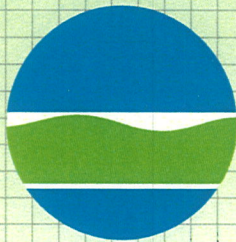


**REMEDIAL DESIGN  
PROJECT MANAGEMENT  
WORK PLAN**



**AVM GOWANDA SITE  
OPERABLE UNIT 01**

Town of Persia

Cattaraugus County New York  
(Site Registry No. 9-05-025)

WORK ASSIGNMENT NO. D003600-38

Prepared For

**New York State Department  
of Environmental Conservation**

APRIL 2004



**DVIRKA AND BARTILUCCI**  
CONSULTING ENGINEERS  
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.



**REMEDIAL DESIGN  
PROJECT MANAGEMENT WORK PLAN**

**AVM GOWANDA SITE  
OPERABLE UNIT 01  
SITE NO. 9-05-025  
TOWN OF PERSIA  
CATTARAUGUS COUNTY, NEW YORK**

**WORK ASSIGNMENT NO. D003600-38**

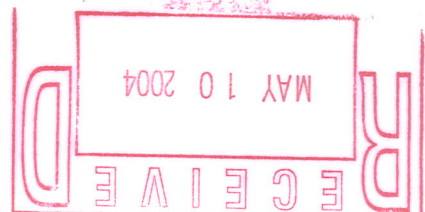
**PREPARED FOR**

**NEW YORK STATE DEPARTMENT OF  
ENVIRONMENTAL CONSERVATION**

**BY**

**DVIRKA AND BARTILUCCI CONSULTING ENGINEERS  
SYRACUSE, NEW YORK**

**APRIL 2004**





**REMEDIAL DESIGN  
PROJECT MANAGEMENT WORK PLAN  
AVM GOWANDA SITE  
TOWN of PERSIA, NEW YORK**

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
<b>1.0</b>	<b>INTRODUCTION.....</b>	1-1
<b>2.0</b>	<b>BACKGROUND INFORMATION.....</b>	2-1
2.1	Site Location and Description.....	2-1
2.2	Site History.....	2-1
<b>3.0</b>	<b>SCOPE OF WORK.....</b>	3-1
3.1	Task 1 - Work Plan Development.....	3-1
	3.1.1 Health and Safety Plan.....	3-2
	3.1.2 Quality Assurance Project Plan.....	3-3
	3.1.3 Citizen Participation Plan.....	3-3
3.2	Task 2 - Pre-Design Field Activities.....	3-3
	3.2.1 Subtask 2.1 – Base Map Development.....	3-4
	3.2.2 Subtask 2.2 – Indoor Air Sampling.....	3-7
	3.2.3 Subtask 2.3 – Surface Soil Sampling.....	3-7
	3.2.4 Subtask 2.4 – Direct Push Groundwater Sampling.....	3-8
	3.2.5 Subtask 2.5 – Subsurface Soil Sampling.....	3-8
	3.2.6 Subtask 2.6 – Monitoring Well Installation, Development and Hydraulic Conductivity Testing.....	3-9
	3.2.7 Subtask 2.7 –Groundwater Sampling.....	3-10
	3.2.8 Subtask 2.8 - Groundwater Elevation Monitoring.....	3-11
	3.2.9 Subtask 2.9 - Surveying.....	3-11
	3.2.10 Subtask 2.10 - Data Usability Summary Report.....	3-12
	3.2.11 Subtask 2.11 – Pre-Design Field Activities Report.....	3-12
3.3	Task 3 - Engineering Design Study.....	3-12
	3.3.1 Subtask 3.1 - Pumping Test.....	3-12
	3.3.2 Subtask 3.2 - Treatability Study.....	3-13
	3.3.3 Subtask 3.3 - Horizontal Well Drilling Evaluation.....	3-14
	3.3.4 Subtask 3.4 - Permeable Reactive Barrier Review.....	3-14
	3.3.5 Subtask 3.5 – Engineering Design Report.....	3-15
3.4	Task 4 – Supplemental Investigation and Interim Remedial Measures.....	3-20
	3.4.1 Subtask 4.1 – Individual Source Area Investigation.....	3-20
	3.4.2 Subtask 4.2 – Interim Remedial Measure.....	3-20
	3.4.3 Subtask 4.3 – Design and Installation of Air Venting Systems.....	3-20

**REMEDIAL DESIGN  
PROJECT MANAGEMENT WORK PLAN  
AVM GOWANDA SITE  
TOWN of PERSIA, NEW YORK**

3.5	Task 5 - Plans and Specifications.....	3-20
3.5.1	Subtask 5.1 - Preliminary Design.....	3-21
3.5.2	Subtask 5.2 - Intermediate Design .....	3-22
3.5.3	Subtask 5.3 - Final Design .....	3-22
3.5.4	Subtask 5.4 – Project Cost Estimate .....	3-23
3.5.5	Subtask 5.5 – Final Design Report.....	3-23
3.6	Task 6 - Citizen Participation.....	3-23
3.7	Task 7 – Pre-award Services .....	3-24
4.0	<b>PROJECT MANAGEMENT .....</b>	<b>4-1</b>
4.1	Project Schedule and Key Milestones.....	4-1
4.2	Project Management, Organization and Key Technical Personnel.....	4-1
5.0	<b>SCHEDULE 2.11s .....</b>	<b>5-1</b>

**List of Appendices**

---

**List of Figures**

---

1-1	Site Location Map .....	1-2
2-1	Groundwater Remediation Plan .....	2-2
3-1	Sample Location Map .....	3-5
4-1	Project Schedule.....	4-2
4-2	Project Team Organization Chart.....	4-3

**List of Tables**

---

3-1	Sampling Matrix.....	3-6
3-2	Draft Table of Contents Engineering Design Report.....	3-16



**Section 1**





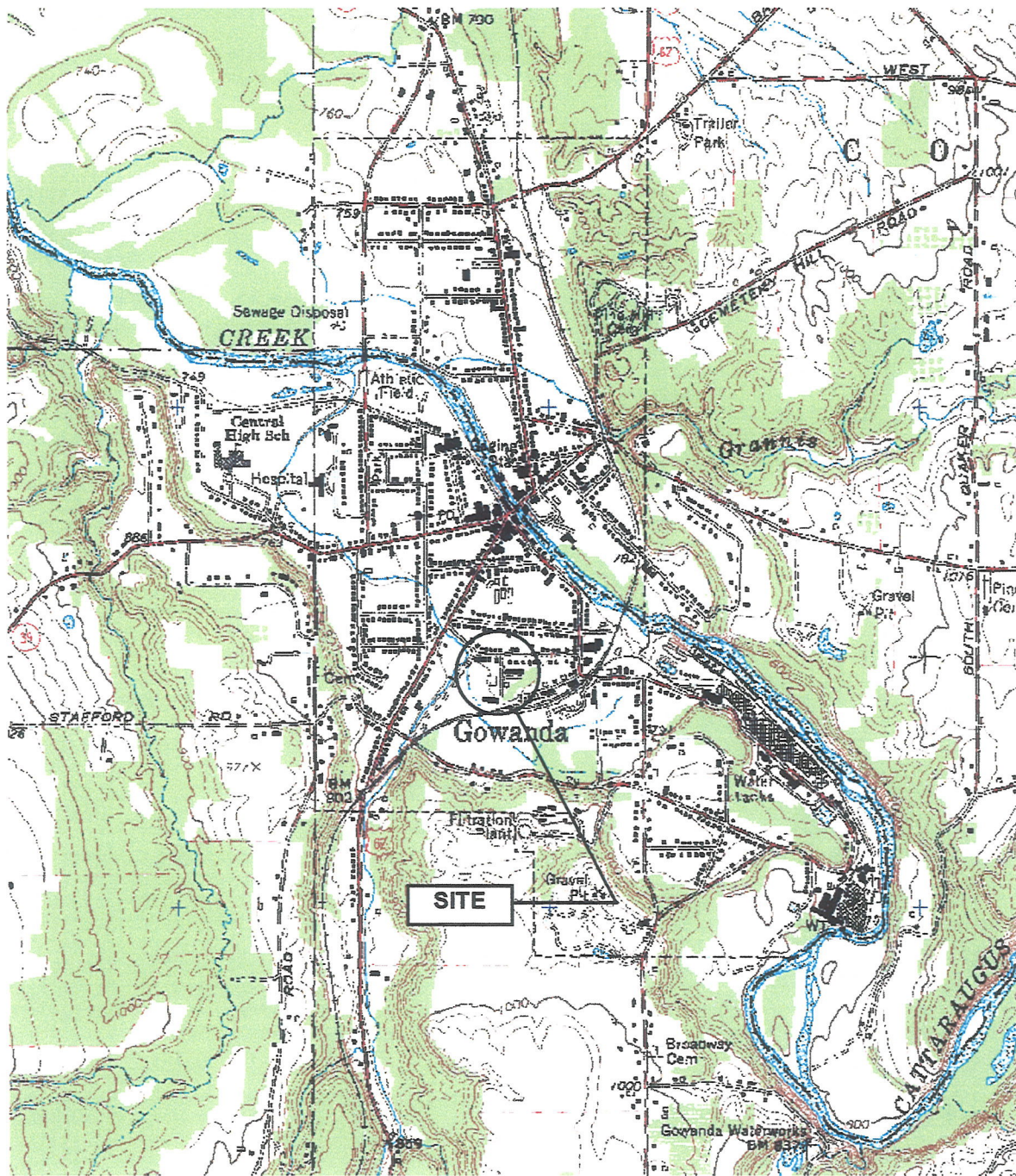
## 1.0 INTRODUCTION

As part of New York State's program to investigate and remediate hazardous waste sites, the New York State Department of Environmental Conservation (NYSDEC) has issued a work assignment to Dvirka and Bartilucci Consulting Engineers of Woodbury, New York under its Superfund Standby Contract with NYSDEC to provide design services for remediation of the AVM Gowanda Site, Operable Unit 1 located in the Town of Persia, Cattaraugus County, New York (see Figure 1-1). The site is a Class 2 New York State Superfund site, Registry No. 9-05-025. The scope of work includes:

- Performance of pre-design field activities and engineering design study;
- Preparation of an engineering design report, and plans and specifications; and
- Assistance in citizen participation activities and construction pre-award services.

The work for this site is being performed with funds allocated under the New York State Superfund Program. This document, entitled "Remedial Design Project Management Work Plan for the AVM Gowanda Site, Operable Unit 1," has been prepared in accordance with NYSDEC guidance and includes a detailed description of tasks, schedule and budget for the project. The work plan also identifies key project milestones and presents the project team organizational structure.





**AVI GOWANDA SITE  
GOWANDA, NEW YORK**

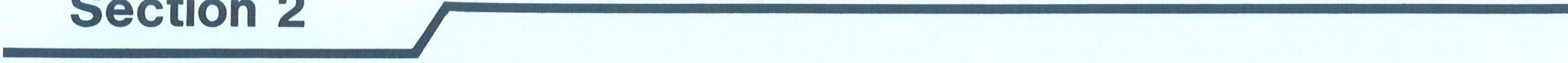
**SITE LOCATION MAP**

**db** Dvirka and Bartilucci  
Consulting Engineers

**FIGURE 1-1**



# Section 2





## **2.0 BACKGROUND INFORMATION**

### **2.1 Site Location and Description**

The AVM Gowanda Site is an inactive hazardous waste disposal site located at One Industrial Place in Gowanda, Town of Persia, Cattaraugus County, New York. The property is approximately 1.75 acres in area and includes two manufacturing buildings and two small storage sheds. The site is currently owned and occupied by the Gowanda Electronics Corporation, a small manufacturer of electrical components, such as inductors.

The site property is flat and largely covered with either paved parking areas or buildings. Surface drainage is provided via storm drains that discharge to Thatcher Brook and ultimately to Cattaraugus Creek. The site is bordered by residential property to the north and east, a railroad yard to the south and commercial industrial facilities to the west. Figure 2-1 presents the site, surrounding residential properties and proposed groundwater remediation plan.

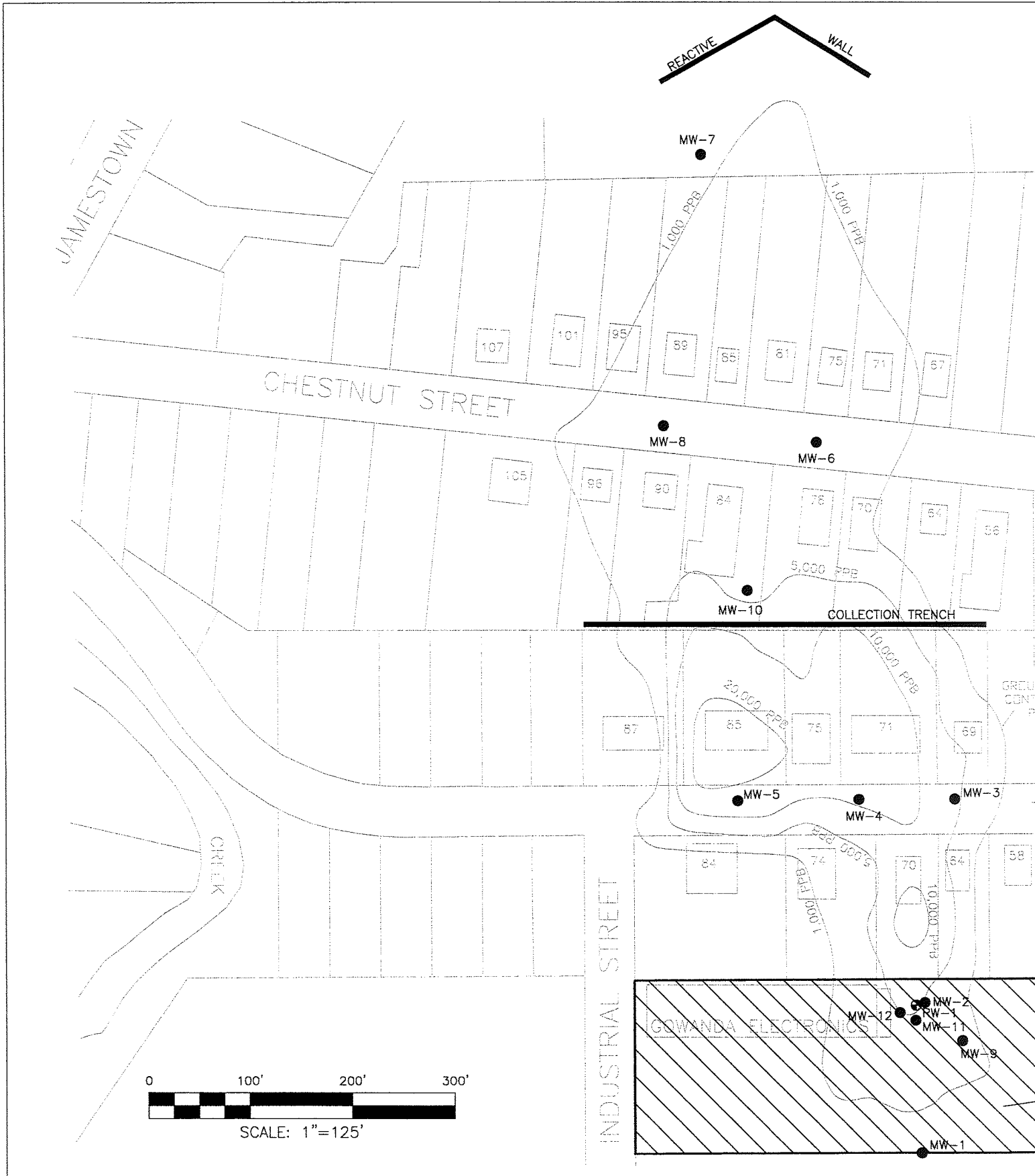
### **2.2 Site History**

The AVM Gowanda Site has been used for industrial operations since the early 1930's. From World War II until 1979 the facility was used as a metal stamping/machine shop. Gowanda Electronics purchased the facility in 1979 from Automatic Voting Machine Corporation (AVM) and has since used the facility for the manufacture of electronics components.

Malcolm Pirnie, Inc., completed a Phase I and Phase II site investigation in the spring of 1994 for Gowanda Electronics. Analysis of surface soil samples showed elevated levels of various metals, total petroleum hydrocarbons (TPH) and trace levels of volatile organic compounds (VOCs) at the east end of the main building, along the northern property boundary. The company chose to excavate the surface soils for off-site disposal. The initial surface soil excavation program continued to a depth of approximately seven feet based on visual identification of stained soil and waste metal shavings, and resulted in the removal of 568 tons of







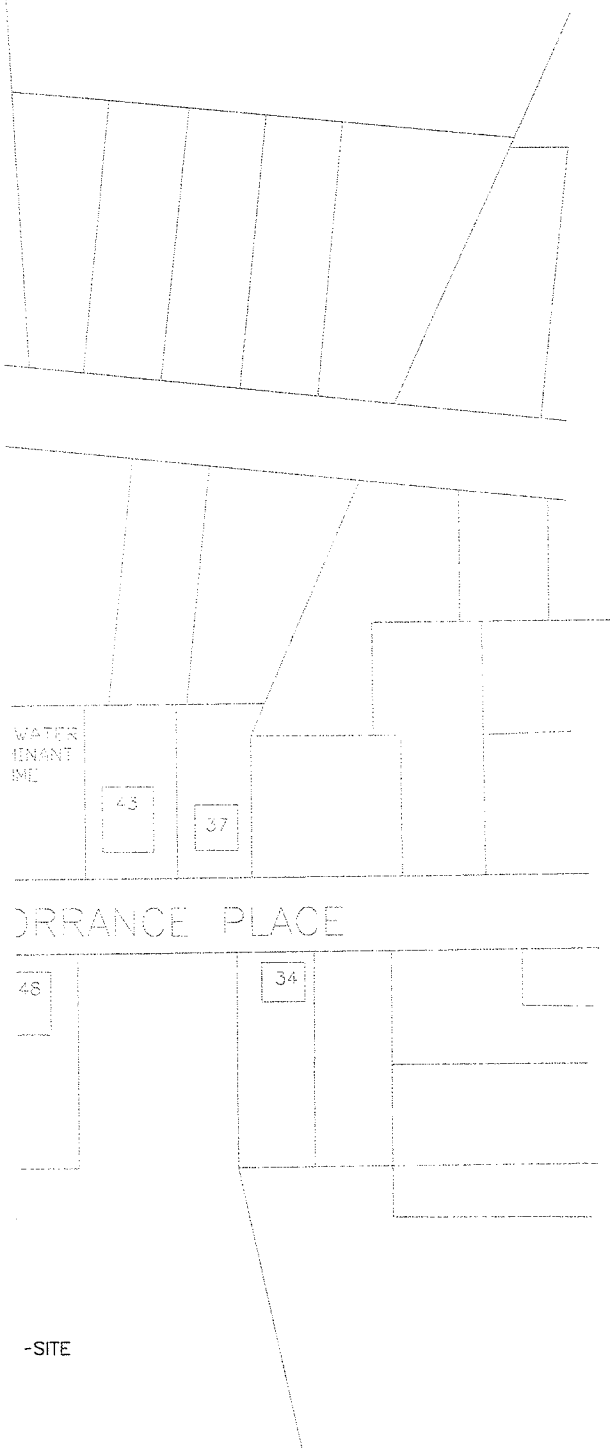
AVM GOWA  
GOWANDA, I

# GROUNDWATER RE



Dvirka and Bartilucci  
Consulting Engineers  
A Division of William F. Cosulich Associates, P.C.





