Mike Cruden

PROJECT MANAGEMENT WORK PLAN
FOR
REMEDIAL INVESTIGATION
JOHNSON CITY WELLFIELD, BROOME COUNTY, NEW YORK
W.A. NO. D002340-12

Prepared For:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION

SEPTEMBER 1991

Prepared By:

URS CONSULTANTS, INC.
282 DELAWARE AVENUE
BUFFALO, NEW YORK 14202

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1.0 INTRODUCTION

In written correspondence dated August 13, 1991 from Mr. Michael J. O'Toole of the New York State Department of Environmental Conservation (NYSDEC) to Mr. John Gorton of URS Consultants, Inc. (URS), an emergency request for engineering services for the Johnson City Public Water Supply was made of URS.

In addition to two municipal groundwater wells reported unusable due to mechanical problems, the Johnson City Public Water Board has had to shut down a third well on July 23, 1991 due to Trichloroethane contamination of 12 ppb rendering nearly half of their well system unusable. URS agreed to proceed with the development of emergency recommendations to alleviate the problem and identify the source of contamination.

1.1 Purpose and Scope of Project

The purpose of this project is to provide emergency engineering recommendations to minimize the impact of chemical contamination at Johnson City's Camden Avenue Wellfield, and to develop a plan to identify the source of groundwater contamination there.

The project includes the following tasks:

- Task I - Develop a Project Management Work Plan
- Task II - Site Evaluation
- Task III - Preliminary Engineering Evaluation
- Task IV - Health and Safety and QA/QC Plans
- Task V - Well Installation
- Task VI - Aquifer Testing
- Task VII - Sampling and Analysis
- Task VIII - Survey and Mapping

- Task IX - Site Assessment and Final Report
- Task X - Temporary Treatment System

URS's approach to Tasks I - X are presented in the following text.

1.2 Project Team

URS, as prime contractor, will be responsible for coordination of all subcontractor activities, for preparation of all final study reports, and for all contractual and technical communications with NYSDEC. URS will conduct all project activities itself not specifically designated to other subcontractors.

URS has retained subcontractors to provide field drilling at the site, monitoring well installation, and chemical laboratory support. The drilling and laboratory subcontractors which have been selected for this work are under current NYSDEC subcontract.

We understand the requirements of MBE/WBE participation and will make good faith efforts to subcontract at least 15 percent and five (5) percent of the total contract price to NYS Minority Business Enterprise(s) (MBE) and Women Business Enterprise(s) (WBE), respectively.

2.0 SCOPE OF WORK

2.1 Task I - Develop a Project Management Work Plan

The project management work plan presented herein includes a description of major tasks and subtasks to be performed by URS for the Johnson City Wellfield Work Assignment, together with a proposed schedule, staffing plan and budget estimate for Tasks I through X. A list of subcontractors has been provided. A minority/women business enterprise (M/WBE) utilization plan for this project will be submitted as a separate document. This project management work plan was prepared by URS subsequent to an initial site visit and scoping meeting with NYSDEC representatives on August 13, 1991. During the site visit, URS personnel also participated in an August 14 Air Force (AF) briefing conducted at Plant 59 in Johnson City to review the next phase of an Installation Restoration Program (IRP) to determine the extent of aquifer contamination at the Plant, which is located in proximity to the Camden Street Wellfield. In addition, well installation is in progress and is expected to be completed by October 11, 1991. This management plan also incorporates the NYSDEC comments dated September 12, 1991 from P. David Smith of the NYSDEC to Mr. John Gorton of URS Consultants, Inc., Work Assignment #D002340-12.

2.2 Task II - Site Evaluation

2.2.1 Records Review

On August 13, representatives of URS reviewed technical files at the NYSDEC office in Kirkwood, New York regarding groundwater contamination due to chemicals at the Johnson City Wellfield on Camden Street. This visit included the review of related NYSDEC memoranda, recent correspondence from the Department of the Air Force (AF) regarding the potential relationship between the contamination at the Johnson City

municipal wells and past AF plant activities conducted by its contractor, the General Electric Corp. (GE), correspondence between the Johnson City Water Department and the regional office of the New York State Department of Health (NYSDOH), the 1984 report of a Phase I environmental records search conducted for AF Plant 59 by CH2M-Hill, and a 1988 Phase II - (environmental) Confirmation/Quantification report conducted for AF Plant 59 by Fred C. Hart Associates, Inc.

During the visit, URS personnel participated in an August 14 AF Briefing conducted at Plant 59 to review the next phase of the Installation Restoration Program (IRP) to determine the extent of aquifer contamination at the Plant, which is located less than 1,400 feet from the Camden Street Wellfield. URS personnel also visited the Camden Street Wellfield on August 15 to review emergency design considerations required by the existing facility.

2.2.2 Preliminary Findings

The information reviewed during URS' August 13, 14 and 15 visit to Kirkwood and Johnson City are briefly summarized below:

- Levels of 1,1,1-Trichloroethane above New York State drinking water quality standards have forced the shutdown of Camden Street Well #3. More recent pumping and analyses of samples from Camden Street Well #2 have reportedly shown levels of 1,1,1-Trichloroethane and dichlorodifluoromethane (freon) above State drinking water quality standards. This condition could necessitate the shutdown of the Camden Street Wellfield. Other volatile organic chemicals such as trichloroethylene, perchloroethylene, and benzene have been identified in Johnson City alternate supply wells #5, #6, and #7 at levels below State standards.

- The operation of the Camden Street Wellfield is critical to the supply of the Johnson City system especially in terms of maintaining line pressure to its western distribution area.

- AF environmental reports indicate that the lower aquifer beneath Plant 59 in the vicinity of the Production Well has been contaminated with levels of 1,1-dichloroethane, trans-1,2-dichloroethane, and trichloroethylene above State drinking water standards.

- Comments made by AF personnel during the August 14 briefing concur with NYSDEC documents indicating other potential sources for the contamination being realized at the Camden Street Wellfield including the inactive Tri-Cities Shopping Center Dump, the Endicott Johnson Dump, and the former industrial waste ponds across the Susquehanna River from the Camden Street Wellfield.

- The existing construction of the Camden Street Wellfield appears to allow the temporary installation of a portable air stripper with attendant in-ground retention tank rated at approximately 4,200 gpm at a location opposite Well No. 3. A high calcium condition could require pretreatment.

2.2.3 Contaminant Minimization

An emergency action originally recommended in a URS letter report of August 21, is to re-start Well #3 and pump it to waste into a nearby storm or sanitary sewer in an effort to hydrologically isolate the on-line Well #2 from sources of contamination landward of the river; effectively causing Well #2 to draw more water from a greater area beneath the river. Preliminary considerations indicate that with Well #2 continuing to pump 2,100 gpm as reported on August 14 and Well #3 pumping to waste at rates

ranging from 1,500 to 2,000 gpm, Well #3 would be capable of intercepting nearly all of the groundwater flowing toward the wellfield from landward sources while forcing Well #2 to sustain its discharge almost entirely with groundwater from the river side of the aquifer. Given several weeks of time for this flow pattern to fully establish itself, it is quite possible that this could cause contaminant levels to decrease in the on-line Well #2. It is not known for certain if the Camden Street Wellfield can sustain a total discharge as high as 4,000 gpm without dewatering a well pump because well-specific hydraulic head losses due to turbulent flow and partial penetration are undefined. However, with the information currently available, it appears feasible; and certainly worth further timely consideration.

2.3 Task III - Preliminary Engineering Evaluation

URS conducted a preliminary investigation to refine their understanding of the existing facility conditions. Pertinent information for the site and the surrounding area was obtained.

Information obtained during that investigation was used as the criteria to locate and determine the most suitable remedial approach. Air strippers and granular activated carbon (GAC) units with capacities of 2,100 gpm and 4,200 gpm were considered. URS researched the feasibility of leasing commercially available units to treat the water during design of the final system. Lease costs and installation costs have been identified and a tentative operations schedule has been developed. URS has submitted their findings from this preliminary evaluation to the Department.

2.4 Task IV - Work Plans

2.4.1 Health and Safety Plan (HASP)

Our Corporate Health and Safety Procedures Manual meets all current applicable regulatory requirements contained in 20 CFR 1910.120(i)(2) - OSHA, Hazardous Waste Operations and Emergency response, Interim Rule, December 19, 1986; USEPA Order 1440.2 - Health and Safety Requirements for Employees Engaged in Field Activities; USEPA Order 1440.3 - Respiratory Protection; USEPA Occupational Health and Safety Manual; and USEPA Interim Standard Operating Procedures (September 1982). The content of the manual will be modified to develop a site specific HASP which will specify levels of respiration protection and protective clothing for various field activities, describe support facilities, and provide guidance in the event of unforeseen accidental discharge of contaminated material. A complete air quality surveillance and monitoring program will be developed to protect site personnel and surrounding residential areas if necessary.

