Interim Remedial Measures Work Plan

7503 Niagara Falls Boulevard Site
Niagara Falls, New York

October 2006 0101-002-500

Prepared For:

GLR Holdings, LLC

Prepared By:

Benchmark Environmental Engineering & Science, PLLC

726 Exchange Street, Suite 624, Buffalo, New York | phone: (716) 856-0599 | fax: (716) 856-0583

INTERIM REMEDIAL MEASURES (IRM) WORK PLAN FOR BROWNFIELD CLEANUP PROGRAM

7503 NIAGARA FALLS BOULEVARD SITE
NIAGARA FALLS, NEW YORK

SITE NO. C932126

October 2006 | 0101-002-500

Prepared for:

GLR Holdings, LLC

IRM WORK PLAN
7503 NIAGARA FALLS BOULEVARD SITE

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IRM WORK PLAN
7503 NIAGARA FALLS BOULEVARD SITE

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1.0 INTRODUCTION

This document presents the proposed scope of work for completion of an Interim Remedial Measure (IRM) for the 7503 Niagara Falls Boulevard Site in Niagara Falls, New York (see Figures 1 and 2). The IRM is being performed on behalf of GLR Holdings, LLC (GLR) through the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP). Benchmark Environmental Engineering & Science, PLLC (Benchmark) recently implemented Remedial Investigation (RI) activities at the Site. The data obtained during the RI and previous on-Site investigations (discussed below) was utilized to develop this IRM Work Plan. Benchmark will be completing an IRM to promptly address on-Site groundwater impacted by chlorinated volatile organic compounds (VOCs) to facilitate site redevelopment. The planned approach to the IRM and related activities is discussed below.

1.1 Background

GLR is redeveloping the 7503 Niagara Falls Boulevard Site and the east adjacent parcel addressed at 7543-7555 Niagara Falls Boulevard as a fast food restaurant (see Figure 3). 7503 Niagara Falls Boulevard is subject to the BCP, while 7543-7555 Niagara Falls Blvd is not. For purposes of this IRM, reference to the Site from this point forward refers only to 7503 Niagara Falls Boulevard parcel.

The Site encompasses approximately 0.89 acres of vacant land along Niagara Falls Boulevard in the City of Niagara Falls, New York (see Figure 2). The property is generally bounded by Niagara Falls Boulevard to the north, a vacant lot and apartment buildings to the east (i.e., 7543-7555 Niagara Falls Blvd owned by GLR), private residences to the south, and commercial (fast-food restaurant) property to the west (i.e., 7403 Niagara Falls Blvd.). A concrete slab remnant from a former building foundation is present across the majority of the western portion of the property. The remainder of the Site is generally covered by asphalt.

Beginning in the late 1960s and continuing through the mid-1990s, the Site was occupied by several commercial establishments. These included various restaurants, auto parts sales and auto repair facilities. The property has been vacant since approximately 1998. The history of Site from an environmental perspective is summarized below.

1.2 Previous Investigations

The nature and distribution of chemical constituents in soil/fill and groundwater at the Site and adjacent site were described during five historic investigations (References 1-5). These included:

- A July 2004 Phase I Environmental Site Assessment (ESA) by GZA GeoEnvironmental (GZA).
- A September 2004 Subsurface Phase II Environmental Assessment conducted by Nature's Way Environmental Consultants and Contractors (NWEC&C).
- A May 2005 Focused Phase II Type Environmental Investigation conducted by NWEC&C.
- An August 2005 Downgradient Groundwater Characterization study conducted by Benchmark.
- An October 2005 Supplemental Site Characterization Adjacent to Site study conducted by Benchmark.
- An October 2006 BCP Remedial Investigation.

Based on the results of the recent RI data and previous investigations, it has been determined that groundwater and saturated soils have been impacted by chlorinated VOCs in to two discrete areas as depicted in Figure 4. Tables 2 and 3 summarize historic analytical results.

1.3 Constituents of Primary Concern (COPCs)

Based on findings of the RI and previous investigations, primary Constituents of Potential Concern (COPCs) are comprised of certain chlorinated VOCs. Specifically, the site-specific COPCs are identified as: tetrachloroethene (PCE); trichloroethene (TCE); cis-1,2-dichloroethene (cis-1,2-DCE); trans-1,2-dichloroethene (trans-1,2-DCE); vinyl chloride (VC); and 1,1,2-trichloroethane (1,1,2-TCA).

1.4 Purpose and Scope

An IRM is proposed to promptly mitigate risks to public health and the environment attributable to contamination at the Site, and to expedite the redevelopment schedule. Remedial action objectives (i.e., groundwater cleanup objectives) are shown on Table 1. Based on the nature and extent of contamination as indicated by prior investigations, the most applicable remedial measure is in-situ enhanced bioremediation of impacted groundwater and saturated soils via direct injection of hydrogen releasing compounds (HRC®) into the impacted zones.

This IRM Work Plan delineates the planned HRC® injection and includes design details describing the planned approach to the IRM work, including anticipated injection zones, the amount of HRC® material to be injected and program performance monitoring. The proposed work will include:

- Direct pressure injection of HRC® into the shallow saturated soil on-site using small diameter probe rods and a high-capacity injection pump.
- Groundwater monitoring to evaluate the effectiveness of the in-situ treatment.

This Work Plan addresses the following tasks in detail:

- The mass of HRC® required to effectively enhance biodegradation of chlorinated VOCs in groundwater.
- Groundwater monitoring sampling parameters and frequency.
- Project documentation and schedule.

Implementation of the remedial activities outlined in this IRM Work Plan will be conducted by Benchmark serving as the Design-Build Engineer. A remediation contractor will be retained to assist in carrying out the work in accordance with the activities described herein. IRM implementation will be supervised and documented per the Work Plan.

1.5 Project Organization and Responsibilities

Benchmark will manage the brownfield cleanup on behalf of the property owner, including selection of the remediation contractor to perform the IRM activities on a design-build basis. The NYSDEC, Division of Environmental Remediation, will monitor the remedial actions to verify that the work is performed in accordance with the BCA.

2.0 TECHNICAL APPROACH

2.1 Pre-Mobilization Tasks

Community residents and other interested parties will be informed of the IRM schedule, objectives, and details via a fact sheet before work begins. The intent of this effort is to seek neighborhood cooperation; minimize disruption of neighborhood residential and commercial activities; and facilitate a safe and secure work site. Benchmark and the NYSDEC will coordinate and lead community relations throughout the course of the project.

2.1.1 Meetings

2.1.1.1 Public Information and Outreach

The fact sheet containing information about the IRM will be direct-mailed by GLR Holdings, LLC to those individuals on the Brownfield Site Contact List, including property owners and residents adjacent to the project site, environmental groups, local political representatives, and interested regulatory agencies. A copy of this Work Plan will be made available for public review at the NYSDEC Region 9 office and the LaSalle Branch of the Niagara County Central Library.

2.1.1.2 Project Coordination Meeting

A project coordination meeting will be held with representatives of the Project Team, including the Design-Build Engineer's Project Manager; the remediation contractor; and the designated NYSDEC contact(s) as the involved regulatory agency. The New York State Department of Health (NYSDOH) will also be notified and invited to attend as an interested agency. The meeting will be held prior to the start of IRM activities to review responsibilities, personnel assignments, and implementation details. Agenda items will include:

- IRM schedule.
- Work sequencing.
- Designation of responsibilities, contact personnel and pager/phone numbers.

- Project documentation requirements.
- Health and safety requirements.
- Work hours.
- Public relations, including procedures for addressing news media and citizen inquiries.

Benchmark will prepare meeting minutes for distribution to attendees following the project coordination meeting.

2.1.2 Underground Utilities Location

Prior to initiating subsurface work, the remediation contractor will locate, with the assistance of utility companies, all active utility lines within the work area. Underground lines will be staked and marked with fluorescent paint.

2.1.3 Health and Safety Plan Development

A Site-Specific Health and Safety Plan (HASP) will be prepared and implemented by the Design-Build Engineer in accordance with the requirements of 29 CFR 1910.120. The HASP will cover all on-site remediation activities. Benchmark will be responsible for site control and for the health and safety of its authorized site workers. Benchmark's HASP is provided for informational purposes in Appendix A.

2.2 In-Situ Groundwater Treatment

2.2.1 Technology Description

In-Situ Enhanced Bioremediation of chlorinated VOCs in groundwater will be accomplished using HRC®. HRC® is a specially formulated lactic acid-based compound developed by Regenesis Corporation for in-situ treatment of chlorinated VOC contamination in groundwater. HRC® is a viscous liquid that is pressure injected into the subsurface using small diameter probe rods and a high-pressure injection pump to facilitate anaerobic bioremediation by prolonged release of hydrogen into the impacted aquifer. Upon contact with water, HRC® slowly hydrolyzes and is broken down by microbial action. During this process, lactic acid is released and used by microbes to produce hydrogen. The resulting hydrogen is then used in a microbially mediated process known as reductive dechlorination. This process enhances natural anaerobic biodegradation reducing chlorinated VOCs in groundwater and saturated soils.

2.2.2 Site Specific In-Situ Treatment Details

The site-specific remedial program was developed using design software provided by the manufacturer of HRC® (ref. 6)· This remedial program will involve directly injecting approximately 1,200 lbs of HRC® into the contaminated groundwater at the two discrete VOC-impacted areas (see Figure 5). Using 10-foot by 10-foot grid treatment spacing, approximately 18 delivery points would be necessary to treat each area with approximately 600 lbs. of HRC®. Direct-push delivery probes will be advanced to approximately 12 fbgs and HRC® will be injected continuously at a rate of approximately 4lbs/ft. until the delivery probe is retracted to approximately 4 fbgs.

2.3 Groundwater Monitoring

A groundwater sampling program will be implemented to evaluate the effectiveness of the in-situ groundwater treatment program. Based on Benchmark's experience at similar sites, HRC® has been shown to rapidly enhance biodegradation and metabolize chlorinated VOCs on the order of months. As such, to monitor the effectiveness of the in-situ treatment, and to meet the Site redevelopment schedule, the groundwater sampling program will consist of post-treatment monitoring for COPCs in MW-14 and MW-19. The frequency of monitoring shall vary based on the planned redevelopment schedule but will be no more frequent than monthly or less frequent than quarterly. The concentrations of COPCs in MW-14 and MW-19 from analytical results collected during the RI activities in June-July 2006 will serve as baseline concentrations for comparison (see Table 3). When concentrations of COPCs are below GWQS groundwater monitoring will be discontinued. If either of the monitoring wells exhibit concentrations of COPCs above GWQS, additional quarterly groundwater monitoring events will be completed for that monitoring location.

3.0 DOCUMENTATION AND REPORTING

3.1 Daily Activities Monitoring

Reporting during implementation of the IRM will include preparation of a daily report and, when appropriate, problem identification and corrective measures reports. Appendix B contains sample project documentation forms. Information that may be included on the daily report form includes:

- Processes and locations of construction under way.
- Equipment and personnel working in the area, including subcontractors.
- The amount of HRC® injected at injection locations.

The completed reports will be available on-site and will be submitted to the NYSDEC as part of the Final Report.

A problem identification report and a corrective measure report will be completed whenever major field problems are encountered and corrective measures may be necessary. These reports will be attached to the Final Report. The NYSDEC will be promptly notified of problems requiring modifications to this Work Plan prior to proceeding or completion of the construction item. Changes or additions will be noted in the Final Report.

Photo documentation of the IRM activities will be prepared by the Design-Build Engineer throughout the duration of the project as necessary to convey typical work activities and whenever changed conditions or special circumstances arise. Photos will be provided in digital format.

3.2 IRM Closeout Report

An IRM closeout report will be prepared and submitted to the NYSDEC after the in-situ treatment. The report will be stamped by a NYS licensed Professional Engineer and will be submitted within 60 days of completion of the work. At a minimum, the report will include:

- A Site or area planimetric map showing the HRC® injection point locations.
- A tabular summary of the mass of HRC® injected at each injection location.
- Copies of daily inspection reports and, if applicable, problem identification and corrective measure reports.
- A description of any deviations from the Work Plan and associated corrective measures taken; and other pertinent information necessary to document that the site activities were carried out in accordance with this Work Plan.
- A certification by a licensed NYS Professional Engineer that all work was performed in accordance with the Brownfield Cleanup Agreement and approved Interim Remedial Measures Work Plan.

3.3 Groundwater Monitoring Reports

A groundwater monitoring report will be provided to the NYSDEC following each post IRM groundwater sampling event. The reports will include tabulated analytical data and discussion of results.

4.0 PROJECT SCHEDULE

The IRM activities (excluding post remediation groundwater monitoring) detailed in this Work Plan shall be completed within approximately 1 month of approval of this Work Plan.

5.0 REFERENCES

1. *Phase I Environmental Site Assessment (ESA),* prepared by GZA GeoEnvironmental (GZA) July, 2004.

2. *Subsurface Phase II Environmental Assessment at Vacant Property located at 7503 Niagara Falls Boulevard, Niagara Falls, New York*, prepared by Nature's Way Environmental Consultants & Contractors, Inc., September 20, 2004.

3. *Focused Phase II Type Environmental Investigation of Vacant Property located at 7503-75555 Niagara Falls Boulevard, Niagara Falls, New York*, prepared by Nature's Way Environmental Consultants & Contractors, Inc., May 18, 2005.