### LEGEND

MW-6 ● EXISTING MONITORING WELL

RW-1 ⊕ EXISTING RECOVERY WELL



HOUSE AND HOUSE NUMBER



GOWANDA ELECTRONICS SITE



TOC CONCENTRATION IN GROUNDWATER

JA SITE  
W YORK

MEDIATION PLAN

FIGURE 2-1



contaminated soil and waste. This led to the discovery of high levels of VOCs, which increased in concentration as the depth of the excavation increased. VOCs from this area apparently had migrated to the water table, resulting in significant groundwater contamination. The excavation was backfilled and the company installed a groundwater extraction well with an air stripper for treatment. This system became operational in June 1996 and continues to operate under a Voluntary Cleanup Agreement (Index No. B9-0507-96-05) between the NYSDEC and the Gowanda Electronics Corporation.

A NYSDEC Immediate Investigation Work Assignment (IIWA) was undertaken in 1995 to further investigate existing subsurface soil and groundwater conditions near the source area and to identify potential migration pathways from this source area. Field activities associated with the IIWA were conducted during late 1995, with a report issued by NYSDEC in January 1996. A significant groundwater contaminant plume was identified, migrating from the source area northward to Torrance Place. The data further suggested that the plume likely extended beyond Torrance Place.

The IIWA provided the basis for the site to be listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites as a Class 2 site. A remedial investigation/feasibility study (RI/FS) was subsequently conducted to fully define the nature and extent of contamination, determine if any exposure pathways exist that pose a threat to human health or the environment, and if necessary, evaluate remedial alternatives to effectively address the contamination.

In March 2001, the NYSDEC issued a Record of Decision (ROD) for the AVM-Gowanda Site. In order to eliminate or mitigate the significant threats to human health and the environment caused by the disposal of hazardous wastes at the AVM-Gowanda Site, the following remedy was selected:

- Performance of a remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial system.
- Continue operation of the extraction well and air stripper currently in place at the Gowanda Electronics property by the volunteer.

- Installation of a groundwater extraction system consisting of pumping wells beneath Torrance Place and a collection trench midway between Torrance Place and Chestnut Street with conveyance of groundwater to the Gowanda Electronics property via buried pipe for treatment.
- Construction of a treatment system consisting of an air stripping unit, air emissions treatment, and DNAPL separator, housed in a separate sound dampened building constructed on the Gowanda Electronics property with discharge to Thatcher Creek.
- Installation of a reactive iron wall north of Chestnut Street, extending approximately 250 feet in length to intercept the leading edge of the contaminant plume.
- Implementation of a monitoring system to ensure the effectiveness of the remedy, including groundwater flow conditions, groundwater chemistry and indoor air quality.







### 3.0 SCOPE OF WORK

The services to be provided by Dvirka and Bartilucci Consulting Engineers (D&B) include preparation of a remedial design work plan (Task 1); performance of a pre-design study (Task 2); preparation of an engineering design report (Task 3); performance of a supplemental investigation and interim remedial measures, if necessary (Task 4); preparation of plans and specifications (Task 5); assistance in citizen participation activities (Task 6); and pre-award services (Task 7).

#### 3.1 Task 1 - Work Plan Development

This task involves preparation of draft and final versions of this Project Management Work Plan (PMWP) and participation in a preliminary scoping meeting at the site with representatives of the NYSDEC and New York State Department of Health (NYSDOH). This task also includes review of site background information provided by NYSDEC and development of a scope of work for the pre-design study. The following reports will be reviewed to gain a thorough understanding of the site conditions and components of the selected design.

1. *Remedial Investigation Report*, prepared by NYSDEC, dated July 1998
2. *Feasibility Study Report*, prepared by NYSDEC, dated February 2000.
3. *Record of Decision*, prepared by NYSDEC, dated March 2001.
4. *Fracture Trace Analysis and 3D High Resolution Seismic Reflection Imaging*, prepared by Resolution Resources, Inc., dated February 2000.

This document is designed to include a flexible, dynamic field activities work plan. The work plan documents the investigative objectives and approaches, discusses the data requirements, and provides the goals and decision logic for the field activities. A preliminary approach to sampling has been outlined, but the field investigation team, in consultation with the NYSDEC, will modify the plan in the field, as necessary.

### 3.1.1 Health and Safety Plan

The Health and Safety Plan (HASP) will address the site-specific hazards to on-site personnel and the community, and define strategies to handle these hazards. The HASP will include the following:

1. A purpose (i.e., the HASP has been designed to protect the health and safety of on-site personnel and the surrounding community during remedial investigation (and IRM, if necessary) activities at the site or that adherence to the HASP will minimize the possibility that personnel at the site or the surrounding community will be injured or exposed to site-related contaminants during the field activities);
2. A discussion of the intent to make prior notifications, if applicable, to local police, fire and potential emergency responders advising them of the remedial investigation (and IRM, if necessary) activities and schedule of events, and an intent to notify adjacent property owners so that necessary precautions are taken, such as closing windows and air-conditioning vents;
3. A section on community health and safety including methods by which the public will be contacted in the event of an emergency and a corresponding evacuation procedure, monitoring information and contaminant action levels;
4. Site worker personal protection equipment;
5. A discussion of Community Air Monitoring with real-time air monitoring for volatile organic compounds (VOCs) and particulates at the perimeter of each designated work zone during ground-intrusive activities. The intent is to provide a measure of protection for site workers and the downwind community from potential exposure to airborne contaminant releases as a direct result of work activities. Action levels for particulates and VOCs will be discussed. Because intrusive activities may potentially release airborne contaminants in the form of dust or vapors, continuous real-time monitoring will be performed at the downwind perimeter of each exclusion/work zone when ground intrusive activities are in progress. Particulate monitoring will not be necessary when work is performed in a non-source area, unless dust is being generated. When invasive field work is creating dust or is being conducted in a source area, community air monitoring will be performed in accordance with the NYSDOH Generic Community Air Monitoring Plan;
6. A discussion of methods to cordon-off work areas to preclude unauthorized access and minimize potential exposure/injuries.

### 3.1.2 Quality Assurance Project Plan

A Quality Assurance Project Plan (QAPP) will be prepared and approved by NYSDEC prior to commencement of fieldwork. Deviations from protocols specified in the QAPP will be subject to NYSDEC approval. All laboratory analytical work will be performed by a NYSDOH ELAP approved laboratory certified in all categories of Analytical Services Protocol (ASP), Contract Laboratory Protocol (CLP), and Solid and Hazardous Waste analytical testing.

A Data Usability Summary Report will be prepared and included in the Pre-Design Field Activities Report. Category B deliverables will be retained in the project files and available for full data validation by a qualified independent third party, if required.

### 3.1.3 Citizen Participation Activities

Assistance will be provided to the NYSDEC in support of citizen participation activities, such as public meetings, as requested by the NYSDEC. It is assumed that the NYSDEC will issue public correspondence and notifications. D&B will attend public meetings as necessary and provide presentation materials, such as summary documents, maps and related handouts.

The Task 1 deliverable will be the Final PMWP including the items described above.

## **3.2 Task 2 - Pre-design Field Activities**

A field investigation program will be conducted prior to the remediation system engineering design. The purpose of the field investigation will be to 1) confirm the aerial extent of the groundwater contaminant plume defined in the 1997 Remedial Investigation, 2) verify that indoor air quality in homes overlying the groundwater contaminant plume does not exceed acceptable concentrations of site related contaminants, and 3) provide site-specific hydrogeologic information for the design of the remediation system including groundwater

extraction wells and collection trench, groundwater treatment system and permeable reactive iron wall .

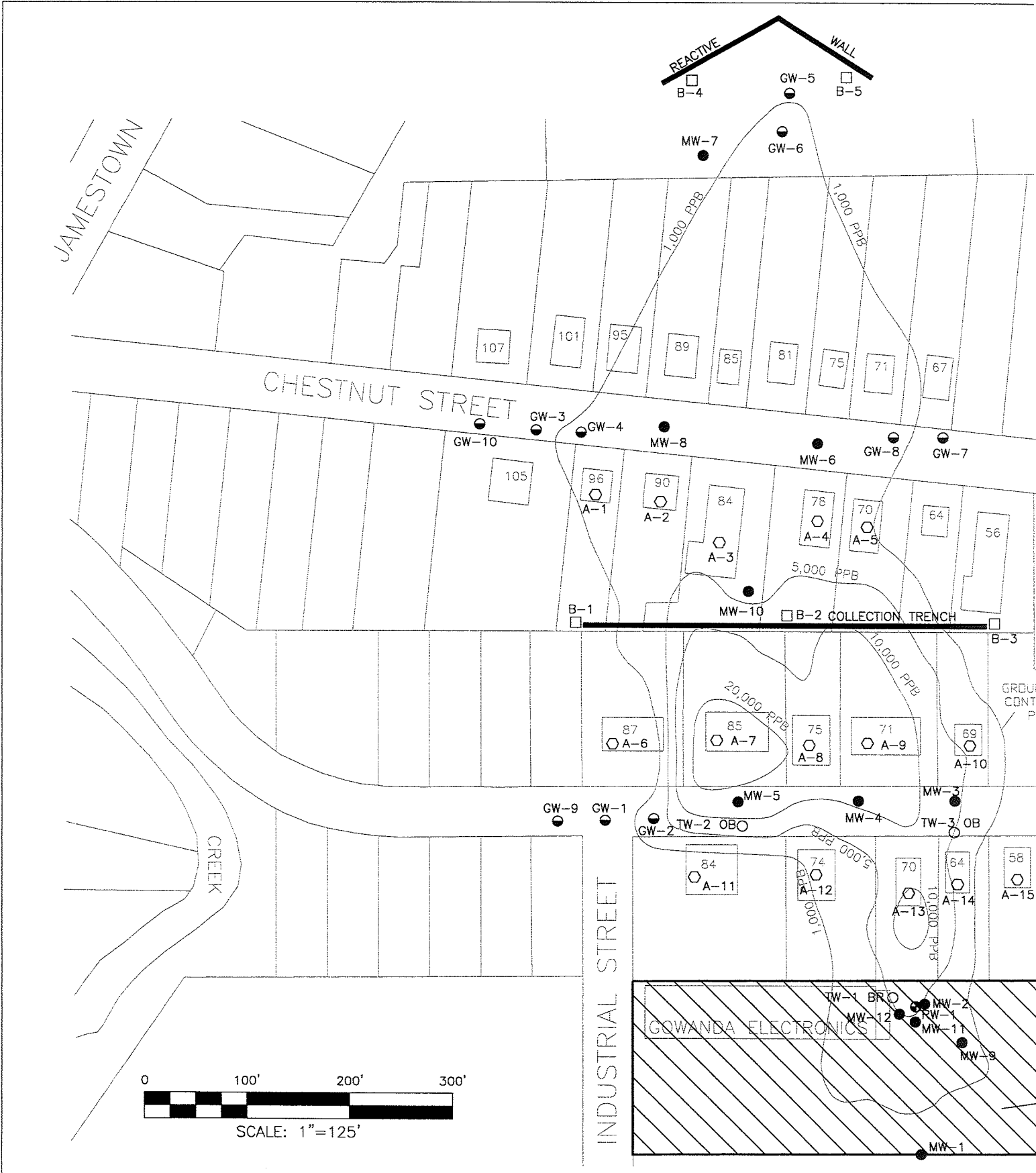
The pre-design activities will consist of the collection of direct push groundwater samples to confirm the plume limits, collection of indoor and ambient air samples to evaluate possible migration of site related contaminants into inhabited areas overlying the plume and the construction of soil borings, monitoring well installation, water level monitoring, and groundwater sampling and analysis. The hydrogeologic characterization will focus on the glacial till basin reported beneath the homes on Torrance Place and the northern edge of the contaminant plume near Chestnut Street. Figure 3-1 presents the study area and proposed sample locations. Table 3-1 summarizes samples to be collected and laboratory analyses. The following describes the pre-design investigation in detail.

### 3.2.1 Subtask 2.1 Base Map Development

Prior to initiation of on-site field activities, a base map of the site and immediate vicinity will be prepared. All relevant features of the site and adjacent areas will be plotted at a scale of 1-inch equals 50 feet. Relevant features will include all structures, roads, fences and existing wells. The base map will be used to accurately plot all surface soil samples, soil borings, monitoring wells, air sample locations, direct push groundwater sample locations and any other items of interest noted during the field activities.

An aerial photograph of the project area will be obtained for use in locating important site features and landmarks, as well as mapping site topography. Areas to be incorporated in the aerial photographs include the AVM Gowanda Site at One Industrial Place, portions of Torrance Place and Chestnut Street north of the site, the portion of Thatcher Creek that is located on the western boundary of the site and the former lumber yard on Walnut Street. The aerial photograph will be at a scale of 1-inch equals 100 feet and the topographic contour mapping will be at one-foot contour intervals. The aerial photograph will be kept on-file and utilized to prepare topographic drawings for the remedial design.

DEC 19, 2003 SEP C:\2184\gowanda base sep.dwg



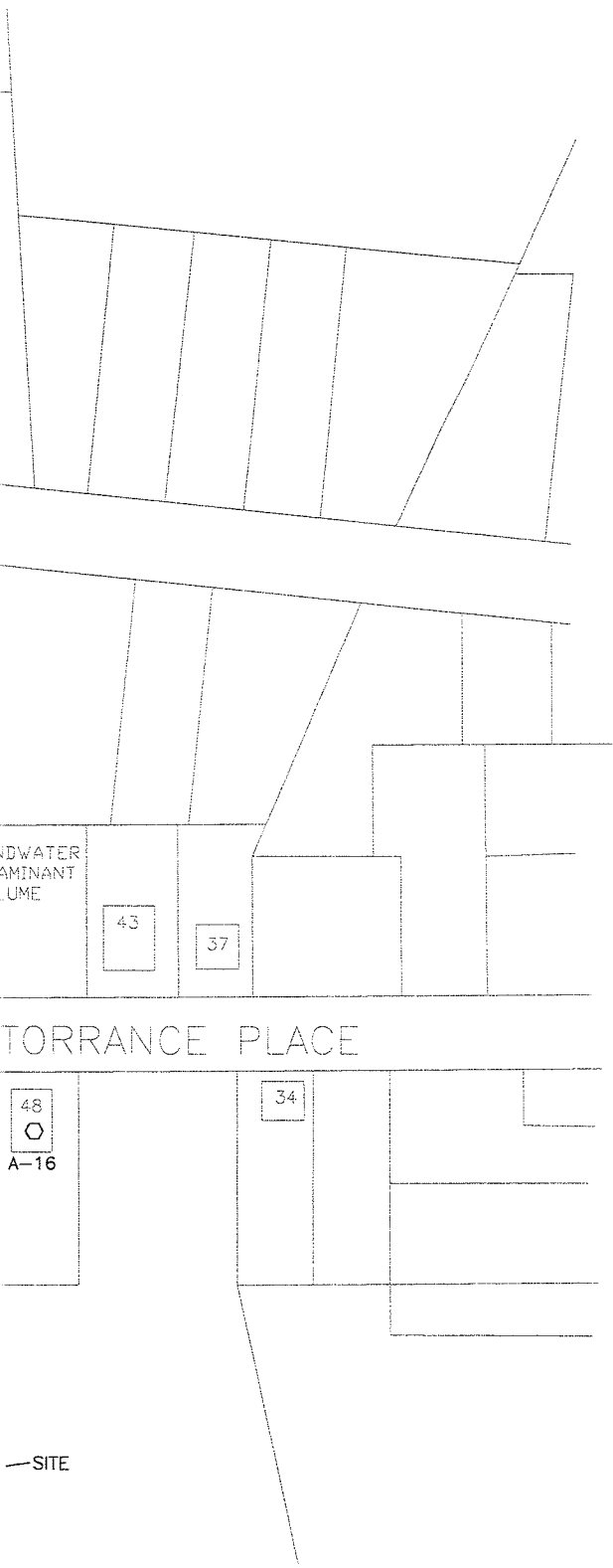
AVM GOWANDA, GOWANDA,

SAMPLE LOC



Dvirka and Bartilucci Consulting Engineers A Division of William F. Cosulich Associates, P.C.





**LEGEND**

MW-6 ● EXISTING MONITORING WELL

RW-1 ⊕ EXISTING RECOVERY WELL

48 □ HOUSE AND HOUSE NUMBER

▨ GOWANDA ELECTRONICS SITE

--- 1,000 PPB --- TCE CONCENTRATION IN GROUNDWATER

B-6 □ PROPOSED SUBSURFACE SOIL SAMPLE LOCATION

TW-2 ○ PROPOSED OVERBURDEN TARGET WELL

TW-1 ○ PROPOSED BEDROCK TARGET WELL

GW-4 ● PROPOSED DIRECT PUSH GROUNDWATER SAMPLE LOCATION

A-6 ○ PROPOSED AIR SAMPLE

GOWANDA SITE  
NEW YORK

LOCATION MAP

FIGURE 3-1





**Table 3-1  
AVM GOWANDA SITE  
PRE-DESIGN FIELD ACTIVITIES  
SAMPLING MATRIX**

<b>Program Element</b>	<b>Environmental Media</b>	<b>Sample Type/Depth</b>	<b>Equipment</b>	<b>Number of Samples</b>	<b>Sample Analyses</b>
Air Sampling - Winter	Air	Grab samples from basements of residences.	Summa canister.	16 indoor 16 sub-slab 4 outdoor 4 optional	TCL VOCs.
Subsurface Soil Sampling	Subsurface Soil	Grab samples from borings	Decontaminated split spoon or direct push sampler.	8	Grain size analysis.
Plume Confirmation Sampling (direct push)	Groundwater	At surface of water in boring after purging.	Direct push sampler.	10	TCL VOCs.
Groundwater Sampling (Round 1) – includes two samples from pumping test	Groundwater	At surface of water in well after purging well.	Disposable polyethylene bailer.	12	TCL VOCs
				5	TCL VOCs, SVOCs, Pest/PCBs, TAL Metals (filtered and unfiltered), CN
Groundwater Sampling (Round 2)	Groundwater	At surface of water in well after purging well.	Disposable polyethylene bailer.	13	TCL VOCs
				2	TCL VOCs, SVOCs, Pest/PCBs, TAL Metals (filtered and unfiltered), CN
Soil Cutting Characterization	Soil	Grab from drums	Disposable polyethylene scoop.	2	TCL VOCs, SVOCs, Pesticides, PCBs, TAL Metals and Cyanide.
Trip Blanks	Aqueous	Distilled water.	Sample supplied by laboratory.	5*	TCL VOCs.
Matrix Spike/ Matrix Spike Duplicates	Aqueous	Groundwater (split of sample).	Sample container or disposable polyethylene bailer.	2**	TCL VOCs, SVOCs, Pesticides, PCBs, TAL Metals and Cyanide.
				1**	TCL VOCs.
Matrix Spike/ Matrix Spike Duplicates	Soil	Soil (split of sample).	Disposable polyethylene scoop.	1**	TCL VOCs, SVOCs, Pesticides, PCBs, TAL Metals and Cyanide.

\*One trip blank will accompany each shipment of aqueous samples requiring volatile organic compound analysis.

\*\*One MS/MSD for each media for every 20 samples collected or one every two weeks if fewer than 20 samples.

Note: No field blanks will be collected as per New York State Department of Environmental Conservation guidance.

