSE: The commentor is correct in noting that the scientific knowledge about the toxic effects of complex chemical mixtures is not completely understood. However, the remedy has been selected such that all potential risks posed by the site in its present condition are addressed. The HRA and the remediation guidelines which have been set are conservative in an attempt to account for the unknown threats posed by the chemical contamination. Regarding the request for a health survey and blood test, please see response to Comment 22.

29. **The commentor supports the removal of the contamination and is opposed to on-site containment (capping). The commentor is concerned about hazardous fumes and airborne toxic substances during clean-up.**

RESPONSE: There is the likelihood that vapors and dust will be released during the implementation of the remedy. The ROD contains provisions in Section 8 for the use of enclosed structures, and other means, to control the release of air contaminants. An air monitoring program will be instituted on the site and at the boundary to insure that off-site air quality is not adversely affected.

The following issues were raised by Ms. Sonia M. Dusza, 123 Miller Street, North Tonawanda, New York in a letter dated March 15, 1992 (Attachment 5).

30. **This commentor requested an extension to the public comment period.**

RESPONSE: The 30-day public comment began on February 14, 1992 when the project documents were placed in the document repositories and the public notice was issued. On February 27, 1992, two weeks into the comment period, the public meeting was held to discuss the proposed remedy. The public comment period remained open after the public meeting until March 15, 1992. The NYSDEC has determined that the comment period will not be extended as no information has been received to justify the extension or any modifications to the proposed remedy.

31. **The project documents could not be found at the North Tonawanda Public Library. This system does not serve citizen participation, only hinders it.**

RESPONSE: The project documents were available at the public library (2 copies), City Hall (3 copies) and NYSDEC Region 9 Office (3 copies). There have been no other indications that these materials were not available for public review. The NYSDEC will

contact the library to determine if these materials have been available to the public.

32. **Because of health problems believed to be related to the site, this commentor requested an epidemiological study and additional sampling of off-site areas.**

RESPONSE: Please see response to Comment 22, regarding the epidemiological study.

To evaluate the possibility that contaminants have migrated off site, the NYSDEC conducted sampling of surface soil, subsurface soil, and groundwater around the perimeter of the site. The data indicated that no significant migration of contaminants to off-site areas had occurred. Some low-level contamination was detected in surface soils near the perimeter of the site which indicated contaminated water/oil probably ran off during site operations. The Robinson Street storm sewer was identified as a route of off-site migration both during site operations and as an ongoing occurrence, however, to a much lesser extent. The possibility that site operations affected the health of exposed populations will be evaluated by the NYSDOH. However, the results of this evaluation, of events that occurred during the past, should have no impact on the selection of a remedy to address the site in its present condition.

33. **What cost benefit ratio formula does NYSDEC (w/EPA) use to place/arrive at a chosen remediation/dollar cost with respect to humanity/human life?**

RESPONSE: The NYSDEC does not employ a cost/benefit ratio for selecting a remedy. As described in the project document *"Phase III Feasibility Study"* (Phase III FS), costs are only one of several factors which are evaluated. All remedies which are evaluated in the detailed analysis must be fully protective of human health and the environment. Costs are only used to compare those alternatives which are found to be fully protective.

34. **Is remediation to occur at Location(s) A, B, C, D, and Carruthers Playground? What remedy for each and why this remedy over another?**

RESPONSE: That portion of the site which is to be remediated is depicted in the PRAP and comprises portions of areas A, B, C and D as described in the Preliminary Baseline Risk Assessment. No remediation is planned for the Carruthers Playground as site-related contamination was not discovered in this area. (For further discussion, see response 16.) The proposed remedy is the same for all areas of the site. The reasons supporting the selected remedy are described in the PRAP and Phase III FS.

35. **Is capping at Area C & D temporary until remediation is begun? For many years black oil sat in the large lagoons; did the oil migrate into the surrounding soil contaminating soil/land off site? Y/N? To what extent? If not, how do you know since untested?**

RESPONSE: The cap on the eastern portion of the site was placed by Booth Oil during closure of the facility to prevent direct contact with wastes. This cap can be considered temporary, as the remedy selected by the NYSDEC will address the wastes buried beneath the cap. As described in the "Phase I / Phase II Remedial Investigation

Report", the wastes beneath the lagoons probably have contributed to the on-site contaminated groundwater. There is no indication that the lagoon wastes or the resulting contaminated groundwater has migrated in significant quantities to off-site areas.

36. **If a house would be on fire on No. Marion Street, would it possibly trigger an explosion due to the volatility of PCBs on adjacent Booth Oil property? Y/N?**

RESPONSE: An explosion at the Booth Oil site would not be triggered by a house fire on North Marion Street.

37. **After remediation what becomes of the land?**

RESPONSE: After remediation, the site owners would be allowed use of their property for non-residential development in accordance with the recommended deed restrictions, consistent with local zoning and land use restrictions.

38. **Contaminated River sediments are not addressed by this proposed remedy.**

RESPONSE: The nature and extent of contaminated sediments in the Little River will be determined during additional investigations as a separate operable unit. The remedial program for this separate operable unit will be implemented with full public involvement.

The following issue was raised by Mr. Edwin J. Kuczkowski, 310 Homestead Drive, North Tonawanda, N.Y., in a letter received by the NYSDOH on March 2, 1992 (Attachment 6).

39. **I believe that a health inquiry survey should not only be conducted on neighborhood residents but also health inquiry forms should also be sent to all former long-term employees of the Lawless Container Corporation. The Lawless Corporation Plant is immediately adjacent to the south of the Booth Oil Co. property in N. Tonawanda, N.Y.**

RESPONSE: Please see response to Comment 22.

The NYSDOH will also provide exposure survey forms to an appropriate representative of former long-term Lawless Container Corporation employees for distribution to those former employees.

The following issues were raised by David L. Roach, of Blair and Roach Attorneys on behalf of their client, Booth Oil Co., Inc. in a letter dated March 13, 1992 (Attachment 7).

40. **What is the basis for determining that the site is hazardous?**

RESPONSE: The NYSDEC has confirmed the that the Booth Oil site is an inactive hazardous waste site based upon the presence of PCBs in excess of the hazardous waste regulatory threshold of 50 parts per million (ppm). The initial determination that the soils exhibited the characteristic of ignitability was in error. However, this does not effect the status of the site, as the basis for listing is the hazardous levels of PCBs.

