WORK PLAN

Ground Water Recovery and Transmission Design for the Robintech/Compudyne, Inc. Site

November 1996

Prepared For:

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Owego, New York

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1.0 INTRODUCTION

1.1 PURPOSE AND ORGANIZATION OF REPORT

At the request of Hadco Corporation (Hadco), ERM-EnviroClean-Northeast, Inc. has prepared this Work Plan for ground water recovery and transmission design for the Robintech/Compudyne, Inc. site located in Owego, New York. The purpose of this Work Plan is to describe the tasks involved in preparation of the remedial design, construction, and operation and maintenance of the selected remedy for the site as stated in the Record of Decision (ROD) issued by the New York State Department of Environmental Conservation (NYSDEC) in March 1995.

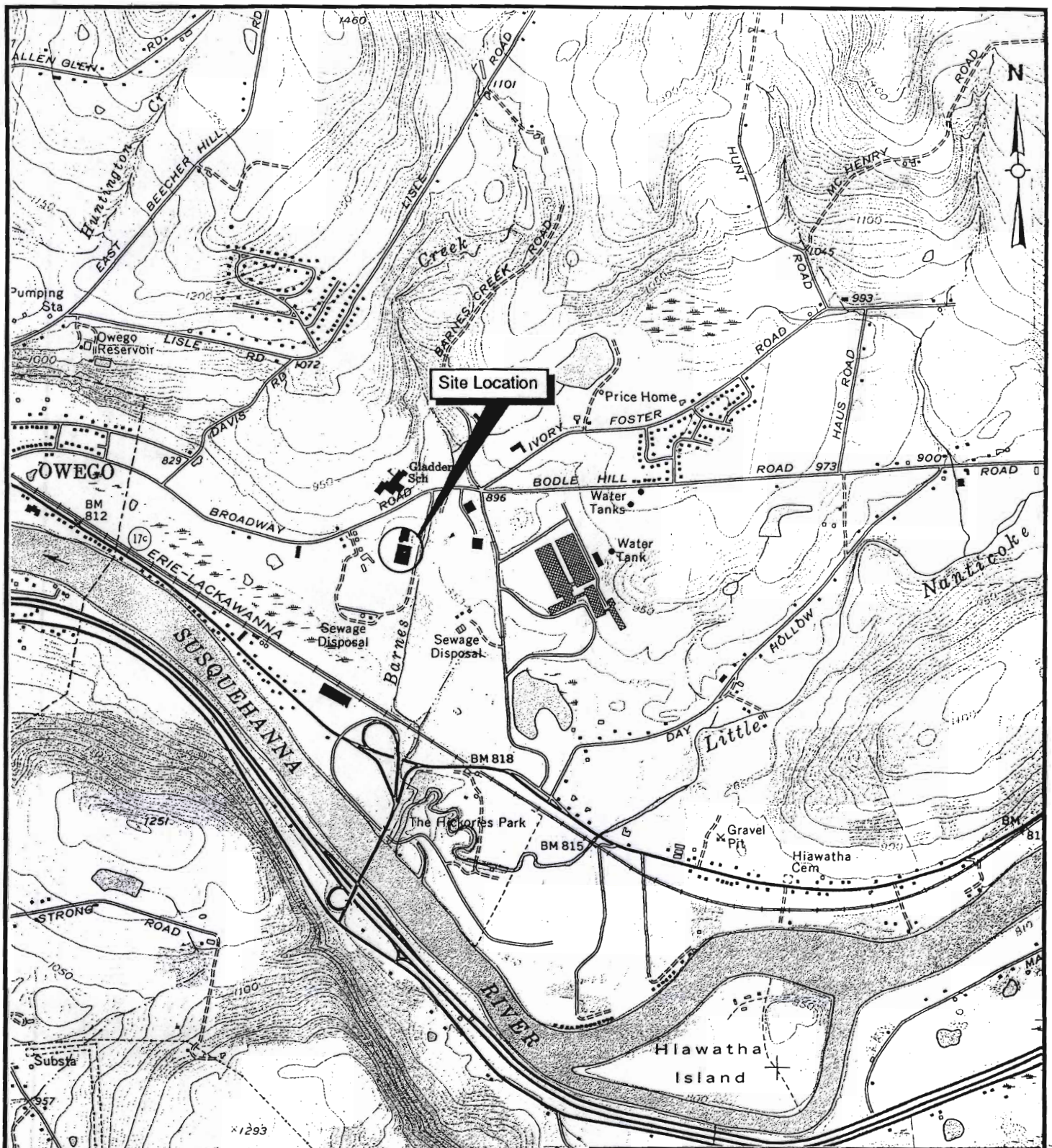
This Work Plan has been prepared in accordance with and subject to the terms and conditions of the Order on Consent between NYSDEC and Hadco (Order on Consent Index No. W7-0731-95-06).

1.2 SITE DESCRIPTION AND HISTORY

This section is based on "The Focused Feasibility Study" submitted to NYSDEC in July 1994.

