7-34033

PROPOSAL TO PROVIDE:

RAILROAD TRACK RELOCATION ENVIRONMENTAL IMPACT STATEMENT

SUBMITTED TO:

THE NEW YORK STATE FAIR
A DIVISION OF THE NEW YORK STATE
DEPARTMENT OF AGRICULTURE AND MARKETS

State Fair Boulevard
Syracuse, New York 13209

JANUARY 1992

H2MGROUP
Engineers, Scientists, Planners, Surveyors

H2M LABS, INC.
HOLZMACHER, McLENDON & MURRELL, P.C.
575 Broad Hollow Road, Melville, New York 11747

H2M ASSOCIATES, INC.
H2M CONSTRUCTION MANAGEMENT, INC.
999 Riverview Drive, Totowa, New Jersey 07512-1165

H2MGROUP

Holzmacher, McLendon & Murrell, P.C. • Holzmacher, McLendon & Murrell, Inc.
H2M Construction Management, Inc. • H2M Labs, Inc.

ACEC Member
Supporting Excellence
In Engineering

575 Broad Hollow Road, Melville, NY 11747-5076
(516) 756-8000 • Fax: (516) 694-4122

January 24, 1992

FEDERAL EXPRESS

Mr. William Fredericks
New York State Fair
State Fair Boulevard
Syracuse, New York 13209

Re: Request for Proposals
Railroad Track Relocation
Environmental Assessment

Dear Mr. Fredericks:

In response to the New York State Fair's RFP, Holzmacher, McLendon & Murrell, P.C. (H2M) is pleased to submit herewith our technical proposal for the above referenced project.

As indicated in the proposal, our extensive experience with environmental assessments, site investigations and environmental impact analysis, together with a multi-disciplined staff and in-house analytical laboratory, make H2M uniquely qualified for the project.

If you should have any questions or comments concerning this proposal, please contact the undersigned at (516) 756-8000.

Very truly yours,

HOLZMACHER, McLENDON & MURRELL, P.C.

Gary J. Miller, P.E.
Assistant Vice President

GJM:cdr
encl.

New York State Fair
State Fair Blvd.
Syracuse, NY 13209

INVITATION FOR BIDS

INVITATION FOR BIDS NUMBER	COMMODITY GROUP
	RAILROAD TRACK RELOCATION ENVIRONMENTAL IMPACT STATEMENT
BID OPENING DATE: JANUARY 8, 1992 TIME: ADMINISTRATION BUILDING 3:00 PM	CONTRACT PERIOD ONE YEAR MAXIMUM
ADDRESS INQUIRIES TO: WILLIAM FREDERICKS PROPERTY MANAGER TELEPHONE NO.: (315) 487-7711 EXT 234	SPECIFICATION REFERENCE AS INCORPORATED HEREIN

NOTICE TO BIDDERS

Pursuant to the provisions of Article XI of the State Finance Law or the State Printing Law, sealed invitations for bids will be received by the Commissioner of General Services at the above address for furnishing the item(s) listed in this invitation for bids. When submitting a bid, you must:

1. Prepare yur bid on this form using black ink or typewriter. Write the name of your company on each page of the bid, in the block provided, making sure you do not write anything on the left of the solid black line running from top to bottom of the page. Only one copy of the bid is required.
2. If your bid deviates from the specifications, indicate such fact by making an "X" alongside the amount bid for each item in the price column. Explain such deviations or qualifications; if necessary, attach a separate sheet setting forth such explanation.
3. Sign the bid. By signing you indicate your express authority to sign on behalf of yourself, or your company or other entity and full knowledge and acceptance of the GENERAL SPECIFICATIONS (9/83) and AMENDMENTS THERETO, the INVITATION FOR BIDS, and the GROUP SPECIFICATIONS. The bid must be fully and properly executed by an authorized person.
4. Mail the bid promptly in order for it to be received before the time of the bid opening. Late bids will be rejected. It is important that you answer this invitation for bids. Failure to respond to three successive invitations for bids may result in your name being removed from the mailing list for this commodity group. IF YOU ARE NOT SUBMITTING A BID, you should:

a. Complete and tear off the front sheet of this invitation for bids.
b. Place the front sheet only in [redacted] envelope, making sure to record the required information on the envelope, and return it to the New York State Fair.
c. IT IS ALSO REQUESTED THAT YOU INDICATE YOUR REASON FOR NOT BIDDING.

ATTENTION: Failure to complete all information on the bid envelope might necessitate the premature opening of the bid which may compromise its confidentiality.

NOTE: IN ORDER TO FULLY AND PROPERLY EXECUTE THIS QUOTATION, A SIGNATURE OF AN AUTHORIZED PERSON IS REQUIRED IN TWO (2) LOCATIONS BELOW. FAILURE TO COMPLY MAY CONSTITUTE GROUNDS FOR REJECTION OF YOUR BID BY THE COMMISSIONER.

BIDDER'S NAME	EMPLOYER'S FEDERAL TAX IDENTIFICATION NUMBER
Holzmacher, McLendon & Murrell, P.C.	11-2235604

ADDRESS 575 Broad Hollow Road (Street) Melville (City) NY (State) 11747 (Zip Code) Suffolk (County)

_____ % Cash Discount for payment within 15 days of delivery and/or receipt of voucher
_____ % Cash Discount for payment within 30 days of delivery and/or receipt of voucher

CASH DISCOUNTS WILL NOT BE CONSIDERED IN DETERMINING THE LOW BIDDER BUT WILL BE CONSIDERED IN AWARDING TIE BIDS.
CASH DISCOUNTS OF LESS THAN 1% WILL NOT BE CONSIDERED.

Place an "X" in the appropriate box below.
☐ WE ARE NOT SUBMITTING A BID.
☐ WE REQUEST THE REMOVAL OF OUR NAME FROM THE MAILING LIST FOR THIS COMMODITY GROUP.

BIDDER'S SIGNATURE	DATE	OFFICIAL TITLE
[signature]	1-24-92	Assistant Vice President
PRINTED OR TYPED COPY OF SIGNATURE Gary J. Miller, P.E.		TELEPHONE NUMBER Area Code (516) 756-8000 x620

EXPRESSLY ACKNOWLEDGE AND AGREE THAT THIS BID CONSTITUTES A FIRM OFFER FOR SIXTY (60) DAYS AFTER THE DATE OF BID OPENING.

Bidder's Signature [signature] *Date* 1-24-92

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TABLE OF CONTENTS

Submitted By:

HOLZMACHER, McLENDON & MURRELL, P.C.
575 Broad Hollow Road
Melville, New York 11747
(516) 756-8000
FAX: 516-694-4122

Contact:
Gary J. Miller, P.E.

JANUARY 1992

EXECUTIVE SUMMARY

1.0 EXECUTIVE SUMMARY

This proposal is to provide all engineering, hydrogeologic, environmental science, drilling, survey and analytical services as necessary to assess the overall environmental conditions along the proposed route of a relocated rail line. The area to be assessed includes a portion of the State Fair Landfill. The primary objective of the assessment is to identify potentially hazardous conditions within the proposed route which might prevent or otherwise impede the planned construction project.

Major tasks to achieve the overall project objective include:

1. Initial screening of the site by means of a soil gas survey.

2. Identifying and assessing contaminated soils and groundwater via soil borings and monitoring wells.

3. Evaluating appropriate remedial actions and/or mitigating measures and determining their associated costs.

4. Preparation of an Environmental Assessment Report summarizing the results of our findings.

5. Preparation of a Full Environmental Assessment Form for the proposed track relocation in accordance with SEQRA.

H2M's multi-disciplined team includes environmental engineers, hydrogeologists and environmental planners with extensive experience with all facets of environmental assessments, site investigations and environmental impact analysis. This team is complemented by H2M's in-house analytical laboratory capabilities. Sub-contractors include a local driller having a long experience and working elationship with H2M that will enable the project to proceed with maximum efficiency. MBE participation in the project will be provided by a local firm which will perform all necessary survey work.

The proposal has been divided into several sections describing how H2M will accomplish the overall objectives of the project. Section 2 provides a task by task description of our technical approach to the project together with a project schedule. Section 3 presents H2M's qualifications including project management, resumés of key personnel and pertinent job histories. Section 4 presents our proposed project budget.

TECHNICAL APPROACH

2.1 PROJECT DESCRIPTION AND OBJECTIVES

The Department of Agriculture and Markets, Division of the State Fair (Fair) and the Consolidated Rail Corporation (Conrail) are proposing to relocate a section of existing railroad tracks on the northern boundary of the New York State Fairgrounds in the Town of Geddes, Onondaga County, New York to the western boundary of the Fairgrounds. As proposed, the route of the relocated tracks will pass through the State Fair Landfill which is presently classified as a "2A" site on the New York State Registry of Inactive Hazardous Waste Sites (Site No. 734033). The "2A" classification is a temporary classification given by the New York State Department of Environmental Conservation (NYSDEC) to sites where disposal of hazardous waste is suspected or known, but the degree of public health or environmental threat is unknown. Due to the possible presence of hazardous materials within the project boundaries, the Fair has asked that an environmental assessment be conducted before proceeding further with the project.

As proposed, the relocated railroad tracks would branch off the main CONRAIL line just east of the I-695 underpass, proceed under I-695 and turn north running parallel to I-695 across the State Fair Landfill. After running approximately 1,200 feet across the landfill, the tracks would cross Nine Mile Creek and continue north along the west side of the Lakeland exit roadway from I-695 immediately east of an Allied Chemical tailings pond before rejoining the existing CONRAIL line just north of State Fair Boulevard. The approximate route of the proposed rail line and the landfill boundaries are shown in Figure 1, Project Map.

The primary objective of the environmental assessment is to determine whether hazardous substances are present within the project boundaries, and if so, whether their presence would prevent or otherwise inhibit the construction of the relocated railroad tracks. Of particular concern will be the potential for contaminated soils which might be disturbed during construction. Because of the relatively shallow depth to groundwater, dewatering may be required for some elements of construction (e.g., bridge foundations). Due to the potential for dewatering systems to draw contaminated groundwater from beneath the landfill and/or adjacent areas, groundwater quality will also be of concern. Although the primary focus of the assessment will be environmental conditions within that portion of the track route which passes through the landfill, the path adjacent to the Allied Chemical property most also be investigated due to potential contamination from the tailings pond.

The primary objective of the environmental assessment will be accomplished by conducting a focused investigation of soil and groundwater conditions within the project boundaries. This would include soil borings to characterize soil quality along the track route and the installation and sampling of monitoring wells to characterize local groundwater quality. All investigative activities, including field work and laboratory analyses, will be conducted in accordance with established NYSDEC guidelines and protocols to ensure the validity of all data gathered during the assessment.

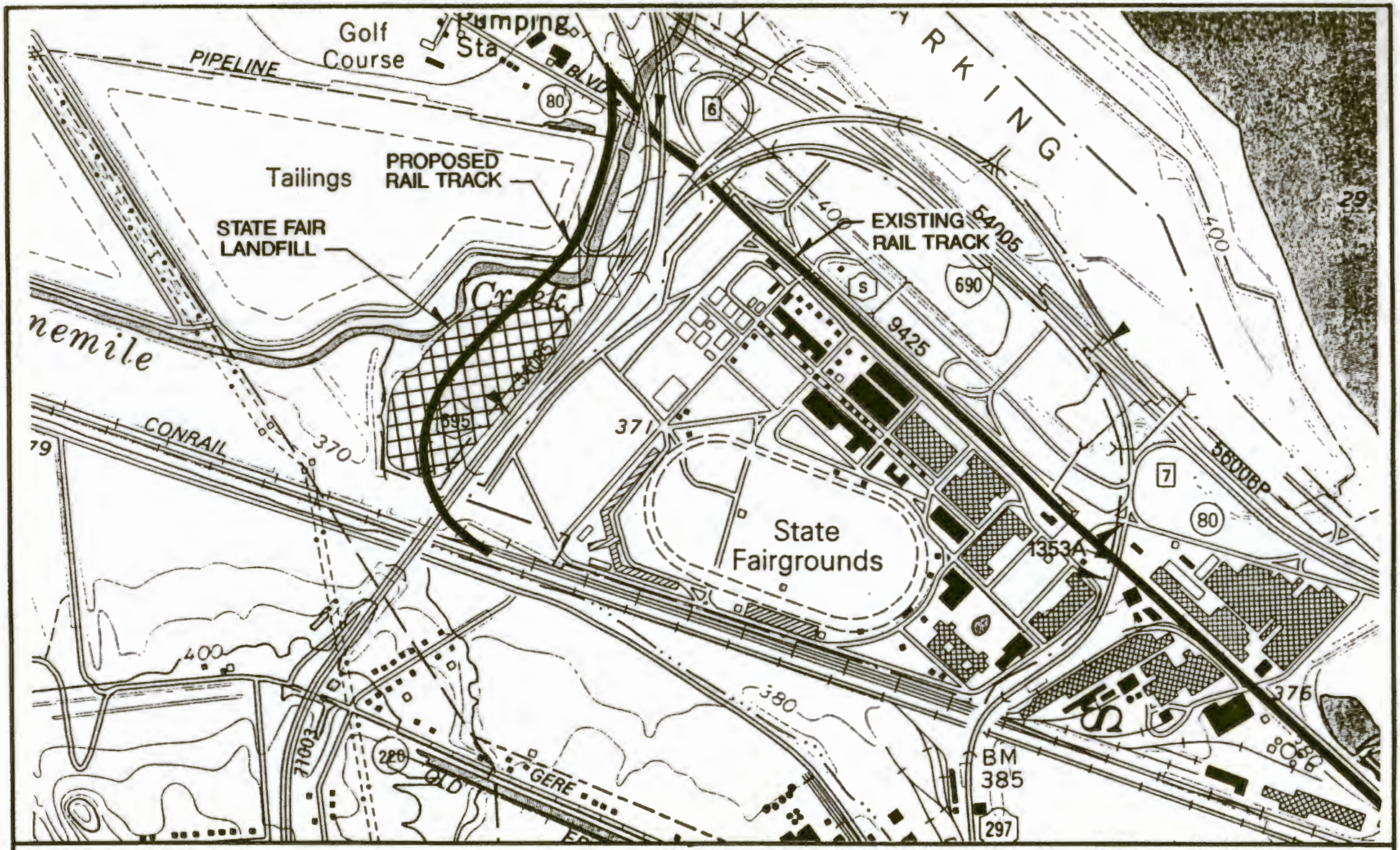


FIGURE 1

PROJECT MAP

SCALE: 1" = 1000'

H2MGROUP

ENGINEERS • ARCHITECTS • PLANNERS • SCIENTISTS • SURVEYORS

MELVILLE, N.Y. TOTOWA, N.J.