PCBs were found to exceed the regulatory threshold of 50 ppm at 3 surface soil locations, 2 subsoil locations, 2 groundwater locations, and in 1 catch basin. The two groundwater samples which were collected from monitoring well-8 (MW-8) were actually a non-aqueous phase oil layer floating on top of the groundwater. The first sample indicated PCB concentrations in excess of 1000 ppm and the second sample, which was taken to confirm the first, indicated PCBs in excess of 650 ppm. In addition to those areas of the site exceeding the regulatory threshold, virtually all areas of the site exhibited elevated levels of PCB sufficient to pose a potential threat to human health and the environment. Please refer the to report Phase I/Phase II Remedial Investigation Report (August 1991) for a complete discussion of the contaminant distribution on the site.

41. **The health risks to children playing at the site have been grossly overstated and are irrational. The alleged groundwater contamination does not appear to present any health risk. No potential health threats were identified for the residential and commercial population near the site.**

RESPONSE: In the "Preliminary Baseline Health Risk Assessment" (HRA), an unacceptable risk to children playing on the site was calculated. This calculated risk was based on an exposure scenario developed in accordance with the U.S. Environmental Protection Agency (USEPA) guidance entitled *"Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual"*. The increased health risk is attributed to dermal contact and ingestion of contaminated surface soils at the site.

An ingestion rate of 10 milligrams/day (mg/day) for non-pica children and 100 mg/day for pica children was used in the exposure scenario. These figures were obtained in accordance with the USEPA guidance document. For non-pica children, the ingestion rate accounts primarily for incidental ingestion of airborne dust. The pica rate accounts for the intentional ingestion of soil by children (pica behavior). Please refer the HRA for a complete description of the risk assessment techniques and the supporting documentation.

In summary, the HRA was performed in accordance with the accepted USEPA protocols as contained in the guidance document *"Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual"*. Using these techniques, which are conservative by nature, an increased risk was calculated for children playing on the site. Unacceptable risk levels were not indicated for exposure to groundwater or for any off-site residential or commercial receptor.

42. **The magnitude of the "problem" represented by the site has been grossly overstated or improperly described. The description of the lagoons is inaccurate as to their size and contents.**

RESPONSE: The size (i.e., areal extent, volume of contamination) is not directly considered in assessing the potential threats to human health and the environment posed by the hazardous wastes and associated contaminated media at a site. The relative size of the Booth Oil site as compared to other sites on the Registry has no

bearing on the remedial program required to be implemented at the site under Environmental Conservation Law. The area of the lagoons was estimated at approximate .5 acres to account for contaminated subsurface soils which were encountered by borings in the estimated location of the lagoons. The sludges disposed in these buried lagoons are not only "inert solids" as suggested by the commentor. The analytical data indicates that this sludge, which is in excess of four feet thick, contains greater that 1000 ppm of volatile organic compounds, greater than 800 ppm of semi-volatile organic compounds, and PCBs at over 100 ppm. This material meets the definition of hazardous waste under 6NYCRR Part 371.

43. **The costs of the RI/FS and the remedy are excessive considering the size of the site and health risks posed by the site. In-situ bioremediation offers the same or greater effectiveness than the PRAP with less disruption to community and significantly less cost.**

RESPONSE: The cost of a RI/FS is relatively independent of the size of the site or the magnitude of the risks posed by the site. The extent and costs of the RI/FS for the Booth Oil site were necessary to determine the extent of the contamination resulting from the remaining hazardous wastes and to evaluate alternatives necessary to mitigate the potential risks posed by the hazardous wastes.

Bioremediation (in-situ and ex-situ) was identified as a possible remedial alternative at the initial stages of the Feasibility Study. This technology was not considered in detail since many of the contaminants at the Booth Oil site are not readily biodegraded. The NYSDEC has not identified any site at which PCBs and chlorinated organic compounds such as trichloroethylene, dichloroethylene, and vinyl chloride were successfully remediated by in-situ bioremediation techniques, lime, or fungi. Please refer to the report entitled *"Phase I/Phase II Feasibility Study Report"* (February 1991) for a discussion of the reasons for rejecting this alternative. The unsupported assertions made by the commentor supporting in-situ bioremediation are not sufficient to revise the NYSDEC's position on the inapplicability of this unproven technology for the contaminant types and site conditions of the Booth Oil project.

The advantages that the commentator presents of in-situ bioremediation over the preferred alternative are irrelevant since in-situ bioremediation has not been shown to be effective for the type of contaminants identified at the Booth Oil site.

APPENDIX A

Administrative Record

Administrative Record

The following documents, which have been available at the document repositories, constitute the Administrative Record for the Booth Oil site, Remedial Investigation/ Feasibility Study.

June 1990:	Remedial Investigation and Feasibility Study Work Plan
September 1990:	Phase I Remedial Investigation Field Record Report
November 1990:	Work Plan Addendum for Second Phase Remedial Investigation
February 1991:	Phase I, Remedial Investigation Report
February 1991:	Phase I/II Feasibility Study Report
March 1991:	Phase II Remedial Investigation Field Record Report
March 1991:	Preliminary Baseline Health Risk Assessment
August 1991:	Phase I/II Remedial INVestigation Report
February 1992:	Phase III Feasibility Study Report
February 1992:	Proposed Remedial Action Plan
February 1992:	Minutes of Public Hearing

ATTACHMENT 1

City of North Tonawanda

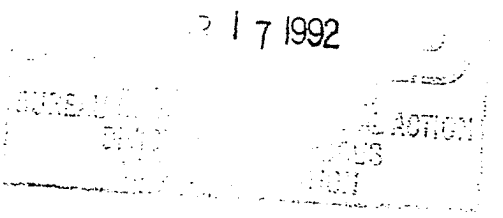
Second Ward Alderman
881 Oliver Street
North Tonawanda, New York 14120

March 13, 1992

Leonard J. Wudyka
Alderman

Telephone
(716) 693-4228

Mr. A. Jeffrey Mirarchi, P.E.
Project Manager - Booth Oil Site
NYS Department of Environmental Conservation
50 Wolf Road, Room 222
Albany, New York 12233-7010



RE: BOOTH OIL SITE REMEDIATION
CITY OF NORTH TONAWANDA, NY

Dear Mr. Mirarchi:

The Honorable Elizabeth C. Hoffman, Mayor, and the Common Council of the City of North Tonawanda, express our thanks for your cooperation in conducting a very informative and constructive public hearing and meeting, regarding the Booth Oil inactive hazardous waste site, on Thursday, February 27, 1992.

