Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Davis-Howland Oil Company
Operable Unit 2
City of Rochester, Monroe County
Site Number 828088

March 1998

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Acting Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Davis-Howland Oil Company Inactive Hazardous Waste Site
Operable Unit 2
Rochester, Monroe County, New York
Site No. 8-28-088

Statement of Purpose and Basis

This Record of Decision (ROD) presents the selected remedial action for the Davis-Howland Oil Company Inactive Hazardous Waste Disposal Site, Operable Unit 2 (OU-2), 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 Substances 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 Davis-Howland Oil Company Inactive Hazardous Waste Site (OU-2) 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 B of the 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 ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) and the criteria identified for the evaluation of alternatives, the NYSDEC has selected No Further Action with monitoring for Operable Unit Two at this Site (the bedrock aquifer). This remedy includes additional testing and a contingency plan in the event that monitoring does not confirm the anticipated decrease in bedrock contamination once the OU-1 (i.e., shallow soils and groundwater) remedy is implemented. The components of the remedy are as follows:

- Bedrock groundwater will be monitored to confirm that the observed downward trend in contaminant concentration continues.

- Approximately two additional wells will be installed to supplement the existing monitoring network; these will be installed in conjunction with the implementation of the OU-1 remedy.

- A limited pump test will be conducted (also part of OU-1) to confirm the extent of bedrock interconnections and connections between bedrock and overburden.

Contingent Remedy (should contamination not continue to decrease adequately)

- Limited groundwater pump and treat focusing on source areas.
- Treatment and discharge to the POTW of extracted groundwater.
- Appropriate supplemental groundwater monitoring.

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.

3/24/98
Date

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

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Rochester, Monroe County, New York
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SECTION 1: SITE LOCATION AND DESCRIPTION

The Davis-Howland Oil Company site is defined as adjacent parcels of land located on Anderson Avenue in the City of Rochester, Monroe County. Those adjacent parcels are described as 190-220 Anderson Avenue and the portion of 176 Anderson Avenue immediately north and west of 190-220 Anderson. See Figure 1 for the location map and Figure 2 for the detailed site map. The site is approximately 1 acre in size. The site is situated in an area which combines residential, commercial, and industrial facilities. No significant surface water is located in the immediate area of the site. The site is bounded on the south by Anderson Avenue, on the west by light industrial and commercial/retail buildings, and on the north and east by Conrail tracks and right-of-way.

The site is underlain by a thin fill layer (2-5 feet thick), outwash sand and gravel (5-20 feet), glacial till (5-15 feet), and bedrock consisting of the Penfield Dolostone. Shallow groundwater is encountered in the outwash and deep groundwater is encountered in the bedrock unit.

The area is served by a public water supply system and we are aware of no local groundwater usage.

Operable Unit No. 2, which is the subject of this PRAP, consists of bedrock groundwater.

An Operable Unit represents a portion of the site remedy which for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. Operable Unit 1 for this site is described in Section 2.2 below.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

During the course of operations at the Davis-Howland site, there were evidently numerous incidents when material leaked or were spilled onto the ground. There is no single occurrence which can account for the majority of the contamination now found at the site.

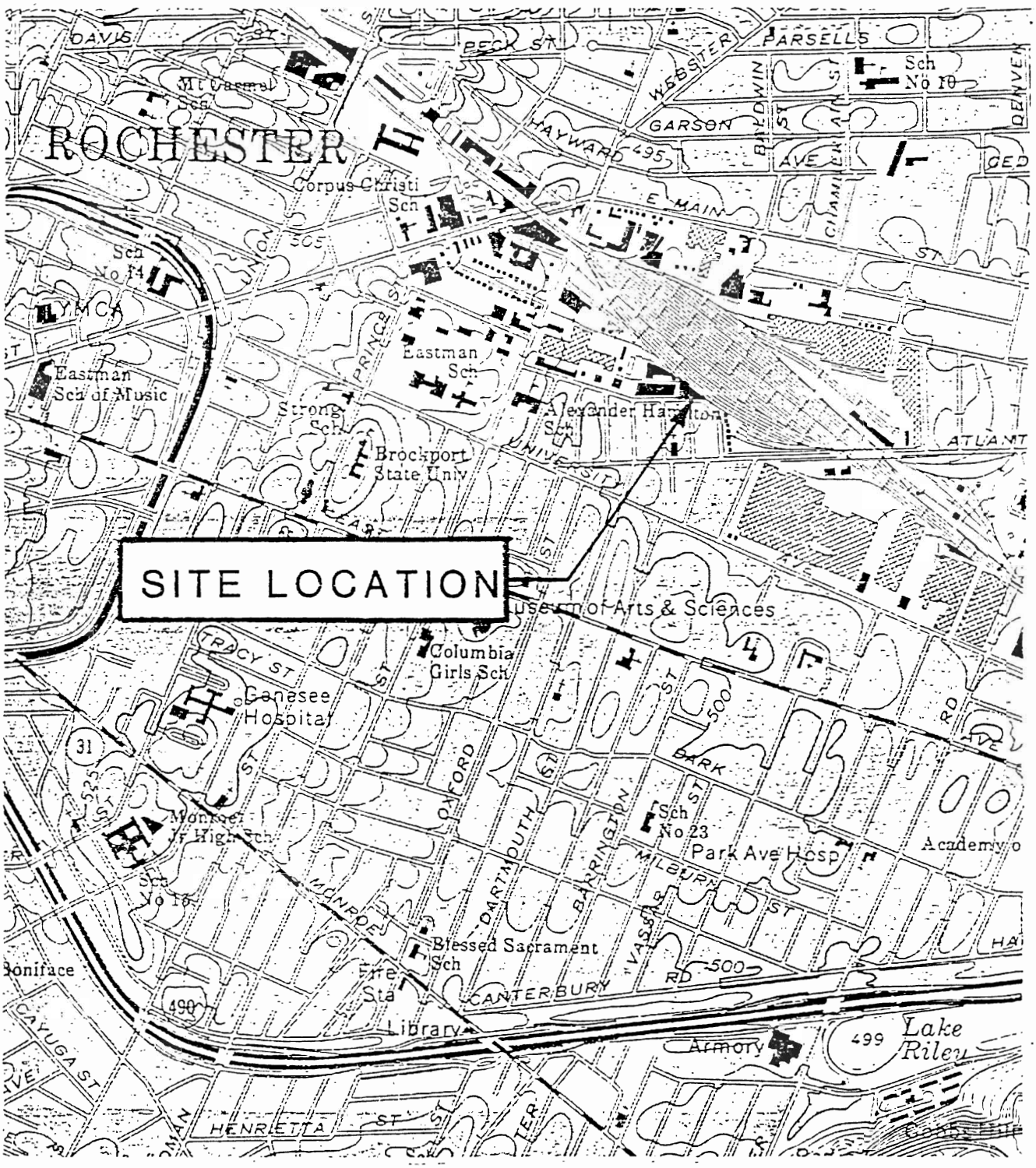
Between 1974 and the early 1990s, there were many reports to the NYSDEC of releases of materials ranging from waste oil and mineral oil to hydrochloric and sulfuric acids at the Davis-Howland site.