### 3.2.2 Subtask 2.2 – Indoor Air Sampling

Air sampling will be conducted in or near homes overlying the groundwater contaminant plume to verify results reported in the Remedial Investigation (RI) and to evaluate the need for permanent air monitoring points. Ambient indoor air sampling will be conducted during early 2004 in homes overlying the contaminant plume as defined in the RI Report, and include collection of 16 ambient indoor (basement/first floor living space) air samples and 16 sub-slab samples. Indoor ambient air samples will be collected from the lowest living space (i.e. basement or first floor) in each of the 16 homes. The ambient air samples will be collected by placing a Summa canister on the floor and allowing it to fill. The sub-slab samples will be collected by drilling a 9/16-inch diameter hole through the concrete basement floor. A clean Teflon tube will be placed in the hole, sealed with plastic film or stopper and sampled the following day. Air will be purged from the hole before collecting a sample using a Summa canister. In addition, four outside ambient air samples will be collected. Outside ambient air samples will be collected by filling Summa canisters 2 feet above ground surface. All air samples will be collected with 6-liter Summa canisters and analyzed for VOCs by Method TO-15 using selective ion monitoring. Summa canisters will be set up to collect air samples for up to four hours and removed within one day of placement in each home.

An indoor air quality questionnaire and building inventory will be completed for each home two to three days before sampling, as required by the Division of Environmental Health Assessment Bureau of Toxic Substance Assessment Indoor Air Sampling and Analysis Guidance Protocols, dated August 8, 2001.

### 3.2.3 Subtask 2.3 - Surface Soil Sampling

The need for surface soil sampling does not appear to be warranted at this time, since the suspected source area was removed previously. In the event that additional source areas are identified, then surface soil samples may be collected following approval from NYSDEC. Surface soil samples would be collected from 0 to 2 inches below the surface, vegetative cover or pavement.

### 3.2.4 Subtask 2.4 – Direct Push Groundwater Sampling

A total of ten direct push groundwater samples will be collected from the edges of the groundwater contaminant plume as defined in the RI Report. One sample will be collected from a location believed to be outside the plume from each of the southwest, west, north and east limits of the plume as defined in the 1997 RI Report. These four samples will be collected first and analyzed with a 48-hour turnaround time. The results will be reviewed in conjunction with the previously mapped location of the groundwater contaminant plume and additional samples will be collected at 50-foot offsets from the initial four sample locations in order to determine the limits of the plume (the initial sample will be from a location believed to be outside of the plume). In the event that the analytical data indicates that contaminants are present, the subsequent sample location will be 50-feet outward from the initial sample. In the event that the analytical data indicates that contaminants are not present, the subsequent sample location will be 50-feet inward from the initial sample. The groundwater samples will be analyzed for Target Compound List (TCL) VOCs. Each sample will be analyzed with a 48 hour turnaround time. Should the results of these samples fail to define the edge of the plume, further samples will be considered and discussed with NYSDEC. No further samples will be collected without approval of NYSDEC.

### 3.2.5 Subtask 2.5 – Subsurface Soil Sampling

Five soil borings will be installed to collect overburden soil samples to determine site geology and geotechnical characteristics. The soil borings will include three borings in the vicinity of the proposed off-site groundwater collection trench and two borings near the proposed permeable reactive barrier. The soil borings will be advanced to 25 feet below ground surface or three feet into the glacial till unit, whichever occurs first. Continuous split spoon samples will be collected from each boring, screened with a photoionization detector (PID) and logged for geotechnical characteristics, including standard penetration test results. Eight subsurface soil samples representing the saturated sandy aquifer unit (four samples) and glacial till aquiclude unit (four samples) will be selected for grain size analyses.

Cuttings generated from the construction of the boreholes will be handled in accordance with NYSDEC TAGM No. 4032 "Disposal of Drill Cuttings", dated November 1989. In general, this TAGM allows for on-site disposal of cuttings as long as certain criteria as to location and cover of cuttings are met. In the event that soil cuttings exhibit elevated PID measurements, the soil will be drummed and staged for later disposal at the Gowanda Electronics property.

### 3.2.6 Subtask 2.6 - Monitoring Well Installation, Development and Hydraulic Conductivity Testing

One bedrock and two overburden monitoring wells will be installed to further define the contaminant plume. The monitoring well locations will be based on the recommendations of the Fracture Trace Analysis report (February, 2002) and target areas where non-aqueous phase liquid (NAPL) may be present in bedrock or glacial till.

The bedrock well will be located on the Gowanda Electronics property near the existing extraction well and is anticipated to be 100 feet deep. The well will be installed by boring to the top of the till unit, grouting an 8-inch diameter permanent steel casing in place, then drilling to the top of rock, grouting a 5-inch diameter permanent steel casing in place and then coring 15 feet into bedrock. The bedrock well will be completed using 2-inch inside diameter (ID) schedule 40 PVC casing with 15-foot stainless steel well screen, but no sand pack to minimize the possible blockage of the well by loose weathered rock fragments. This well will also be incorporated into the groundwater elevation monitoring and sampling programs to verify local groundwater flow directions and the distribution of groundwater contaminants.

The two overburden monitoring wells will be located off-site, in the Torrance Place right-of-way. The overburden wells are anticipated to be approximately 25 feet deep and will be drilled using hollow stems augers. The wells will be completed at the interface of the sandy aquifer and glacial till unit, and constructed with 2-inch inside diameter (ID) schedule 40 PVC screen and 2-inch ID Schedule 40 PVC riser. Drill cuttings will be drummed and staged on Gowanda Electronics property for later off-site disposal as described in Section 3.2.5.

Upon completion of the monitoring wells, the wells will be developed by surging and pumping. In addition, 12 of the existing monitoring wells will be re-developed in preparation for groundwater sampling. The monitoring wells will be developed until a turbidity of 50 nephelometric turbidity units (NTUs) is achieved, or until field parameters, such as pH, specific conductance, turbidity and temperature, have stabilized. Water removed from the wells during well development will be contained in a 20,000-gallon frac tank to be located on the Gowanda Electronics property. The contents of the frac tank will be removed following the pumping test and disposed off-site.

In-situ hydraulic conductivity values will be determined for each of the three new wells and six selected existing wells by performing falling and rising head tests using the Bouwer and Rice method. Water displacement will be achieved by lowering a solid aluminum rod measuring 6 feet in length and 1-inch in diameter into the well. Changes in water level over time will be recorded using a pressure transducer and an electronic data logger. If the formation exhibits very slow recovery, the test may not be run until full recovery is achieved. Attempts will be made to allow the water to fall to at least two-thirds of the original level before stopping the test. All down-hole equipment will be decontaminated between wells.

### 3.2.7 Subtask 2.7 - Groundwater Sampling

Following the completion of well installations, a total of 15 groundwater samples will be collected from each of the three new and 12 existing monitoring wells, including monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11 and MW-12. The samples collected from the three new monitoring wells will be analyzed for TCL+30 VOCs and semivolatile organic compounds (SVOCs), pesticides, PCBs, Target Analyte List (TAL) metals and cyanide. Approximately 10% (one sample) of the groundwater samples collected from the existing monitoring wells will be analyzed for TCL+30 VOCs and SVOCs, pesticides, PCBs, TAL metals and cyanide. The remaining 11 samples collected from the existing monitoring wells will be analyzed for VOCs only.

A second round of groundwater samples will be collected from the 15 monitoring wells in the fall of 2004. Approximately 10% (two) of the groundwater samples collected during the second round of sampling will be analyzed for TCL+30 VOCs and SVOCs, pesticides, PCBs, TAL metals and cyanide. The remaining 13 samples will be analyzed for VOCs only. The monitoring wells will be purged of three volumes of water using dedicated disposable bailers prior to sampling. Purge water from round one sampling will be contained in a 20,000-gallon frac tank to be located on the Gowanda Electronics property. Round two purge water will be disposed in the existing groundwater treatment system, or drummed and disposed off-site. Groundwater samples will be collected using dedicated disposable bailers.

### 3.2.8 Subtask 2.8 - Groundwater Elevation Monitoring

Groundwater elevations in 15 monitoring wells, including all three new and 12 existing monitoring wells, will be measured manually on a quarterly basis until one year of data is collected. In addition, a rain gauge will be installed on-site and a temporary staff gauge will be installed in Thatcher Brook to monitor precipitation and stream water height. Groundwater, surface water and precipitation measurements will be coordinated, when possible, with other field activities, such as groundwater sampling to minimize travel. Water table and potentiometric surface maps will be developed based on synoptic water level measurements. These maps will be used to interpret groundwater flow direction under static conditions and to determine responses, if present, due to seasonal or precipitation variations.

### 3.2.9 Subtask 2.9 - Surveying

A land survey will be conducted for development of a topographic map, and to locate sample points and important site features identified in the field investigation. Upon completion of fieldwork, a New York State-licensed surveyor will establish the locations and elevations of each of the new monitoring wells and other sampling points. Elevations of all well casings and the corresponding locations will be determined to within 0.01 feet based on the North America Datum (NAD) 83 and added to the base map.

### 3.2.10 Subtask 2.10 - Data Usability Summary Report

D&B's Quality Assurance/Quality Control (QA/QC) Officer will conduct a data usability analysis. A Data Usability Report Summary Report (DUSR) will be prepared which will determine the adequacy of the data for environmental assessment and design purposes.

### 3.2.11 Subtask 2.11 – Pre-Design Field Activities Report

A Pre-Design Field Activities Report will be prepared after the completion of the field activities and prior to the Engineering Design Study. The report will be an interim document to be later included in the Engineering Design Report. The Pre-Design Field Activities report will consist of documentation of field activities, notation of any deviations from the work plan, a presentation of the data collected, interpretation of the data, and conclusions and recommendations appropriate to the site, including further investigation, if necessary, and special considerations for remedial design. Included in this task is a meeting with NYSDEC to review the report.

## **3.3 Task 3 - Engineering Design Study**

The engineering design study will obtain data for, and evaluate, the recommended remedial methods. The study will include an evaluation of the aquifer for groundwater extraction and treatment, the feasibility of horizontal well drilling for groundwater extraction in lieu of the collection trench, and the design requirements of a permeable reactive barrier and groundwater treatment system. A detailed description of each subtask is provided below.

### 3.3.1 Subtask 3.1 – Pumping Test

An aquifer test will be conducted by pumping water from a monitoring well to provide information to design the groundwater extraction system. The pumping test will be conducted at a monitoring well located within the contaminant plume. During the test, nearby monitoring well

water levels will be monitored using dedicated pressure transducers (e.g. Troll data loggers) and hand held water level measurement instruments (i.e. Solinst Water Level Indicator). Water levels will be measured to the nearest 0.01 feet at prescribed times during the pumping tests. Results of the pumping test will be used to determine the optimum rates and locations for the groundwater extraction system. It is anticipated that approximately 15,000 gallons of contaminated water will be pumped during the test. The pumped water will be temporarily stored in a 20,000-gallon frac tank to be located on the Gowanda Electronics property. Following the pumping test, the water in the frac tank will be disposed off-site.

### 3.3.2 Subtask 3.2 - Treatability Study

A laboratory scale treatability study will be conducted by D&B using representative groundwater samples from the pumping test. The study will use both composite samples and maximum concentration samples.

Jar testing, with pH adjustments with lime or sodium hydroxide and coagulants, will determine the effectiveness of settling in removing metals. Screening analysis will be performed using field-testing kits (Hach or equal). Periodically, selected samples will be forwarded to the laboratory for confirmation analysis. Coagulant aids, such as polymers, may also be tested if deemed necessary to enhance settling. The jar testing will indicate the volume of sludge that will be generated. The need for filtration will be evaluated based on the suspended solids analysis following settling.

Aeration studies to determine VOC removal will be accomplished using a batch sample(s) and a low head compressor with air flow meter. Samples will also be sent to Layne Christensen, Inc. (or other manufacturers of packed tower and tray aeration equipment) to evaluate conventional flow through treatment devices for VOC removal on a continual basis. Mathematical computations will determine the need for vapor phase treatment by either carbon absorption or thermal destruction.



Based on the treatability study and recommendations of aeration treatment system manufacturers, sizing parameters will be established for the design of the groundwater treatment system.

### 3.3.3 Subtask 3.3 - Horizontal Well Drilling Evaluation

Horizontal well drilling will be evaluated as a method for meeting the requirements of the pumping wells proposed for Torrance Place and the groundwater collection trench between Torrance Place and Chestnut Street. The goal of this evaluation will be to determine if horizontal well technology will be as effective as the groundwater extraction system presented in the ROD. The evaluation will involve a literature search, review of other similar successful projects utilizing horizontal wells and discussions with experienced horizontal well drillers. Site-specific data, including aquifer conditions observed as a result of the Pre-Design Field Activities and pumping test, will be considered during the evaluation.

### 3.3.4 Subtask 3.4 – Permeable Reactive Barrier Review

Design for the permeable reactive barrier will include discussions with vendors and a literature review. The literature review will include the United States Air Force Research Laboratory document titled *Design Guidance for Application of Permeable Reactive Barriers for Groundwater Remediation, March 31, 2000*. Applicable site-specific design information that will be obtained during the pre-design investigation, including the requirements of *Section 2.0 The Design Methodology*, will be identified and evaluated in this subtask. The permeable reactive barrier review will also include discussions with vendors who have experience designing and installing permeable reactive barriers. The discussion will involve determining if AVM Gowanda site conditions appear favorable for this technology and identifying specific considerations for installation that should be addressed in the design and bid specification preparation.

### 3.3.5 Subtask 3.5 – Engineering Design Report

The Engineering Design Report will be prepared under this task. A draft table of contents for the design report is presented in Table 3-2 of this work plan.

Treatment of extracted groundwater will be evaluated to determine the most appropriate and cost-effective treatment processes necessary to meet the Class B(T) surface water discharge requirements for Thatcher Creek with additional input from the NYSDEC Division of Water. This evaluation will also include determining the size/capacity of the treatment systems and the need for vapor phase treatment using the NYSDEC Air Guide 1. Groundwater pumping rates will be based on existing information and the results of the pre-design study.

In addition, evaluation of the location of the groundwater treatment systems will be made based upon available space and access, and proximity to the containment and groundwater extraction systems, and discharge locations. D&B personnel will determine the rights-of-way in the area of the site to appropriately locate the off-site groundwater extraction system and treated water discharge system. The location of all utilities will be determined for purposes of construction of the pumping systems and transmission piping. Certified boundary surveys will be completed by a New York State Licensed Surveyor on seven property parcels where access will be required for construction and maintenance of the remediation system.

The results of this task, which will include the results of the pre-design study, a layout of the location and configuration of the pumping, transmission and treatment systems, a schematic and sizing of the treatment processes and a preliminary construction cost estimate, will be incorporated into the engineering Design Report for NYSDEC review and approval prior to proceeding with preparation of the plans and specifications.

**Table 3-2**

**- D R A F T -**

**AVM GOWANDA SITE  
OPERABLE UNIT 1  
ENGINEERING DESIGN REPORT**

**TABLE OF CONTENTS**

<u>Section</u>	<u>Title</u>	<u>Page</u>
<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1-1</b>
1.1	Project Objective.....	1-
1.2	Site Location, Ownership and Access.....	1-
1.3	Site History.....	1-
1.4	Previous Investigations.....	1-
<b>2.0</b>	<b>PRE-DESIGN STUDY.....</b>	<b>2-1</b>
2.1	Hydrogeologic Investigation.....	2-
2.2	Groundwater Quality Evaluation.....	2-
2.3	Ambient Air and Soil Vapor Sampling.....	2-
2.4	Pumping Test.....	2-
2.5	Treatability Study.....	2-
2.6	Horizontal Well Evaluation.....	2-
2.7	Permit Requirements.....	2-
<b>3.0</b>	<b>BASIS OF DESIGN.....</b>	<b>3-1</b>
3.1	Discharge Standards (Air and Water).....	3-
3.2	Off-site Groundwater Extraction and Treatment System.....	3-
3.3	Groundwater Collection Trench (or Horizontal Extraction Wells).....	3-
3.4	Permeable Reactive Barrier.....	3-
<b>4.0</b>	<b>GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROCESS DESIGN.....</b>	<b>4-1</b>
4.1	General.....	4-
4.2	Selection of Treatment Processes.....	4-
4.2.1	VOC Removal.....	4-
4.2.2	Metals Removal.....	4-
4.2.3	Non-Aqueous Phase Liquid Removal.....	4-
4.2.4	Emissions Treatment.....	4-
4.2.5	System Location and Layout.....	4-

**Table 3-2 (continued)**

TABLE OF CONTENTS (continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
4.3	Extraction Wells and Piping.....	4-
4.3.1	Well Locations .....	4-
4.3.2	Screen Settings and Casing Size .....	4-
4.3.3	Well Pump Characteristics .....	4-
4.3.4	Piping (Size and Location).....	4-
4.4	Iron and Manganese Treatment.....	4-
4.4.1	General .....	4-
4.4.2	Iron and Manganese Data Analysis .....	4-
4.4.3	Precipitation (pH adjustment and coagulants).....	4-
4.4.4	Chemical Feed.....	4-
4.4.5	Filtration .....	4-
4.4.6	Wastewater Disposal.....	4-
4.5	Packed Tower (or Shallow Tray) Aeration System.....	4-
4.6	Emissions Gas Treatment System.....	4-
4.6.1	Packed Tower (or Shallow Tray) Aeration System Emissions Characteristics .....	4-
4.6.2	Carbon Adsorption/Thermal Oxidation .....	4-
4.7	Treatment System Building.....	4-
4.7.1	Soil Borings and Geotechnical Report .....	4-
4.7.2	Foundations .....	4-
4.7.3	Size and Type of Superstructure .....	4-
4.7.4	Sound Attenuation.....	4-
4.8	Electrical.....	4-
4.8.1	Power Supply Source .....	4-
4.8.2	Electrical Equipment .....	4-
4.9	Control Systems .....	4-
4.9.1	General Failure Alarms .....	4-
4.9.2	Extraction Wells.....	4-
4.9.3	Chemical Feed Equipment .....	4-
4.9.4	Iron and Manganese Treatment.....	4-
4.9.5	Backwash Wastewater Storage Tanks.....	4-
4.9.6	Packed Tower (or Shallow Tray) System.....	4-
4.9.7	Backwash Supply Water Storage Tanks.....	4-
4.9.8	Emissions Gas Treatment System .....	4-
4.9.9	Startup Sequence .....	4-
4.9.10	Telemetry Panel.....	4-

**Table 3-2 (continued)**

TABLE OF CONTENTS (continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
<b>5.0</b>	<b>GROUNDWATER COLLECTION TRENCH DESIGN (or HORIZONTAL EXTRACTION WELL)</b> .....	<b>5-1</b>
5.1	Collection Trench.....	5-
5.1.1	Location of Trench and Site Constraints.....	5-
5.1.2	Utility Mark Outs .....	5-
5.1.3	Construction Feasibility .....	5-
5.1.4	Design (Depth, length, Collection Piping, Pump Station, Force Main) .....	5-
5.2	Horizontal Extraction Wells.....	5-
5.2.1	Location of Wells .....	5-
5.2.2	Utility mark Outs.....	5-
5.2.3	Construction Feasibility .....	5-
5.2.4	Design (Diameter, Screen Length, Number of Wells, Pump Station, Force Main) .....	5-
<b>6.0</b>	<b>PERMEABLE REACTIVE BARRIER DESIGN</b> .....	<b>6-1</b>
6.1	Evaluation of Available Documents .....	6-
6.2	Applicability of System.....	6-
6.3	Location of Barrier and Site Constraints .....	6-
6.4	Design .....	6-
<b>7.0</b>	<b>DISCHARGE SYSTEM DESIGN</b> .....	<b>7-1</b>
7.1	Volume and Frequency of Discharges.....	7-
7.2	Treated Groundwater Discharge.....	7-
7.2.1	Location of Discharge .....	7-
7.2.2	Pipe Size and Route .....	7-
7.2.3	Discharge Structure .....	7-
7.2.4	Sampling Point .....	7-
7.3	Wastewater Disposal .....	7-
7.3.1	Characteristics of Backwash Water and Sludges .....	7-
7.3.2	Pretreatment .....	7-
7.3.3	Storage.....	7-
7.3.4	Disposal Alternatives .....	7-

**Table 3-2 (continued)**

**TABLE OF CONTENTS (continued)**

<u>Section</u>	<u>Title</u>	<u>Page</u>
8.0	RECOMMENDATIONS .....	8-1
9.0	COST EVALUATION.....	9-1
9.1	Preliminary Construction Cost .....	9-
9.2	Estimated Operation and Maintenance Annual Cost .....	9-

**List of Appendices**

---

**List of Figures**

---

**List of Tables**

---

### **3.4 Task 4 – Supplemental Investigation and Interim Remedial Measures**

#### **3.4.1 Subtask 4.1 – Individual Source Area Investigation**

Results of the Pre-Design Field Activities may suggest possible source areas or other areas requiring further investigation necessary to prepare the remedial design. If necessary, and with the approval of the NYSDEC, further focused study may be required and may include additional soil, soil vapor, and groundwater sample collection and analyses. If such work is required and agreed upon by NYSDEC, an amendment to this work plan will be prepared.

