report.VCP.V00433.2002-09-04.Remedial Action Report vol 2

REMEDIAL ACTION REPORT

Waters Edge
200 East Main Street
Port Jervis, New York
Site Identification # V00433-3

IVI Project No.: E1066016
Volume [redacted] of 2

Prepared for
City of Port Jervis
Port Jervis, New York

By
IVI Environmental, Inc.
White Plains, New York

September 4, 2002

New York
105 Corporate Park Drive
Suite 115
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-1335 (fax)

Washington, D.C.
7910 Woodmont Avenue
Suite 310
Bethesda, Maryland 20814
(301) 907-0163 (tel)
(301) 907-3352 (fax)

Los Angeles
700 South Flower Street
Suite 1520
Los Angeles, California 90017
(213) 896-0300 (tel)
(213) 896-0149 (fax)

Miami
444 Brickell Avenue
Suite 700
Miami, Florida 33131
(305) 358-1776 (tel)
(305) 372-1797 (fax)

Dallas
15305 N Dallas Pkwy
Suite 300
Addison, Texas 75001
(972) 716-9300 (tel)
(972) 716-9311 (fax)

IVI

IVI ENVIRONMENTAL, INC.
Environmental Engineers

September 4, 2002

Mr. Thomas L. Gibbons
Project Manager
Bureau of Eastern Remedial Action, 11th Floor
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015
(518) 402-9622 (tel)
(518) 402-9022 (fax)

Delivered-by-Overnight Mail

Re: IVI Project No.: E1066016
Site Identification # V00433-3
Waters Edge
200 East Main Street
Port Jervis, New York

Dear Mr. Gibbons:

IVI Environmental, Inc. (IVI) is pleased to provide this Remedial Action Report (RAR) for the Waters Edge Property located in Port Jervis, New York. This report summarizes the remedial activities conducted on site, and describes the operations, maintenance and monitoring of the remedial action. Please do not hesitate to call me at (914) 694-9600 ext. 348 if you have any questions regarding this RAR.

Sincerely,

IVI ENVIRONMENTAL, INC.

Peter Biolchini
Project Manager

Reviewed by: _____
Jerry F. Vorbach, P.E., C.H.M.M.
Vice President

Reviewed by: _____
Carl de Stefanis, P.E.
President

cc: Ross Decker, City of Port Jervis, Mayor
Vince Lopez, City of Port Jervis, Dept. of Public Works
John S. Hicks, City of Port Jervis, Corporate Counsel
Robert Cozzy, NYSDEC
Dan Bendall, NYSDEC
Steve Bates, NYSDOH
Doug Olcott, Community Preservation Corporation
Jonah Mendelbaum, Waters Edge, LLC

TABLE OF CONTENTS

TABLE OF CONTENTS - continued

List of Appendices

List of Figures

TABLE OF CONTENTS - continued

List of Tables

1.0 EXECUTIVE SUMMARY

IVI Environmental Inc. (IVI) has prepared this Remedial Action Report (RAR) on behalf of the City of Port Jervis (the "City") to address soil and groundwater contamination at the Waters Edge property located at 200 East Main Street, Orange County, Port Jervis, New York (the "Subject"). This RAR was prepared in accordance with the Remedial Action Workplan completed by IVI dated April 27, 2001 and the Supplementary Voluntary Investigation/ Remedial Action Workplan Addendum dated September 21, 2001.

The purpose of this RAR is to document the remedial activities performed at the Subject including the construction of a soil cap, the removal of the 10,000-gallon fuel-oil underground storage tank (UST), and the successful remediation of contaminated groundwater.

IVI conducted site investigation activities on the Subject between September 2000 and October 2001 to delineate the horizontal and vertical extent of contamination in soil and groundwater at the Subject. A combined Voluntary Investigation Report/Response Action Workplan (VIR/RAW), which summarized the results of our site investigation activities and detailed our response action plan, was prepared by IVI and submitted to NYSDEC on April 27, 2001. In addition, IVI provided the New York Department of Environmental Conservation (NYSDEC) with a Remedial Action Workplan Addendum dated September 21, 2001. NYSDEC provided comments on IVI's workplans in letters dated April 26, 2001, October 16, 2001, and October 26, 2001. IVI provided responses to these comment letters with response letters dated April 26, 2001, October 17, 2001 and October 31, 2001, respectively. NYSDEC gave their approval of the proposed Remedial Action Workplan Addendum in a letter dated November 7, 2001.

The Subject's soil and groundwater were contaminated as a result of historical manufacturing operations conducted by Barrier Industries at the Subject. The results of IVI's investigations indicated that no volatile organic compounds (VOC) contamination was found within the Subject's soils. Minor semi-VOC (SVOC) exceedances, less than one order of magnitude above applicable NYSDEC Technical and Administrative Guidance Memorandum (TAGM) No. 4046 Recommended Soil Cleanup Objectives (RSCOs) were detected within the soil samples collected from the southern portion of the site. This contamination was attributed to the small quantity of fill noted in this area. Additionally, minor metals exceedances, less than one order of magnitude above applicable RSCOs, were detected within localized areas of the Subject. No polychlorinated biphenyls (PCBs) were identified within the soils in the vicinity of the former transformers.

A chlorinated VOC contaminated groundwater plume containing levels of 1,1,1 trichloroethane (TCA), trichloroethylene (TCE) and cis-1,2, dichloroethylene (DCE), all above their respective NYSDEC Groundwater Quality Standards (GQSs), was identified beneath the Subject. This plume was approximately at 4.43 acres in size and appeared to be migrating in the direction of groundwater flow towards the Neversink River. The area of highest contamination was located on the north central portion of the site. No SVOC contamination in excess of GQS was detected on-site.

1.0 EXECUTIVE SUMMARY-continued

Additionally, minor metals contamination was detected within the Subject's groundwater. Specifically, aluminum, antinomy, cobalt, iron, and manganese concentrations were detected above their respective GQS. With the exception of manganese, the metals were detected at concentrations of less than one order of magnitude above their respective GQS. Further, within 10 of the 12 groundwater samples collected, the pH of the Subject's groundwater was found to be slightly lower than its GQS.

An out-of-service UST was located adjacent to the boiler building. The tank was found to contain approximately 3' of liquid, observed to be primarily water, although a slight odor and sheen was noted. No visually impacted soil was noted during test pit or soil boring activities in the area. However, slight exceedances of NYSDEC RSCOs of SVOCs were detected in soils.

Based on the results of IVI's investigation, a Remedial Action Plan consisting of the following activities was recommended: 1) conducting a lead based paint (LBP) survey; 2) construction of a soil cap of clean fill to minimize exposure potential; 3) the removal of the out-of-service UST; 4) the installation of in-situ chemical remediation injection points; 5) full scale in-situ chemical remediation; 6) performance of post-remediation groundwater sampling; and 7) preparation of a Remedial Action Report following the completion of the monitoring program, which summarizes the overall findings of this program.

IVI conducted remedial activities, including in-situ chemical remediation activities, on the Subject between June 2001 and July 2002.

The following tasks were performed as part of this Remedial Action: 1) LBP testing; 2) oversight of the construction of a soil cap of clean fill to minimize exposure potential to the minor metals and SVOC exceedances in the soil; 3) the removal of the out-of-service UST; 4) the installation of monitoring wells to further delineate the chlorinated VOC contaminated groundwater plume; 5) the installation of in-situ chemical remediation injection points; 6) the conductance of full scale in-situ chemical remediation; and 7) the performance of post-remediation groundwater sampling.