In June 1991, NYSDEC staff inspected the site in response to a report of an oil spill. They found several hundred drums of oils and solvents and several areas of stained soils.

FIGURE 1

LOCATION PLAN

DAVIS–HOWLAND OIL CORPORATION, ROCHESTER, NY (NYSDEC SITE. NO. 8–28–088)



LOCATION PLAN

NOT TO SCALE

FIGURE 2

GENERAL SITE PLAN
DAVIS-HOWLAND OIL CORPORATION
ROCHESTER, NY (NYSDEC SITE NO. 8-28-088)

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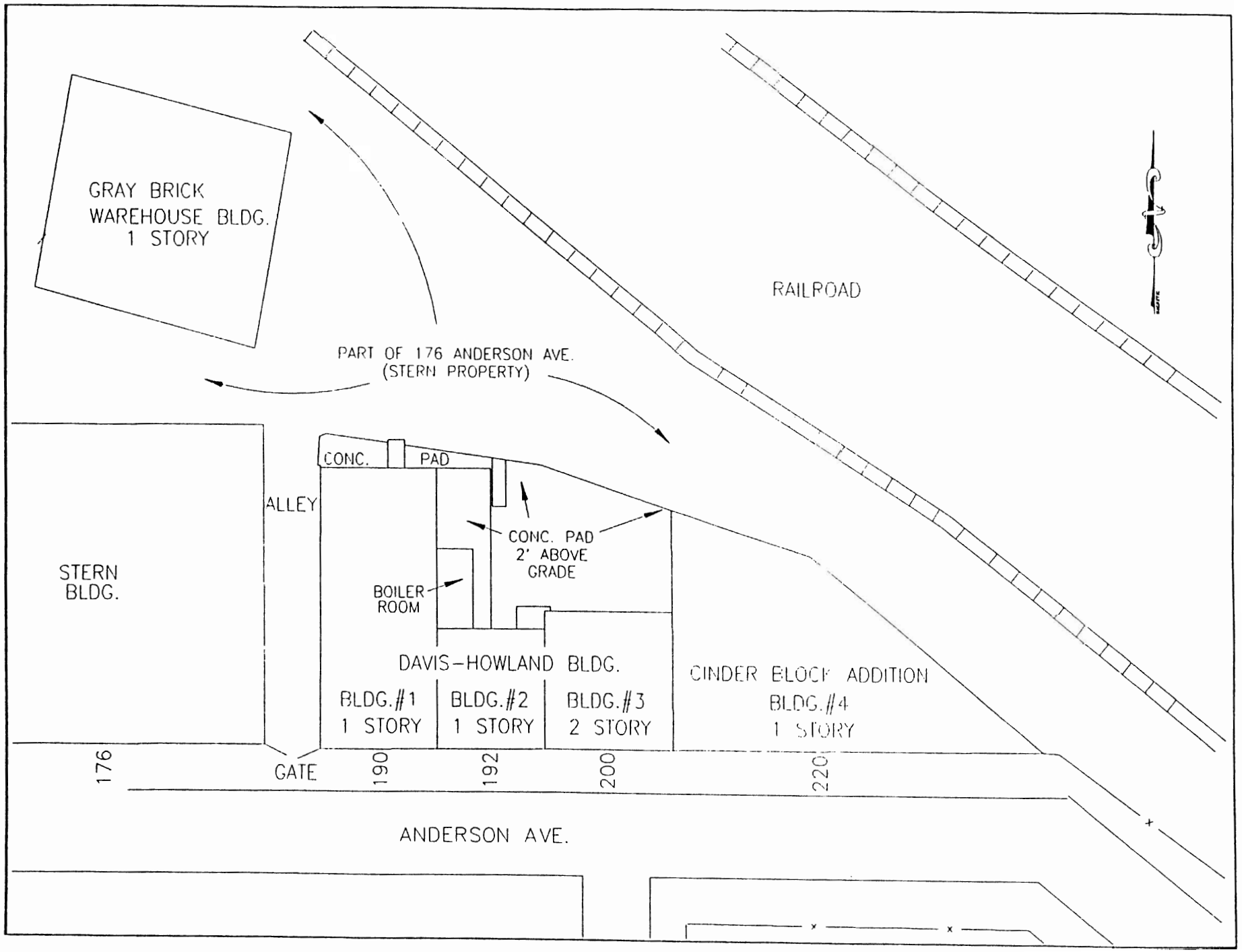

2.2: Remedial History

In June 1991, NYSDEC staff inspected the site and identified numerous drums, some of which were leaking. A follow-up inspection was conducted which included soil sampling and the containerizing of leaking drums. Soil sampling indicated that soil was contaminated with petroleum and solvents.