Mr. William Heim, a very concerned resident bordering the Booth Oil site is an expectant father, and has taken a lead role in representing the residents.

After a few discussions with Mr. Heim, three (3) considerations of most concern should be addressed and they are the following:

1. The on-site treatment alternative seems to be the direction NYSDEC is considering; treatment under a spring loaded structure (bubble-type enclosure) is a must. This would prevent human health, and further environmental problems. It would also minimize excessive odors, vapors, and dust which would otherwise affect the area.

2. Cleaning up the site is estimated to take between 1-1/2 to 2 years to complete. We want to make sure that this on-site clean-up facility, erected for the Booth Oil site, is not to be used for the cleaning of any other hazardous waste hauled in from other nearby contaminated areas. What assurances will the State make that this will not happen?

3. The baseline Human Health Risk Assessment (H.R.A.) evaluated the risk posed by the site in its existing condition. The evaluation revealed that unacceptable risks would result if any children played in the highly contaminated areas of the site. The assessment goes on to state that no significant potential health threats were identified for the residents and commercial population near the site.

Mr. A. Jeffrey Mirarchi, P.E.
Project Manager - Booth Oil Site
NYS Department of Environmental Conservation

March 13, 1992

Item 3. Con't.

> We are not certain what human health risk the Booth Oil contaminated site might already have on nearby residents. We request that NYSDEC make arrangements to give these residents physical medical examinations if they desire. This would be an incidental cost, when compared to the overall project costs, and would have a profound effect on the morale and well being of the residents adjacent to the site. This would also renew confidence that the NYSDEC and NYSDOH are there to protect the residents, giving proper assurances that no significant health risks exist.

The Mayor and City Council strongly urge that you study the above considerations, and any others you deem important and necessary in determining your final remedial decision for the Booth Oil inactive hazardous waste site.

Thank you again, and please keep us informed of the progress on this most urgent situation.

Sincerely,

Leonard J. Wudyka

Leonard J. Wudyka
Alderman, 2nd Ward

LJW:dmf

cc: Mayor
Common Council
City Attorney
City Engineer
P. Dicky, NC Health Dep't.
Robert Schick, Project Dir. NYSDEC
A. Wakeman, NYSDOH

ATTACHMEHT 2

JM

att 2

William Heine, Jr.
116 N. Marion Street
N. Tonawanda, NY 14120
March 10, 1992

Mr. Jeffrey Mirarchi
NYSDEC - Central Office
Div. of Hazardous Waste
50 Wolf Road
Albany, NY 12233-7010

Dear Mr. Mirarchi,

I would like to make the following comments regarding remediation at the Booth Oil inactive hazardous waste sight #9-32-100.

After much research and discussion with Mr. Dan Gagliardo of OHM Remediation Corp., it appears the on-sight clean up would be satisfactory providing the following suggestions be adhered to:

1. The on-sight remediation be conducted completely under a "Green House" structure to eliminate or greatly reduce airborne contaminants.

2. The Booth Oil sight would be the only soils treated at this sight. By this I mean contaminated soils would not be brought in from the Gill Creek sight in Niagara Falls or any other sight for treatment at the Booth Oil sight.

3. Strict health monitoring be done throughout the remediation phase and results of such tests be known to the residents of the effected areas.

4. A plan for daytime relocation be drafted in the event conditions should warrant such a relocation.

Mr. Mirarchi, I expect a reply to my concerns regarding the clean up and hope you may have one more meeting inviting all effected residents and give straight answers to their questions.

Thank you,

William Heine Jr.

William Heine, Jr.
DAYTIME PHONE
716 826-8834

ATTACHMENT 3

All NAmes collecteD BY
William Heine 116 N. MARION ST.

copies on File with NT. city A.

att 3

March 4, 1992

We, the undersigned residents of North Tonawanda, wish to express the following comments in regards to the Booth Oil inactive hazardous waste sight #9-32-100.

1. On sight clean up would be acceptable providing the sight be enclosed in a "Greenhouse" type structure as to protect the residents from airborne contaminants that would arise from construction.

2. That the portable incinerator would remain just that, portable. It would be removed upon completion of remediation at the Booth Oil sight and that no other waste be brought to the Booth sight for treatment.

3. Strict health monitoring be done throughout the remediation process.

4. A plan for daytime relocation of "at risk residents" be drafted in case such conditions arise that poses a threat to public health.

NAME	ADDRESS
[illegible]	174 Pine St N.T.
[illegible]	823 [illegible] Rd NT
Jim Coughlin	305 Robinson St N.T.
Bill Price	577 E. Thompson St NT
[illegible]	490½ Schenck N.T.
[illegible]	141 Wilmer Rd NT
John M. [illegible]	471 Oliver
Dennis M. Fitzpatrick	26 16TH AVE N.T.
Herbert E. [illegible]	401 Bennett St. N Tonawanda N.Y. 1412
Brian J. [illegible]	253 Payne No. TON.
[illegible]	1670 Forbes St N. Ton.
[illegible]	67 Klaum Ave. N TONA.
Paul [illegible]	243 Miller St N Tona.
Michael Pientorak	173 Pine St No. Tona
[illegible] Cert. N.Y.S. E.M.T.	373 Stenzil Pl. No. Tona.
[illegible]	599 Ward Rd N. Ton.
[illegible]	304 Schenck St N.T.
David [illegible]	57 Zimmerman NT
[illegible]	219 Robinson St No. Ton N.Y. 1412
William [illegible]	36 Fillmore Ave. N. T.
[illegible]	183 Roncroff Dr. N.T.
[illegible]	112 North Marion St.
Carol Doyle	195 Maid St. N.T.

All NAMES, collected By William. Heine 116 N. MARION ST.

Copies on file with N.T. City Attny

March 4, 1992

We, the undersigned residents of North Tonawanda, wish to express the following comments in regards to the Booth Oil inactive hazardous waste sight #9-32-100.

1. On sight clean up would be acceptable providing the sight be enclosed in a "Greenhouse" type structure as to protect the residents from airborne contaminants that would arise from construction.

2. That the portable incinerator would remain just that, portable. It would be removed upon completion of remediation at the Booth Oil sight and that <u>no</u> other waste be brought to the Booth sight for treatment.