1.2.1 *Site Description*

Portions of the Hadco facility, located at 1200 Taylor Road in the Town of Owego, New York (Figure 1-1), are listed as a Class 2 Inactive Hazardous Waste Storage Site by the NYSDEC (Site No. 754007) as the Robintech/Compudyne, Inc. site. The site consists of the approximately 3.7 acre parcel previously owned by Robintech/Compudyne, Inc. The site and the adjacent properties purchased by Hadco after 1981 now consist of approximately 17.3 acres, which is bordered to the south by a



SOURCE: U.S.G.S. Quadrangle Map, Apalachin, NY

TITLE

SITE LOCATION MAP
1200 TAYLOR ROAD
OWEGO, NY

PREPARED FOR

HADCO

ERM-Northeast
Environmental Resources Management

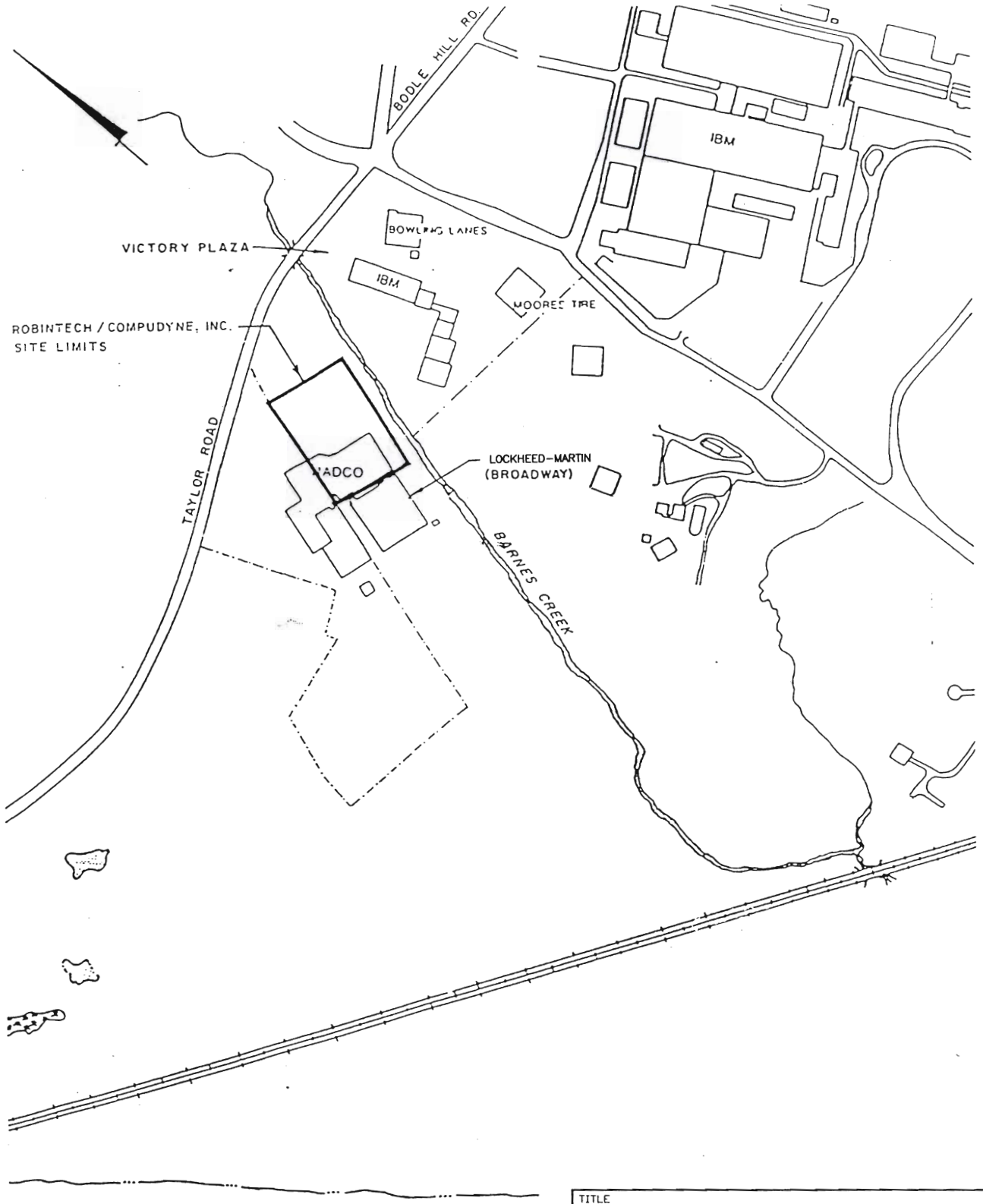
SCALE	FIGURE
1" = 2000'	1-1

DRAWN	JOB NO.	FILE NAME	DATE
S.P.	400.118.1	GEN-V	8/21/95

municipal sewage treatment plant. The land to the west of the site is undeveloped, while the land to the north and east has been developed for industrial use. The facility located immediately east (the Broadway Building) of the Robintech site has been purchased recently by Hadco (formerly leased by Lockheed-Martin (Loral) and by IBM). In addition, Lockheed-Martin owns and operates a large facility (formerly owned by IBM) further to the east of the Robintech property. A complex of buildings, referred to as the Victory Plaza, is located northeast of the Robintech site. Previous investigations performed at the Victory Plaza and at the large Lockheed-Martin facility have shown the presence of dissolved organic constituents in the ground water underlying these sites. In addition, testing at the adjacent Broadway Building facility has identified the presence of trichloroethene (TCE) in the former septic system. Given their location hydraulically upgradient of the Robintech site, these facilities are potential off-site contributors to the dissolved constituents observed underlying the Robintech site. The location of the Robintech site in relation to these surrounding facilities is illustrated on the site vicinity map, presented as Figure 1-2.

1.2.2 *Site History*

A discussion of the site history of the Robintech site, included in the RI/FS Work Plan, detailed the past ownership and activities at the site. In summary, the original property was subdivided from the Taylor family farm in 1956 and sold to Mr. George Warneke. Mr. Warneke sold the property within six months to the Owego Development Co., which soon developed this and surrounding properties for industrial use. The property was then leased to Mutual Design, which operated the first manufacturing operation at the facility through 1970. Robintech, Incorporated (Robintech), now known as Compudyne, Inc. (a subsidiary