In October 1991, Dunn Geosciences performed a soil investigation for Davis-Howland. They confirmed the results of the initial DEC inspection.

From April through June 1992, Clean Harbors, Inc. conducted a soil and groundwater sampling effort. Results of this investigation indicated soil contamination and significant contamination of groundwater with chlorinated and non-chlorinated solvents. During the same period, Clean Harbors also conducted a drum removal and surface soil excavation and removal. The soil removal consisted of the removal of the top one foot of soil and subsequent offsite disposal.

In December 1994, the NYSDEC resampled the Clean Harbors wells and found similar types of contamination.

Operable Unit 1 (OU-1), consists of shallow groundwater, metals contaminated surface soil, and VOC contaminated subsurface soil. These media were addressed in the March 1997 Record of Decision.

The Phase I RI was conducted between July 1995 and October 1996. A report entitled "Davis-Howland Oil Corporation Remedial Investigation," dated October 1996, has been prepared describing the field activities and findings of the Phase I RI in detail.

The Phase I RI concluded that the site had significant contamination of soils and shallow groundwater. The main contaminants detected in soil were VOCs, SVOCs, and metals. VOCs were the main contaminant found in the shallow groundwater.

The remedial action for OU-1 consists of the treatment of shallow groundwater by air sparging and treatment of subsurface soils through vapor extraction. Metals contaminated surface soils will be excavated and disposed of offsite.

It is anticipated that the Remedial Design of OU-1 will begin during the spring of 1998. This would allow construction of the OU-1 remedy in 1999 with startup of the remedy later that year. Operation of the OU-1 remedy will likely last for several years.

SECTION 3: CURRENT STATUS

The NYSDEC recently completed a second phase Remedial Investigation (RI) (dated October 1997) regarding additional issues in the bedrock groundwater. This report supplements the original Remedial Investigation (October 1996) and Feasibility Study (March 1997).

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 two phases. The first phase was conducted between July 1995 and October 1996, the second phase between November 1996 and January 1997. A report entitled "Davis-Howland Oil Corporation Remedial Investigation," dated October 1996, has been prepared describing the field activities and findings of the Phase I RI in detail. The "Phase II Investigation Report," dated October 1997, summarizes the work and findings of the Phase II RI. The focus of the Phase II RI was OU-2, bedrock groundwater along with limited soil sampling to further define some elements of OU-1.

The Phase II RI included the following activities:

- Installation and development of six bedrock monitoring wells.
- Installation and development of four overburden monitoring wells.
- Sampling and analysis of groundwater from all of the Phase I and Phase II monitoring wells.
- Groundwater level monitoring and contouring.
- Surface soil samples from the area around DHSS-7 and DHSS-9, and two soil samples from between DHSS-6 and DHSS-7 (figure 3).
- An air sparging and soil vapor extraction pilot study to assess the effectiveness of these technologies in addressing OU-1 groundwater contamination.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance (SCGs). Groundwater, drinking water and surface water SCGs identified for the Davis-Howland Oil Company site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of the NYS Sanitary Code. NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used as SCGs for soil.

Based upon the results of the Remedial Investigation in comparison to the SCGs and potential public health and environmental exposure routes, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI Report and Phase II RI Report.

Chemical concentrations are reported in parts per billion (ppb) and parts per million (ppm). For comparison purposes, groundwater SCGs are given.

3.1.1 Nature of Contamination:

As described in the RI Report and Phase II RI Report, bedrock groundwater conditions were characterized through the installation of monitoring wells, collection of water levels, and analysis of groundwater chemistry.

During the RI, groundwater samples were analyzed for volatile organics (VOCs), semivolatile organics (SVOCs), pesticides, PCBs, and metals. Bedrock groundwater was found to contain VOCs including 1,2-dichloroethene, vinyl chloride, 1,1,1-trichloroethane, and xylene. The only SVOC detected at significant levels was 4-Methyl-2-Pentanone. PCBs and pesticides were not detected in bedrock groundwater. In the Phase II, the same VOCs were detected, at significantly lower levels. During Phase I, the total VOCs were at 11,255 parts per billion (ppb) in bedrock well MW-1R, and in Phase II they dropped to 5,479 ppb in the

FIGURE 3

SURFACE SOIL SAMPLE PLAN

DAVIS-HOWLAND OIL CORPORATION, ROCHESTER, NY (NYSDEC SITE. NO. 8-28-088)