4. *Downgradient Groundwater Characterization Letter Report at 7503 Niagara Falls Boulevard, Niagara Falls, New York*, prepared by Benchmark Environmental Engineering & Science, PLLC, August 11, 2005.

5. *Supplemental Site Characterization Adjacent to Site Study, Niagara Falls, New York,* prepared by Benchmark Environmental Engineering & Science, PLLC, October, 2005.

6. *HRC Design Software for Plume Area/Grid Treatment.* US Version 3.1. Regenesis Corporation.

TABLES

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 1

GROUNDWATER CLEANUP OBJECTIVES

IRM Work Plan
7503 Niagara Falls Boulevard Site
GLR Holdings

Parameter	GWQS/GV [1]
VOCs (ug/L)	
Tetrachloroethene	**5**
Trichloroethene	**5**
1,1,2-Trichloroethane	**1**
cis-1,2-Dichloroethene	**5**
trans-1,2-Dichloroethene	**5**
1,1-Dichloroethene	**5**
Vinyl chloride	**2**

Notes:
1. NYSDEC Class "GA" Groundwater Quality Standards/Guidance Values (GWQS/GV), 6 NYCRR Part 703.

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TABLE 2

HISTORICAL SOIL ANALYTICAL DATA SUMMARY

Remedial Investigation
7503 Niagara Falls Boulevard Site
GLR Holdings

Sampling Event	Sampling Location									SCO UNRESTRICTED USE [2]	SCO RESTRICTED-COMMERCIAL[2]
	Subsurface Phase II Environmental Assessment (August 2004)		Focused Phase II Type Environmental Investigation (May 2005)								
Parameters	EP 2 (6.0-8.0 fbgs)	EP 8 (8.0-10.0 fbgs)	EP 9 (8.0-10.0 fbgs)	EP 10 (8.0-10.0 fbgs)	EP 14 (10.0-12.0 fbgs)	EP 17 (6.0-8.0 fbgs)	EP 20 (6.0-8.0 fbgs)	EP 21 (4.0-6.0 fbgs)	EP 22 (6.0-8.0 fbgs)		
TCL VOCs (ug/kg)											
cis-1,2-Dichloroethene	257	148	149	83.7	539	ND	128	3450	249	**250**	**500,000**
1,1-Dichloroethene	ND	ND	ND	ND	21.6	ND	ND	ND	ND	**330**	**500,000**
trans-1,2-Dichloroethene	266	69.8	34.5	ND	224	ND	130	2750	187	**190**	**500,000**
Tetrachloroethene	ND	190	1430	ND	1210	ND	ND	ND	375	**1300**	**150,000**
1,1,2-Trichloroethane	ND	ND	ND	ND	160	ND	ND	ND	ND	**--**	**--**
Trichloroethene	9.96	154	760	31.3	1300	8.29	ND	ND	188	**470**	**200,000**
Vinyl Chloride	51.1	50.5	ND	ND	ND	ND	891	4170	71.2	**20**	**13,000**

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Soil Cleanup Objectives (SCOs) per June 2006 NYSDEC draft Part 375

Yellow shaded cells indicate exceedances of unrestricted SCOs.

Red shaded cells indicate exceedances of restricted-commerical SCOs (none).

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL DATA

Remedial Investigation
7503 Niagara Falls Boulevard Site
GLR Holdings

Parameter [1]	Sampling Event/Location															GWQS/GV [4]
	Subsurface Phase II Environmental Assessment (August 2004)	Focused Phase II Type Environmental Investigation (May 2005)			Downgradient Groundwater Characterization		Remedial Investigation (June 2006)									
	EP/PZ 8	MW 14	MW 17	MW 19	MW-1 (8/23/05)	MW-2 (8/23/05)	MW - 1 (6/23/06)	MW-2 (6/23/06)	MW-4 (6/23/06)	MW-5 (6/23/06)	MW - 14 [2] (6/23/06)	MW-17 (6/23/06) [6]	MW-17 (7/13/06) [6]	MW-19 (6/23/06) [6]	MW-19 (7/13/06) [6]	MW-19 (6/23/06) [3]	
VOCs (ug/L)																
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	**7 J**	**7 J**	**7 J**	ND	ND	NA	ND	NA	ND	**5**
Carbon Disulfide	16.3	ND	ND	ND	0.96 J	0.86 J	ND	ND	ND	17 J	ND	ND	NA	ND	NA	ND	**NS**
Vinyl chloride	ND	192	ND	12.2	ND	ND	ND	ND	ND	ND	**910 D**	ND	NA	**58**	NA	**54**	**2**
Acetone	ND	ND	ND	ND	4.4 J	6.3 J	ND	ND	ND	ND	ND	ND	NA	ND	NA	ND	**50***
1,1-Dichloroethene	ND	32	ND	ND	ND	ND	ND	ND	ND	ND	**83**	ND	NA	1 J	NA	1 J	**5**
Trichloroethene	31	411	ND	ND	ND	ND	ND	ND	ND	ND	**540 D**	2 J	NA	1 J	NA	ND	**5**
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9 J**	ND	NA	ND	NA	ND	**1**
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1J**	ND	NA	ND	NA	ND	**1**
Tetrachloroethene	10.1	760	5.09	ND	ND	ND	ND	ND	ND	ND	**640 D**	4 J	NA	1 J	NA	ND	**5**
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 J	ND	NA	ND	NA	ND	**5**
trans-1,2-Dichloroethene	4.1	351	ND	ND	ND	ND	ND	ND	ND	ND	**1300 D**	2 J	NA	ND	NA	ND	**5**
cis-1,2-Dichloroethene	20.5	316	ND	10	ND	ND	ND	ND	ND	ND	**1100 D**	1 J	NA	**30**	NA	**30**	**5**
Total and Soluble Metals[4,6] (ug/L)																
Iron, Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**56300**	NA	**12600**	NA	**28600**	NA	**300**
Iron, Soluble	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**351**	NA	21.2 B	NA	**584**	NA	**300**
Manganese, Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2420**	NA	**318**	NA	**704**	NA	**300**
Manganese, Soluble	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29.1	NA	1.2 B	NA	199	NA	**300**
Wet Chemistry (units as indicated)																
Chemical Oxygen Demand (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA	**NS**
Nitrate (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.49	NA	3.6	NA	ND	NA	**10**
Sulfate (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**888**	NA	75.1	NA	157	NA	**250**
Field Measurements (units as indicated)																
pH (units)	NA	NA	NA	NA	NA	NA	6.83 6.75	7.06 7.03	7.09 7.08	6.71 6.74	9.36 9.48	10.68 10.75	11.26 11.30	7.17 7.31	7.38 7.28	7.17 7.31	**6.5 - 8.5**
Temperature (°C)	NA	NA	NA	NA	NA	NA	17.2 17.2	18.1 17.6	21.2 22.7	20.1 20.2	17.8 18.5	17.6 19.6	21.7 21.4	18.6 19.5	23.5 23.3	18.6 19.5	**NA**
Specific Conductance (uS)	NA	NA	NA	NA	NA	NA	1442 1411	1136 914.1	665.3 671.1	1020 1021	1255 1252	1907 1900	1714 1820	881.2 896.2	827 842	881.2 896.2	**NA**
Turbidity (NTU)	NA	NA	NA	NA	NA	NA	240 169	169 30.7	49.4 38.6	35.1 63.1	>1000 >1000	47.2 78.4	>1000 >1000	>1000 >1000	>1000 >1000	>1000 >1000	**50****
ORP (mV)	NA	NA	NA	NA	NA	NA	-76 -68	-94 -83	10 20	42 43	-84 -72	-94 -95	-106 -87	-131 -149	-49 -85	-131 -149	**NA**

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. MS/MSD collected at monitoring well MW-14.
3. Blind Duplicate collected at monitoring well MW-19 (6/23/06).
4. NYSDEC Class "GA" Groundwater Quality Standards/Guidance Values (GWQS/GV), 6 NYCRR Part 703.
5. Groundwater collected from well MW-14, MW-17 (7/13/06), and MW-19 (7/13/06) were analyzed for soluble iron and manganese, in addition to TAL Metals.
6. MW-17 and MW-19 had insufficient volumes to collect the volume for the full parameter list. VOCs and field measurement volumes were collected on 6/23/06. Metals and wet chemistry volumes were collected on 7/13/06.

Definitions:

J = Estimated value; result is less than the sample quantitation limit but greater than zero.
D = Diluted sample result.
ND = parameter not detected above laboratory detection limit.
J = parameter has been identified with its approximate concentration.
" * " = Groundwater Quality Guidance Value
" ** " = field threshold value; when exceeded, field filtered metals sample is collected (i.e., dissolved metals).
NA = Not Applicable
NS = No GWQS/GV listed in 6 NYCRR Part 703.
BOLD = Analytical result exceeds individual GWQS/GV.

FIGURES

FIGURE 1

FILEPATH:g:\cad\benchmark\glr holdings-wendy's\irm work plan\figure 1; site location and vicinity map.dwg

BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

PROJECT NO.: 0101-002-500

DATE: OCTOBER 2006

DRAFTED BY: BCH

SITE LOCATION AND VICINITY MAP

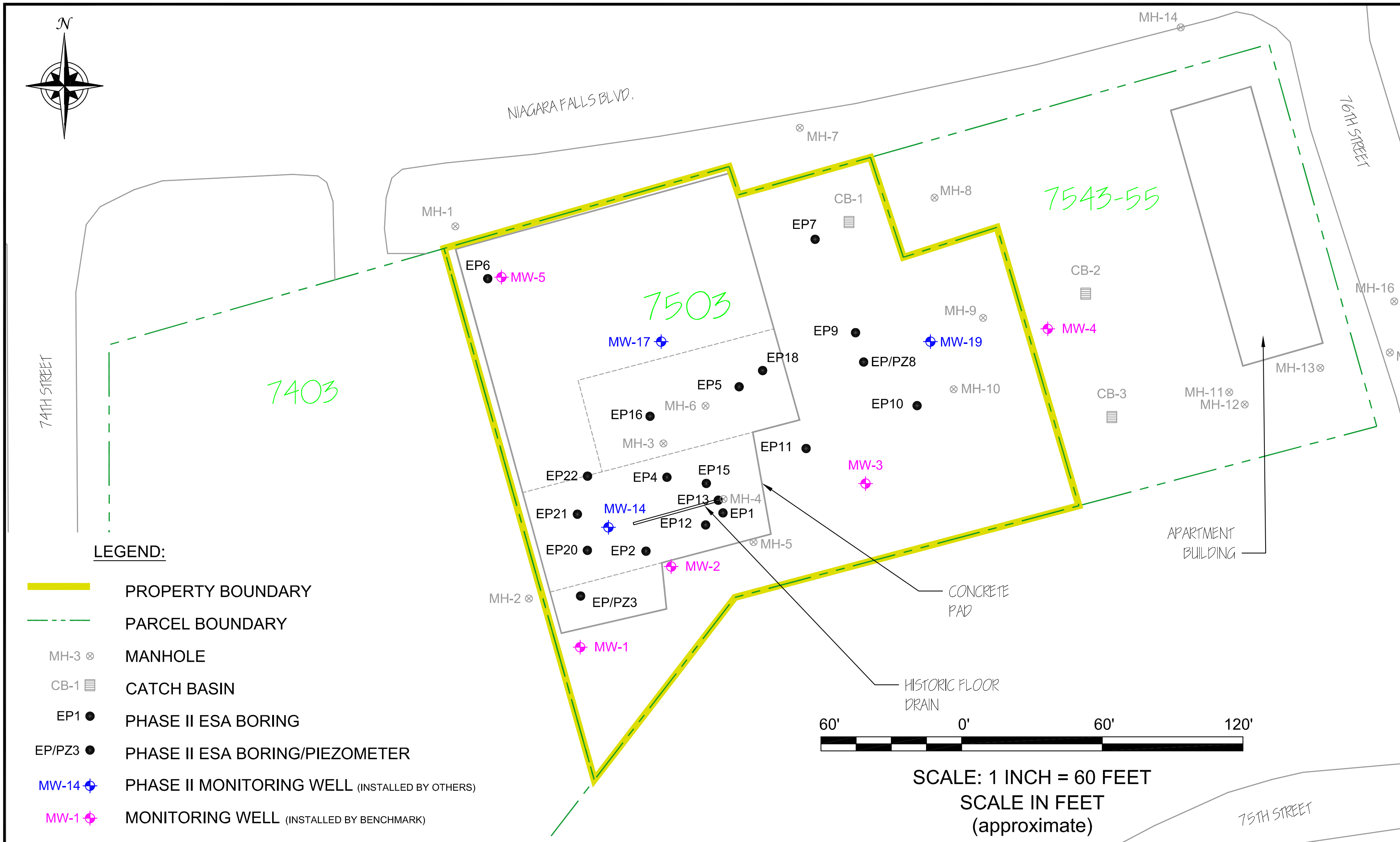
INTERIM REMEDIAL MEASURES WORK PLAN

7503 NIAGARA FALLS BOULEVARD SITE
NIAGARA FALLS, NEW YORK

PREPARED FOR

GLR HOLDINGS, LLC

F:\CAD\Benchmark\GLR Holdings - Wendy's\IRM Work Plan\Figure 2; Site Plan.dwg



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SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