2.4.2 Quality Assurance Project Plan (QAPP)

The QAPP will include QA/QC procedures and programs which will be used during the site activities. The sampling and analytical protocols specified in the QAPP, will conform to current NYSDEC, Analytical Services Protocol, September 1989. It will prescribe specific methods, audit procedures, and QA/QC requirements for field activities and testing of samples obtained from the site. The presentation of the reporting and deliverables package will be described in the QAPP. Specifically, the QAPP will contain a project organization chart; a project description; QA objectives for the required accuracy and precision in completeness, representativeness, comparability, and intended use of the data; sampling custody procedures during sample collection, laboratory analysis, and for final evidence files; the type and frequency of instrument calibration,

internal QC checks and QA performance and system audits, and preventive maintenance procedures, schedule, and corrective action procedures for instruments; specific procedures to assess data precision, representativeness, comparability, accuracy, and completeness of specific measurement parameters; and data documentation and tracking procedures.

Additionally, the QAPP will prescribe a specific procedure to follow in the event of an unforseen problem in the field and identify personnel responsible for implementing the change. The NYSDEC QA/QC Officer will be consulted before any changes are made. We have prepared and implemented these procedures successfully on recent projects.

2.5 TASK V - WELL INSTALLATION

2.5.1 Contaminant Source Investigation

In an effort to identify and define the source of contamination effecting the Camden Street Wellfield, an emergency observation well drilling and sampling program is currently underway. Four (4) shallow and six (6) deep wells are being installed at six (6) locations approximately midway between the wellfield and five potential contaminant sources as shown on the attached map. These locations have been selected without the critical benefit of a comprehensive, temporally recent, potentiometric map depicting the presumably complex groundwater flow directions, which probably exist in this area of the aquifer. As additional data is generated about this aquifer, additional wells may have to be installed.

Current well construction includes the use of 2-inch stainless steel threaded and coupled casing and pre-packed stainless-steel screen. The shallow well screen will be 30 to 35 feet in length installed across the prevailing water table using the hollow stem auger drilling method. The deeper well screen will be 30 to 35 feet in length and installed to the base of the aquifer approximately 100 feet in depth using the cable tool

JOHNSON CITY

JOHNSON CITY
WATER SUPPLY WELLS
WASTE SITE LOCATIONS
&
PROPOSED OBSERVATION
WELL SITES

SCALE 1" = ±830'

Gravel Pit
Golf Course
Front Park Ch
Course
17c
BM 849
Calvary Cem
H L Johnson Sch
St Johns Ch
HARRY
850
INTERCHANGE 70
BROAD ST
ROAD
Well #7
6 LANE
BROWN ST
Coconut Creek
Well #6
Well #4
BM 853
CHAMPION OIL SPACES
ERIE-LACKAWANNA
Westover
Well #5
IBM SPACES
TRI CITIES SHOPPING CENTER & DUMP
MW-5
MW-1
MW-6
MW-2
CITY WELLS #3 #2 #1
AF 59
Little
High Sch
MAIN
YMCA
Wilson Hospital
St James Sch
STREET
BM 85
Industrial Waste Pond
PESTAL CET
4-22
No. 4 TEST WELLS
4-29
4-26
MW-4
Substas
MW-3
Powerplant
GE1 GE2
RECHARGE PRODUCTION
NYSEG SPACES
C F Johnson Sch
BM 840
GRAND
Gravel Pit
843
ERIE-LACKAWANNA
900
950
960
951
BM 849
CORP BDY
BOLAND
ENDICOTT JOHNSON DUMP
201
THERON ST
Roosevelt Sch
Southside Park
ACKLEY
CFJ Memorial Bridge
I-SUSQ
RIVERSIDE DR
860
Slovak Cem
Woodlawn Cem
AVE
Bible Sch
URBANK
ARGARET
RPORATE

drilling method. The drilling tools and sampling equipment of each rig will be decontaminated at each site with high pressure steam after well installation, to minimize cross contamination.

2.5.2 Well Development

At the end of installation, the newly installed wells will be developed by pumping to waste on the ground until the turbidity of the discharge drops below 50 NTU/JTU. This task is expected to take one (1) day per well. After development, the wells will be allowed to lie idle for two weeks prior to purging and sampling.

2.6 Task VI - Aquifer Testing

The determination of aquifer characteristics is fundamental to a contaminant source investigation. Toward that end, URS feels that performing an aquifer test at the Camden Street Wellfield, would help define the degree of hydraulic connection between the Wellfield and the several potential contaminant sources. All aspects of the pump test will be coordinated with the NYSDEC and the water superintendent of the Village of Johnson City. Pumping well #2 and/or #3 are the most likely candidates for the pump test because of their proximity to potential source areas.

An aquifer test of 72 hours duration is planned. Aquifer test observation wells will include the 10 two-inch stainless steel observation wells installed as part of this investigation. If possible, an appropriate well at AF Plant 59 will also be monitored during this test.

2.7 Task VII - Environmental Sampling and Analysis

The proposed environmental sampling and analytical program is intended to characterize the Johnson City site and assess the potential

sources of contamination. This information may eventually be used as the basis for evaluating the effectiveness remedial measures at the site.

One (1) groundwater sample will be collected from each of the 10 new observation wells installed as part of the Camden Street Wellfield investigation. Additionally, one (1) groundwater sample will be collected from each of Johnson City Well #2 and Well #3, and three Vestal Water District #4 test wells as shown on the attached map. The groundwater sampling protocol will require the purging of the wells prior to sampling to remove stagnant water present within the well casing. Wells will be sampled immediately following purging provided they have recharged sufficiently to obtain a sample. If a well does not recharge adequately in 24 hours to collect a complete set of samples, a determination will be made with respect to the need to prioritize the analysis with the available water in the well to extent the time period allowed to collect sufficient water or a complete set of analysis.

The groundwater samples which will be collected will be analyzed for "Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry Method 524.2". In addition to the list of compounds analyzed for by 524.2, dichlorodifluoromethane (freon), acetone and methlyethylketone will also be analyzed for. The samples will be analyzed for the Target Analyte List (TAL) Metals, cyanide and the Target Compound List (TCL) PCBs. It is expected that one water sample from each observation well will be analyzed in this fashion. Quality control samples will consist of one (1) matrix spike (for VOA, PCBs, metals and cyanide), one matrix duplicate (for metals, PCBs, and cyanide) and a field blank (for VOA, PCBs, metals and cyanide). The deliverable data package will consist of the standard laboratory report which includes the analytical and quality control results. The proposed analytical program is summarized in the attached table.

2.8 Task VIII - Survey and Mapping

A field survey will be conducted for locational control during site investigation activities, and to establish the exact locations and elevations of all groundwater monitors and other pertinent field data points. Vertical control will be set using benchmark elevations tied to the National Geodetic Vertical Datum of 1929. Horizontal control will use an assumed coordinate system. Horizontal closures will meet or exceed 1 inch: 20,000 inches, and vertical closures will meet or exceed 0.035 x M, with M being the distance in miles. All surveying will be performed by URS under the supervision of a licensed surveyor.

2.9 TASK IX - Site Assessment and Final Report

Following analysis of the field and chemical data, the Contaminant Source Investigation will be documented in a draft summary report. The draft report will present all of the collected information in either tabular or graphic form including data tables, borehole logs, contour maps, and cross-sections and will be accompanied by written text presenting our interpretation of the site conditions. The report shall include recommendations of future investigation/remediation of the site.

2.10 Task X - Temporary Treatment System

In Task III, URS identified an air stripping column to be leased by URS for the Department as a temporary measure for water treatment. The lease will run until a final interim remedial measure (IRM), with design based upon the findings of the current field investigation, is installed and operating. That period is estimated at 12 months. Operation and maintenance of the unit will be the responsibility of the Village of Johnson City.

URS will prepare an engineering design for the installation of the temporary system. That design will include a concrete pad for support of the rented equipment based on details supplied by the lessor, schematic diagrams of piping requirements, and sketches and diagrams for modifications to electrical systems. Piping and instrumentation diagrams for the treatment system will be supplied by the lessor.