#### **3.4.2 Subtask 4.2 – Interim Remedial Measure**

In the event that the Pre-Design Field Activities reveals source areas or areas of significant contamination which are a threat to human health or the environment, interim remedial measures (IRM) may be proposed. The scope of the IRM will be developed with NYSDEC and an amendment to this work plan prepared.

#### **3.4.3 Subtask 4.3 – Design and Installation of Air Venting Systems**

Indoor air sampling results from the pre-design investigation will be compiled and submitted to the NYSDOH for review. Should NYSDOH determine potential human health hazards in the homes evaluated, the installation of air venting systems may be required. If NYSDEC requests such work, a work plan amendment describing the scope and cost the work will be prepared.

### **3.5 Task 5 – Plans and Specifications**

Plans and specifications will be prepared for use in competitively bidding the construction, operation and maintenance of the groundwater remediation system. The plans and specifications will be prepared in conformance with New York State and applicable federal laws,

rules, regulations and guidelines. This submittal will include a complete design for the groundwater remediation system, including the extraction wells, collection trench, conveyance system, treatment system, discharge system and reactive barrier wall, as well as system operation and maintenance (O&M) requirements. The contract documents will include NYSDEC's most recent standard construction contract clauses and format. Included in this task will be the minimum requirements for the construction quality assurance and health and safety plans (the plans themselves will be prepared by the construction contractor).

### 3.5.1 Subtask 5.1 - Preliminary Design

The preliminary construction plans and specifications (six copies) will be submitted to NYSDEC for review and approval when the design is 30% complete. The preliminary design will define the functional aspects of the project and how it complies with any applicable regulations (air permit calculations, wastewater discharge requirements, etc.). The preliminary design plans will include verification of existing field conditions, supporting data, documentation and design calculations.

Property deed records (to the extent necessary and currently available) will be researched to identify all potentially impacted property owners, and/or those parties with property rights. An updated tax map will also be provided to the NYSDEC along with a preliminary listing of all proposed temporary and permanent easements, right of ways and permits necessary to implement the remedial design, and associated operation and maintenance. Additional surveying, if necessary, will be conducted to identify property boundaries required for temporary and long-term easements. Additional surveying, if required, is not included as part of this work plan.

A schedule for meeting the critical access and permit requirements to allow bidding the project will be developed in cooperation with the NYSDEC. At this time, a determination will be made as to whom (NYSDEC or D&B) will be responsible for obtaining required permits, completing applications and obtaining access agreements. The schedule will ensure the execution of all necessary access agreements, right of ways and permits prior to design completion and preparation of final bid documents.



Six copies of the preliminary draft plans and specifications will be submitted to NYSDEC for review and comment. Supporting data, documentation and design calculations, as applicable, will be provided with the design documents. The preliminary design submittal will comprise a set of plans and a table of contents for the specifications. This subtask includes attendance at one meeting at NYSDEC's Albany office to review the comments on the preliminary draft design submittal.

### 3.5.2 Subtask 5.2 - Intermediate Design

Following receipt of comments on the preliminary design submittal from NYSDEC, three copies of the intermediate design plans and specifications (60% complete) will be submitted to NYSDEC for review and approval, together with supporting data/documentation and design calculations, as applicable.

In addition, as part of this subtask, a draft detailed construction cost estimate will be prepared. The estimate will be prepared on a bid item basis as provided in the bid schedule in order to provide an estimate of quantities and cost for each bid item. The estimated quantities on the bid schedule in the final contract documents will be utilized to provide a total engineering cost estimate for construction, and initial operation and maintenance of the remediation system.

### 3.5.3 Subtask 5.3 - Final Design

Comments provided by the NYSDEC on the intermediate design submittal will be incorporated into the final plans and specifications, and into the NYSDEC Standard Contract. The bid form, specifications and drawings will be coordinated and crosschecked to ensure consistency within the contract documents. Written documents will be provided to NYSDEC identifying the changes required to deem the plans and specifications acceptable for bidding. The final design documents will be signed and stamped by a New York State Licensed Professional Engineer and seven copies provided to NYSDEC for final review.

Along with the final design, a Limited Site Data Summary Report will be prepared that will accompany the bid documents. This report will include a summary of the site conditions and available data to help bidders understand the requirements of the project.

After approval of the final design by the NYSDEC, up to seventy-five (75) copies of the plans, specifications and Limited Site Data Report will be prepared for distribution to potential bidders. A copy of all final plans, specifications and reports will also be submitted in Adobe PDF format.

#### 3.5.4 Subtask 5.4 – Project Cost Estimate

A final pre-bid cost estimate will be prepared and include estimated costs for the construction, operation and maintenance of the groundwater remediation system. The pre-bid estimate will be supported by final quantity take off sheets, and the basis for the development of unit and lump sum prices used in the estimate. The estimate will be prepared on a bid item basis as provided in the bid schedule.

#### 3.5.5 Subtask 5.5 – Final Design Report

A Final Design Report will be prepared based on the results of the pre-design field activities and the engineering design study that will provide the results of the study and describe the major elements of the project, the basis of design, supporting data, documentation, design calculations, assumptions and uncertainties. Corresponding portions of the Design Report will be submitted along with each major submittal of the plans and specifications (i.e., 30%, 60% (if required), and final design).

### **3.6 Task 6 - Citizen Participation**

Assistance will be provided to the NYSDEC in support of citizen participation activities, such as public meetings, as requested by the NYSDEC. Presentation materials, such as summary documents, maps and related handouts, will be prepared for the meetings. It is assumed that

preparation for and attendance at one meeting will be required, which will be held in the vicinity of the project site.

### **3.7 Task 7 – Pre-Award Services**

Pre-award services will be provided to assist NYSDEC with the solicitation and selection of a remedial construction contractor.

Elements of this task will include:

- Assistance to the NYSDEC in conducting a pre-bid conference and site visit. Minutes will be maintained during the conference and provided to NYSDEC for distribution to bidders.
- Preparation of responses and addenda to the plans and specifications based on questions and comments received at and subsequent to the pre-bid conference.
- Review of submittals received by the apparent low bidder for compliance with the requirements of the contract documents. The review will include evaluation of the health and safety plan and construction quality assurance plan.



# Section 4





## **4.0 PROJECT MANAGEMENT**

### **4.1 Project Schedule and Key Milestones**

The schedule for this project is provided in Figure 4-1. Key milestones are identified in order to monitor work progress. Specific deadlines for completion of tasks and subtasks are established throughout the project to ensure timely completion of work. The following is the list of the primary milestones for this project:

1. Submittal of Draft Project Management Work Plan
2. Submittal of Draft Pre-Design Field Activities Report
3. Submittal of Draft Engineering Design Report
4. Submittal of Preliminary Draft Plans and Specifications
5. Submittal of Draft Final Plans and Specifications, and Draft Construction Cost Estimate
6. Submittal of Final Plans and Specifications, and Final Construction Cost Estimate

### **4.2 Project Management, Organization and Key Technical Personnel**

Dvirka and Bartilucci Consulting Engineers will be the prime consultant responsible for this project. The following subcontractors will be used on the project for the noted services:

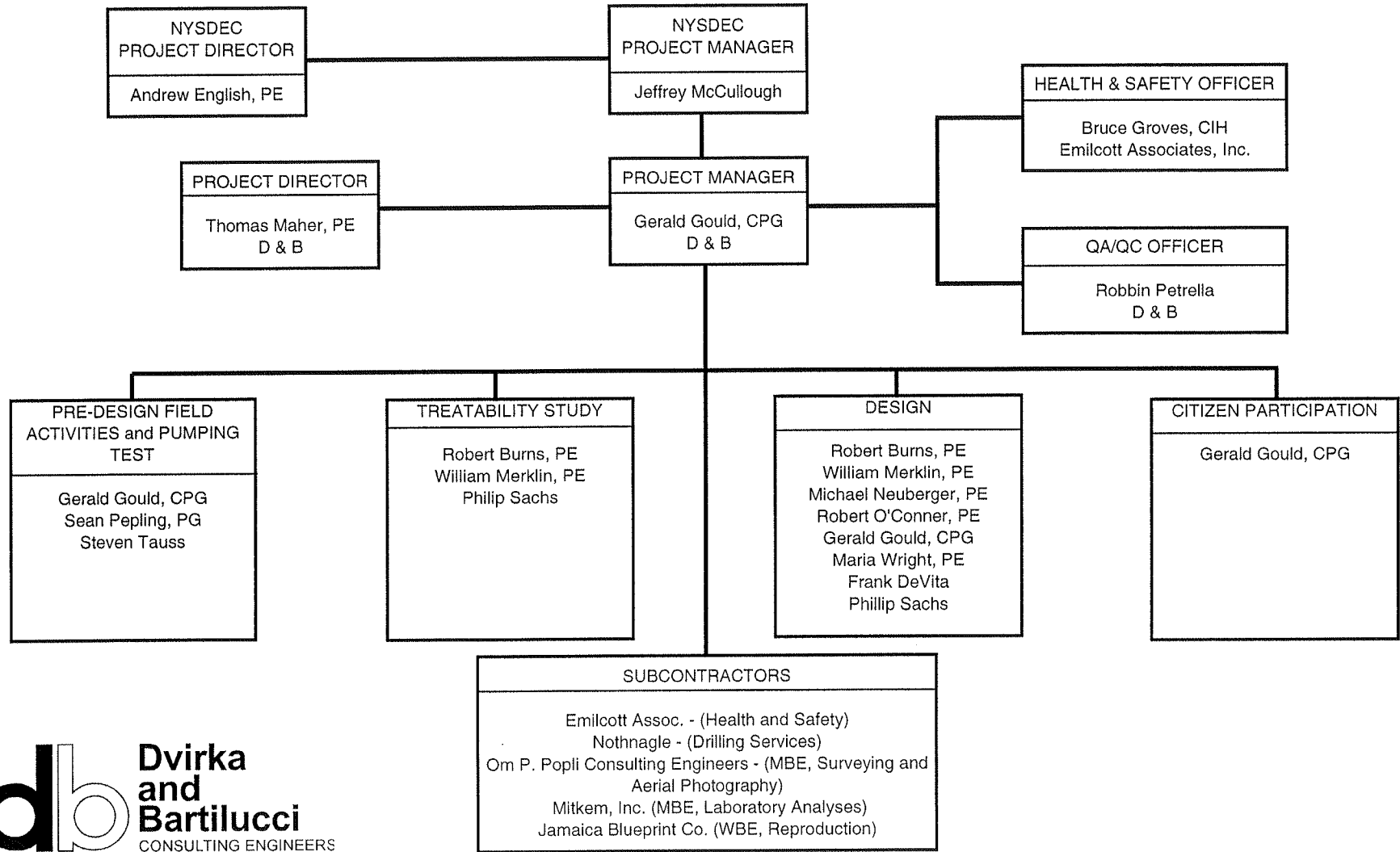
- Emilcott Associates – Health and Safety
- Nothnagle, Inc. – Soil Borings and Monitoring Well Installation
- Om P. Popli Consulting Engineers (WBE) – Surveying and Aerial Photography
- Mitkem Corporation (MBE) – Sample Analyses
- Jamaica Blueprint Co., Inc. (WBE) – Reproduction

**Figure 4-1**  
**Project Schedule**  
**AVM Gowanda Site**

Item	Action	Start Date	Duration (weeks)	Completion Date
<b>TASK 1 - WORK PLAN DEVELOPMENT</b>				
1	Issue Work Assignment		(time zero)	11/21/2003
2	Site Visit/Scoping Session		3	12/10/2003
3	Submission of Draft Project Management Work Plan		5	1/16/2004
4	NYSDEC Review		7	3/5/2004
5	Submission of Final Project Management Work Plan		6	4/16/2004
6	Notice to Proceed		4	5/14/2004
<b>TASK 2 - PRE-DESIGN FIELD ACTIVITIES</b>		4/9/2004		
7	Field Work		14	7/16/2004
8	Draft Pre-design Field Activities Report		7	9/3/2004
9	NYSDEC Review		4	10/1/2004
<b>Task 3 - ENGINEERING DESIGN STUDY</b>		6/1/2004		
10	Pumping Test and Treatability Study		8	7/27/2004
11	Horizontal Well and PRB Review	7/27/2004	4	8/24/2004
12	Draft Engineering Design Report (includes Final Pre-design Field Activities Report)		9	10/26/2004
13	NYSDEC Review		4	11/23/2004
<b>TASK 4 - SUPPLEMENTAL INVESTIGATION &amp; IRM</b>			0	
<b>TASK 5 - PLANS &amp; SPECIFICATIONS</b>		11/23/2004		
14	Preliminary Design (30% Design)		16	3/15/2005
15	Intermediate Design (60% Design)		9	5/17/2005
16	Final Design		7	7/5/2005
<b>TASK 6 - CITIZENS PARTICIPATION</b>				
17	Public Meeting (to be held after approval of Engineering Design Report)		1	12/15/2004
<b>TASK 7 - PRE-AWARD SERVICES</b>			0	



**FIGURE 4-2**  
**PROJECT TEAM ORGANIZATION CHART**  
 AVM GOWANDA SITE  
 OPERABLE UNIT 1 REMEDIAL DESIGN  
 GOWANDA, NEW YORK









**5.0 SCHEDULE 2.11s**



Schedule 2.11 (a)  
 Summary of Work Assignment Price  
 AVM Gowanda Site  
 Summary  
 Work Assignment Number D003600-38

1.	Direct Salary Costs (Schedules 2.10 (a) and 2.11(b))	\$123,980
2.	Indirect Costs (Schedule 2.10 (g))	\$196,260
3.	Direct Non-Salary Costs (Schedules 2.11 (c)and (d))	\$17,692

Subcontract Costs

Cost-Plus-Fixed-Fee Subcontracts (Schedules 2.11(e))

	<u>Name of Subcontractor</u>	<u>Services To Be Performed</u>	<u>Subcontract Price</u>
A.	Om P. Popli, PE, LS, PC	Air Photo Topo Map	\$8,760
B.	Om P. Popli, PE, LS, PC	Survey new points	\$4,350
C.	Om P. Popli, PE, LS, PC	Property Survey	\$3,210
4.	Total Cost-Plus-Fixed-Fee Subcontracts		\$16,320

Unit Price Subcontracts (Schedules 2.11(f))

	<u>Name of Subcontractor</u>	<u>Services To Be Performed</u>	<u>Subcontract Price</u>
A.	Emilcott	HASP	\$1,500
B.	Nothnagle Drilling, Inc.	Borings and Well Installation	\$41,211
C.	MITKEM, Inc.	Sample Analysis	\$34,445
D.	Diamond Transport, LLC	Water Disposal	\$13,605
E.	Jamaica Blue Print Co.	Reproduction	\$8,188
5.	Total Unit Price Subcontracts		\$98,949
6.	Subcontract Management Fee		\$3,124
7.	Total Subcontract Costs (lines 4 + 5 + 6)		\$118,394
8.	Fixed Fee (Schedule 2.10 (h))		\$26,900

9.	Total Work Assignment Price (lines 1 + 2 + 3 + 7 +8)	\$483,226
----	--	-----------

SCHEDULE 2.11 (b)  
SUMMARY  
AVM Gowanda Site  
Work Assignment Number D003600-38

Average NSPE Wage Rates	IX	VIII	VII	VI	V	IV	III	II	I	TOTAL HOURS
as of July 1,2003	\$65.61	\$61.47	\$53.43	\$43.03	\$36.16	\$30.54	\$27.72	\$24.06	\$19.19	
as of July 1,2004	\$67.58	\$63.31	\$55.03	\$44.32	\$37.24	\$31.46	\$28.55	\$24.78	\$19.77	
Task 1- Work Plan Develop.	28	4	0	74	82	0	0	20		208
Task 2- Pre-Design Field	8	0	0	128	582	0	0	236		954
Task 3- Engineering Design	8	36	116	128	128	140	80	48		684
Task 4- Supplemental Inv.	0	0	0	0	0	0	0	0		0
Task 5-Plans and Specif.	8	28	217	324	60	272	304	92		1305
Task 6-Citizen Participation	2	0	0	24	16	0	4	4		50
Task 7-Pre-Award Services	4	0	4	16	38	0	0	0		62
Subtotal 2003 Hours	36	4	0	202	664	0	0	256	0	1162
Subtotal 2004 Hours	22	64	337	492	242	412	388	144	0	2101
Total Hours	58	68	337	694	906	412	388	400	0	3263
Total Direct Labor Cost	\$3,849	\$4,298	\$18,546	\$30,498	\$33,023	\$12,960	\$11,078	\$9,728	\$0	\$123,980



SCHEDULE 2.11 (b)-1  
SUMMARY  
AVM Gowanda Site  
Work Assignment Number D003600-38

Average NSPE Wage Rates	IX	VIII	VII	VI	V	IV	III	II	I	TOTAL HOURS
as of July 1,2003	\$65.61	\$61.47	\$53.43	\$43.03	\$36.16	\$30.54	\$27.72	\$24.06	\$19.19	
as of July 1,2004	\$67.58	\$63.31	\$55.03	\$44.32	\$37.24	\$31.46	\$28.55	\$24.78	\$19.77	
Task 1- Work Plan Develop.	2	0	0	3	2	0	0	4	0	11
Task 2- Pre-Design Field	0	0	0	6	4	0	0	14	0	24
Task 3- Engineering Design	1	0	0	0	0	0	0	18	0	19
Task 4- Supplemental Inv.	0	0	0	0	0	0	0	0	0	0
Task 5-Plans and Specif.	0	0	0	0	0	0	0	20	0	20
Task 6-Citizen Participation	0	0	0	0	0	0	0	4	0	4
Task 7-Pre-Award Services	0	0	0	0	0	0	0	12	0	12
Subtotal 2003 Hours	2	0	0	9	6	0	0	18	0	35
Subtotal 2004 Hours	1	0	0	0	0	0	0	54	0	55
Total Hours	3	0	0	9	6	0	0	72	0	90
Total Direct Labor Cost	\$199	\$0	\$0	\$387	\$217	\$0	\$0	\$1,771	\$0	\$2,574

BREAKDOWN OF ADMINISTRATIVE  
 LOE HOURS ON SCHEDULE 2.11(b-1)