APPROXIMATE SCALE

600' 0 600'

Focused Feasibility Study(1994)

SOURCE: Blasland & Bouck Engineers, P.C.

TITLE

SITE VICINITY MAP
ROBINTECH/COMPUDYNE, INC. SITE
OWEGO, NEW YORK

PREPARED FOR

HADCO

Environmental Resources Management (ERM)			SCALE: GRAPHIC	FIGURE: 1-2
DRAWN: S.P.	JOB NO.: 400.118.1	FILE NAME: GEN-V	DATE: 9/6/95	

of Compudyne Corporation), owned and operated this facility from 1970 through 1979, and expanded the facility in 1975 and again in 1977. The Robintech facility and the original 3.6-acre parcel of land it occupied were purchased by Hadco in 1979. It has been confirmed that discharges of the identified constituents occurred during Robintech's operations, and prior to the purchase of the facility by Hadco.

Since acquiring the site, Hadco has expanded its facility six times, including two expansions in 1983, an addition in 1984, another in 1985, and another in 1990/1991. The sixth expansion of the facility was recently completed. A separate building was also constructed south of the main facility to house an on-site biological wastewater treatment system.

1.2.3 *Previous Investigations*

The previous investigations implemented at the site have included: a Preliminary Site Evaluation; a Phase I Hydrogeologic Investigation; a Phase II Hydrogeologic Investigation; a Supplementary Hydrogeologic Investigation; the performance of an initial RI task associated with the establishment of a site-specific Project Compound List (PCL); and a Remedial Investigation/Feasibility Study (RI/FS).

The PCL developed for the Robintech site identifies the types of chemical compounds within soil and ground water at the site, and specifies the analytical procedures required to quantify their concentrations (Groundwater Technology, Inc., 1991). The PCL for this site includes analyses for volatile organic compounds (VOCs) by NYSDEC Method ASP 89-1; and priority pollutant metals plus seven site-specific inorganic compounds (i.e., aluminum, cobalt, iron, magnesium, manganese, sodium, and vanadium) by NYSDEC Method ASP CLP-M.

As part of previous NYSDEC approved investigations, a network of 16 monitoring wells (MW-1 through MW-15 and MW-17) was installed at

the locations indicated on Figure 1-3. The ground water analytical results from these investigations have shown dissolved volatile organic constituents in the ground water underlying the Robintech site (Blasland & Bouck, 1992).