URS will solicit and review bids for construction of support facilities for the treatment unit. Due to time constraints, the bid packages will contain minimal detail. URS will schedule and attend a pre-bid meeting to answer contractor questions and will provide field oversight during construction. URS will prepare an O&M manual for the system, based on material supplied by the lessor, and will be present to provide assistance as necessary when the unit is released by the lessor to the Village.

A representative from URS will be available to attend a public meeting relating to the temporary system.

RECOMMENDED GROUNDWATER SAMPLING SUMMARY FOR
OBSERVATION WELL INSTALLATION NEAR THE CAMDEN STREET WELLFIELD

Matrix	Schedule	No. of Samples
Groundwater	A*, B**	15
Field QC		
Field Blank	A,B	1
Lab QC		
Matrix Spike	B	1
Laboratory Fortified Blank	A	1
Matrix Spike Dup	B (PCBs only)	1
Matrix Duplicate	B (Metals, cyanide only)	1
* Schedule A		
Volatiles	524.2 (plus acetone methylethylketone & dichlorodifluoromethane	
** Schedule B		
TAL Metals (23)	NYSDEC ASP	
Cyanide	9010	
TCL PCBs	89-3	

3.0 PROJECT SCHEDULE/LEVEL OF EFFORT

Table 2 presents our tentative schedule for the Camden Street Wellfield investigation. As indicated by the table, we anticipate that the remedial investigation portion of the project will take five months to complete, from Notice to Proceed until submission of the Draft Remediation Report. This schedule is based on the following assumptions:

- Chemical laboratory turn around time does not exceed two weeks (the validity of this assumption, which is generally quite reasonable, also depends on the real-time frame of the project, and the corresponding order backlog at the time when samples are actually delivered to the laboratory);

- NYSDEC review and input is interactive throughout the project, particularly at the milestone submission dates, with no separate time allowance for this function.

A complete and comprehensive breakdown of levels-of-effort are detailed in attached Schedule 2.11 in Appendix A.

TABLE 2

PROJECT SCHEDULE

Milestones/Deliverables		Completion Date
1.	Issuance/Work Assignment (WA)	09/12/91
2.	Receipt of Signed Copy of WA	09/19/91
*3.	Submission of M/WBE Utilization Plan Submission of Work Plan (Task I)	09/27/91
4.	Work Plan Approval/Notice to Proceed	10/04/91
*5.	Well Installation (Task V)	10/11/91
6.	Final Remediation Report Approval (Task VIII)	02/07/92
*7.	Water Treatment System Start-up (Task X)	10/31/91

* Project milestones requiring performance evaluations.

4.0 STAFFING PLAN/KEY PERSONNEL

URS will supply the following senior staff to be responsible for the emergency investigations and designs:

Title	Grade	Name
Program Director	IX	John Gorton
Project Engineer	VIII	Charles Hurley
Project Manager	VIII	Gerry Sikora
Senior Engineer	VII	James Lanzo
Project Hydrogeologist	VII	Andre LaPres

Services will be provided by other members of our staff on an as-needed basis.

APPENDIX A

ESTIMATED COSTS
JOHNSON CITY WELLFIELD
WORK ASSIGNMENT #D002340-12

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11(a)

SUMMARY OF WORK ASSIGNMENT PRICE

1.	DIRECT SALARY COSTS	$48,322.62
2.	INDIRECT COSTS	$64,752.31
3.	DIRECT NON-SALARY COSTS	$24,757.00
4.	SUBCONTRACT COSTS	

A. Cost-Plus-Fixed-Fee Subcontracts

	Name of Subcontractor	Services to be Performed	Subcontract Price
1.	NONE		$0.00

TOTAL Cost-Plus-Fixed-Fee Subcontracts $0.00

B. Unit Cost Subcontracts

	Name of Subcontractor	Services to be Performed	Subcontract Price
1.	AMERICAN AUGER	DRILLING/WELL INSTALLATION	$102,610.00
2.	IEA LABORATORY	CHEMICAL ANALYSIS	$18,903.00
3.	A & E BLUEPRINTING	REPRODUCTION	$337.50
4.	HYDROGROUP, INC.	WATER TREATMENT	$111,700.00
5.	NOT SELECTED YET	PUMP,PAD,LINE INSTALLMENT	$75,500.00
6.	NOT SELECTED YET	LANDSCAPING	$400.00

TOTAL Unit Price Subcontracts $309,450.50

5.	FIXED FEE	$11,307.49
6.	TOTAL WORK ASSIGNMENT PRICE	$458,589.92

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11 (b)

DIRECT LABOR HOURS BUDGETED

Labor Classification	IX	VIII	VII	VI	V	IV	III	II	I	TOTALS
Task 1: DEVELOP PROJECT MANAGEMENT WORK PLAN	2	35	0	20	0	20	10	0	10	97
Task 2: SITE EVALUATION	7	69	1	2	9	118	13	2	0	221
Task 3: PRELIMINARY ENGINEERING EVALUATION	1	10	28	0	1	6	0	0	0	46
Task 4: HEALTH & SAFETY AND QA/QC PLANS	2	5	0	25	25	10	0	0	0	67
Task 5: WELL INSTALLATION	7	70	3	0	2	300	1	395	0	778
Task 6: AQUIFER TESTING	3	10	35	0	20	50	50	0	20	188
Task 7: SAMPLING AND ANALYSIS	5	15	0	35	130	45	45	0	0	275
Task 8: SURVEY AND MAPPING	3	5	0	10	0	70	0	40	20	148
Task 9: SITE ASSESSMENT & FINAL REPORT	5	20	5	35	0	160	160	0	40	425
Task 10: WELL #3 TREATMENT	4	55	25	80	124	45	60	0	0	393
TOTALS	39	294	97	207	311	824	339	437	90	2638

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11 (b)

DIRECT LABOR COSTS BUDGETED

Labor Class	IX	VIII	VII	VI	V	IV	III	II	I	TOTALS
Rate	$38.12	$35.32	$28.57	$22.93	$19.15	$15.90	$12.49	$11.10	$8.80	
Task 1: DEVELOP PROJECT MANAGEMENT WORK PLAN	$76.24	$1,236.20	$0.00	$458.60	$0.00	$318.00	$124.90	$0.00	$88.00	$2,301.94
Task 2: SITE EVALUATION	$266.84	$2,437.08	$28.57	$45.86	$172.35	$1,876.20	$162.37	$22.20	$0.00	$5,011.47
Task 3: PRELIMINARY ENGINEERING EVALUATION	$38.12	$353.20	$799.96	$0.00	$19.15	$95.40	$0.00	$0.00	$0.00	$1,305.83
Task 4: HEALTH & SAFETY AND QA/QC PLANS	$76.24	$176.60	$0.00	$573.25	$478.75	$159.00	$0.00	$0.00	$0.00	$1,463.84
Task 5: WELL INSTALLATION	$266.84	$2,472.40	$85.71	$0.00	$38.30	$4,770.00	$12.49	$4,384.50	$0.00	$12,030.24
Task 6: AQUIFER TESTING	$114.36	$353.20	$999.95	$0.00	$383.00	$795.00	$624.50	$0.00	$176.00	$3,446.01
Task 7: SAMPLING AND ANALYSIS	$190.60	$529.80	$0.00	$802.55	$2,489.50	$715.50	$562.05	$0.00	$0.00	$5,290.00
Task 8: SURVEY AND MAPPING	$114.36	$176.60	$0.00	$229.30	$0.00	$1,113.00	$0.00	$444.00	$176.00	$2,253.26
Task 9: SITE ASSESSMENT & FINAL REPORT	$190.60	$706.40	$142.85	$802.55	$0.00	$2,544.00	$1,998.40	$0.00	$352.00	$6,736.80
Task 10: WELL #3 TREATMENT	$152.48	$1,942.60	$714.25	$1,834.40	$2,374.60	$715.50	$749.40	$0.00	$0.00	$8,483.23
	$1,486.68	$10,384.08	$2,771.29	$4,746.51	$5,955.65	$13,101.60	$4,234.11	$4,850.70	$792.00	$48,322.62

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11(c)

