Department of Environmental Conservation

Division of Hazardous Waste Remediation

Record of Decision

Scott Aviation Site
Village of Lancaster, Erie County
I.D. Number 9-15-149

November 1994

New York State Department of Environmental Conservation
MARIO M. CUOMO, *Governor* LANGDON MARSH, *Commissioner*

DECLARATION FOR THE MINOR MODIFICATION TO THE RECORD OF DECISION

SITE NAME AND LOCATION:

Scott Aviation, Inc.
Village of Lancaster
Erie County, New York

AREA OF CONCERN:

Plant #2 Property, Site No. 915149

DESCRIPTION OF THE MODIFICATION OF THE RECORD OF DECISION:

Scott Aviation has requested that the Department consider a modification of the soil treatment technology in the Record of Decision (ROD). The ROD currently proposes that the soil be excavated and Soil Vacuum Extraction (SVE) be used to remove the Volatile Organic Compounds (VOCs). The company has proposed that a Mechanical Volatilization System (MVS) be used in lieu of the SVE technology to treat contaminated soils. The change was the result of pre-design investigation activities that determined a lower concentration of VOCs in the soil than was detected during the Remedial Investigation and also showed a 3X increase in the over all amount of soil requiring remediation (2800 yd^3 compared to 800 yd^3). The change in the soil technology will also reduce the remediation time from one year to four weeks and proportionally reduce the estimated cost of remediation from $419,700 to $200,000. All other aspects of the ROD will remain in effect including the chosen remedial alternative for groundwater and the remedial action objectives.

The Department has determined that this proposed action meets the intent of the existing ROD for protection of human health and the environment, and is not inconsistent with the remedial concepts developed in the existing ROD.

DECLARATION:

The Department has determined that the change is minor in nature, and therefore the Record of Decision for the Scott Aviation Site has been modified accordingly. A copy of this declaration will be attached to, and made part of the Record of Decision signed on November 7, 1994.

APR 12 1995

Michael J. O'Toole Jr.
Director
Division of Hazardous Waste Remediation
NYS Department of Environmental Conservation

Date

DECLARATION STATEMENT - RECORD OF DECISION

SCOTT AVIATION INACTIVE HAZARDOUS WASTE SITE
VILLAGE OF LANCASTER, ERIE COUNTY, NEW YORK
SITE NO. 915149

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Scott Aviation inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substance Pollution Contingency Plan of March 8, 1990 (40 CFR 300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Scott Aviation 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.

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 ROD, presents a current or potential threat to public health or the environment.

Description of the Selected Remedy

Based upon the Remedial Investigation/Feasibility Study (RI/FS) for the Scott Aviation Site and the criteria identified for the evaluation of alternatives the NYSDEC has selected excavation and ex-situ soil vapor extraction for soil combined with construction of a groundwater interception and extraction trench with effluent treatment for groundwater. The components of the remedy are as follows:

- Excavation of the contaminated soil containing chlorinated solvents in the area of the former UST.
- Ex-situ vacuum extraction of excavated soils in an aboveground treatment cell(s).
- Disposal of treated soil on-site and cover with minimum six inches clay soil.
- Collection of groundwater using a collection trench.
- Physical/chemical treatment of groundwater with discharge to the sanitary sewer system.

- Implementation of a long-term monitoring program which will allow the effectiveness of the selected remedy to be monitored. This long-term monitoring program will be a component of the operations and maintenance for the site and will be developed in accordance with a Remedial Design.

Based upon the results of the remedial investigation, the Feasibility Study and achievement of the Remedial Action Objectives, 20,000 sq. ft. of the northwest part of the Scott property, adjacent to Plant #2, has been designated as the Corrective Action Management Unit (CAMU) for site remediation purposes. The CAMU will consist of an area directly north of the Plant #2 building where the contaminated soil will be treated. An additional area has been established directly adjacent to the plant structure, on the north and west sides, where the treated soil will be spread and covered.

New York State Department of Health Acceptance

The New York Sate Department of Health concurs with the remedy selected for the 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.

November 7, 1994
Date

Ann Hill DeBarbieri
Deputy Commissioner

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SCOTT AVIATION, INC.
Village of Lancaster, Erie County, New York
Site No. 915149
October 1994

SECTION 1: SITE LOCATION AND DESCRIPTION

The Scott Aviation facility is located on approximately 22 acres of land at 225 Erie Avenue in the Village of Lancaster. The area of contamination itself consists of approximately 1/3 acres of the property located at the west end of Plant #2, which is situated on the north side of Erie Avenue (Figure 1). The area is bounded by a unnamed, intermittent stream and open fields to the north, open fields and a private residence to the east, Scott Aviation's Plant #1 building and Erie Avenue to the south, and commercial/light industrial property to the west. The general land use of the area is commercial/light industrial and residential. The unnamed stream flows through a culvert beneath Scott's property and becomes a tributary to Plum Creek and the Buffalo River drainage basin. The site is listed on the New York Registry of Inactive Hazardous Waste Sites as a Class 2 site. A class 2 designation indicates the property poses a significant threat to public health and/or the environment.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

The Scott Aviation Plant #2 facility was constructed in 1965. The 43,200 square foot building is used for product development and manufacturing and contains machine shops and engineering laboratories. A concrete pad located on the southwest corner of Building No.2 was used for the storage of metal cuttings and 55-gallon drums of cutting oils, lubricating oils and solvents. A 3,000 gallon underground storage tank (UST) was installed adjacent to the pad to store the waste oils generated as part of the manufacturing process (Figure 2). An investigation by the company in 1991 determined that the UST had released an unknown amount of the contents to the environment over a period of time.

2.2: Remedial History

The following is a summary of the investigations completed or in progress at the Scott Aviation Site. The major investigative activity conducted at an inactive hazardous waste site is a Remedial Investigation/Feasibility Study (RI/FS). During the RI, the nature and extent of the contamination at the site is determined. This information is then used during the FS to determine an appropriate remedial action that effectively eliminates the threat posed by the site.

- July 1990: Scott conducted a Site Investigation to determine source of stained soils in area of concrete pad

- April 1991: Scott notified NYSDEC Division of Spill Management of removal of a 3,000 gallon UST and visually contaminated soils.

- May 1991: Scott conducted a hydrological assessment of the site to gather information on the geologic profile, groundwater flow direction and the preliminary degree of soil and groundwater contamination.

- June 1991: Scott submitted results of hydrogeological assessment in report entitled; Einal Hydrological Assessment, Scott Aviation Site, June 1991

- September 1991: Site listed on the New York State Registry of Inactive Hazardous Waste Site as a Class 2 site.

- June 1992: Scott signed an Order on Consent (legal document) with DEC to conduct an RI/FS at the site.

- November 1993: Scott submitted completed Remedial Investigation Report.

- March 1994: Scott submitted a draft Final Feasibility Study Report.

An Interim Remedial Measure (IRM) was implemented as part of the initial investigation of the site. The IRM consisted of:

1) The removal of visually contaminated soil from the excavation created during the removal of the 3,000 gallon UST. Contaminated soil was taken off-site and properly disposed of at a permitted landfill. Uncontaminated soil was used as backfill in the tank excavation area.

2) the installation of a passive groundwater collection trench.

The trench was constructed to intercept the flow of contaminants in the upper groundwater zone from the area of the tank excavation. The company has continued to dewater this trench to limit the off-site spread of the contamination while the site was being investigated. Water collected from the trench is disposed of off-site at a permitted hazardous waste treatment/storage/disposal facility.

SECTION 3: CURRENT STATUS

Scott Aviation, under the supervision of the NYSDEC, initiated a Remedial Investigation/ Feasibility Study (RI/FS) in October 1992 to address the contamination at the site. The RI was completed in November 1993. A revised FS was submitted in June 1994. Upon issuance of the

Record of Decision (ROD), the NYSDEC will begin negotiations with Scott to enter into a Remedial Design/Remedial Action (RD/RA) Order on Consent to implement the chosen remedial alternative at the site.

3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted in one phase, from October 1992 and until August 1993. A report entitled Remedial Investigation Report, Scott Aviation, 225 Erie Avenue, Lancaster, New York, dated November 1993 has been prepared describing the field activities and findings of the RI in detail.

The RI activities consisted of the following:

- A Soil Vapor survey to investigate the extent of contamination.
- Installation of six soil borings and six monitoring wells for analyses of soils and groundwater as well as physical properties of soil and hydrogeologic conditions.
- Sampling of nearby surface water and sediments.
- A utility survey to determine if any off-site transport conduits exists.
- An Air Pathways analysis, to determine the effects of the release of volatile organics to the atmosphere.
- A residential basement survey
- A Health Risk Assessment

The analytical data obtained from the RI was compared to Applicable Standards, Criteria, and Guidance (SCGs) in determining remedial alternatives. Groundwater, drinking water and surface water SCGs identified for the Scott Aviation site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of the NYS Sanitary Code. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals for soil.

Based upon the results of the RI, in comparison to the SCGs and potential public health and environmental exposure rates, certain areas and media of the site has been determined to require remediation. The following discussions summarize the extent of the contamination at the site.

Groundwater

Groundwater on the site is contaminated with volatile organic compounds (VOCs), primarily trichloroethylene (TCE) and 1,1,1-trichloroethane (TCA) and their degradation products such as dichloroethene (DCE), dichloroethane (DCA) and vinyl chloride. The depth of the overburden soil is approximately 25 feet and consists of a 10 foot layer of clay followed by alternating layers of silty sand and clay approximately 15 feet thick. A dense black shale underlies the site below 25 feet and is estimated to be approximately 30-55 feet thick. No contamination was detected in the shale bedrock below the soil layer.

The source of contamination was determined to be the area of the former underground storage tank. (Figure 2). Analysis of groundwater collected from the shallow trench located in the immediate area of the former UST detected total VOCs at a concentration of approximately 131,000 parts per billion (ppb) (Figures 3 & 4). The primary constituent detected in this sample was TCA at 56,000 ppb. DCE and DCA were also detected in the trench water samples at concentrations of 32,000 ppb and 37,000 ppb, respectively. The general flow direction of the groundwater through the site is in a west-northwesterly direction. The groundwater at the site was also determined to be confined (under pressure). For this to occur it is believed that groundwater is entering the site along the top of the bedrock and migrating upwards. Because the layer of clay that overlies the silty sand soil is much less permeable than the lower silty sand, it restricts the movement of the groundwater towards the surface.