3. Strict health monitoring be done throughout the remediation process.

4. A plan for daytime relocation of "at risk residents" be drafted in case such conditions arise that poses a threat to public health.

NAME	ADDRESS
William Heine	116 N. Marion St.
Christine Heine	116 No. Marion St.
Gloria Duval	120 N. Marion St.
Joseph W. Duval	120 N. MARION ST.
Herman Hastreiter	180 N Marion St
Elizabeth Doherty	111 N Marion St
[illegible]	119 N. Marion St. N. Ton.
Sandra L. Hume	119 N. Marion St. NO. TONA.
Mary K. Berry	121 N. Marion St. V-R
Gerald M Long	102 N. MARION ST
Debra L. Long	102 N. Marion St. N. Ton.
Terry Patterson	123 N. Marion St. N. Tona.
Karen L. Bass	127 N. Marion St. N. Ton. 14120
Frank DiPillo	112 N. Marion St N Tona 1412[illegible]
Adeline DiPillo	112 N. Marion St N-Tona 1412

ATTACHMENT 4

AM 4

March 15, 1992

Francine Whiton
137 Sommer St.
No. Tonawanda, NY 14120

Dear Mr. Mirarchi:

This letter is in regards to the Booth Oil Site in my immediate area. I regret not being able to attend your most recent meeting pertaining to this issue, but I had pressing family matters that warranted my attention and hence, was unable to attend. This I did with great regret, because I found your previous preliminary meeting informative and helpful. The March meeting would have afforded me answers to my questions and help clarify my impressions and confusion that I experienced while studying the volumes available at the library. I must admit that I was at a loss when it came to various terminology and charts, but I tried to the best of my ability to get the "Gist" of all being said.

A few things stand out in my mind. The most important being the need for a concise and through Health Evaluation Study for residents living in the immediate area surrounding this very toxic dump. I, myself, am a victim of Booth Oil. I grew up in this area, as did my 5 brothers and sisters. Infact, in 1983, I purchased the very home I grew up in from my mothers estate. Had I known how toxic this area was, I would have put sentiment aside, and not done so. I, along with almost all of the other neighborhood children played on this site. The fact that there was a huge oil lake surrounding the big oil tank did not phase us. The fruit trees, wild berries, thick brush and small hill surrounding this lake was our favorite play area. No one associated this area with "danger". No one spoke of

Toxic materials. Now, as an adult, I find I have many health problems. (One of which is severe and debilitating migraine headaches which I have endured for over 25 years.)

Even now I observe many neighborhood children playing on this toxic site and unfortunately, the attitude of some is, "I'm not dead yet so there must not be any danger to me!"

My impression of your research is that there are substances that are more potent than others and hence, provide a greater or lesser degree of cancer risk because of it. I concur with this, but would like to take it a step further by saying there still remains many "unknowns". (After all, isn't this why cancer research is an on-going process?) Your report stated that your "toxic studies are generally conducted for exposure to a single compound of concern". My greatest concern along this line of reasoning is- exactly, what affect do toxic substances have on the human body when other chemicals are present, and what indeed, is the "synergistic" and perhaps, cummulative affect, and how does "the time factor" influence ones chance of acquiring cancer later in life? (Many people are under the myth that if they have been smoking for some 20=30 years, then they have beat the odds of ever getting cancer. We now know this to be untrue.) I think we may be living with some "Myths" in regards to the effect (Long term) of toxics also. I personally feel that this is an area where more data and research is needed, and where we have only touched the "tip" of the iceberg. A health survey in our immediate area is a step in the right direction.

I also feel that all children that play in the area of Booth oil should be offered a blood test to determine lead content. I think some parents may stand up and take notice following these results.

I have read over your "Proposed Remedial Action Plan" and would once again like to go on record as saying, "Remove this toxic soil, do not leave it, or can it."! I am also very concerned about inhalation of hazardous fumes and airborne toxic substances during clean-up. I regret my letter may reach you to late to make a big difference, but I had to try anyways.
(I apoligize for my typewriter and my typing- neither of us is working well today.)

Sincerely,
Francine Whiton
Francine Whiton

ATTACHMENT 5

Sonia M. Dusza
123 Miller Street
North Tonawanda, New York 14120
(716) 692-8764

March 15, 1992

A. Jeffrey Mirarchi, P.E.
Project Manager - Booth Oil site
NYS Department of Environmental
Conservation
Room 222
50 Wolf Road
Albany, New York 12233-7010

Re: Questions & Comments with respect to NYS/DEC Proposed Remedial Action Plan Booth Oil Inactive Hazardous Waste Site (Site Registry No. 9-32-100), 76 Robinson Street, No. Tonawanda, NY

Dear Mr. Mirarchi & DEC Staff Members:

As a life long citizen of North Tonawanda, a resident of the the above address since 1949 with my parents, Henry and Bernice Dusza, a residentially zoned area/neighborhood and as an advocate of quality of life and quality of environment I submit some of the following questions and comments:

Comment #1: I request an extension of at least two weeks from the seventeen days deadline (2/27 to 3/15) in which to submit comments/questions on the proposed/preferred remedy(ies) action plan by DEC as this relates with the researching/evaluating the data contained in the voluminous volumes on RI/FS, Prelim. Health Risk Assessment and Environmental Assessment and comparing with the proposed/preferred remedy. NOTE: Residents/taxpayers have suffered and been aggreived from the effects of the Booth Oil's operations for decades --- two weeks are not going to change the status for remediation.

Comment #2: incidential to remediation comments/questions yet a source of frustration, annoyance and irritation. On the last two occasions I specifically went to the No. Tona. Public Library/repository to read the most current volume (See Mirarchi 2/11/92 letter to McKenna) and borrow out; it could neither be physically found or found via the catalogue system. This non-system does not serve citizen participation only hinders. I suggest finding another.

Comment #3: approximately 1981 I was diagnosed as having scleroderma. After reading previous Dvirka & Bartilucci did the thought register, may the Booth Oil operations contaminants have a connection with my own health? Therefore, I request that a meaningful and full scale epidemiological studies be implemented of residents/workers within a 1000 feet radius of the Booth Oil Site. That property/land, air , soil be tested evaluated. Could migration of contaminants be

ie. soil contamination from perculation? Hence dermal contact??? During the Booth Oil's operations ie. "cooking" the oil residents had a myriad of physical symptoms such as irritation to throat, eyes burning, dizziness, heart pounding, etc. Before remediation is selected the DEC I should think would want to know what is the status health wise of the population impacted from the firm's operations and via effect(s) not only to environment damage but human health as well and before consideration of the appropriate remediation for a short term and long term payoff/effect. Find encl. att'd.