DIRECT NON-SALARY COSTS

ITEM	MAX. REIMBURSEMENT RATE (Specify Unit)	EST. NO. OF UNITS	TOTAL EST. COST
A. SAMPLE ANALYSIS RATE			
1. NONE			
B. MISCELLANEOUS			
1a. AIRFARE	$422.00 /EACH	2	$844.00
1b. AIRFARE	$380.00 /EACH	2	$760.00
2. PER DIEM	$81.00 /DAY	95	$7,695.00
3. CAR RENTAL	$40.00 /DAY	25	$1,000.00
4. VAN RENTAL	$46.00 /DAY	50	$2,300.00
5. MILEAGE	$0.23 /MILE	6000	$1,380.00
6. SHIPPING	$100.00 /EACH	10	$1,000.00
7. OWNED EQUIPMENT	(SCHEDULE 2.11(d) 2)	-	$4,183.00
8. RENTED EQUIPMENT	(SCHEDULE 2.11(d) 3)	-	$500.00
9. CONSUMABLE SUPPLIES	(SCHEDULE 2.11(d) 5)	-	$5,095.00
TOTAL DIRECT NON-SALARY COSTS			$24,757.00

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11 (d) 1

EQUIPMENT PURCHASED UNDER THE CONTRACT

Item	Estimated Purchase Price	O&M Rate (per month)	Term of Usage (Months)	Estimate Usage Cost
NONE	-	-	-	$0.00
			TOTAL:	$0.00

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11(d) 2

MAXIMUM REIMBURSEMENT RATES FOR CONSULTANT/SUBCONSULTANT
OWNED EQUIPMENT

WORK ASSIGNMENT D002340-6

ITEM	PURCHASE PRICE x 85%	USAGE RATE ($/day)	CAPITAL RECOVERY ($/day)	O & M RATE ($/day)	ESTIMATED USAGE (DAYS)	ESTIMATED COST
Photoionization Meter	$4,226.00	$45.00	$22.00	$23.00	40	$1,800.00
Explosimeter	$2,372.00	$44.00	$36.00	$8.00	2	$88.00
Gieger Counter	$281.00	$20.00	$15.00	$5.00	2	$40.00
pH Temperature Meter	$215.00	$7.00	$5.00	$2.00	25	$175.00
Turbidity Meter	$915.00	$15.00	$13.00	$2.00	20	$300.00
Conductivity Meter	$199.00	$15.00	$10.00	$5.00	20	$300.00
Water Level Meter	$253.00	$10.00	$8.00	$2.00	45	$450.00
Bailer	$127.50	$25.00	$18.00	$7.00	10	$250.00
Data Logger	$4,161.00	$33.00	$31.00	$2.00	10	$330.00
Hand Auger	$250.00	$10.00	$8.00	$2.00	0	$0.00
EDM	$4,072.00	$50.00	$40.00	$10.00	5	$250.00
Theodolite	$2,975.00	$40.00	$30.00	$10.00	5	$200.00
TOTAL						$4,183.00

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11 (d) 3

MAXIMUM REIMBURSEMENT RATE FOR VENDOR - RENTED EQUIPMENT

Item	Maximum Reimbursement Rate	Estimated Usage (period of time)	Estimated Rental Cost
WATERRA PUMP & GENERATOR	$100.00	5	$500.00
		TOTAL:	$500.00

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11 (d) 4

SITE-DEDICATED EQUIPMENT

Item	Estimated Quantity	Unit Cost	Total Budgeted Cost
NONE	-	-	$0.00
		TOTAL:	$0.00

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11 (d) 5

CONSUMABLE SUPPLIES

Item	Estimated Quantity	Unit Cost	Total Budgeted Cost
AERIAL PHOTOGRAPHS	0	$40.00	$0.00
FLAGS AND STAKES	1	$100.00	$100.00
HEALTH AND SAFETY (C)	0	$40.00	$0.00
HEALTH AND SAFETY (D)	80	$34.00	$2,720.00
TUBING	800	$1.00	$800.00
MISC. SURVEY SUPPLIES	1	$300.00	$300.00
MISC. SUPPLIES	10	$100.00	$1,000.00
FOOT VALVE	10	$17.50	$175.00
		TOTAL:	$5,095.00

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12

SCHEDULE 2.11(e)

COST-PLUS-FIXED-FEE SUBCONTRACTS

Name of Subcontractor	Services to be Performed	Subcontract Price
NONE		

A. DIRECT SALARY COSTS

Professional Responsibility Level	Labor Classification	Average Reimbursement Rate	Max. Reimbursement Rate	Estimated No. of hours	Total Estimated Direct Salary Cost
Total Direct Salary Costs					$0.00

B. INDIRECT COSTS

Total Indirect Salary Costs			$0.00

C. MAXIMUM REIMBURSEMENT RATES FOR NON-DIRECT SALARY COSTS

Item	Max. Reimbursement Rate	Estimated No. of Units	Total Estimated Cost
1. Travel			
2. Supplies			
Total Direct Non-Salary Costs			$0.00

D. FIXED FEE

The Fixed Fee is...	$0.00

JOHNSON CITY WELLFIELD
SCHEDULE 2.11(f)
UNIT PRICE SUBCONTRACTORS

1. Name of Contractor	Services to be performed	Subcontract Price
AMERICAN AUGER	DRILLING/WELL INSTALLATION	$102,610.00

Item	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Cost
MOB/DEMOB	$1,400.00 LUMP	1	$1,400.00
6" SPIN CASING	$45.00 /FT	0	$0.00
4 1/4" AUGER DRILLING	$14.00 /FT	275	$3,850.00
6 5/8" AUGER DRILLING	$25.00 /FT	0	$0.00
2" SPLIT SPOON SAMPLES (0-50ft)	$20.00 /SAMPLE	115	$2,300.00
2" SPLIT SPOON SAMPLES (50-100ft)	$30.00 /SAMPLE	35	$1,050.00
3" SPLIT SPOON SAMPLES (0-50ft)	$25.00 /SAMPLE	50	$1,250.00
3" SPLIT SPOON SAMPLES (50-100ft)	$35.00 /SAMPLE	50	$1,750.00
WELL INSTALLATION	$8.00 /FT	880	$7,040.00
SAND (100#)	$10.00 /BAG	50	$500.00
CEMENT (94#)	$9.00 /BAG	50	$450.00
BENSEAL (50#)	$11.00 /BAG	50	$550.00
2" SS SLOTTED SCREEN	$44.00 /FT	0	$0.00
2" SS RISER	$16.00 /FT	550	$8,800.00
2" SS PRE-PACKED SCREEN	$55.00 /FT	385	$21,175.00
4" SS PRE-PACKED SCREEN	$81.00 /FT	0	$0.00
4" SS RISER	$28.00 /FT	0	$0.00
CABLE TOOL DRIVING & PULLING 6" CASING	$37.00 /FT	660	$24,420.00
6" T&C STEEL CASING	$10.00 /FT	660	$6,600.00
6" DRIVE SHOE	$50.00 /EACH	7	$350.00
STEAM CLEANER & WATER TRUCK	$150.00 /DAY	29	$4,350.00
PER DIEM (3 MAN CREW)	$105.00 /DAY	19	$1,995.00
PER DIEM (5 MAN CREW)	$175.00 /DAY	11	$1,925.00
STANDBY/DECON/DEVELOPMENT TIME	$85.00 /HOUR	22	$1,870.00
6" PROTECTIVE CASING	$130.00 /EACH	11	$1,430.00
DEVELOPMENT PUMP RENTAL	$75.00 /DAY	13	$975.00
GROUT PUMP RENTAL	$150.00 /DAY	23	$3,450.00
FLUSH MOUNT WELL COVERS	$130.00 /EACH	4	$520.00
BRASS LOCKING CAP W/O-RING	$25.00 /EACH	4	$100.00
BENTONITE PELLETS	$37.00 /PAIL	30	$1,110.00
SS PLUGS AND CAPS	$50.00 /EACH	26	$1,300.00
SS CENTRALIZIERS	$30.00 /EACH	10	$300.00
55-GALLON DRUMS (WITH HANDLING)	$70.00 /EACH	10	$700.00
EXTRA WATER TRUCK RENTAL	$100.00 /DAY	11	$1,100.00

JOHNSON CITY WELLFIELD
SCHEDULE 2.11(f) (Continued)

2. Name of Contractor	Services to be performed	Subcontract Price
IEA	CHEMICAL ANALYSIS	$18,903.00 * **

Item	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Cost
WATER			
VOC	$367.50 EACH	15	$5,512.50
TAL METALS & CYANIDE	$480.00 EACH	15	$7,200.00
TCL PCB's	$202.50 EACH	15	$3,037.50
FIELD BLANK	$1,050.00 EACH	1 *	$1,050.00
MATRIX SPIKE	$682.50 EACH	1 *	$682.50
LAB FORTIFIED BLANK	$367.50 EACH	1 *	$367.50
MATRIX SPIKE DUPLICATE	$202.50 EACH	1 *	$202.50
MATRIX DUPLICATE	$480.00 EACH	1 *	$480.00
EXPIDITED SAMPLE BOTTLE ORDER 2% OF TOTAL COST			$370.50

3. Name of Contractor	Services to be performed	Subcontract Price
A&E BLUEPRINTING	REPRODUCTION	$337.50

Item	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Cost
PRINTING	$0.060 /PAGE	5000	$300.00
BINDING	$2.50 /BOOK	15	$37.50

* Level of QA/QC samples assumes that all samples will be collected within one (1) work week. If sample collection extends beyond one work week, one analysis for each of the QA/QC parameters noted above will be required for each additional week the sample collection is extended.