PROJECT NO.: 0101-002-500

DATE: OCTOBER 2006

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SITE PLAN

INTERIM REMEDIAL MEASURES WORK PLAN

7503 NIAGARA FALLS BOULEVARD SITE
NIAGARA FALLS, NEW YORK

PREPARED FOR
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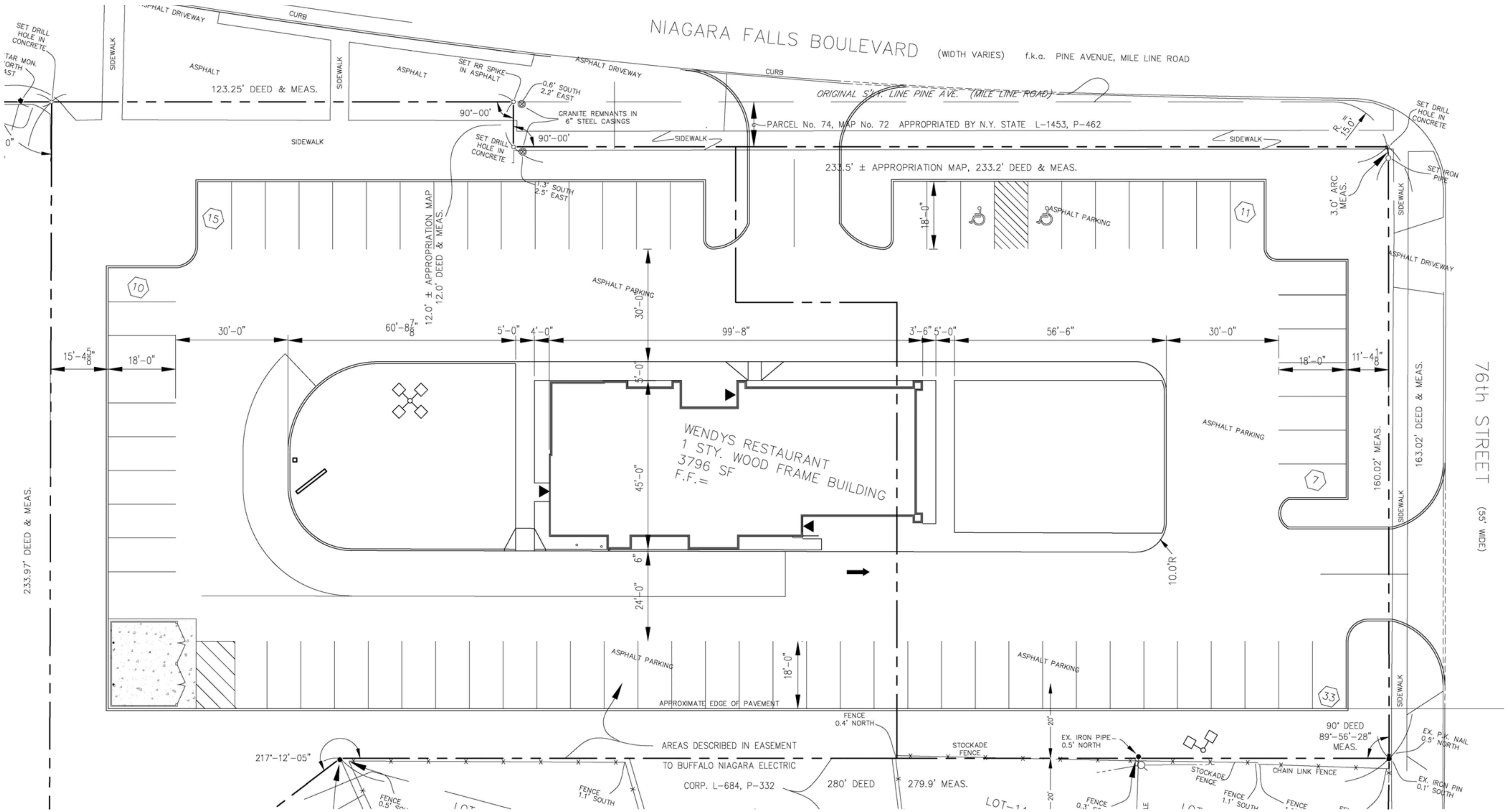
FIGURE 2



PROPOSED REDEVELOPMENT PLAN

INTERIM REMEDIAL MEASURES WORK PLAN

7503 NIRAGARA FALLS BOULEVARD SITE

NIAGARA FALLS, NEW YORK

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SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

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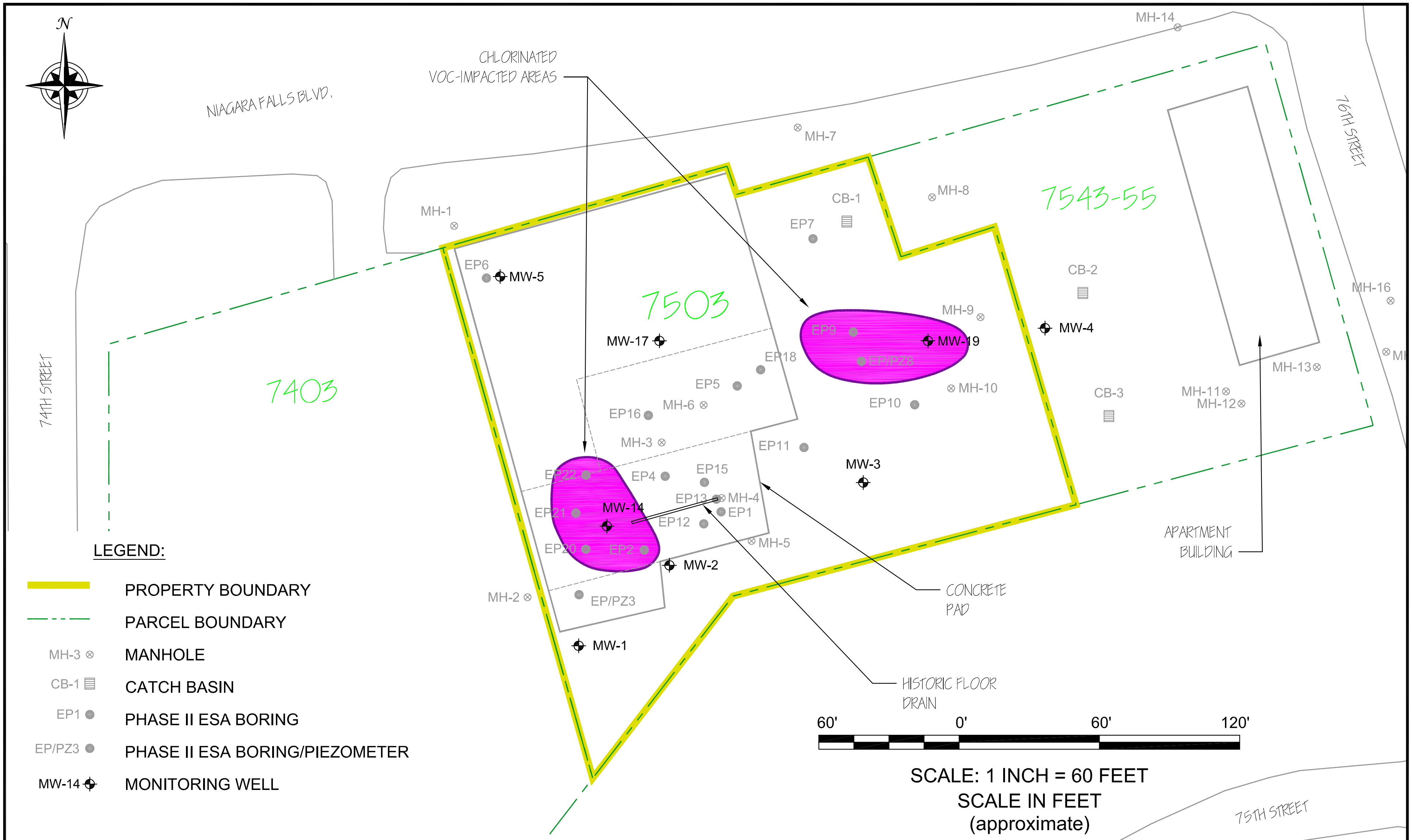
FIGURE 3

DATE: OCTOBER 2006
DRAFTED BY: BCH



F:\CAD\Benchmark\GLR Holdings - Wendy's\IRM Work Plan\Figure 4; Chlorinated VOCs in GW.dwg

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SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

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DATE: AUGUST 2006

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CHLORINATED VOCs IN GROUNDWATER

INTERIM REMEDIAL MEASURES WORK PLAN

7503 NIAGARA FALLS BOULEVARD SITE
NIAGARA FALLS, NEW YORK

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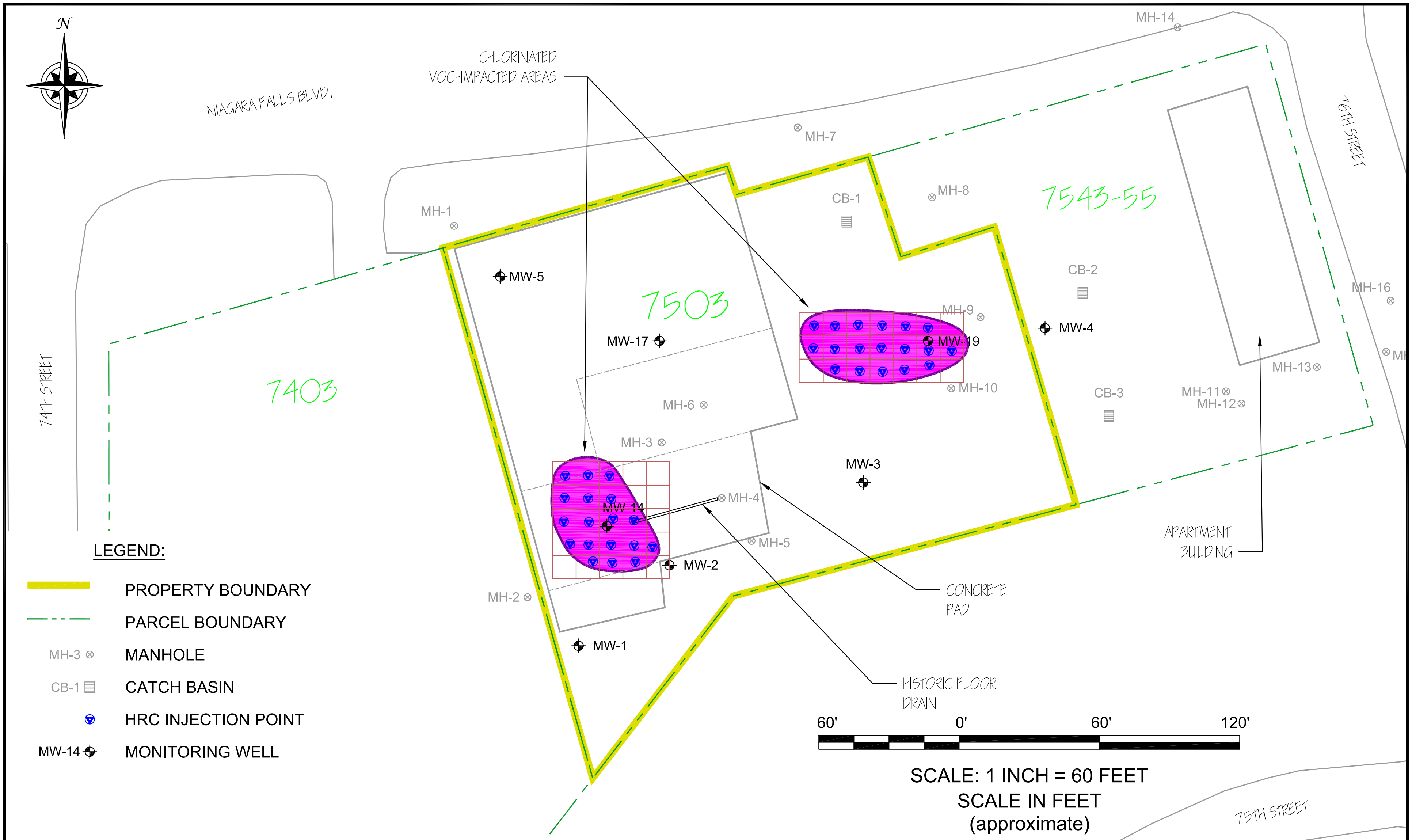
FIGURE 4

F:\CAD\Benchmark\GLR Holdings - Wendy's\IRM Work Plan\Figure 5; In-Situ HRC Injection Plan.dwg



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SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

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IN-SITU HRC INJECTION PLAN

INTERIM REMEDIAL MEASURES WORK PLAN

7503 NIAGARA FALLS BOULEVARD SITE
NIAGARA FALLS, NEW YORK

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FIGURE 5

APPENDIX A

SITE HEALTH AND SAFETY PLAN (HASP)

SITE HEALTH AND SAFETY PLAN
for
INTERIM REMEDIAL MEASURES ACTIVITIES

7503 NIAGARA FALLS BOULEVARD
NIAGARA FALLS, NY

October 2006 0101-002-500

higher level of respiratory protection.

7.2.3 Level D Protection Ensemble

As indicated above, Level D protection is primarily a work uniform. It can be worn in areas where only boots can be contaminated, where there are no inhalable toxic substances and where the atmospheric contains at least 19.5% oxygen.

Recommended PPE for Level D includes:

- Coveralls.
- Safety boots/shoes.
- Safety glasses or chemical splash goggles.
- Hardhat.
- Optional gloves; escape mask; face shield.