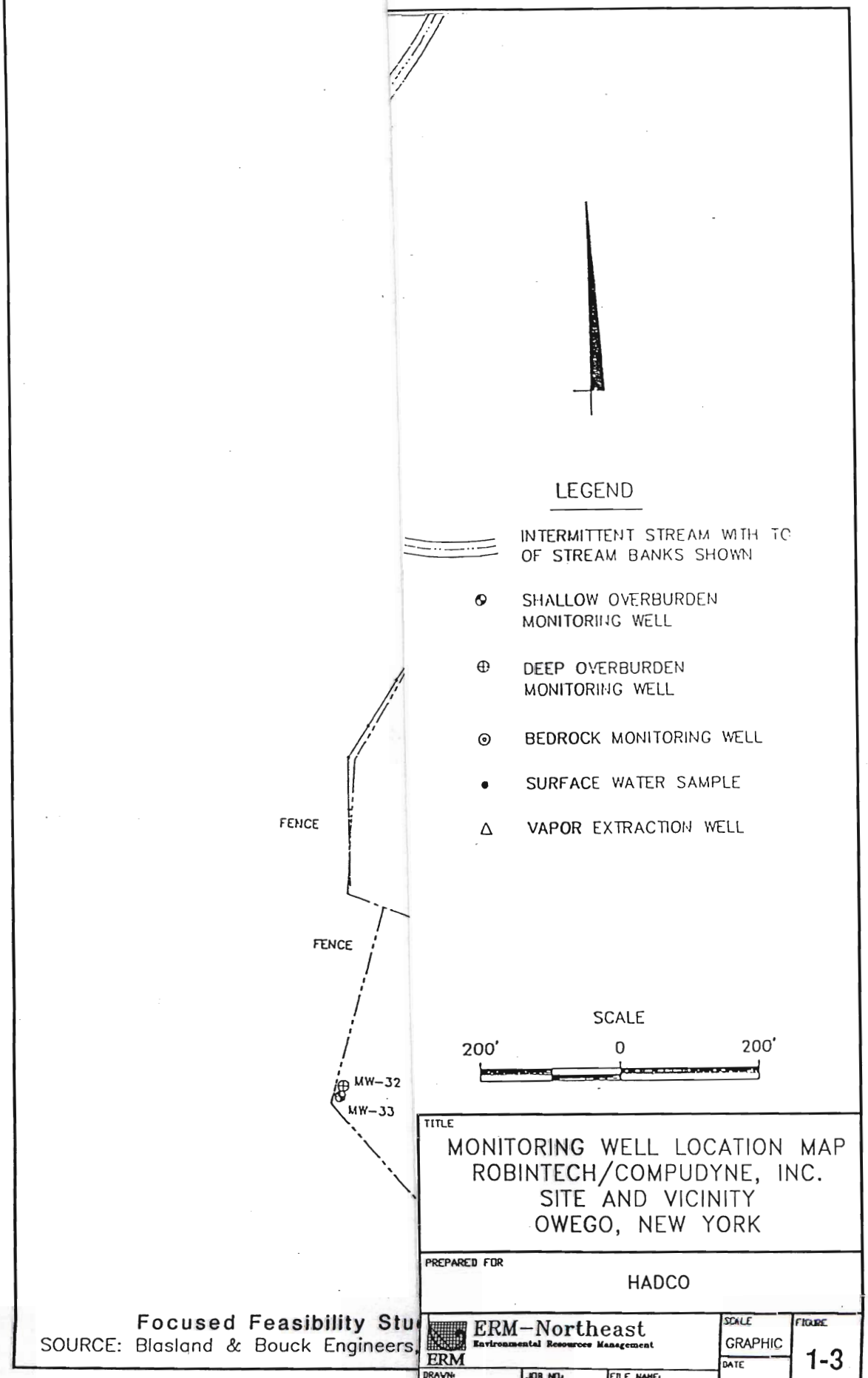
1.2.4 *Previous Response Actions*

Interim Remedial Measures (IRMs) are implemented at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

An IRM was implemented at the site in October 1993 to begin remediating VOCs in the ground water downgradient of the source area. The IRM, which consists of ground water extraction and treatment as described below, will continue to be operated as part of the final ground water remedial alternative.

The interim ground water extraction and treatment system consists of the following:

- Extraction of ground water from recovery well RW-3 at a flow rate of between 10 to 12 gpm;
- On-site treatment of the extracted ground water using a low profile, shallow tray air stripper; and
- Discharge of treated effluent to the Town of Owego's Publicly Owned Treatment Works (POTW).



Focused Feasibility Stu

SOURCE: Blasland & Bouck Engineers,

1.3 *DESCRIPTION OF SELECTED REMEDY AS STATED IN THE RECORD OF DECISION*

Based upon the results of the RI/FS for the Robintech/Compudyne, Inc. site and the criteria identified for evaluation of alternatives, NYSDEC has selected ground water withdrawal and treatment with iterative source control pumping as a portion of the remedy. This remedy consists of withdrawing, treating, and disposing of ground water at the Town of Owego Publicly Owned Treatment Works (POTW) and implementing an iterative source control pumping program in the saturated zone of the source area soils.

One additional recovery well (RW-6) will be installed in the downgradient area to supplement the existing recovery well (RW-3). The existing recovery well was previously installed as part of an approved IRM. Ground water will be pretreated on-site using the existing IRM treatment system and discharged to the Town of Owego's POTW. A step-drawdown pump test has been performed to determine the optimum flow rate for ground water recovery.

In addition, contaminated saturated soils located beneath the source area will be remediated by an iterative source control pumping. The iterative source control pumping is defined as phased ground water withdrawal from discrete zones within the overburden aquifer immediately downgradient of the contaminated source area. By slightly increasing the rate of ground water flow through the highly contaminated source area, solubilization/ dissolution of the chemicals will occur. The compounds of concern would be flushed from the contaminated soil. The contaminated ground water will be pumped from recovery wells RW-4 and RW-5 and will be pretreated on-site using the existing IRM treatment system and discharged to the Town of Owego's POTW. A step-drawdown pump test has been performed to establish the optimum pumping rate and

performance criteria will be determined for this system during the remedial design phase.