Based on the results of the soil vapor survey and the installation of downgradient groundwater monitoring wells, the extent of the contamination has been found to be restricted to an area approximately 150 feet from the source. Two sampling events were conducted to confirm the extent of chemical contamination in the site groundwater. The results of groundwater analysis from monitoring well MW-5, located south west of the source area did not detect any contamination of VOCs. MW-6 showed a trace level of DCE during one sampling event and did not detect any VOCs during the second event. Monitoring well MW-6 is located directly downgradient of the UST area. Monitoring well MW-3 also detected low levels of VOCs (chloroethane and vinyl chloride) during both sampling events at maximum concentrations of 28 ppb and 25 ppb respectively. Groundwater standards/guidance values for these compounds are 5 ppb.

Soil

Subsurface soil samples were taken to complement the results of groundwater analyses at the site and to assist in determining if a contamination source area needs remediation. As expected, the highest analytical results were detected in the immediate area of the former underground storage tank (UST). Total VOC concentrations in subsurface soil ranged from 635 ppb at 0 -2 feet to 247,000 ppb at 14 - 16 feet below the ground surface. Soil samples collected at monitoring wells MW-5 and MW-6 (which are approximately 150 feet downgradient of the former UST), did not detect any VOCs above the detection limit. All other soil boring samples taken on-site, with the exception of the UST area, also did not detect any VOCs of concern.

Because the former UST was used to store oil, an analysis for PCBs was conducted on soil samples collected from soil boring SB-5 in the area of the UST. No PCBs were detected. It is apparent from review of the analytical data that the major portion of the contamination is located at a depth of between 14 feet and 18 feet and is limited to the immediate area of the former UST. Approximately 750 yards of soil are estimated to be contaminated with VOCs and will require remediation.

Surface water and Sediment

Samples of surface water and stream sediments were collected from three locations along the unnamed stream (north of the UST area) (Figure 5). The stream flows through a culvert underground through the Scott property from the east side of Walter Winter Drive to approximately 125 feet beyond the Scott Aviation property line behind 192 Erie Street. Surface water and sediments were analyzed for VOCs and metals. No VOCs were detected in either surface water or sediments. The concentration of metals in creek sediment were higher in downstream samples for chromium, copper, manganese, magnesium and nickel. The higher than background levels were only detected at the point of discharge from the conduit in an area where sediment would accumulate. The remainder of the stream had metals concentration similar to background. The stream is enclosed (i.e.,. flows through a buried pipe) through the Scott property and there is no indication of the plant's use or release of these materials, the levels of metals at the one downstream location cannot be directly associated with the Scott site. Surface water and sediment samples were also collected and analyzed from a drainage ditch that flows from Erie Avenue to a low area, west of the UST area. No VOCs were detected in either water or sediment samples from the ditch.

Air Pathways Analysis

An Air Pathways Analysis was conducted at the site in accordance with NYSDEC **Air Clean Up Criteria** and **Air Pathways Analysis Requirements in the Remedial Investigation,** documents. The objective was to evaluate the potential effects on ambient air quality resulting from release of contaminants from the site. Ten VOCs were selected as indicator compounds based on the record of activity at the site. Of all soil analysis at the site only one sample taken at the location of the former UST detected VOC contamination. The results of this analysis indicated that four compounds; acetone, 1,1-dichloroethane, 1,2-dichloroethene, toluene, and methyl ethyl ketone were detected in near surface soil samples. The concentrations of these parameters were assumed to have one hundred percent volatilization from the soil to the air, and were compared to the ambient guideline concentration (AGC) established in the **NYSDEC Air Cleanup Criteria**. The results of modeling of the potential air discharge concluded that all VOC's identified at the site are below the ambient guideline concentration established in the **NYSDEC Air Cleanup Criteria** and do not pose a threat to air quality.

3.2 Summary of Human Exposure Pathways:

This section describes the types of human exposure that may present added health risks to persons at or around the site. A more detailed discussion of the health risks associated with the site can be found in the report, **Risk Assessment, Scott Aviation**, dated August 1993. An exposure pathway is the process by which an individual comes into contact with a contaminant. The five elements of an exposure pathways are 1) the source of contamination; 2) the environmental media and transport mechanism (e.g. air); 3) the point of exposure and uptake mechanism; 4) the route of exposure (e.g. inhalation, ingestion, etc.); and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Completed pathways (i.e.,. ways in which people come in contact with contaminants) which are known to, or may, exist at the site include:

- Ingestion (drinking) of contaminated groundwater (future use scenario)
- Dermal (skin) contact and/or ingestion (eating) of contaminated subsurface soils (excavation/residential scenario)
- Inhalation (breathing) of contaminants from subsurface soils (excavation/residential scenario)

The Risk Assessment selected sixteen chemicals of concern (COC) which included volatile organic compounds (VOCs) and ten metal parameters. Based on a comparison of upgradient and background sample analysis, this list of COCs was reduced to nine volatile organic parameters(Table 1). Primary volatiles included TCE and 1,1,1-TCA and their degradation products which were only detected in subsurface soils and groundwater at the site.

The VOC contamination can be attributed to a release from the former UST and is restricted to the general area of the former tank. VOC COCs were not detected in site surface soils, stream or ditch surface water or sediments, therefore no routes of exposure can be attributed to these media. The contaminated soil is below ground surface. The Risk Assessment concluded that the probability of contact with contaminated soil is minimal except in the circumstance that future excavation and construction would expose the contaminated soil that is isolated below the ground surface.

There are limited pathways of exposure to the public. The extent of groundwater contamination does not currently impact local residential properties and was limited to the Scott property and the adjacent industrial property to the west. Adjacent residences also do not currently use local groundwater due to the availability of a public water supply. However, although public water is available, the potential exists for the use of groundwater by local residences.

3.3 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposure which may be presented by the site. The Habitat Based Assessment included in the RI presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources.

Several potential pathways of contaminant migration exist, including (1) overland flow of contaminants from the UST area to the lowlands and the stream surface water and sediments and, (2) discharge of groundwater to the stream. At this time no volatile contaminants were detected in ditch sediments, stream surface water and sediments or the lowland surface soils. Therefore there are no complete pathways of environmental exposure exist at this time. However, the potential exists for the release of VOC contamination from the groundwater to the surface water as the contaminated groundwater migrates from the site. The level of metal contamination detected in the stream sediments in one sample exceeded the NYSDEC 1993 sediment guidelines for the protection of aquatic life. However, this area of elevated metal contamination appears limited to an area at the discharge end of the stream culvert and cannot be associated with the facility's operation. Metal contaminant levels detected in the ditch were also consistent with contaminant levels in other urban areas.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and waste haulers.

The Potential Responsible Party (PRP) for the site is:

Scott Aviation Inc., a Division of Figgie International, Inc.

The NYSDEC and Scott Aviation entered into a Consent Order on July 9, 1992. The Order obligates Scott to implement a RI/FS remedial program. Upon issuance of the Record of Decision the NYSDEC will approach the PRPs to implement the selected remedy under an Order on Consent for remedial action/remedial action.

The following is the chronological enforcement history of this site.

Date	Index	Subject
07/09/92	**B9-0377-91-06**	**RI/FS**

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

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

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

The goals selected for this site are:

- Eliminate the potential for direct human or animal contact with the contaminated soils and groundwater on-site.
- Mitigate the impacts of contaminated groundwater to the environment.
- Provide for attainment of Remedial Action Objectives (RAOs) (Table 1) for groundwater and soil quality to the extent practicable.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the Scott Aviation site were identified, screened and evaluated in a three-phase Feasibility Study. This evaluation is presented in the report entitled Final Feasibility Study, Scott Aviation, 225 Erie Street, Lancaster, New York, (Versar, June 1994). A summary of the detailed analysis follows.

6.1: Description of Alternatives

Due to the hydrogeological conditions and the limited extent of soil and groundwater contamination, the remedial methods applicable to the site were limited for each media. During a preliminary review of technologies, common remedial technologies such as pump and treat, air sparging, in-situ vacuum extraction etc. were eliminated. Although these technologies could be modified so that they could be used at the site, because of the availability of better suited technologies and the limited extent of contamination, they were not retained for further evaluation. Based on this evaluation, the following potential remedies were chosen for further evaluation. The potential remedies are intended to address the contaminated soil and groundwater at the site.

A. Remedial Alternatives for Groundwater(G)

Alternative 1G

No Action

Present Worth:	$ 128,548*
Capital Cost:	$ 5000
Annual O&M:	$ 16,000
Time to Construct:	3 Months

* - Present worth based on ten year monitoring period @ 5% interest rate.

The "No Action" alternative requires implementation of a groundwater monitoring program. This program would be used to monitor groundwater conditions and provide a data base for periodically reevaluating the risks and assessing whether future actions may be required.

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 because contamination would continue to be released to the environment.

Alternative 2G

Groundwater Interception Trench w/ Air Stripper Treatment

Present Worth:	$ 598,699
Capital Cost:	$ 286,510
Annual O&M:	$ 40,430
Time to Construct:	6 months

This alternative consists of the installation of a new groundwater collection trench downgradient of the source area to intercept the flow of contaminated groundwater from the site. This trench would replace the existing trench that was installed during the IRM. The existing was installed in the former UST excavation as does not efficiently collect the contaminated groundwater and prevent off-site migration. The groundwater would then be extracted from the new trench and air stripped of volatile compounds. Discharge of the treated groundwater would be to the local sanitary sewer system.

The collection trench would consist of a series of perforated pipes located in a trench along the western plant boundary. The trench would extend from the surface to approximately the top of bedrock. The trench would be backfilled with a permeable material such as crushed stone or pea gravel to allow optimum collection of groundwater to occur. The collected groundwater would then be removed from the trench and treated to acceptable discharge limits with the use of an air stripper. The discharge gas from the air stripper would then be treated with activated carbon to remove the volatile organic compounds from the discharge gas stream. The spent

carbon would be properly disposed of off-site. The treated groundwater would be disposed of in the local sanitary sewer system.