7.2.4 Recommended Level of Protection for Site Tasks

Based upon current information regarding both the contaminants suspected to be present at the Site and the various tasks that are included in the investigation, the minimum required Levels of Protection for these tasks shall be as identified in Table 7-1.

7503 Niagara Falls Boulevard
Health and Safety Plan for Interim Remedial Measures Activities

Plan Reviewed by (initial):

Corporate Health and Safety Director:	Thomas H. Forbes
Project Manager:	Michael Lesakowski
Designated Site Safety and Health Officer:	Bryan C. Hann

Acknowledgement:

I acknowledge that I have reviewed the information contained in this site-specific Health and Safety Plan, and understand the hazards associated with performance of the field activities described herein. I agree to comply with the requirements of this plan.

NAME (PRINT)	SIGNATURE	DATE

7503 NIAGARA FALLS BOULEVARD
HEALTH AND SAFETY PLAN FOR
INTERIM REMEDIAL MEASURES ACTIVITIES

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1.0 INTRODUCTION

1.1 General

In accordance with OSHA requirements contained in 29 CFR 1910.120 and USEPA Standard Operating Safety Guidelines, this Health and Safety Plan (HASP) describes the specific health and safety practices and procedures to be employed by Benchmark Environmental Engineering & Science, PLLC and TurnKey Environmental Restoration, LLC employees (referred to jointly hereafter as Benchmark) during interim remedial measures (IRM) activities at 7503 Niagara Falls Boulevard located in Niagara Falls, Niagara County, New York. This HASP presents information and procedures for Benchmark employees who will be involved with field activities, including the assignment of responsibilities, personnel protection requirements, work practices and emergency response procedures. It is not intended to cover the activities of other contractors or subcontractors on the Site; these firms will be required to develop and enforce their own HASPs as discussed below. In order to ensure that proper coordination on such key issues as emergency notification and decontamination exists between Benchmark and other contractors or subcontractors, Benchmark will review all HASPs and coordinate procedures where appropriate.

This HASP presents information on known Site health and safety hazards using available historical information for previously-investigated areas of the Site, and identifies the equipment, materials and procedures that will be used to eliminate or control these hazards. Environmental monitoring will be performed during the course of field activities to provide real-time data for on-going assessment of potential hazards. This HASP will be updated as new data becomes available.

All Benchmark personnel involved with the field activities associated with the IRM will be required to comply with this HASP and any field modifications as directed by the Site Safety and Health Officer.

1.2 Site Location and Description

The Site encompasses approximately 0.89-acres along Niagara Falls Boulevard in the City of Niagara Falls, New York (See Figure 1). The property is generally bounded by Niagara Falls Boulevard to the north, a vacant lot and apartment buildings to the east (i.e., 7543-7555 Niagara Falls Blvd), private residences to the south, and a commercial (restaurant) property to the west (7403 Niagara Falls Blvd.). A concrete slab remnant from a former building foundation is present across the majority of the western portion of the property. The remainder of the site is generally covered by asphalt.

1.3 Site History

Beginning in the late 1960's and continuing through the mid 1990's, the property was occupied by several commercial establishments. These included various restaurants, auto parts sales and auto repair facilities. The property has been vacant since approximately 1998. The site is presently owned by GLR Holdings, LLC, who plans to redevelop 7503 through 7555 Niagara Falls Boulevard as a Wendy's Restaurant with associated drives and surface lot parking.

1.4 Previous Investigations

A Phase I Environmental Site Assessment was performed for the subject property by GZA Geo Environmental of New York in July 2004 (Ref. 1). The Phase I ESA indicated potential environmental conditions due to the potential for chemical and/or petroleum product releases associated with historic automotive collision and repair shop activities on the property. In September 2004 and May 2005, Nature's Way Environmental Consultants & Contractors, Inc. performed limited Subsurface Phase II environmental investigations at the site (Refs. 2 and 3). The Phase II investigations focused on determining whether volatile and semi-volatile organic compounds possibly related to historic auto repair and collision operations have impacted site soil and/or groundwater. Based upon the Phase II investigations, it was determined that site soil and groundwater has been impacted with

FIGURE 1

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BENCHMARK
ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

PROJECT NO.: 0101-002-100

DATE: NOVEMBER 2005

DRAFTED BY: BCH

SITE LOCATION AND VICINITY MAP

HEALTH AND SAFETY PLAN

7503 NIAGARA FALLS BOULEVARD SITE
NIAGARA FALLS, NEW YORK

PREPARED FOR

GLR HOLDINGS, LLC

FILEPATH:g:\cad\benchmark\glr holdings-wendy's\brownfield cleanup program (bcp) - glr\hasp\figure 1; site location and vicinity map.dwg chlorinated volatile organic compounds, likely associated with painting and machining operations. Benchmark confirmed the findings of the previous investigations during a remedial investigation (RI) of the site in June-July 2006.

Based on the presence of environmental conditions at 7503 Niagara Falls Boulevard, GLR Holdings has elected to pursue cleanup and redevelopment of the site under the New York State Brownfield Cleanup Program (BCP), and has applied for entrance into the BCP with the intent to execute a Brownfield Cleanup Agreement (BCA) as a non-responsible party (volunteer) per ECL§27-1405.

1.5 IRM Activities

Benchmark personnel will be on-site for Site IRM activities including the following:

- Direct pressure injection of HRC® into the shallow saturated soil on-site using a direct-push drill rig equipped with small diameter probe rods and a high-capacity injection pump.

- Groundwater monitoring to evaluate the effectiveness of the in-situ treatment.

2.0 ORGANIZATIONAL STRUCTURE

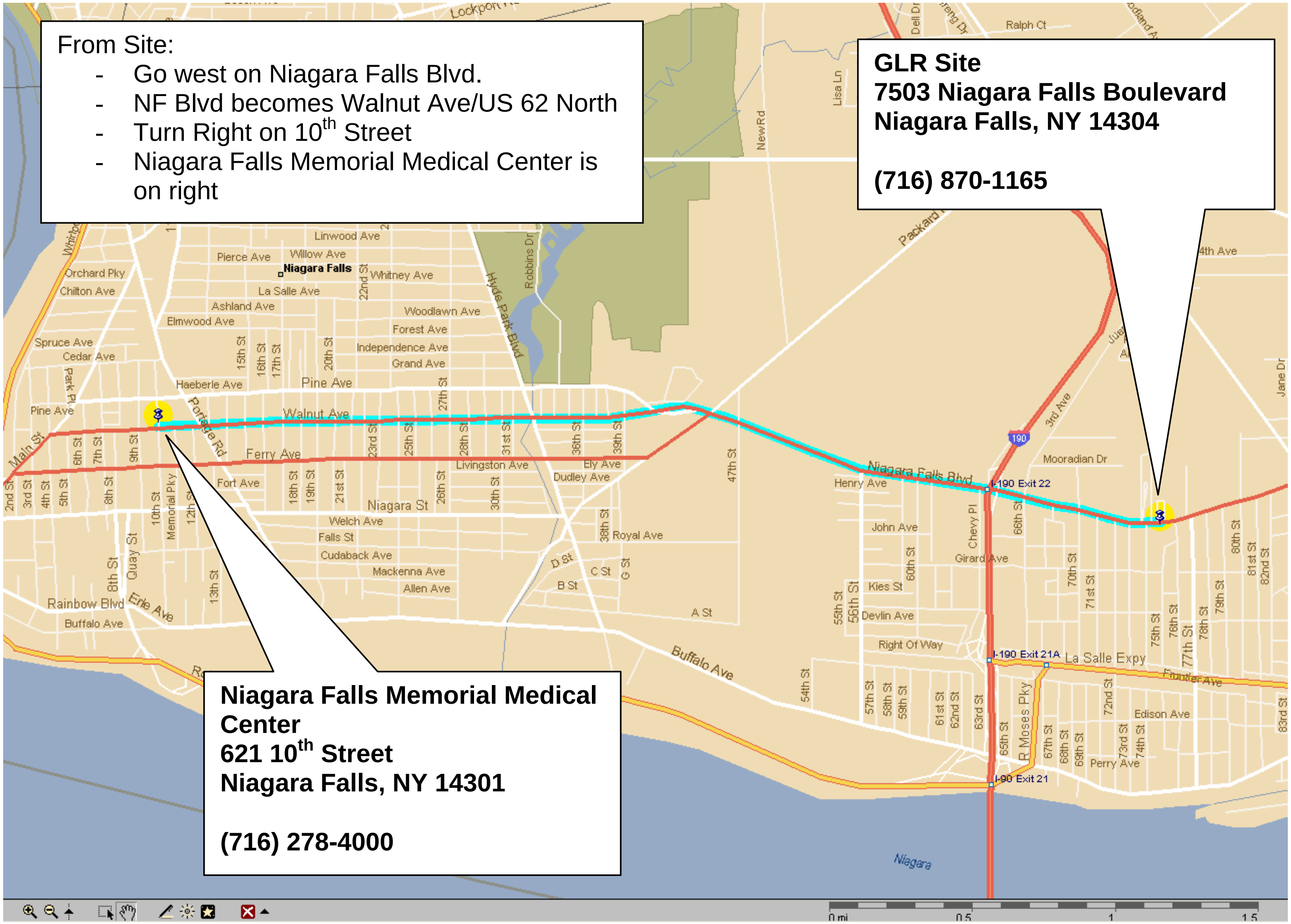
This chapter of the HASP describes the lines of authority, responsibility and communication as they pertain to health and safety functions at the Site. The purpose of this chapter is to identify the personnel who will impact the development and implementation of the HASP and to describe their roles and responsibilities. This chapter also identifies other contractors and subcontractors involved in work operations and establishes the lines of communication among them for heath and safety matters. The organizational structure described in this chapter is consistent with the requirements of 29 CFR 1910.120(b)(2). This section will be reviewed by the Project Manager and updated as necessary to reflect the current organizational structure at this Site.

2.1 Roles and Responsibilities

All Benchmark personnel on the Site must comply with the minimum requirements of this HASP. The specific responsibilities and authority of management, safety and health, and other personnel on this Site are detailed in the following paragraphs.

2.1.1 Corporate Health and Safety Director

The Benchmark Corporate Health and Safety Director is **Mr. Thomas H. Forbes**. The Corporate Health and Safety Director is responsible for developing and implementing the Health and Safety program and policies for Benchmark Environmental Engineering & Science PLLC and TurnKey Environmental Restoration, LLC, and consulting with corporate management to ensure adequate resources are available to properly implement these programs and policies. The Corporate Health and Safety Director coordinates Benchmark's Health and Safety training and medical monitoring programs, and assists project management and field staff in developing site-specific health and safety plans.



BENCHMARK
ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

PROJECT NO.: 0101-002-100

DATE: JANUARY 2006

DRAFTED BY: BCH

HOSPITAL ROUTE MAP

HEALTH AND SAFETY PLAN (HASP)

7503 NIAGARA FALLS BOULEVARD
NIAGARA FALLS, NEW YORK

PREPARED FOR

GLR HOLDINGS, LLC

FIGURE A2-1

FILEPATH: g:\cad\benchmark\glr holdings - wendy's\brownfield cleanup program (bcp) - glr\hasp\figure a2-1; hospital route map.dwg

2.1.2 Project Manager

The Project Manager for this Site is **Mr. Michael Lesakowski**. The Project Manager has the responsibility and authority to direct all Benchmark work operations at the Site. The Project Manager coordinates safety and health functions with the Site Safety and Health Officer, and bears ultimate responsibility for proper implementation of this HASP. He may delegate authority to expedite and facilitate any application of the program, including modifications to the overall project approach as necessary to circumvent unsafe work conditions. Specific duties of the Project Manager include:

- Preparing and coordinating the Site Work Plan.
- Providing Benchmark workers with work assignments and overseeing their performance.
- Coordinating health and safety efforts with the Site Safety and Health Officer (SSHO).
- Reviewing the emergency response coordination plan to assure its effectiveness.
- Serving as the primary liason with Site contractors and the property owner.

2.1.3 Site Safety and Health Officer

The Site Safety and Health Officer (SSHO) for this Site is **Mr. Bryan H. Hann**. The qualified alternate SSHO is **Mr. Richard L. Dubisz**. The SSHO reports to the Project Manager. The SSHO is on-site or readily accessible to the Site during all work operations and has the authority to halt work if unsafe conditions are detected. The specific responsibilities of the SSHO are:

- Managing the safety and health functions for Benchmark personnel on the Site.
- Serving as the point of contact for safety and health matters.

- Ensuring that Benchmark field personnel working on the Site have received proper training (per 29 CFR Part 1910.120(e)), that they have obtained medical clearance to wear respiratory protection (per 29 CFR Part 1910.134), and that they are properly trained in the selection, use and maintenance of personal protective equipment, including qualitative respirator fit testing.

- Performing or overseeing Site monitoring as required by the HASP.

- Assisting in the preparation and review of the HASP.

- Maintaining site-specific safety and health records as described in this HASP.

- Coordinating with the Project Manager, Site Workers and Contractor's SSHO as necessary for safety and health efforts.

2.1.4 Site Workers

Site workers are responsible for: complying with this HASP or a more stringent HASP, if appropriate (i.e. Contractor and Subcontractor's HASP); using proper PPE; reporting unsafe acts and conditions to the SSHO; and following the safety and health instructions of the Project Manager and SSHO.