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Table 1						
	Bedrock Groundwater - Phase I Results					
	Concentration Range, ppb			SCG	No. that	No. of
Contaminant	Minimum	Maximum	Average		Exceed	Samples
1,2-Dichloroethene (total)	300	8600	2866	5	8	8
Vinyl Chloride	56	840	402	2	8	8
Trichloroethene	27	740	319	5	8	8
1,1-Dichloroethene	8	88	33	5	8	8
1,1,1-Trichloroethane	10	190	67	5	8	8
1,1-Dichloroethane	28	390	101	5	8	8
4-Methyl-2-Penatanone	5	640	164	50	3	8
	Bedrock Groundwater - Phase II Results					
	Concentration Range, ppb			SCG	No. that	No. of
Contaminant	Minimum	Maximum	Average		Exceed	Samples
1,2-Dichloroethene (total)	4	4200	1496	5	13	14
Vinyl Chloride	ND	420	200	5	12	14
Trichloroethene	3	2200	250	5	13	14
1,1-Dichloroethene	ND	70	27	5	12	14
1,1,1-Trichloroethane	ND	270	42	5	8	14
1,1-Dichloroethane	ND	330	88	5	11	14
Benzene	ND	200	17	0.7	4	14

same well. The only SVOC detected above standards was 2,4-Dichlorophenol in two wells. The metals magnesium and iron were also detected above drinking water standards.

The VOCs detected can have both short and long-term health effects. The short-term impacts include headaches and dizziness, the long-term effects may include damage to the central nervous system and the liver as well as other internal organs. These effects are known to occur in cases of high level and long-term exposure.

3.1.2 Extent of Contamination

The Phase II Remedial Investigation determined that bedrock groundwater was contaminated at the site. The bedrock groundwater is separated from the shallow groundwater and the surface by a layer of material classified as a glacial till. This material consists of clay rich silt with small amounts of sand and gravel encountered.

The bedrock groundwater is primarily contaminated with VOCs. The highest levels are detected in wells on the site and on the south side of Anderson Avenue.

Table 1 summarizes the extent of contamination for the contaminants of concern in bedrock groundwater and compares the data with New York State Class GA groundwater standards. The table is divided into Phase I and Phase II sampling results which seem to indicate a downward trend in contamination.

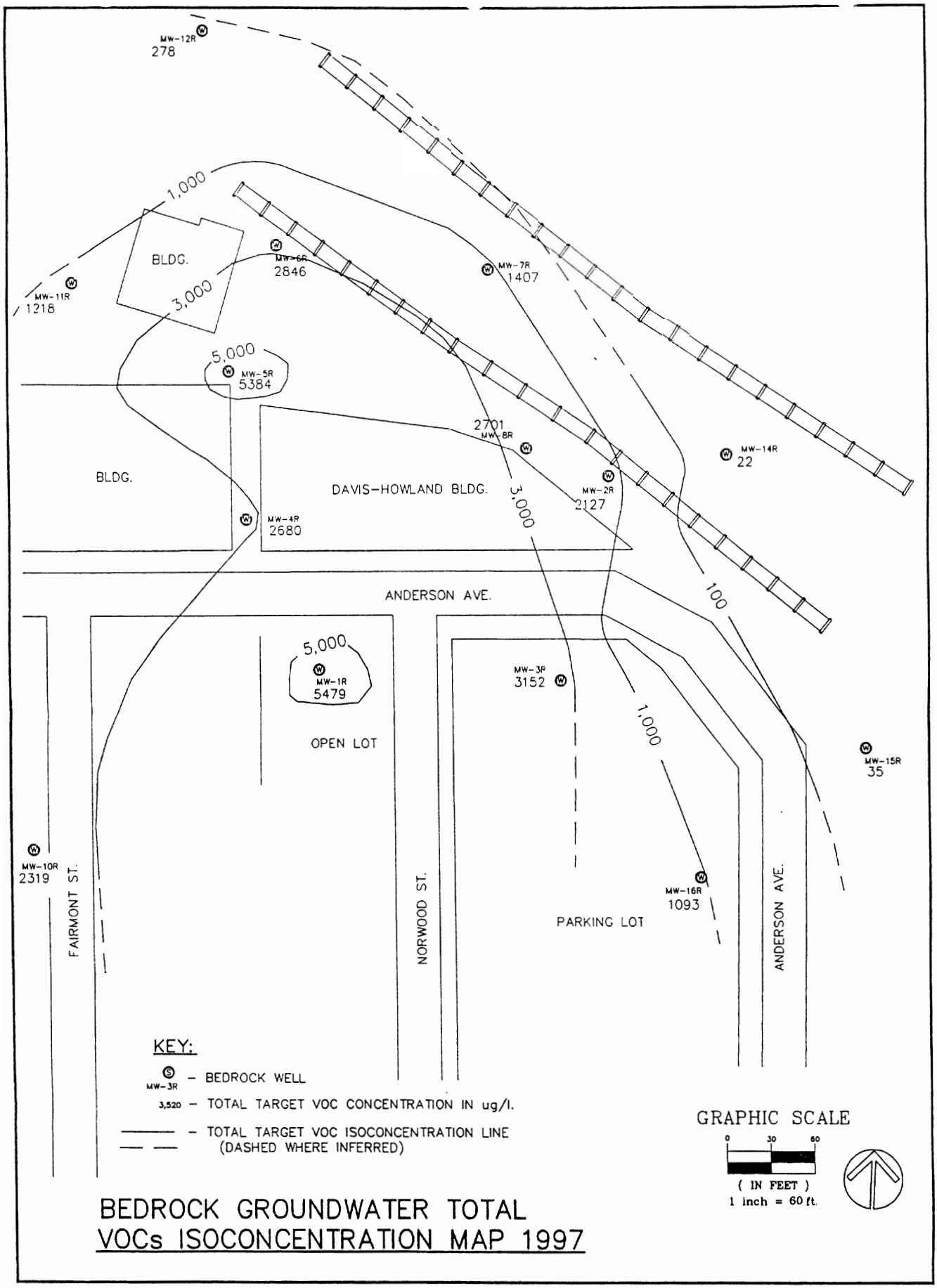
Bedrock Groundwater

The Phase I RI left several questions about site groundwater contamination unanswered, including, the extent of bedrock groundwater contamination, the direction of flow, and whether the Davis-Howland site was the main source of the contamination. These questions justified the decision to break off the bedrock groundwater at the site into a second operable unit.