Lead Based Paint Survey and Soil Cap Construction

Inasmuch as debris from the demolition of the former on-site structures was to be used as fill material, IVI conducted an LBP survey of these structures to ensure that all LBP was removed prior to their demolition. LBP was identified within two areas of the Subject: the right edge of the southern exterior wall of the 5-story building and the windowsills of the 1-story building. These areas identified as containing LBP, approximately 2,500 SF, were demarcated and abated by FTF Construction Associates, a certified LBP abatement contractor. Waste manifests indicate that the lead paint was disposed of at the Southern Alleghenies Landfill. Following the LBP abatement, the existing buildings were demolished and used as fill materials on-site. An additional 35,000 cubic yards of clean fill was placed across the property to create a soil cap, minimizing exposure potential to the minor metals and SVOC exceedances in the soil. The cap ranges in thickness from 4' to 10'.

1.0 EXECUTIVE SUMMARY-continued

UST Removal and Assessment

A 10,000 gallon inactive UST, which served the former boiler room, was removed by IVI in August 2001. The tank was visually inspected and was found to be sound with no evidence of cracks, holes or breaches. A total of seven (7) soil samples (one from each sidewall and tank bottom and two from the excavated materials) were collected and analyzed for NYSDEC STARS list VOCs and SVOCs. The soil analytical results were compared to both NYSDEC STARS Memo #1 Alternative Guidance Values (AGVs) and NYSDEC TAGM 4046 RSCOs. This testing identified levels of SVOCs including benzo(a)anthracene, chrysene, benzo(b)flouranthene, benzo(k)flouranthene and benzo(a)pyrene slightly in excess of their respective TAGM guidelines. However, inasmuch as this area has been capped with approximately 5' of clean fill, and none of these compounds were detected within the subject's groundwater, and all of these compounds have very low volatility and mobility, the overall potential for exposure to these compounds is considered to be negligible. Therefore, IVI recommends no further action with regard to this area.

Groundwater Remediation

IVI has conducted three (3) rounds of in-situ chemical injection as part of the remedial action to address the VOC groundwater contamination at the Subject. A pre-remediation baseline groundwater sampling was conducted on October 19, 2001. Total VOC concentrations ranged from a low of 2 ug/l in MW-2A to a high of 8,287 micrograms per liter ("µg/l") in MW-5. TCE was the predominant VOC identified, followed by 1,2 DCE and PCE. Following the first chemical injection round in February and March 2002, total VOC concentrations ranged from a low of 3 µg/l in MW-2A to a high of 6,272 µg/l in MW-5. After the second chemical injection round in April 2002 total VOC concentrations ranged from a low of 2 µg/l in MW-2A to a high of 3,385 µg/l in MW-5. Following the third chemical injection round in June and July 2002, total VOC concentrations ranged from non-detect in MW-2A to a high of 1,332 µg/l in MW-7.

Over the course of the injections, the range of percent reductions of total VOCs in the groundwater was from 77 to 100% with an average reduction of 92%. Additionally, the total mass of contamination was reduced by 92% from 52.75 lbs in October 2001 to 4.34 lbs. Further, the area of contaminated groundwater in excess of 500 ug/L was reduced by 81% from 35,085 square feet ("SF") to 6,752 SF. The area of contaminated groundwater in excess of 5,000 ug/L was reduced 100% from 11,469 SF to 0 SF.

Based on these results, the source area of the groundwater contamination has been successfully remediated with approximately 92% of the total VOC contamination on-site being destroyed as a result of the in-situ chemical remediation process. The residual concentrations in the groundwater are at least 25' below ground surface ("bgs") and do not pose a potential inhalation exposure risk. Further, the on-site groundwater is not used for drinking water purposes. Finally, additional monitoring events will be performed to ensure the remaining groundwater contamination will not migrate into the Neversink River. Therefore, IVI requests a Certificate of Remedial Completion designating that no further action is required for this site.

2.0 INTRODUCTION

A discussion of the site location and history, site geology and hydrogeology, and site documentation, including a summary of the following reports regarding the environmental inspections, assessments and investigations conducted on the Subject is given in this Section: 1) Phase I Environmental Field Inspection Report, dated July 6, 1998, prepared by Advanced Testing Corporation (ATC) on behalf of Warwick Properties; 2) Phase I Environmental Site Assessment ("ESA") dated August 21, 2000 prepared by IVI Environmental, Inc. on behalf of Community Preservation Corporation; 3) Phase II Environmental Site Assessment ("ESA"), dated November 27, 2000 prepared by IVI Environmental, Inc. on behalf of the Community Preservation Corporation; 4) Voluntary Investigation Report Remedial Action Workplan dated April 27, 2001 prepared by IVI Environmental, Inc. on behalf of the City of Port Jervis, and; 5) Supplementary Voluntary Investigation Remedial Action Workplan Addendum dated September 21, 2001 prepared by IVI Environmental, Inc. on behalf of the City of Port Jervis.

2.1 Site Location and History

The Subject is located at 200 East Main Street in Port Jervis, Orange County, New York and is identified on local tax maps as Section 14, Block 6, Lot 28. The property, which is situated in a suburban area characterized by residential and commercial retail and office development, consists of an approximately 7-acre parcel improved with a newly constructed senior housing complex. The site was previously improved with an approximately 80-year-old, 100,000 SF vacant industrial facility. Barrier Industries, an industrial janitorial chemical manufacturer, occupied the site from 1978 until December 1993. The site was first developed prior to 1921 with a silk mill and several storage and residential buildings. Previous site improvements included three buildings: 1) a house; 2) interconnected production and storage buildings, and; 3) a boiler building. The Subject is serviced by public water and sanitary sewers.

2.2 Site Geology and Hydrogeology

2.2.1 Topography

According to the USGS *Port Jervis South, NY, NJ, PA* 7.5 Minute Series topographic map, the Subject's topographic elevation ranges from 450' to 430' above mean sea level ("msl"). The Subject slopes gradually from the northwest to the southeast. A topographic map is included as Figure 1 in Appendix A.

2.2.2 Soils

IVI reviewed a letter report pertaining to test pits excavated at the Subject prepared by ATC on behalf of Warwick Properties dated July 6, 1998. This report stated that soils at the site consist of fill material composed of silty sand, gravel, cinders, and traces of brick. According to the October, 1981 *Soil Survey of*

2.0 INTRODUCTION-continued

Orange County, New York issued by the United States Department of Agriculture, Soil Conservation Service, the soils at the site are classified as sandy loam or gravelly sandy loam of the Basher, Otisville and Hoosic series. Permeability of these soils is moderate to rapid. Subsurface soils encountered during IVI's investigations were composed of fine to coarse brown sand with moderate quantities of clay and silt.

2.2.3 Geology

According to the aforementioned Soil Survey, parent material of soils in Orange County is typically glacial till with some soils formed from alluvium. Based on review of the *Geologic Map of New York* prepared by the University of the State of New York dated 1989, the Subject's surficial geology is comprised of recent deposits consisting of fine sands and silt to gravel. Additionally, according to the *Geologic Map of New York* prepared by the University of the State of New York dated 1970, the Subject is underlain by the Middle Devonian-aged Hamilton Group of the Valley and Ridge Province. This information is primarily comprised of shales and sandstones. Bedrock was not encountered during this investigation and is anticipated to be located more than 20' bgs.

2.2.4 Hydrogeology

The nearest surface water body is the Neversink River, which is located adjacent to the Subject's southeast property boundary and flows south towards the Delaware River. Groundwater was encountered at depths ranging between 25' bgs on the northern portion of the Subject to 16' bgs on the southern portion. Given the topography of the site, groundwater flow is anticipated to be from the north to the south.

2.3 Site Documentation

A chronological summary of previous environmental reports regarding the environmental inspections, assessments, and investigations conducted on the Subject is presented below.