Alternative 3G

Groundwater Interception Trench w/ Activated Carbon Treatment

Present Worth:	$ 722,473
Capital Cost:	$ 259,910
Annual O&M:	$ 59,930
Time to Construct:	6 months

This alternative consists of the installation of a groundwater collection trench downgradient of the source area to intercept the flow of contaminated groundwater from the site. The construction of the collection trench would be the same as discussed in alternative No. 2. The groundwater would then be extracted from the trench and treated with activated carbon to remove the volatile compounds. Discharge of the treated groundwater would be to the local sanitary sewer system.

Alternative 4G

Groundwater Interception Trench w/ Off-site Disposal

Present Worth:	$ 10,818,626
Capital Cost:	$ 187,110
Annual O&M:	$ 1,376,830
Time to Construct:	3 months

This alternative consists of the installation of a groundwater collection trench downgradient of the source area to intercept the flow of contaminated groundwater from the site. The construction of the collection trench would be the same as discussed in alternative No. 2. The collected groundwater would be removed from the trench, collected in a bulk quantity and transported to a acceptable disposal facility for proper disposal. The transporter and treatment facility would be required to obtain all regulatory approvals and permits prior to acceptance and treatment of the waste.

B. Remedial Alternative for Soil (S)

Alternative 1S

No Action

Present Worth:	$ 0
Capital Cost:	$ 0

Annual O&M: $ 0[1]
Time to Construct: 0 Years

The "No Action" alternative requires implementation of a groundwater monitoring program. This program would be used to monitor soil conditions, through the evaluation of the degree of groundwater contamination, and provide a data base for periodically reevaluating the risks and assessing whether future actions may be required.

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 because contamination would continue to be released to the environment.

(1) - There are no specific annual operation and maintenance activities associated with the "No Action" soil alternative. The annual cost for O&M are reflected in the costs associated with Alternative 1G.

Alternative 2S

Excavation and Low Temperature Thermal Desorption

Present Worth: $ 521,850
Capital Cost: $ 521,850
Annual O&M: $ 0[2]
Time to Construct: 6 months

This alternative consists of the excavation of soils from the source area of the former UST. The soils would be treated on-site by low temperature thermal desorption to meet the RAOs (Table 1), and returned to the plant property for disposal.

The low temperature thermal desorption system would treat the contaminated soil by driving off the volatile compounds through the application of heat. The soil would be excavated, staged, and fed to the unit in a controlled manner. The soil may need to be conditioned to produce a more homogeneous material before treatment can be applied to insure that all soil particles are treated. Off gas treatment may also need to be applied. Treated soil would be placed back on plant property and covered with six inches of clay soil.

Alternative 3S

Excavation and Ex-situ Bioremediation

Present Worth: $ 480,550
Capital Cost: $ 480,550
Annual O&M: $ 0[2]
Time to Construct: 6 months

This alternative consists of the excavation of soils in the area of the former UST. The soils would be treated on-site using bioremediation through the construction of a bioreactor or bio-cell. The soil would be treated in this manner until the RAOs are met. The remediated soil would then be placed back on plant property and covered with six inches of clay soil.

The contaminated soil would be treated through the use of microbial degradation by the introduction of bacteria strains and nutrients to the soil in a reactor vessel or other containment area. Previous bench scale studies have determined that the use of an ex-situ methanogenic (aerobic) bioremediation process, which uses methane as the primary food source for the bacteria, be used. To determine the effectiveness of full scale bioremediation of soils, a pilot scale study would be required to be conducted prior to implementation of this action. Conditioning of the soil would also be required due to the high clay content, in order to ensure that all soil particles are effectively treated.

Alternative 4S

Excavation and Off-site Disposal

Present Worth:	$ 524,650
Capital Cost:	$ 524,650
Annual O&M:	$ 0[2]
Time to Construct:	6 months

This alternative consists of the excavation of soils in the area of the former UST. The soils would be transported from the site to an approved treatment, storage and disposal facility for proper disposal.

The Off-site disposal, at permitted disposal facility, would be required to comply with all Resource, Conservation, Recovery Act (RCRA) requirements including waste characterization and manifesting. If the soils cannot be landfilled due to their high volatile content, the soils would be required to be incinerated at an approved facility.

Alternative 5S

Excavation and Ex-situ Soil Vapor Extraction

Present Worth:	$ 489,650
Capital Cost:	$ 489,650
Annual O&M:	$ 0[2]
Time to Construct:	6 months

This alternative consists of the excavation of soils in the area of the former UST and treatment using soil vapor extraction technology. The soil would be treated in this manner until

the remedial actions objectives are met. The remediated soil would then be placed back on plant property and covered with six inches of clay soil.

To remediate the soil above grade a treatment cell would be constructed, consisting of a perimeter berm and impermeable liner. The soil would be excavated and placed in lifts, within the cell. Between the lifts perforated pipes would be placed. Air would be drawn through the contaminated soil, to volatilize the volatile organic materials into the air stream. The resulting vapor would be captured, treated and then discharged to the atmosphere. Conditioning of the soil would also be required due to the high clay content, in order to ensure that all soil particles are effectively treated.

(2) - There are no specific annual operation and maintenance activities associated with this soil alternative. The annual cost for O&M is reflected in the costs associated with Alternative 3G.

6.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the FS.

Groundwater

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. Alternatives 2G, 3G and 4G, each comply with chemical-specific SCGS, by treating groundwater to the target levels prescribed by the NYSDEC groundwater quality standards. Alternative 1G would not meet chemical-specific 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. Alternative 1G would not provide adequate protection of human health and the environment. Specifically, this alternative would not protect hypothetical future residents from exposure to contaminated groundwater if they choose to use groundwater as their drinking water supply. When Alternative 1G is coupled with excavation of contaminated soils in the source area, groundwater could, over time, reach regulatory levels through dilution. However, residual contamination in on-site soils may continue to migrate to groundwater. Alternatives 2G, 3G, and 4G would provide an equal level of protection to human health and the environment by collecting groundwater and treating to the target levels set forth by the NYSDEC groundwater quality standards. Additionally, long-term monitoring would be conducted to determine any changes in the nature and extent of contamination and to evaluate the effectiveness of the treatment system.

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

implementation were evaluated. The length of time needed to achieve the remedial objectives was also estimated and compared with the other alternatives. The "No Action" alternative is rated the highest with respect to short-term impacts , because this alternative would not result in any additional intrusive activities that may increase short-term risks. However, the effectiveness of this alternative is low because it would not achieve the remedial goals within an acceptable period of time. The remaining three alternatives are relatively equal with respect to this criterion. However, Alternative 4G, off-site disposal of groundwater, may pose an additional risk that is associated with the transportation of the groundwater to the treatment facility. The excavation of the interception trench may result in the generation of some fugitive dust and VOC vapor emissions, but these potential emissions can be controlled using available technologies.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. 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. Alternatives 2G and 3G were rated highest with respect to long-term effectiveness and permanence because both alternatives rely on on-site treatment technologies. Alternatives 2G, 3G, and 4G are considered permanent remedies. Alternative 2G (air stripping) is considered more effective than alternative 3G (carbon adsorption) for treating the contaminants of concern (i.e. vinyl chloride), because carbon offers preferential treatment (it treats some chemicals less effectively than others). But both alternatives are considered effective treatment options. Alternative 1G may be effective on a long term basis, if coupled with excavation of contaminated soils at the source.

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. Alternatives 2G, 3G, and 4G would reduce the toxicity, mobility and volume of contaminated groundwater through collection and treatment. Alternative 2G would likely result in a higher reduction in toxicity, since air stripping is a more effective method of treatment of vinyl chloride than activated carbon. Alternatives 2G and 3G would each generate a residual waste stream (i.e., contaminated air and granular activated carbon, respectively), but the waste streams can be adequately controlled.

6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction of the specific technology. Administratively, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc. All alternatives are technically and administratively implementable. Alternatives 2G, 3G, and 4G are technically and administratively feasible options, but Alternative 2G was rated the highest for this criterion. Carbon adsorption and air stripping are both readily available processes that are effective for the treatment of volatile organic compounds. Both technologies can be constructed at the site using current construction techniques and equipment. Alternative 4G, Off-site treatment, is subject to several uncertainties associated with acceptance

of the waste by a permitted off-site facility, but can also be implemented using existing construction and transportation facilities .

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 costs associated with Alternative 1G are associated with the long term monitoring of the site. Capital costs for Alternative 1G would be for the repair, upgrading and expansion of the existing groundwater monitoring system. Alternative 4G is not economically feasible since it's cost far exceed the other alternatives. Alternative 2G is more cost-effective than Alternative 3G if off-gas treatment is required; air stripping is slightly less expensive than granular-activated carbon treatment. A comparison of costs for groundwater alternatives is presented in Table 2.

8. **Community Acceptance** - Concerns of the community regarding the RI/FS report and the Proposed Remedial Action Plan have been evaluated. A " Responsiveness Summary" was prepared and is attached as Appendix B. The Responsiveness Summary describes public comments received during the public comment period and the meeting held on September 14, 1994, regarding the Proposed Remedial Action Plan, and how the Department will address the concerns raised.

Soils

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. As set forth in the Remedial Action Objectives (RAOs)(Table 1), the clean-up goal that has been established for soils is 1.0 ppm for trichloroethylene and the other VOCs. The objective of the RAO is to prevent the degradation of groundwater due to the leaching of contaminants into the soil. Contact with the contaminated soil or groundwater would pose an unacceptable risk to human health and the environment. The "No Action" alternative would not meet this objective. Alternatives 2S, 3S, 4S, and 5S would each result in the removal and treatment of the source area, thus reducing the potential for migration of soil contaminants to groundwater. Air quality permit conditions may be required for implementation of alternatives 2S, 3S, and 5S to control VOC discharges to acceptable levels. Alternative 4S must comply with Resource Conservation Recovery Act (RCRA) requirements. Alternatives 2S, 3S, 4S and 5S would likely comply with location-specific 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. Alternative 1S would not provide adequate protection of human health and the environment. Specifically, groundwater would continue to be contaminated from the leaching of contaminants from the soil. Alternatives 2S, 3S, and 5S would provide an equal level of protection to human health and the environment. Each of these alternatives would result in the removal of soils from the source area and subsequent treatment of the excavated material. Removal of the source area would minimize

the threat of migration of soil contamination to groundwater. Alternative 4S would also provide equal protection through the excavation and off-site disposal of the contaminated soil.