2.1.5 Other Site Personnel

Other Site personnel who will have health and safety responsibilities in the work zone will include subcontractors and governmental agencies performing Site inspection work (viz. New York State Department of Environmental Conservation and/or its designated oversight contractor) who will be responsible for developing, implementing and enforcing a Health and Safety Plan equally stringent or more stringent than Benchmark's HASP. Benchmark assumes no responsibility for the health and safety of anyone outside its direct employ. During activities involving subcontractors, the subcontractor's HASP shall cover all non-Benchmark Site personnel. The subcontractor(s) shall assign a SSHO who will coordinate with Benchmark's SSHO as necessary to ensure effective lines of communication and consistency between contingency plans.

3.0 HAZARD EVALUATION

The possibility exists that workers will be exposed to hazardous substances during groundwater monitoring. The principal points of exposure would be through direct contact with impacted media or vapors during sample collection and handling activities. In addition, the use of large equipment will also present conditions for potential physical injury to workers. Adherence to the medical evaluations, worker training relative to chemical hazards, safe work practices, proper personal protection, environmental monitoring, establishment work zones and site control, appropriate decontamination procedures and contingency planning outlined herein will reduce the potential for chemical exposures and physical injuries.

3.1 Chemical Hazards

Table 3-1 identifies known constituents of potential concern and ranges of concentrations, by media, observed during previous Phase II investigations (References 2 through 4). Based on this work, the constituents of potential concern include specific chlorinated organics. Table 3-2 lists toxicity and exposure data for these constituents of potential concern. As additional data is obtained, Tables 3-1 and 3-2 will be updated accordingly. Brief descriptions of the toxicology of these materials and related health and safety guidance and criteria are provided below.

- **Tetrachloroethene** is used a solvent for greases, waxes and rubbers. It is harmful by ingestion inhalation and skin absorption. Exposure can cause dermatitis, dizziness, nausea, liver and kidney damage. This compound is a suspected carcinogen.

- **Trichloroethene (TCE)** This compound was formally widely used in dry cleaning operations and metal degreasing. It is toxic by inhalation and skin absorption. It is an irritant to the skin, eyes and mucous membranes. Symptoms of exposure may include headache, dizziness and nausea. Exposure may cause liver and kidney damage. TCE is a suspected human carcinogen.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 3-1

CONSTITUENTS OF POTENTIAL CONCERN & OBSERVED CONCENTRATIONS BY MEDIA (1)

IRM Activities Health and Safety Plan
7503 Niagara Falls Boulevard
GLR Holdings
Niagara Falls, New York

Parameter	Saturated Soil (ug/kg)	Groundwater (ug/L)
Tetrachloroethene	ND-1430	ND-760
Trichloroethene	ND-1300	ND-411
cis-1,2-Dichloroethene	ND-3450	ND-316
trans-1,2-Dichloroethene	ND-2750	ND-351
Vinyl chloride	ND-4170	ND-192
1,1-Dichloroethene	ND-21.6	ND-32.0
1,1,2-Trichloroethane	ND-160	ND

Notes:
(1) Concentration ranges based on:
Subsurface Phase II Environmental Assessment by Nature's Way Environmental Consultants & Contractors, Inc., September 20, 2004.
Focused Phase II Environmental Investigation by Nature's Way Environmental Consultants & Contractors, Inc., May 18, 2005.
Supplemental Site Characterization Report by Benchmark Environmental Engineering & Science, PLLC, November 15, 2005

TABLE 3-2

TOXICITY AND EXPOSURE DATA FOR CONSTITUENTS OF POTENTIAL CONCERN

IRM Activities Health and Safety Plan
7503 Niagara Falls Boulevard
GLR Holdings
Niagara Falls, New York

Constituents of Potential Concern	Inhalation Hazard		IDLH
	PEL	TLV	
Volatile Organic Compounds (ppm):			
Tetrachloroethene	100	25	150, Ca
Trichloroethene	100	50	1000, Ca
cis-1,2-Dichloroethene	200	200	1000
trans-1,2-Dichloroethene	200	200	1000
Vinyl Chloride	1	1	Ca
1,1-Dichloroethene	Not Listed	5	Ca
1,1,2-Trichloroethane	10	10	100, Ca

Notes:
PEL- Permissible Exposure Limit, established by OSHA, equals the maximium exposure concentration allowable for 8 hours per day @ 40 hours per week.
TLV- Threshold Limit Value, established by ACGIH, equals the maximum exposure concentration allowable for 8 hours per day @ 40 hours per week.
IDLH- Immediately Dangerous to Life or Health
Ca- NIOSH considers constituent to be a potential carcinogen.
ND-IDLH has not yet been established.

- **1,2-Dichloroethene (cis and trans)** Commercial use of these compounds is not extensive; however are used as intermediates in the production of other chlorinated solvents and compounds, as well as low temperature extraction solvents for dyes, perfumes, and lacquers. They are highly volatile by reaction with alkalies, potassium hydroxide, sodium, and sodium hydroxide. Direct exposure is mostly by inhalation resulting in heart and liver damage.

- **Vinyl Chloride** is used primarily as an intermediate in the manufacture of polyvinyl chloride; limited quantities are used as a refrigerant and as an intermediate in the production of chlorinated compounds. It is a biodegradation product of trichloroethene, tetrachloroethene, and 1,1,1-trichloroethene. Inhalation exposure may result in damage to the liver, kidneys, lungs and other organs. In addition to liver cancer, exposure has also been linked to an increased risk of lung, brain, hematopoietic, and digestive tract cancers.

- **1, 1, 2-Trichloroethane**, also known as vinyl trichloride, is a nonflammable liquid that is used in the manufacture of **1,1-dichloroethene**; as a solvent for fats, waxes, resins, and alkaloids; and in organic synthesis. 1,1,2-Trichloroethane is rapidly absorbed, widely distributed in organs and tissues, and extensively metabolized. The chemical exerts a narcotic action at "low" concentrations and is irritating to the eyes and mucous membranes of the respiratory tract. When in contact with skin, 1,1,2-trichloroethane may cause cracking and erythema.

With respect to the anticipated activities defined in Section 1.4, possible routes of exposure to the above-mentioned contaminants are presented in Table 3-3. The use of proper respiratory equipment, as outlined in Section 7.0, will minimize the potential for exposure to airborne contamination. Further, exposure to contaminants through dermal and other routes will also be minimized through the use of protective clothing (Section 7.0), safe work practices (Section 6.0), and proper decontamination procedures (Section 12.0).

3.2 Physical Hazards

Remedial investigation activities at the Site may present the following physical hazards:

- The potential for physical injury during heavy equipment use, such as drill rigs.

TABLE 3-3

POTENTIAL ROUTES OF EXPOSURE TO CONSTITUENTS OF POTENTIAL CONCERN

IRM Activities Health and Safety Plan
7503 Niagara Falls Boulevard
GLR Holdings
Niagara Falls, New York

Activity	Direct Contact with Surface and Subsurface Soils	Direct Contact with Groundwater	Inhalation of Vapors or Dust
Subsurface Soil Borings (HRC Injections)	X		X
Development and Sampling of Monitoring Wells		X	

- The potential for slip and fall injuries due to slippery terrain.

These hazards represent only some of the possible means of injury which may be present during investigation and sampling activities at the Site. Since it is impossible to list all potential sources of injury, it shall be the responsibility of each individual to exercise proper care and caution during all phases of the work.

4.0 TRAINING

4.1 Site Workers

All personnel performing site investigation activities (such as, but not limited to, equipment operators and general laborers) and who may be exposed to hazardous substances, health hazards, or safety hazards and their supervisors/managers responsible for the site shall receive training in accordance with 29 CFR 1910.120(e) before they are permitted to engage in operations in the exclusion zone or contaminant reduction zone. This training includes an initial 40-hour Hazardous Waste Site Worker Protection Course, an 8-hour Annual Refresher Course subsequent to the initial 40-hour training, and 3 days of actual field experience under the direct supervision of a trained, experienced supervisor. Additional site-specific training shall also be provided by the SSHO prior to the start of field activities. A description of topics to be covered by this training is provided below.

4.1.1 Initial and Refresher Training

Initial and refresher training is conducted by a qualified instructor as specified under OSHA 29 CFR 1910.120(e)(5), and is specifically designed to meet the requirements of OSHA 29 CFR 1910.120(e)(3) and 1910.120(e)(8). The training covers, as a minimum, the following topics:

- OSHA HAZWOPER regulations.
- Site safety and hazard recognition, including chemical and physical hazards.
- Medical monitoring requirements.
- Air monitoring, permissible exposure limits, and respiratory protection level classifications.
- Appropriate use of personal protective equipment (PPE), including chemical compatibility and respiratory equipment selection and use.
- Work practices to minimize risk.

- Work zones and Site control.
- Safe use of engineering controls and equipment.
- Decontamination procedures.
- Emergency response and escape.
- Confined space entry procedures.
- Heat and cold stress monitoring.
- Elements of a Health and Safety Plan.
- Spill containment.

Initial training also incorporates workshops for PPE and respiratory equipment use (Levels A, B and C), and respirator fit testing. Records and certification received from the course instructor documenting each employee's successful completion of the training identified above are maintained on file at Benchmark Environmental Engineering and Science, PLLC's Buffalo, NY office. Contractors and Subcontractors are required to provide similar documentation of training for all their personnel who will be involved in on-site work activities.

Any employee who has not been certified as having received health and safety training in conformance with 29 CFR 1910.120(e) is prohibited from working in the exclusion and contamination reduction zones, or to engage in any on-site work activities that may involve exposure to hazardous substances or wastes.

4.1.2 Site Training

Site workers are given a copy of the HASP and provided a site-specific briefing prior to the commencement of work to ensure that employees are familiar with the HASP and the information and requirements it contains. The site briefing shall be provided by the SSHO prior to initiating field activities and shall include:

- Names of personnel and alternates responsible for Site safety and health.
- Safety, health and other hazards present on the Site.
- The Site lay-out including work zones and places of refuge.
- The emergency communications system and emergency evacuation procedures.
- Use of PPE.
- Work practices by which the employee can minimize risks from hazards.
- Safe use of engineering controls and equipment on the Site.
- Medical surveillance, including recognition of symptoms and signs of over-exposure (see Section 5).
- Decontamination procedures (see Section 12).
- The Emergency Response Plan (see Attachment 2).
- Confined space entry procedures, if required (see Section 13).
- The spill containment program (see Section 9).
- Site control (see Section 11).

Supplemental health and safety briefings will also be conducted by the SSHO on an as-needed basis during the course of the work. Supplemental briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during on-going Site characterization and analysis. Conditions for which the SSHO may schedule additional briefings include, but are not limited to: a change in Site conditions (viz., based on monitoring results); changes in the work schedule/plan; newly discovered hazards; and safety incidents occurring during Site work.

4.2 Supervisor Training

On-site safety and health personnel who are directly responsible for or who supervise the safety and health of workers engaged in hazardous waste operations (viz., SSHO) shall receive, in addition to the appropriate level of worker training described in Section 4.1, above, 8 additional hours of specialized supervisory training, in compliance with 29 CFR 1910.120(e)(4).

4.3 Emergency Response Training

Emergency response training is addressed in Attachment 2 of this HASP, Emergency Response Plan.

4.4 Site Visitors

Benchmark's SSHO will provide a site-specific briefing to all Site visitors and other non-Benchmark personnel who enter the Site beyond the Site entry point. The site-specific briefing will provide information about Site hazards, the Site lay-out including work zones and places of refuge, the emergency communications system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

Site visitors will not be permitted to enter the exclusion zone or contaminant reduction zones unless they have received the level of training required for Site workers as described in Section 4.1.

5.0 MEDICAL MONITORING

Medical monitoring examinations are provided to Benchmark employees as stipulated under 29 CFR Part 1910.120(f). These exams include initial employment and termination physicals for all Benchmark employees involved in hazardous waste Site field operations. Annual exams are provided for those employees who are engaged in hazardous waste site field operations for more than 30 days per year, or who meet other specific criteria listed in 29 CFR 1910.120(f). Post-exposure examinations are also provided for employees who may have been injured, received a health impairment, or developed signs or symptoms of over-exposure to hazardous substances or were accidentally exposed to substances at concentrations above the permissible exposure limits without necessary personal protective equipment. Such exams are performed as soon as possible following development of symptoms or the known exposure event.

Medical evaluations are performed by ADP Screening & Selection Services, an occupational health care provider under contract with TurnKey-Benchmark. ADP's local facility is Health Works WNY, Seneca Square Plaza, 1900 Ridge Road, West Seneca, New York 14224. The facility can be reached at (716) 823-5050 to schedule routine appointments or post-exposure examinations.

Medical evaluations are conducted according to the Benchmark-TurnKey Medical Monitoring Program and include an evaluation of the workers' ability to use respiratory protective equipment. The examinations include:

- Occupational/medical history review.
- Physical exam, including vital sign measurement.
- Spirometry testing.
- Eyesight testing.
- Audio testing (minimum baseline and exit, annual for employees routinely exposed to greater than 85db).

- EKG (for employees >40 yrs age or as medical conditions dictate).
- Chest X-ray (baseline and exit, and every 5 years).
- Blood biochemistry (including blood count, white cell differential count, serum multiplastic screening).
- Medical certification of physical requirements (viz., sight, musculoskeletal, cardiovascular) for safe job performance and to wear respiratory protection equipment.