2.3.1 Phase I Environmental Field Inspection Report dated July 6, 1998 prepared by Advanced Testing Corporation (ATC) on behalf of Warwick Properties

According to this report, the Subject was the location for Barrier Systems, which manufactured institutional cleaning supplies and floor waxes. ATC noted some asbestos-containing pipe insulation within the buildings and also stated that LBP may be present on painted surfaces. Additionally, ATC advanced six (6) test pits

2.0 INTRODUCTION – continued

to depths of 6' to 8' bgs on the Subject. A total of two (2) composite soil samples were collected from the test pits and analyzed for EPA Priority Pollutants. With the exception of chromium, copper, lead, nickel, and zinc, no contaminants were detected above laboratory Method Detection Limits ("MDL"). According to this report, ATC was informed by a NYSDEC representative that the concentrations of the metals identified were considered normal background levels.

ATC concluded that based on the sampling data, the on-site soils were generally free of pollutants and would not present a hazard to persons exposed during construction activities. ATC further recommended that the soils be visually monitored as work progresses and additional evaluation be conducted should conditions significantly different from those observed in their investigation be encountered.

2.3.2 Phase I Environmental Site Assessment ("ESA") dated August 21, 2000 prepared by IVI Environmental, Inc. on behalf of Community Preservation Corporation.

Based on the results of this report, the site was formerly improved with the Barrier Systems Facility, prior to which the site was improved with a silk mill. This report identified numerous recognized environmental conditions in conjunction with the Subject. The issue of primary concern was the historical manufacturing of cleaning supplies. An estimated 15,000 drums, pails, lab chemical containers, and approximately 200 storage tanks and reactor vessels of hazardous wastes, chemical products, and product precursors were abandoned in the facility, in trailers, and outside the building when the company filed for bankruptcy.

Chemicals discovered on site included various acids and VOCs including 1,1,1-TCA and toluene. Several complaints and chemical releases were reported. Finally, after freezing temperatures caused water pipes and drums to burst, the NYSDEC investigated the site and initiated an emergency removal and cleanup action. This led to the inclusion of the Subject on the U.S. Environmental Protection (USEPA) CERCLIS, and NYSDEC Inactive Hazardous Waste Disposal Sites databases. The drums were overpacked, sorted, categorized, and shipped off-site for disposal. The cleanup was turned over to the USEPA and completed in 1995. Additionally, a monitoring well, indicating previous investigation, was noted on Lot 2 of the Subject. Finally, an abandoned UST was noted adjacent to the boiler building on Lot 3.

Based on these findings, IVI recommended that a subsurface investigation be conducted on the Subject. IVI also noted the possible presence of asbestos-containing materials and LBP.

2.0 INTRODUCTION – continued

2.3.3 Phase II Environmental Site Assessment ("ESA"), dated November 27, 2000, prepared by IVI Environmental, Inc. on behalf of Community Preservation Corporation.

IVI conducted a Phase II ESA on the Subject in November 2000 to address the areas of environmental concern identified in the Phase I ESA described above. This Assessment consisted of the advancement of five (5) borings and the collection and analysis of five (5) soil samples and three (3) groundwater samples. The soil samples were analyzed for VOCs and SVOCs in accordance with EPA Methods 8260C and 8270 (base neutrals only), respectively.

Additionally, three (3) of the five (5) soil samples were also analyzed for SVOCs (acid extractables) and pesticides via EPA Methods 8270 and 8081, respectively. The groundwater samples were analyzed for VOCs, SVOCs, pesticides, priority pollutant metals ("PPMs"), and pH in accordance with EPA Methods 8260, 8270, 8081, 200.7 (245 for mercury), and 305, respectively.

The analytical results of the soil samples indicated that no VOCs, SVOCs, or pesticides were present above laboratory MDLs in the soil samples collected. The analytical results of the groundwater samples indicated that six (6) VOCs were present above their respective laboratory MDLs in the samples collected. Specifically, 1,1,1-TCA at 30 µg/L, 1,1-dichloroethane ("DCA") at 3 µg/L, chloroform at 3 µg/L, M&P xylenes at 2 µg/L, PCE ranging from 2 to 12 µg/L, and TCE ranging from 5 to 67 µg/L were detected in the Subject's groundwater. In addition, the concentrations of 1,1,1-trichloroethane, PCE, and TCE exceeded their respective NYSDEC GQS of 5 µg/L given in 6 NYCRR Chapter X Part 703. Only one (1) SVOC, diethylphthalate at 13 µg/L, was detected in the groundwater samples. However, the concentration of diethylphthalate detected was below its NYSDEC GQS of 50 µg/L.

Additionally, 11 metals were detected in the Subject's groundwater; seven of which exceeded their respective NYSDEC GQS. Specifically, arsenic at concentrations up to 0.075 milligrams per liter ("mg/L"), beryllium at concentrations up to 0.031 mg/L, cadmium at concentrations up to 0.014 mg/L, chromium at concentrations up to 0.824 mg/L, copper at concentrations up to 0.699 mg/L, lead at concentrations up to 3.55 mg/L, nickel at concentrations up to 0.589 mg/L, and selenium at concentrations up to 0.2 mg/L were found in excess of their respective NYSDEC GQS of 0.025 mg/L, 0.003 mg/L, 0.005 mg/L, 0.05 mg/L, 0.2 mg/L, 0.025 mg/L, 0.1 mg/L, and 0.01 mg/l, respectively. Further, the pH of the Subject's groundwater ranged from 1.6 to 5.84, which was outside the NYSDEC GQS range of 6.5 to 8.5. Of note, based on the results of the subsequent groundwater sampling, it appears that the low pH readings were anomalous readings. No pesticides were present above laboratory MDLs in the samples collected.

2.0 INTRODUCTION-continued

2.3.4 Voluntary Investigation Report/Remedial Action Workplan dated April 27, 2001, prepared by IVI Environmental, Inc. on behalf of the City of Port Jervis

IVI prepared a Voluntary Investigation Report/Remedial Action Workplan ("VIR/RAW") on behalf of the City of Port Jervis to address soil and groundwater contamination at the Subject. The VIR/RAW was prepared in accordance with the Voluntary Investigation Workplan completed by IVI dated February 6, 2001 and the Voluntary Investigation Workplan Addendum letter dated February 14, 2001.

The VIR/RAW was designed to supplement the results of all previous environmental assessments and investigations on the Subject. More specifically, the purpose of the VIR/RAW was to: 1) characterize the geologic and hydrogeologic conditions on the Subject; 2) further assess the nature and extent of contamination in soil and groundwater at the Subject; and 3) provide a Remedial Action Workplan to address the identified contamination.

The scope of the Voluntary Investigation (the "Investigation") included the following tasks: 1) a review of all previous environmental reports performed on the Subject; 2) an UST assessment; 3) groundwater monitoring well sampling; 4) a Geoprobe investigation; 5) a test pit investigation; 6) a geophysical survey; and 7) sump sampling. The findings of the Investigation are presented below.

The Subject's groundwater was contaminated with VOCs and metals as a result of historical manufacturing operations conducted by Barrier Industries at the Subject. The results of the Investigation indicated that no VOC contamination was found within the Subject's soils. Minor SVOC exceedances, less than one order of magnitude above applicable NYSDEC TAGM No. 4046 RSCOs, were detected within the soil samples collected from the southern portion of the site. This contamination was attributed to the small quantity of fill noted in this area. Additionally, minor metals exceedances, less than one order of magnitude above applicable RSCOs, were detected within localized areas of the Subject. No PCBs were identified within the soils in the vicinity of the former transformers.