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 implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives. With respect to short-term impacts, Alternative 1S is ranked the highest because this alternative would not result in any intrusive activities that may expose the surrounding community to risks. However, the effectiveness of this alternative is low because it would not achieve the remedial goals within an acceptable period of time. Alternatives 2S, 3S, and 5S have the highest potential for short-term risks to the surrounding community and on-site workers. Alternatives 2S, 3S, and 4S and 5S would each require the excavation of contaminated soils, which could result in the generation of fugitive dust and VOC emissions. Additionally, the on-site operation of the treatment systems for Alternatives 2S, 3S and 5S may result in the generation of additional air emissions. Alternative 4S, off-site disposal of soils, may pose an additional risk that is associated with the transportation of the soil to the disposal facility. The potential short-term risks posed by each of the alternatives can be easily controlled by on-site control measures. Therefore, short-term risks are not considered to be limiting factors.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. 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. Alternatives 2S, 3S, and 5S were rated the highest with respect to long-term effectiveness and permanence. Each of these alternatives utilizes on-site, destructive treatment technologies to achieve RAOs. Thermal desorption, ex situ vapor extraction and, ex situ bioremediation are each considered permanent remedies and consistent with the preference for the selection of a permanent remedy. Alternative 4S - Off-Site Treatment/Disposal is also considered a permanent remedy, but Alternatives 2S, 3S, and 5S are preferable, since they utilize treatment methods that result in the removal of the contaminant from the soil. Although Alternatives 2S, 3S and 5S each utilize permanent on-site treatment technologies, Alternative 2S (thermal desorption) and Alternative 5S (ex-situ vapor extraction), may be considered to be more reliable and effective treatment technologies than bioremediation under certain field conditions. Thermal desorption and Vapor Extraction are also proven technologies that have been successfully applied in field applications for the remediation VOCs. A pilot scale bioremediation treatability study would need to be conducted at the Scott Aviation facility to determine the effectiveness of this technology under existing site specific conditions. Alternative 1S is not an effective method of controlling potential site risks.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of wastes at the site. Alternatives 2S, 3S, 4S and 5S would each result in the reduction of the toxicity, and mobility of contaminated soil. Alternatives 3S and 5S may increase the volume of soil depending on the need

for soil conditioning prior to treatment. Alternatives 2S and 5S are currently rated slightly higher than Alternatives 3S and 4S. However, Alternative 3S could rate highest if a pilot scale treatability was successfully conducted at the site. If effective, ex situ bioremediation would permanently reduce the toxicity and mobility of contaminated soil. Alternative 4S would rely on the management of residual waste that would occur at an off-site facility as opposed to on-site treatment and management.

6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and material is evaluated, along with potential difficulties in obtaining specific operating approvals, access for construction, etc. Alternative 1S is technically implementable. Alternatives 2S, 3S, 4S, and 5S are each technically and administratively feasible options and can constructed at the site using current construction methods and procedures. Off-site treatment is subject to uncertainties associated with coordination with an off-site facility.

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 costs associated with Alternative 1S are minimal. The costs for Alternatives 2S through 5S are all comparable, ranging from a low of $480,000 to a high of $525,000. Alternative 3S results in the lowest estimated cost and Alternative 2S in the highest cost. However, the costs for Alternatives 3S and 5S are nearly identical, as are the costs for Alternatives 4S and 2S. Due to the extremely low variability of costs for the ex situ treatment technologies (i.e., differential cost < $45,000), all four alternatives are considered essentially equal, with Alternatives 3S and 5S rated slightly higher with respect to cost effectiveness. Although the costs for Alternative 4S, Off-site disposal, is currently comparable to the other alternatives, the amount of soil to be disposed of, pretreatment requirements and the disposal location may vary and significantly change the cost of the alternative. The unknown variability of the cost makes this alternative less attractive than the other alternatives. A comparison of the costs for the soil treatment alternatives is presented in Table 2.

8. Community Acceptance - Concerns of the community regarding the RI/FS report and the Proposed Remedial Action Plan have been evaluated. A " Responsiveness Summary" was prepared and is attached as Appendix B. The Responsiveness Summary describes public comments received during the public comment period and the meeting held on September 14, 1994, regarding the Proposed Remedial Action Plan, and how the Department would address the concerns raised.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, **the NYSDEC has selected Alternative 5S (Excavation and Ex-situ Soil Vapor Extraction) for soil, combined with Alternative 2G (Construction of a new Groundwater Interception Trench with Air Stripper Treatment) for groundwater, as the remedy for this site.**

Selection of the Remedial Alternative

The risk assessment conducted during the RI indicated that the contaminated soils and groundwater (through drinking water) would pose an unacceptable future risk due to direct contact with exposed subsurface soils and from the consumption of contaminated groundwater. In addition, the potential exists for contaminants in the vadose layer (unsaturated soils above the water table) to continue percolating into the groundwater, and for the groundwater to continue migrating from source areas and to cause exceedances of the Ambient Water Quality Standards (AWQS) for the water discharged to the tributary of Plum Creek. The site groundwater quality is also in excess of presently established groundwater water standards/guidance values. Although the groundwater is not currently utilized as a source of potable water and a public water system is currently in place, it is possible (although unlikely) that someone could install a well and use the groundwater as a drinking water source. For these reasons, the "No Action" Alternatives for both soil and groundwater would not achieve the remedial action objectives, and therefore would not be protective of human health and the environment.

Criteria for Soils

Alternatives 2S and 5S were rated slightly higher than Alternatives 4S and 3S with respect to long-term effectiveness and permanence, implementability, and reduction of toxicity, mobility and volume. The technical feasibility of Alternative 2S is considered slightly higher than Alternatives 3S, 4S, and 5S, but Alternatives 3S, 4S, and 5S are each considered technically feasible technologies. Alternatives 3S and 5S are ranked highest with respect to cost-effectiveness. Although the costs for Alternative 4S, Off-site disposal, is currently comparable to the other alternatives, the amount of soil to be disposed of, pretreatment requirements and the disposal location may vary and significantly change the cost of the alternative. The unknown variability of the cost makes this alternative less attractive than the other alternatives. Preliminary vendor data indicated that ex situ bioremediation may be effective under the site-specific conditions at Scott Aviation. A follow-up evaluation of initial data needs to be developed with respect to this alternative. The work will involve the performance of a pilot scale bioremediation treatability study at the facility before actual remedial activities could begin.

Criteria for Groundwater

Alternatives 2G, 3G, and 4G received comparable ratings with respect to all the evaluation criteria except cost. Alternative 2G rates slightly higher than Alternatives 4G and 3G with respect to long-term effectiveness and permanence, implementability, and reduction of toxicity,

mobility, and volume. The primary reason for this is that low concentrations of vinyl chloride have been detected in on-site groundwater and air stripping is the most reliable treatment technology for vinyl chloride. However, based on the levels of vinyl chloride detected, carbon adsorption is considered to be an acceptable remedial alternative. With respect to cost, although Alternative 1G is certainly the lowest cost, it would not address the risk to residence associated with the potential future ingestion of contaminated groundwater from the site. Alternative 4G is cost prohibitive. Air stripping was generally found to be a more cost-effective option than carbon adsorption. However, if off-gas treatment is required, the costs of air stripping and carbon adsorption are comparable, although air stripping followed by off-gas treatment is still anticipated to cost less than carbon adsorption.

The estimated present worth cost to implement the total remedy is $ 1,088,349. The cost to construct the remedy is estimated to be $ 776,160 and the estimated average annual operation and maintenance cost for 10 years is $ 40,430. The time period of 10 years was chosen for cost comparison purposes only. It is expected that the preferred remedy could obtain the Clean-up Goals in the Remedial Action Objectives in less than the 10 year time period (perhaps two to five years).

Designation of a Corrective Action Management Unit (CAMU)

In order to complete the selected soil remedial action, soil vapor extraction of soil on-site, it will be necessary to designate a portion of the Scott property as a Corrective Action Management Unit (CAMU). A CAMU is an area at the facility that is approved by the NYSDEC for the purpose of managing and implementing the treatment requirements of the chosen remedial action. A CAMU is based upon federal regulations and promotes the use of on-site treatment of contaminated soil. Without the use of this mechanism, the treated soil could not be placed back into the ground on-site even after contaminants are removed. Use of a CAMU promotes on-site remediation and reduces off-site disposal. It avoids the large cost disincentive that drives responsible parties towards leaving contaminates in the ground to escape incurring large remedial costs. Therefore, based upon the results of the remedial investigation, the Feasibility Study and achievement of the Remedial Action Objectives, 20,000 sq. ft. of the northwest part of the Scott property, adjacent to Plant #2, has been designated as the CAMU for site remediation purposes. It will consist of an area directly north of the Plant #2 building where the contaminated soil will be treated. An additional area has been established directly adjacent to the plant structure, on the north and west sides, where the treated soil will be spread and covered. The approximate areal extent and location of the selected CAMU area is shown in Figure 6.

The elements of the selected remedy are as follows:

* Excavation of the contaminated soil containing chlorinated solvents in the area of the former UST.

* Ex-situ vacuum extraction of excavated soils in an aboveground treatment cell(s).

* Disposal of treated soil on-site and cover with minimum six inches clay soil.

* Collection of groundwater using a collection trench.

* Physical/chemical treatment of groundwater with discharge to the sanitary sewer system.

* Implementation of a long term monitoring program which will allow the effectiveness of the selected remedy to be monitored. This long-term monitoring program will be a component of the operations and maintenance for the site and will be developed in accordance with a Remedial Design.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a citizen participation plan, dated March 1992, was developed for the Scott site project. The objectives of the plan are: promote public understanding of the NYSDEC's responsibilities, planning and remedial activities; provide opportunities for the NYSDEC to learn from the public; and provide information that would facilitate a comprehensive remedial program protective of both public health and the environment.

The following public participation activities have been conducted as part of the project:

- A Citizen Participation Plan, dated March 1992, was developed.

- A document repository was established at the Lancaster Public Library.

- Held a public meeting on June 16, 1992 to discuss the proposed investigative work to be conducted as part of the Remedial Investigation.

- Developed and mailed "Fact Sheets" to all interested parties concerning the status of activities at the site dated: June 1992, March 1993, September 1993, June 1994 and August 1994.

- Held a public meeting on September 14, 1994 to present the Proposed Remedial Action Plan (PRAP) for the site. Comments received during the meeting and the public comment period (from September 7, 1994 to October 6, 1994) and the Department's responses are presented in the Responsiveness Summary in Appendix B.