ADMIN ACTIVITY	WORK PLAN DEVELOPMENT													
	Conflict of Interest Checks						Prepare 2.11 Schedules							
NSPE	IX	VIII	VII	VI	V	IV	VIII	VII	VI	V	IV	III	II	I
TASK 1	1.0								2.0					
TASK 2									2.0	2.0				
TASK 3														
TASK 4														
TASK 5														
TASK 6														
TASK 7														
TOTAL	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	2.0	0.0	0.0	0.0	0.0

ADMIN ACTIVITY	REVIEW WORK ASSIGNMENT (WA) PROGRESS																											
	Conduct Progress Reviews						Prepare Monthly Report & Update Schedules						MBE/WBE Activities						Program Management									
NSPE	VIII	VII	VI	V	IV	III	VIII	VII	VI	V	IV	III	II	I	VIII	VII	VI	V	IV	III	II	I	IX	VIII	VII	VI	V	IV
TASK 1			1.0																1.0					1.0				
TASK 2			2.0						2.0	1.0																		
TASK 3																												
TASK 4																												
TASK 5																												
TASK 6																												
TASK 7																												
TOTAL	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	

ADMIN ACTIVITY	CAP PREPARATION												MISCELLANEOUS															
	Prepare Monthly Cost Control Report & CAP						Oversee CAP						Update NSPE List						Equipment Use and Inventory				Word Processing and Report Preparation					
NSPE	VIII	VII	VI	V	IV	III	II	I	IX	VIII	VII	VI	VIII	VII	VI	V	IV	III	II	I	IV	III	II	I	IV	III	II	I
TASK 1							4																					
TASK 2							10																					
TASK 3							14		1.0							1												
TASK 4																												
TASK 5							16																					
TASK 6							4																					
TASK 7							12																					
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ADMIN ACTIVITY	Total Adm. LOE (hrs)								
	IX	VIII	VII	VI	V	IV	III	II	I
TASK 1	2	0	0	3	2	0	0	4	0
TASK 2	0	0	0	6	4	0	0	14	0
TASK 3	1	0	0	0	0	0	0	18	0
TASK 4	0	0	0	0	0	0	0	0	0
TASK 5	0	0	0	0	0	0	0	20	0
TASK 6	0	0	0	0	0	0	0	4	0
TASK 7	0	0	0	0	0	0	0	12	0
TOTAL	3	0	0	9	6	0	0	72	0

SCHEDULE 2.11 (C)  
 DIRECT NON-SALARY COSTS  
 AVM Gowanda Site  
 Work Assignment Number D003600-38

ITEM	MAXIMUM REIMBURSEMENT RATE	UNIT	ESTIMATED NUMBER OF UNITS	TOTAL ESTIMATED COSTS
<b>IN-HOUSE</b>				
Outside Services	\$50.00	set	2	\$100
Express Mail	\$40.00	package	2	\$80
Level D Safety Equipment	\$14.00	(\$/person/day)	40	\$560
Level C Safety Equipment	\$40.00	(\$/person/day)	8	\$320
Level B Safety Equipment	\$50.00	(\$/person/day)	0	\$0
Meals	\$31.00	/day	30	\$930
Lodging	\$55.00	/day	30	\$1,650
<b>TRAVEL</b>				
Air	\$400.00	roundtrip	2	\$800
Transportation (Personal Car)	\$0.375	mile	8500	\$3,188
Tolls	\$20.00	week	13	\$260
Car Rental	\$255.00	week	4	\$1,020
Gas	\$80.00	week	4	\$320
<b>TOTAL DIRECT NON-SALARY COSTS</b>				<b>\$9,228</b>

Schedule 2.11 (c)  
Direct Non-Salary Costs  
AVM Gowanda Site  
Work Assignment Number D003600-38

Summary

Item	Reimbursement Rate	Task 1		Task 2		Task 3		Task 4		Task 5		Task 6		Task 7		Total Est.	Total
		Est. No. of Units	Total Cost	Est. No. of Units	Total Cost	Est. No. of Units	Total Cost	Est. No. of Units	Total Cost	Est. No. of Units	Total Cost	Est. No. of Units	Total Cost	Est. No. of Units	Total Cost	No. of Units	Estimated Cost
<b>A. Travel</b>																	
1. Meals	\$31 /day*		\$0.00	28	\$868.00		\$0.00		\$0.00		\$0.00		\$0.00	2	\$62.00	30	\$930.00
2. Lodging	\$55 /day		\$0.00	28	\$1,540.00		\$0.00		\$0.00		\$0.00		\$0.00	2	\$110.00	30	\$1,650.00
3. Air Travel	400 /round trip	1	\$400.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	1	\$400.00	2	\$800.00
4. Transportation (Personal Car)	\$0.375 /mile	1000	\$375.00	5000	\$1,875.00	1000	\$375.00		\$0.00		\$0.00	1000	\$375.00	500	\$187.50	8,500	\$3,187.50
5. Tolls	\$20.00 /trip	2	\$40.00	10	\$200.00	1	\$20.00		\$0.00		\$0.00		\$0.00		\$0.00	13	\$260.00
6. Car Rental	\$255.00 /week		\$0.00	4	\$1,020.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	4	\$1,020.00
7. Gas	\$80.00 /week		\$0.00	4	\$320.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	4	\$320.00
Subtotal (Travel)			\$815.00		\$5,823.00		\$395.00		\$0.00		\$0.00		\$375.00		\$759.50		\$8,167.50
<b>B. Miscellaneous (Expenses)</b>																	
1. Outside Services**	\$50.00 /set	2	\$100.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	2	\$100.00
2. Express Mail	\$40.00 /package	2	\$80.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	2	\$80.00
Subtotal (Misc. Expenses)			\$180.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$180.00
<b>C. Personal Protective Equipment</b>																	
1. Level D Safety Equipment	\$14.00 (\$/person/day)		\$0.00	40	\$560.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	40	\$560.00
2. Level C Safety Equipment	\$40.00 (\$/person/day)		\$0.00	8	\$320.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	8	\$320.00
3. Level B Safety Equipment	\$50.00 (\$/person/day)		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0	\$0.00
Subtotal (Protective Equipment)			\$0.00		\$880.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$880.00
<b>TOTAL</b>			\$995.00		\$6,703.00		\$395.00		\$0.00		\$0.00		\$375.00		\$759.50		\$9,227.50

Footnote:

In-house costs for computer services, postage, reproduction, printing, and telephone are not allowable as direct non-salary costs. These costs should be included in the indirect cost pool used to determine the indirect cost percentage for the engineer.

\* Maximum allowable rate for Cattaraugus County, NY

\*\* Includes photo finishing, reproduction and any other costs not associated with in-house capabilities.

SCHEDULE 2.11 (d) 1  
 EQUIPMENT PURCHASED UNDER THE CONTRACT  
 AVM Gowanda Site  
 Work Assignment Number D003600-38  
 Summary

ITEM	ESTIMATED PURCHASE PRICE	O&M RATE (\$/per month)	TERM OF USAGE (MONTHS)	ESTIMATED USAGE COST (COL. 2 + [3X4])
Treatability Study Equipment	\$4,100.00		1	\$4,100.00
			TOTAL	\$4,100.00

SCHEDULE 2.11 (d) 2  
EQUIPMENT CONSULTANT OWNED

AVM Gowanda Site  
Work Assignment Number D003600-38  
Summary

ITEM	PURCHASE PRICE X 85%	USAGE RATE (\$/day)	CAPITAL RECOVERY RATE (\$/Unit of Time)	O & M RATE (\$/Unit of Time)	ESTIMATED USAGE (days)	ESTIMATED USAGE COST (Col. 3x6)
						\$0
					TOTAL	\$0

Notes:

Usage Rate = Capital Recovery Rate + O&M rate

The maximum usage rate for an item of equipment reverts to the O&M rate when the total usage reimbursement exceed 85% of the purchase price.

SCHEDULE 2.11 (d) 3  
 EQUIPMENT  
 VENDOR RENTED  
 AVM Gowanda Site  
 Work Assignment Number D003600-38  
 Summary

ITEM	MAXIMUM REIMBURSEMENT RATE	TIME PERIOD	ESTIMATED USAGE (period of time)	ESTIMATED USAGE COST (Col. 2 X 3)
Horiba U-22 Water checker	\$300	week	4	\$1,200
Photoionization Detector	\$200	week	4	\$800
MiniTroll Data Logger	\$225	week	2	\$450
Persitaltic Pump	\$75.00	week	2	\$150
Air Sampling Pump	\$50.00	week	1	\$50
Hammer Drill and Bit	\$200.00	week	2	\$400
			Total	\$3,050

SCHEDULE 2.11 (d) 4  
 EXPENDABLE SUPPLIES  
 AVM Gowanda Site  
 Work Assignment Number D003600-38  
 Summary

ITEM	ESTIMATED QUANTITY	UNITS	UNIT COST	TOTAL BUDGETED COST (COL. 2 X 3)
Cell Phone	2	months	\$120.00	\$240
Office supplies, field books, pens, pencils	1	each	\$100.00	\$100
Sampling Supplies- Ice, plastic bags, packing tape ...	12	each	\$10.00	\$120
Soil Implants	0	each	\$100.00	\$0
				\$0
				\$0
				\$0
			TOTAL	\$460



SCHEDULE 2.11 (D) 5  
 CONSUMABLE SUPPLIES  
 AVM Gowanda Site  
 Work Assignment Number D003600-38  
 Summary

ITEM	ESTIMATED QUANTITY	UNIT COST	TOTAL BUDGETED COST (COL. 2 X 3)
Miscellaneous Supplies	1	\$250.00	250
Sieve Analyses	5.0	\$90.00	\$450
Teflon tubing	2	\$77.00	\$154
		TOTAL	\$854

ITEM DESCRIPTION	UNIT	QUANTITY	Parratt-Wolff, Inc.		Nothnagle Drilling, Inc.		Uni-Tech Drilling Company, Inc.		Delta Well and Pump Company, Inc.		
			UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	
1. A. MOBILIZATION/DEMOBILIZATION, INCLUDING SET-UP, SITE BREAKDOWN, CLEANUP, REPAIR, INITIAL AND FINAL EQUIPMENT DECONTAMINATION, TRAVEL, LODGING, MEALS AND LABOR FOR SITE RESTORATION.		2	\$1,500	\$3,000	\$0	\$0	TBD		TBD		
B. CONSTRUCTION AND REMOVAL OF DECON PAD	Lump Sum	1	400	400	850	850	425	425	800	800	
C. WELL/BORING SET-UP	Per Well/Boring	18	200	3,600	100	1,800	200	3,600	300	5,400	
2 DRILLING TECHNIQUES											
2A. HOLLOW STEM AUGER											
(1) 0-50 FEET IN DEPTH											
A. 2.25- In. ID HSA	Lineal Foot	300	12	0	10	0	12	0	17	0	
B. 3.25- In. ID HSA	Lineal Foot		12	3,600	10	3,000	14	4,200	17	5,100	
C. 4.25- In. ID HSA	Lineal Foot		50	13	650	12	600	14	700	18	900
D. 6.25- In. ID HSA	Lineal Foot		16	0	14	0	16	0	20	0	
E. 8.25- In. ID HSA	Lineal Foot		24	0	24	0	18	0	50	0	
(2) 50-100 FEET IN DEPTH											
A. 3.25- In. ID HSA	Lineal Foot		13	0	12	0	14	0	17	0	
B. 4.25- In. ID HSA	Lineal Foot		15	0	14	0	14	0	17	0	
C. 6.25- In. ID HSA	Lineal Foot		20	0	16	0	17	0	21	0	
D. 8.25- In. ID HSA	Lineal Foot		NA	0	28	0	20	0	60	0	
(3) 100-200 FEET IN DEPTH											
A. 3.25- In. ID HSA	Lineal Foot		NA	0	16	0	18	0	19	0	
B. 4.25- In. ID HSA	Lineal Foot		NA	0	18	0	22	0	20	0	
C. 6.25- In. ID HSA	Lineal Foot		NA	0	20	0	26	0	30	0	
2B CABLE TOOL- Flush Joint or Coupled Casing											
(1) 0-50 FEET IN DEPTH											
A. 4-INCH ID CASING	Lineal Foot		25	0	15	0	20	0	NA	0	
B. 6-INCH ID CASING	Lineal Foot		30	0	20	0	27	0	NA	0	
C. 8-INCH ID CASING	Lineal Foot		50	0	28	0	30	0	NA	0	
(2) 50-100 FEET IN DEPTH											
A. 4-INCH ID CASING	Lineal Foot		35	0	16	0	20	0	NA	0	
B. 6-INCH ID CASING	Lineal Foot		45	0	22	0	27	0	NA	0	
C. 8-INCH ID CASING	Lineal Foot		NA	0	30	0	30	0	NA	0	
(3) 100-200 FEET IN DEPTH											
A. 4-INCH ID CASING	Lineal Foot		60	0	20	0	20	0	NA	0	
B. 6-INCH ID CASING	Lineal Foot		NA	0	28	0	27	0	NA	0	
C. 8-INCH ID CASING	Lineal Foot		NA	0	42	0	30	0	NA	0	
(4) GREATER THAN 200 FEET IN DEPTH											
A. 4-INCH ID CASING	Lineal Foot		NA	0	30	0	25	0	NA	0	
B. 6-INCH ID CASING	Lineal Foot		NA	0	40	0	32	0	NA	0	
C. 8-INCH ID CASING	Lineal Foot		NA	0	60	0	35	0	NA	0	
2C SPIN TEMPORARY FLUSH JOINT CASTING											
(1) 0-50 FEET IN DEPTH											
A. 4-INCH ID CASING	Lineal Foot		30	0	15	0	35	0	25	0	
B. 6-INCH ID CASING	Lineal Foot		40	0	20	0	65	0	NA	0	
C. 8-INCH ID CASING	Lineal Foot		60	0	28	0	72	0	NA	0	
(2) 50-100 FEET IN DEPTH											
A. 4-INCH ID CASING	Lineal Foot		40	0	16	0	35	0	25	0	
B. 6-INCH ID CASING	Lineal Foot		50	0	22	0	65	0	NA	0	
(3) 100-200 FEET IN DEPTH											
A. 4-INCH ID CASING	Lineal Foot		60	0	20	0	40	0	27	0	
B. 6-INCH ID CASING	Lineal Foot		NA	0	28	0	70	0	NA	0	

ITEM DESCRIPTION	UNIT	QUANTITY	Parratt-Wolff, Inc.		Nothnagle Drilling, Inc.		Uni-Tech Drilling Company, Inc.		Delta Well and Pump Company, Inc.	
			UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
<b>MUD ROTARY</b>										
(1) 0-50 FEET IN DEPTH										
A. 4-INCH DIAMETER BIT	Lineal Foot		30	0	16	0	12	0	NA	0
B. 6-INCH DIAMETER BIT	Lineal Foot		40	0	20	0	13	0	50	0
C. 8-INCH DIAMETER BIT	Lineal Foot	30	60	1,800	28	840	15	450	55	1,650
D. 10-INCH DIAMETER BIT	Lineal Foot	20	80	1,600	35	700	20	400	57	1,140
(2) 50-100 FEET IN DEPTH										
A. 4-INCH DIAMETER BIT	Lineal Foot		35	0	18	0	12	0	NA	0
B. 6-INCH DIAMETER BIT	Lineal Foot		45	0	24	0	13	0	50	0
C. 8-INCH DIAMETER BIT	Lineal Foot	35	65	2,275	32	1,120	15	525	55	1,925
D. 10-INCH DIAMETER BIT	Lineal Foot		90	0	40	0	22	0	57	0
(3) 100-200 FEET IN DEPTH										
A. 4-INCH DIAMETER BIT	Lineal Foot		35	0	20	0	14	0	NA	0
B. 6-INCH DIAMETER BIT	Lineal Foot		45	0	26	0	16	0	45	0
C. 8-INCH DIAMETER BIT	Lineal Foot		65	0	34	0	18	0	50	0
D. 10-INCH DIAMETER BIT	Lineal Foot		90	0	42	0	28	0	55	0
(4) GREATER THAN 200 FEET IN DEPTH										
A. 4-INCH DIAMETER BIT	Lineal Foot		40	0	28	0	18	0	NA	0
B. 6-INCH DIAMETER BIT	Lineal Foot		50	0	34	0	20	0	40	0
C. 8-INCH DIAMETER BIT	Lineal Foot		70	0	42	0	24	0	45	0
<b>AIR ROTARY</b>										
(1) 0-50 FEET IN DEPTH										
A. 4-INCH DIAMETER BIT	Lineal Foot		30	0	16	0	14	0	NA	0
B. 6-INCH DIAMETER BIT	Lineal Foot		40	0	20	0	16	0	NA	0
C. 8-INCH DIAMETER BIT	Lineal Foot		60	0	28	0	18	0	NA	0
(2) 50-100 FEET IN DEPTH										
A. 4-INCH DIAMETER BIT	Lineal Foot		30	0	18	0	14	0	NA	0
B. 6-INCH DIAMETER BIT	Lineal Foot		40	0	24	0	16	0	NA	0
C. 8-INCH DIAMETER BIT	Lineal Foot		60	0	32	0	18	0	NA	0
(3) 100-200 FEET IN DEPTH										
A. 4-INCH DIAMETER BIT	Lineal Foot		35	0	20	0	14	0	NA	0
B. 6-INCH DIAMETER BIT	Lineal Foot		45	0	26	0	16	0	NA	0
C. 8-INCH DIAMETER BIT	Lineal Foot		65	0	34	0	18	0	NA	0
(4) GREATER THAN 200 FEET IN DEPTH										
A. 4-INCH DIAMETER BIT	Lineal Foot		40	0	28	0	16	0	NA	0
B. 6-INCH DIAMETER BIT	Lineal Foot		50	0	36	0	18	0	NA	0
C. 8-INCH DIAMETER BIT	Lineal Foot		70	0	42	0	20	0	NA	0
<b>ROCK CORING</b>										
(1) 0-50 FEET IN DEPTH										
A. NX-CORING	Lineal Foot		40	0	32	0	45	0	NA	0
B. HX-CORING	Lineal Foot		50	0	45	0	48	0	NA	0
C. NQ-CORING	Lineal Foot		40	0	32	0	50	0	NA	0
D. HQ-CORING	Lineal Foot		50	0			50	0	NA	0
(2) 50-100 FEET IN DEPTH										
A. NX-CORING	Lineal Foot		40	0	35	0	45	0	NA	0
B. HX-CORING	Lineal Foot	15	50	750	48	720	48	720	NA	0
C. NQ-CORING	Lineal Foot		40	0	35	0	50	0	NA	0
D. HQ-CORING	Lineal Foot		50	0			50	0	NA	0
(3) 100-200 FEET IN DEPTH										
A. NX-CORING	Lineal Foot		40	0	40	0	50	0	NA	0
B. HX-CORING	Lineal Foot		50	0	54	0	55	0	NA	0
C. NQ-CORING	Lineal Foot		40	0	40	0	60	0	NA	0