Question #1: What cost -benefit ratio formula does NYSDEC (w/ EPA) use to place/arrive at a chosen remediation/dollar cost with respect to humanity/human life???

Q. #2: Is remediation to occur at Location(s) A, B, C, D, and Carruthers Playground? What remedy for each and why this remedy over another?

Q. #3: Is capping at Area C & D temporary until remediation is begun? For many years black oil sat in the large lagoons; did the oil migrate into the surrounding soil contaminating soil/land off site? Y/N ? to what extent? If not, how do you know since untested?

Q. #4: If a house would be on fire on No. Marion Street would it possibly trigger an explosion due to the violatilty of PCBs on adjacent Booth Oil property? Y/N? How would this impact on the quality of both life / environment of residents living in neigborhood?

Q. $5: After remediation what becomes of the land?

C. #4: W.r.t 'contaminated River sediments (Pg. 4) are not addressed by this proposed remedy', See encl. attached

Due to clock I must submit, hope DEC will extend comment period. Thank you for the opportunity.

Sincerly yours,

Sonia M. Dusza

encl. 3 (2 above & Dusza's 2/21/92
letter to City of NT officals)

cc: Mayor Hoffman
Common Council
WNY-REACH

UNITED SCLERODERMA FOUNDATION
WESTERN NEW YORK CHAPTER
MEMBERSHIP APPLICATION FOR PATIENTS, FAMILY AND FRIENDS

NAME: _____

ADDRESS: _____ ZIP_____

TELEPHONE: _____

_____Enclosed is my check for $12.00 for a one year membership
___New ___Renewal ___Patient ___Family ___Friend

_____Enclosed is my tax deductible donation for $_____
(make all checks payable to USF Western NY Chapter)

_____I would be interested in helping out with:
___Phone Calling ___Fund Raising ___Newsletter
___Publicity/Media ___Meetings/Workshops

THANKS FOR YOUR SUPPORT!!

United Scleroderma Foundation, Western New York Chapter,
P.O. Box 362, Elma, New York 14059

United Scleroderma Foundation
Western New York Chapter
P.O. Box 362
Elma, New York 14059

Non-Profit Organization
U. S. POSTAGE PAID
Elma, New York 14059
Permit No. 25

ADDRESS CORRECTION REQUESTED

Sonia Dusza
123 Miller St.
N. Tonawanda, NY 14120

Convention '91- Medical Workshops: Part 1

This is the first in a series of articles in which we will attempt to summarize the medical presentations made on Saturday, August 24,1991 in Fort Lauderdale, Florida for the benefit of our membership.

Overview of Scleroderma-

Dr. Daniel Wallace

There are about 150 rheumatic diseases which can be grouped into 7 families. The first family is osteoarthritis which affects 20-30 million Americans and is the most common. The second form of arthritis is crystal induced disease that is caused by a crystal such as gout which is caused by uric acid crystals. There are about 2 or 3 million Americans who have a form of crystal induced arthritis. The third family of arthritis is metabolic bone disease. That is where you have too much calcium in the bones or too little as in osteoporosis. We don't know how many people have the metabolic form but probably 10-20 million. The fourth family is septic arthritis which is caused by an infection in the joint and extends from staph or bacteriological infections in the joint to forms resulting from reactions to byproducts of viral or bacterial infection like AIDS arthritis and Lyme Disease. The fifth family used to be called Rheumatoid Variants and includes diseases like ankylosing spondolitis and probably affects another 3-4 million Americans. The sixth category is something everybody gets at one time or another. It is called soft tissue rheumatism that occurs in the supporting tissue around the joint. Tendonitis, bursitis and fibrositis are examples of diseases in this group. The seventh and last family are the autoimmune diseases that affect probably 7-8 million Americans. The most common autoimmune illness is rheumatoid arthritis which affects 3-4 million Americans, the second most common is lupus which affects 1/2-1 million Americans and the third most common is Scleroderma. So of the seven families of arthritis, the autoimmune family is one of the smaller and scleroderma is the third most common of that family.

What is sclerodera? It is a disease of unknown cause that affects primarily women but not an overwhelming majority are women. Most people tend to get it between the ages of 30 and 45. We don't know what brings it on. There may be a sclerderma gene but the research into this has been contradictory. We tend to believe it may be genetic although it may be a virus or something in the environment that turns on the genes. In maybe 20% of the time there are certain known environmental situations that can induce it. Some of these include polyvinyl chloride, silicon breast implants and industrial silicosis. There are reports of numerous drugs that may induce it like appetite suppressants, cocaine and bleomycin. More recently other environmental factors like toxic oil syndrome and more recently L-tryptophan.

Most cases are of unknown cause but what is the process that is turned on? The process is characterized by three features: 1. increased collagen and fibroblast production, 2. an autoimmune feature where T-lympocytes are excessive and is the opposite of cancer or AIDS, 3. Episodes of injury to the endothelial cells that line the blood vessels.

There are 5 classifications of scleroderma: 1. Localized.. morphea or lineal where you have streaks of scleroderma and it often goes away on its own, 2. Limited.. which encompasses the so-called CREST syndrome. (Calcinosis, Raynaud's, Esophagitis, Sclerodactyly and Telangectasia.), 3. Diffuse.. encompasses PSS (progressive systemic sclerosis) which is usually an organ threatening disease. Ther are probably 3 or 4 cases of CREST for every case of PSS, 4. Mixed Connective Tissue disease.. where you have the tight skin and features of scleroderma concurrent with autoimmune features seen in other rheumatic diseases such as systemic lupus or rheumatoid arthritis, 5. Environmental.. from graft-versus-host reaction or silicosis where it is similar to scleroderma but has its own unique imprint that differentiates it from classic sclerodrma.

What kind of tests can we do to esablish a diagnosis? Hopefully, the patient is referred to a Rheumatologist who will do a blood test. Most of the results in a blood test are inconclusive although there may be anemia, certain types of eosiniphils may be present, or the sedimentation rate may be high but the absence of these indicators do not preclude scleroderma. An anti-nuclear antibody (ANA) test that is positive may indicate lupus or scleroderma but scleroderma is usually associated with a speckled pattern or a centromere pattern ANA. CREST patients tend to have the centromere pattern antibodies whereas patients with the more diffuse form will tend to have an anti-SCL70 antibody or an anti-topoisomerase antibody. This may indicate that CREST and PSS are different diseases and one doesn't involve the other. We have since found that the limited form can include lung disease.