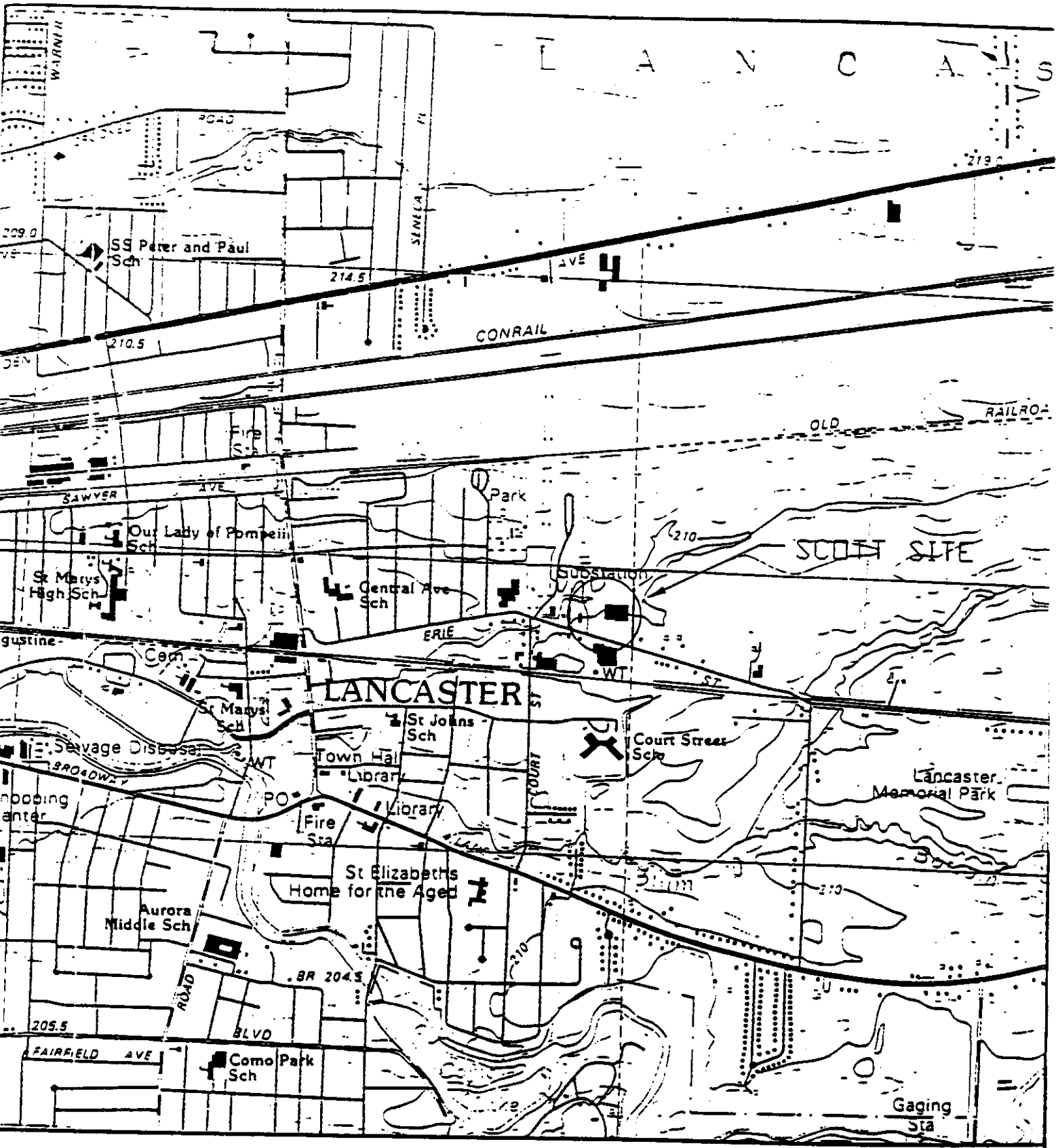


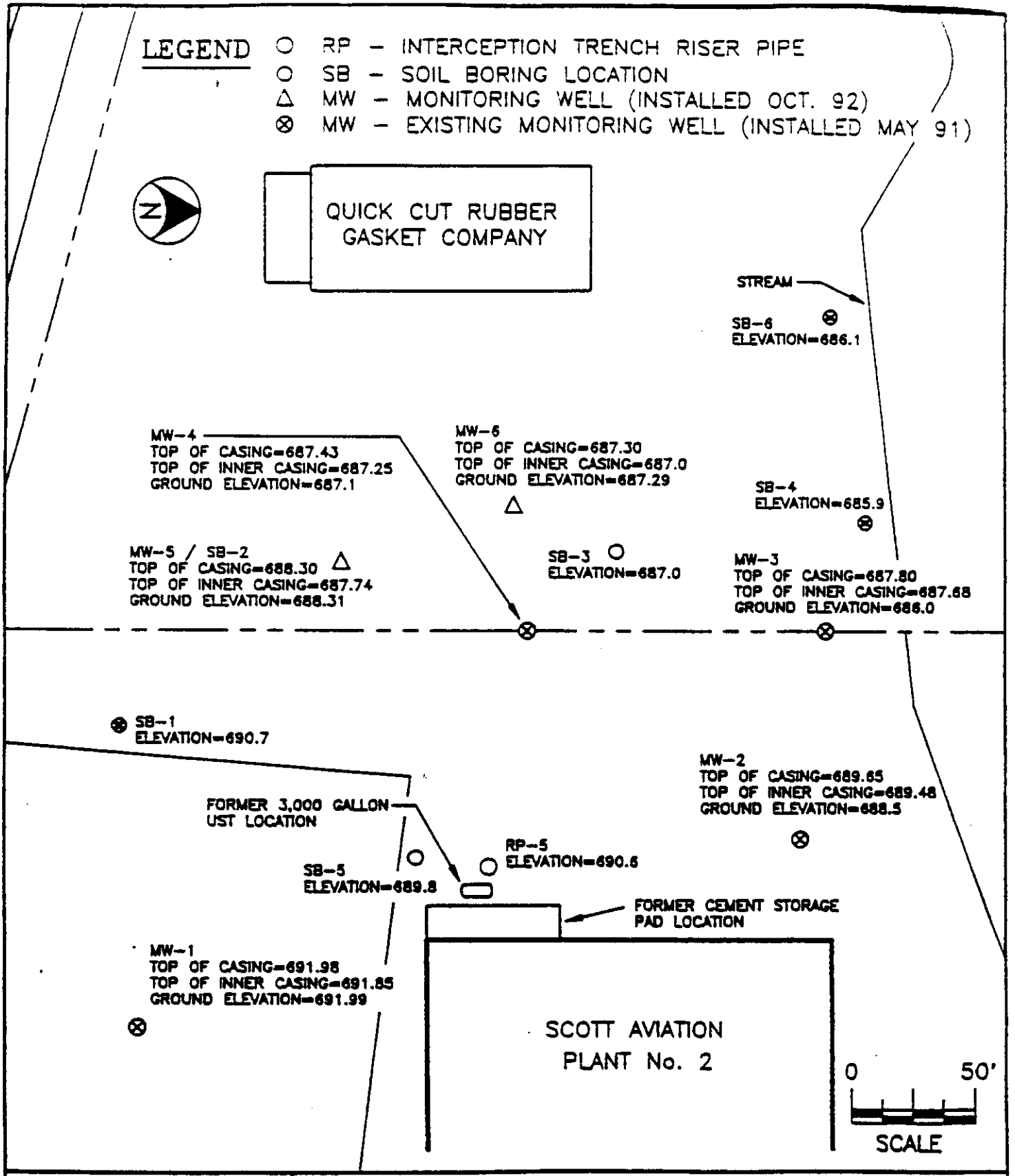
FIGURE 1

SITE LOCATION MAP

SCOTT AVIATION SITE

SITE NO. 915149

LANCASTER(V), ERIE COUNTY



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SCOTT AVIATION, LANCASTER, NY

FIGURE 2

SUBSURFACE SOIL AND GROUND WATER SAMPLING LOCATIONS
MARCH – 1993

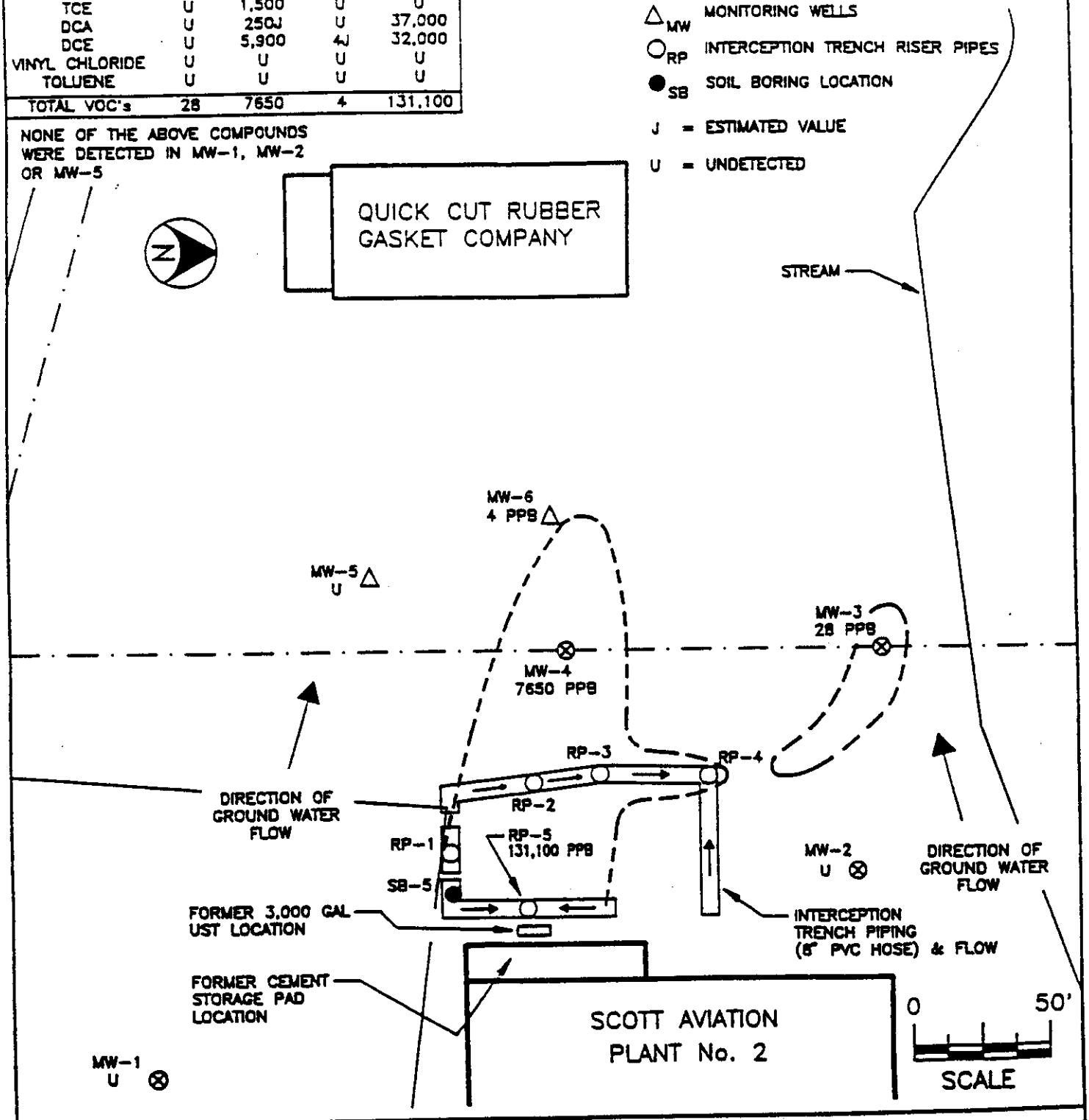
SUMMARY OF ROUND 1 GW QUALITY DATA (IN PPB)