A chlorinated VOC contaminated groundwater plume containing levels of 1,1,1 TCA, TCE and cis-1,2, DCE, all above their respective NYSDEC GQSs, was identified. The plume was approximately 4.43 acres in size and appeared to be migrating in the direction of groundwater flow towards the Neversink River. The area of highest contamination was located on the north central portion of the

2.0 INTRODUCTION-continued

site. No SVOC contamination in excess of GQSs was detected on-site. Additionally, minor metals contamination was detected within the Subject's groundwater. Specifically, aluminum, antinomy, cobalt, iron, and manganese concentrations were detected above their respective GQSs. With the exception of manganese, the metals were detected at concentrations of less than one order of magnitude above their respective GQSs. Further, within 10 of the 12 groundwater samples collected, the pH of the Subject's groundwater was found to be slightly lower than its GQS.

No anomalies were detected during the geophysical survey around the perimeter of the abandoned residential structure. In addition, our field investigation revealed the presence of a natural gas-fired boiler within the basement of the building. Further, no fill or vent pipes were noted on or around the structure. As such, it was not suspected that an UST was present in the vicinity of the residential structure.

An out-of-service UST was identified adjacent to the boiler building. The tank was found to contain approximately 3' of liquid, observed to be primarily water, although a slight odor and sheen was noted. No visually impacted soil was noted during test pit and soil boring activities in the UST area. Soil and groundwater samples collected from the area indicated no detectable levels of petroleum contamination were found in the vicinity of the UST. As such, this tank was not suspected to have had an impact on the Subject's soil and groundwater.

A sump located in the northern portion of the warehousing building, which was identified during a walkthrough of the building, was found to contain high concentrations of 1,1-dichlorethane ("DCA") and 1,1,1-TCA. IVI estimated the volume of liquid/sludge within this sump to be approximately 5-gallons. Based on conversations with representatives of the City of Port Jervis Department of Public Works and the prospective property developer, there were no subsurface disposal systems on-site, and all wastewater was discharged to the municipal system. This fact was further confirmed by direct observation of a wastewater pumping station located on the southern portion of the Subject.

Based on the results of the Investigation, a Remedial Action Plan consisting of the following activities were proposed: 1) the construction of a soil cap of clean fill to minimize exposure potential to the minor exceedances of the TAGM RSCOs for metals and SVOCs identified in soils; 2) the removal of the out-of-service UST; 3) the installation of monitoring wells to further delineate the chlorinated VOC contaminated groundwater plume; 4) the installation of in-situ chemical remediation injection points; 5) the conductance of full scale in-situ chemical remediation; 6) a survey of the monitoring well and injection points; 7) the performance of post-remediation groundwater sampling; and 8) the preparation of a Remedial Action Report, which summarizes the overall findings of the remedial activities.

2.0 INTRODUCTION-continued

2.3.5 Supplementary Voluntary Investigation Remedial Action Workplan Addendum dated September 21, 2001, prepared by IVI Environmental, Inc. on behalf of the City of Port Jervis

IVI prepared a Supplemental Voluntary Investigation Report/Remedial Action Workplan Addendum ("SVIR/RAWA") on behalf of the City of Port Jervis to further address groundwater contamination at the Waters Edge property.

This SVIR/RAWA was prepared in accordance with the Scope of Work presented in IVI's VIR/RAW dated April 27, 2001, which was approved by the NYSDEC in a letter dated April 30, 2001.

The scope of this Supplemental Investigation (SI) included the following tasks: 1) the advancement of additional Geoprobe borings; 2) collection of groundwater samples from each Geoprobe boring and laboratory analysis for VOCs for the purpose of horizontal and vertical delineation; and 3) collection of a groundwater sample from an existing monitoring well and laboratory analysis for VOCs.

A total of 13 groundwater samples were collected and analyzed for VOCs from eight (8) Geoprobe borings, B-22 through B-29, and one (1) monitoring well (MW-2), as part of this Supplemental Investigation. The analytical results of the groundwater samples indicated detectable levels of nine (9) VOCs were found. Four (4) VOCs were detected above their respective GQSs. Specifically, concentrations of 1,1,1-TCA of 8 ppb, TCE up to 240 ppb, PCE up to 9 ppb and chloroform up to 8 ppb, exceeded their respective GQSs of 5 ppb for 1,1,1-TCA, TCE, and PCE, and 7 ppb for chloroform.

Based on the results of this Supplemental Investigation and previous investigations on the Subject, a chlorinated VOC contaminated groundwater plume containing levels of 1,1,1-TCA, TCE, PCE, and cis-1,2-DCE above their respective GQSs was identified beneath the Subject. The area of highest contamination was located on the northwest portion of the site. The area of chlorinated VOC contamination in excess of the NYSDEC remedial guideline of 500 ppb for the Subject was approximately 0.5 acres.

3.0 OBJECTIVES OF REMDIAL ACTION

The objectives of this Remedial Action were as follows: 1) perform a LBP survey of the former on-site structures to ensure that all lead paint was removed from the structures prior to demolition; 2) the construction of a soil cap of clean fill to minimize exposure potential to minor exceedances of TAGM RSCO for SVOCs and metals identified in soils; 3) to remove an out-of-service UST; 4) to treat chlorinated VOC-contaminated groundwater at the Subject using an in-situ chemical remediation technology; 5) to achieve the maximum reduction of chlorinated VOC contamination in the source area groundwater; and 6) to conduct a monitoring program to verify the continuing attenuation of chlorinated VOC groundwater concentrations following the completion of remedial activities.

4.0 REMEDIAL ACTION FIELD ACTIVITIES

The scope and design of this Response Action Plan was developed based on the following: 1) the results of the previously discussed environmental site assessments and investigations conducted on the Subject by IVI and a previous environmental consultant; and 2) input received from the NYSDEC via comment letters and conversations.

The following tasks were performed as part of this Remedial Action: 1) a survey for lead based paint; 2) the construction of a soil cap of clean fill to minimize exposure potential to minor exceedances of TAGM RSCOs for SVOCs and metals identified in soils; 3) the removal of an inactive UST; 4) the installation of monitoring wells to further delineate the chlorinated VOC contaminated groundwater plume; 5) the installation of in-situ chemical remediation injection points; 6) the conductance of full scale in-situ chemical remediation; and 7) the performance of post-remediation groundwater sampling.

A summary of each of these tasks is presented below. Additionally, the quality assurance/quality control (QA/QC) procedures used during these remedial activities is included at the end of this section.

4.1 Lead Based Paint Survey

Inasmuch as debris from the demolition of the former on-site structures was to be used as fill materials, IVI conducted a LBP survey of the structures to ensure that all LBP was removed from the structures prior to their demolition. IVI utilized RMD Industries' X-ray fluorescence ("XRF") Lead Paint Analyzer ("LPA") to screen all painted surfaces within the Subject. Samples were taken using a grid pattern on all painted surfaces. A table documenting the results of this screening is provided as Table 2 within Appendix B. Areas identified as containing LBP were demarcated and abated by a certified LBP abatement contractor. Documentation regarding the removal of the LBP is provided in Appendix D.

4.2 Soil Cap Construction

A soil cap comprised of certified clean fill and onsite-demolition debris was placed across the site in 1' lifts to a minimum elevation of 1' above the 100 year flood plain. This resulted in a cap ranging in approximate thickness between 4' to 10'. The fill was composed of a mixture of crushed rock, bank run, and crushed concrete block from building demolition. As previously discussed, all recycled building materials were analyzed for lead content prior to reuse. As mentioned above, no material containing LBP was used as fill.

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

4.3 UST Removal

The inactive 10,000-gallon UST was removed from the site in August 2001. IVI excavated the soils from the top of the tank to facilitate cleaning of the tank. Upon uncovering the UST, IVI cut an access manhole in the top of the UST and pumped remaining liquids and sludges from the UST for recycling and disposal, respectively. The UST was then purged to render it free of petroleum vapors and was monitored continuously using a combustible gas indicator to ensure that vapor concentrations remained less than 15 percent of the lower explosion limit.