** Includes 50% premium for two (2) week turnaround in receipt of analyses.

JOHNSON CITY WELLFIELD
SCHEDULE 2.11(f) (Continued)

4. Name of Contractor	Services to be performed	Subcontract Price
HYDROGROUP	WATER TREATMENT	$111,700.00

Item	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Cost
DELIVER AND SET-UP	$47,500.00 LS	1	$47,500.00
RENTAL	$4,100.00 /MONTH	12	$49,200.00
DEMOBILIZATION (estimated)	$15,000.00 LS	1	$15,000.00

5. Name of Contractor	Services to be performed	Subcontract Price
NOT SELECTED YET	PUMP,PAD & LINE INSTALLATION	$75,500.00

Item	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Cost
PUMPS #2 & #3 AND WATER LINE	$65,000.00 LS	1	$65,000.00
CONCRETE PAD FOR AIR STRIPPER	$10,500.00 LS	1	$10,500.00

6. Name of Contractor	Services to be performed	Subcontract Price
NOT SELECTED YET	LANDSCAPING	$400.00

Item	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Cost
REPAIR LAWN DAMAGE	$400.00 LS	1	$400.00

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.

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Date

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TASK I: DEVELOP PROJECT MANAGEMENT WORK PLAN SCHEDULE 2.11(g)
Complete _____%

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$2,302	
2. Indirect Costs (1.34%)							$3,085	
3. Subtotal Direct Salary Costs and Indirect Costs							$5,387	
4. Travel							$0	
5. Other Non-Salary Costs							$0	
6. Subtotal Direct Non-Salary Costs							$0	
7. Subcontractors							$0	
8. Total Work Assignment Cost							$5,387	
9. Fixed Fee							$470	
10. Total Work Assignment Price							$5,857	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
TASK II: SITE EVALUATION
Complete _____%

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Date

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SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$5,011	
2. Indirect Costs (1.34%)							$6,715	
3. Subtotal Direct Salary Costs and Indirect Costs							$11,727	
4. Travel							$439	
5. Other Non-Salary Costs							$0	
6. Subtotal Direct Non-Salary Costs							$439	
7. Subcontractors							$0	
8. Total Work Assignment Cost							$12,166	
9. Fixed Fee							$1,173	
10. Total Work Assignment Price							$13,338	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
TASK III: PRELIMINARY ENGINEERING EVALUATION
Complete _____%

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SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$1,306	
2. Indirect Costs (1.34%)							$1,750	
3. Subtotal Direct Salary Costs and Indirect Costs							$3,056	
4. Travel							$0	
5. Other Non-Salary Costs							$0	
6. Subtotal Direct Non-Salary Costs							$0	
7. Subcontractors							$0	
8. Total Work Assignment Cost							$3,056	
9. Fixed Fee							$306	
10. Total Work Assignment Price							$3,361	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
TASK IV: WORK PLANS
Complete _____%

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SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$1,464	
2. Indirect Costs (1.34%)							$1,962	
3. Subtotal Direct Salary Costs and Indirect Costs							$3,425	
4. Travel							$0	
5. Other Non-Salary Costs							$0	
6. Subtotal Direct Non-Salary Costs							$0	
7. Subcontractors							$0	
8. Total Work Assignment Cost							$3,425	
9. Fixed Fee							$343	
10. Total Work Assignment Price							$3,768	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
TASK V: WELL INSTALLATION
Complete _____%

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SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$12,030	
2. Indirect Costs (1.34%)							$16,121	
3. Subtotal Direct Salary Costs and Indirect Costs							$28,151	
4. Travel							$8,817	
5. Other Non-Salary Costs							$5,988	
6. Subtotal Direct Non-Salary Costs							$14,805	
7. Subcontractors							$103,010	
8. Total Work Assignment Cost							$145,966	
9. Fixed Fee							$2,815	
10. Total Work Assignment Price							$148,781	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
TASK VI: AQUIFER TESTING
Complete _____%

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SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$3,446	
2. Indirect Costs (1.34%)							$4,618	
3. Subtotal Direct Salary Costs and Indirect Costs							$8,064	
4. Travel							$1,193	
5. Other Non-Salary Costs							$415	
6. Subtotal Direct Non-Salary Costs							$1,608	
7. Subcontractors							$0	
8. Total Work Assignment Cost							$9,672	
9. Fixed Fee							$806	
10. Total Work Assignment Price							$10,478	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
TASK VII: ENVIRONMENTAL SAMPLING AND ANALYSIS
Complete _____%

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SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$5,290	
2. Indirect Costs (1.34%)							$7,089	
3. Subtotal Direct Salary Costs and Indirect Costs							$12,379	
4. Travel							$878	
5. Other Non-Salary Costs							$3,350	
6. Subtotal Direct Non-Salary Costs							$4,228	
7. Subcontractors							$18,903	
8. Total Work Assignment Cost							$35,510	
9. Fixed Fee							$1,238	
10. Total Work Assignment Price							$36,747	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
TASK VIII: SURVEY AND MAPPING
Complete _____%

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SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$2,253	
2. Indirect Costs (1.34%)							$3,019	
3. Subtotal Direct Salary Costs and Indirect Costs							$5,273	
4. Travel							$878	
5. Other Non-Salary Costs							$890	
6. Subtotal Direct Non-Salary Costs							$1,768	
7. Subcontractors							$0	
8. Total Work Assignment Cost							$7,041	
9. Fixed Fee							$527	
10. Total Work Assignment Price							$7,568	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
TASK IX: SITE ASSESSMENT AND FINAL REPORT
Complete _____%

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SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$6,737	
2. Indirect Costs (1.34%)							$9,027	
3. Subtotal Direct Salary Costs and Indirect Costs							$15,764	
4. Travel							$1,182	
5. Other Non-Salary Costs							$0	
6. Subtotal Direct Non-Salary Costs							$1,182	
7. Subcontractors							$338	
8. Total Work Assignment Cost							$17,284	
9. Fixed Fee							$1,576	
10. Total Work Assignment Price							$18,860	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
TASK X: WELL #3 TREATMENT
Complete _____%

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Date

Billing
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SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs							$8,483	
2. Indirect Costs (1.34%)							$11,368	
3. Subtotal Direct Salary Costs and Indirect Costs							$19,851	
4. Travel							$1,146	
5. Other Non-Salary Costs							$0	
6. Subtotal Direct Non-Salary Costs							$1,146	
7. Subcontractors							$187,200	
8. Total Work Assignment Cost							$208,197	
9. Fixed Fee							$1,878	
10. Total Work Assignment Price							$210,074	

PROJECT MANAGER (ENGINEER)_____ DATE_____

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Work Assignment: # D002340-12
Period
No.
Project Totals
Complete _____%

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Date

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Invoice

SCHEDULE 2.11(g)

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid to Date	C Total Disallowed To Date	D Total Costs Incurred to Date	E Estimated Costs to Completion	F Estimated Total Work Assignment Price	G Approved Budget	H Estimated Over/Under
1. Direct Salary Costs				$0	$48,323	$48,323	$48,323	$0
2. Indirect Costs (1.34%)				$0	$64,752	$64,752	$64,752	$0
3. Subtotal Direct Salary Costs and Indirect Costs				$0	$113,075	$113,075	$113,075	$0
4. Travel				$0	$13,979	$13,979	$13,979	$0
5. Other Non-Salary Costs				$0	$10,778	$10,778	$10,778	$0
6. Subtotal Direct Non-Salary Costs				$0	$24,757	$24,757	$24,757	$0
7. Subcontractors				$0	$309,451	$309,451	$309,451	$0
8. Total Work Assignment Cost				$0	$447,282	$447,282	$447,282	$0
9. Fixed Fee				$0	$11,307	$11,307	$11,307	$0
10. Total Work Assignment Price				$0	$458,590	$458,590	$458,590	$0