In the event that hazardous substances are found in soils and/or groundwater at concentrations which would inhibit the proposed track construction, the necessary remedial actions prior to construction and/or mitigating measures during construction will be determined. Cost estimates for all remedial actions/mitigating measures will be provided, allowing the Fair and CONRAIL to fully evaluate the economic impact associated with hazardous materials within the proposed track rote.

H2M has based the general scope of work for the environmental assessment on the Fair's December 1, 1991 Request For Proposals and subsequent meeting and discussions with representatives of the Fair and NYSDEC. The scope of work necessary to accomplish the project objectives has been divided into four principal tasks as follows:

Task 1 - Kickoff Meetings

Task 2 - Field Investigation Work

Task 3 - Data Evaluation and Draft Report

Task 4 - Review Meeting and Final Report

The following sub-sections present a brief description of each task as it relates to the overall project objectives.

2.1 TASK 1 - KICKOFF MEETINGS

Prior to commencing any field investigation work, it is important that the various involved parties are in agreement as to the specific objectives and data needs of the environmental assessment. An initial kickoff meeting would be held with representatives of H2M, the Fair and CONRAIL to discuss the proposed field investigation work. The primary purpose of this meeting will be to confirm the precise route of relocated railroad tracks and the various construction elements anticipated by CONRAIL. This will ensure that the proposed field investigation will meet all of the project's required data needs.

A separate meeting will be held with representatives of the Region 6 NYSDEC office. The primary purpose of this meeting will be to outline for NYSDEC the project objectives and proposed scope of the field investigation work. H2M has already contacted NYSDEC regarding the project and confirmed that since the primary objective of the program is not the delisting of the State Fair Landfill, NYSDEC will not require a Field Investigation Work Plan for review and comment prior to commencing field work.

During the kickoff meeting with NYSDEC, H2M will pay close attention to agency concerns and comments regarding the proposed track relocation. This attention will precipitate a

reasonable scope of issues which may have to be addressed as part of the New York State Environmental Quality Review Act (SEQRA) process. While H2M does not intend for this to be an official SEQRA scoping process (pursuant to 6 NYCRR Part 617.7), the meeting will provide for an indicator of the level of effort needed to prepare the SEQRA Full Environmental Assessment Form (6 NYCRR Part 617.21A), particularly with respect to Part 3 of the Form which is an elaboration of the potential environmental impacts and the proposed mitigation measures. Although the primary potential impacts will be those related to hazardous materials within the project boundaries, additional issues may include potential impacts to wetlands and traffic.

Being a New York State Agency, the Fair is bound by law to SEQRA. It would be preferable for the Fair to comply with SEQRA by becoming the Lead Agency, preparing the Full Environmental Assessment Form (EAF) and incorporating the results of the proposed field investigation into Part 3 of the EAF. In this manner, regulatory agency concerns may be specifically addressed and the level of detail in the EAF will be sufficient to support a Negative Declaration pursuant to SEQRA 6 NYCRR Part 617.2(y), thus avoiding the full environmental impact statement process.

During this first phase of the project, H2M will also prepare a site specific Health and Safety Plan (HASP) for implementing the proposed field investigation work. The HASP is required because much of the field investigation work will be conducted within a listed New York State Inactive Hazardous Waste Site. The HASP establishes a protocol for protecting H2M field personnel from incidents that may arise while performing field activities at the site. The HASP provides personnel protection standards, mandatory operation procedures and provides contingencies for situations that may arise due to field work involving chemical substances. All H2M field personnel will be required to abide by these procedures. All contractors involved in field activities will be provided a copy of this plan for their consideration and should provide an appropriate HASP for their personnel. At a minimum, appropriate protocols include continuous monitoring for methane and hydrogen sulfide and other potentially explosive or flammable gases during drilling and as otherwise deemed required.

2.2 TASK 2 - FIELD INVESTIGATION WORK

As proposed, H2M's field investigation work will be comprised of several elements. A brief description of each element in the sequence they would be performed is as follows:

Site Survey: Prior to conducting any investigative field work, a limited site survey will be conducted to map out the proposed route of the relocated rail line across the landfill. Using CONRAIL's site plan (Drawing 49603, Sheet 1 of 2), a survey crew will stake out the centerline of the proposed relocated rail line, with stakes set at an interval of approximately 100 feet on center. This will allow for the proper orientation of all subsequent field investigation work. The

primary focus of the site survey will be on that portion of the track route which passes across the landfill where accurate field orientation would otherwise be difficult.

Soil Gas Survey: The objective of the soil gas survey is to screen the proposed track route for evidence of volatile organic compounds in the subsurface soils and groundwater and to define the distribution of methane and non-methane volatile organic compounds within the study area. Results from the soil gas survey will be used to select appropriate locations for placement of subsequent soil borings and groundwater monitoring wells.

Soil gas readings will be obtained using two portable field instruments, namely, a Foxboro OVA-128 flame ionization organic vapor analyzer (OVA), and HNu PI-101 photoionization detector (PID). The OVA will be used to measure total organic vapor concentrations (including methane) and the PID to measure non-methane organic vapor concentrations. Methane gas concentrations will be calculated as the difference between the total (OVA) and non-methane (PID) organic vapor concentrations.

Soil gas measurements will be obtained using the following procedures:

1. A 30-inch deep by 1/2-inch diameter test hole will be made using a steel slam bar. Upon advancing the test hole to the proper depth, a clean 1/2-inch hollow Teflon sampling tube will be inserted into the test hole. The bottom six inches of the sampling tube will be perforated to allow free entry of soil gas vapors. Soil cuttings will be used to seal the top of the test hole.

2. Using a small vacuum pump and flow meter a minimum of five volumes of air (approximately 500 ml) will be evacuated from the sampling tube.

3. Immediately after evacuating the sampling tube, the vacuum pump will be disconnected and the PID and OVA probes inserted into the tube. The PID and OVA will remain connected to the sampling tube drawing soil gas vapors for a minimum of one minute.

4. The highest PID and OVA readings at the test point will be recorded together with the test point location, date and time of sampling.

5. Ambient air PID and OVA readings will also be obtained and recorded for each test point location.

To ensure accurate and reliable soil gas data, the PID and OVA will be calibrated at the beginning of each day, and recalibrated throughout the soil gas survey as necessary in accordance with the instrument manufacturer's recommendations. The effectiveness of a soil gas survey will be impacted by weather conditions prior to and during the survey work. High soil moisture

content caused by precipitation will reduce the generation of soil gas resulting in artificially low soil gas readings. Ideally the soil gas survey should be preceded by and conducted during days of dry weather.

Soil Borings: Based upon the results of the soil gas survey, H2M will select appropriate locations for soil borings. The purpose of the soil borings will be to further characterize subsurface conditions along the proposed track route by obtaining discrete soil samples for laboratory analyses. We anticipate that a total of eight borings spaced evenly along the centerline of the rail line route will be sufficient to accomplish our objectives. Five borings would be located south of Nine Mile Creek within the landfill. The remaining three borings would be located north of Nine Mile Creek along the west side of the Lakeland exit roadway. The actual locations and spacing between borings may be modified based upon the results of the initial soil gas survey.

Each soil boring will be advanced down to groundwater. As each soil boring is advanced, continuous split-spoon sampling will be used to obtain soil samples. Each split-spoon soil sample will be screened for evidence of organic contamination using an OVA. In this manner, volatile organic profiles can be immediately developed for each borehole while drilling. These profiles will be used to determine which soil samples will be submitted for laboratory analyses. The subsurface samples corresponding to the depths with the highest organic vapor content will be submitted for chemical analyses. We anticipate that one sample from each soil boring will be selected for laboratory analyses, for a total of eight soil samples.

As proposed, each soil sample will be analyzed for target compound list (TCL) volatile and semi-volatile organics, PCBs, cyanide and extractable target analyte list (TAL) metals. Since the environmental assessment is not being conducted under the auspices of a NYSDEC Order on Consent, we propose that the lab analyses be conducted using non-CLP (Contract Laboratory Protocol) analytical methods. Non-CLP lab deliverables will help control overall project costs.

TCLP
EP TOX

Groundwater Monitoring Wells: Four of the eight soil borings will be converted into groundwater monitoring wells. As proposed, each monitoring well will be constructed as a 2-inch, Schedule 40 PVC well casing, with 10 foot continuous slotted screen (0.010 slot size). It is recommended that each monitoring well will be completed approximately 8 to 9 feet below the water table with 1 to 2 feet of screen extended above the water table. The 10 foot screen length will ensure that sufficient screen is present above the water table interface at all times. Thread joints for well construction will be used in lieu of adhesive compounds. The monitoring wells will be installed with a locking top cap, a concrete apron, a cement/bentonite casing sealant, an annular sealant, and a medium grain size gravel pack.

A follow-up survey will be conducted to establish the elevation of each monitoring well. This data will be used to determine accurate groundwater elevations to the nearest 0.01 foot.

Each monitoring well will be developed by pumping until the well parameters of pH, temperature and specific conductivity have stabilized. The monitoring well also will be developed until it exhibits a turbidity of less than 50 Nephelometric Turbidity Units (NTUs) in the pumping returns.

One round of groundwater samples will be collected at each of the four monitoring wells. To obtain a representative groundwater sample, each well will be adequately purged until the parameters of turbidity, pH, temperature, and specific conductivity have stabilized to ± 10 percent over at least three successive well volumes pumped. All turbidity, pH, temperature and specific conductivity data will be recorded by the hydrogeologist in the field and will be provided in the final report.

A laboratory cleaned dedicated disposable polyethylene bailer with dedicated disposable polypropylene rope will be used to obtain the groundwater samples. New dedicated latex gloves will be utilized when sampling each well to minimize potential cross contamination. The groundwater sample will be immediately placed into the sampling jar, used for each specific analyte.

Samples for volatile organic analysis will be collected first. Care will be exercised to eliminate the formation of air bubbles and to completely eliminate headspace. All samples requiring preservation will be gently mixed after collection and checked for proper preservation with indicator paper (i.e., pH paper).

All containerization, analytical methods and preservation techniques for groundwater samples, and all chain-of-custody procedures, required by NYSDEC Analytical Services Protocol will be followed. Field blanks and trip blanks will be utilized for QA/QC purposes as required.

Groundwater samples will be submitted for the following parameters (non-CLP deliverable):

- TAL Metals
- TCL Volatile Organic Compounds
- TCL Semi-Volatile Organic Compounds
- PCBs
- Total Cyanide
- Total Dissolved Solids
- Chloride

2.3 TASK 3 - DATA EVALUATION AND REPORT

Upon completing the field investigation work and sample analyses, H2M will prepare a draft Environmental Assessment Report summarizing the results of our findings. The draft report will present the results of all field investigation tasks including all field sampling and analytical results. Site plans and other graphics (e.g., groundwater elevation maps) will be provided showing soil boring and monitoring well locations as well as other site features pertinent to the assessment. All field notes, boring logs and laboratory reports will be provided in appendices to the report.