The purpose of the medical evaluation is to determine an employee's fitness for duty on hazardous waste sites; and to establish baseline medical data.

In conformance with OSHA regulations, Benchmark will maintain and preserve medical records for a period of 30 years following termination of employment. Employees are provided a copy of the physician's post-exam report, and have access to their medical records and analyses.

6.0 SAFE WORK PRACTICES

All Benchmark employees shall conform to the following safe work practices during all on-site work activities conducted within the exclusion and contamination reduction zones:

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth contact is strictly prohibited.
- The hands and face must be thoroughly washed upon leaving the work area and prior to engaging in any activity indicated above.
- Respiratory protective equipment and clothing must be worn by all personnel entering the Site as required by the HASP or as modified by the Site Safety Officer. Excessive facial hair (i.e., beards, long mustaches or sideburns) that interferes with the satisfactory respirator-to-face seal is prohibited.
- Contact with surfaces/materials either suspected or known to be contaminated will be avoided to minimize the potential for transfer to personnel, cross contamination and need for decontamination.
- Due to possible contraindications, use of prescribed drugs should be reviewed with the Benchmark occupational physician.
- Alcoholic beverage and illegal drug intake are strictly forbidden during the work day.
- All personnel shall be familiar with standard operating safety procedures and additional instructions contained in this Health and Safety Plan.
- On-site personnel shall use the "buddy" system. No one may work alone (i.e., out of earshot or visual contact with other workers) in the exclusion zone.
- Personnel and equipment in the contaminated area shall be minimized, consistent with effective Site operations.
- All employees have the obligation to immediately report and if possible, correct unsafe work conditions.
- Use of contact lenses on-site will not be permitted. Spectacle kits for insertion

into full-face respirators will be provided for Benchmark employees, as requested and required.

The recommended specific safety practices for working around the subcontractor's equipment (e.g., drill rig, site truck.) are as follows:

- Although the subcontractors are responsible for their equipment and safe operation of the Site, Benchmark personnel are also responsible for their own safety.

- Subsurface work will not be initiated without first clearing underground utility services.

- Heavy equipment should not be operated within 20 feet of overhead wires. This distance may be increased if windy conditions are anticipated or if lines carry high voltage. The Site should also be sufficiently clear to ensure the project staff can move around the heavy machinery safely.

- Care should be taken to avoid overhead wires when moving heavy-equipment from location to location.

- Hard hats, safety boots and safety glasses should be worn at all times in the vicinity of heavy equipment. Hearing protection is also recommended.

- The work Site should be kept neat. This will prevent personnel from tripping and will allow for fast emergency exit from the Site.

- Proper lighting must be provided when working at night.

- Investigation activities should be discontinued during an electrical storm or severe weather conditions.

- The presence of combustible gases should be checked before igniting any open flame.

- Personnel shall stand upwind of any investigation activity when not immediately involved in sampling/logging/observing activities.

- Personnel will not approach the edge of an unsecured trench/excavation closer than 2 feet.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 Equipment Selection

Personal protective equipment (PPE) will be donned when work activities may result in exposure to physical or chemical hazards beyond acceptable limits, and when such exposure can be mitigated through appropriate PPE. The selection of PPE will be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the Site, the task-specific conditions and duration, and the hazards and potential hazards identified at the Site.

Equipment designed to protect the body against contact with known or suspect chemical hazards are grouped into four categories according to the degree of protection afforded. These categories, designated A through D consistent with United States Environmental Protection Agency (USEPA) Level of Protection designation, are:

- **Level A:** Should be selected when the highest level of respiratory, skin and eye protection is needed.

- **Level B:** Should be selected when the highest level of respiratory protection is needed, but a lesser level of skin protection is required. Level B (or Level A) is also necessary for oxygen-deficient atmospheres.

- **Level C:** Should be selected when the types of airborne substances are known, the concentrations have been measured and the criteria for using air-purifying respirators are met. In atmospheres where no airborne contaminants are present, Level C provides dermal protection only.

- **Level D:** Should not be worn on any site with elevated respiratory or skin hazards. This is generally a work uniform providing minimal protection.

OSHA requires the use of certain PPE under conditions where an immediate danger to life and health (IDLH) may be present. Specifically, OSHA 29 CFR 1910.120(g)(3)(iii) requires use of a positive pressure self-contained breathing apparatus, or positive pressure air-line respirator equipped with an escape air supply when chemical exposure levels present a substantial possibility of immediate serious injury, illness or death, or impair the ability to escape. Similarly, OSHA 29 CFR 1910.120(g)(3)(iv) requires donning totally-encapsulating chemical protective suits (with a protection level equivalent to Level A protection) in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate serious illness, injury or death, or impair the ability to escape.

In situations where the types of chemicals, concentrations, and possibilities of contact are unknown, the appropriate level of protection must be selected based on professional experience and judgment until the hazards can be further characterized. The individual components of clothing and equipment must be assembled into a full protective ensemble to protect the worker from site-specific hazards, while at the same time minimizing hazards and drawbacks of the personal protective gear itself. Ensemble components are detailed below for levels A/B, C, and D protection.

7.2 Protection Ensembles

7.2.1 Level A/B Protection Ensemble

Level A/B ensembles include similar respiratory protection, however Level A provides a higher degree of dermal protection than Level B. Use of Level A over Level B is determined by: comparing the concentrations of identified substances in the air with skin toxicity data, and assessing the effect of the substance (by its measured air concentrations or splash potential) on the small area of the head and neck unprotected by Level B clothing.

The recommended PPE for level A/B is:

- Pressure-demand, full-face piece self-contained breathing apparatus (MSHA/-NIOSH approved) or pressure-demand supplied-air respirator with escape self-contained breathing apparatus (SCBA).
- Chemical-resistant clothing. For Level A, clothing consists of totally-encapsulating chemical resistant suit. Level B incorporates hooded one-or two-piece chemical splash suit.
- Inner and outer chemical resistant gloves.
- Chemical-resistant safety boots/shoes.

- Hardhat.

7.2.2 Level C Protection Ensemble

Level C protection is distinguished from Level B by the equipment used to protect the respiratory system, assuming the same type of chemical-resistant clothing is used. The main selection criterion for Level C is that conditions permit wearing an air-purifying device. The device (when required) must be an air purifying respirator (MSHA/NIOSH approved) equipped with filter cartridges. Cartridges must be able to remove the substances encountered. Respiratory protection will be used only with proper fitting, training and the approval of a qualified individual. In addition, an air-purifying respirator can be used only if: oxygen content of the atmosphere is at least 19.5% in volume; substances are identified and concentrations measured; substances have adequate warning properties; the individual passes a qualitative fit-test for the mask; and an appropriate cartridge/canister is used, and its service limit concentration is not exceeded.

Recommended PPE for Level C conditions includes:

- Full-face piece, air-purifying respirator equipped with MSHA and NIOSH approved organic vapor/acid gas/dust/mist combination cartridges or as designated by the SSHO.
- Chemical-resistant clothing (hooded, one or two-piece chemical splash suit or disposable chemical-resistant one-piece suit).
- Inner and outer chemical-resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

An air monitoring program is part of all response operations when atmospheric contamination is known or suspected. It is particularly important that the air be monitored thoroughly when personnel are wearing air-purifying respirators. Continual surveillance using direct-reading instruments is needed to detect any changes in air quality necessitating a

TABLE 7-1

IRM ACTIVITIES
7503 NIAGARA FALLS BOULEVARD
GLR HOLDINGS
NIAGARA FALLS BOULEVARD

REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE) LEVELS[1]

Activity	Respiratory Protection[2]	Clothing	Gloves	Boots	Other Required PPE/Modifications[3]
Subsurface Soil Borings	Level D; upgrade to Level C if necessary	Work Uniform or Tyvek	L	L outer, steel-toed safety boot inner	Hardhat, Safety glasses w/ sideshields
Development and Sampling of Monitoring Wells	Level D; upgrade to Level C if necessary	Work Uniform or Tyvek	L	L outer, steel-toed safety boot inner[3]	Safety glasses w/ sideshields

Notes:

1. T = Tyvek; L= Latex; N = Nitrile;, S = Saranex
2. Respiratory equipment shall conform to guidelines presented in Section 8. The Level C requirement is an air-purifying respirator equiped with organic compound/acid gas/dust cartridge.
3. Dust masks shall be donned as directed by the site health and safety officer or site safety technician whenever potentially contaminated airborne particulates (i.e., dust) are present in significant amounts in the breathing zone. Goggles may be substituted with safety glasses w/side-shields whenever contact with contaminated liquids is not anticipated.

8.0 EXPOSURE MONITORING

8.1 General

Based on the results of historic sample analysis and the nature of the proposed work activities at the Site, the possibility exists that particulates may be released to the air during intrusive sampling activities. Ambient breathing zone concentrations may at times, exceed the permissible exposure limits (PEL) established by OSHA for the individual compounds (see Table 3-2), in which case respiratory protection will be required. Respiratory and dermal protection may be modified (upgraded or downgraded) by the SSHO based upon real-time field monitoring data.

8.1.1 Work Area Monitoring

Routine, real-time monitoring of the atmosphere within the work area will be conducted by Benchmark during all intrusive investigation phases such as drilling, well development, etc. The work area will be monitored at regular intervals using a photo-ionization detector (PID). Observed values will be recorded and maintained as part of the permanent field record.

Additional air monitoring measurements may be made by Benchmark personnel to verify field conditions during subcontractor oversight activities. Monitoring instruments will be protected from surface contamination during use. Additional monitoring instruments may be added if the situations or conditions change.

8.1.2 Off-Site Community Monitoring

In addition to on-site monitoring within the work zone(s), monitoring at the down-wind portion of the site perimeter will be conducted when any intrusive activities are performed outdoors of the facility. This will provide a real-time method for determination of substantial vapor releases to the surrounding community as a result of intrusive work.

The monitoring will be performed at the downwind perimeter location at regular intervals and at a minimum of once per half hour during times when organic vapors exceed established limits for five minutes or longer until such time as work zone concentrations decrease to below the perimeter monitoring action levels. If sustained concentrations of organic vapors are detected in excess of the threshold values identified in Section 7.2.2 at the downwind perimeter location for a period of ***5*** minutes or longer, the actions identified in Section 7.2.2 shall be taken. Pertinent emergency response information including the telephone number and address of the Fire Department are included in Attachment 2 - Emergency Response Plan.

8.2 Monitoring Action Levels

8.2.1 On-site Levels

The PID or other appropriate instrument(s) will be used as specified in this Health and Safety Plan. Readings obtained in the breathing zone may be interpreted (with regard to other site conditions) as follows for on-site Benchmark personnel:

- Total atmospheric concentrations of unidentified vapors or gases ranging from 0 to background on the PID) - Continue operations under Level D.
- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings above background to *5* ppm on the PID (vapors not suspected of containing high levels of chemicals toxic to the skin) - Continue operations under Level C.
- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings of *5* to 50 ppm above background on the PID - Continue operations under Level B, re-evaluate and alter (if possible) construction methods to achieve lower vapor concentrations.
- Total atmospheric concentrations of unidentified vapors or gases above 50 ppm on the PID - Discontinue operations and exit the work zone immediately.

Readings with the organic vapor analyzers will be recorded and documented in the Health and Safety Logbook. All instruments will be calibrated before use and the procedure will be documented in the Health and Safety Logbook.

9.0 SPILL RELEASE/RESPONSE

This chapter of the HASP describes the potential for and procedures related to spills or releases of known or suspected petroleum and/or hazardous substances on the Site. The purpose of this Section of the HASP is to plan appropriate response, control, counter-measures and reporting, consistent with OSHA requirements in 29 CFR 1910.120(b)(4)(ii)(J) and (j)(1)(viii). The spill containment program addresses the following elements:

- Potential hazardous material spills and available controls.
- Initial notification and evaluation.
- Spill response.
- Post-spill evaluation.

9.1 Potential Spills and Available Controls

An evaluation was conducted to determine the potential for hazardous material and oil/petroleum spills at this Site. For the purpose of this evaluation, hazardous materials posing a significant spill potential are considered to be:

- CERCLA Hazardous Substances as identified in 40 CFR Part 302, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).
- Extremely Hazardous Substances as identified in 40 CFR Part 355, Attachment 1, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).
- Hazardous Chemicals as defined under Section 311(e) of the Emergency Planning and Community Right-To-Know Act of 1986, where such chemicals are present or will be stored in excess of 10,000 lbs.
- Toxic Chemicals as defined in 40 CFR Part 372, where such chemicals are present or will be stored in excess of 10,000 lbs.

- Chemicals regulated under 6NYCRR Part 597, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

Oil/petroleum products are considered to pose a significant spill potential whenever the following situations occur:

- the potential for a "harmful quantity" of oil (including petroleum and non-petroleum-based fuels and lubricants) to reach navigable waters of the U.S. exists (40 CFR Part 112.4). Harmful quantities are considered by USEPA to be volumes of 1,000 gallons or more, or lesser quantities that either form a visible sheen on the water or violate applicable water quality standards.

- the potential for any amount of petroleum to reach any waters of NY State, including groundwater, exists. Petroleum, as defined by NY State in 6NYCRR Part 612, is a petroleum-based heat source, energy source, or engine lubricant/maintenance fluid.