ITEM DESCRIPTION	UNIT	QUANTITY	Parratt-Wolff, Inc.		Nothnagle Drilling, Inc.		Uni-Tech Drilling Company, Inc.		Delta Well and Pump Company, Inc.	
			UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
D. HQ-CORING (4) GREATER THAN 200 FEET IN DEPTH	Lineal Foot		50	0			60	0	NA	0
A. NX-CORING	Lineal Foot		40	0	45	0	60	0	NA	0
B. HX-CORING	Lineal Foot		50	0	60	0	65	0	NA	0
4 ROLLER BIT REAMING NX/NQ CORE HOLE TO 4-INCH DIAMETER										
A. 0-50 FEET IN DEPTH	Lineal Foot		30	0	18	0	12	0	NA	0
B. 50-100 FEET IN DEPTH	Lineal Foot		40	0	19	0	14	0	NA	0
C. 100-200 FEET IN DEPTH	Lineal Foot		50	0	24	0	16	0	NA	0
D. GREATER THAN 200 FEET IN DEPTH	Lineal Foot		60	0	28	0	18	0	NA	0
5 ROLLER BIT REAMING NX/NQ CORE HOLE TO 6-INCH DIAMETER										
A. 0-50 FEET IN DEPTH	Lineal Foot		40	0	26	0	12	0	NA	0
B. 50-100 FEET IN DEPTH	Lineal Foot		50	0	28	0	14	0	NA	0
C. 100-200 FEET IN DEPTH	Lineal Foot		60	0	35	0	16	0	NA	0
D. GREATER THAN 200 FEET IN DEPTH	Lineal Foot		80	0	40	0	18	0	NA	0
6 BORE HOLE SAMPLING										
6A. SPLIT SPOON SAMPLING										
(1) 0-50 FEET IN DEPTH										
A. 2-INCH OD	Per Sample	199	20	3,980	10	1,990	15	2,985	35	6,965
B. 3-INCH OD	Per Sample		30	0	15	0	25	0	55	0
(2) 50-100 FEET IN DEPTH										
A. 2-INCH OD	Per Sample	15	30	450	12	180	15	225	40	600
B. 3-INCH OD	Per Sample		45	0	17	0	25	0	60	0
(3) 100-200 FEET IN DEPTH										
A. 2-INCH OD	Per Sample		45	0	14	0	20	0	45	0
B. 3-INCH OD	Per Sample		60	0	21	0	30	0	65	0
(4) GREATER THAN 200 FEET IN DEPTH										
A. 2-INCH OD	Per Sample		150	0	16	0	35	0	50	0
B. 3-INCH OD	Per Sample		200	0	25	0	45	0	70	0
6B SHELBY TUBE SAMPLING										
A 0-50 FEET IN DEPTH	Per Attempt		125	0	75	0	100	0	350	0
B 50-100 FEET IN DEPTH	Per Attempt		150	0	85	0	100	0	375	0
C 100-200 FEET IN DEPTH	Per Attempt		200	0	95	0	130	0	400	0
D. GREATER THAN 200 FEET IN DEPTH	Per Attempt		300	0	125	0	150	0	575	0
6C HYDRO PUNCH SAMPLING										
A 0-50 FEET IN DEPTH	Per Sample		175	0	150	0	275	0	250	0
B 50-100 FEET IN DEPTH	Per Sample		200	0	160	0	295	0	275	0
C. 100-200 FEET IN DEPTH	Per Sample		250	0	175	0	325	0	300	0
D. GREATER THAN 200 FEET IN DEPTH	Per Sample		400	0	200	0	375	0	375	0
7 BOREHOLE ABANDONMENT										
A 0 TO 4-INCH DIAMETER BOREHOLE	Per Foot		4	0	5	0	3	0	12	0
B 4 TO 8-INCH DIAMETER BOREHOLE	Per Foot		6	0	6	0	6	0	15	0
C. 8 TO 12-INCH DIAMETER BOREHOLE	Per Foot		12	0	10	0	10	0	25	0
8 WELL SCREEN										
8A SCHEDULE 40 PVC										
A 1-INCH ID	Per Foot	150	2	300	10	1,500	7	975	4	600
B 2-INCH ID	Per Foot		8	0	14	0	10	0	6	0
C. 4-INCH ID	Per Foot		10	0	22	0	20	0	9	0
D. 6-INCH ID	Per Foot		20	0	30	0	25	0	24	0
E 8-INCH ID	Per Foot		30	0	38	0	30	0	35	0
8B SCHEDULE 80 PVC										
A. 4-INCH ID	Per Foot		15	0	28	0	20	0	14	0
B. 6-INCH ID	Per Foot		30	0	36	0	28	0	35	0

ITEM DESCRIPTION	UNIT	QUANTITY	Parratt-Wolff, Inc.		Nothnagle Drilling, Inc.		Uni-Tech Drilling Company, Inc.		Delta Well and Pump Company, Inc.	
			UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
C. 8-INCH ID	Per Foot		40	0	44	0	32	0	40	0
5C. STAINLESS, SCHEDULE 5, TYPE 304										
A. 2-INCH ID	Per Foot	35	15	525	28	980	30	1,050	30	1,050
B. 4-INCH ID	Per Foot		30	0	56	0	50	0	48	0
C. 6-INCH ID	Per Foot		60	0	68	0	65	0	60	0
8D. PRE-SAND PACKED STAINLESS STEEL WELL SCREEN, SCHEDULE 5, TYPE 304										
(1) 2-INCH ID	Per Foot		60	0	84	0	75	0	70	0
(2) 4-INCH ID	Per Foot		90	0	124	0	95	0	90	0
9. WELL RISER										
6. SCHEDULE 40 PVC										
A. 1-INCH ID	Per Foot	150	2	300	8	1,200	3	450	2	300
B. 2-INCH ID	Per Foot	115	4	460	14	1,610	5	575	3	345
C. 4-INCH ID	Per Foot		6	0	19	0	8	0	6	0
D. 6-INCH ID	Per Foot		15	0	24	0	12	0	10	0
E. 8-INCH ID	Per Foot		25	0	30	0	14	0	20	0
7. SCHEDULE 80 PVC										
A. 4-INCH ID	Per Foot		10	0	25	0	10	0	10	0
B. 6-INCH ID	Per Foot		25	0	30	0	14	0	20	0
C. 8-INCH ID	Per Foot		35	0	38	0	16	0	40	0
5. STAINLESS, SCHEDULE 5, TYPE 304										
A. 2-INCH ID	Per Foot		10	0	22	0	12	0	15	0
B. 4-INCH ID	Per Foot		25	0	42	0	18	0	25	0
C. 6-INCH ID	Per Foot		50	0	60	0	28	0	40	0
WELL SCREEN SANDPACK MATERIAL (No.00 TO No. 2 SIZE SAND)	Bag (94 LBS)	20	15	300	25	500	12	240	10	200
BENTONITE										
A. PELLETS	5 Gallon Pail		50	0	50	0	70	0	60	0
B. POWDER	Bag (50 LBS)	5	15	75	20	100	12	60	30	150
C. GRANULAR	Bag (50 LBS)	5	20	100	25	125	12	60	30	150
GROUT										
A. PORTLAND CEMENT TYPE-I	Bag (94 LBS)		30	0	20	0	12	0	15	0
B. PORTLAND CEMENT TYPE-II	Bag (94 LBS)	20	30	600	20	400	12	240	25	500
INSTALLATION OF OUTER CASING FOR MULTI-CASED WELLS										
(1) SCHEDULE 40 PVC										
A. 4-INCH DIAMETER	Per Foot		20	0	16	0	15	0	50	0
B. 6-INCH DIAMETER	Per Foot		30	0	20	0	20	0	55	0
C. 8-INCH DIAMETER	Per Foot		40	0	28	0	24	0	65	0
D. 10-INCH DIAMETER	Per Foot		50	0	36	0	30	0	80	0
(2) SCHEDULE 80 PVC										
A. 4-INCH DIAMETER	Per Foot		25	0	18	0	17	0	60	0
B. 6-INCH DIAMETER	Per Foot		35	0	22	0	22	0	65	0
C. 8-INCH DIAMETER	Per Foot		45	0	30	0	26	0	75	0
D. 10-INCH DIAMETER	Per Foot		55	0	38	0	32	0	90	0
(3) CARBON STEEL										
A. 4-INCH DIAMETER	Per Foot		25	0	18	0	16	0	50	0
B. 6-INCH DIAMETER	Per Foot	85	30	2,550	22	1,870	21	1,785	55	4,675
C. 8-INCH DIAMETER	Per Foot	20	40	800	30	600	25	500	70	1,400
D. 10-INCH DIAMETER	Per Foot		50	0	42	0	32	0	100	0
14. INSTALLATION OF PROTECTIVE CASINGS										
FLUSH MOUNT SURFACE CASING										
(1) FLUSH MOUNT WITH LOCKING COVER, DRAIN HOLE										

ITEM DESCRIPTION	UNIT	QUANTITY	Parratt-Wolff, Inc.		Nothnagle Drilling, Inc.		Uni-Tech Drilling Company, Inc.		Delta Well and Pump Company, Inc.	
			UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
SET IN A 2'X2' CONCRETE PAD EXTENDING AT LEAST 6 INCHES BELOW GROUND SURFACE										
A. 4-INCH ID	Per Casing	3	200	600	130	390	275	825	200	600
B. 6-INCH ID	Per Casing		200	0	150	0	300	0	225	0
C. 8-INCH ID	Per Casing		200	0	180	0	325	0	250	0
14B ABOVE GRADE										
(1) 6-Foot Protective Surface Casing, with Locking Cover, DrainHole set in a 2X2 foot cement pad extending at least a foot below ground surface.										
A. 4-INCH ID	Per Casing		200	0	150	0	275	0	200	0
B. 6-INCH ID	Per Casing		250	0	175	0	300	0	225	0
C. 8-INCH ID	Per Casing		300	0	200	0	325	0	250	0
14C KEYED ALIKE LOCKS	Per Lock	3	10	30	12	36	12	36	19	57
15 CONTAINERIZATION OF DRILLING MATERIAL AND STAGING (ON PALLETS)										
A. PROVIDE CLEAN EMPTY DOT APPROVED 55 GALLON DRUMS WITH SEALS, BUNGS, AND LABELS	Per 55 Gallon Drum	15	50	750	30	450	30	450	45	675
B. PROVIDE CONTAMINMENT AND STAGING OF DISPOSABLE PPE CLOTHING ONSITE ON PALLETS	Per 55 Gallon Drum		50	0	35	0	45	0	45	0
C. FILLING, MOVING, STAGING 55 GALLON DRUMS ON-SITE ON PALLETS	Per 55 Gallon Drum	15	75	1,125	30	450	45	675	45	675
D. MOVE FILLED DRUMS TO SECONDARY LOCATION WITHIN 1 MILE OF DRILL SITE	Per 55 Gallon Drum		100	0	35	0	55	0	45	0
16 WELL DEVELOPMENT										
A. BAILING	Per Hour	0	45	0	130	0	160	0	140	0
B. PUMP AND SURGE (submersible, centrifugal)	Per Hour	40	65	2,600	150	6,000	160	6,400	140	5,600
C. AIR LIFTING	Per Hour		110	0	150	0	160	0	140	0
17 WELL ABANDONMENT										
A. 2-INCH DIAMETER WELL	Per Foot		5	0	18	0	5	0	20	0
B. 4-INCH DIAMETER WELL	Per Foot		7	0	24	0	8	0	25	0
C. 6-INCH DIAMETER WELL	Per Foot		10	0	32	0	10	0	30	0
D. 8-INCH DIAMETER WELL	Per Foot		15	0	40	0	12	0	35	0
18 BULLDOZER WITH OPERATOR FOR CLEARING/SITE ACCESS (bulldozer with 6 foot blade)										
A. MOBILIZATION AND DEMOBILIZATION	Lump Sum		TBD	0	450	0	650	0	TBD	0
B. ON SITE OPERATION	Per Hour		110	0	80	0	125	0	125	0
C. DECONTAMINATION BETWEEN LOCATIONS	Lump Sum Per Location		110	0	150	0	80	0	150	0
19 BACKHOE/ EXCAVATOR WITH OPERATOR FOR TEST PIT/ TRENCH EXCAVATION										
A. MOBILIZATION AND DEMOBILIZATION	Lump Sum		400	0	450	0	650	0	TBD	0
B. RUBBER TIRE (10 FOOT EXCAVATION IN TRENCH)	Per Hour		90	0	75	0	125	0	125	0
C. TRACKED (20-FOOT EXCAVATION IN TRENCH)	Per Hour		130	0	125	0	150	0	300	0
D. DECONTAMINATION BETWEEN LOCATIONS	Lump Sum Per Location		130	0	150	0	80	0	150	0
20 ONSITE RESTORATION										
A. COMPACTED CLEANFILL	Cubic Yard		15	0	15	0	12	0	30	0
B. TOPSOIL	Cubic Yard		30	0	25	0	12	0	30	0
C. GRASS SEEDING	Square Yard		10	0	15	0	0	0	10	0
D. ASPHALT PAVING	Bag (60 LBS)		20	0	40	0	12	0	20	0
E. CONCRETE PAVING	Bag (94 LBS)		30	0	25	0	12	0	25	0
21 SPECIALTY ITEMS										

ITEM DESCRIPTION	UNIT	QUANTITY	Parratt-Wolff, Inc.		Nothnagle Drilling, Inc.		Uni-Tech Drilling Company, Inc.		Delta Well and Pump Company, Inc.	
			UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
2 Packer testing equipment including labor and equipment for testing using single or double packers, and interval gas sampling between straddle packer units										
(1) NQ/NX DIAMETER BOREHOLE	Per Hour		190	0	150	0	180	0	NA	0
(2) HQ/HX DIAMETER BOREHOLE	Per Hour		190	0	160	0	180	0	NA	0
21B PUMP TEST- Labor and equipment including one laborer, pump and generator to provide continuous pumping for a min. 4- hours test in a 100-foot well 100 feet of discharge piping										
(1) 0-50 GALLON PER MINUTE TEST	Per Hour	60	65	3,900	125	7,500	150	9,000	250	15,000
(2) 50-100 GALLON PER MINUTE TEST	Per Hour		90	0	150	0	150	0	350	0
(3) 100-200 GALLON PER MINUTE TEST	Per Hour		125	0	200	0	150	0	375	0
21C WATER HAULING-When on-site water is insufficient or unavailable provide additional laborer and vehicle with minimum 500-gallon capacity to supply portable water to drill rig	Per Day	10	250	2,500	450	4,500	450	4,500	900	9,000
STANDBY TIME	Per Hour	8	200	1,600	150	1,200	150	1,200	130	1,040
23 LABOR CHARGE for services not listed in the Price Quotation Schedule	Per Hour									
A. SUPERVISOR RATE	Per Hour		90	0	75	0	95	0	75	0
B. LABORER RATE	Per Hour		65	0	60	0	65	0	70	0
24 HEALTH AND SAFETY										
A. Cost increment for level "C" protection (indicate which items would be affected)	Percent		10%		30.00%		20%		40%	
B. Cost increment for level "B" protection (indicate which items would be affected)	Percent		100%		\$50.00		30%		100%	
Price Increase or Optional Additional 12 month period (indicate which items would be affected)	Percent		0.00%		2.00%		1.50%		3.00%	
<b>TOTAL</b>				<b>41,220</b>		<b>41,211</b>		<b>43,251</b>		<b>66,497</b>

NA: Not available.

TBD: To be determined for each work assignment



555 PENBROOKE DRIVE  
PENFIELD, NEW YORK 14526-2035  
TEL (585) 388-2060, FAX (585) 388-2070

April 1, 2004

Dvirka & Bartilucci Consulting Engineers  
P.O. Box 56,  
5879 Fisher Rd.  
East Syracuse, NY 13057-0056  
Fax (315) 437-1282

**FAX TRANSMITTAL**

Re: Gowanda Site

Attention Mr. Gerry Gould

Dear Gerry,

OM P. POPLI, P.E., L.S., P.C. is pleased to submit a revised quote of \$ 8,760.00 for the mapping work at the above site. The 2.11e form is attached, please note the assumptions.

If you have any questions, please contact me at (585) 388-2060 or [inventuro@popligroup.com](mailto:inventuro@popligroup.com)

Very truly yours,

Michael A. Ventura, L.S.

Attachments  
cc. File



Schedule 2.11 (e)

Cost Plus Fixed-Fee Sub-Contracts

Job Name: **AVM Gowanda Site**

Work Assignment Number: \_\_\_\_\_

<u>1. NAME OF SUBCONTRACTOR</u>	<u>SERVICES TO BE PERFORMED</u>	<u>SUB-CONTRACT PRICE</u>
Om P. Popli, PE, LS, PC	Surveying Services	\$8,760.00

A. Direct Salary Costs

<u>Professional Responsibility Levels</u>	<u>Labor Classification</u>	<u>Average Reimbursement Rate (\$/Hr)</u>	<u>Maximum Reimbursement Rate (\$/Hr)</u>	<u>Estimated No. of Hours</u>	<u>Total Estimated Direct Salary Cost</u>
VII	Principa Engineer	\$61.06	\$61.06	0	\$0.00
IV	Surveyor	\$28.70	\$31.98	4	\$114.78
III	Surveyor	\$21.67	\$24.15	8	\$173.39
III	CADD Technician	\$18.00	\$21.20	2	\$36.00
II	*Technician/Surveyor	\$19.66	\$21.90	24	\$471.75
I	*Technician/Surveyor	\$16.61	\$18.50	24	\$398.52

**Total Direct Salary Costs (A) \$1,194.45**

Footnotes:

- 1) These rates will be held firm until December 31, 2004.
  - 2) Reimbursement will be limited to the lesser of either the individual's actual hourly rate or the maximum rate for each labor category
  - 3) Reimbursement will be limited to the maximum reimbursement rate for the professional responsibility level of the actual work performed.
  - 4) Only those labor classifications indicated with an asterisk will be entitled to overtime premium.
  - 5) Reimbursement for technical time of principals, owners and officers will be limited to the maximum reimbursement rate of that labor category, the actual hourly labor rate paid, or the State M-5 rate whichever is lower.
  - 6) The maximum rates in each labor category can be modified only by mutual written agreement and approved by both the Department and the Comptroller.
  - 7) Maximum reimbursement rates may be exceeded for work assignment activities that are under the jurisdiction of Schedule of Prevailing Wage Rates sent by the New York State Department of Labor.
  - 8) Proposal based upon non-prevailing wage rates not subject to NYSDOL
  - 9) The above quotes are based on doing all or none of the tasks
  - 10) The site will be accessible at all times.
  - 11) Horizontal & Vertical will be provided on the necessary datum.
  - 12) The site is a Level D site, personnel will working on site will have at a minimum the 24 hour Site Tech. training.
- \* Non-prevailing wage rates not subject to NYDDOL

Schedule 2.11 (e)

Cost Plus Fixed-Fee Sub-Contracts

Job Name: **AVM Gowanda Site**

Work Assignment Number: \_\_\_\_\_

Additional assumptions specific to the site are as follows:

- A The project will be completed in English units.
- B Horizontal and Vertical control will be provided.
- C Elevations at remote Photo locations will be obtained using RTK GPS methods.
- E The only field location will be the photo-control.
- F No Control Report will be produced.
- G Satellite availability will be at a sufficient level to provide suitable RTK GPS locations.

Indirect costs shall be paid based on a percentage of direct salary costs incurred which shall not exceed a maximum of 117% or the actual rate calculated in accordance with 48 CFR Federal Acquisition Regulation, whichever is lower.

Amount budgeted for indirect costs is \$1,194.43 x 1.17 (B) \$1,397.50

C. Maximum Reimbursement Rates for Direct Non-Salary Costs

<u>Item</u>	<u>Maximum Reimbursement Rate (Specify Unit)</u>	<u>Estimated Number of Units</u>	<u>Total Estimated Cost</u>
1. Travel:			
Lodging and per diem	\$175.00 /person/day	6 man-days	\$1,050.00
Survey van	\$75.00 /day	3 day	\$225.00
Auto CADD Station	\$7.60 /hour	2 hours	\$15.20
			<u>\$1,303.20</u>
2. Supplies			
Level D Safety equipment	\$18.00 /person/day	3 man-days	<u>\$54.00</u>
3. Subcontractor			
Aerial Mapping			<u>\$4,415.00</u>
<b>Total Direct Non-Salary Costs</b>			<b>(C) \$5,777.20</b>

D. Fixed Fee

The fixed fee is 15% (D) \$386.79  
 See Schedule 2.10(b) for how the fixed fee should be claimed.