1.4 *PHYSICAL SITE CHARACTERISTICS*

This section is based on the "The Focused Feasibility Study" submitted to NYSDEC in July 1994.

1.4.1 *Topographic Setting and Surface Water Drainage*

The Robintech site is located on the northern side of the Susquehanna River Valley, which is oriented generally east-west in the site vicinity. The site consists of 3.7 acres of primarily open land in a mixed commercial/industrial land use area. Just to the north of the site, the valley walls slope steeply, and the land surface continues to slope to the south across the site. However, the slope is noticeably less steep across the southern portion of the site.

The Robintech site is located in the northern slope drainage area of the Susquehanna River. The Susquehanna River is within approximately one mile of the site and drains an area of approximately 4,200 square miles in the reach near Owego [United States Geological Survey (USGS) 1992]. The NYSDEC best usage classification for the Susquehanna River within a two-mile radius of the site is Class B (NYSDEC 1992). The best usages of Class B waters are primary and secondary contact recreation and fishing; the water quality is suitable for fish propagation and survival (reference 6NYCRR Part 701). The Susquehanna River supports fishing and provides other recreational opportunities in the Owego area.

Barnes Creek, the closest surface water to the site, is within 100 yards of the eastern site boundary. This creek is subject to much seasonal variation in stream flow regime, and discharge reflects precipitation events in the reach near the site. The NYSDEC best usage classification for Barnes

Creek in the reach adjacent to the site is Class C (NYSDEC 1992). The best usage of Class C waters is fishing, and the water quality is suitable for primary and secondary contact recreation, although other factors may limit their use for these purposes (reference 6NYCRR Part 701).

A more detailed discussion of surface water resources in the vicinity of the site was presented in the Fish and Wildlife Impact Analysis, presented in Section 5.2 of the RI Report (Blasland & Bouck, 1992).

1.4.2 *Site Geology*

The geologic conditions in the immediate site vicinity have been characterized based on the observations of materials encountered during the drilling of monitoring wells at the site during RI activities, as well as through the evaluation of the geologic logs generated during the previous investigations.

The materials encountered in the overburden vary considerably across the site. The near-surface materials encountered across the majority of this site consist of glacial outwash deposits composed of sand and gravel, with varying degrees of silt.

Underlying these glacial outwash deposits is a very compact basil till unit composed predominantly of silt, sand and gravel. This glacial till was encountered above the bedrock at a majority of the drilling locations. Due to the relatively low permeability of the till materials, the upper surface of this till unit could act as a surface upon which DNAPLs may be perched.

The bedrock unit encountered immediately below the overburden deposits beneath this site consists of interbedded layers of siltstone and fine sandstone. The average depth to bedrock ranges from approximately 60 feet below ground surface (bgs) near the facility to over 90 feet bgs near the southern property boundary.

1.4.3 *Site Hydrogeology*

The ground water bearing units of concern to this investigation include the saturated overburden materials, as well as the upper zone of the bedrock. The glacial outwash deposits, which predominantly form the water-bearing materials in the overburden beneath this site, range in thickness from approximately 35 feet beneath the facility to over 80 feet under the southern property boundary.

Both ground water bearing units beneath the Robintech site and vicinity (i.e., the saturated overburden materials and the upper zone of the bedrock) are classified as GA by the NYSDEC, indicating that the best potential use of these ground waters is as a source of drinking water (reference 6NYCRR Part 701).

To evaluate ground water movement in the site vicinity, several rounds of water level measurements were recorded as part of the RI. These data indicate that ground water in the overburden generally flows from northeast to southwest beneath the site in both the shallow and deep zones of this formation. However, a greater westerly component of flow appears to exist in the shallow zone as compared to the deep zone. The direction of the ground water flow within the bedrock also appears to be generally toward the southwest (i.e., toward the Susquehanna River).

At monitoring well cluster locations, the ground water elevations in the shallow versus in the deep overburden wells, as well as the ground water elevations in the overburden versus in the bedrock wells, were compared to determine the vertical hydraulic gradients across the site vicinity. These measurements indicate minor vertical gradients that vary in direction beneath the site, suggesting that horizontal gradients are the principal hydraulic gradients influencing ground water flow in the site vicinity.

In-situ hydraulic conductivity tests (slug tests) were performed on eight of the monitoring wells (i.e., MW-18, MW-20, MW-21, and MW-23 through MW-27) to further characterize the various water-bearing materials (see Figure 1-3 for monitoring well locations). The hydraulic conductivity values calculated for the deep overburden materials ranged from 2.3 E-04 cm/sec (.65 ft/day) to 1.7 E-02 cm/sec (48.20 ft/day). The hydraulic conductivity of the bedrock unit monitored by MW-20 was estimated to be 8.3 E-04 cm/sec.(2.35 ft/day), based on the slug test performed in this well. These results suggest that the glacially deposited outwash deposits predominantly forming the saturated materials in the overburden are moderately to highly conductive. The bedrock also appears to be moderately conductive, based on these slug test results.