Results of the Phase II RI improved the understanding of the site. Groundwater contamination trends are now more clear, with contaminant levels quickly decreasing to the east, north, and west, and decreasing more slowly to the south. Chemical analysis indicates that the site is the primary source of the bedrock contamination and that the contamination is migrating through the glacial till layer. While the unusual water level readings from the Phase I have not been fully explained, they are likely the result of the wells in question intercepting different fracture systems in the bedrock.

Bedrock groundwater flows away from the site in all directions. This may be the result of mounding in the bedrock groundwater due to leakage from the shallow aquifer. A significant component of this offsite flow is to the south and southwest. Bedrock contamination is greatest in the areas of monitoring wells MW-1R and MW-5R which are located on the south side of Anderson Avenue and northwest of the Davis-Howland building, respectively (see Figure 4). Contamination levels decrease in all directions as you move away from the site (see Figure 4). The quickest decrease is to the north and east with a significant decline to the west and south.

The unusual flow pattern at the site may be the result of a complicated fracture system in the bedrock under the site. It may also result from wells intercepting fractures which have different groundwater levels due to connections with deeper units.



BEDROCK GROUNDWATER TOTAL VOCs ISOCONCENTRATION MAP 1997

FIGURE 4

BEDROCK GROUNDWATER – TOTAL VOCs ISOCONCENTRATION MAP, JANUARY 1997
DAVIS-HOWLAND OIL CORPORATION, ROCHESTER, NY (NYSDEC SITE NO. 8-28-088)

GALSON

GALSON ENGINEERS

To fully characterize bedrock groundwater contamination and to provide additional monitoring points for determining the effectiveness of the OU-1 remedy, additional field work will be conducted. During the predesign fieldwork leading up to the implementation of the OU-1 remedy, one or more additional wells will be installed to further define the southern extent of the bedrock groundwater plume. These will serve to confirm the extent of contamination and provide additional information regarding the geologic conditions present to the south of the site.

Please note that in Table 1, groundwater contamination values are given in parts per billion (ppb).

Bedrock groundwater contamination consists primarily of VOCs such as 1,2-dichloroethene, trichloroethene, 1,1,1-trichloroethane, and vinyl chloride. Highest levels are for 1,2-dichloroethene (4200 ppb), vinyl chloride (420 ppb), and trichloroethene (2200 ppb).

3.2 Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 4.7 of the RI Report.

An exposure pathway is how an individual may come into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Pathways which are known to or may exist at the site include:

- For groundwater, the only likely point of contact would be if someone were using groundwater as a drinking water source. Local residents are on City water and there are no indications bedrock groundwater near the site is being used. Therefore, this pathway is not complete.

- Inhalation of volatile organic compounds (VOCs) from contaminated bedrock groundwater would be a pathway if the water or contaminated vapor came into contact with basements. This pathway is not complete because of the depth to bedrock groundwater and the thickness of the intervening till layer (This is a pathway of concern for OU-1).

3.3 Summary of Environmental Exposure Pathways:

There is no significant habitat in the immediate area of the site which would provide an active breeding or dwelling area for most wild species. Only those animals which have shown tolerance for urban dwelling can reasonably be expected in the area of the site. The Fish and Wildlife Impact Assessment included in the RI presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources.

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 haulers.

The Potential Responsible Parties (PRP) for the site, documented to date, include: the Davis-Howland Oil Company.

While Davis-Howland is the only PRP identified at this time, a portion of the contamination found at the site may not solely be the result of activities conducted by Davis-Howland. Industries which were previously located at the site may have contributed to some portion of the contamination encountered.

The PRPs failed to implement the RI/FS at the site when requested by the NYSDEC. 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 evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State has incurred.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to be protective of human health and the environment and meet all Standards, Criteria, and Guidance (SCGs).

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health or the environment presented by the hazardous waste present at he site. The State believes that the remediation already completed (IRM), and the selected remedy for OU-1, which are described in section 3.2, will accomplish this objective provided that it is operated and maintained in a manner consistent with the OU-1 ROD.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The **No Further Action** alternative with groundwater monitoring is appropriate because the previously described soil removal IRM, in combination with the selected remedy for Operable Unit 1, will accomplish the goals set out in Section 5.

The selection of the No Further Action remedy is justified for this operable unit because:

- there is no exposure to people or fish and wildlife,
- chemical releases are limited to the vicinity of the site,
- contaminant concentrations appear to be decreasing through time,
- completion of the OU-1 remedy is expected to accelerate clean-up of OU-2,
- remediation of OU-2 before OU-1 could lead to a worsening of conditions by drawing contamination from the more heavily contaminated shallow groundwater down into bedrock,
- the contingent remedy will be implemented if necessary.

No Further Action is protective of human health and the environment because the IRM in combination with the OU-1 remedy will eliminate known and reasonably anticipated exposure pathways. The New York State Department of Health concurs with this remedy.

Community Acceptance - Concerns of the community regarding the Phase II RI Report and the Proposed Remedial Action Plan were evaluated. A " Responsiveness Summary" was prepared and is attached as

Appendix A. The Responsiveness Summary describes the public comments received and provides the State's responses to those comments.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, Phase II RI, and the discussion in Section 6, the NYSDEC is selecting the **No Further Action** alternative with groundwater monitoring and a backup contingency plan.