The skin is the target organ of scleroderma. Tight skin with calcium deposits or dry mucous membranes. Raynaud's is see in more than 90% of patients. The GI tract can be involved throughout. The kidneys can be involved. The lungs can be involved with pleuresy or interstitial fibrosis (scarring of the lungs) or pulmonary hypertension or Raynaud's of the lung. Sjogren's syndrome or dry mouth. Inflammation of muscles or joints. The brain and liver are usually spared.

CONNECTION LINE

United Scleroderma Foundation, Western New York — October 1991

NEXT MEETING:

DATE: SATURDAY, OCTOBER 19, 1991

TIME: 1:00 pm

PLACE: HEALTH CARE PLAN MEDICAL CENTER
120 GARDENVILLE PARKWAY, WEST SENECA, NY

SPEAKER: NOELLA M. KAMINSKA
PATIENT SERVICES COORDINATOR
ARTHRITIS FOUNDATION, WNY CHAPTER

TOPIC: "Support Services for Arthritis-Related Illnesses"

A variety of programs, services and materials are available to individuals in the Western New York area who suffer from arthritis or related diseases. Noella will describe the work of the Arthritis Foundation and the many resources it offers to us. We will learn about exercise classes, self-help courses, support groups, acquatic programs, information and referral, videotapes and other materials on arthritis and related illnesses such as scleroderma. Everyone is welcome.

****

HAPPY SEPTEMBER BIRTHDAYS TO:

Ted Kotek - September 17
Charles Notaro - September 25

****

United Scleroderma Foundation

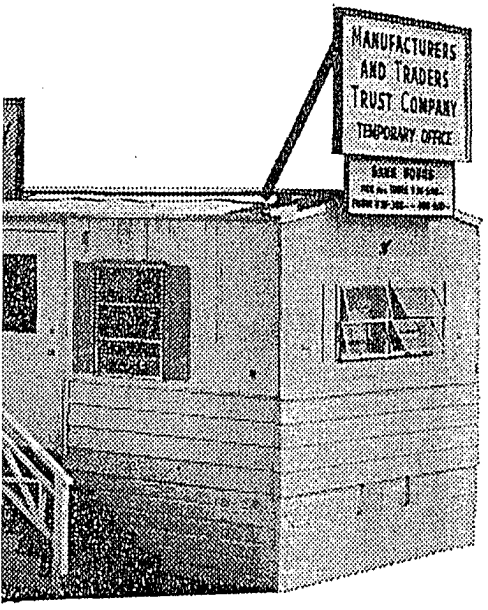
The mission of the United Scleroderma Foundation is to provide educational and emotional support for scleroderma patients and their families. The USF is committed to increasing awareness of this devastating disease and raising essential research dollars to determine its cause, enhance treatment and find a cure.

MEMBER SUPPORT VISITS

The Western New York Chapter of the United Scleroderma Foundation can provide individualized support to people in the community with scleroderma through home or hospital visits. If you or a friend, relative or family member with scleroderma are hospitalized or homebound and would like a visit, please call us. We will be glad to send a member to talk with you. For home or hospital visits, call (652-3040) or (689-8846).

ons

/anda



Pollution of River Caused Concern Here 85 Years Ago

Sewage dumping in the Niagara River and the Erie Canal was a major problem to North Tonawanda village residents.

Their vigorous opposition to such pollution was expressed in a newspaper item June 25, 1880.

"Buffalo, the 'Queen City of the Lakes,' with all her parks and beautiful grounds; with all her boasted wealth and enterprise; her clean streets and beautiful location; her gentle lake breezes and invigorating atmosphere, permits and has permitted beyond all reasonable time, the most disgusting nuisance ever allowed within the limits of any corporation.

"The Erie Canal is made the receptacle for all the sewage, and accumulated filth of pens and stables of its 180,000 people and its vast numbers of horses, cattle, sheep and hogs.

"When vaporization is the heaviest, it will make a person entirely unaccustomed to it deathly sick in five minutes. It infects the grain on the canal and if a boat loaded with grain should sink, its cargo would be worthless. A rat could not eat the sunken grain and live.

"It is an outrage on the boatmen and every inhabitant upon the canal within the reach of this abuse. Tonawanda has no doubt lost many lives from the effect of the poison and there is no doubt it will have to suffer for the next century unless some action is taken to compel Buffalo to confine her filth to her own limits."

Patent Medicine Was Promoted

There weren't many doctors around in the 1880s to cure the ills and injuries of early North Tonawandans, and there were no clinics, public health programs or a hospital.

But this item from the Daily News of April 10, 1880, gives an idea of how some folks got rid of their aches and pains:

"Dr. Filkins Bros.' agent is stopping at the Excelsior House where consultation is free and cures warranted.

Sonia M. Dusza
123 Miller Street
North Tonawanda, New York 14120
(716) 692-8764

February 21, 1992

John Wylucki, City Clerk
Office of City Clerk
Jeffrey Mis, City Attorney
Department of Law
Elizabeth Hoffman, Mayor
Thomas Jaccarino, Council Pres. &
5th Ward Alderman
Leonard Wudyka, 2nd Ward
Paul Reidenouer, 1st Ward
Joseph Liberto, 3rd Ward
Carol Steurnagel, 4th Ward
City Hall
City of North Tonawanda
216 Payne Avenue
North Tonawanda, New York 14120

Re: NYS DEC Public Meeting and Hearing on Thursday, February 27, 1992 at 7PM w.r.t. Booth Oil Inactive Hazardous Waste Site

Dear Mayor Hoffman, Council Members, Messrs. Mis & Wylucki:

The purpose of this letter is to request of you, as a citizen of this community and in your capacity and duties as an elected municipal offical and under the powers and authority granted you in the Charter of the City of North Tonawanda, Its laws, codes and ordinances and the New York State Constitution and Statutes, the following:

(1) your attendance at the above public and <u>most</u> important Meeting & Hearing with DEC next week

(2) your participatory support and actions in protecting we/ citizen(s), <u>residing in a residentially zoned neighborhood</u> and in the general vicinity of Booth Oil, located in an M-1 zoned area on Robinson Street in North Tonawanda, <u>and</u> the citizens, taxpayer(s) who individually and collectively <u>are also</u> impacted by the Booth Oil Waste Site as it relates in protection/ing of Our/All citizens' safety, security, health, general welfare, <u>and</u> in the protecting of our already invested dollars of our home(s)/ property/land in this neighborhood in this community and the preservation of neighborhood and its quality of life and environment <u>before</u> the Site's present conditions

ATTACHMENT 6

JM

106 3/4/92 w/ [illegible] DOH [illegible]

BOOTH OIL SITE
Questions/Comments Worksheet

Thank you for coming tonight. In order to accurately document the meeting and conduct the meeting in an orderly manner, we are asking you to follow the procedure listed below when presenting your comments or questions. Your cooperation will be greatly appreciated.