Field investigation data will be reviewed, interpreted and assessed relative to how any documented contamination will impact the proposed rail track relocation. The report will present our conclusions regarding the significance of any site contamination and provide recommendations for appropriate remedial actions and/or mitigating measures as necessary to allow the rail line relocation to proceed. A scope of work and cost estimate will be developed and included in the assessment report for all recommended remedial actions/mitigating measures.

The need to remediate soils and/or groundwater containing hazardous substances prior to construction and/or implement specific procedures to mitigate their impact during construction will be assessed based on contaminant concentrations and the specific types of construction activities anticipated during the rail line relocation. Shallow soil contamination may be of concern throughout the proposed track route if significant excavation and/or grading work is required. Groundwater contamination will be of concern if dewatering is required during construction. In addition to assessing potential impacts on construction, the proposed rail line relocation project will also be assessed relative to its potential to impede or otherwise effect future remediation of the landfill.

Concurrent with the preparation of the draft Environmental Assessment Report, H2M will also complete the SEQRA Full Environmental Assessment Form (EAF). Data developed during the field investigation will be incorporated into Part 3 of the EAF. The objective here is to document the comprehensive assessment of potential impacts in support of project's obtaining a Negative Declaration pursuant to SEQRA 6 NYCRR Part 617.2(y).

Both the Environmental Assessment Report and EAF will be submitted in draft form to the Fair and CONRAIL for review and comment.

2.4 TASK 4 - REVIEW MEETING AND FINAL REPORT

After the Fair and CONRAIL have completed their review of the draft Environmental Assessment Report and EAF and presented any comments to H2M, a review meeting will be held to discuss the report's findings and recommendations. H2M will respond to comments and answer any questions the Fair and CONRAIL may have. A final Environmental Assessment Report will

be prepared incorporating the comments of the Fair and CONRAIL. The final report will be submitted to NYSDEC for their review and concurrence. H2M will meet with representatives of NYSDEC to review the report and respond to any questions and comments. All review meetings with the Fair, CONRAIL and NYSDEC will be attended by H2M's project manager. H2M's senior hydrogeologist and environmental scientist will attend selected meetings as needed.

2.5 PROJECT SCHEDULE

We anticipate that approximately twelve weeks will be required to complete the project. During the first week H2M will prepare the site specific HASP and attend kickoff meetings with the Fair, CONRAIL and NYSDEC. Barring any severe weather, all field investigation work including the soil gas survey, soil borings, monitoring well installation and groundwater sampling can be accomplished in three weeks. An additional three weeks have been allocated for lab analyses. Once all lab data is complete, it will take approximately two weeks to evaluate the data and prepare the draft Environmental Assessment Report and EAF. Two weeks have been allocated for the Fair and CONRAIL to review the report and for our review meeting. One additional week is included to finalize the report and EAF.

QUALIFICATIONS

3.1 QUALIFICATIONS

Organized in 1933, H2M Group has grown and diversified to meet clients' needs over the past 58 years. The H2M Group, which ranks 307 in ENR's 1990 "Top 500" listing of engineering design firms, consists of four operating companies:

Holzmacher, McLendon & Murrell, P.C., Melville, New York, Professional Corporation specializing in full service environmental engineering; architecture; civil and structural engineering; planning, environmental science and survey.

H2M Associates, Inc., Totowa, New Jersey, specializing in full service environmental engineering; structural engineering; civil engineering and planning.

H2M Construction Management, Inc., Totowa, New Jersey, full service construction management to industry.

H2M Labs, Inc., Melville, New York, environmental laboratory; certified in the states of New York, New Jersey, Massachusetts, Connecticut, Pennsylvania and Delaware; USEPA, NYSDEC, NJDEP NYCDEP experience and regulatory approvals.

H2M Group's full scope of professional services encompasses civil/site engineering; surveying; community planning and development; water supply/resources management; wastewater pollution control; solid and hazardous waste management; environmental impact analysis; and environmental analytical laboratory services.

H2M prides itself on the breadth of its comprehensive in-house service capabilities. Covering a wide spectrum of engineering and other technical capabilities, H2M's diverse staff is always available to provide insight and assistance on a large variety of projects without requiring clients to seek outside consultants for each discipline involved. This important asset has consistently saved our clients unnecessary expense and the problem of trying to coordinate many different "teams" to achieve the final goal. However, specialized outside consultants are subcontracted as required to meet the clients goals. Our clients include federal, state and local regulatory agencies as well as industrial firms, utilities and municipalities. As a result, H2M possesses in-depth knowledge and ability to interpret regulations impacting our clients in specific situations.

H2M provides professional services in many areas including environmental assessments, wetlands investigations, permit applications and survey. H2M's environmental scientists are well aware that the success of any project is heavily dependent upon the ability to move through preliminary assessment permitting and environmental review phases quickly. Documents for permits must be complete and acceptable upon first submission. A critical

component of our technical team is our staff of environmental professionals who assist the client through this often difficult regulatory maze.

Much of environmental planning services center around the preparation of Environmental Impact Statements (EIS), Environmental Assessments (EA) and various local, state and federal permit application forms. Additional services include conducting vegetative and wildlife inventories in various habitats with identification and analysis of local ecological communities and endangered species; and examination of various site and planning parameters, such as soils, land use, zoning, topography, demographics, air photo interpretation, etc.

H2M's environmental staff prepares EIS' and EA's to address such concerns as:

- Impact on available groundwater supply and quality
- Transportation impacts
- Impacts to natural ecosystems including endangered species
- Impact on historical and archaeological resources
- Preservation of open space qualities
- Growth aspects and effect on local economy and tax bases

H2M's working knowledge of National Environmental Policy Act (NEPA), State Environmental Quality Review Act (SEQRA), New Jersey and other state environmental review procedures assists clients through the review process at all levels, enabling planning and zoning/planning boards and other agencies to resolve applications in a manner meeting both their own and the applicant's requirements.

WETLAND INVESTIGATIONS

H2M conducts wetland investigations for many project-types. When conducting such an investigation, H2M staff will gather information from a variety of sources to utilize in the formation of their data. These sources may include, but not be limited to, survey information, New York State Department of Environmental Conservation (NYSDEC) inventories and maps, and their own visual inspection. H2M will utilize USEPA's Wetland Identification and Delineation Manual during the course of an investigation as the need arises. The three parameters which are investigated, as outlined in that source are: (1) vegetative cover; (2) wetland hydrology; and (3) hydric soils.

Vegetative cover, along with the extent and quality of the vegetation present, are determined by visual inspection. Wetland hydrology are investigated through topographic maps made of the site and its surrounding area, and soils investigations are conducted through soil borings. The staff is highly sensitive to the fragile ecosystem of these wetlands and takes great care to develop an accurate survey of their natural resources.

HYDROGEOLOGY

As a groundwater consultant, H2M serves its clients by providing the following:

- groundwater monitoring
- monitoring system design and operation
- landfill closure planning
- technical representation during administrative proceedings
- groundwater modeling
- water quality analysis and assessment
- site hydrogeological investigations

A single project will often involve a number of these services.

H2M is currently involved in a number of groundwater monitoring projects. Well design and location are critical in keeping down the costs of these projects. As an example, one of H2M's hydrogeologic studies involved a careful balance between adequate data collection capability and well construction and analytical costs. In this case, surface resistivity analysis was utilized to locate wells up-stream, mid-stream and down-stream of a plume emanating from wastewater leaching beds.

The vertical dispersion of the plume was identified during well installation operations, minimizing the need for placement of separate wells and screens at closely spaced depth increments. Only three wells were required at the mid-stream and down stream sites, and a single multi-screen well was sufficient up-stream. Use of cluster wells versus single wells, and PVC casing, reduced costs even further. Analytic costs were kept low, as the number of wells (and therefore samples) was minimized.

Upon completion of monitoring system installation, sampling and analysis commence. As the data base grows, the firm's hydrogeologic professionals provide complete assessments, including water quality maps, groundwater flow nets, piezometric surface plots, and risk appraisal.

Industrial and governmental clients find H2M's hydrogeologic expertise essential in complying with environmental regulations. Evaluation of hydrogeologic conditions and baselines is recognized by regulatory agencies as a major component of remedial investigations, industrial expansions and siting studies. H2M routinely prepares site-specific work plans oriented toward the development of cost-effective data collection, while maintaining the technical quality of project objectives.

High levels of technical quality are assured by use of accepted methods and techniques along with sound professional practices.

Groundwater Modeling
system design
finite difference analysis
solute transport and dispersion
3-dimensional flow models
water table contour mapping

Groundwater Monitoring
development of monitoring plans
management of well installations
sampling
laboratory analysis
assessment reports

Feasibility Studies
technological screening
remedial alternatives development
public health/environn. screening
economic analysis/cost screening
engineering criteria development
engineering analyses
selection of remedy

Groundwater Remediation
leachate collection system design
bench and pilot treatability studies
groundwater containment system design
groundwater collection/
pumping system design
treatment system design incl. air stripping
and granular activated carbon filtration

Design
groundwater collection and treatment systems
groundwater containment systems
contract documents including plans and specifications
services for bidding and award of a construction contract
cost estimating

Engineering Management
remedial contract administration
on-site construction supervision and inspection
review & evaluation of contractor's shop drawings
liaison with regulatory agencies
field surveys
safety programs

H2M has also performed hydrogeologic investigations and remedial investigations/feasibility studies at landfills. H2M is currently performing a RI/FS at the Town of Southampton Landfill on Long Island. This study includes the installation of 11 groundwater monitoring wells at various depths to address potential health and environmental concerns. For this investigation, H2M has provided the work plan, health and safety plan, QA/QC plan and field operations plan which have been reviewed and approved by USEPA. H2M has been retained by the New York City Department of Environmental Protection (NYCDEP), Bureau of Water Supply and Wastewater Collection to provide all required engineering, hydrogeologic, environmental science and analytical laboratory services to assess, and if necessary, remediate environmental conditions which may impact the construction of a stormwater sewer which will pass through a Class 2A landfill. The work involves an extensive soil boring and soil sampling program followed by the installation of monitoring well network to evaluate groundwater quality.

A team of H2M and three other New York State consultants were recently contracted by NYSDEC for the New York State Superfund Standby Contract. This work will involve preliminary site assessments, remedial investigations/feasibility studies, remedial design and remedial construction management at inactive hazardous waste disposal sites in New York State.

H2M has consistently proven its capabilities in managing major projects from our Long Island office, managing projects of this scope and magnitude and providing technical excellence in hydrogeology and remedial investigations/feasibility studies. A few of our more significant jobs illustrate our capabilities:

Haviland Complex Wells Site RI/FS - This $560,000 project for NYSDEC was located in Hyde Park, New York. H2M managed a number of subcontractors including, well drilling, geophysical and survey. The project was completed on time and within budget, even though well drilling and groundwater sampling were performed in the middle of the winter under extremely adverse conditions. The project identified a contaminant plume emanating from a number of large septic systems serving a shopping center, an apartment complex and a junior high school. The highly variable bedrock topography necessitated the construction of monitoring wells at variable depths to determine the vertical extent of contamination. H2M Labs, Inc. performed the analysis of soil and water samples at the site using "Contract Laboratory Protocol."

Remedial Investigation/Feasibility Study - Town of Southampton, NY - This RI/FS being performed for the Town of Southampton at the North Sea Landfill site as a potential responsible party included the negotiation of a consent order and work plan with the USEPA. The work plan includes the installation of groundwater monitoring wells, soil borings, investigating the impact of leachate contaminated groundwaters on surface water and the evaluation of health effects on a primary aquifer.

Phase II Groundwater Investigation, Newburgh, NY - H2M is performing a Phase II groundwater investigation in Newburgh which includes the negotiation of the work plan with NYSDEC, Region II, installation of overburden and bedrock groundwater monitoring wells, soil probing for volatile organics and the excavation of test pits.

Closure Plan for Landfill, Staten Island, NY - H2M prepared the closure plan for a portion of the world's largest landfill located on Staten Island. The closure plan included environmental monitoring of groundwater, surface water and landfill gas, capping and final cover, leachate collection and treatment and regulatory review.

H2M's comprehensive services offer you the one source - one responsibility package required for your objectives: NYSDEC-recognized premier laboratory facility; separate engineering division comprised of experienced environmental professionals; in-house support functions required to move projects along swiftly without sacrificing quality; commitment to maintain our high standards of professionalism and timeliness in the completion of successful remediation projects.

LABORATORY SERVICES

In the environmental field, as in every other, good decisions depend on good data. For more than 30 years, H2M Labs, Inc. (H2M) has been providing environmental analyses consistently and accurately, with an emphasis on responsive service. Today, H2M is ranked among the nation's 100 largest environmental laboratories. Yet, we are equally proud of the fact that we continue to serve many of those clients who began with us in 1957.

H2M Labs, Inc. is approved in New York, New Jersey, Connecticut, Delaware, Massachusetts and Pennsylvania to perform analyses in bacteriology; wet and automated

chemistry; gas and liquid chromatography; atomic absorption and ICP spectrophotometry; and GC/mass spectrometry.