It is anticipated that the design of the OU-1 remedy will begin in the spring of 1998 with construction and startup of the remedy in 1999. Deferring any active remediation of the bedrock groundwater should not have any impact on either the nature or the scope of the contingent remedy, should it become necessary to implement it.

To fully characterize bedrock groundwater contamination and to provide additional monitoring points for determining the effectiveness of the OU-1 remedy, approximately two additional monitoring wells will be installed in the area to the south of the site. These wells will serve to delineate the southern extent of the plume and provide additional geologic information in that area.

Maintenance for the proposed remedy will consist of monitoring of bedrock groundwater through the implementation and operation of the selected remedy for OU-1.

A contingent remedy has also been selected for OU-2. This contingency consists of the following elements:

- a low flow bedrock groundwater extraction system to collect water from the identified areas of highest contamination.

- treatment of groundwater (as needed) to meet discharge standards to the local POTW.

- appropriate supplemental monitoring of bedrock contamination.

This contingency will be put into effect if the anticipated reduction in bedrock groundwater contamination does not occur after the construction and activation of the selected OU-1 remedy. It is anticipated that once the shallow contaminant source is addressed, the bedrock contamination will decrease.

Estimated costs for the proposed remedy and the contingent remedy are presented in Table 2.

With the selection of this remedy, the remedy for the overall site (OU-1 and OU-2) will consist of the following: 1) the soil and drum removal actions completed in 1992 that removed the majority of surface contamination; 2) soil vapor extraction and shallow groundwater remediation by air sparging implemented under the OU-1 remedy (likely to begin in 1999); and 3) monitoring of the bedrock groundwater with implementation of a contingent pump and treat remedy, if necessary, as the OU-2 remedy.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation (CP) 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.
- Fact Sheet describing RI/FS process and basic site history, 5/95.
- Fact Sheet announcing RI results, 11/96.
- RI Public Meeting, 12/3/96.
- Fact Sheet announcing completion of Operable Unit 1 PRAP and public meeting, 2/97.
- Operable Unit 1 PRAP Public Meeting, 3/5/97.
- In March 1997, a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the Operable Unit 1 PRAP.
- Fact Sheet announcing completion of Operable Unit 2 PRAP and public meeting, 1/98.
- Operable Unit 2 PRAP Public Meeting, 2/28/98.
- In March 1998, a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the Operable Unit 2 PRAP.

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
No Further Action (w/monitoring)	$0	$12,000/6,000(1)	$72,000
Contingency Plan - Pump and Treat	$80,000	$77,000	$470,800

(1) 5 Years bi-annual and 5 years annual

EXHIBIT A
RESPONSIVENESS SUMMARY
Davis-Howland Oil Corporation Site
Operable Unit No. 2: Bedrock Groundwater
Monroe County
8-28-088

This document summarizes the comments and questions received by the New York State Department of Environmental Conservation (NYSDEC) regarding the Proposed Remedial Action Plan (PRAP) for the subject site. A public comment period was held between January 16 and February 18, 1998 to receive comments on the proposal. A public meeting was held on January 28, 1998 at Writers and Books in Rochester, New York to present the results of the investigations performed at the site and to describe the PRAP. The information below summarizes the comments and questions received and the Department's responses to those comments.

DESCRIPTION OF THE SELECTED REMEDY

The No Further Action selection will be supplemented by the following elements:

- bedrock groundwater monitoring and analysis.

- installation of two additional monitoring wells.

- bedrock aquifer testing to assess interconnections of fractures and overburden groundwater.

A contingent remedy has also been selected for OU-2. This contingency consists of the following elements:

- a low flow bedrock groundwater extraction system to collect water from the identified areas of highest contamination.

- treatment of groundwater (as needed) to meet discharge standards to the local POTW.

- appropriate supplemental monitoring of bedrock contamination.

The information given below is summarized from the January 28, 1998 public meeting. The issues raised have been grouped into the following categories:

I. Questions/Comments Raised During the Public Meeting

A. Issues Regarding Site Conditions
B. Issues Regarding the Remedy
C. Issues Regarding Health and Safety
D. Issues Regarding the OU-1 Remedy

I. QUESTIONS/COMMENTS RAISED DURING THE PUBLIC MEETING

A. Issues Regarding Site Conditions

A.1 **Issue:** Do you think the groundwater contamination is spreading out or downward?

Response: The data collected at the site, during the investigation, indicate that most of the flow in both the shallow and bedrock aquifers is horizontal. Due to local physical characteristics there is also a downward component of flow, away from the surface.

A.2 **Issue:** What do you think the contaminant concentrations were in the bedrock eight years ago?

Response: There is no way to tell what the contaminant concentrations were before the installation of the monitoring wells. Our best "guess," based on current trends, would be that bedrock contamination may have been somewhat higher before the contaminated surface soil was removed and replaced by clean soil.

A.3 **Issue:** Is it certain that this site is the source of the contamination?

Response: Evidence collected during the site investigation points to the conclusion that the Davis-Howland site is the source of the groundwater contamination encountered.

A.4 **Issue:** How long has the site been closed?

Response: We believe that Davis-Howland was active at the site until about 1993. Since that time, portions of the site buildings have been occupied by various tenants.

A.5 **Issue:** Are all of the wells on the south side of Anderson Avenue bedrock wells?

Response: No. Wells MW-1R, 3R, 10R, and 16R are bedrock wells completed in the bedrock unit. Wells MW-1S and 3S are overburden wells screened and completed in the shallow groundwater unit.