To further evaluate the hydraulic characteristics of the overburden unit underlying the site, a pump test was performed on the new 4-inch diameter recovery well (PW-3) installed during the RI (see Figure 1-3 for the location of PW-3). Based on a review of the pump test data, the transmissivity of the deep overburden materials in which PW-3 is screened was estimated by Blasland & Bouck (1992) to range from 1,200 to 1,900 gallons per day per square foot (gal./day/sq. ft.). The overall hydraulic conductivity of the overburden was estimated by Blasland & Bouck (1992) to range between 9.9 E-04 cm/sec (2.81 ft/day) and 1.6 E-03 cm/sec (4.54 ft/day). The storativity of the deep overburden materials was estimated to range between 3.8 E-03 and 4.3 E-05.

1.5 *GROUND WATER QUALITY*

This section is based on the "The Focused Feasibility Study" submitted to NYSDEC in July 1994.

The analytical results of the ground water samples collected from the monitoring wells located on and adjacent to the Robintech site indicate

the presence of organic and inorganic constituents at concentrations exceeding NYSDEC Class GA ground water standards. The concentrations of organic and inorganic constituents detected in the ground water samples are presented in the Remedial Investigation.

The organic constituents detected in the ground water samples include a number of a halogenated VOCs, principally TCE, TCA, and DCE, and several aromatic hydrocarbons, including toluene, ethylbenzene, and xylenes. The principal source of VOCs for the ground water beneath the Robintech facility appears to be located near the former chemical storage area. Ground water samples collected from the shallow overburden monitoring well located immediately downgradient of the former chemical storage area (MW-19) consistently contained the highest concentrations of TCE (up to 630 ppm). The concentrations of TCE detected in the ground water samples collected from MW-19 were nearly 50% of the solubility of TCE in water, suggesting the possible presence of dense non-aqueous phase liquids (DNAPLs) in the vicinity of the former chemical storage area.

The extent of VOCs detected in the ground water extends horizontally the length of the site and vertically into the bedrock formation underlying the site. However, the high VOC concentrations detected near the former chemical storage area appear to attenuate downgradient of the site (i.e., much lower concentrations of VOCs were detected in the ground water samples from monitoring wells located downgradient of the site).

Several inorganic constituents (including beryllium, chromium, copper, lead, and zinc) were detected in ground water samples at concentrations which exceed their respective NYSDEC Class GA ground water standards are not indicative of upgradient ground water conditions. The detection of chromium and copper in the soils from the former chemical storage area (at concentrations above the expected common range for central New York State) may indicate that the soils in this area are a contributing

source of these inorganic constituents in ground water. The source(s) of the other inorganic constituents of potential concern in the ground water (i.e., beryllium, lead, and zinc) has not been identified. However, all ground water samples submitted for inorganic analysis as part of the RI were unfiltered.

In an unfiltered sample, the turbidity in the ground water sample prevents accurate quantification of the analyte concentration. The analyte sorbs to the suspended particles in the ground water sample, and will be measured and reported as the detected concentration reported in ground water (i.e., the analyte concentration reported in unfiltered ground water samples may be more reflective of concentrations for the particulate matter present in the ground water and therefore is not representative of actual ground water quality). Thus, strict application of ground water standards to unfiltered samples may not be appropriate.

2.0 *PUMP TESTS*

Pump tests were performed on four existing monitoring wells (MW-19, MW-22, MW-23 and MW-29) to determine aquifer hydraulic characteristics and the suitability of these wells to function as recovery wells. Any of the monitoring wells found to be unsuitable for ground water recovery purposes have been replaced by newly-constructed recovery wells.

2.1 *STEP-DRAWDOWN TESTS OF EXISTING MONITORING WELLS*

Separate step-drawdown pump tests were performed on the four monitoring wells. The tests were run on each monitoring well using temporary submersible pumps with ground water elevation monitoring in the pumping well and surrounding monitoring wells. The pump test water was treated by the on-site air stripper and discharged to the sanitary sewer system. Yields from MW-22 and MW-29 were not as large as was projected in the Feasibility Study. Therefore, the use of the monitoring wells MW-22 and MW-29 as recovery wells is not acceptable.

2.2 *NEW RECOVERY WELL CONSTRUCTION*

Due to insufficient yields, a new recovery well will be installed in the vicinity of monitoring wells MW-22 and MW-29, and will be designated as RW-6. Due to other considerations, new recovery wells will be installed in the vicinity of monitoring wells MW-19 and MW-23, and will be designated as RW-4 and RW-5 respectively. All of the new wells will be four-inch diameter PVC wells installed at the same depths as the adjacent monitoring wells. The wells have been designed using grain-size analyses of soil samples collected from the portion of the formation targeted for the recovery well screen.

A hydrogeologist will provide oversight during well drilling, installation and development. Geologic logs of the borings and well construction diagrams will be prepared for each well.

2.3 *STEP-DRAWDOWN TESTS OF NEW RECOVERY WELLS*

Prior to connection of the newly-constructed recovery wells to the existing ground water treatment system, step-drawdown pump tests will be performed on these wells to show that they are yielding the expected amount of recovered water as shown in Section 3.1.