Staffed by expert chemists, biologists, toxicologists and technicians, the laboratory is fully equipped to perform water quality tests and evaluate fresh, estuarine and marine ecosystems; industrial waste and wastewater; municipal sewage and solid wastes; as well as to assess the effectiveness of pollution control methods for wastewater treatment facilities, solid waste disposal programs and air quality protection measures.

SCOPE OF SERVICES: Bacteriology; Chemical Analysis (*trace and heavy metals, inorganic analysis, priority pollutants [PP], target compound list [TCL], hazardous substance list [HSL]*; Sewage and sludge analysis; Dredge spoils analysis; Hazardous waste analysis *(organophosphate, carbamate, chlorinated)*; Laboratory data validation; Leachate analysis; Pesticides and Herbicides; Special studies.

H2M has been consistently chosen to conduct analytical programs for regulatory agencies at all governmental levels on the basis of its outstanding Quality Assurance/Quality Control (QA/QC) program. H2M is a NYSDEC and New Jersey Department of Environmental Protection (NJDEP) contract laboratory. We have many contracts requiring full United States Environmental Protection Agency (USEPA) CLP-type documentation and quality control procedures.

H2M also has an established data validation section. This group, under the supervision of the Quality Assurance Manager, has provided review of data packages from other laboratories, and is responsible for the data validation of both internal and external CLP reporting documents.

H2M has successfully conducted analytical, as well as research and development, work for the USEPA, NYSDEC, NJDEP, New York City Department of Sanitation (NYCDOS), New York City Health Department, New York State Dormitory Authority, South Central Connecticut Regional Water Authority, General Services Administration, and other agencies.

The laboratory provides water supply monitoring and analysis for public water supply districts of varying sizes as well as non-community systems to assure their compliance with all federal, state and local regulations. H2M also services industry with a variety of wastewater testing in conjunction with National Pollution Discharge Elimination System (NPDES), in New York (SPDES) and New Jersey (NJPDES) permits, and monitors the performance of municipal wastewater treatment plants via effluent analysis.

H2M has been involved in a number of special projects which have contracted turnaround times and require the assemblage and analysis of substantial data. Examples include lead screening for the USEPA, Indian Health Service; the ongoing project of analyzing organics in drinking water for Nassau and Suffolk Counties and the New York State Department of Health Services; leachate testing and air monitoring for the Town of North Hempstead's Port Washington Landfill; oil spill analysis for NYSDEC; landfill monitoring in the Towns of Southampton, Southold, Riverhead, Huntington and Islip, New York; landfill

sampling and monitoring for the NYCDOS, a water corrosion study for the USEPA; and a project for the South Central Connecticut Regional Water Authority.

H2M developed its organic testing capability prior to the establishment of many approved methods. The laboratory was a forerunner in the development of working protocols which have since become industry standards. H2M was also the first commercial laboratory approved for the analysis of volatile organics by the purge and trap method in New York State.

Additionally, H2M has developed numerous procedures on both potable and non-potable matrices, requiring special extraction recovery techniques. In testing for aldicarb (Temik), H2M, in conjunction with Union Carbide Corporation, developed the procedure for routine analysis of trace concentrations in drinking water supplies located above a sole source aquifer. The laboratory has also independently developed a method for testing polar volatile organics, i.e. in drinking water (ketones).

The LIMS system has computerized input, work-in-progress, and report procedures in place for all samples processed. H2M uses its Digital Equipment Corporation VAX computer. H2M's availability of in-house processing facilities with computerized laboratory records facilitates sample tracking, data handling, quality control and statistical analysis.

Quality Assurance/Quality Control: Quality assurance and control are an integral part of the standard techniques H2M uses when conducting any analysis. Basic QA/QC consists of proficiency tests, replicate analyses and spiked samples which verify analytical accuracy. To retain approval, proficiency samples must be performed on a routine basis for New York, New Jersey, Connecticut, Delaware, Massachusetts and Pennsylvania, as well as the NYSDEC. H2M has consistently met the standards for approval and has an excellent record of accuracy.

Professional Staff: H2M's dedicated professional staff of chemists, biologists and environmental scientists provide the laboratory with experience that exceeds USEPA-required experience levels. We encourage professional development through seminars, workshops, participation at technical conferences and cross training. Our senior laboratory managers have provided consistent and effective management of H2M's continuing growth, with an average professional tenure of more than a decade at H2M.

Instrumentation: H2M's laboratory facilities are extensive with technically advanced automated equipment and a modern data processing system to assure controlled testing procedure and accurate reporting. H2M's advanced instrumentation includes: GC/Mass Spectrometers; GC's with Perkin Elmer and Nelson Analytical; Liquid Chromatograph (HPLC); ICP (sequential and simultaneous); Graphite Furnace and Flame Atomic Absorption Spectrophotometer; Technicon 4-channel auto analyzer; TOX analyzer; TOC analyzer; Automatic TKN Analyzer; Auto Titrator Systems; Automated Sample Concentrator.

Project Management

3.2 PROJECT MANAGEMENT

H2M is aware that the success of any project is dependent on the strength and expertise of the project team. H2M brings to the project over 50 years experience in environmental engineering with a multi-disciplined staff able to address the various issues associated with the site investigation. The project team assembled for this effort includes environmental engineers, hydrogeologists and environmental planners who are fully familiar with environmental assessments and site investigations.

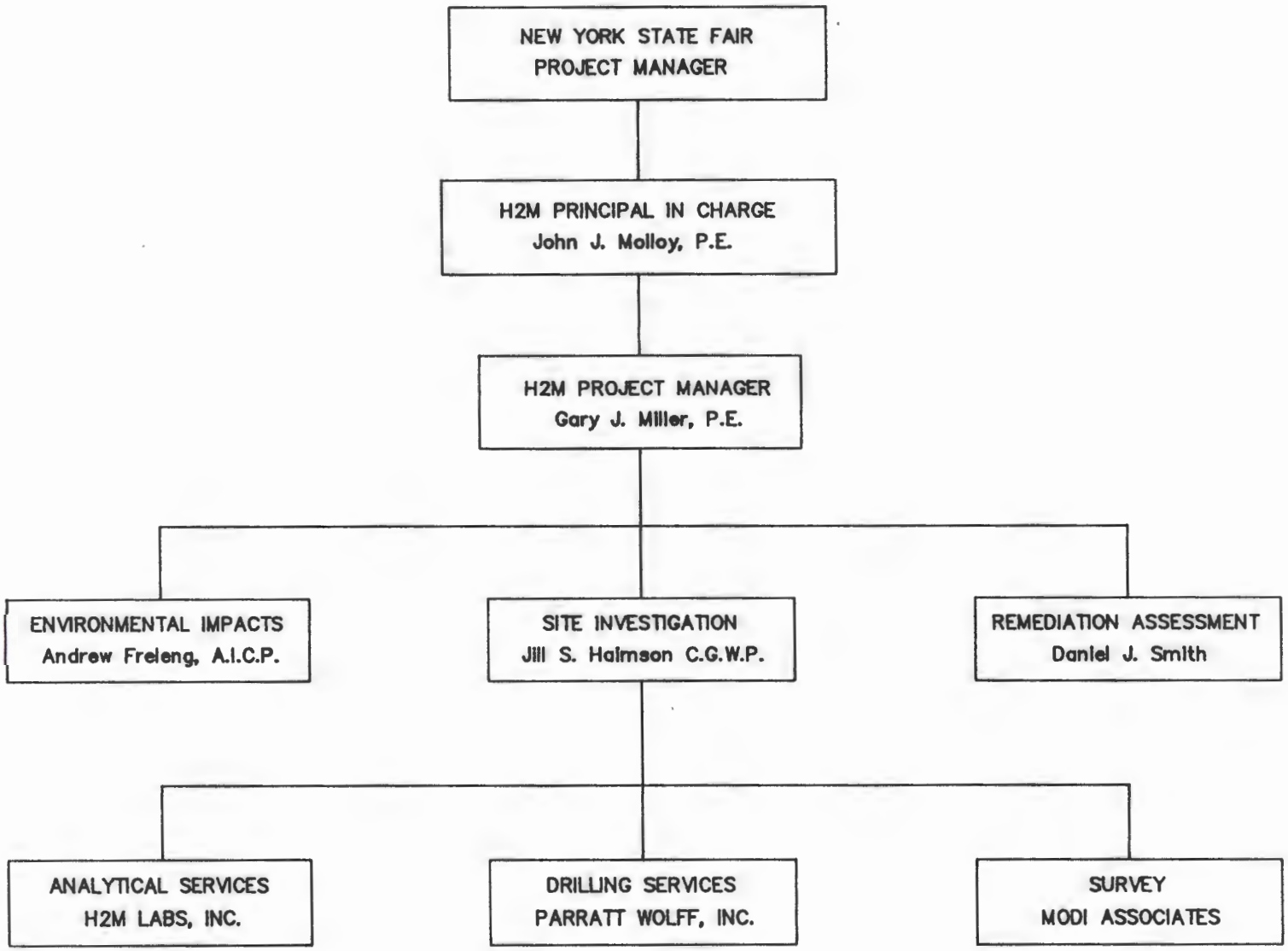
H2M principal-in-charge will be **John J. Molloy, P.E.** As a vice-president of the firm and president of H2M Labs, Inc., Mr. Molloy possesses the unique authority within the H2M Group to commit the resources of both Holzmacher, McLendon & Murrell, P.C. for the investigation and engineering portions of the project and H2M Labs, Inc. providing the required analytical laboratory services. Mr. Molloy's responsibility on the project will include overall direction of the program as well as technical quality assurance/quality control.

H2M's project manager will be **Gary J. Miller, P.E.** Mr. Miller has over 10 years of engineering, supervisory and project management experience with environmental projects. As Manager of H2M's Environmental Engineering Division, Mr. Miller's responsibilities include planning, estimating, scheduling and quality control as it relates to industrial wastewater, hazardous materials, site remediation and air pollution projects. Mr. Miller's responsibilities on this project will be overall project management of the program. Mr. Miller will also be the principal contact between H2M and The Fair.

The H2M project hydrogeologist will be **Jill S. Haimson, CGWP** (Certified Ground Water Professional). Ms. Haimson has more than ten years experience in managing and carrying out all aspects of geologic and hydrogeologic site investigations. Ms. Haimson's responsibility on this project will be the daily management of all technical aspects of the site investigation including directing all field activities and review of field data and laboratory data.

Other key personnel who will contribute to the project include **Andrew P. Freleng, AICP** and **Daniel J. Smith.** Mr. Freleng heads up H2M 's Environmental Planning and Permitting section and will be responsible for all SEQRA issues, includes preparation of the EAF. Mr. Smith is a project engineer within H2M's Industrial Services Section and will be responsible for assessing site remediation requirements and their associated costs.

ORGANIZATION CHART



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Subcontractors

3.3 SUBCONTRACTORS

H2M will utilize the services of two subcontractors on the project. All soil borings and monitoring well installations will be conducted by **Parratt-Wolff, Inc.** of East Syracuse, New York. H2M and Parratt-Wolff have work successfully together on similar site investigation projects in New York and New Jersey.

Site survey work in Task 2 of the project will be performed by **Modi Associates.** Located in nearby Cicero, New York, Modi Associates is a certified Minority Business Enterprise (MBE).

All field work by Parratt-Wolff and Modi Associates will be conducted under the direction of H2M's field personnel.

Resumes of Key Personnel

JOHN J. MOLLOY, P.E.

President and Chief Executive Officer: H2M Labs, Inc.
Vice President: Holzmacher, McLendon & Murrell, P.C.; H2M Associates, Inc.
Director: Environmental Engineering Group

EXPERIENCE: **H2M GROUP**
(1974 - Present)

As President and Chief Executive Officer of H2M Labs, Inc., the environmental analytical laboratory, Mr. Molloy is responsible for all facets of management including planning and development; budgeting; marketing and sales; and quality control/quality assurance. Upon assuming its direction in the late 1970's, Mr. Molloy has been the key principal responsible for its growth and development.

As Vice President of Holzmacher, McLendon & Murrell, P.C., Mr. Molloy directs environmental engineering. His experience includes all phases of project engineering and management including feasibility studies, pilot studies, cost estimating, design, construction and startup. These disciplines have been provided to government and industrial clients covering most facets of environmental engineering - air pollution, water and wastewater, and solid and hazardous waste.

Mr. Molloy began his professional career as a project engineer in the chemical process industry. He also served as an air pollution control engineer for the City of New York where he was involved in the testing and evaluation of air emissions for industrial processes.

Since joining H2M in 1974, Mr. Molloy has participated in and managed hundreds of projects related to water quality protection, supply, treatment and system development; industrial wastewater treatment; hazardous and solid waste management; and site evaluation and remediation.