1. When recognized please stand.
2. State your name and address each time you are recognized.
3. State your questions and comments clearly.
4. Please keep your comments brief and succinct.
5. You can use this sheet of paper to organize your thoughts or provide your questions/comments to us in writing.
6. We will make every effort to answer your questions this evening. Those questions which we are unable to answer will be responded to in the Responsiveness Summary which will be provided following the close of the comment period.

NAME: Erwin [illegible]

ADDRESS: 310 [illegible] Dr N.T. N.Y. 1412[illegible]

PHONE: 716 693-9505

QUESTION(S): I believe that a health inquiry survey should not only be conducted on neighborhood residents but also health inquiry forms should also be sent to all former long term employees of the Lawless Container Corporation. The Lawless Corporation Plant is immediately adjacent to the south of the Booth Oil Co property in N. Tonawanda, N.Y.

The public comment period ends on March 15, 1992. You can send your written comments to the following address until that date:

Mr. A. Jeffrey Mirarchi, P.E.
Project Manager - Booth Oil site
NYS Department of Environmental Conservation
Room 222
50 Wolf Road
Albany, NY 12233-7010
Telephone: 518/457-4343

ATTACHMENT 7

BLAIR & ROACH
Attorneys
SUITE 400 • THE DUN BUILDING • 110 PEARL STREET
BUFFALO, NEW YORK 14202
PHONE: 716-856-9181 • FAX: 716-856-9197

wt 7

THOMAS R. BLAIR
of Counsel

3043 Delaware Avenue
Kenmore, New York 14217
PHONE: 716-874-7660
FAX: 716-874-7662

March 13, 1992

FEDERAL EXPRESS

New York State Department of
Environmental Conservation
A. Jeffrey Mirarchi, P.E.
Project Manager
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233

Re: Booth Oil Inactive Hazardous Waste Site, Site No. 9-32-100
Proposed Remedial Action Plan

Dear Mr. Mirarchi:

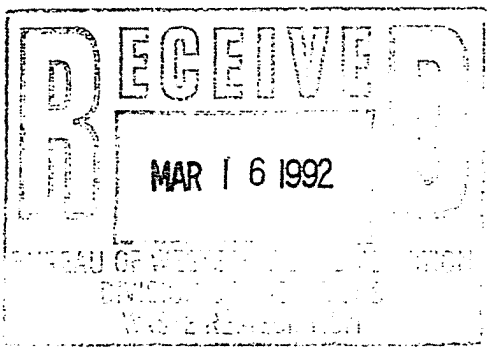
On behalf of our client, Booth Oil Co., Inc. we enclose herewith comments to the proposed remedial action plan for the above-referenced site.

Very truly yours,

BLAIR & ROACH

By: David L. Roach
David L. Roach

DLR:tn
Enclosure



TO: New York State Department of Environmental Conservation

RE: Booth Oil Inactive Hazardous Waste Site, Site No. 9-32100; Proposed Remedial Action Plan

DATED: March 13, 1992

1. Introduction

Booth Oil Co., Inc. ("Booth") is submitting the following comments in response to the Proposed Remedial Action Plan ("PRAP") with respect to the location of its former processing facility on Robinson Street in North Tonawanda, New York ("Site"). This memorandum is submitted in response to the invitation for comments on the PRAP and in accordance with provisions under applicable statutes and regulations allowing for such participation. Due to significant time constraints this is not intended as a comprehensive review of the Phase III, Feasibility Study Report ("Phase III Report") made available on or about February 15, 1992. Rather, it is intended to give notice of significant concerns raised by the PRAP.

2. The Site

Review of the Phase III Report and the earlier report (Phase I and II), together with the summary materials provided by the New York State Department of Environmental Conservation ("DEC") indicates two criteria for determining the status of the site as hazardous: (i) the presence of PCB's in excess of 50 ppm at a few test locations, and (ii) subsurface soils which allegedly demonstrated the characteristic of ignitability (flash point below 140°).

With respect to the PCB's, it should be noted that there were two (2) anomalous results, one in excess of 650 ppm and in the other in excess of 1,000 ppm. There was no suggestion that the results were rechecked. These appear aberrant in view of the fact that most of the samples which exceeded the regulatory threshold of 50 ppm were less than 120 ppm. It is also apparent from the testing that PCB's are not present throughout the site, but rather, exceed the regulatory threshold only at a few certain defined points.

The only other hazardous waste determined to be present at the site involved subsurface soils which were alleged to be ignitable within the meaning of the regulations. The Phase III Report reaches this conclusion, apparently, because certain samples of the subsurface soils had a

flash point below 60°C 140° F. However, the regulations are clear that wastes which are deemed hazardous because of the characteristic of ignitability and are solids must be "capable under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and when ignited, burns so vigorously and persistently that it creates a hazard." 6 NYCRR 371.3(b)(1)(ii). The 140° flash point standard utilized by the Phase III Report applies only to liquids. There is no suggestion that the allegedly ignitable wastes present in the subsurface soils were liquids. Thus, it is questionable whether the site can be deemed hazardous on this basis.

3. Potential Exposures

Apparently, the primary, if not exclusive, health risk associated with the Site concerns ingestion of or dermal exposure to contaminated soil by children between the ages of 10-18 years old playing on the Site an average of three hours per day, 75 days per year for eight years. There is no documented evidence of soil ingestion by anyone at the Site. Moreover, it is highly unlikely that children between the ages of 10-18 ingest soil either accidently or intentionally. Finally, it is assumed that the ingestion or exposure to soil would always occur in the areas of highest contamination.