A.6 **Issue:** Did there used to be a well south of the current well on Norwood Street?

Response: There was a piezometer, which is a very small diameter "well," used to take preliminary groundwater elevations. These are installed to allow greater accuracy in the placement and installation of the more complicated monitoring wells.

A.7 **Issue:** You said at the previous meeting that groundwater was flowing to the east. What is your conclusion now?

Response: Based upon the data collected during the Phase II RI, bedrock groundwater flow is radial away from the site. In the areas with the highest bedrock groundwater contamination, the prevailing flow directions are to the east and south with the most extensive flow to the south.

A.8 **Issue:** What is a "till layer"?

Response: A till is a kind of mixed deposit which has no distinct structure (layering) and is not well sorted, meaning it may have a wide range of soil material in it, including clay, silt, and sand. Till is a deposit left behind by a glacier. A till may have a significant range of density caused be the conditions under which is was deposited. For example, if the till was compressed by a readvance of the glacier, it would be hard and relatively dry, compared to a till deposited and left uncompressed. In the area of Davis-Howland the till is generally 10 to 15 feet thick and is a fairly dense mixture of clay and silt with a trace of sand and gravel.

A.9 **Issue:** This site is listed as a class 2 site, but I'm hearing that there's little contamination and no threat at the site. What does class 2 really mean? Is it true that because of surface soils, the site is a class 2, even though a soil removal was done already?

Response: Class 2 is the designation that the NYSDEC gives to sites which are believed to pose a significant threat to human health or the environment. Based upon the initial site investigations conducted at Davis-Howland, there was sufficient groundwater contamination and a potential for human exposure which qualified the site as a Class 2. With regard to the bedrock aquifer (OU-2), which was the focus of the recent public meeting, there are no completed exposure pathways, nor are there likely to be any in the future. For soils and shallow groundwater, there is significantly greater likelihood of exposure since the shallow groundwater is nearer the surface and some contaminated soils are present on the surface behind the building.

A.10 **Issue:** How many homes are right in this area?

Response: The nearest residences to the site are to the southeast on Anderson, the south on Norwood, and southwest on Fairmont. There are no residences within 200 feet of the site. Beyond that distance, to the south, the area is primarily residential with many homes within half a mile.

A.11 **Issue:** With all the water we had a couple of weeks ago (from the heavy rains), will the water table at the site be raised?

Response: There may be some increase in the level of the shallow aquifer as a result of the heavy rains, but the bedrock aquifer is not likely to respond as quickly. Furthermore, the majority of the water from heavy downpours runs off along the surface, especially in the winter; the same amount of rain spread over a month's time would impact the aquifer to a greater extent.

B. Issues Regarding the Remedy

B.1 **Issue:** Where is the money coming from to fund the investigation?

Response: The money has come from the 1986 Environmental Quality Bond Act (EQBA) which partially funds the State Superfund program.

B.2 **Issue:** Will the cost of remediation come out of Superfund too?

Response: This will be determined by Department legal staff but it is quite possible that the remedy will be paid for through Superfund.

B.3 **Issue:** Do you know of any future (legal) actions against the owner? Are you going to litigate against the owner?

Response: The NYSDEC will seek to negotiate with the owner to have him undertake the selected site remedy. A determination will be made later regarding possible cost recovery actions.

B.4 **Issue:** Who will perform the actual remediation work?

Response: The work will be done under the supervision of the NYSDEC. The contract will be awarded through the competitive bidding process; we do not now know who the contractor will be.

B.5 **Issue:** Will the State do the testing or will the potentially responsible party (PRP) do their own testing?

Response: The testing activities at the site during design and construction will be conducted by either State workers or consultants working for the State.

B.6 **Issue:** Is the same consultant used up to now going to be used for the remediation? Will the consultant draw up the health and safety plan?

Response: It has not yet been decided who the design consultant will be. The selected consultant will prepare the health and safety plan.

B.7 **Issue:** When is work expected to begin? The project probably won't start until 1999, correct? When will the wells be dug?

Response: It is anticipated that design will begin in the spring of 1998 with the construction of the remedy to begin in 1999. It should not take more than one construction season to complete the remedy. The wells will be installed as part of the predesign field work (likely 1998).

C. Issues Regarding Health and Safety

C.1 **Issue:** Is there an existing site safety plan? We (local fire company) would like to receive the site safety plan when the project goes out to bid.

Response: A site safety plan was prepared to cover the site investigation and the tasks conducted during the investigation. A new site Health and Safety plan will be developed for the remedial action. A copy will be made available at that time.

C.2 **Issue:** What level of protection will you use?

Response: The level of protection used during construction will depend on the potential for contact with hazardous materials and the conditions measured in the field during work. During most of the investigation Level D was used. Level D is basic protection consisting of steel toed boots, eye protection, gloves, and hardhat, as needed.

C.3 **Issue:** What would you say to someone wanting to move into the Norwood/Fairmont block area?

Response: With regard to contamination from the site, we have no reason to discourage anyone interested in moving into this area. The investigations conducted at the site did not identify any completed pathways for site contamination to reach residents in this area.

C.4 **Issue:** Are there known health ramifications from the site as of yet?

Response: We have no knowledge of any health impacts relating to this site.

C.5 **Issue:** Have you sought out health effects information from residences instead of waiting for people to report it?

Response: As was stated at the public meeting, local residents have not been surveyed for health effects information because the results of the environmental investigations conducted to date for this site do not indicate that off-site receptors are likely to be exposed to site related contaminants.