Mr. Molloy was project manager for a major Long Island water project (in excess of 5 million gpd) to remove organics by air stripping. This was one of the first such treatment systems in the region, operational in the Spring of 1985.

Mr. Molloy applied the same treatment expertise to additional air-stripping systems for treatment of contaminated public supply wells for others experiencing contamination with volatile organics. Systems capable of handling in excess of 10 million gpd are currently in operation.

Mr. Molloy has been responsible for the assessment of numerous industrial sites. The extent and severity of site contamination has been assessed both privately and with regulatory agency review. These assessments have been for sites throughout the eastern region of the United States and have included all phases of investigation, including soil borings and analysis, groundwater monitoring well installation, sampling and analysis, and remediation. Project scope has included efforts ranging from Phase I real estate liability assessments through formal remedial investigation/feasibility studies.

Mr. Molloy recently directed the efforts of H2M in a hazardous waste assessment which resulted in the need to contract with a remediation contractor and manage a complex cleanup. This project required a sampling program (Level "B" protection) and an expedited determination of hazardous waste characteristics; the development of a work plan, health and safety plan, and contract documents for remediation of a hazardous waste site. Efforts included interfacing with contractors on removal and securing of waste drums, contaminated liquids and contaminated soils. Field work was Level "C" with Level "B" available on-site. Waste materials were characterized for offsite approved disposal.

EDUCATION:
B.E., Chemical Engineering
Manhattan College

REGISTRATIONS/ CERTIFICATIONS:
Licensed Professional Engineer-New York
Director, Environmental Laboratory-New York, New Jersey
Connecticut, Pennsylvania and Delaware
Certified Health And Safety Operations at Hazardous Waste Sites

OFFICES:
Chairman, 1989-1992
N.Y. State Association of Approved Environmental Laboratories
Director, 1989-1992
Huntington Township Chamber of Commerce
Member, 1989-1990
Town of Hempstead Business Council

MEMBERSHIPS:
American Institute of Chemical Engineers
American Water Works Association
Long Island Water Conference
National Society of Professional Engineers
New York State Society of Professional Engineers
Water Pollution Control Federation

PROFESSIONAL PAPERS:

Molloy, John J. *Industrial Property Transactions: Protecting Yourself Against the Liabilities*. Institute for International Research Environmental Compliance Conference, October 1990.

GARY J. MILLER, P.E.

Assistant Vice President
Department Head: Industrial Services and Hazardous Waste Management

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1980 - Present)

Mr. Miller's experience includes design work, economic analyses, preparation of engineering reports for sludge incineration, resource recovery, leachate liners and collection systems, methane venting systems, groundwater monitoring and solid waste management projects. Additionally, he is a specialist in assisting industrial clients with RCRA and other regulatory compliance in their industrial wastewater and overall waste management programs. Mr. Miller has experience with a variety of industrial and hazardous waste problems. He is responsible for the preparation of engineering proposals, reports, design plans and specifications for industrial wastewater treatment systems and for facilities to store, treat and dispose of industrial waste and hazardous materials.

Prior to joining H2M, Mr. Miller served as an operations engineer at Nichols Engineering and Research Corp., where his duties involved the mechanical and electrical checkout and startup of multiple hearth furnaces, waste heat boilers, wet scrubbers and sludge handling equipment. He was also responsible for operations training, performance, emissions and acceptance tests and served as construction superintendent responsible for coordination and supervision of all subcontractors and vendors in the construction of Nichols Herreshoff multiple hearth carbon regeneration, lime recalcining and sludge incinerators.

EDUCATION:
B.S., Engineering Technology/Civil-Environmental
Virginia Polytechnic Institute and State University
A.S., Mechnical Technology
City University of New York, Queensborough Community College

REGISTRATIONS/ CERTIFICATIONS:
Licensed Professional Engineer-New York
Certified USEPA Asbestos Abatement Management Planner
Certified USEPA Asbestos Abatement Inspector
Certified Hazardous Materials Manager - Master Level
Certified Health and Safety Operations at Hazardous Waste Sites

MEMBERSHIPS:
Institute of Hazardous Materials Management
Water Environment Federation

PUBLICATIONS:

Design of Hazardous Materials Storage Facilities. Presented at the Spill Control and Hazardous Materials Conference, New Haven, Connecticut, September 1983.

Closure of Industrial Facilities Containing Hazardous Wastes. Presented at the New York Water Pollution Control Association, Winter Meeting, January 1989.

H2M

ANDREW P. FRELENG, AICP

Chief Planner: Community Development and Environmental Planning

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1985 - Present)

Mr. Freleng is responsible for project management and preparation of professional land use documents such as Environmental Impact Statements, Environmental Assessment Forms, site plan review reports, site development feasibility studies, zoning\planning studies and community development grant applications. In addition, Mr. Freleng is responsible for the management and preparation of environmental permit applications including federal coastal zone applications, state and local freshwater and tidal wetland permits and U.S. Army Corp of Engineer Permits. He conducts field inventory and analysis of terrestrial and wetland vegetative, zoological,and soil ecosystem components.

As Senior Project Planner, Mr. Freleng is an integral part of the community development and planning projects. He is responsible for the management of data synthesis and analysis on a wide range of planning studies. Mr. Freleng is experienced in land use analysis, transportation, demography, community development, zoning analysis, waterfront and open space planning.

Mr. Freleng's previous position at Interscience Research Associates, Inc., a Southampton, Long Island based environmental planning and development consulting firm, was assistant planner preparing subdivision and site plans, environmental impact statements and the associated field work and permit applications.

Mr. Freleng has been a Natural Science educator for the Suffolk County Organization for the Promotion of Education (Scope). Acting as a Resident Naturalist on Shelter Island and in Southold Town, he conducted classroom and field lectures and demonstrations regarding the elements of the natural environment and their inter-relationships.

For the Town of Southampton Planning Department In Southampton, New York, he worked under the Town Planner on the Southampton Town Master Plan Update. This included extensive existing land use analysis, data management and graphic representation.

EDUCATION:
Masters Candidate in Environmental Management
Long Island University/C.W. Post Center
B.S., Environmental Science/Biology
Southampton College of Long Island University

CERTIFICATIONS:
American Institute of Certified Planners

OFFICES:
Adjunct Assistant Professor, 1990 - 1991
New York Institute of Technology
Executive Committee-New York Metropolitan Chapter, 1990 - 1992
American Planning Association
Steering Committee-Long Island Section, 1988 to Present
American Planning Association
Acting President-C.W. Post Student Chapter, 1986
National Association of Environmental Professionals

MEMBERSHIPS:
American Institute of Certified Planners
American Planning Association
National Association of Environmental Professionals
Natural History Society
New York Land Institute

H2M

JILL S. HAIMSON, CGWP

Section Supervisor: Groundwater Resources/Hydrogeology

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1988 - Present)

Ms. Haimson has 12 years of experience in the fields of hydrogeology, water resources, solid and hazardous waste management, soil and groundwater contaminant investigation and remediation. She serves as the hydrogeology section head and as project manager focusing on groundwater and assessments of environmental impact.

Her project experience includes a broad range of groundwater investigations and associated regulatory interaction; remedial investigations/feasibility studies; groundwater modeling; hazardous and non-hazardous waste management; design of implementation of soil and groundwater remediation programs; underground storage tank management; and the assessment of environmental impact.

Her experience as a project manager includes:

- Remedial Investigation at the Link Flight Simulation Corporation, Binghamton, New York. The remedial investigation included the evaluation of data from over 20 monitoring wells, soil gas investigations, geophysical data and extensive on and off site soil/groundwater sampling programs.

- Phase II Investigation at West Islip, New York and conducted for an industrial facility under the scrutiny of the New York State Department of Environment Conservation, Division of Hazardous Waste. Continued interim remedial measures was implemented at the site following the result of the Phase II investigation, with RI/FS to be conducted.

- Hydrogeologic investigation for a Long Island pharmaceutical manufacturing facility involving on-site monitoring, well installation, soil borings and delineation of numerous areas of on-site contamination. Continued project efforts included the design and implementation of outfall remediation programs and the technical oversight and monitoring of a soil venting system for remediation of vadose zone. Continued work includes the implementation of a groundwater monitoring program. With remediation programs concluded, complete closure of the site is anticipated.

- Hydrogeologic investigation of a leaking fuel tank for a Long Island municipality which involved the development of work plans, including HASP, quality assurance/quality control, installation of monitoring wells and evaluation of data. A program is currently underway to provide remediation through an groundwater extraction well and air stripping system.

- Hydrogeologic investigation for a manufacturer of electronic color matching equipment servicing the pharmaceutical, paint, plastics, textile, paper and cosmetics industries. This investigation involved the impact of an on-site chemical disposal on the surrounding area. This project ultimately went to remediation which included incineration of removed waste materials. Continued groundwater monitoring is currently underway.

- Determination of the environmental impacts of the installation of combustion turbine facility on local hydrogeology at several sites within the Town of Babylon.

- Conductance of a series of hydrogeologic and closure investigations for the New York State Facilities Development Corporation at psychiatric facilities to determine the long term coal and ash disposal

Prior to joining H2M, Ms. Haimson worked as a project manager/senior hydrogeologist. Her experience included groundwater flow modeling used for water resource management for selected groundwater basins in Arizona; preparation of over 80 environmental impact assessments for the disposal of hazardous waste through underground injection under RCRA and SDWA; and project management of the installation of six deep groundwater monitoring wells at an underground injection well facility in Louisiana.

EDUCATION:
Graduate study towards M.S. in Hydrogeology
Arizona State University
B.S., Geology
Queens College

SPECIALIZED COURSES:
Compliance with RCRA Groundwater Contamination
Geophysical Well Logging (Schlumberger and Welex)
Bioremediation of Hazardous Waste Site Workshop
Remediation Alternatives for Contaminated Sediments
Technical Writing Workshop

CERTIFICATIONS:
Certified Ground Water Professional
Certified Health and Safety Operations at Hazardous Waste Sites

MEMBERSHIPS:
Association of Environmental Professionals
Association of Ground Water Scientists and Engineers
Long Island Geologists
National Water Well Association

PUBLICATIONS:

Haimson. *Long Island's Drinking Water*, Hauppauge Reporter, Editorial Section, June 1990.

Jones and Haimson. *Class I Injection Well Monitoring Issues and Answers*. Conference on Midwestern Ground Water Issues, National Water Well Association, April 1987.

Jones and Haimson. *Demonstration of Confinement: An Assessment of Class I Wells in the Great Lakes and Gulf Coast Regions*. Journal of Underground Injection Practices Council No.1, 1986.

Haimson et al. *American Iron and Steel Institute Position on Underground Injection*. White paper presented at the Underground Injection Practices Council, Winter meeting, January 1985.

Jones and Haimson. *Technical Considerations in Class I Injection Wells*. Proceedings of the 7th National Groundwater Quality Symposium, National Water Well Association, September 26, 1984.

Kisser and Haimson. *Estimation of Aquifer Characteristics Using Driller's Logs: In Hydrology and Water Resources in Arizona and the Southwest*. Proceedings of the American Water Resources Association, Arizona/Nevada Academy of Science, Volume 11, 1981.

DANIEL J. SMITH

Project Engineer: Industrial Services and Hazardous Waste Management

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1988 - Present)

As a project engineer in H2M's industrial services section, Mr. Smith is responsible for air emissions, wastewater discharges, hazardous materials, hazardous waste management, remedial design, and environmental site assessments on both commercial and industrial properties. He is experienced in field sampling, source testing, waste treatment performance evaluation and is certified for health and safety operations at hazardous waste sites.

Mr. Smith's recently completed projects include:

- Design of hazardous materials storage and containment facilities.
- Closure plans for a chemical packaging plant and metal finishing treatment system.
- Remediation of leaking underground storage tanks.
- Remediation of contaminated industrial subsurface disposal systems.
- Evaluation of recently upgraded 70,000 gpd industrial wastewater treatment system.
- Environmental assessments of industrial/commercial properties.

Prior to joining H2M, Mr. Smith worked for a major aerospace corporation where he was responsible for the thermal analysis and design of heat transfer systems, computer modeling of environmental control systems, infrared thermal imaging, and the review of technical specifications for thermal systems. In addition, Mr. Smith has done quality control for a wet chemistry laboratory and production of QA/QC reports.

EDUCATION: B.S., Chemical Engineering
Polytechnic Institute of New York

CERTIFICATIONS: Engineer in Training-New York
Certified Health and Safety Operations at Hazardous Waste Sites

MEMBERSHIPS: American Institute of Chemical Engineers
Suffolk County Emergency Planning Committee

SUSAN F. BIANCHETTI

Senior Hydrogeologist: Groundwater Resources/Hydrogeology

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1990 - Present)

Ms. Bianchetti has over seven years experience in the field of hydrogeology, solid and hazardous waste management, and groundwater quality assessment. As a senior hydrogeologist, she serves as project manager on numerous projects involving groundwater and soil investigations. Relevant projects include industrial and government facility groundwater investigations, the ongoing support for remedial investigations/feasibility studies (RI/FS), related groundwater modeling efforts, and associates waste management. Many of these projects ultimately require hazardous waste/groundwater remediation and the resolution of underground storage tank issues and overall assessment of environmental impact. Current projects include:

- Continued RI/FS at a municipal landfill coordinating a combination of regulatory requirements inclusive of the NYCRR 360 regulations and required RI/FS activities. This involves an evaluation of related post disposal practices, current environmental impacts and prevailing regulations.