PROJECT MANAGER (ENGINEER)_____ DATE_____

SCHEDULE 2.11(h)

Site Name: JOHNSON CITY WELLFIELD
Consultant: URS CONSULTANTS, Inc.
Contract: # D002340
Work Assignment: # D002340-12
Date: 8/21/91
Billing Period:
Invoice No.:

MONTHLY COST CONTROL REPORT

SUMMARY OF LABOR HOURS
NUMBER OF DIRECT LABOR HOURS EXPENDED TO DATE/
ESTIMATED NUMBER OF DIRECT LABOR HOURS TO COMPLETION

LABOR CLASSIFICATION	IX	VIII	VII	VI	V	IV	III	II	I	TOTAL HOURS
Salary Rate	$38.12	$35.32	$28.57	$22.93	$19.15	$15.90	$12.49	$11.10	$8.80	
	EXP / EST	EXP / EST	EXP / EST	EXP / EST	EXP / EST	EXP / EST	EXP / EST	EXP / EST	EXP / EST	EXP / EST
TASK 1	0.0 / 2.0	0.0 / 35.0	0.0 / 0.0	0.0 / 20.0	0.0 / 0.0	0.0 / 20.0	0.0 / 10.0	0.0 / 0.0	0.0 /10.0	0.0 / 97.0
TASK 2	0.0 / 7.0	0.0 / 69.0	0.0 / 1.0	0.0 / 2.0	0.0 / 9.0	0.0 /118.0	0.0 / 13.0	0.0 / 2.0	0.0 / 0.0	0.0 / 221.0
TASK 3	0.0 / 1.0	0.0 / 10.0	0.0 / 28.0	0.0 / 0.0	0.0 / 1.0	0.0 / 6.0	0.0 / 0.0	0.0 / 0.0	0.0 / 0.0	0.0 / 46.0
TASK 4	0.0 / 2.0	0.0 / 5.0	0.0 / 0.0	0.0 / 25.0	0.0 / 25.0	0.0 / 10.0	0.0 / 0.0	0.0 / 0.0	0.0 / 0.0	0.0 / 67.0
TASK 5	0.0 / 7.0	0.0 / 70.0	0.0 / 3.0	0.0 / 0.0	0.0 / 2.0	0.0 /300.0	0.0 / 1.0	0.0 /395.0	0.0 / 0.0	0.0 / 778.0
TASK 6	0.0 / 3.0	0.0 / 10.0	0.0 / 35.0	0.0 / 0.0	0.0 / 20.0	0.0 / 50.0	0.0 / 50.0	0.0 / 0.0	0.0 /20.0	0.0 / 188.0
TASK 7	0.0 / 5.0	0.0 / 15.0	0.0 / 0.0	0.0 / 35.0	0.0 /130.0	0.0 / 45.0	0.0 / 45.0	0.0 / 0.0	0.0 / 0.0	0.0 / 275.0
TASK 8	0.0 / 3.0	0.0 / 5.0	0.0 / 0.0	0.0 / 10.0	0.0 / 0.0	0.0 / 70.0	0.0 / 0.0	0.0 / 40.0	0.0 /20.0	0.0 / 148.0
TASK 9	0.0 / 5.0	0.0 / 20.0	0.0 / 5.0	0.0 / 35.0	0.0 / 0.0	0.0 /160.0	0.0 / 160.0	0.0 / 0.0	0.0 /40.0	0.0 / 425.0
TASK 10	0.0 / 4.0	0.0 / 55.0	0.0 / 25.0	0.0 / 80.0	0.0 /124.0	0.0 / 45.0	0.0 / 60.0	0.0 / 0.0	0.0 / 0.0	0.0 / 393.0
TOTAL HOURS:	0.0 / 39.0	0.0 /294.0	0.0 / 97.0	0.0 /207.0	0.0 /311.0	0.0 /824.0	0.0 / 339.0	0.0 / C	0.0 /90.0	0.0 /2638.0

APPENDIX B

RESUMES/KEY PERSONNEL

JOHNSON CITY WELLFIELD

WORK ASSIGNMENT #D002340-12

Name:	JOHN C. GORTON, JR.
Current Affiliation:	URS Consultants
Education:	BS, Chemical Engineering, Northeastern University, 1970
Title:	Vice President

PROFESSIONAL EXPERIENCE

Mr. Gorton is responsible for URS Corporation's hazardous waste projects in the Northeast. He directs a multidisciplinary staff of over 190 engineers, scientists and support personnel, and manages an annual budget of $20 million worth of remedial investigations, feasibility studies, remedial designs and RF/FSs, remedial designs and remedial action construction projects. During the past six years, Mr. Gorton has directed: 27 RI/FSs, 19 remedial designs, 16 projects involving the construction of remedial measures and two New York State task order hazardous waste contracts. A number of these projects included underground storage tank analyses and/or removal. His 17-year career includes a comprehensive, highly professional contribution to the advancement of hazardous waste management. He has taken leadership roles to forge positive results for clients who face difficult hazardous site conditions. Evidence of his technical and management capabilities are illustrated by his work on the following projects:

- Program Principal responsible for Underground Storage Tank Management Program. Program involves remedial investigation, feasibility studies, remedial design, oversight, and design RA implementation services for the New York City Transit Authority. Activities include tank tightness testing, remedial investigations and remediation recommendations, design overview and technical inspection for tank replacement and installation. The underground storage tanks (USTs) are located in all five boroughs of New York City, 214 tanks at 26 facilities. The USTs range in size from 200 gallons to 35,000 gallons, generally single walled, and up to 52 wears in age. The tanks contain petroleum products such as gasoline, diesel fuel, lube oil, fuel oil, and waste oil.

- Program Manager for contaminated soil removal from site associated with the rehabilitation of the Brooklyn-Queens Expressway/Meeker Avenue Viaduct in Brooklyn, New York. The New York State Department of Transportation retained URS Consultants for the reconstruction of the 1.1 mile viaduct, a $107 million project.

- Project Director for overall direction and site management continuity at the Pollution Abatement Services (PAS) Superfund site. This three-year project encompasses RI/FS, design and remedial construction. A number of problems were successfully addressed during the life of this contact and the project was completed on schedule and despite an additional 700 drums and varied chemical content, the final construction cost was within the budget.

- Project Director for the design of new landfill cells and impoundments for Rollin's hazardous waste treatment and disposal facility in Louisiana.

- Project Director for the remediation of a manufacturing facility for General Motors in the State of New Jersey. This project included initial studies to define the problem interaction with NJDEP, evaluation of clean-up alternative and demolition of 2 millions $ft.^2$ of manufacturing facility including asbestos and PCB removal.

- Program Manager for the 5-year $15 million New York State Superfund Standby contract. Assignments under this task order contract have included: preliminary assessments, initial remedial measures, RI/FS, remedial design, and construction monitoring.

- Project Director for RI/FS's at Gratwick Riverside Park a public park on the Niagara River and Weston Mills in Olean, New York.

PROFESSIONAL AFFILIATIONS

- American Institute of Chemical Engineers

- Water Pollution Control Federation

- Hazardous Materials Control Research Institute

PUBLICATIONS

- "Combined Treatment of Industrial and Domestic Wastewater in the Buffalo Municipal System" 3/77

- "Indirect Discharges" Their Effect on the Sludge Disposal Alternatives of the Buffalo Sewer Authority 3/79

- "Implications and Impacts of the Federal Industrial Pretreatment Program in Puget Sound" 5/79

- Development of a Pretreatment Program in Puerto Rico 10/81

- "Private Sector Attitudes and Concerns with Superfund" (co-author) 10/19/81

- "RCRA Considerations in Permitting a TSD Facility" 8/1983

- Remedial Investigation and Feasibility Study for the Pollution Abatement Services Site" (co-author) 11/1984

- "Procedures for the Effective Investigation and Remediation of Hazardous Waste Sites" 11/1985

- "PAS Investigation Through Remedial Construction" 3/1987

Name:	**GERALD S. SIKORA**
Current Affiliation:	URS Consultants, Inc.
Education:	MS, Geology/Hydrology, University of Toledo, Ohio, 1975
	BS, Geology, State University College Fredonia, New York, 1971
Title:	Project Manager

PROFESSIONAL EXPERIENCE

Mr. Sikora has over 16 years of comprehensive professional experience in applying geologic and hydrologic principles to the practical solution of environmental, geotechnical, and water resources problems. The diversity of his training and experience allows him to perform as a Project Manager on a variety of large multidisciplinary projects commonly dealing with waste site investigation/ remediation, water resource exploration/development, and groundwater control. In this capacity he has managed projects with budgets cumulatively exceeding $5,500,000. He has actively represented private clients in technical negotiations with state (NY, MI, TX, VA) and federal regulatory agencies and provided expert testimony at public meetings and in depositions taken for litigious purposes.