2.4 *PERFORMANCE MONITORING*

A performance monitoring plan will be prepared to assess the hydraulic capture zones and water quality changes through time.

3.0 *REMEDIAL DESIGN*

The project will include the permanent installation of well pumps in four recovery wells, transfer piping from the wells to the existing ground water treatment system, and all required appurtenances. Initial start-up troubleshooting and monitoring will be performed.

3.1 *WELL PUMPS*

New submersible pumps will be installed in three recovery well casings at depths indicated in the following table and will be designed to perform to the pumping capacities stipulated in the ROD.

Well Designation	Depth (ft)	Flow (GPM)
RW-4	20	1
RW-6	115	25
RW-5	35	11

Each pump will be supplied with an on-off-auto switch. Flow control will be achieved by manually throttling valves located in the individual recovery well vaults.

3.2 *WELL VAULTS*

Each well casing will be excavated to a depth of approximately six feet below grade where a precast concrete vault will be installed. The vaults will provide well access and the double wall piping interface needed for the new water recovery transmission piping. Flow meters, shut-off valving, pressure indicators and sample taps will be installed in the vault for each recovery well.

3.3 *TRANSFER PIPING*

The water recovery transmission piping from the source area recovery wells (RW-4 and RW-5) will be run from the wells through the Hadco main building, then underground to the existing treatment facility. Piping materials will be compatible with ground water potentially containing TCE concentrations greater than 500 ppm.

Exterior piping will be double-walled PVC and buried to attain at least a four-foot depth of cover. Interior piping will be single-walled PVC, hung from the Hadco main building's roof support structure with hangers.

Well RW-6 will be manifolded into one header pipe. The entire length, approximately 600 feet to the existing treatment system, will be exterior double-walled pipe, buried four feet below grade.

Wells RW-4 and RW-5 will be manifolded into one header pipe. All below grade pipe, approximately 180 feet, will be exterior double-walled, buried four feet below grade. The remaining above-grade pipe, approximately 420 feet, will be single-walled, installed inside the Hadco building, hung from the roof structure.

Two (2) inspection tee sample points will be installed in the below-grade piping system to allow for routine leak detection testing.

3.4 *CONNECTION TO EXISTING TREATMENT FACILITY*

The three new recovery wells will be hydraulically connected to the existing treatment system via the recovery transmission piping. The piping branches will be appropriately combined into a single recovery

line leading to the existing biological treatment plant building. At this point, a penetration will be made into the treatment plant and a connection to the existing low profile air stripper will be made. The connection will include an isolation valve, a check valve to prevent reverse flow and a sampling point to enable sampling of the combined influent from the new wells.

In addition, a control interconnection will be made between the new wells and the existing air stripper. The interconnection will control the automatic on/off operation of each well. If there is a shutdown of the air stripper for any reason (i.e., high stripper sump alarm), the recovery well pumps will be de-energized. This interconnection between the treatment system and the recovery pumps will ensure that untreated effluent does not enter the discharge sewer line.

3.5 *ELECTRICAL*

All electrical panels will be NEMA 4 rated for exterior installation. The individual control panels will be mounted above-grade at each recovery well. This will enable on/off operation of each well without requiring entry into the recovery well vault.

3.5.1 *Power For Pumps*

The power and control wires within each recovery vault will be run from the submersible pump and level probe connections to each local electrical control panel. Power will be taken from the treatment plant for the three new wells.

3.5.2 *Level Control For Pumps*

Each well pump will be fitted with high and low water level controls. These controls will be located in a local panel that will also include a hand-off-auto switch. The well level controls will automatically operate the local on/off cycle of each recovery well pump.

3.5.3 *Safety Interconnections to Air Stripper*

Each recovery well will be provided with a Hands-Off-Auto (H-O-A) switch. When in the automatic position, the recovery pump(s) will be interlocked to the existing air stripper "low air pressure" shut down.

4.0 *REMEDIAL DESIGN DELIVERABLES*

In accordance with the Consent Order, the Remedial Design deliverables described in the following sections will be submitted to Hadco for submission to NYSDEC for review and approval.

4.1 *HEALTH AND SAFETY PLAN*

A Health and Safety Plan (HASP) will be prepared for submittal to NYSDEC. This plan will be prepared in accordance with 29 CFR 1910 by a certified health and safety professional and will be protective of persons at, and in the vicinity of, the site during construction and after completion of construction. The HASP will establish the protocols for all construction activities associated with the installation of the ground water recovery and transmission system. The activities include:

- setting up work zones;
- establishing personal protective equipment (PPE);
- air monitoring in, and adjacent to, the work zone;
- heavy equipment usage;
- excavation; and
- confined space entry.