- Continued hydrogeologic investigation for a national corporation involving on-site groundwater monitoring well installation, soil borings and evaluation of on-site contamination as part of an overall environmental audit. Detailed delineations of the source of contamination was performed and remediation is pending.

- Series of hydrogeologic investigation for a developmentally disabled/psychiatric facilities required by the New York State Department of Environmental Conservation to evaluate the environmental impacts due to on-site storage of coal and ash.

- Conductance of a phased hydrogeologic investigation to intercept a wastewater plume migrating from primary treatment leaching beds.

- Technical support in litigation involving contaminated public supply wells and surrounding industrial community.

Prior to joining H2M, Ms. Bianchetti was a project manager/senior hydrogeologist. She was Project Manager for a RI/FS at a local municipality's federal Superfund site and a project manager for a number of groundwater and soil investigations for both private and commercial clients. In addition, Ms. Bianchetti's extensive background has included the preparation of both environmental impacts statements and environmental site assessments for numerous properties throughout the northeast.

EDUCATION:
M.S., Geochemistry
State University of New York at Stony Brook
B.S., Geology
Boston College

SPECIALIZED COURSES:
Groundwater Pollution and Hydrogeology Short Course
Hydrogeology and Groundwater Management

CERTIFICATIONS:
Certified Health and Safety Operations at Hazardous Waste Sites

MEMBERSHIPS:
American Water Works Association
Association of Groundwater Scientists and Engineers
Long Island Geologists
National Water Well Association
Sierra Club

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FRANK P. CASTELLANO

Hydrogeologist II: Groundwater Resources/Hydrogeology

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1989 - Present)

Mr. Castellano provides technical support during the implementation of groundwater contaminant investigations, site assessments and remedial investigations/feasibility studies (RI/FS). He routinely performs technical oversight of groundwater monitoring well and exploratory boring installation, underground storage tank removal programs and soil remediation programs.

His experience includes:

- Project management of the quarterly groundwater sampling program being conducted for the New York City Department of Sanitation at a landfill located in Queens, New York. The project includes a comprehensive quarterly groundwater sampling program and semi-annual sampling program of sediment and surface water in Jamaica Bay.

- Participation in a tidal hydraulic study in Jamaica Bay to quantify the effects of leachate from a nearby landfill.

- Technical oversight and documentation of an extensive soil remediation project at a Long Island City industrial facility.

- Computation of a Hazardous Ranking System score as part of a Phase II study conducted at a West Islip facility. An interim remedial measure of contaminated soil removal was also executed and documented. Currently, preparation of the RI/FS study workplan is being developed for this site.

- Coordination and management of a soil remediation program in Fort Wayne, Indiana, Mr. Castellano is now serving as Field Operations Manager for continued site assessments and remediation. The site assessments includes the installation of piezometers, monitoring wells, source area and groundwater plume definition.

- Supervision of the installation of monitoring wells and borings and sampling program of groundwater monitoring wells for the Singer Link Flight Simulation project in Hillcrest, New York. For an industrial site in Hamburg, New Jersey, he conducted ground/surface water and sediment sampling; and interpretation of laboratory data for chromium contaminated groundwaters.

- Project management of routine 3NYCRR 360 monitoring at a landfill for a local municipality federal Superfund site which has been coordinated to coincide with RI/FS sampling requirements.

EDUCATION: Graduate study towards M.S. in Hydrogeology
Adelphi University
B.S., Water Resources
State University of New York at Oneonta

CERTIFICATIONS: Certified Health and Safety at Hazardous Waste Sites

MEMBERSHIPS: Association of Groundwater Scientist and Engineers
Long Island Geologists
National Water Well Association

H2M

MICHAEL N. GENTILS

Senior Hydrogeologist: Groundwater Resources/Hydrogeology

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1988 - Present)

Mr. Gentils has more than five years of experience in the fields of hydrogeology, solid and hazardous waste management, and assessment of groundwater. He serves as a senior hydrogeologist in the hydrogeology section, focusing on groundwater contamination studies and remedial activities.

His project experience includes numerous comprehensive groundwater contaminant investigations, conductance of remedial investigations/feasibility studies, underground storage tank removal programs and soil and groundwater remediation.

Current projects include:

- Comprehensive hydrogeologic investigation and remediation program at a facility on the North Fork of Long Island. The investigation included the installation of 18 monitoring wells and a recovery and drawdown pumping test which determined the aquifer characteristics. An on-site aeration unit and an air stripping tower were installed to remove volatile organics. Ongoing remediation program, inclusive of providing compliance documentation to the New York State Department of Environmental Conservation, is currently being implemented.

- Hydrogeologic investigation concluding into industrial site remediation program in Newburgh, New York. Preparation of a work plan; health and safety plan; field supervision of excavation and soil removal inclusive of drumming of the waste; coordination of the disposal of the waste with approved landfills; verification sampling; report preparation and documentation of remediation efforts.

- Field manager for the implementation of a remedial investigation to delineate a groundwater contaminant plume at an inactive hazardous waste site in Binghamton, New York.

- Removal of leaking underground storage tanks containing gasoline and fuel oil; conductance of floating and dissolved product monitoring, delineation of plume, petitioning of closure of site.

- Conductance of on and off site hydrogeologic investigation to delineate volatile organic plume, evaluation and remediation of on-site source areas of contamination, implementation of a soil venting system to treat contaminated unsaturated zone, closure of remedial activities with associated monitoring of groundwater conditions.

- Field management of closure investigation at numerous psychiatric facilities involving the determining impact due to long term storage of coal and ash.

- Participate in tidal hydraulic study in Jamaica Bay to quantify the efforts of leachate from a nearby landfill.

- Conductance of NYCRR Park 360 monitoring program at numerous municipal landfills in New York.

Prior to joining H2M, Mr. Gentils had two years of experience as a professional geologist/hydrogeologist for a firm engaged in USEPA enforcement-related investigations conducted at potential hazardous waste sites. In this role, he supervised field operations at these sites following USEPA protocols and developed Hazard Ranking System scores and site assessment reports for these sites.

EDUCATION:	B.S., Geology Adelphi University
SPECIALIZED COURSES:	Ground Water and Vadose Zone Hazardous Materials Handling and Sampling Monitoring and Sampling Technology Remediation Alternatives for Contaminated Sediments
CERTIFICATIONS:	Certified Health and Safety Operations at Hazardous Waste Sites
MEMBERSHIPS:	Association of Groundwater Scientists & Engineers Long Island Geologists National Water Well Association
HONORS/AWARDS:	H2M Group Employee Excellence Award, 1991

ROBERT V. NICHOLSON

Project Engineer: Industrial Services and Hazardous Waste Management

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1990 - Present)

As project engineer in H2M's industrial services section, Mr. Nicholson is responsible for air emissions and wastewater discharge permitting, hazardous material storage design and environmental site assessments of industrial and commercial properties. Mr. Nicholson's responsibilities also include preparing work plans and field sampling plans for Phase II assessments and field oversight of hazardous material remediation/construction projects. He is experienced in all field sampling techniques and is certified for health and safety operations at hazardous waste sites.

Prior to H2M, Mr. Nicholson operated a general contracting business and was a project engineer for a consulting firm working on projects for Brookhaven National Laboratory and the New York State Department of Transportation.

EDUCATION: B.S., Chemical Engineering
Clarkson University

REGISTRATIONS/ CERTIFICATIONS: Engineer in Training-New York
Certified Health and Safety Operations at Hazardous Waste Sites

H2M

STANLEY ISAACSON

Vice President and Laboratory Director

EXPERIENCE: **H2M Labs, Inc.**
(1985 - Present)

As vice president and co-director of H2M Labs, Inc., Mr. Isaacson is responsible for and directs all laboratory operations and activities. He maintains all records for laboratory operations, including reports billing and purchasing. He is responsible for all contract administration and serves as liaison between lab and client. He directs 65 scientists and technicians, and manages the programs necessary to conduct the organic, inorganic and bacteriological services of the laboratory. He also reviews and supervises the methods, protocols and guidelines for sample collection and analysis based upon USEPA and state contract requirements and chain-of-custody procedures.

Mr. Isaacson oversees the analysis of more than 75,000 samples per year, many requiring multiple tests. He administers requirements set forth in multiple-year USEPA water quality and New York State Superfund Program contracts, and supervises subcontractor laboratory services for Federal Superfund projects. In January of 1988, Mr. Isaacson attended a seminar on the management of USEPA Contract Laboratory Protocol, held in Denver, Colorado.

Mr. Isaacson assisted in coordination of the design and layout of the H2M laboratory facility to produce high volume as well as a research and development component. He was responsible for the purchasing and coordination of contractors during the installation of this expansion, and was responsible for the selection and startup of all instrumentation used in both production and research. He also approved all contract documents upon completion of tasks.

Mr. Isaacson has had 13 years experience as administrative director of laboratories. He has implemented laboratory computer systems, organized a centralized access department, directed major renovations of bacteriology and chemistry departments, reorganized a special chemistry department to provide faster and more economical assays, as well as expanded test menu and laboratory services.

EDUCATION:
M.A., Health Care Administration
Long Island University/C.W. Post Center
M.A., Biology
Hunter College
B.A., Biology
Hunter College

CERTIFICATIONS: Supervisor Certification in General, Special Chemistry and Immunology,
New York City Department of Health

MEMBERSHIPS:
American Academy for the Advancement of Science
American Chemical Society
Clinical Laboratory Management Association
International Association of Quality Circles, Long Island Chapter
Phi Sigma Biological Science Honor Society

H2M

Job Histories

HAZARDOUS WASTE MANAGEMENT

Remedial Investigation/Feasibility Study (RI/FS)

DESCRIPTION:

H2M, in association with Metcalf & Eddy and Empire-Thomsen, was prime contractor providing a complete RI/FS at the **Haviland Complex wells site** in Hyde Park, New York, to identify the source and extent of contamination and develop a remediation plan. Residential homes and apartment complex had private wells contaminated with tetrachloroethane, trichloroethene and dichloroethane. This project was funded under CERCLA and administered by NYSDEC.

Work Plans, QA/QC, Health and Safety Plans were developed and approved by NYSDEC and USEPA. A focused FS was completed primarily to investigate extending public water to the area from a nearby water district. Aerial photography with ground control was used to generate a topographic map with two foot contours in the vicinity of the contaminant plume. Ground and surface water quality samples, soil and bedrock samples were obtained and analyzed to determine the presence of priority pollutants using contract laboratory protocol. Ambient air and soil gases were monitored using OVA and HNu detectors.

Based upon laboratory analysis of the contaminated groundwater, desk top treatability studies were performed for treatment via GAC and air-stripping for organics removal. The degree of hazard was identified based upon human exposure rates by ingestion and interior air. The environmental impacts were determined as they relate to groundwater discharge into the Fallkill and its impact on the streams' ability to meet applicable and relevant standards. The health risk/toxicological assessment was incorporated into the FS.

A Community Relations program was vital since public water supply to the affected homes might have required a permissive referendum. The program included presentations to the Town Board and information letters to the residents. The USGS three-dimensional groundwater flow model was utilized to simulate groundwater flow conditions, contamination prediction and evaluate efficiency of various remediation alternatives. Alternatives were identified and screened to meet the requirements of supplying potable water and the possible need of environmental cleanup. The two alternatives recommended were the extension of public water and pumping, and treating the plume via air stripping. These alternatives were evaluated as they relate to applicable and relevant standards provided by NYSDEC. The recommended alternative was described as a conceptual design and incorporated into the final engineering report.

CLIENT: New York State Department of Environmental Conservation
Albany, New York

CONTACT: Joseph Iannotti, P.E.

CONTRACT AMOUNT: $560,000

COMPLETION DATE: 1987

H2M

HAZARDOUS WASTE MANAGEMENT

Remedial Investigation/Feasibility Study (RI/FS)

DESCRIPTION:

H2M was retained to conduct an RI/FS at the **North Sea Landfill** in Southampton, New York. The landfill is a United States Environmental Protection Agency (USEPA) Region II Superfund site and has been placed on the National Priorities List (ranked 639). This project followed the procedures outlined by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), and the National Contingency Plan. The RI/FS study investigated the impacts of an inactive landfill cell and scavenger waste lagoons on a nearby residential area and salt water body.

The Field Operations Plan, Work/Quality Assurance Plan and Health and Safety Plan were developed by H2M and approved by USEPA in 1987. Field activities for the RI were initiated and completed in 1987.