COMPOUND	MONITORING WELL/SAMPLING POINT MW-3	MW-4	MW-6	RP-5
CHLOROETHANE	28	U	U	6,100
TCA	U	U	U	56,000
TCE	U	1,500	U	U
DCA	U	250J	U	37,000
DCE	U	5,900	4J	32,000
VINYL CHLORIDE	U	U	U	U
TOLUENE	U	U	U	U
TOTAL VOC's	28	7650	4	131,100

NONE OF THE ABOVE COMPOUNDS WERE DETECTED IN MW-1, MW-2 OR MW-5

LEGEND

- APPROXIMATE EXTENT OF TOTAL VOC CONTAMINATION.
- MW MONITORING WELLS
- MW MONITORING WELLS
- RP INTERCEPTION TRENCH RISER PIPES
- SB SOIL BORING LOCATION
- J = ESTIMATED VALUE
- U = UNDETECTED



SCOTT AVIATION, LANCASTER, NY

FIGURE 3

INTERPRETED FROM ROUND 1 (OCT. 1992) DATA

MARCH - 1993 (REVISED OCTOBER, 1993)

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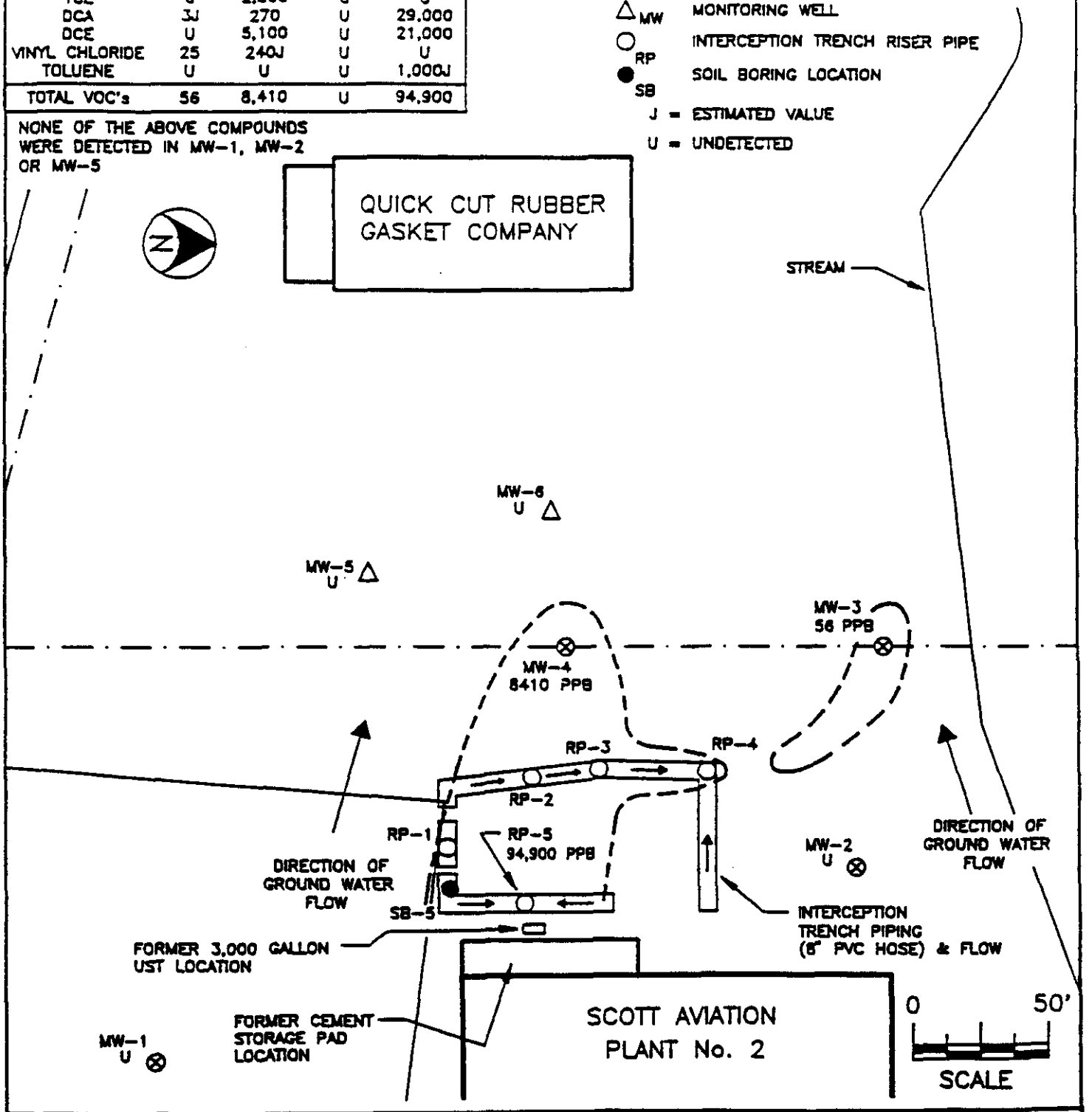
SUMMARY OF ROUND 2 QUALITY DATA (IN PPB)

COMPOUND	MONITORING WELL/SAMPLING POINT MW-3	MW-4	MW-6	RP-5
CHLOROETHANE	28	U	U	3,900
TCA	U	U	U	40,000
TCE	U	2,800	U	U
DCA	3J	270	U	29,000
DCE	U	5,100	U	21,000
VINYL CHLORIDE	25	240J	U	U
TOLUENE	U	U	U	1,000J
TOTAL VOC's	56	8,410	U	94,900

NONE OF THE ABOVE COMPOUNDS WERE DETECTED IN MW-1, MW-2 OR MW-5

LEGEND

- APROXIMATE EXTENT OF TOTAL VOC CONTAMINATION
- ⊗ MW MONITORING WELL
- △ MW MONITORING WELL
- ○ RP INTERCEPTION TRENCH RISER PIPE
- ● SB SOIL BORING LOCATION
- J = ESTIMATED VALUE
- U = UNDETECTED



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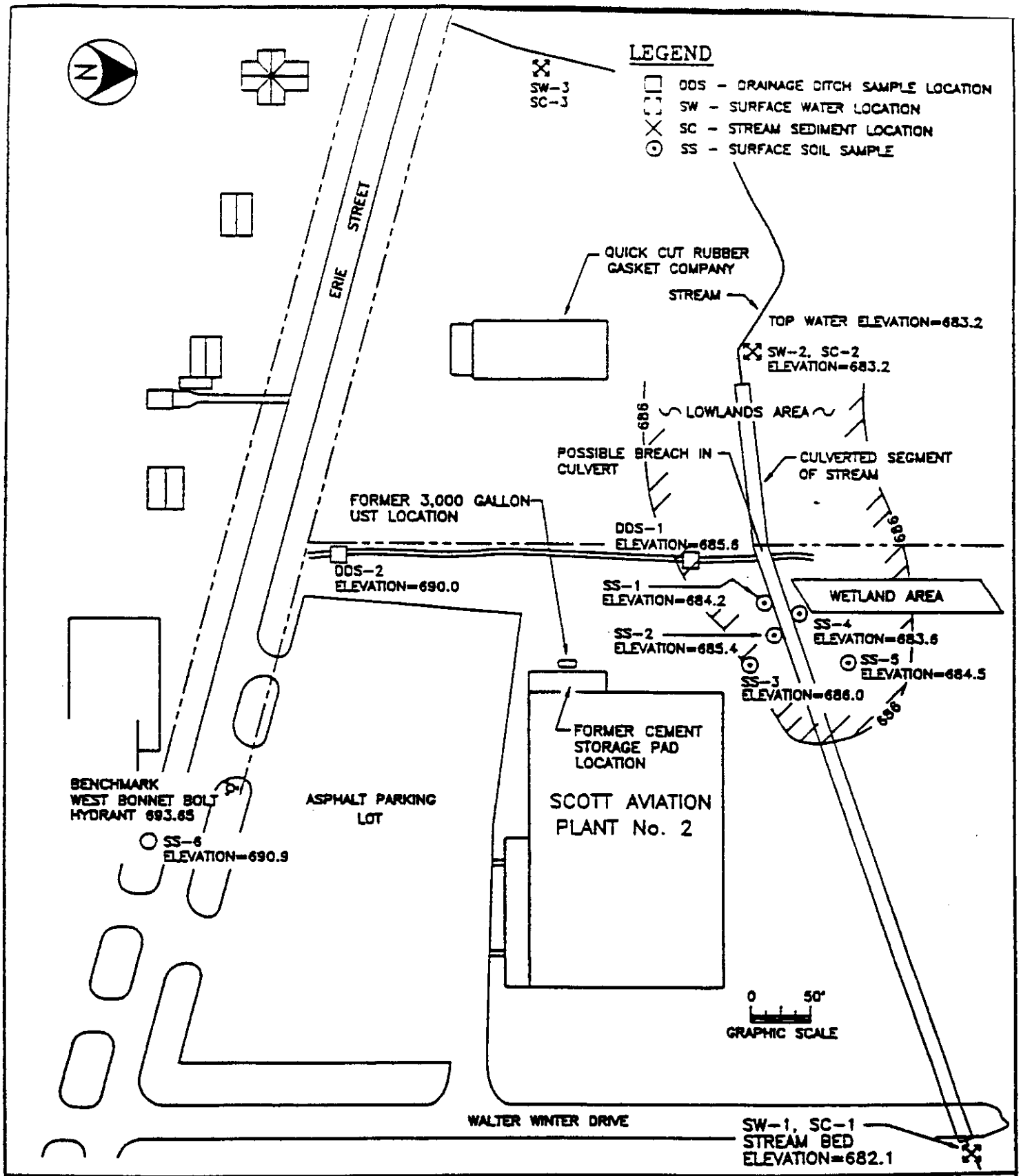
SCOTT AVIATION, LANCASTER, NY