4.2 *CONTINGENCY PLAN*

A Contingency Plan will be prepared for submittal to NYSDEC. Its purpose is to:

- anticipate and identify unplanned events (e.g., releases of contaminated materials into the air, soil or surface water) which may occur during construction of the remedy selected for the site and to develop appropriate precautionary measures and prepare a planned response to these events to protect human health and the environment; and

- to identify corrective actions and corrective action schedules which may be implemented in the event an element of the Remedial Design fails to achieve any of its objectives or otherwise fails to protect human health or the environment. This plan will address pump failures, transmission line leakages and failure to attain performance criteria.

4.3 *AIR EMISSIONS ASSESSMENT*

A preliminary air emissions assessment to determine the impact of future emissions from the air stripper will be provided. The assessment will consist of a spreadsheet based on Air Guide-1 formulas and discharge guidelines. The emissions could potentially increase due to the additional water that will be treated from the three recovery wells.

4.4 *DESIGN DRAWINGS AND SPECIFICATIONS*

The Design Drawings will be submitted on D-size sheets. Details and information that will be included are:

- Cover Sheet/Site Plan;
- Process and Instrumentation Diagram;
- Trench Detail;
- Vault Plan and Section;
- Pipe Plan; and
- Treatment Facility Connection Detail.

All required Specifications will be included on the Design Drawings.

4.5 *OPERATIONS AND MAINTENANCE PLAN*

An Operations and Maintenance (O&M) manual will be certified by a professional engineer and submitted to NYSDEC within 30 days after completion of the construction activities. It will consist of the following:

- Expected duration of O&M activities;
- Inspection, maintenance and lubrication schedules;

- Detailed startup and operations narrative; and
- Referenced detailed preventative maintenance procedures provided in individual manufacturer's O&M manuals.

The above items will be provided for both the newly-installed and existing equipment (including the recovery wells, transmission system and air stripper).

4.6 *FINAL ENGINEERING REPORT AND P.E. CERTIFICATION*

A Final Engineer's Report will be submitted to NYSDEC within 30 days after completion of construction activities. This report will include as-built drawings and will be signed and certified by a New York State-licensed professional engineer (P.E.). This professional engineer will visit the site prior to certification in order to inspect the recovery and transmission system.

The report will summarize and discuss any modifications to the Remedial Design during construction and their impacts, if any, on the site remediation.

The report will include certification by a professional engineer that the Remedial Design was implemented and all construction activities were completed in accordance with the approved Remedial Design.

6.0 *REMEDIAL DESIGN SCHEDULE*

A Remedial Design schedule is included as Figure 6-1. This schedule is divided into Remedial Design and Remedial Design Construction and identifies the major work elements in each phase of the project. The schedule provides time for Hadco and NYSDEC to review key project deliverables.

FIGURE 6-1

REMEDIAL DESIGN SCHEDULE
ROBINTECH/COMPUDYNE INC. SITE

Task Name	Duration (months)	1996				1997											
		9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Submit Remedial Design	1																
NYSDEC Review	0.5																
Construct Remedial Design	1.5																
Prepare and Submit O&M Plan, As-Builts and Certification	1																
NYSDEC Review	0.5																
Implement Post-Remediation O&M	unknown																

File name: HADSCHED.XLS

Revised: 11/5/96

7.0 *MONTHLY PROGRESS REPORTS*

Progress reports will be submitted to NYSDEC by the tenth day of every month following the effective date of the Consent Order, and will consist of a description of the following:

- actions which have been taken toward achieving compliance with the Consent Order during the previous month;
- all results of sampling and tests and all other data received or generated in the previous month, including quality assurance/quality control information;
- all work plans, reports, and other deliverables required that were completed and submitted during the previous month;
- all actions, including, but not limited to, data collection and implementation of work plans, that are scheduled for the next month and provide other information relating to the progress at the site;
- information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Remedial Design, and efforts made to mitigate those delays or anticipated delays;
- any modifications to any work plans; and
- all activities undertaken in support of the Citizen Participation Plan during the previous month and those to be undertaken in the next month.

8.0 *CONSTRUCTION OVERSIGHT*

Construction oversight will be conducted and will ensure that all provisions of the Remedial Design are enforced. Specific responsibilities will include:

- collecting and maintaining information that describes essential work elements, such as methods of construction, daily activities, quality of the materials and quality of the work performed. This will be in the form of daily logs, daily reports, material delivery records, material shipment documents, surveys, punch lists, change orders, accident reports, Certificate of Contractor Completion and other miscellaneous documents.

- certifying and documenting that all work items have been completed in accordance with the Remedial Design.

9.0 *SITE SECURITY*

Caution tape and/or caution fence will be installed around all work areas to prevent unauthorized access. Entry and exit to the site will be permitted through one gate only, where sign in/sign out procedures will be enforced.

10.0 *PERMITS*

All required plumbing and electrical permits will be obtained as necessary to perform the work.

10.1 *DISCHARGE PERMIT (OPTIONAL)*

Hadco's existing ground water treatment system currently discharges to the Town of Owego sanitary sewer. If Hadco decides to explore the option, the possibility of discharging the treated ground water to the Susquehanna River, a nearby surface water body, will be examined and a discharge permit in accordance with the State Permit Discharge Elimination System (SPDES) will be obtained.