Field activities included environmental sampling and analysis, well installation oversight and a landfill soil gas survey. Samples were collected from newly constructed and existing groundwater monitoring, nearby surface waters, surface soils and subsurface "saturated soils." Reported analytical data represents the use of the full USEPA Contract Laboratory Protocol analysis and data validation procedures.

The RI report for Phase I activities was submitted and approved by USEPA and related federal and state agencies. A Public Health Evaluation was also prepared as a part of the RI. The FS addressed source control of the on-site contamination sources (i.e. the inactive landfill cell and the abandoned scavenger waste lagoons). The conclusions and recommendations of the FS were developed according to the draft USEPA document "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (10/88). The study evaluated remedial alternatives for the on-site sources, and, based on the H2M recommendations contained in the feasibility study report, the Record of Decision for Phase I of the RI/FS was issued by USEPA in September 1989.

The RI/FS is Operable Unit II is currently in progress.

CLIENT: Town of Southampton
Southampton, New York

CONTACT: Supervisor George Stavroupolous

CONTRACT AMOUNT: $800,000

COMPLETION DATE: 1991

H2M

HYDROGEOLOGY/WATER SUPPLY MANAGEMENT

Groundwater Contamination Remediation
Air Stripping for Organics Removal

DESCRIPTION:

H2M conducted an accelerated and comprehensive hydrogeologic investigation and remediation program at the **Additive Products/AMP Akzo, Inc.** facility in Aquebogue, New York. This investigation included the installation of 18 monitoring wells to determine the vertical and horizontal extent of a volatile organic compound plume and a 12-hour recovery pump test at the facility's three on-site supply wells to determine site specific aquifer characteristics. This recovery test confirmed that an hydraulic connection existed between the two zones of the aquifer. These investigations were completed within 60 days of discovery of the presence of solvent contamination.

H2M also aided in the speedy implementation of an on-site aeration unit and the installation of a remediation/extraction well. This well was constructed to screen the entire saturated depth of the aquifer and was sized to allow a range of flows, both to allow flow adjustments to maintain control of the plume in the presence of changing groundwater levels, and also to control the total contaminant flow to the treatment process.

H2M was responsible for the design and installation of a countercurrent packed air stripping tower to remove volatile organics in association with the extraction well. Volatile organic contamination in groundwater produced from the remediation/extraction well and the three on-site supply wells is treated by the stripper and discharged to the on-site recharge basins. The total flow and contaminant loading to the tower are controlled to maintain desired concentrations in the effluent water, as well as excessive discharges to the air.

The success of the project was made possible by the close cooperation of H2M with the client's engineering department, as well as H2M's careful integration of hydrogeologic and engineering tasks, which not only resulted in prompt permit approvals and remediation, but ensured that actions necessary to protect each segment of the aquifer and air were taken. Remedial pumping and treatment will continue at the facility until all the monitoring wells report concentrations below New York State Drinking Water Standards.

CLIENT: Additive Products/AMP Akzo, Inc.
Aquebogue, New York

CONTACT: Terry Hulse
Environmental Engineer

CONTRACT AMOUNT: $225,000

COMPLETION DATE: 1989
Monitoring ongoing

H2M

HAZARDOUS WASTE MANAGEMENT

Remedial Investigation and Feasibility Study (RI/FS)

DESCRIPTION:

This facility in Binghamton, New York is currently under a New York State Department of Environmental Conservation (NYSDEC) consent order to investigate groundwater contamination and perform remedial activities. H2M was selected to perform the multi-phase investigation project.

The on-going remedial investigation includes the development of a site specific work plan which includes the installation of monitoring wells, soil borings, soil gas sampling, groundwater sampling and sampling of a number of possible point sources of contamination.

H2M's industrial services section also investigated production processes and made recommendations to minimize contaminant flows. Groundwater monitoring wells were installed under H2M's direction to determine the site stratigraphy, groundwater flow direction and vertical extent of contamination.

Under H2M's direction, the site was surveyed to determine monitoring well elevations and locations. Groundwater and soil samples were obtained to determine the sources and extent of groundwater contamination. The H2M lab utilized its written in-house Quality Assurance/Quality Control (QA/QC) procedures for each sample analyzed and provided procedures for another laboratory to use. Samples were split for QA/QC. Soil samples were obtained and tested with an HNu meter to detect organic contamination. The data obtained was inputted into a data base management system, plotted versus time, and were contoured.

H2M provided guidance in regard to a community relations program.

CLIENT: Confidential Client
Binghamton, New York

CONTRACT AMOUNT: $500,000

COMPLETION DATE: 1990

H2M

HAZARDOUS WASTE MANAGEMENT

Phase II Site Investigation and Remediation

DESCRIPTION:

H2M conducted a groundwater contamination investigation at an industrial site located adjacent to a drinking water reservoir in Newburgh, New York. Tasks included installation of 10 groundwater monitoring wells and the excavation of test pits to search for sources of hazardous waste contamination. Large areas of the site were screened for subsurface contamination by using a soil vapor monitoring technique employing a soil probe and HNu organic vapor monitor to determine "hot spots" of contamination.

An on-site source area was identified during the soil gas survey and confirmed with split spoon soil samples and lab analyses. Further investigation confirmed that paint sludges and thinners were disposed of at this location. Due to soil conditions and a shallow groundwater table, in-situ treatment was not appropriate for this site.

Comprehensive work programs were developed and included the preparation of a Health and Safety Plan, Quality Assurance/Quality Control Plan and work plan. The work programs complied with federal and state guidelines for remedial actions at hazardous waste sites. H2M Labs, Inc. analyzed the water and soil samples for priority pollutant contaminants and RCRA hazardous waste characteristics.

H2M prepared bid documents, selected a remediation contractor and supervised remediation activities. Approximately 1000 tons of soil was excavated. Field screening was performed during remediation to determine the extent of additional excavation. Verification samples from the bottom and side walls of the excavation confirm that the soil removal sufficiently remediated the contaminated soils.

Contaminated groundwater at the site flows through both the glacial till and the bedrock at varying direction and velocity. Flow through the bedrock, composed of shale and carbonate rock such as limestone and dolomite, is highly irregular. Groundwater monitoring is ongoing to assess the extent of groundwater contamination.

CLIENT:

Confidential Client
Newburgh, New York

CONTRACT AMOUNT:

$300,000

COMPLETION DATE:

1989
Monitoring ongoing

INDUSTRIAL SERVICES

Environmental Site Assessment/Remediation

DESCRIPTION:

H2M is currenlty providing all required engineering, hydrogeologic, environmental science and analytical services to assess, and if necessary, remediate environmental conditions which may impact the construction of a stormwater sewer. The environmental site assessment is being conduted at an area of land in south eastern Queens, a portion of which was previously the **Idlewild Park Construction Waste Landfill.** The Idlewild Park Construction Landfill has been identified as a class 2A site by New York State Department of Environmental Conservation.

The major task to be implemented by H2M is an environmental site assessment encompassing the entire geographic area where construction or development will occur. Impacts to sensitive wetland areas due to construction dewatering are to be identified and assessed for possible mitigation. The environmental site assessment consists of an extensive soil boring and soil sampling program followed by the installation of a monitoring well network to evaluate groundwater quality. Upon completion of the environmental assessment, mitigation/remediation plans will be developed to address required measures to allow construction activities to proceed.

CLIENT:

Poslau J.V./
New York City Department of Environmental Protection
Bureau of Water Supply and Wastewater Collection

CONTACT:

Fred Locher (Poslau)
(516) 249-1872
D.J. Patel (NYCDEP)
(718) 595-5668

CONTRACT AMOUNT:

Construction Cost: $14 million
Engineering Fee: $500,000

COMPLETION DATE:

1992

H2M

HYDROGEOLOGY/GROUNDWATER SERVICES

Groundwater Remediation

DESCRIPTION:

H2M is currently engaged in a comprehensive hydrogeologic investigation and remedial program at a northern New Jersey manufacturing facility of a Fortune 100 aerospace industrial client. In the investigation phase of this project, H2M delineated overlapping plumes of solvent and diesel fuel contamination.

H2M's responsibilities included the installation of more than 20 groundwater monitoring wells, screening both shallow overburden and deep bedrock aquifers; liaison with New Jersey Department of Environmental Protection in negotiating NJPDES permit; and all laboratory analysis.

In the remedial design phase, H2M provided design and pilot studies for a $500,000 groundwater treatment system. Treatment includes a packed countercurrent air stripping tower and both liquid phase and vapor PHASE carbon treatment. Air discharges are monitored using photoionization detectors.

Construction management services, offered through H2M Construction, Inc. include engaging contractors for construction of the treatment system; preparation of bidding documents; solicitation of bids; and review of shop drawings, change order requests, and approvals for payment.

CLIENT:

Confidential Client
Clifton, New Jersey

CONTRACT AMOUNT:

$340,000

COMPLETION DATE:

1991

H2M

HAZARDOUS WASTE MANAGEMENT

Environmental Investigation

DESCRIPTION:

H2M Group undertook this site investigation in accordance with the phased approach outlined in a previous work plan submitted to the Nassau County Department of Health Services.

Previous sampling confirmed the presence of elevated levels of volatile and semi-volatile organic contaminants in the facility's on-site sanitary disposal system and stormwater drywells. The site investigation, including soil borings, is designed to evaluate the impact of that contamination.

In addition to sampling storm drains and leaching pools, soil borings were drilled downgradient and adjacent to the sanitary disposal systems. Split barrel core samples were collected at five foot intervals and screened with a photoionization detector (PID). Soil samples and PID readings were taken until groundwater was reached. PID readings were also taken in the work area for health and safety reasons.

Samples were analyzed by H2M Labs, Inc. for priority pollutant volatiles, base neutrals, acid extractables and priority pollutant metals.

CLIENT:

Confidential Client
Westbury, New York

CONTRACT AMOUNT:

$30,000

COMPLETION DATE:

1989

HAZARDOUS WASTE MANAGEMENT

Hazardous Waste Assessment and Remediation

DESCRIPTION:

An expanded Phase II site investigation was performed at the **Dzus Fastener** site consisting of a hydrogeologic investigation and source area investigation. The site is listed on the New York State Registry of Inactive Hazardous Waste Sites. The Phase II investigation was performed in conformance with NYSDEC protocols under a negotiated Order on Consent.

The Phase II study consisted of a groundwater monitoring program to assess groundwater quality directly beneath the site. Contaminants of concern for the site consists primarily of cadmium and chromium. A limited groundwater monitoring well network was established off-site to evaluate downgradient water quality.

The source area investigation confirmed the presence of elevated levels of cadmium and chromium in on-site leaching pools. The industrial leaching pools had received wastewater discharges from the facility's electroplating operations. The source area investigation also confirmed the presence of an abandoned leaching bed approximately 100 feet long by 20 feet wide. In addition, soil samples collected from beneath the plating room floor also revealed elevated levels of cadmium and chromium.

An Interim Remedial Measure (IRM) was implemented which consisted of a source area removal action to remove contaminants which pose an immediate threat the groundwater beneath the site. An IRM Work Plan, and a Health and Safety Plan was submitted to NYSDEC prior to implementation of the IRM. H2M also prepared Contract Specifications for bid solicitation and assisted in the selection of a remedial contractor. Because groundwater beneath the site is shallow, at five feet below grade, chemical stabilization with on-site disposal was not feasible. Soils containing cadmium and chromium were excavated from the drywells and leaching bed down to the groundwater table. Soils were also removed from beneath the former plating building. The excavated materials were transported to a TSD facility for stabilization and land disposal. Approximately 2,500 tons of contaminated sediments and soils were excavated and removed.

An IRM report is being developed to document the removal of the source areas. Additional groundwater and soil investigation for the site will be performed as part of the RI/FS investigation being required by NYSDEC. The RI/FS will include a public health evaluation to assess impacts to public health due to contaminated groundwater emanating from the site. The FS will include an evaluation of remedial action alternatives to address groundwater and soil contamination at the site, as deemed warranted based on findings of the RI and Public Health Evaluation studies.

CLIENT: Dzus Fastener Co., Inc.
West Islip, New York

CONTACT: James Kaczanowski

CONTRACT AMOUNT: $500,000

COMPLETION DATE: 1993

H2M

HAZARDOUS WASTE MANAGEMENT

Remedial Investigation/Feasibility Study (RI/FS)

DESCRIPTION:

The New York City Department of Sanitation (NYCDOS) was required to fulfill conditions of a consent order with the New York State Department of Environmental Conservation (NYSDEC) which required NYCDOS to perform an RI/FS at **Edgemere Landfill**. H2M was selected to provide support services to NYCDOS and the engineering firm selected to lead the RI/FS. H2M's portion of the project includes:

- Collection of samples from groundwater monitoring wells, landfill leachate, surface water, and Jamaica Bay bottom sediments. (Additional samples are collected for submittal to a designated data validation laboratory.) Recording of ambient conditions during the collection of samples and the required field analysis are also performed.