555 PENBROOKE DRIVE  
PENFIELD, NEW YORK 14526-2035  
TEL (585) 388-2060, FAX (585) 388-2070

March 5, 2004

Dvirka & Bartilucci Consulting Engineers  
P.O. Box 56,  
5879 Fisher Rd.  
East Syracuse, NY 13057-0056  
Fax (315) 437-1282

**FAX TRANSMITTAL**

Re: Gowanda Site

Attention Mr. Gerry Gould

Dear Gerry,

OM P. POPLI, P.E., L.S., P.C. is pleased to submit a revised quote of \$ 4,350.00 for the mapping work at the above site. The 2.11e form is attached, please note the assumptions I based the quote on, I have listed them below.

No aerial mapping will be completed for this assignment.

Additional assumptions specific to the site are as follows:

- A The project will be completed in English units.
- B Horizontal and Vertical control is available within four (4) miles of the site.
- C Elevations at remote sample locations will be obtained using RTK GPS methods.
- E No snow cover will be present during the field activities.
- F No Control Report will be produced.
- G Satellite availability will be at a sufficient level to provide suitable RTK GPS locations.

If you have any questions, please contact me at (585) 388-2060 or [mventura@popligroup.com](mailto:mventura@popligroup.com)

Very truly yours,

A handwritten signature in black ink, appearing to read 'M. A. Ventura', written over a horizontal line.

Michael A. Ventura, L.S.

Attachments  
xx. File

## Schedule 2.11 (e)

## Cost Plus Fixed-Fee Sub-Contracts

Job Name: **AVM Gowanda Site**

Work Assignment Number: \_\_\_\_\_

1. NAME OF SUBCONTRACTOR      SERVICES TO BE PERFORMED | SUB-CONTRACT PRICEOm P. Popli, PE, LS, PC      Surveying Services      **\$4,350.00**

## A. Direct Salary Costs

Professional Responsibility Level	Labor Classification	Average Reimbursement Rate (\$/Hr)	Maximum Reimbursement Rate (\$/Hr)	Estimated No. of Hours	Total Estimated Direct Salary Cost
VII	Principal Engineer	\$61.06	\$61.06	0	\$0.00
IV	Surveyor	\$28.70	\$31.98	-	\$28.70
III	Surveyor	\$21.67	\$24.15	2	\$43.35
III	CADD Technician	\$18.00	\$21.20	2	\$36.00
II	*Technician/Surveyor	\$19.66	\$21.90	30	\$589.69
I	*Technician/Surveyor	\$16.61	\$18.50	30	\$498.15

Total Direct Salary Costs

(A)      \$1,195.69

## Footnotes:

- 1) These rates will be held firm until December 31, 2004.
- 2) Reimbursement will be limited to the lesser of either the individual's actual hourly rate or the maximum rate for each labor category.
- 3) Reimbursement will be limited to the maximum reimbursement rate for the professional responsibility level of the actual work performed.
- 4) Only those labor classifications indicated with an asterisk will be entitled to overtime premium.
- 5) Reimbursement for technical time of principals, owners and officers will be limited to the maximum reimbursement rate of that labor category, the actual hourly labor rate paid, or the State M-5 rate, whichever is lower.
- 6) The maximum rates in each labor category can be modified only by mutual written agreement and approved by both the Department and the Comptroller.
- 7) Maximum reimbursement rates may be exceeded for work assignment activities that are under the jurisdiction of Schedule of Prevailing Wage Rates sent by the New York State Department of Labor.
- 8) Proposal based upon non-prevailing wage rates not subject to NYSDOL.
- 9) The above quotes are based on doing all or none of the tasks.
- 10) The site will be accessible at all times.
- 11) Horizontal & Vertical will be provided on the necessary datum.
- 12) The site is a Level D site, personnel working on site will have at a minimum the 24 hour Site Tech. training.

\* Non-prevailing wage rates not subject to NYDDOL

Schedule 2.11 (e)

Cost Plus Fixed-Fee Sub-Contracts

Job Name: **AVM Gowanda Site**

Work Assignment Number: \_\_\_\_\_

Additional assumptions specific to the site are as follows:

- A The project will be completed in English units.
- B Horizontal and Vertical control will be provided
- C Elevations at remote sample locations will be obtained using RTK GPS methods.
- E No snow cover will be present during the field activities.
- F No Control Report will be produced.
- G Satellite availability will be at a sufficient level to provide suitable RTK GPS locations.
- J No aerial mapping will be used

Indirect costs shall be paid based on a percentage of direct salary costs incurred which shall not exceed a maximum of 117% or the actual rate calculated in accordance with 48 CFR Federal Acquisition Regulation, whichever is lower

Amount budgeted for indirect costs is \$1,195.89 x 1.17 (B) \$1,399.19

C. Maximum Reimbursement Rates for Direct Non-Salary Costs

Item	Maximum Reimbursement Rate (Specify Unit)	Estimated Number of Units	Total Estimated Cost
1. Travel:			
Lodging and per diem	\$178.00 /person/day	6 man-days	\$1,068.00
Survey van	\$75.00 /day	3 day	\$225.00
Auto CADD Station	\$7.60 /hour	2 hours	\$15.20
			\$1,308.20
2. Supplies			
Level D Safety equipment	\$18.00 /person/day	3 man-days	\$54.00
3. Subcontractor			
Aerial Mapping			\$0.00
<b>Total Direct Non-Salary Costs</b>			(C) <b>\$1,362.20</b>

D. Fixed Fee

The fixed fee is 15% (D) \$389.26  
 See Schedule 2.10(b) for how the fixed fee should be claimed.



555 PENBROOKE DRIVE  
PENFIELD, NEW YORK 14526-2035  
TEL (585) 388-2060, FAX (585) 318-2070

January 7, 2004

Dvirka & Bartilucci Consulting Engineers  
P.O. Box 56,  
5879 Fisher Rd.  
East Syracuse, NY 13057-0056  
Fax (315) 437-1282

**FAX TRANSMITTAL**

Re: Gowanda Site

Attention Mr. Gerry Gould

Dear Gerry,

Per my conversation with Sean Pepling of your office; *additional* tasks will be performed at the subject site and they are 1) determine the Property and ROW lines at seven residential properties on the site and 2) produce seven maps of the same.

OMP P. POPLI, P.E., L.S., P.C. is pleased to submit a quote of \$ **3,210.00** for the **boundary** mapping work at the above site. The 2.11e form is attached, please note the additional assumptions I based the quote on, I have listed them below.

Additional assumptions specific to the site are as follows:

- A The project will be completed in English units.
- B Horizontal and Vertical control is available within four (4) miles of the site.
- C Elevations at remote sample locations will be obtained using RTK GPS methods.
- E No snow cover will be present during the field activities.
- F No Control Report will be produced.
- G Satellite availability will be at a sufficient level to provide suitable RTK GPS locations.
- H The boundary / ROW lines will be determined for seven properties.
- I The mapping will not extend beyond the areas delineated on the mapping request. And the area requested is  $\pm 25$ ac

If you have any questions, please contact me at (585) 388-2060 or [mventuro@popligroup.com](mailto:mventuro@popligroup.com)

Very truly yours,

A handwritten signature in black ink, appearing to read 'Michael A. Venturo'. The signature is fluid and cursive, with a large initial 'M'.

Michael A. Venturo, L.S.

Attachments  
xc File

## Schedule 2.11 (e)

Cost Plus Fixed-Fee Sub-Contracts  
 Job Name: **Seven Boundary Maps AVM Gowanda Site**  
 Work Assignment Number: \_\_\_\_\_

1. <u>NAME OF SUBCONTRACTOR</u>	<u>SERVICES TO BE PERFORMED</u>	<u>SUB-CONTRACT PRICE</u>
Om P. Popli, PE, LS, PC	Surveying Services	<b>\$3,210.00</b>

## A. Direct Salary Costs

Professional Responsibility Level	Labor Classification	Average Reimbursement Rate (\$/hr)	Maximum Reimbursement Rate (\$/Hr)	Estimated No. of Hours	Total Estimated Direct Salary Cost
V.I	Principal Engineer	\$61.06	\$61.06	0	\$0.00
IV	Surveyor	\$28.70	\$31.98	4	\$114.78
III	Surveyor	\$21.67	\$24.15	8	\$173.39
II*	CADD Technician	\$18.00	\$21.20	10	\$180.00
II	*Technician/Surveyor	\$19.66	\$21.90	16	\$314.50
I	*Technician/Surveyor	\$16.61	\$16.50	16	\$265.68

Total Direct Salary Costs

(A) **\$1,048.35**

## Footnotes:

- 1) These rates will be held firm until December 31, 2004.
  - 2) Reimbursement will be limited to the lesser of either the individual's actual hourly rate or the maximum rate for each labor category.
  - 3) Reimbursement will be limited to the maximum reimbursement rate for the professional responsibility level of the actual work performed.
  - 4) Only those labor classifications indicated with an asterisk will be entitled to overtime premium.
  - 5) Reimbursement for technical time of principals, owners and officers will be limited to the maximum reimbursement rate of that labor category, the actual hourly labor rate paid, or the State M-5 rate, whichever is lower.
  - 6) The maximum rates in each labor category can be modified only by mutual written agreement and approved by both the Department and the Comptroller.
  - 7) Maximum reimbursement rates may be exceeded for work assignment activities that are under the jurisdiction of Schedules of Prevailing Wage Rates sent by the New York State Department of Labor.
  - 8) Proposal based upon non-prevailing wage rates not subject to NYSDOL.
  - 9) The above quotes are based on doing all or none of the tasks
  - 10) The site will be accessible at all times.
  - 11) Horizontal & Vertical will be provided on the necessary datum.
  - 12) The site is a Level D site, personnel will working on site will have at a minimum the 24 hour Site Tech. training.
- \* Non-prevailing wage rates not subject to NYDDOL

## Schedule 2.11 (e)

## Cost Plus Fixed-Fee Sub-Contracts

Job Name: **Seven Boundary Maps** AVM Gowanda Site

Work Assignment Number: \_\_\_\_\_

Additional assumptions specific to the site are as follows:

- A The project will be completed in English units.
- B Horizontal and Vertical control is available within four (4) miles of the site.
- C Elevations at remote sample locations will be obtained using RTK GPS methods.
- E No snow cover will be present during the field activities.
- F No Control Report will be produced.
- G Satellite availability will be at a sufficient level to provide suitable RTK GPS locations.
- H ~~Hard pavement shots will not be needed to prepare the digital terrain model.~~ N/A
- I The boundary / ROW lines will be determined for a total of SEVEN properties.
- J The mapping will not extend beyond the areas delineated on the mapping request. And the area requested is  $\pm 25ac$

Indirect costs shall be paid based on a percentage of direct salary costs incurred which shall not exceed a maximum of 117% or the actual rate calculated in accordance with 48 CFR Federal Acquisition Regulation, whichever is lower.

Amount budgeted for indirect costs is \$1,048.55 x 1.17 (B) \$1,226.57

## C. Maximum Reimbursement Rates for Direct Non-Salary Costs

Item	Maximum Reimbursement Rate (Specify Unit)	Estimated Number of Units	Total Estimated Cost
1. Travel:			
Maps and deeds			\$50.00
Lodging and per diem	\$176.00 /person/day	2 man-days	\$356.00
Survey van	\$75.00 /day	1 day	\$75.00
Auto CADD Station	\$7.60 /hour	10 hours	\$76.00
			<u>\$557.00</u>
2. Supplies			
Level D Safety equipment	\$18.00 /person/day	2 man-days	<u>\$36.00</u>
3. Subcontractor			
			<u>_____</u>
<b>Total Direct Non-Salary Costs</b>			(C) <b>\$593.00</b>

## D. Fixed Fee

The fixed fee is 15% (D) \$341.24  
See Schedule 2.10(b) for how the fixed fee should be claimed.



**SCHEDULE 2.11 (f) 1**  
**UNIT PRICE SUBCONTRACTS**  
**AVM Gowanda Site**  
**Work Assignment Number D003600-38**

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MANAGEMENT FEE
Emilcott Associates	Health and Safety Plan	\$1,500	\$0
	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Costs
<u>Item</u>	<u>Rate</u>	<u>of Units</u>	<u>Costs</u>
Preparation of Health and Safety Plan	\$1,500 Per plan	1	\$1,500.00
	<b>SUBTOTAL</b>		<b>\$1,500.00</b>
	<b>SUBCONTRACT MANAGEMENT FEE</b>		<b>\$0.00</b>
	<b>TOTAL</b>		<b>\$1,500.00</b>

**SCHEDULE 2.11 (f)2  
UNIT PRICE SUBCONTRACTS  
AVM Gowanda Site  
Work Assignment Number D003600-38**

<u>NAME OF SUBCONTRACTOR</u>	<u>SERVICES TO BE PERFORMED</u>	<u>SUBCONTRACT PRICE</u>	<u>MANAGEMENT FEE</u>
Nothnagle Drilling, Inc.	Borings and Well Installation	\$41,211	\$1,442

Contract Item number	Max. Reimbursement Rate	Estimated No. of Units	Total Estimated Costs
1. A. MOBILIZATION/DEMobilIZATION, INCLUDING SITE SET UP, SITE BREAKDOWN, CLEANUP, REPAIR, INITIAL AND FINAL EQUIPMENT DECONTAMINATION, TRAVEL, LODGING, MEALS AND LABOR FOR SITE RESTORATION.	\$0 Lump Sum	2 Lump Sum	\$0
B. CONSTRUCTION AND REMOVAL OF DECON PAD	850 Lump Sum	1 Lump Sum	850
C. WELL/BORING SET-UP	100 Per Well/Boring	18 Per Well/Boring	1,800
2 DRILLING TECHNIQUES			
2A. HOLLOW STEM AUGER			
(1) 0-50 FEET IN DEPTH			
A. 2.25- In. ID HSA	10 Lineal Foot	Lineal Foot	0
B. 3.25- In. ID HSA	10 Lineal Foot	300 Lineal Foot	3,000
C. 4.25- In. ID HSA	12 Lineal Foot	50 Lineal Foot	600
D. 6.25- In. ID HSA	14 Lineal Foot	Lineal Foot	0
E. 8.25- In. ID HSA	24 Lineal Foot	Lineal Foot	0
(2) 50-100 FEET IN DEPTH			
A. 3.25- In. ID HSA	12 Lineal Foot	Lineal Foot	0
B. 4.25- In. ID HSA	14 Lineal Foot	Lineal Foot	0
C. 6.25- In. ID HSA	16 Lineal Foot	Lineal Foot	0
D. 8.25- In. ID HSA	28 Lineal Foot	Lineal Foot	0
(3) 100-200 FEET IN DEPTH			
A. 3.25- In. ID HSA	16 Lineal Foot	Lineal Foot	0
B. 4.25- In. ID HSA	18 Lineal Foot	Lineal Foot	0
C. 6.25- In. ID HSA	20 Lineal Foot	Lineal Foot	0
2B CABLE TOOL- Flush Joint or Coupled Casing			
2C SPIN TEMPORARY FLUSH JOINT CASTING			
2D. MUD ROTARY			
(1) 0-50 FEET IN DEPTH			
A. 4-INCH DIAMETER BIT	16 Lineal Foot	Lineal Foot	0
B. 6-INCH DIAMETER BIT	20 Lineal Foot	Lineal Foot	0
C. 8-INCH DIAMETER BIT	28 Lineal Foot	30 Lineal Foot	840
D. 10-INCH DIAMETER BIT	35 Lineal Foot	20 Lineal Foot	700
(2) 50-100 FEET IN DEPTH			
A. 4-INCH DIAMETER BIT	18 Lineal Foot	Lineal Foot	0
B. 6-INCH DIAMETER BIT	24 Lineal Foot	Lineal Foot	0
C. 8-INCH DIAMETER BIT	32 Lineal Foot	35 Lineal Foot	1,120
D. 10-INCH DIAMETER BIT	40 Lineal Foot	Lineal Foot	0
(3) 100-200 FEET IN DEPTH			
A. 4-INCH DIAMETER BIT	20 Lineal Foot	Lineal Foot	0
B. 6-INCH DIAMETER BIT	26 Lineal Foot	Lineal Foot	0
C. 8-INCH DIAMETER BIT	34 Lineal Foot	Lineal Foot	0
D. 10-INCH DIAMETER BIT	42 Lineal Foot	Lineal Foot	0
(4) GREATER THAN 200 FEET IN DEPTH			
A. 4-INCH DIAMETER BIT	28 Lineal Foot	Lineal Foot	0
B. 6-INCH DIAMETER BIT	34 Lineal Foot	Lineal Foot	0
C. 8-INCH DIAMETER BIT	42 Lineal Foot	Lineal Foot	0
2E. AIR ROTARY			

3.	ROCK CORING				
	(1) 0-50 FEET IN DEPTH				
	A. NX-CORING	32	Lineal Foot	Lineal Foot	0
	B. HX-CORING	45	Lineal Foot	Lineal Foot	0
	C. NQ-CORING	32	Lineal Foot	Lineal Foot	0
	D. HQ-CORING		Lineal Foot	Lineal Foot	0
	(2) 50-100 FEET IN DEPTH				
	A. NX-CORING	35	Lineal Foot	Lineal Foot	0
	B. HX-CORING	48	Lineal Foot	15 Lineal Foot	720
	C. NQ-CORING	35	Lineal Foot	Lineal Foot	0
	D. HQ-CORING		Lineal Foot	Lineal Foot	0
	(3) 100-200 FEET IN DEPTH				
	A. NX-CORING	40	Lineal Foot	Lineal Foot	0
	B. HX-CORING	54	Lineal Foot	Lineal Foot	0
	C. NQ-CORING	40	Lineal Foot	Lineal Foot	0
	D. HQ-CORING		Lineal Foot	Lineal Foot	0
	(4) GREATER THAN 200 FEET IN DEPTH				
	A. NX-CORING	45	Lineal Foot	Lineal Foot	0
	B. HX-CORING	60	Lineal Foot	Lineal Foot	0
4	ROLLER BIT REAMING NX/NQ CORE HOLE TO 4-INCH DIAMETER				
5	ROLLER BIT REAMING NX/NQ CORE HOLE TO 6-INCH DIAMETER				
6	BORE HOLE SAMPLING				
6A.	SPLIT SPOON SAMPLING				
	(1) 0-50 FEET IN DEPTH				
	A. 2-INCH OD	10	Per Sample	199 Per Sample	1,990
	B. 3-INCH OD	15	Per Sample	Per Sample	0
	(2) 50-100 FEET IN DEPTH				
	A. 2-INCH OD	12	Per Sample	15 Per Sample	180
	B. 3-INCH OD	17	Per Sample	Per Sample	0
	(3) 100-200 FEET IN DEPTH				
	A. 2-INCH OD	14	Per Sample	Per Sample	0
	B. 3-INCH OD	21	Per Sample	Per Sample	0
	(4) GREATER THAN 200 FEET IN DEPTH				
	A. 2-INCH OD	16	Per Sample	Per Sample	0
	B. 3-INCH OD	25	Per Sample	Per Sample	0
6B	SHELBY TUBE SAMPLING				
6C	HYDRO PUNCH SAMPLING				
7	BOREHOLE ABANDONMENT				
8	WELL SCREEN				
8A	SCHEDULE 40 PVC				
	A. 1-INCH ID	10	Per Foot	150 Per Foot	1,500
	B. 2-INCH ID	14	Per Foot	Per Foot	0
	C. 4-INCH ID	22	Per Foot	Per Foot	0
	D. 6-INCH ID	30	Per Foot	Per Foot	0
	E. 8-INCH ID	38	Per Foot	Per Foot	0
8B	SCHEDULE 80 PVC				
8C.	STAINLESS, SCHEDULE 5, TYPE 304				
	A. 2-INCH ID	28	Per Foot	35 Per Foot	980
	B. 4-INCH ID	56	Per Foot	Per Foot	0
	C. 6-INCH ID	68	Per Foot	Per Foot	0
8D	PRE-SAND PACKED STAINLESS STEEL WELL SCREEN, SCHEDULE 5, TYPE 304				