Following purging, the UST interior was cleaned by a professional trained in accordance with the Occupational Safety and Health Administration (OSHA) standards in 29 CFR Part 1910 Subparts I and Z. During cleaning operations, all liquid and sludge from the UST and connecting lines were removed and disposed of in accordance with all USEPA and NYSDEC requirements. All connecting lines were removed. Following removal of the UST, an opening was cut in one end of each UST rendering it unusable, as required. The UST was then loaded on a flat bed truck and sent to a scrap metal facility for recovery. The tank removal contractor was responsible for complying with all of the provisions of the OSHA Hazardous Waste Operations and Emergency Response Rules as outlined in 29 CFR Part 1910.120, which includes preparing a site-specific Health and Safety Plan.

IVI screened soils during the excavation activities with a photoionization detector (PID) to determine whether any contaminated soil remained in the excavation. The tank was observed to be in sound condition with no evidence of holes, cracks or leakage. Upon removal of the UST, a total of five (5) soil samples were collected from the sidewalls and bottom of the excavation. Additionally, two (2) grab samples of the excavated soils were also collected. All post-excavation sample results were compared with both the NYSDEC STARS Memo #1 AGVs, as well as the TAGM 4046 guidelines. Because no significantly contaminated soils were identified, all excavated soils were backfilled. Table 3 documenting the post-excavation laboratory results is included in Appendix B.

Soil samples collected were transferred to appropriate sample containers, packed on ice in a cooler, and sent to an Environmental Laboratory Approval Program ("ELAP"), Contract Laboratory Protocol (CLP) certified laboratory for analysis. Post excavation soil samples were analyzed for VOCs and SVOCs in accordance with the NYSDEC Spill Technology and Remediation Series (STARS) Memo #1 protocols.

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

4.4 Monitoring Well Installation and Sampling

On October 15-16, 2001, IVI installed seven (7) overburden monitoring wells, (MW 2A, 4, 5, 6, 7, 8, and 9) on the Subject to confirm the extent of the chlorinated VOC contamination and for post remediation monitoring purposes. The well borings were advanced from the ground surface to depths ranging between 27' and 33' bgs utilizing a truck-mounted hollow-stem auger drill rig.

Monitoring wells were screened from a depth of 5' above the soil/groundwater interface to the bottom of the well. The wells were constructed with 15' of 2" inner diameter (ID) Schedule 40 10 slot PVC screen and 15' to 20' of 2" ID Schedule 40 solid PVC riser. A sand filter pack was placed around the well screen to a height of 3' above the top of the screen. A 3' bentonite seal was placed on top of the sand pack with the remainder of the borehole depth filled with soil cuttings. Monitoring Well Construction Details and boring logs for each well are provided in Appendix C. Of note, Monitoring Well MW-7 was destroyed during site redevelopment activities and was subsequently re-installed on February 22, 2002. Monitoring wells MW-5 and MW-7 were damaged during the in-situ chemical remediation and were re-installed on May 9, 2002 and June 13, 2002, respectively.

Each monitoring well was developed following installation and allowing sufficient time for the grout in the annular spaces of the well to cure (approximately 24 hours). A minimum of five (5) well volumes were removed from each well during the development process. Following this removal, development water was screened for water quality parameters using a water quality analyzer. Development in each well continued until water quality parameters such as dissolved oxygen (DO), pH, conductivity, and temperature stabilized (successive readings between well volume purges are within ten percent). The purpose of the well development was to eliminate all fine material from the area of the well screen and allow for the collection of a groundwater sample, which was free of suspended materials and representative of the aquifer conditions.

On October 19th, following the development of the monitoring wells, IVI purged the newly installed and existing wells of three (3) to five (5) well volumes to obtain groundwater samples that were representative of the aquifer conditions. IVI collected water quality parameter readings including dissolved oxygen DO, pH, conductivity, and temperature, prior to purging, and following the second and all subsequent well volume purges. Purging continued until successive readings were within 10%. Following purging activities, one groundwater sample was collected from each well using disposable polyethylene bailers.

Groundwater samples were transferred to appropriate sample containers, packed on ice in a cooler, and sent for analysis to a certified laboratory. Samples were analyzed for VOCs in accordance with NYS ASP 95-1.

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

4.5 Injection Point Installation

IVI advanced four (4) 2" ID injection points in to the water table within the 500 ppb total chlorinated VOCs contour area as shown in Figure 2 in Appendix A. The injection points consist of an expendable drive point and five foot sections of schedule 40 stainless steel casings. These injection points were advanced using a cone penetrometer unit to depths of 30' bgs, approximately 5' below the soil/groundwater interface. The injection point placement was designed to achieve the maximum distribution of the treatment chemical reagents to the groundwater contamination to ensure the most effective and efficient contaminant destruction.

Following the advancement of the injection points, their respective drive points were dislodged for the creation of propagations for transference of chemical reagents associated with the in-situ chemical remediation process into the groundwater and saturated zone soils. The propagations were created using a hydraulic-fracturing technology which involved the injection of high pressure water into the points. Following the advancement of the propagations, a coarse sand mixture was injected into the points to prop the fractures and create precise preferential pathways with a high hydraulic conductivity inside the in-situ volume to be treated. A typical injection point construction detail is shown on Figure 6 in Appendix A.

4.6 In-Situ Chemical Remediation

As part of this remediation, three (3) rounds of chemical injection were conducted. The first round was conducted from February 1, 2002 through March 12, 2002. The second round was conducted from April 23, 2002 through May 7, 2002. The third round was conducted from June 25, 2002 through July 2, 2002. During each round a proprietary catalyst solution was injected into each injection point followed by a mixture of a proprietary acid and hydrogen peroxide solution. For the first injection round a total of 750 gallons of the proprietary acid, 1,100- gallons of hydrogen peroxide, and 1,885-gallons of the proprietary catalyst solution was injected. In the second injection round a total of 1,010 gallons of proprietary acid, 2,296-gallons of hydrogen peroxide, and 2,550-gallons of the proprietary catalyst solution was injected. Finally, in the third injection round 466 gallons of proprietary acid, 652-gallons of hydrogen peroxide and 1,400-gallons of the proprietary catalyst solution was injected. A summary of the in-situ chemical reagents injected and allocations for each injection point is provided as Table 1 in Appendix B.

Total VOCs, water-quality parameters, combustible gas indicator parameters, and groundwater elevation were analyzed in the groundwater and/or vapor in surrounding monitoring wells periodically throughout the course of the chemical remediation using a photoionization detector, toxic gas/LEL detector and an oil/water interface probe to monitor the real time progress of the remediation, make any necessary adjustments, and to ensure that the remedial goal was achieved.

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

During injections of the proprietary catalyst solution increases in the groundwater elevations up to 0.5' were observed in monitoring points up to 20' from the injection points.

Dramatic decreases in pH from approximately 7.0 to 1.3 were observed following the injections of the proprietary acid and hydrogen peroxide solution. In addition, elevated concentrations of carbon dioxide greater then 10,000 parts per million and oxygen in excess of 40% were detected in air quality readings from monitoring points up to 50' from the injections points. The increases of carbon dioxide and oxygen were observed approximately 20 minutes after starting the injections and persisted up to 2 hours after the injections were completed. Low lower explosion limits (LEL) levels were detected between 1 and 3% LEL during some of the injections. No concentrations of chlorine were detected during any of the injection events. PID readings of up to 200 ppm were detected from monitoring points located within 20' of the chemical injection points.