D. Issues Regarding the OU-1 Remedy

Many of the questions asked at the meeting for the OU-2 proposed remedy were about the shallow soils and groundwater which are part of OU-1. Although these questions were addressed at the meeting and are shown below, they are not directly relevant to the selection of the OU-2 remedy.

D.1 **Issue:** Did you consider if the open lot on the south side of Anderson was a source of contamination? Soil contamination was found there, and it was rumored that they stored stuff there. Was the metals contamination found there concentrated in one area? Do you plan to clean up that area?

Response: The open lot is not likely to be a source of the groundwater contamination. If it were a source area we would expect to see contamination in the shallow wells located there and they are clean, only the deep wells are contaminated. The metals (chromium) contamination was very localized and its removal is part of the Operable Unit 1 selected remedy.

D.2 **Issue:** Are the air sparging wells still there?

Response: The air sparging wells are part of the Operable Unit 1(OU-1) selected remedy. They have not yet been installed. We anticipate that the construction will begin during the 1999 construction season.

D.3 **Issue:** Will there be an odor from the remediation work? Have you looked at possible exposures that could occur when you dig up the contaminated soil?

Response: There should be no noticeable odor from the remedial work. During construction air monitoring will be conducted to make sure that no unacceptable releases of either dust or volatile chemicals occurs. If levels exceed pre-determined values, actions will be taken to suppress the release and the procedures being used will be modified. Workers on the site will take appropriate precautions to keep themselves from being exposed to any dangerous levels of contamination.

Vapors collected during operation of the remedy will be treated appropriately before being released to the atmosphere.

D.4 **Issue:** Can we expect storage on site of extracted soil or groundwater? Will any soil be incinerated on site? Should we expect anything to be stored on the site for nine months or more?

Response: No soil or groundwater will be stored onsite during the remediation. There may be days when the soil being excavated will be stockpiled for testing prior to disposal; this will be for a matter of days, not months. None of the site materials will be incinerated onsite, nor do we anticipate incineration of site materials anywhere else.

D.5 **Issue:** Where will the air sparge points be located? Back near where the tanks were? How will you get under the building?

Response: The placement and number of sparging points will be determined during the design of the remedy. They will probably be installed along the back of the building in the areas of highest shallow groundwater contamination. The vapor extraction points will be installed to complement the sparge points. Some of them will be installed through the floor of the building and some in the backyard area. During design, consideration will be given to the possibility of using "horizontal drilling" as one of the installation techniques.

D.6 **Issue:** Someone from an environmental group suggested that it is hazardous to eat vegetables or berries from my backyard. I live two blocks down on Delaware. I called the health department to try and confirm this but got no response.

Response: It would be extremely unlikely to find any contamination from the Davis-Howland site at such a distance from the site. Even in the immediate area of the site, shallow groundwater contamination is at or near undetectable levels once you cross Anderson and other that one small spot at the corner of Norwood and Anderson, soil contamination is restricted to the rear of the site.

D.7 **Issue:** I live across the street from the parking lot on Anderson. Should I take any precautions when the kids go out to ride their bikes or play in the open lots?

Response: It would clearly be advisable to stay off the actual site (don't climb any fences around either the site or the railroad right-of-way). As far as areas outside the site go, basic hygienic practices, like hand washing, are advisable, as they would be in any urban area. Transfer of soil, by children, from their hands to their mouths, should be avoided.

D.8 **Issue:** Regarding the question about if it is safe to eat vegetables - is there also no threat to the Fairmont/Norwood block?

Response: The significant soil contamination is found in the area behind the site. The only identified site soil contamination outside that area, was at the corner of Norwood and Anderson, in a very small area. The contamination found in bedrock groundwater is too deep to be taken up by garden plants.

D.9 **Issue:** Were the heavy metals only found in two areas of the site? Were they the carcinogenic form of chromium? Are all types of chromium carcinogenic? Did you find concentrations of metals in shallow soil?

Response: Many metals occur naturally as a component of most soils. Most of the metals detected at this site were found at concentrations typical for urban areas. Chromium, cadmium, and lead were found at levels of concern near soil samples 7 and 9 (DHSS 7 and 9). DHSS-9 is located near the corner of Anderson and Norwood and had elevated levels of chromium. Phase II sampling of the soil found the soil with elevated chromium to be extremely localized. This spot is also covered with grass, further decreasing the likelihood of contact. The contaminated soil will be removed as part of the OU-1 remedy. DHSS-7, located behind the buildings, had elevated cadmium, lead, and mercury levels. Hexavalent chromium (Cr+6) is a suspected carcinogen. It is unlikely that it would be found in this form under the oxidizing conditions found on the ground surface and we did not specifically test for it.

EXHIBIT B
ADMINISTRATIVE RECORD
Davis-Howland Oil Corporation Site
Operable Unit No. 2: Bedrock Groundwater
Monroe County
8-28-088

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1. Record of Decision 03/98
2. Proposed Remedial Action Plan 01/98
3. Phase II Remedial Investigation (RI) Report 10/97
4. Referral for Completion of RI/FS, J. Lacey to M. O'Toole 04/30/93
5. Remedial Investigation (RI) Report, Volumes I, II, III, and IV 10/96
6. Feasibility Study (FS) Report 03/97
7. RI/FS Work Plan 03/95
8. Citizen Participation Plan, prepared by NYSDEC 05/95
9. Soil Investigation Report, prepared by Dunn Geoscience 11/26/91
10. Relevant Correspondence

    - G.A. Carlson to M.J. O'Toole, NYSDOH PRAP concurrence letter 01/13/98

    - G.A. Carlson to M.J. O'Toole, NYSDOH ROD concurrence letter 03/98