It would appear that the likely area for recreational use of the property would be outside of the proposed area for remediation. The remediation area is surrounded by or in close proximity to railroad tracks and, for the most part, has little or no vegetation. The more likely areas for recreational use are on the northern and eastern portions of the Site which are closer to the residential areas in and around Marion Street. These areas are not within the remediation area suggested by the PRAP. In sum, the health risk assessment with respect to children ingesting or being exposed over significant periods of time to highly contaminated soil are grossly overstated and irrational.

The alleged groundwater contamination does not appear to present any health risk. First, it is not a source of drinking water. Second, the estimate of the quantity of water within the perched water table at the Site is only 300,000 gallons. This is an extremely small amount of water viewed

in the context of most groundwater remediation proposals or inactive hazardous waste site remediations, generally. Third, it is documented that the water within the perched water table is migrating extremely slowly, if at all. Fourth, the DEC's consultants assert that the groundwater was moving in a northeasterly direction which is away from the Niagara River and the sewer receiver on Robinson Street. Fifth, the naturally existing layer of clay underlying the site prevents significant migration from the perched water table to a lower aquifer. In sum, the groundwater contamination does not represent a significant potential health threat.

It is also suggested that nearby residential and commercial population are exposed to contamination through inhalation of dust and vapors from the site. At most, odors and dust would appear to constitute a nuisance rather than a health threat. The DEC concluded that "[n]o significant potential health threat were [sic] identified for the residence and commercial population near the site."

In sum, the only alleged significant health threat is based upon a theoretical situation and appears to have no basis in fact. There is no documentation of any ingestion of on-Site soils by children, no evidence of skin exposure over extended periods of time and no justification for the use of this private property as a recreational area.

4. Quantification

It is respectfully submitted that the environmental impact and potential health threat represented by the Site have not been expressed in a reasonable context. As indicated above, the estimated quantity of groundwater is 300,000 gallons. This is an extremely small amount of groundwater. Similarly, the estimated amount of contaminated soil, 30,000 cubic yards is a relatively insignificant amount. Compared to most inactive hazardous waste sites on the Registry maintained by New York, this is an extremely small site. For example, the Gratwick Park Site located within one mile, comprised more than 50 acres. The Niagara County Refuse District Landfill, which is close to Gratwick is approximately 50 acres. The PRAP at the Booth Site would involve approximately 1.5 to 2 acres.

Notwithstanding the fact that the Site is extremely small in relation to other sites on the Registry, estimates and assumptions regarding the Site are inaccurate. For example, a discussion of the former lagoons characterizes their size as one-half acre. In fact, drawings of lagoons which were filed previously with DEC indicate their size is approximately one-tenth of an acre. Also, the lagoons are described as being used in plant processing. To the contrary, they were used to hold water prior to decanting to the POTW. Thus, any residual deposits remaining on-Site are probably inert solids which precipitated out of the water and were immobilized upon the addition of lime as part of the closure performed in the early 1980's.

In sum, the magnitude of the "problem" represented by the Site has been grossly overstated or improperly described.

5. Remediation Alternatives

The significant price of the RI/FS (apparently in the range of 1 million dollars) in relation to similar undertakings at Gratwick and Niagara (approximately 1.5 and 2 million dollars, respectively) should cause additional scrutiny given the relative insignificance of the size and alleged health risks associated with the Site. Moreover, the PRAP cost estimate is grossly out of line with remediations at Gratwick (estimated by DEC's consultants to be in the range of 18-20 million dollars for a 53 acre Site) and Niagara (estimated to be about 15 million dollars for a 50 acre Site).

During Phase I of the remedial investigation the consultant identified eleven (11) remediation techniques. One of those techniques was in-situ bio-remediation. This alternative was abandoned in the subsequent reports, and, apparently, not even considered in the Phase III report. It is respectfully submitted that in-situ bio-remediation offers the same or greater effectiveness than the PRAP with significantly less disruption to the community and significantly less cost.

It is not intended that the following discussion serve as a substitute for the PRAP. Rather, it is intended to give sufficient detail to explain and justify the serious consideration of in-situ bio-remediation. Against this background the following program is outlined for serious consideration:

A. Phase I. In the first phase groundwater extraction and injection well galleries will be located in the proposed remediation area after determination of the groundwater flow characteristics for the Site. Previous investigation and general Site characteristics suggest a northwesterly flow rather than northeasterly flow determined by DEC's consultants. Once the downgradient is determined, a clay slurry wall can be installed to the depth of the underlying clay to form a barrier to off-Site migration. After the galleries of wells have been located, physical separation of the oil and water shall commence. Separated oil shall be stored temporarily on-Site, analyzed and managed in accordance with the analysis results. Extracted water will be reinjected into the soil. Chemical additives may be used to immobilize lead which is present in the soil and has been identified as a concern by DEC's consultants. However, it is noted that none of the EP Toxicity tests on the lead exceeded the 5 ppm threshold for designation as a characteristic hazardous waste. Thus, the lead appears to be insoluble and the necessity for additives to immobilize it is remote, at best. Additional chemical additives could be reinjected with the water to break the bonds between contamination and the soil. The extraction/injection system would be operated until immiscible oil can no longer be removed. It is anticipated that a significant amount of the oil will be removed quickly. Removal of marginal amounts of remaining oil will either extend the period for Phase 1 or be effected in Phase II.

B. Phase II. In-situ bio-remediation of the remaining oil contamination in the overburden would be conducted through the extraction, injection well system. It is believed that sufficient data regarding the Site currently exists to allow bio-remediation contractors to respond to a request for proposal ("RFP"). The relatively small size of the project would, most likely, be viewed as a pilot project by most contractors. In addition to bio-remediation for the oil contamination, there are in-situ treatments for PCB's which include the applications of fungi or de-chlorination through the addition of quick lime. EPA has experience with both techniques. A re-refinery in Indiana, the Cam-Or, facility which is the subject of a current CERCLA removal action was determined to contain PCB contamination. The soils were fixed and stabilized through the addition of lime and capped for subsequent removal. After a period of time and prior to removal,

neighborhood. There is no justification for the PRAP when compared to the unexplored alternative of in-situ bio-remediation.

6. Conclusion

The PRAP should not be adopted for the reasons set forth herein. The risk represented by the Site have been grossly exaggerated. Data regarding the Site is inaccurate. The costs, disruptions and results of the PRAP cannot be justified when compared to the same criteria for in-situ bio-remediation.