- Project Manager for the remedial removal of drummed chemical waste, debris, and soil from an old automobile press pit located on a New York State designated inactive hazardous waste site. This project included the preparation of CERCLA-type documents including a regulatory agency negotiated work plan, quality assurance project plan, health and safety plan, contract plans and specifications, and final report documentation.

- Project Manager and Senior Hydrogeologist for a RCRA Facility Investigation (RFI) pursuant to 40 CFR 264 at an 880-acre organic chemical manufacturing facility in Michigan. Work included the preparation of a multi-faceted work plan to detect and characterize historical releases from 23 solid waste management units on the site and the preparation of a health and safety plan.

- Project Manager and Senior Hydrogeologist for a comprehensive hydrogeologic and water quality investigation in technical support of a New York State Dept. of Environmental Conservation Part 360 Permit Application for design and construction at a major municipal landfill. In addition to defining the complex hydrogeology of the site which is in proximity to a primary drinking water aquifer, the project included the development of a 22 multi-level well, RCRA-type groundwater monitoring plan for the landfill which was successfully granted a construction permit.

- Project Manager and Senior Hydrogeologist for a Remedial Investigation (RI) at a high priority New York State Superfund site. The project included the integration of a comprehensive drilling and sampling program with fracture trace, seismic refraction, terrain conductivity and geotechnical testing data for the subsequent development of hazardous waste site closure plans and specifications which included groundwater control and slurry trench installations.

- Project Manager and Senior Hydrogeologist for a detailed review and independent hydrologic analysis of a 1,008,000 gallon per day groundwater plume extraction system in Michigan. A select group of mathematical models were used as the basis for the complex aquifer testing, design, and installation of an expanded 15-well pumping and monitoring system which satisfactorily met stringent performance goals.

- Project Manager and Senior Hydrogeologist on a groundwater exploration and development program for a 12 to 14 million gallon per day municipal supply in New York State. The project included the integration of test boring and seismic refraction programs to define unconsolidated aquifer geometry; the selection and testing of potential well sites; production well design, installation and testing; and a determination of the performance of the 12-unit induced-recharge wellfield for final design purposes.

- Project Hydrogeologist for a detailed review and independent hydrologic analysis of an operational dewatering program for a proposed open pit porphyry copper mine in Arizona. The review identified a subtle but significant misinterpretation of aquifer test data in an earlier investigator's work. The revised operational plan indicated that capital and operation/maintenance costs for the deep 14-well system required to efficiently dewater the mine were 300 percent higher than previously believed.

- Project Manager and Senior Hydrogeologist for an exploratory municipal ground water supply program in Virginia. Fracture trace analyses integrated with existing geologic data and information were used in the design, installation and testing of three deep (+ 1,000 feet) bedrock test wells to determine aquifer/well yield, water quality and interference effects on nearby domestic supply wells.

- Senior Hydrogeologist for an investigation to predict the surface water and ground water impacts due to the proposed dewatering of a planned 200-feet deep quarry. A select group of mathematical models were used to predict operational quarry discharge, to quantify potential effects at neighboring domestic supply wells, to determine the potential impact on a state designated wetland which bordered one side of the quarry, to determine the capacity of existing surface water drainage to accommodate

quarry discharge without adverse flooding and to estimate the rate at which the quarry would fill at the cessation of pumping for reclamation purposes. The predicted hydrologic impacts favorably withstood rigorous independent peer review.

- Project Advisor for a project to relocate 2,600 feet of two surface streams which flowed over the main haulageway of an underground gypsum mine. Hydrologic, geologic, and fracture trace analyses were used to choose a preferred option, develop a design with plans/specifications, and provide field inspection during construction.

- Project Hydrogeologist for the evaluation of an 18-unit 28 million gallon per day wellfield for potable supply at the King Khalid Military City in the Kingdom of Saudi Arabia. Nine single and multiple pumping-well constant rate aquifer tests and six variable rate well tests conducted in 14 of the 3,800-feet deep high capacity bedrock wells were analyzed with an appropriate group of mathematical models to predict well/aquifer performance for pumping/distribution design purposes.

- Project Hydrogeologist for six ground water production well rehabilitation programs in unconsolidated soil and bedrock aquifers. Developed and/or implemented investigations to test, diagnose and remedy yield loss problems related to sand piping, screen/sand pack invasion, well bore encrustation, over pumping, bacteriological clogging, and aquifer consolidation. Post remedial recommendations for well yield monitoring were made for continued operation.

- Project Manger and Senior Hydrogeologist for a detailed hydrogeologic and ground water quality investigation at a 22 acre inorganic chemical manufacturing facility in Texas. Responsible for the total development, management, and data interpretation/ presentation for the 18 well project.

- Hydrogeologist conducting and interpreting resistivity/spontaneous potential and natural gamma radiation wireline logs for the purpose of recommending municipal waterwell design parameters at several sites in the Magothy Aquifer for Suffolk County Water Authority in Suffolk County, New York.

- Environmental Geologist for the development of a conceptual plan and cost estimate to investigate groundwater contaminated with halogenated organics at a major chemical manufacturing site in Hicksville, New York for the Hooker Chemical Co., RUCO Division Plant. Plan included nested observation well drilling and sampling in the water table and Magothy Aquifers beneath the site in an effort to define the character and source of contamination.

Name:	**CHARLES W. HURLEY**
Current Affiliation:	URS Consultants
Education:	BSCHE, Chemical Engineering, University of Pittsburgh, 1949 Postgraduate studies in Business Administration, Drexel University, Philadelphia, PA
Title:	**Sr. Project Manager**

PROFESSIONAL EXPERIENCE

Mr. Hurley is a Senior Project Manager with 40 years of varied experience in engineering, industrial operations, and waste management, including hazardous waste assignments. Hazardous waste, industrial waste, and other industrial engineering projects include field investigations, conceptual planning and design alternative analyses for process and equipment, process and facility design, preparation of technical specifications and control documents, construction management, start-up assistance, and optimization of equipment operation. Other assignments include technical assistance to production management, product and process development, and waste stream minimization. Industrial experience prior to joining a consulting firm included in-house engineering at a petroleum refinery, heavy chemical production facilities, and pulp and paper mills.

- Program Manager for work assigned to URS under a $15,000,000 NYSDEC Standby Contract. Projects include Phase I and Phase II site investigations, Remedial Investigation/Feasibility Study assignments, remedial measure design, construction management, and long-term O&M management at remediated sites.

- Project Manager for Remedial Investigation/Feasibility Study at the Weston Mills site for NYSDEC. The site was an abandoned dumping ground suspected of contaminating groundwater and an adjacent surface stream.

- Project Management for RI/FS at the Gratwick-Riverside Park site for NYSDEC. The site, on the bank of the Niagara, was an abandoned town dump which had been converted into a municipal park. A proposed remediation measure was accepted and became part of the official Record of Decision.

- Project Manager for RI/FS at the Frontier Chemical-Pendleton site for NYSDEC. The site, originally a brick manufacturing facility which was converted into a processing facility for waste materials, includes a lake excavated from the local clay during the brick factory days. Remediation is required for groundwater, soils, and surface drainage.

- Project Manager for RI/FS at the Lockport City Landfill for the City under a consent order with NYSDEC. The site is a closed city dump located on a portion of the Niagara Escarpment. Remediation is required for surface soils and groundwater.

- Project Manager for Phase I investigations at thirty-two sites and Phase II investigations at thirteen sites in New York State for NYSDEC.

- Project Manager for the design of an interim remedial measure (IRM) (for NYSDEC at the Town of Kirkwood water supply well field. The facility included well pump replacement, installation of an air stripping column with on-ground retention tank, and a high-pressure water transfer pump.

- Project Manager for closure of three sites owned by Dunlop Tire Corporation. Project includes field study to verify result of prior investigations, remedial design, and remediation construction management. Consultation with the client and NYSDEC is required for each step.

- Responsible Engineer for selection, screening,and evaluation of alternative technologies in the Feasibility Study following a preliminary Remedial Investigation at the Lake Ontario Ordinance Works site in Lewiston, New York for the Kansas City COE.