- the potential for any release, to soil or water, of petroleum from a bulk storage facility regulated under 6NYCRR Part 612. A regulated petroleum storage facility is defined by NY State as a Site having stationary tank(s) and intra-facility piping, fixtures and related equipment with an aggregate storage volume of 1100 gallons or greater.

The evaluation indicates that, based on Site history and the scope of work, a hazardous material spill is not likely to occur during investigation efforts. However, the procedures identified below will be followed in the event of an unanticipated release.

9.2 Initial Spill Notification and Evaluation

Any worker who discovers a hazardous substance or oil/petroleum spill will immediately notify the Project Manager and SSHO. The worker will, to the best of his/her ability, report the material involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, if any, and any associated injuries. The Emergency Response Plan presented in Attachment 2 of this HASP will immediately be implemented if an emergency release has occurred.

Following initial report of a spill, the Project Manager will make an evaluation as to whether the release exceeds RQ levels. If an RQ level is exceeded, the Project Manager will notify the Site owner who will in turn notify NYSDEC at 1-800-457-7362 within 2 hours of spill discovery. The Project Manager will also determine what additional agencies are to be contacted regarding the release, and will follow-up with written reports as required by the applicable regulations.

9.3 Spill Response

For all spill situations, the following general response guidelines will apply:

- Only those personnel involved in overseeing or performing containment operations will be allowed within the spill area. If necessary, the area will be roped, ribboned or otherwise blocked off to prevent unauthorized access.
- Appropriate PPE, as specified by the SSHO, will be donned before entering the spill area.
- Ignition points will be extinguished/removed if fire or explosion hazards exist.
- Surrounding reactive materials will be removed.
- Drains or drainage in the spill area will be blocked to prevent inflow of spilled materials or applied materials.

For minor spills, the Benchmark will maintain a Spill Control and Containment Kit in the Field Office or other readily accessible storage location. The kit will consist of, at a minimum, a 50 lb. bag of "speedy dry" granular absorbent material, absorbent pads, shovels, empty 5-gallon pails and an empty open-top 55-gallon drum. Spilled materials will be absorbed, and shoveled into a 55-gallon drum for proper disposal (USEPA approval will be secured for on-site treatment of the impacted soils/absorbent materials, if applicable). Impacted soils will be hand-excavated to the point that no visible signs of contamination remains, and will be drummed with the absorbent.

In the event of a major release or a release that threatens surface water, a spill response contractor will be called to the Site. The response contractor may use heavy equipment (viz., excavator, backhoe, etc.) to berm the soils surrounding the spill site or create diversion trenching to mitigate overland migration or release to navigable waters. Where feasible, pumps will be used to transfer free liquid to storage containers. Spill control/cleanup contractors in the Western New York area that may be contacted for assistance (in order of preference) include:

- The Environmental Service Group of NY, Inc.: (716) 695-6720
- Op-Tech: (716) 873-7680
- Environmental Products and Services, Inc.: (716) 447-4700

9.4 Post-Spill Evaluation

If a reportable quantity of hazardous material or oil/petroleum is spilled as determined by the Project Manager, a written report will be prepared as indicated in Section 9.2. The report will identify the root cause of the spill, type and amount of material released, date/time of release, response actions, agencies notified and/or involved in cleanup, and procedures to be implemented to avoid repeat incidents. In addition, all re-useable spill cleanup and containment materials will be decontaminated, and spill kit supplies/disposable items will be replenished.

10.0 HEAT/COLD STRESS MONITORING

Although most Site Investigation activities will occur in a climate controlled environment, measures will be taken to minimize heat/cold stress to Benchmark employees working outdoors. The Site Safety and Health Officer and/or his or her designee will be responsible for monitoring Benchmark field personnel for symptoms of heat/cold stress.

10.1 Heat Stress Monitoring

Personal protective equipment may place an employee at risk of developing heat stress, a common and potentially serious illnesses often encountered at construction, landfill, waste disposal, industrial or other unsheltered sites. The potential for heat stress is dependent on a number of factors, including environmental conditions, clothing, workload, physical conditioning and age. Personal protective equipment may severely reduce the body's normal ability to maintain temperature equilibrium (via evaporation and convection), and require increased energy expenditure due to its bulk and weight.

Proper training and preventive measures will mitigate the potential for serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress, the following steps should be taken:

- Adjust work schedules.
- Modify work/rest schedules according to monitoring requirements.
- Mandate work slowdowns as needed.
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat (i.e., eight fluid ounces

must be ingested for approximately every 1 lb of weight lost). The normal thirst mechanism is not sensitive enough to ensure that enough water will be consumed to replace lost perspiration. When heavy sweating occurs, workers should be encouraged to drink more.

- Train workers to recognize the symptoms of heat related illness.

Heat-Related Illness - Symptoms:

- Heat rash may result from continuous exposure to heat or humid air.
- Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include: muscle spasms; pain in the hands, feet and abdomen.
- Heat exhaustion occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include: pale, cool, moist skin; heavy sweating; dizziness; nausea; fainting.
- Heat stroke is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occur. Competent medical help must be obtained. Signs and symptoms are: red, hot, usually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

The monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70 degrees Fahrenheit or above. For monitoring the body's recuperative ability to excess heat, one or more of the following techniques should be used as a screening mechanism.

- Heart rate may be measured by the radial pulse for 30 seconds as early as possible in the resting period. The rate at the beginning of the rest period should not exceed 100 beats per minute. If the rate is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest periods stay the same, If the pulse rate is 100 beats per minute at the beginning of the nest rest period, the following work cycle should be further shortened by 33%.
- Body temperature may be measured orally with a clinical thermometer as early as possible in the resting period. Oral temperature at the beginning of the rest period

should not exceed 99.6 degrees Fahrenheit. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period remains the same. However, if the oral temperature exceeds 99.6 degrees Fahrenheit at the beginning of the next period, the work cycle may be further shortened by 33%. Oral temperature should be measured at the end of the rest period to make sure that it has dropped below 99.6 degrees Fahrenheit. No Benchmark employee will be permitted to continue wearing semi-permeable or impermeable garments when his/her oral temperature exceeds 100.6 degrees Fahrenheit.

10.2 Cold Stress Monitoring

Exposure to cold conditions may result in frostbite or hypothermia, each of which progresses in stages as shown below.

- **Frostbite** occurs when body tissue (usually on the extremities) begins to freeze. The three states of frostbite are:

  1) **Frostnip** - This is the first stage of the freezing process. It is characterized by a whitened area of skin, along with a slight burning or painful sensation. Treatment consists of removing the victim from the cold conditions, removal of boots and gloves, soaking the injured part in warm water (102 to 108 degrees Fahrenheit) and drinking a warm beverage. Do not rub skin to generate friction/ heat.

  2) **Superficial Frostbite** - This is the second stage of the freezing process. It is characterized by a whitish gray area of tissue which will be firm to the touch but will yield little pain. The treatment is identical for Frostnip.

  3) **Deep Frostbite** - In this final stage of the freezing process the affected tissue will be cold, numb and hard and will yield little to no pain. Treatment is identical to that for Frostnip.

- **Hypothermia** is a serious cold stress condition occurring when the body loses heat at a rate faster than it is produced. If untreated, hypothermia may be fatal. The stages of hypothermia may not be clearly defined or visible at first, but generally include:

  1) Shivering

  2) Apathy (i.e., a change to an indifferent or uncaring mood)

3) Unconsciousness

4) Bodily freezing

Employees exhibiting signs of hypothermia should be treated by medical professionals. Steps that can be taken while awaiting help include:

1) Remove the victim from the cold environment and remove wet or frozen clothing. (Do this carefully as frostbite may have started.)

2) Perform active re-warming with hot liquids for drinking (Note: do not give the victim any liquid containing alcohol or caffeine) and a warm water bath (102 to 108 degrees Fahrenheit).

3) Perform passive re-warming with a blanket or jacket wrapped around the victim.

In any potential cold stress situation, it is the responsibility of the Site Health and Safety Officer to encourage the following:

- Education of workers to recognize the symptoms of frostbite and hypothermia.

- Workers should dress warmly, with more layers of thin clothing as opposed to one thick layer.

- Personnel should remain active and keep moving.

- Personnel should be allowed to take shelter in a heated areas, as necessary.

- Personnel should drink warm liquids (no caffeine or alcohol if hypothermia has set in).

- For monitoring the body's recuperation from excess cold, oral temperature recordings should occur:

  - At the Site Safety Technicians discretion when suspicion is based on changes in a worker's performance or mental status.

  - At a workers request.

  - As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind chill less than 20 degrees Fahrenheit or wind chill less than 30 degrees Fahrenheit with precipitation).

- As a screening measure whenever anyone worker on Site develops hypothermia.

Any person developing moderate hypothermia (a core body temperature of 92 degrees Fahrenheit) will not be allowed to return to work for 48 hours without the recommendation of a qualified medical doctor.

11.0 WORK ZONES AND SITE CONTROL

Work zones around the areas designated for IRM activities will be established by Benchmark on a daily basis and communicated to all employees and other Site users by the SSHO. It shall be the Site Safety and Health Officer's responsibility to ensure that all Site workers are aware of the work zone boundaries and to enforce proper procedures in each area. The zones will include:

- Exclusion Zone ("Hot Zone") - The area where contaminated materials may be exposed, excavated or handled and all areas where contaminated equipment or personnel may travel. The zone will be delineated by flagging tape. All personnel entering the Exclusion Zone must wear the prescribed level of personal protective equipment identified in Section 7.

- Contaminant Reduction Zone - The zone where decontamination of personnel and equipment takes place. Any potentially contaminated clothing, equipment and samples must remain in the Contaminant Reduction Zone until decontaminated.

- Support Zone - The part of the Site that is considered non-contaminated or "clean." Support equipment will be located in this zone, and personnel may wear normal work clothes within this zone.

In the absence of other task-specific work zone boundaries established by the SSHO, the following boundaries will apply to all activities involving disruption or handling of Site soils, sediment or groundwater:

- Exclusion Zone: 50 foot radius from the outer limit of the sampling activity.

- Contaminant Reduction Zone: 100 foot radius from the outer limit of the sampling activity.

- Support Zone: Areas outside the Contaminant Reduction Zone.

Access of non-essential personnel to the Exclusion and Contaminant Reduction Zones will be strictly controlled by Benchmark. Only personnel who are essential to the completion of the task will be allowed access to these areas and only if they are wearing the prescribed level of protection. Entrance of all personnel must be approved by the SSHO.

The Contractor will maintain a Health and Safety Logbook containing the names of workers and their level of protection. The zone boundaries may be changed by the SSHO as environmental conditions warrant, and to respond to the necessary changes in work locations on-site.

12.0 DECONTAMINATION

12.1 Decontamination For Benchmark Employees

The degree of decontamination required is a function of a particular task and the environment within which it occurs. The following decontamination procedure will remain flexible, thereby allowing the decontamination crew to respond appropriately to the changing environmental conditions which may arise at the Site. All Benchmark personnel on-site shall follow the procedure below.

Station 1 - Equipment Drop: Deposit visibly contaminated (if any) re-useable equipment used in the contamination reduction and exclusion zones (tools, containers, monitoring instruments, radios, clipboards, etc.) on plastic sheeting.

Station 2 - Boots and Gloves Wash and Rinse: Scrub outer boots and outer gloves. Deposit tape and gloves in waste disposal container.

Station 3 - Tape, Outer Boot and Glove Removal: Remove tape, outer boots and gloves. Deposit tape and gloves in waste disposal container.

Station 4 - Canister or Mask Change: If worker leaves exclusive zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot cover donned, and worker returns to duty.

Station 5 - Outer Garment/Face Piece Removal: Protective suit removed and deposited in separate container provided by Contractor. Face piece or goggles are removed if used. Avoid touching face with fingers. Face piece and/or goggles deposited on plastic sheet. Hard hat removed and placed on plastic sheet.

Station 6 - Inner Glove Removal: Inner gloves are the last personal protective equipment to be removed. Avoid touching the outside of the gloves with bare fingers. Dispose of these gloves in waste disposal container.

Following PPE removal, personnel shall wash hands, face and forearms with absorbent wipes. If field activities proceed for a duration of 6 consecutive months or longer, shower facilities will be provided for worker use in accordance with OSHA 29 CFR 1910.120(n).

12.2 Decontamination For Medical Emergencies

In the event of a minor, non-life threatening injury, personnel should follow the decontamination procedures as defined, and then administer first-aid.

In the event of a major injury or other serious medical concern (e.g., heat stroke), immediate first-aid is to be administered and the victim transported to the hospital in lieu of further decontamination efforts unless exposure to a Site contaminant would be considered "Immediately Dangerous to Life or Health."

12.3 Decontamination Of Field Equipment

Decontamination of heavy equipment will be conducted by the subcontractor in accordance with his approved Health and Safety Plan in the Contamination Reduction Zone. As a minimum, this will include manually removing heavy soil clods, followed by high pressure water and detergent or steam cleaning.

Decontamination of all tools used for sample collection purposes will be conducted by Benchmark personnel. It is expected that all tools will be constructed of nonporous, nonabsorbent materials (i.e., metal) which will aid in the decontamination effort. Any tool or part of a tool made of porous, absorbent material (i.e., wood) will be placed into suitable containers and prepared for disposal.

13.0 CONFINED SPACE ENTRY

OSHA 29 CFR 1910.146 identifies a confined space as a space which is large enough and so configured that an employee can physically enter and do assigned work, has limited or restricted means for entry and exit, and is not intended for continuous employee occupancy. Confined spaces include, but are not limited to, trenches, storage tanks, process vessels, pits, sewers, tunnels, underground utility vaults, pipelines, sumps, wells, and excavations.