FIGURE 4

INTERPRETED FROM ROUND 2 (NOV, 1992) DATA

MARCH - 1993 (REVISED OCTOBER, 1993)



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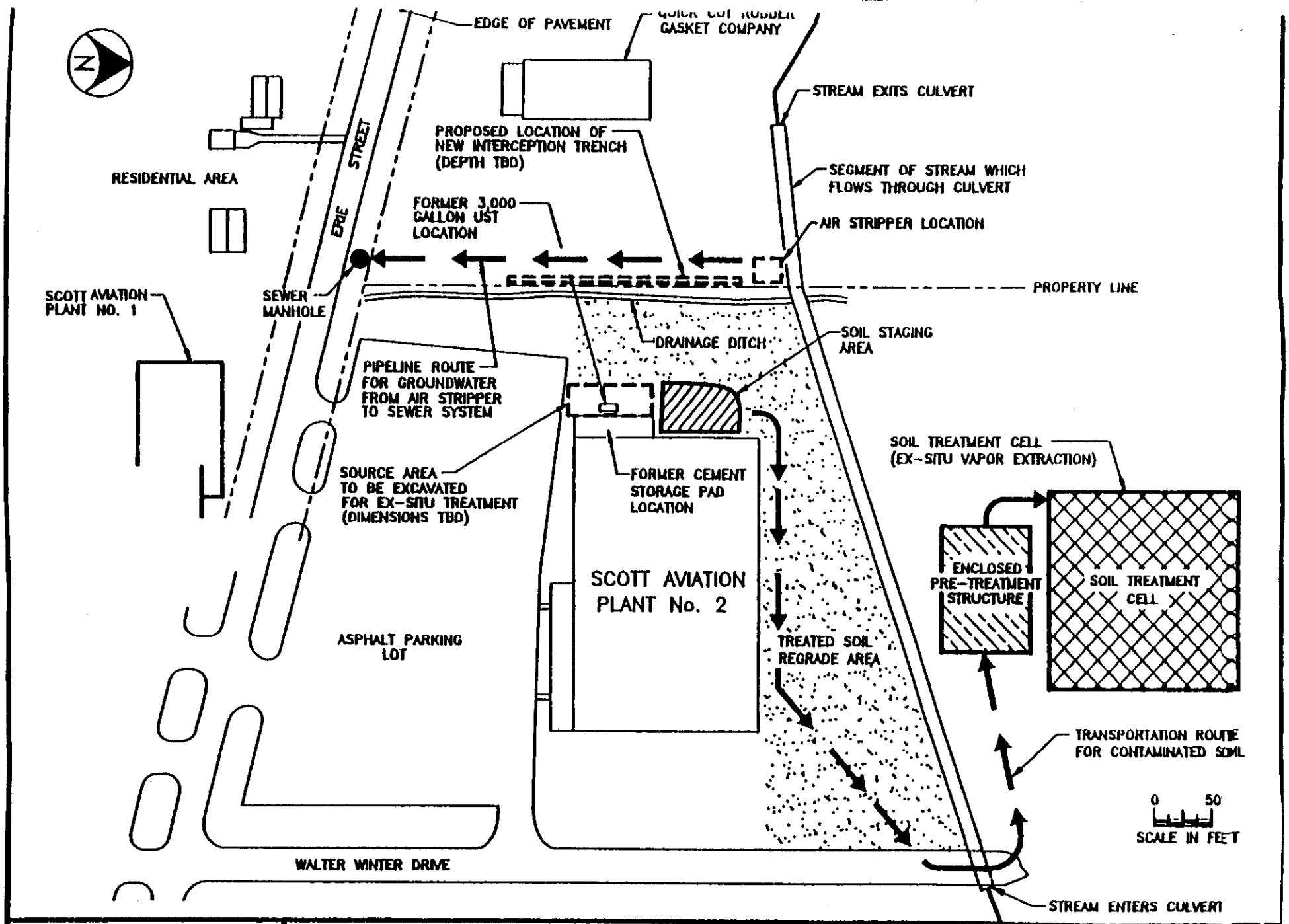
SCOTT AVIATION, LANCASTER, NY

FIGURE 5

SURFACE WATER, SURFACE SOIL AND SEDIMENT SAMPLING LOCATIONS - March 1993



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SCOTT AVIATION, LANCASTER, NY

FIGURE 6

REMEDIAL ACTIONS 2G & 5S SITE PLAN

DATE:	6/29/94
DESIGNED BY:	E. ASHTON
SCALE:	AS NOTED
PROJ. NO.:	1324.014

TABLE 1

SCOTT AVIATION SITE
VILLAGE OF LANCASTER, ERIE COUNTY, NEW YORK

SOIL AND GROUNDWATER
REMEDIAL ACTION OBJECTIVES (RAOs)

Media	Parameter	RAO
Soil	Total Volatile Organics Compounds (VOCs)	10 ppm
	Each Individual VOC[1]	1 ppm
Groundwater[2]		
	Chloroethane	5 ppb
	1,1-Dichloroethane	5 ppb
	1,2-Dichloroethene (total)	5 ppb
	1,1,1-Trichloroethane	5 ppb
	Trichloroethene (trichloroethylene)	5 ppb
	Vinyl Chloride	5 ppb
	Ethylbenzene	5 ppb
	Toluene	5 ppb
	Xylene	5 ppb

(1) Individual contaminants listed under Groundwater below.

(2) Other compounds, not listed, would have RAOs in compliance with NYSDEC Ambient Groundwater Quality Standards.

ppm - part per million
ppb - part per billion

TABLE 2
SUMMARY OF PRELIMINARY COST ESTIMATES
SCOTT AVIATION SITE
LANCASTER, NEW YORK

GROUNDWATER

Alternative	Description	Capital Cost	Annual O&M	Estimated Present Worth[1]
1G	-No Action -Monitoring	$ 5000	$16,000	$128,547
2G	-GW Interception trench -Air Stripper -Monitoring	$ 286,510	$ 40,430	$ 598,699
3G	-GW Interception trench -GAC Treatment -Monitoring	$ 259,910	$ 59,930	$ 722,473
4G	-GW Interception trench -Off-site disposal -Monitoring	$ 187,110	$ 1,376,830	$10,818,626

SOIL

Alternative	Description	Capital Cost	Annual O&M	Estimated Present Worth[1]
1S	-No Action -Monitoring	No direct costs associated with this alternative See Alternative 1G above for related costs		
2S	-Excavation -Low Temperature Thermal Treatment -On-site disposal and capping	$ 521,850	$ 0	$ 521,850
3S	-Excavation -Bioremediation -On-site disposal and capping	$ 480,550	$ 0	$ 480,550
4S	-Excavation -Off-site disposal	$ 524,650	$ 0	$ 524,650
5S	-Excavation -Soil Vapor Extraction -On-site disposal and capping	$ 489,650	$ 0	$ 489,650

(1) Present Worth values based on a 10 yr. life and 5% interest rate.

APPENDIX A
ADMINISTRATIVE RECORD
SCOTT AVIATION SITE
SITE NO. 915149
LANCASTER(V), ERIE COUNTY

1. **Final Hydrogeological Assessment**, Scott Aviation Site, dated June 1991.

2. **Phase II Quality Assurance/Quality Control Data**, Scott Aviation Site, Lancaster(V), Site No. 915149, dated July 1991.

3. **Scope of Work for a Site Investigation**, Scott Aviation, 225 Erie Street, Lancaster, New York, dated August 15, 1991.

4. Letter - R. Marino to Scott Aviation, Notification of listing property as a Class 2 site on the NYS Registry of Inactive Hazardous Waste Sites - September 26, 1991.

5. Letter - J. Baldauf to G. Sutton, Transmittal of draft RI/FS Work Plan - February 18, 1992.

6. **Remedial Investigation/Feasibility Study Work Plan, Appendix "B", Order on Consent I.D. No. #B9-0377-91-6**, Scott Aviation, 225 Erie Street, Lancaster, New York, dated June 4, 1992.

7. Letter - G. Sutton to T. Hadzi-Antich, Conditional approval of RI/FS Work Plan report -June 26, 1992

8. Notice of Public Meeting on RI/FS Work Plan - July 1, 1992

9. Held Public Meeting - July 16, 1992

10. Letter G. Bailey to T. Hadzi-Antich, Transmittal of signed Consent Order effective date July 9, 1992 - July 21, 1992

11. **Site Investigation Analytical Data**, Scott Aviation Site, Lancaster(V), Site No. 915149, dated July 30, 1992.

12. Transmittal of **Interim Remedial Measure Report**, Scott Aviation, 225 Erie Street, Lancaster, New York, dated August 21, 1992.

13. Letter - G. Bailey to Quick Cut Gasket and Rubber Co., Notice to owner to allow access to collect environmental samples - October 2, 1992.

14. Submitted draft Risk Assessment and Remedial Action Objectives reports - March 1993

15. Fact Sheet released - March 1993

16. **Thermal Desorption Treatability Test Detailed Work Plan**, dated April 21, 1993.

17. **Bench-Scale Biotreatability Study for Bioremediation of Volatile Organic Compounds Work Plan**, dated April 13, 1993.