- Analysis of all samples to characterize site chemical conditions for assessing potential impacts of the landfill on the local environment. All sampling, analytical procedures and QA/QC are in compliance with NYSDEC CLP and United States Environmental Protection Agency protocols.

- Perform survey of elevations of the on-site monitoring wells to determine if settlement is causing well elevation changes. This service is provided annually.

The collection and analysis of groundwater samples are scheduled quarterly over a four year period. Jamaica Bay surface water and sediment sampling and analysis are scheduled annually over a four year period. There are 55 wells, one leachate seep and 30 offshore surface water and sediment samples collected per sample period.

A wide variety of analysis are required including metals, volatile organics, base neutrals, acid extractables, PCBs/pesticides, halogenated hydrocarbons and a list of Bureau of Municipal Waste Water Quality Parameters.

A contract was also awarded to H2M Labs, Inc. for analysis of soil samples collected during the drilling of the monitoring wells at the landfill. This work is coordinated with the drilling firm.

CLIENT: New York City Department of Sanitation
New York, New York

CONTACT: Gerald Braun, Project Manager

CONTRACT AMOUNTS: $2.18 million

COMPLETION DATE: 1993

H2M

INDUSTRIAL SERVICES

Environmental Site Assessment

DESCRIPTION: An industrial client located in a heavily industrialized area of long Island City requested H2M to perform an assessment of the condition of soil and groundwater at the property. The site was determined to be contaminated due to elevated concentrations of petroleum hydrocarbons and chlorinated solvents. H2M has negotiated with the NYCDEP and NYSDEC to conduct a remedial investigation to determine the nature and extent of the contamination on site. Interim remedial measures (IRMs) such as excavation of contaminated soils for treatment on site by air stripping, have been recommended. IRMs are anticipated to be completed within 1992.

CLIENT: Confidential Client

CONTRACT AMOUNT: $250,000

COMPLETION DATE: 1992

H2M

INDUSTRIAL SERVICES

Environmental Site Assessment

DESCRIPTION: A vacant lot in **Woodside, Queens** was evaluated for development as a retirement home. The lot had previously been used as a gasoline and repair station. H2M conducted an exhaustive subsurface investigation inclusive of soil borings and monitoring well installation. Ten 550-gallon underground storage gasoline tanks were identified, registered and removed under H2M's technical oversight. Soils contaminated due to release from pipes associated with the tank were removed to an off-site disposal at a permitted facility. Groundwater was determined not to be impacted due to the gasoline release. Recommendations were made for additional remediation to be implemented prior to the development of the property.

CLIENT: Astoria Federal Savings
Jackson Heights, New York

CONTACT: Thomas W. Drennan
Senior Vice President

CONTRACT AMOUNT: $100,000

COMPLETION DATE: 1991

H2M

HYDROGEOLOGY/GROUNDWATER RESOURCES

Groundwater Monitoring Program

DESCRIPTION: Monitoring wells were installed as part of a routine groundwater monitoring program for a major on-shore petroleum storage facility at **Pan American World Airways**, JFK Airport. H2M provided oversight during well installation, screened soils and sampled groundwater.

A report was prepared to address results of sampling and routine monitoring requirements

CLIENT: Pan American World Airways, Inc.
John F. Kennedy International Airport
Jamaica, New York

CONTACT: James Stephan

CONTRACT AMOUNT: $9,000

COMPLETION DATE: 1991

H2M

WATER SUPPLY MANAGEMENT

Groundwater Supply Engineering Report

DESCRIPTION:

A drought emergency of the early 1980's necessitated that every effort be made to conserve water supplied by New York City's upstate reservoirs. The **New York City Department of Parks and Recreation** retained H2M to investigate the feasibility of supplying water for some of New York City parks, pools and golf courses via groundwater wells.

H2M's investigation revealed the potential for water savings if groundwater is utilized to supply the 32 swimming pools, 10 golf courses and two park sites studied. The swimming pools studied consume approximately 35 million gallons of water annually, and the golf courses approximately 330 million gallons.

The suitability of supplying groundwater for each of the studied swimming pools, golf courses or park sites was evaluated on an individual basis. As part of each evaluation, the existing water and electric services for each site were assessed; quantity and quality of the required water determined; hydrogeology and probable well yields of the sites analyzed; and a recommendation prepared for each facility.

With each favorable recommendation, a cost opinion of the well and well pump installation was presented, as well as an evaluation of the impact of a proposed well at a site, existing wells which may be impacted were identified and the extent of the impact (if any) assessed. The extent of available fresh water and any impact upon the local salt water interface was estimated from existing data to complete the evaluation.

CLIENT: New York City Department of Parks and Recreation
New York, New York

CONTACT: Ted Raderman

CONTRACT AMOUNT: $65,000

COMPLETION DATE: 1987

H2M

INDUSTRIAL SERVICES

Landfill Monitoring

DESCRIPTION: H2M conducted extensive groundwater, surface water and air emissions monitoring at the **Brookfield Avenue Landfill**, Staten Island, New York, which is part of the Fresh Kills Landfill. Monitoring was conducted on a daily, weekly and monthly basis to determine migration of landfill methane gas.

CLIENT: New York City Department of Sanitation
New York, New York

CONTACT: Philip Gleason

CONTRACT AMOUNT: $10,000

COMPLETION DATE: 1986

HAZARDOUS WASTE MANAGEMENT

Remedial Investigation

DESCRIPTION:

H2M performed hydrogeologic studies in conjunction with a remedial investigation at an inactive hazardous waste site in East Northport, NY. The work was performed for a manufacturer of electronic components, under a consent order with the Suffolk County Department of Health Services.

The scope of work for the hydrogeologic investigation phase includes determining the direction and rate of horizontal groundwater flow and the extent of vertical flow. The constituents present in the groundwater as a result of past discharges, and their concentration, have been delineated.

The field investigation began in the summer of 1985, after quality assurance project plans and health and safety plans were developed. Initially, four existing on-site wells were utilized to define the potentiometric surface in the shallow groundwater aquifer. Three existing on-site wells were utilized to determine whether a confining clay layer was continuous beneath the site. The on-site groundwater flow study revealed that flow regime is complex due to the shifting of the groundwater divide. This fluctuation is further complicated by the pumping schedules of two on-site supply wells. Two downgradient wells and one upgradient well in the immediate vicinity of the manufacturing facility were incorporated into the groundwater flow study. H2M performed water quality sampling and analysis at all existing on-site, and three off-site wells.

CLIENT:

Confidential Client
East Northport, New York

CONTRACT AMOUNT:

$55,000

COMPLETION DATE:

1988

LABORATORY SERVICES

Toxic/Hazardous Materials Program Support Services

DESCRIPTION: H2M Labs, Inc. conducted analysis of groundwater, wastewater, sludge and soil samples in conjunction with the **New York State Department of Environmental Conservation's** toxic and hazardous materials programs. Scope of the contract included analysis of municipal sludges, SPDES monitoring, and hazardous waste testing.

CLIENT: New York State Department of Environmental Conservation
Albany, New York

CONTACT: Italo G. Carcich, P.E.

CONTRACT AMOUNT: $210,000

COMPLETION DATE: 1986

H2M

LABORATORY SERVICES

Air and Water Quality Risk Analysis and Investigation

DESCRIPTION:

H2M Labs, Inc. is the prime laboratory contractor for the Town of North Hempstead to perform groundwater and air sample analysis from the **Port Washington Landfill** located in Flower Hill, New York. Groundwater monitoring tasks involve collection, risk analysis, identification of 15 groundwater test wells in and around the landfill, as well as treatment plant leachate and SPDES monitoring to assure compliance with permit requirements. Air monitoring tasks involve collection, analysis, and risk identification at twelve subsurface landfill gas monitoring wells. Tests are conducted at various depths, locations and atmospheric conditions to detect presence or absence of methane, and GC/MS analysis for volatile halogenated organics.

Other services include determination of effectiveness and life span of activated charcoal filters in the methane venting system to prevent release of toxic gases.

CLIENT:

Town of North Hempstead
Department of Public Works
Manhasset, New York

CONTACT:

William J. D'Antonio, P.E.

CONTRACT AMOUNT:

$200,000/year

COMPLETION DATE:

Ongoing

H2M

LABORATORY SERVICES

Toxic/Hazardous Materials Program Support Services

DESCRIPTION: As a contract laboratory for the **New York State Department of Environmental Conservation**, H2M Labs, Inc. conducts analysis of groundwater, wastewater, sludge and soil samples in conjunction with the NYSDEC's toxic and hazardous materials programs. Scope of the contract included analysis of municipal sludges, SPDES monitoring, and hazardous waste testing, as well as projects requiring full CLP protocols and deliverables. Methods development and ultra low detection limit analyses, are occasionally required.

CLIENT: New York State Department of Environmental Conservation
Albany, New York

CONTACT: John M. Ryan

CONTRACT AMOUNT: $500,000

COMPLETION DATE: 1990

H2M

LABORATORY SERVICES

Environmental Analysis for Site Investigation

DESCRIPTION: H2M Labs, Inc. performed extensive testing in support of a large site investigation at **Trump City** in New York.

Analysis included the full Target Compound and Target Analyte List on more than 80 samples.

CLIENT: Fanning, Phillips & Molnar
Dames & Moore
Ronkonkoma, New York

CONTACT: Dr. Kevin Phillips

CONTRACT AMOUNT: $97,000

COMPLETION DATE: 1988

H2M

LABORATORY SERVICES

Ground and Surface Water, Leachate, and Sediment Collection

DESCRIPTION: H2M, Labs, Inc. performs sampling and analysis in support of Remedial Investigation/Feasibility Study investigations at the **Edgemere Landfill**, Queens, New York. Parameters include the Target Compound List using New York State Department of Environmental Conservation CLP protocols and deliverables, and 26 conventional chemistry analyses listed in the New York City Bureau of Municipal Waste parameters.

CLIENT: New York City Department of Sanitation
New York, New York

CONTACT: Ted Nabavi

CONTRACT AMOUNT: $2.5 million

COMPLETION DATE: 1994

H2M

LABORATORY SERVICES

Priority Pollutant Analysis

DESCRIPTION: H2M Labs, Inc. conducted priority pollutant analysis of liquid samples at **Hunter Street Yards** for the New York/New Jersey Port Authority.

CLIENT: Port Authority of New York and New Jersey
New York, New York

CONTACT: Sy Solomon
Chief of Chemical/Environemtnal Testing
Materials Division-Engineering Department

CONTRACT AMOUNT: $10,000

COMPLETION DATE: 1985

H2M

LABORATORY SERVICES

Superfund Contract Laboratory Support Projects

DESCRIPTION: H2M Labs, Inc. conducted laboratory support services for **New York State Department of Environmental Conservation** Superfund contract work involving analysis of soil and water samples for priority pollutants.

CLIENT:

Engineering Science/Dames & Moore
Atlanta, Georgia

Dames & Moore
Baldwinsville, New York

IMS Engineers
Rochester, New York

CONTACT:

Ernest J. Schroeder, P.E.
Engineering Science/Dames & Moore
Dames & Moore

Iqbal Singh, P.E.
IMS Engineers

CONTRACT AMOUNT: $141,000

COMPLETION DATE: 1985

H2M

PROJECT BUDGET

4.0 PROJECT BUDGET

A complete budget for the project is provided in Table 1, Project Budget. Costs were divided into labor and expenses for each of the four tasks. As indicated in Table 1, the total project budget is $71,600. This includes $8,000 for drilling services and $16,100 for analytical laboratory services. Table 2, Hourly Rates summarizes the billable hourly rates for the various labor classifications to be utilized on the project.

TABLE 1

PROJECT BUDGET

TASK 1 - KICKOFF MEETINGS AND HASP		
Labor		$5,300
Miscellaneous Direct Expenses		570
	Subtotal	$5,870
TASK 2 - FIELD INVESTIGATION WORK		
Labor		$10,300
Surveying (Modi Associates)		1,200
Drilling (Parratt Wolff, Inc.)		8,000
Analtyical Services		16,100
Miscellaneous Direct Expenses		2,690
	Subtotal	$38,290
TASK 3 - DATA REVIEW AND DRAFT REPORT		
Labor		$14,400
Miscellaneous Direct Expenses		400
	Subtotal	$14,800
TASK 4 - REVIEW MEETINGS AND FINAL REPORT		
Labor		$11,500
Miscellaneous Direct Expenses		1,140
	Subtotal	$12,640
Total Project Budget		**$71,600**

TABLE 2

HOURLY RATES

LABOR CATEGORY	AVG. BILLABLE RATE
Principal	165
Project Manager	140
Sr. Hydrogeologist	110
Sr. Environmental Scientist	80
Project Engineer	75
Staff Engineer	65
Staff Hydrogeologist	60
Technician	45
Drafter	45
Technical Typist	45