During chemical injections, the volume of chemicals injected, the pump pressure, manifold pressures on the injection points, and flow rates were recorded. Chemical solutions of either catalyst or acid/hydrogen peroxide were injected in batches between 175 and 200-gallons. Chemicals were injected at approximately 10 gallons per minute under pressures between 5 and 10 psi. Occasionally, due to backpressures in the injection points or silt blockages, pressures of up to 25-30 psi were temporarily encountered at the injection point manifolds.

4.7 Post Remediation Sampling

Due to excessive silting of some wells following the chemical remediation, these wells were redeveloped. Silting occurred in monitoring wells MW-5, MW-6, and MW-7 following each chemical injection round. A minimum of five (5) well volumes were removed from each well during their development process to remove siltation. Following this removal, development water was screened for water quality parameters using a water quality analyzer. Development in each well continued until water quality parameters such as DO, pH, conductivity, and temperature stabilized (successive readings between well volume purges were within ten percent).

Three (3) rounds of post remediation sampling were conducted approximately one to two weeks following each injection round on March 15, 2002, May 21, 2002 and July 17, 2002. Prior to sampling, IVI purged the monitoring wells of three (3) to five (5) well volumes to obtain groundwater samples that were representative of the aquifer conditions. IVI collected water quality parameter readings including DO, pH, conductivity, and temperature, prior to purging, and following the second and all subsequent well volume

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

purges. Purging continued until successive readings were within 10%. Of note, during the July 2002 sampling event, minimal water was present within MW-5. As such a non-purged sample was collected because the well became dry during initial purging activities.

Groundwater samples were transferred to appropriate sample containers, packed on ice in a cooler, and sent for analysis to a certified laboratory. Samples were analyzed for VOCs in accordance with NYS ASP 95-1. Table 4 provided in Appendix B summarizes all the groundwater sampling analytical results.

4.8 Quality Assurance/Quality Control ("QA/QC") Procedures

QA/QC procedures were used to provide performance information with regard to accuracy, precision, sensitivity, representativeness, completeness, and comparability associated with the sampling and analysis activities conducted as part of this Investigation. Field QA/QC procedures were used to ensure that samples collected were representative of the actual conditions of the Subject and did not contain contaminants introduced either from the field activities or from sample transit.

Laboratory QA/QC procedures and analyses were used to demonstrate whether analytical results were biased either by interfering compounds present in the sample matrix or by laboratory techniques that may have introduced systematic or random errors to the analytical process. A summary of the field and laboratory QA/QC procedures that were followed as part of this remediation is given below.

4.8.1 Field QA/QC

Field QA/QC included the following procedures: 1) calibration of field equipment; 2) the collection of duplicate, trip, and field blank samples; 3) the use of dedicated and disposable field sampling equipment; 4) proper sample handling and preservation; 5) proper sample custody; and 6) the completion of report logs. A description of each of these procedures is provided below.

4.8.1.1 Calibration of Field Equipment

All field analytical equipment used, including the PID, water quality analyzer, and toxic gas analyzer were properly calibrated in accordance with manufacturer's recommendations and good and customary practices.

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

4.8.1.2. Collection of Field QA/QC Samples

Trip blanks were prepared by the certified laboratory with deionized laboratory grade water, and one blank accompanied all sample shipments to the laboratory. The water used was from the same source as that used for the laboratory method blank. The trip blanks were handled and transported in the same manner as the samples collected, which it accompanied. Trip blanks were analyzed for TCL VOCs in accordance with NYS 95-1 to identify the presence of cross-contamination as a result of sample shipment, for example, contaminated from the air, shipping containers, or from other items coming into contact with the sample bottles.

Field blanks were prepared to ensure that samples collected were representative of the actual condition of the Subject and did not contain contaminants introduced from the field activities. Specifically, one field blank was collected per day by pouring or pumping laboratory supplied deionized water, over or through sampling equipment utilized, into appropriate sampling jars. The field blanks were analyzed for the same parameters as the soil and groundwater samples with the exception of pH.

4.8.1.3. Use of Disposable Field Sampling Equipment

Disposable sampling equipment, including latex gloves and disposable bailers and tubing, were used to prevent cross-contamination between samples. Field screening equipment, such as the water quality analyzer probe, was decontaminated after each sample by washing it with laboratory grade Alconox detergent and deionized water, and thoroughly air-drying equipment.

4.8.1.4. Sample Handling and Preservation

For each sample, a sufficient volume was collected to allow the specified analytical method to be performed according to protocol and to provide sufficient sample for reanalysis if necessary. Because plasticizers and other organic compounds inherent in plastic containers may contaminate samples requiring organic analysis, samples were collected in glass containers.

Appropriate sample preservation techniques, including cold temperature storage at 4° C, was utilized to ensure that the VOCs in the samples analyzed by the laboratory did not volatilize from the time the sample was collected in the field.

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

Samples were analyzed within proper holding times to ensure the integrity of the analytical results. Groundwater samples collected for VOC analysis were bottled with zero headspace to prevent premature loss of VOCs from diffusion into existing airspaces above the samples. This was accomplished by filling VOC vials used to collect aqueous samples until groundwater overflowed the top of the vial, screwing the cap on tightly, and turning the vial upside down to ensure that no air bubbles were trapped inside.

4.8.1.5 Sample Custody

Sample handling in the field conformed to appropriate sample custody procedures. Field custody procedures included proper sample identification, chain-of-custody forms, and packaging and shipping procedures. Sample labels were attached to all sampling bottles before field activities began to ensure proper sample identification. Each label identified the site and sample location.

Each cooler was lined with two 6-mil thick plastic bags. Bubble wrap was used to absorb shock and prevent breakage of sample containers. VOC vials were packaged inside a plastic "Ziplock" bag prior to placement inside the cooler. Ice or ice packs were placed in between the plastic bags for sample preservation purposes.

After each sample was collected and appropriately identified, the following information was entered onto the chain-of-custody form: 1) site name and address; 2) sampler(s)' name(s) and signature(s); (3) names and signatures of persons involved in the chain of possession of samples; 4) sample number; 5) number of containers; 6) sample location; 7) date and time of collection; 8) type of sample, sample matrix and analyses requested; 9) preservation used (if any); and 10) any pertinent field data collected (pH, temperature, conductivity, and DO.

The sampler signed and dated the "Relinquished" blank space prior to removing one copy of the custody form and sealing the remaining copies of the form in a Ziplock plastic bag taped to the underside of the sample cooler lid. After sample containers were sufficiently packed and the chain-of-custody form completed, the 6-mil plastic bags were sealed around the samples by twisting the top and securely taping the bag closed to prevent leakage. A sample custody seal was placed around the neck of the bag, which included the signature of the project manager and the date.

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

The sample cooler was sealed with tape prior to delivery or shipment to the certified laboratory. Additionally, sample custody seals were placed around the cooler lid to detect unauthorized tampering with samples following collection and prior to the time of analysis. The seals were attached in such a way that it would be necessary to break them in order to open the container. Seals were affixed at the time of sample packaging and included the signature of the project manager and the date.

Samples were hand delivered to the certified laboratory and were packaged and labeled for shipment in compliance with current U.S. Department of Transportation ("DOT") and International Air Transport Association ("IATA") dangerous goods regulations.

4.8.1.6 Report Logs

The following project logs were completed during the course of this investigation: 1) field logs; 2) boring logs; 3) monitoring well purging and sampling data logs; 4) process data logs; and 5) field screening data logs.

A field log was completed on a daily basis which described all field activities including: 1) project number, name, manager, and address; 2) date; 3) weather; 4) attendees on-site and associated affiliations; 5) description of field activities; and 6) all pertinent sample collection information including sample identification numbers, description of samples, location of sampling points, number of samples taken, method of sample collection and any factors that may affect its quality, time of sample collection, name of collector, and field screening results.