18. Transmittal of draft Remedial Investigation Report, T. Hadzi-Antich to G. Bailey - April 2, 1993.

19. Letter - L. Lewis to G. Sutton, Transmittal of draft Treatability Study - April 27, 1993.

20. Letter - G. Sutton to T. Hadzi-Antich, Acceptance of Biotreatability Study - May 3, 1993.

21. **Standards, Criteria, and Guidance and Remedial Action Objectives Report**, Scott Aviation, 225 Erie Street, Lancaster, New York, dated August 1993 (revised 10/07/93).

22. **Risk Assessment**, Scott Aviation, 225 Erie Street, Lancaster, New York, dated August 1993.

21. **Treatability Study for Bioremediation of Volatile Organic Compounds in Soil at the Scott Aviation Site: Lancaster, NY**, dated October 5, 1993.

22. **Remedial Investigation Report**, Scott Aviation, 225 Erie Street, Lancaster, New York, dated November 1993.

23. Letter - G. Sutton to G. Lindemann, DEC/DOH comments of draft RI report - May 11, 1993.

24. Letter - G. Sutton to T. Hadzi-Antich, Acceptance of Remedial Action Objectives and Risk Assessment reports - September 21, 1993.

26. September 1993 - Fact Sheet sent out.

27. Submission of draft **Feasibility Study**, Scott Aviation, 225 Erie Street, Lancaster, New York, dated March 1994 (revised July 21, 1994).

28. Letter - G. Sutton to G. Lindemann, Acceptance of Feasibility Study report - August 29, 1994.

29. **Proposed Remedial Action Plan**, Scott Aviation Site No.915149, dated August 1994

30. Letter - G. Lindemann to G. Sutton, Scott comments on Proposed Remedial Action Plan - October 4, 1994.

APPENDIX B
RESPONSIVENESS SUMMARY
for the
PROPOSED REMEDIAL ACTION PLAN

SCOTT AVIATION INACTIVE HAZARDOUS WASTE SITE
Village of Lancaster, Erie County
Site No. 915149

The Proposed Remedial Action Plan (PRAP) was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on September 6, 1994. This plan outlined the proposed measures for the remediation of the Scott Aviation Site. The proposed remedy consisted of:

* Excavation of the contaminated soil containing chlorinated solvents in the area of the former UST.

* Ex-situ vacuum extraction of excavated soils in an aboveground treatment cell(s).

* Disposal of treated soil on-site and cover with minimum six inches clay soil.

* Collection of groundwater using a collection trench.

* Physical/chemical treatment of groundwater with discharge to the sanitary sewer system.

* Implementation of a long term monitoring program which will allow the effectiveness of the selected remedy to be monitored. This long-term monitoring program will be a component of the operations and maintenance for the site and will be developed in accordance with a Remedial Design.

The release of the PRAP was announced via a notice to the mailing list informing the public of the PRAP's availability and the time, date and location of the public meeting.

A public meeting was held September 14, 1994 at the Town of Lancaster Town Hall and included a presentation of the PRAP and a discussion of the proposed remedy. Comments on the proposed remedy were received from the public at the meeting and by writing during the comment period. The comment period closed October 6, 1994.

This Responsiveness Summary responds to all questions and comments raised at the September 14, 1994 public meeting and received in writing by the Department during the comment period. Comments received have become part of the Administrative Record for this site.

The following are comments related to the PRAP and the State's response:

1. **Q.** Is it your opinion that the trichloroethene (TCE) was a product of the cutting oils? Was it part of the cutting oils? Did it leak from the tank? Did the disposal records for TCE show, historically, proper disposal? This gentleman would be interested in knowing how TCE was historically disposed of by the company. He wants to know if the boring/well installation records showed that TCE had been improperly disposed of at any other locations at the site.

A. Trichloroethene (TCE), which is a volatile organic compound (VOC), was used as a degreasing solvent in the Scott's Plant #2 building. Scott disposal records of the cutting oils indicate that oil was periodically sampled for solvents, like TCE, and none were detected. The TCE would not have been a product of the cutting oils, but would have been used separately to degrease finished, machined parts. Therefore, this would indicate that TCE did not leak from the tank itself. When the contamination was discovered a Resource Conservation and Recovery Act (RCRA) inspection was performed by DEC's Division of Hazardous Substance Regulation, to evaluate the company's handling and disposal practices. No evidence of spillage or improper disposal was noted. Several minor violations were noted during the inspection and have been addressed by Scott. It has not been determined how the TCE entered the soil and groundwater on the site at this time. From the information gathered during the remedial investigation and the RCRA inspection of the facility, it is not apparent that TCE was disposed of at any other locations on the site.

2. **Q.** Was there any benzene found (in groundwater sampled at the site)?

A. Benzene, and other typical petroleum components, were not detected in groundwater samples during the Remedial Investigation. However, remediation goals (clean-up values) for ethylbenzene, toluene and xylene have been established based on the known release of the cutting oils.

3. **Q.** Did you find anything (contaminants) in the analyses of stormwater drains? So, even water from the parking lots goes into the sanitary sewers?

A. A stormwater sewer system does not exist to serve the Scott facility. Stormwater from the site, Plant building roofs and parking lots is conveyed to the ground surface and drains with the natural contours of the land to low areas and natural drainage ways, such as ditches and streams. Both the drainage ditches and the unnamed stream near the site were sampled during the Remedial Investigation and no VOC contaminants were found.

4. **Q.** Do you have any idea of the potential yield of the groundwater collection system?

A. The potential yield of groundwater was not calculated during the Remedial investigation. This information will be developed during the design of the collection trench and the water treatment system. The hydraulic conductivity (the capacity for the soil to transmit water) of the subsurface soils in the proposed area of the collection trench is $6.7 \times 10^{(-5)}$ cm/sec (or 0.18 ft/day). In other words, the capacity for groundwater to move in the area is low.

5. **Q.** Are there any other places in Lancaster like this, that have contamination problems?

A. There are no other listed sites in the Village of Lancaster. The closest site to the Scott property is the Lancaster Sanitary Landfill, located on Gunville Road in the Town of Lancaster.

6. Q. You said the site is classified as a significant threat to public health. What does that mean to the residents living in close proximity to the site, as well as those living in the general area? Are the people safe?

A. The current classification of Class 2 was based on preliminary and limited analytical data that was collected during the removal of the Underground Storage Tank. The Class 2 designation means that there is a significant threat to public health and/or the environment. Information collected during the Remedial Investigation determined that currently there is no health threat to residents since contamination has; 1) not migrated from the site, 2) surface soil and surface water is not contaminated, and 3) residents are not drinking groundwater in the area.

7. Q. Is air stripping proposed as the remedy for groundwater? And what about for soil?

A. Air stripping of volatile organics compounds (TCE and related contaminants) is proposed to be performed on both the groundwater and the soil, prior to proper disposal.

8. Q. How large was the tank that was taken out and how much actually leaked out of the tank?

A. The underground storage tank held 3,000 gallons. It is not known how much material leaked from the tank or when the leak began.

9. Q. Are you confident that the area of contamination is isolated (limited to the boundaries defined in the reports)?

A. Yes, In addition, samples will be taken during the remedial work to make sure all areas of contamination have been addressed.

10. Q. The procedure of storing the chemicals in a tank -- is it still going on?

A. No, all waste cutting oils are stored inside the building in aboveground storage tanks.

11. Q. Due to the uncertainty of the volume of soil to be remediated at the Scott Site and current Federal (RCRA) restrictions on landfilling in the United States, the off-site disposal alternative is cost prohibitive. However, as discussed in the Feasibility Study, Canadian disposal firms are currently permitted to accept this type of material. Why doesn't the PRAP discuss this issue?

A. In Section 8 of the Proposed Remedial Action Plan, it was acknowledged that the costs for Alternative 5S (Soil Vapor Extraction) and Alternative 4S (Off-site disposal) were comparable. However, it also noted that the variability of the amount of soil to be disposed, pretreatment requirements, and disposal locations could significantly change the cost for implementation of Alternative 4S, which made this alternative less attractive. Flexibility was incorporated into the PRAP so that during the remedial design, if off-site disposal was found to be comparable in cost,

it could be implemented. If during the design of the remedial method, soil quantities, contaminant concentration, pretreatment and/or regulatory requirements are determined to favor off-site disposal, the Record of Decision could be amended to indicate the change in the preferred alternative.

12. **Q.** Please explain why the Feasibility Study Report states that soils will be treated to the level of 1 (one) part per million (ppm) for trichloroethylene (TCE) and 10 ppm for total Volatile Organic Compounds (VOCs), but the PRAP proposes a Remedial Action Objective of 1 ppm for each individual VOC.

A. The Feasibility Study identified eight VOCs present in soil at the site. These parameters were established as contaminants of concern requiring remediation in the report prepared by Scott Aviation, entitled, Standards, Criteria and Guidance and Remedial Action Objectives Reports, dated August 1993. While the primary contaminant, TCE, is discussed, in the Feasibility Study's evaluation of remedial alternatives for the site, the aforementioned report established the contaminants of concern and proposed clean-up levels which were the basis of the RAOs provided in Table I of the PRAP. In dealing with the contaminants present on the site, if the chosen treatment remedy is properly designed and implemented by the company, not only will the primary contaminant, TCE, be removed, but so will all the low levels of its degradation (breakdown) products such as dichloroethylene and the petroleum constituents such as toluene, benzene and xylene. It was not the PRAPs intent to limit all VOCs since there have been only limited number of VOCs associated with the contamination of the site. Table I will be modified to note that the soil remedial objective of 1 ppm will only apply to the contaminants noted in the list of groundwater contaminants on that page.

13. **Q.** Alternative 2S contains an inappropriate term, "would", which should be deleted.

A. The description of Alternative 2S will be corrected.

14. **Q.** The word "trench" is missing from the description of Alternative 2G.

A. The description of Alternative 2G will be corrected.

15. **Q.** In Section 5, the correct name of the potentially responsible party is Scott Aviation, a Division of Figgie International, Inc.

A. Section 5 will be revised accordingly.

16. **Q.** Section 4.3 contains an inappropriate term, "exist", which should be removed.

A. The wording of Section 4.3 will be revised accordingly.

17. **Q.** In Section 4.1 the word "have" should replace the word "has" in the third paragraph.

A. Section 4.1 will be revised accordingly.