- Project Manager for a feasibility study, design, and economic analysis for a lagoon closure at the Model City, New York site for SCA Chemical Services.

- Project Manager for the design of an elementary neutralization unit (ENU) for RCRA compliance at the Danskammer, New York, generating station for Central Hudson Gas and Electric Corp.

- Responsible Engineer for the design of facilities for control of landfill-generated leachate, gases, and vapors at a USEPA Superfund remediation site in Florence Township, New Jersey, for the New Jersey Department of Environmental Protection. The project included installation of pumps in existing manholes and wells for leachate collection with batch transfer to a neighboring treatment facility and collection and extraction of gases and vapors for destruction onsite.

Name:	**JAMES LANZO, P.E.**
Current Affiliation:	URS Consultants, Inc.
Education:	MS, Industrial Management, Clarkson College, 1972
	BS, Chemical Engineering, Clarkson College, 1971
Registration:	Professional Engineer - New York, 1989
Title:	**Chemical Engineer**

PROFESSIONAL EXPERIENCE

Senior Project Manager with over 15 years of relevant management and technical experience in the fields of hazardous and industrial waste management. He has participated in RI/FS studies at five sites and directed the design and construction of remedial measures at three sites. Additionally designed and operated two large pilot scale facilities to evaluate treatment of hazardous materials.

- Task Manager: Development of preliminary (50%) design documents for a vapor extraction process to remove BTX chlorinated hydrocarbon volatile organics from soil. Design was supported by a pilot-scale treatability test on the Superfund site in Colorado.

- Project Manager: Directing the remedial investigation of the Gorick C&D Landfill in Kirkwood (Binghamton), New York. Field activities have included installation of fourteen monitoring wells; evaluation and use of six existing wells; coordination of regional groundwater modeling efforts; gas chromatographic soil gas survey; in addition to waste, soil, groundwater, surface water, and sediment sampling. Site has been implicated as having impacted the regional potable water supply.

- Project Engineer: Coordianted the performance of thirteen (13) Phase II and thirty (30) Task I preliminary site assessments (PSA) at various inactive hazardous waste site locations around New York State. Phase IIs involved the use of eight (8) subcontractors and six URS field teams. PSAs have been completed by junior personnel with the guidance of upper level staff.

- Task Leader: Review of pretreatment facility and gas treatment facility mechanical process, and instrumentation shop drawings for Helen Kramer remedial action.

- Task Leader for the design of a 30 GPM contaminated groundwater treatment system at the Kirkman Boulevard site in Atlantic City, New Jersey. This site is being remediated to allow construction of a convention center.

- Task leader for the design of the modifications required to allow expansion of an industrial waste treatment system for a General Motors Production Facility. The existing facility was redesigned to allow the

treatment of a 50% increase of the wastewater flow rate.

- Project Engineer: Aided Union County, NJ, client in establishing a temporary field office during the site investigation and a "permanent" field office to support the site remediation. Provided office, utilities, guard service, and other required materials and services.

- Project Engineer: Developed the conceptual design for an in-situ steam stripping of soil process alternative for the feasibility study of a hazardous waste site in Louisiana.

- Project Manager: Directing the remedial investigation and feasibility study for the Ramapo Landfill site in the Town of Ramapo, New York. (The site is one of the first RI/FS to be carried out under the New York State Title 3 regulations which allow the Town to direct the Engineer while receiving up to 75% reimbursement from the State.) Remedial investigation has included the installation of 28 groundwater monitoring wells and the collection of approximately 50 additional soil, waste, and surface water, and sediment samples.

- Environmental Engineer: Standardized storage and handling procedures for plant's RCRA facility. Coordinated effort to change the plant's RCRA status from that of a treatment, storage, and disposal facility to generator only status.

- Environmental Engineer: Audited an industrial manufacturer for compliance with state of Illinois environmental regulations prior to their proposed sale.

- Project Engineer: Directed the updating, editing, and reissuing of a Contingency Plan and Emergency Procedures for an industrial facility which was a RCRA waste generator.

- Environmental Engineer: Audited operation of an Energy From Waste facility for general compliance with environmental regulations.

- Team Leader: Evaluated requirements and designed system to pretreat the contaminated leachate and groundwater from the Helen Kramer Landfill site. Design activities included: location selection, unit operation requirements, utility requirements, plant layout, air emission risk assessment, and coordination with the gas treatment design team. Other work assignments included: assisting the EPA in negotiations with the regional POTW, development of a detailed scope of work for a biological treatability study to provide a full-treatment alternative, and supervision of bench-scale corrosion testing of materials to be used in the pretreatment facility.

- Task Leader for evaluating remedial alternatives for the Clothier Superfund site. Contaminated matrix of concern was soils leading to the evaluation of: excavation and removal, incineration and bioreclamation. A recommendation for bioreclamation was made.

- Project Engineer: Assisted Western Region effort to provide Quality Assurance for the closure of a large industrial facility. Recommended simplification and standardization of their communications with the owner and the rest of the site's demolition management team.

- Project Engineer: Reviewed analytical data and suggested treatment alternatives to reduce the danger associated with contaminated leachate, groundwater, and soil at a number of State and Federal Superfund sites.

- Task Leader for the treatability studies at a Superfund site in Louisiana. Site requires remediation of over 10,000 cu. yds. of contaminated soil and treatment of 40 million gallons of contaminated water.

Name:	**ANDRE J. LAPRES**
Current Affiliation:	URS Consultants
Education:	BA, Geology, State University College at Buffalo, 1982
Title:	**Geologist**

PROFESSIONAL EXPERIENCE

Mr. LaPres has seven years experience performing and supervising field subsurface investigations. His responsibilities have included geotechnical drilling and other field activities for remedial investigations/feasibility studies conducted at several New York State Superfund sites, and other hazardous waste sites in the Northeast. He has experience in numerous New York State Superfund Phase I and II site investigations.

- Mr. LaPres has been a Field Supervisor for numerous hazardous waste disposal facilities and industrial pant sites for over seven years.

- Field Supervisor for numerous subsurface investigations at active hazardous waste disposal facilities. Responsible for supervision of activities including drilling, soil and rock sample characterization, monitoring well installation, permeability testing and surveying, data reduction and interpretation, and report preparation.

- Field Supervisor for numerous subsurface investigations at industrial plant sites. Responsible for subcontractor scheduling, supervision of activities including drilling, soil and rock sample characterization, monitoring well installation, permeability testing and surveying, client contact, data reduction and interpretation, and report preparation.

- Project Manager for lagoon excavation/closure and subsurface investigation. Responsible for client contact, supervision of excavation, waste manifesting and transport, budget tracking, and report preparation.

- Project Geologist for two Massachusetts Field Investigation Team Phase II site investigations. Responsible for supervision of activities including drilling, soil and rock sample characterization, monitoring well installation, pressure testing bedrock, data reduction and interpretation and report preparation.

- Project Manager for site characterization related to subsurface contamination assessment for major industrial corporation. Responsible for client contact, subcontractor agreements and scheduling, supervision of activities including drilling, soil and rock sample characterization, monitoring well installation, permeability testing, surveying, data reduction and interpretation, budget tracking, and report preparation.

- Site Engineer for geotechnical drilling and related field activities for several remedial investigations/feasibility studies in progress, including: Gratwick-Riverside Park NYS Superfund site, Niagara County, New York; Weston Mills NYS Superfund site, Cattaraugus County, New York; Lockport City Landfill NYS Superfund site, Niagara County, New York; and Dura Landfill, Toledo, Ohio.

- Site Engineer responsible for conducting numerous New York State Superfund Phase I site investigations involving data collection and interpretation, and report preparation.

- Field Supervisor for numerous New York State Superfund Phase II site investigations. Responsible for supervision of activities including drilling, soil and rock sample characterization, monitoring well installation, permeability testing and surveying, data reduction and interpretation, and report preparation.

- Site Engineer for supervision of geotechnical drilling for design of slurry wall and leachate treatment plant, Helen Kramer Landfill, Gloucester County, New Jersey.

- On-site Coordinator for site remedial action design investigation at top priority federal Superfund site in New Jersey. Responsible for coordination of all on-site activities including; drilling, sampling and survey crews, health and safety requirements, subcontractor contacts and supervision, progress tracking and reporting, community relations and site mobilization and demobilization.

- Author of numerous New York State Superfund Phase I reports. Responsible for data collection and interpretation, and report preparation.