Boring logs were completed during the advancement of each boring on-site. The following information was recorded on each data log: 1) project number, name, manager, and location; 2) boring number; 3) soil classification; 4) depth of boring; 5) depth of soil/groundwater interface; 6) date; 7) drilling method; and 8) drilling company.

A monitoring well purging and sampling data log was completed following purging and sampling of each monitoring well. The following information was recorded on each data log: 1) project number, name, manager, and location; 2) monitoring well number; 3) well casing diameter and stick-up height; 4) depth of well from top of well casing and roadbox; 5) date; 6) time; 7) water analyzer used; 8) distance from top of well casing to water and free product; and 9) the pH, temperature, conductivity, and DO content associated with each monitored well volume removed.

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

A field screening data log was completed for each day of injection activities The following information was recorded on each data log: 1) project number, name, manager, and location; 2) injection point and monitoring well number; 3) water quality parameter readings including pH, DO, temperature, and conductivity; 4) depth of water level from top of well casing; and 5) vapor quality parameters, including VOCs, LEL, oxygen, carbon dioxide and chlorine. Copies of these logs are included in Appendix C.

A process data log was completed for each day of injection activities. The following information was recorded on each data log: 1) project number, name, manager, and location, 2) injection point and monitoring well number, 3) time centrifugal injection pump was turned on, 4) process data reading time, 5) injection pump flow rate, 6) injection pump discharge pressure, 7) injection point manifold pressures, 8) time centrifugal pump turned off, 9) total mix tank batch injection time, 10) total volume of solution injected and 11) average flow rate. Copies of these logs are included in Appendix C

4.8.2 Laboratory QA/QC

A CLP-certified laboratory was used for all sample analyses performed as part of this investigation. This laboratory followed all applicable NYSDEC analytical laboratory QA/QC protocols and procedures. Additionally, laboratory QA/QC sample custody procedures followed is provided below.

4.8.2.1. Sample Custody

All samples were delivered to the CLP-certified laboratory via hand delivery. Samples were received by laboratory personnel whom inspected the sample cooler(s) to check the integrity of the custody seals. The cooler(s) were then opened, the samples unpackaged and the information on the chain-of-custody form examined.

If the samples shipped matched those described on the chain-of-custody form, the laboratory sample custodian signed and dated the form on the next "Received" blank and assume responsibility for the samples. If problems were noted with the sample shipment, the laboratory custodian would have signed the form and recorded problems in the "Remarks" box. The custodian would then have immediately notified the Project Manager so appropriate follow-up steps could be implemented on a timely basis. All samples were then logged into a sample log book and/or computerized information system. The following information was recorded: 1) date and

4.0 REMEDIAL ACTION FIELD ACTIVITIES - continued

time of sample receipt; 2) project number; 3) field sample number; 4) laboratory sample number (assigned during log-in procedure); 5) sample matrix; 6) sample analytical parameters; 7) storage location; and 8) log-in person's initials. A record of the information detailing the handling of a particular sample through each stage of analysis was provided by the completion of a laboratory chronicle form. The following information was included on this form: 1) job reference; 2) sample matrix; 3) sample number; 4) date sampled; 5) date and time received by laboratory; 6) holding conditions; 7) analytical parameters; 8) extraction date, time and extractor's initials (if applicable); 9) analysis date, time, and analyst's initials; and 10) QA batch number, date reviewed, and reviewer's initials.

All information relevant to the samples was secured at the end of each business day. All samples were stored in a designated sample storage refrigerator, access to which was limited to laboratory employees.

5.0 REMEDIAL ACTION RESULTS

5.1 Lead Based Paint Testing Results

LBP was identified within two (2) areas of the Subject. Specifically, the right edge of the southern exterior wall of the 5-story building and the windowsills of the 1-story building were identified as LBP. Concentrations of lead ranged from 1.1-2.7 mg/cm^{3,} in excess of the 1.0 mg/cm^3 EPA lead paint limit. Overall, approximately 2,500 SF of LBP areas were identified on two (2) window sills of Building #2, a concrete block wall next to the parking lot Building #1, and the front of Building #1. Table 2 includes all LBP testing results and is provided in Appendix B.

5.2 UST Post Excavation Results

A total of seven (7) soil samples (one from each sidewall and tank bottom and two from the excavated materials) were collected and analyzed for STARS list VOCs and SVOCs. The soil analytical results were compared to both the NYSDEC STARS AGVs and TAGM 4046 RSCOs. Benzo(a)anthracene, chrysene, benzo(b)flouranthene, benzo(k)flouranthene and benzo(a)pyrene were identified slightly in excess of their respective TAGM RSCOs. The analytical results of all post excavation soil samples collected are summarized in Table 3, in Appendix B. The complete laboratory report is presented in Appendix E.

5.3 Groundwater Sampling Analytical Results

One (1) pre-remediation groundwater sample was collected from each monitoring well on October 19, 2001 and analyzed for VOCs via ASP 95-1. Total VOC concentrations ranged from a low of 2 ug/L in MW-2A to a high of 8,287 ug/L in MW-5. TCE, was the predominant VOC identified, followed by 1,2 DCE, and PCE. Following the first chemical injection round, total VOC concentrations ranged from a low of 3 ug/L in MW-2A to a high of 6,272 ug/L in MW-5. Following the second chemical injection round, total VOC concentrations ranged from a low of 2 ug/L in MW-2A to a high of 3,385 ug/L in MW-5. Following the third chemical injection round, total VOC concentrations ranged from non-detect in MW-2A to a high of 1,332 ug/L in MW-7. Complete laboratory reports for the October 2001 pre remediation sampling and the March 2002, May 2002, and the July 2002 post remediation sampling events are provided in Appendices F, G, H, and I, respectively

Table 3 presents the cumulative groundwater monitoring results of the existing monitoring wells for all pre- and post-remediation monitoring events. Of note, monitoring wells MW-1, MW-2, MW-3 were identified during IVI's investigation as destroyed as a result of site redevelopment activities. Given its importance to the monitoring well network, MW-2 was replaced by MW-2A, while MW-1 and MW-3 were not.

5.0 REMEDIAL ACTION RESULTS - continued

5.4 Field QA/QC Samples

A duplicate sample, a field blank, and a trip blank were prepared and analyzed, for each groundwater sampling event to ensure that samples collected were representative of the actual conditions of the Subject and did not contain contaminants introduced either from the field activities or from sample transit. Laboratory results of the field and trip QA/QC samples indicated that no detectable concentrations of contaminants were found in any of the samples. Analysis of the duplicate samples indicated comparable levels of contamination in each.

6.0 CONCLUSIONS

6.1 LBP Survey

IVI conducted LBP testing to ensure no LBP remained in the on-site structures that were demolished and used as fill materials. IVI utilized RMD's Industries XRF LPA to screen all painted surfaces within the Subject. Samples were taken using a 3' grid pattern on all surfaces. LBP was identified within two (2) areas of the Subject. Specifically, the right edge of the southern exterior wall of the 5-story building and the windowsills of the 1-story building were identified as LBP. Areas identified as containing LBP of approximately 2,500 SF were demarcated and abated by FTF Construction Associates, a certified LBP abatement contractor. Waste manifests indicate that the lead paint was disposed of at Southern Alleghenies Landfill. LBP abatement documentation is provided in Appendix D. The on-site structures were subsequently demolished and used as non-lead containing fill materials.