Confined space entry by Benchmark employees is not anticipated to be necessary to complete the Site investigation activities identified in Section 1.4. In the event that the scope of work changes or confined space entry appears necessary, the Project Manager will be consulted to determine if feasible engineering alternatives to confined space entry can be implemented. If confined space entry by Benchmark employees cannot be avoided through reasonable engineering measures, task-specific confined space entry procedures will be developed and a confined-space entry permit will be issued through Benchmark's corporate Health and Safety Director. Benchmark employees shall not enter a confined space without these procedures and permits in place.

14.0 FIRE PREVENTION AND PROTECTION

14.1 General Approach

Recommended practices and standards of the National Fire Protection Association (NFPA) and other applicable regulations will be followed in the development and application of Project Fire Protection Programs. When required by regulatory authorities, the project management will prepare and submit a Fire Protection Plan for the approval of the contracting officers, authorized representative or other designated official. Essential considerations for the Fire Protection Plan will include:

- Proper Site preparation and safe storage of combustible and flammable materials.
- Availability of coordination with private and public fire authorities.
- Adequate job-site fire protection and inspections for fire prevention.
- Adequate indoctrination and training of employees.

14.2 Equipment And Requirements

Fire extinguishers will be provided by Benchmark and are required to be provided by the subcontractor on all heavy equipment brought on-site. Fire extinguishers will be inspected, serviced, and maintained in accordance with the manufacturer's instructions. As a minimum, all extinguishers shall be checked monthly and weighed semi-annually, and recharged if necessary. Recharge or replacement shall be mandatory immediately after each use.

14.3 Flammable And Combustible Substances

All storage, handling or use of flammable and combustible substances will be under the supervision of qualified persons. All tanks, containers and pumping equipment, whether portable or stationary, which are used for the storage and handling of flammable and combustible liquids, will meet the recommendations of the National Fire Protection Association.

14.4 Hot Work

If the scope of work necessitates welding or blow torch operation, the hot work permit presented in Attachment 3 will be completed by the SSHO and reviewed/issued by the Project Manager.

15.0 EMERGENCY INFORMATION

In accordance with OSHA 29 CFR Part 1910, an Emergency Response Plan is attached to this HASP as Attachment 2.

16.0 REFERENCES

1. Phase I Environmental Site Assessment Apartments/Vacant Lot 7503-7555 Niagara Falls Boulevard, Niagara Falls, New York, GZA GeoEnvironmental of New York, July 2004.

2. Subsurface Phase II Environmental Assessment, 7503-7555 Niagara Falls Boulevard Niagara Falls, NY, Nature's Way Environmental Consultants & Contractors, Inc., September 20, 2004.

3. Focused Phase II Environmental Investigation, 7503-7555 Niagara Falls Boulevard Niagara Falls, NY, Nature's Way Environmental Consultants & Contractors, Inc., May 18, 2005.

4. Supplemental Site Characterization Report, 7503-7555 Niagara Falls Boulevard Niagara Falls, NY, Benchmark Environmental Engineering & Science, PLLC, November 15, 2005.

ATTACHMENT 1

NYSDOH GENERIC COMMUNITY AIR MONITORING PLAN

New York State Department of Health
Generic Community Air Monitoring Plan [1]

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

[1] Taken from Appendix 1A of the Draft DER-10 Technical Guidance for Site Investigation and Remediation, December 2002.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

ATTACHMENT 2

EMERGENCY RESPONSE PLAN

ATTACHMENT 2

EMERGENCY RESPONSE PLAN

Personnel Exposure

- Skin contact: Use copious amounts of soap and water. Wash/rinse affected area for at least 15 minutes. Decontaminate and provide medical attention. Eyewash stations will be provided on site. If necessary, transport to Niagara Falls Memorial Medical Center.

- Inhalation: Move to fresh air and, if necessary, transport to Niagara Falls Memorial Medical Center.

- Ingestion: Decontaminate and transport to Niagara Falls Memorial Medical Center.

Personal Injury

Minor first-aid will be applied on-site as deemed necessary. In the event of a life threatening injury, the individual should be transported to Niagara Falls Memorial Medical Center via ambulance. The Site Health and Safety Officer and/or the subcontractor's Health and Safety Officer will supply available chemical specific information to appropriate medical personnel as requested.

First aid kits will conform to Red Cross and other applicable good health standards, and shall consist of a weatherproof container with individually sealed packages for each type of item. First aid kits will be fully equipped before being sent out on each job and will be checked weekly by the Site Health and Safety Officer to ensure that the expended items are replaced.

Communications

Internal emergency communication systems are used to alert workers to danger, convey safety information, and maintain site control. Any effective system can be employed. Two-way radio headsets or field telephones are often used when work teams are far from the command post. Hand signals and air-horn blasts are also commonly used. Every system must have a backup. It shall be the responsibility of the Site Health and Safety Officer and/or the subcontractor's Health and Safety Officer to ensure that an adequate method of internal communication is understood by all personnel entering the site. Unless all personnel are otherwise informed, the following signals shall be used.

1) Emergency signals by portable air horn, siren, or whistle: two short blasts, personal injury; continuous blast, emergency requiring site excavation.

2) Visual signals: hand gripping throat, out of air/cannot breathe; hands on top of head, need assistance; thumbs up, affirmative/ everything is OK; thumbs down, no/negative; grip partner's wrist or waist, leave area immediately.

Evacuation

In the event that an area must be evacuated due to an emergency, such as a chemical spill or a fire, workers shall exit upwind, if possible. Since work conditions and work zones within the site may be changing on daily basis, it shall be the responsibility of the Site Health and Safety Officer and/or the subcontractor's Health and Safety officer to review evacuation routes and procedures as necessary and to inform all site workers of any changes.

Adverse Weather Conditions

In the event of adverse weather conditions, the Site Health and Safety Officer in conjunction with the subcontractor's Health and Safety Officer will determine if engineering operations can continue without sacrificing the health and safety of site personnel. Some of the items to be considered prior to determining if work should continue are:

- Potential for heat/cold stress;
- Inclement weather—related working conditions;

EMERGENCY RESPONSE PLAN

- Limited visibility; and
- Potential for electrical storms.

Emergency Telephone Numbers

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE PROJECT & CORPORATE HEALTH AND SAFETY MANAGER: **Thomas Forbes**

(716) 856-0599 (Work)
(716) 864-1730 (Mobile)
(716) 685-0062 (Home)

BENCHMARK SITE HEALTH AND SAFETY OFFICER: **Bryan Hann**

(716) 870-1165 (Mobile)
(716) 856-0599 (Work)
(716) 823-8005 (Home)

NIAGARA FALLS MEMORIAL MEDICAL CENTER	(716) 278-4000
FIRE	911
AMBULANCE	911
CITY OF ROCHESTER POLICE	911
STATE EMERGENCY RESPONSE HOTLINE	(800) 457-7362
NATIONAL RESPONSE HOTLINE	(800) 424-8802

NYSDEC
Mr. Jeff Konsella, P.E.
270 Michigan Street
Buffalo, New York 14203

Niagara County DOH
Ms. Paulette M. Kline
5467 Upper Mtn. Road Suite 100
Lockport, New York 14094

The site location is:

7503 Niagara Falls Boulevard
Niagara Falls, NY 14304

ATTACHMENT 2

EMERGENCY RESPONSE PLAN

Directions to Hospital

The following directions describe the best route to **Niagara Falls Memorial Medical Center** and Figure C-1 identifies the hospital route:

> Start out going West on NIAGARA FALLS BOULEVARD which becomes WALNUT AVE/RT 62 NORTH.
>
> Turn RIGHT onto 10TH ST.
>
> NIAGARA FALLS MEMORIAL MEDICAL CENTER is located on the right at 621 10th Street. Follow signs to Emergency Room.

Records and Reporting

It shall be the responsibility of each employer to establish and assure adequate records of all:

- Occupational injuries and illnesses;
- Accident investigations;
- Reports to insurance carrier or State compensation agencies;
- Reports required by client;
- Records and reports required by local, state, federal and/or international agencies;
- Property or equipment damage;
- Third party injury or damage claims;
- Environmental testing logs;
- Explosive and hazardous substances inventories and records;

- Records of inspections and citations;
- Related correspondence; and
- Safety training.

ATTACHMENT 3

HOT WORK PERMIT FORM

Benchmark Environmental Engineering & Science, PLLC

HOT WORK PERMIT

PART 1 - INFORMATION

Issue Date:

Date Work to be Performed: Start: Finish (permit terminated):

Performed By:

Work Area:

Object to be Worked On:

PART 2 - APPROVAL

(for 1, 2 or 3: mark Yes, No or NA)*

Will working be on or in:	Finish (permit terminated):	
1. Metal partition, wall, ceiling covered by combustible material?	yes	no
2. Pipes, in contact with combustible material?	yes	no
3. Explosive area?	yes	no

* = If any of these conditions exist (marked "yes"), a permit will not be issued without being reviewed and approved by Thomas H. Forbes (Corporate Health and Safety Director). Required Signature below.

PART 3 - REQUIRED CONDITIONS**

(Check all conditions that must be met)

	PROTECTIVE ACTION		PROTECTIVE EQUIPMENT
	Specific Risk Assessment Required		Goggles/visor/welding screen
	Fire or spark barrier		Apron/fireproof clothing
	Cover hot surfaces		Welding gloves/gauntlets/other:
	Move movable fire hazards, specifically		Wellintons/Knee pads
	Erect screen on barrier		Ear protection: Ear muffs/Ear plugs
	Restrict Access		B.A.: SCBA/Long Breather
	Wet the ground		Respirator: Type:
	Ensure adequate ventilation		Cartridge:
	Provide adequate supports		Local Exhaust Ventilation
	Cover exposed drain/floor or wall cracks		Extinguisher/Fire blanket
	Fire watch (must remain on duty during duration of permit)		Personal flammable gas monitor
	Issue additional permit(s):		

Other precautions:

** Permit will not be issued until these conditions are met.

SIGNATURES

Orginating Employee:	Date:
Project Manager:	Date:
Part 2 Approval:	Date:

Prepared By: ___________

APPENDIX B

PROJECT DOCUMENTATION FORMS

INSPECTOR'S DAILY REPORT

CONTRACTOR			
CLIENT		DATE:	

LOCATION				DAY		JOB NO.	
WEATHER		TEMP	° F	START		END	

WORK PERFORMED:

CONTRACTOR ACTIVITIES:

[PUT CONTRACTOR ACTIVITIES HERE, BE SPECIFIC. TYPE OF EQUIPMENT, ACTIVITIES PERFORMED, BY WHOM, LOCATION OF LANDFILL ETC.]

BENCHMARK ACTIVITIES:

[PUT ENGINEER ACTIVITIES HERE, BE SPECIFIC. TYPE OF EQUIPMENT, ACTIVITIES AND TESTING PERFORMED, SAMPLES COLLECTED, BY WHOM, LOCATION OF LANDFILL ETC.]

TEST PERFORMED		*QA PERSONNEL* SIGNATURE			
PICTURES TAKEN	none	REPORT NO.			
VISITORS	none	SHEET	1	OF	

BENCHMARK
ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

INSPECTOR'S DAILY REPORT

CONTRACTOR			
CLIENT		DATE:	

LOCATION				DAY		JOB NO.	
WEATHER		TEMP	° F	START		END	

MEETINGS HELD & RESULTS:

CONTRACTOR'S WORK FORCE AND EQUIPMENT

DESCRIPTION	*H*	*#*	*DESCRIPTION*	*H*	*#*	*DESCRIPTION*	*H*	*#*	*DESCRIPTION*	*H*	*#*
Field Engineer						Equipment			Front Loader Ton		
Superintendent			Ironworker			Generators			Bulldozer		
						Welding Equip.			DJ Dump truck		
Laborer-Foreman			Carpenter						Water Truck		
Laborer									Backhoe		
Operating Engineer			Concrete Finisher						Excavator		
						Roller			Pad foot roller		
Carpenter						Paving Equipment					
						Air Compressor					

REMARKS:

REFERENCES TO OTHER FORMS:

SAMPLES COLLECTED:					
SAMPLE NUMBER					
APPROX. LOCATION OF STOCKPILE					
NO. OF STOCKPILE					
DATE OF COLLECTION					
CLIMATOLOGIC CONDITIONS					
FIELD OBSERVATION		SHEET		OF	

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

DAILY LOG				
	DATE			
	REPORT NO.			
	PAGE	OF		

PROBLEM IDENTIFICATION REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

WEATHER CONDITIONS:

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Problem Description:

Problem Location (reference test location, sketch on back of form as appropriate):

Problem Causes:

Suggested Corrective Measures or Variances:

Linked to Corrective Measures Report No. *or Variance Log No.*

Approvals (initial):

CQA Engineer:

Project Manager:

Signed:

CQA Representative

DAILY LOG	DATE			
	REPORT NO.			
	PAGE	OF		

CORRECTIVE MEASURES REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

WEATHER CONDITIONS:

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Corrective Measures Undertaken (reference Problem Identification Report No.)

Retesing Location:

Suggested Method of Minimizing Re-Occurrence:

Approvals (initial):

CQA Engineer:

Project Manager:

Signed:

CQA Representative