9	WELL RISER					
9A.	SCHEDULE 40 PVC					
	A. 1-INCH ID	8	Per Foot	150	Per Foot	1,200
	B. 2-INCH ID	14	Per Foot	115	Per Foot	1,610
	C. 4-INCH ID	19	Per Foot		Per Foot	0
	D. 6-INCH ID	24	Per Foot		Per Foot	0
	E. 8-INCH ID	30	Per Foot		Per Foot	0
9B.	SCHEDULE 80 PVC					
9C.	STAINLESS, SCHEDULE 5, TYPE 304					
10	WELL SCREEN SANDPACK MATERIAL (No.00 TO No. 2 SIZE SAND)	25	Bag (94 LBS)	20	Bag (94 LBS)	500
11	BENTONITE					
	A. PELLETS	50	5 Gallon Pail		5 Gallon Pail	0
	B. POWDER	20	Bag (50 LBS)	5	Bag (50 LBS)	100
	C. GRANULAR	25	Bag (50 LBS)	5	Bag (50 LBS)	125
12	GROUT					
	A. PORTLAND CEMENT TYPE-I	20	Bag (94 LBS)		Bag (94 LBS)	0
	B. PORTLAND CEMENT TYPE-II	20	Bag (94 LBS)	20	Bag (94 LBS)	400
13	INSTALLATION OF OUTER CASING FOR MULTI-CASED WELLS					
	(1) SCHEDULE 40 PVC					
	A. 4-INCH DIAMETER	16	Per Foot		Per Foot	0
	B. 6-INCH DIAMETER	20	Per Foot		Per Foot	0
	C. 8-INCH DIAMETER	28	Per Foot		Per Foot	0
	D. 10-INCH DIAMETER	36	Per Foot		Per Foot	0
	(2) SCHEDULE 80 PVC					
	(3) CARBON STEEL					
	A. 4-INCH DIAMETER	18	Per Foot		Per Foot	0
	B. 6-INCH DIAMETER	22	Per Foot	85	Per Foot	1,870
	C. 8-INCH DIAMETER	30	Per Foot	20	Per Foot	600
	D. 10-INCH DIAMETER	42	Per Foot		Per Foot	0
14	INSTALLATION OF PROTECTIVE CASINGS					
14A	FLUSH MOUNT SURFACE CASING					
	(1) FLUSH MOUNT WITH LOCKING COVER, DRAIN HOLE SET IN A 2'X2' CONCRETE PAD EXTENDING AT LEAST 6 INCHES BELOW GROUND SURFACE					
	A. 4-INCH ID	130	Per Casing	3	Per Casing	390
	B. 6-INCH ID	150	Per Casing		Per Casing	0
	C. 8-INCH ID	180	Per Casing		Per Casing	0
14B	ABOVE GRADE					
	(1) 6-Foot Protective Surface Casing, with Locking Cover, DrainHole set in a 2X2 foot cement pad extending at least a foot below ground surface.					
	A. 4- INCH ID	150	Per Casing		Per Casing	0
	B. 6-INCH ID	175	Per Casing		Per Casing	0
	C. 8-INCH ID	200	Per Casing		Per Casing	0
14C	KEYED ALIKE LOCKS	12	Per Lock	3	Per Lock	36
15	CONTAINERIZATION OF DRILLING MATERIAL AND STAGING (ON PALLETS)					
	A. PROVIDE CLEAN EMPTY DOT APPROVED 55 GALLON DRUMS WITH SEALS, BUNGS, AND LIDS	30	Per 55 Gallon Drum	15	Per 55 Gallon Drum	450
	B. PROVIDE CONTAMINMENT AND STAGING OF USED DISPOSABLE PPE CLOTHING ONSITE ON PALLETS	35	Per 55 Gallon Drum		Per 55 Gallon Drum	0
	C. FILLING, MOVING, STAGING 55 GALLON DRUMS ON-SITE ON PALLETS	30	Per 55 Gallon Drum	15	Per 55 Gallon Drum	450
	D. MOVE FILLED DRUMS TO SECONDARY LOCATION WITHIN 1 MILE OF DRILL SITE	35	Per 55 Gallon Drum		Per 55 Gallon Drum	0
16	WELL DEVELOPMENT					

	A. BAILING	130	Per Hour	0	Per Hour	0	
	B. PUMP AND SURGE (submersible, centrifugal)	150	Per Hour	40	Per Hour	6,000	
	C. AIR LIFTING	150	Per Hour		Per Hour	0	
17	WELL ABANDONMENT						
18	BULLDOZER WITH OPERATOR FOR CLEARING/SITE ACCESS (bulldozer with 6 foot blade)						
19	BACKHOE/ EXCAVATOR WITH OPERATOR FOR TEST PIT/ TRENCH EXCAVATION						
	A. MOBILIZATION AND DEMOBILIZATION	450	Lump Sum		Lump Sum	0	
	B. RUBBER TIRE (10 FOOT EXCAVATION IN DEPTH)	75	Per Hour		Per Hour	0	
	C. TRACKED (20-FOOT EXCAVATION IN DEPTH)	125	Per Hour		Per Hour	0	
	D. DECONTAMINATION BETWEEN LOCATIONS	150	Lump Sum		Lump Sum	0	
			Per Location		Per Location		
20	ONSITE RESTORATION						
21	SPECIALTY ITEMS						
21A	Packer testing equipment including labor and equipment for testing using single or double packers, and interval gas sampling between straddle packer units						
	(1) NO/NX DIAMETER BOREHOLE	150	Per Hour		Per Hour	0	
	(2) HQ/HX DIAMETER BOREHOLE	160	Per Hour		Per Hour	0	
21B	PUMP TEST- Labor and equipment including one laborer, pump and generator to provide continuous pumping for a min. 4- hours test in a 100-foot well 100 feet of discharge piping						
	(1) 0-50 GALLON PER MINUTE TEST	125	Per Hour	60	Per Hour	7,500	
	(2) 50-100 GALLON PER MINUTE TEST	150	Per Hour		Per Hour	0	
	(3) 100-200 GALLON PER MINUTE TEST	200	Per Hour		Per Hour	0	
21C	WATER HAULING-When on-site water is insufficient or unavailable provide additional laborer and vehicle with minimum 500-gallon capacity to supply portable water to drill rig	450	Per Day	10	Per Day	4,500	
22	STANDBY TIME	150	Per Hour	8	Per Hour	1,200	
23	LABOR CHARGE for services not listed in the Price Quotation Schedule		Per Hour		Per Hour		
	A. SUPERVISOR RATE	75	Per Hour		Per Hour	0	
	B. LABORER RATE	60	Per Hour		Per Hour	0	
24	HEALTH AND SAFETY						
25	Price Increase or Optional Additional 12 month period (indicate which items would be affected)	2.00%	Percent		Percent		
						Subtotal	\$41,211
						Management Fee	\$1,442
						Total	\$42,653

**SCHEDULE 2.11 (f) 3  
UNIT PRICE SUBCONTRACTS  
AVM Gowanda Site  
Work Assignment Number D003600-38**

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MANAGEMENT FEE
MITKEM, Inc.	Sample Analysis	\$34,445	\$1,206

	Item	Method	Maximum Reimbursement Rate	Expedited Turnaround Multiplier	Estimated No. of Units	Total Estimated Costs
Air - 16 indoor/16 sub-slab	VOCs	TO-15	\$350.00 /sample	1	32	\$11,200
Air - 8 outside	VOCs	TO-15	\$350.00 /sample	1	8	\$2,800
<u>Surface Soils</u>	VOCs	OLMO4.2	\$110.00 /sample	1	2	\$220
	SVOCs	OLMO4.2	\$225.00 /sample	1	2	\$450
	Pesticides/PCBs	OLMO4.2	\$130.00 /sample	1	2	\$260
	TAL Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	2	\$220
<u>Subsurface Soils</u> (waste characterization)	VOCs	OLMO4.2	\$110.00 /sample	1	2	\$220
	SVOCs	OLMO4.2	\$225.00 /sample	1	2	\$450
	Pesticides/PCBs	OLMO4.2	\$130.00 /sample	1	2	\$260
	TAL Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	2	\$220
<u>Ground Water</u>	VOCs	OLMO4.2	\$110.00 /sample	1	22	\$2,420
1st round	VOCs	OLMO4.2	\$110.00 /sample	2	10	\$2,200
(includes two samples from pumping test)	SVOCs	OLMO4.2	\$200.00 /sample	1	6	\$1,200
	Pesticides/PCBs	OLMO4.2	\$120.00 /sample	1	6	\$720
	TAL Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	6	\$660
	Alkalinity	EPA 310.1	\$15.00 /sample	1	7	\$105
	Anions (NO3, SO4, Cl, B	EPA 300.0	\$75.00 /sample	1	7	\$525
	Cations (K, Na, Ca, Mg, I	EPA 200.7	\$90.00 /sample	1	7	\$630
	Total Organic Carbon	EPA 415.1	\$35.00 /sample	1	7	\$245
	Dissolved Organic Carbc	EPA 415.1	\$45.00 /sample	1	7	\$315
	Total Dissolved Solids	EPA 160.1	\$15.00 /sample	1	7	\$105
	Total Suspended Solids	EPA 160.2	\$15.00 /sample	1	7	\$105
<u>Ground Water</u> 2nd round	VOCs	OLMO4.2	\$110.00 /sample	1	15	\$1,650
	SVOCs	OLMO4.2	\$200.00 /sample	1	2	\$400
	Pesticides/PCBs	OLMO4.2	\$120.00 /sample	1	2	\$240
	TAL Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	2	\$220
<u>QA/QC Samples</u>	Blanks					
	Trip Blanks	OLMO4.2	\$110.00 /sample	1	5	\$550
	Trip Blanks	TO-15	\$350.00 /sample	1	1	\$350
<u>Groundwater</u>	Matrix Spike					
	VOCs	OLMO4.2	\$110.00 /sample	1	3	\$330
	SVOCs	OLMO4.2	\$225.00 /sample	1	2	\$450
	Pesticides/PCBs	OLMO4.2	\$130.00 /sample	1	2	\$260
	Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	2	\$220
	Matrix Spike Duplicate					
	VOCs	OLMO4.2	\$110.00 /sample	1	3	\$330
	SVOCs	OLMO4.2	\$225.00 /sample	1	2	\$450
	Pesticides/PCBs	OLMO4.2	\$130.00 /sample	1	2	\$260
	Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	2	\$220
	Matrix Spike Blank					
	VOCs	OLMO4.2	\$110.00 /sample	1	3	\$330
	SVOCs	OLMO4.2	\$225.00 /sample	1	2	\$450
	Pesticides/PCBs	OLMO4.2	\$130.00 /sample	1	2	\$260
	Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	2	\$220
<u>Soil, Sediment</u>	Matrix Spike					
	VOCs	OLMO4.2	\$110.00 /sample	1	1	\$110
	SVOCs	OLMO4.2	\$225.00 /sample	1	1	\$225
	Pesticides/PCBs	OLMO4.2	\$130.00 /sample	1	1	\$130
	Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	1	\$110
	Matrix Spike Duplicate					
	VOCs	OLMO4.2	\$110.00 /sample	1	1	\$110
	SVOCs	OLMO4.2	\$225.00 /sample	1	1	\$225
	Pesticides/PCBs	OLMO4.2	\$130.00 /sample	1	1	\$130
	Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	1	\$110
	Matrix Spike Blank					
	VOCs	OLMO4.2	\$110.00 /sample	1	1	\$110
	SVOCs	OLMO4.2	\$225.00 /sample	1	1	\$225
	Pesticides/PCBs	OLMO4.2	\$130.00 /sample	1	1	\$130
	Metals and Cyanide	OLMO4.2	\$110.00 /sample	1	1	\$110
<b>SUBTOTAL</b>						<b>\$34,445</b>
<b>SUBCONTRACT MANAGEMENT FEE</b>						<b>\$1,206</b>
<b>TOTAL</b>						<b>\$35,651</b>

SCHEDULE 2.11 (f)4  
UNIT PRICE SUBCONTRACTS  
AVM Gowanda Site  
Work Assignment Number D003600-38

<u>NAME OF SUBCONTRACTOR</u>	<u>SERVICES TO BE PERFORMED</u>	<u>SUBCONTRACT PRICE</u>	<u>MANAGEMENT FEE</u>
Diamond Transport, LLC	Water Disposal	\$13,605.00	\$476.18
	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Costs
<u>Item</u>			
1. Transportation and disposal of water (pumping test/development)			
a. Tanker spot fee	\$1,100.00 /event	1 event	\$1,100.00
b. Tanker Rental	\$75.00 /day	21 days	\$1,575.00
c. Transportation	\$550.00 /load	3 load	\$1,650.00
d. Disposal	\$0.38 /gallon	15,000 gallons	\$5,700.00
2. Transportation and disposal of drill cuttings (non-hazardous)			
a. Rolloff spot fee (30 cu.yd.)	\$460.00 /event	1 event	\$460.00
b. Rolloff Rental	\$15.00 /day	30 days	\$450.00
c. Transportation	\$550.00 /load	1 load	\$550.00
d. Disposal - hazardous soil F039 - Subtitle C	\$212.00 /ton	10 tons	\$2,120.00
	SUBTOTAL		\$13,605.00
	SUBCONTRACT MANAGEMENT FEE		\$476.18
	TOTAL		\$14,081.18

MONTHLY COST CONTROL REPORT  
 SUMMARY OF FISCAL INFORMATION

	A Costs Claimed This Period	B Paid To Date	C Total Disallowed To Date	D Total Costs Incurred To Date (A+B+B1)	E Estimated Costs To Completion	F Total Work Assignment Price (A+B+E)	G Approved Budget	H Estimated Under/(Over) (G-F)
1. Direct Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	\$2,008	0.00
2. Indirect	0.00	0.00	0.00	0.00	0.00	0.00	\$3,179	0.00
3. Subtotal Direct Salary Costs and Indirect Costs	0.00	0.00	0.00	0.00	0.00	0.00	\$5,187	0.00
4. Travel	0.00	0.00	0.00	0.00	0.00	0.00	\$375	0.00
5. Other Non- Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	\$0	0.00
6. Subtotal Direct Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	\$375	0.00
7. Subcontractors	0.00	0.00	0.00	0.00	0.00	0.00	\$0	0.00
8. Total Work Assignment Cost	0.00	0.00	0.00	0.00	0.00	0.00	\$5,562	0.00
9. Fixed Fee	0.00	0.00	0.00	0.00	0.00	0.00	\$436	0.00
10. Total Work Assignment Price	0.00	0.00	0.00	0.00	0.00	0.00	\$5,998	0.00

Project Manager (Engineer) \_\_\_\_\_

Date \_\_\_\_\_



MONTHLY COST CONTROL REPORT  
 SUMMARY OF FISCAL INFORMATION

	A Costs Claimed This Period	B Paid To Date	C Total Disallowed To Date	D Total Costs Incurred To Date (A+B+B1)	E Estimated Costs To Completion	F Total Work Assignment Price (A+B+E)	G Approved Budget	H Estimated Under/(Over) (G-F)
1. Direct Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	\$2,615	0.00
2. Indirect	0.00	0.00	0.00	0.00	0.00	0.00	\$4,139	0.00
3. Subtotal Direct Salary Costs and Indirect Costs	0.00	0.00	0.00	0.00	0.00	0.00	\$6,754	0.00
4. Travel	0.00	0.00	0.00	0.00	0.00	0.00	\$760	0.00
5. Other Non- Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	\$0	0.00
6. Subtotal Direct Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	\$760	0.00
7. Subcontractors	0.00	0.00	0.00	0.00	0.00	0.00	\$0	0.00
8. Total Work Assignment Cost	0.00	0.00	0.00	0.00	0.00	0.00	\$7,514	0.00
9. Fixed Fee	0.00	0.00	0.00	0.00	0.00	0.00	\$567	0.00
10. Total Work Assignment Price	0.00	0.00	0.00	0.00	0.00	0.00	\$8,081	0.00

Project Manager (Engineer) \_\_\_\_\_

Date \_\_\_\_\_

Scedule 2.11 (h)

AVM Gowanda Site  
 Work Assignment Number D003600-38

Date Prepared:  
 Billing Period  
 Invoice No.

Monthly Cost Control Report Summary of Labor Hours Expended to Date/Estimated To Completion
---

NSPE Labor Classification	IX EXP/EST	VIII EXP/EST	VII EXP/EST	VI EXP/EST	V EXP/EST	IV EXP/EST	III EXP/EST	I & II EXP/EST	ADMIN/ SUPPORT	TOTAL NUMBER OF DIRECT LABOR HOURS EXP/EST
Task 1	0/ 28	0/ 4	0/ 0	0/ 74	0/ 82	0/ 0	0/ 0	0/ 20	0/ 20	0/ 208
Task 2	0/ 8	0/ 0	0/ 0	0/ 128	0/ 582	0/ 0	0/ 0	0/ 236	0/ 236	0/ 954
Task 3	0/ 8	0/ 36	0/ 116	0/ 128	0/ 128	0/ 140	0/ 80	0/ 48	0/ 48	0/ 684
Task 4	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
Task 5	0/ 8	0/ 28	0/ 217	0/ 324	0/ 60	0/ 272	0/ 304	0/ 92	0/ 92	0/ 1305
Task 6	0/ 2	0/ 0	0/ 0	0/ 24	0/ 16	0/ 0	0/ 4	0/ 4	0/ 4	0/ 50
Task 7	0/ 4	0/ 0	0/ 4	0/ 16	0/ 38	0/ 0	0/ 0	0/ 0	0/ 0	0/ 62
<b>Total Hours</b>	<b>0/ 58</b>	<b>0/ 68</b>	<b>0/ 337</b>	<b>0/ 694</b>	<b>0/ 906</b>	<b>0/ 412</b>	<b>0/ 388</b>	<b>0/ 400</b>	<b>0/ 400</b>	<b>0/ 3263</b>

MBE/WBE  
 UTILIZATION PLAN  
 SUMMARY  
 AVM Gowanda Site  
 Work Assignment Number D003600-38

<u>Areas to be Subcontracted</u>	<u>Subcontractor Name</u>	<u>MBE/WBE</u>	<u>Total Subcontract Value</u>	<u>% MBE/WBE Utilization</u>
Air Photo Topo Map	Om P. Popli, PE, LS, PC	MBE	\$11,970	2.5%
Sample Analysis	MITKEM, Inc.	MBE	\$34,445	7.1%
Reproduction	Jamaica Blue Print Co.	WBE	\$8,188	1.7%
Total MBE Utilization	$\frac{\text{MBE Subcontract Value}}{\text{Total Contract Value}}$	=	$\frac{\$46,415}{\$483,226}$	9.6%
Total WBE Utilization	$\frac{\text{WBE Subcontract Value}}{\text{Total Contract Value}}$	=	$\frac{\$8,188}{\$483,226}$	1.7%