6.2 UST Removal and Assessment

The 10,000 gallon UST that served the former boiler room was removed. The tank was visually inspected and was found to be sound with no evidence of cracks, holes or breaches. The analytical results of all post excavation soil samples collected are summarized in Table 3 given in Appendix B. The soil analytical results were compared to both the NYSDEC STARS AGVs and TAGM 4046 RSCOs. A total of seven (7) soil samples (one from each sidewall and tank bottom and two from the excavated materials) were collected and analyzed for STARS list VOCs and SVOCs. Benzo(a)anthracene, chrysene, benzo(b)flouranthene, benzo(k)flouranthene, and benzo(a)pyrene were identified slightly in excess of their respective TAGM standards. However, inasmuch as this area has been capped with approximately 5' of clean fill, none of these compounds were detected with the subject's groundwater, and all of these compounds have very low volatility and mobility, the overall potential for exposure to these compounds is considered to be negligible. Therefore, IVI recommends no further action regarding this area. The complete laboratory report is presented in Appendix E.

6.3 Groundwater Remediation

Following the third chemical injection round in June and July 2002, total VOC concentrations ranged from non-detect in MW-2A to a high of 1,332 µg/l in MW-7. Over the course of the three (3) rounds of injections, the range of percent reduction of total VOC concentrations in the groundwater was from 77 to 100% with an average of 92%. Additionally, the total mass of contamination was reduced by 92% from 52.75 lbs in October 2001 to 4.34 lbs. Further, the area of contaminated groundwater in excess of 500 ug/L was reduced by 81% from 35,085 SF to 6,752 SF, while the area of contaminated groundwater in excess of 5,000 ug/L was reduced 100% from 11,469 SF to 0 SF.

6.0 CONCLUSIONS-continued

Tables 4, 5 and 6 provided in Appendix B present the cumulative groundwater monitoring results, and summarize the reduction of contaminant areas and masses, respectively. Further, figures depicting the October 2001 pre-remediation and March 2002, May 2002 and July 2002 post-remediation plume configurations are provided in Appendix A.

Based on these results, the source area of the groundwater contamination has been successfully remediated with approximately 92% of the total VOC contamination on-site being destroyed as a result of the in-situ chemical remediation process. The residual concentrations in the groundwater are at least 25' bgs and do not pose a potential inhalation exposure risk. Further, the on-site groundwater is not used for drinking water purposes. Finally, additional monitoring events will be performed to ensure the remaining groundwater contamination will not migrate into the Neversink River. Therefore, IVI requests a Certificate of Remedial Action Completion designating that no further action is required for this site.

7.0 Operations, Maintenance and Monitoring Plan

In accordance with the NYSDEC letter dated December 31, 2001, because institutional and engineering controls are required as part of the Remedial Action, an Operations, Maintenance and Monitoring Plan (OMMP) is required to obtain the assignable release letter.

Specifically, the following institutional controls were requested by the NYSDEC in an e-mail correspondence dated April 19, 2001

- Inasmuch as groundwater contaminants above their respective NYSDEC GQSs will remain on-site following remediation, a deed restriction preventing groundwater usage will be placed in effect.

- Further, a deed restriction regarding the soil cap will be placed in effect. This restriction will state that future excavation below 4 feet (the proposed minimum thickness of the soil cap) will require prior State approval of the methods and handling of soils for proper disposal.

Further, annual inspection of the property shall be conducted to evaluate the integrity of the capping surface. Specifically, the condition of the paved areas will be assessed, and landscaped areas will be inspected for evidence of erosion or other disturbance. Should the capping materials show evidence of deterioration, they shall be expeditiously repaired.

N

Legend

- Piezometer
- Injection Point
- 60' Injection Point Radius of Influence
- Monitoring Well Location
- 5 ug/L Total VOC Isopleth Line

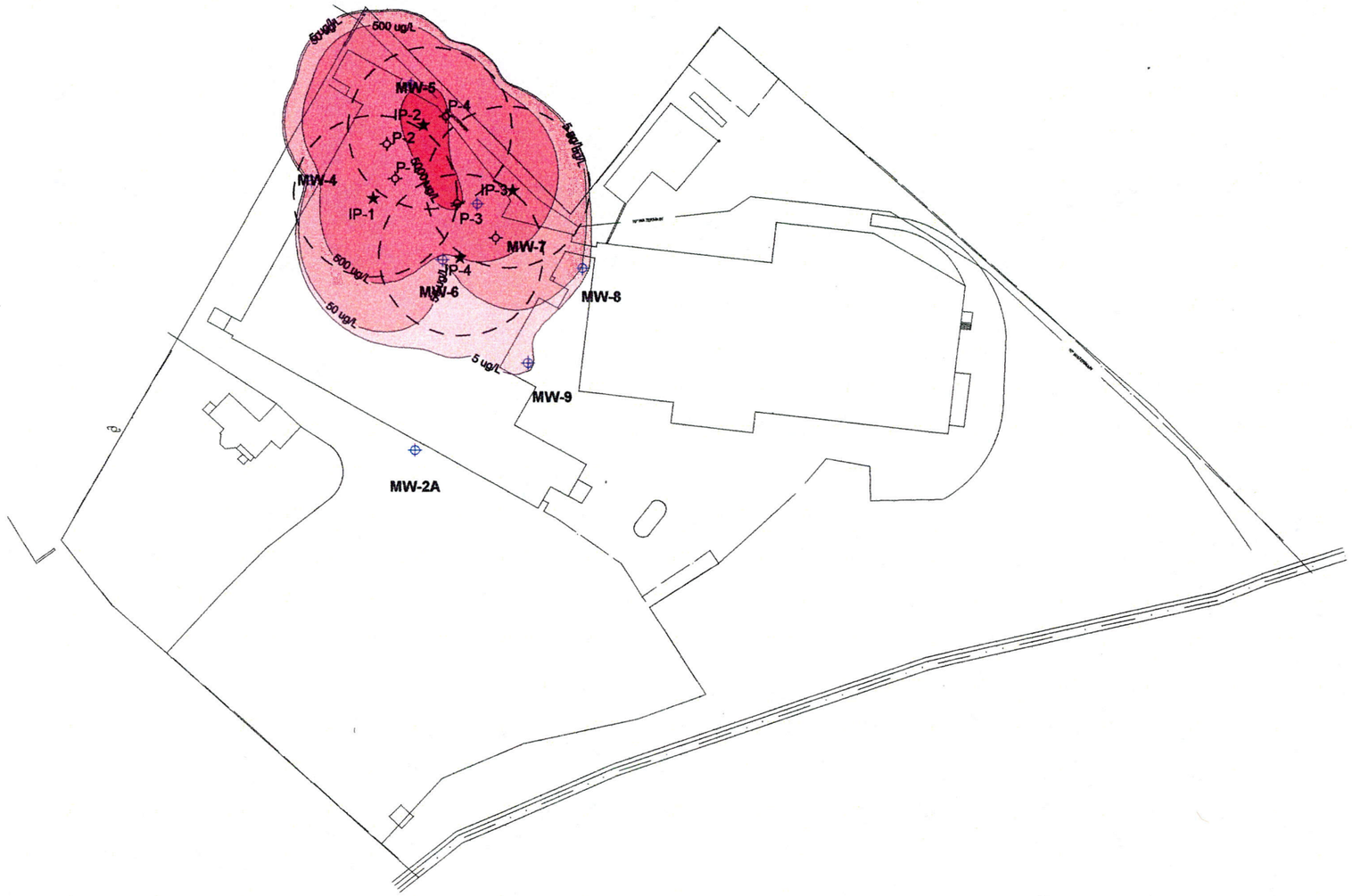
Figure 2: Pre-Remediation Total VOC Concentration Isopleth Map - October 2001

Project Name: Waters Edge
200 East Main Street
Port Jervis, New York

Project No.: E1066016

IVI Environmental, Inc.
105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Scale: 1"=100'



N

Legend

- Pieziometer
- Injection Point
- 60' Injection Point Radius of Influence
- Monitoring Well Location
- 5 ug/L Total VOC Isopleth Line

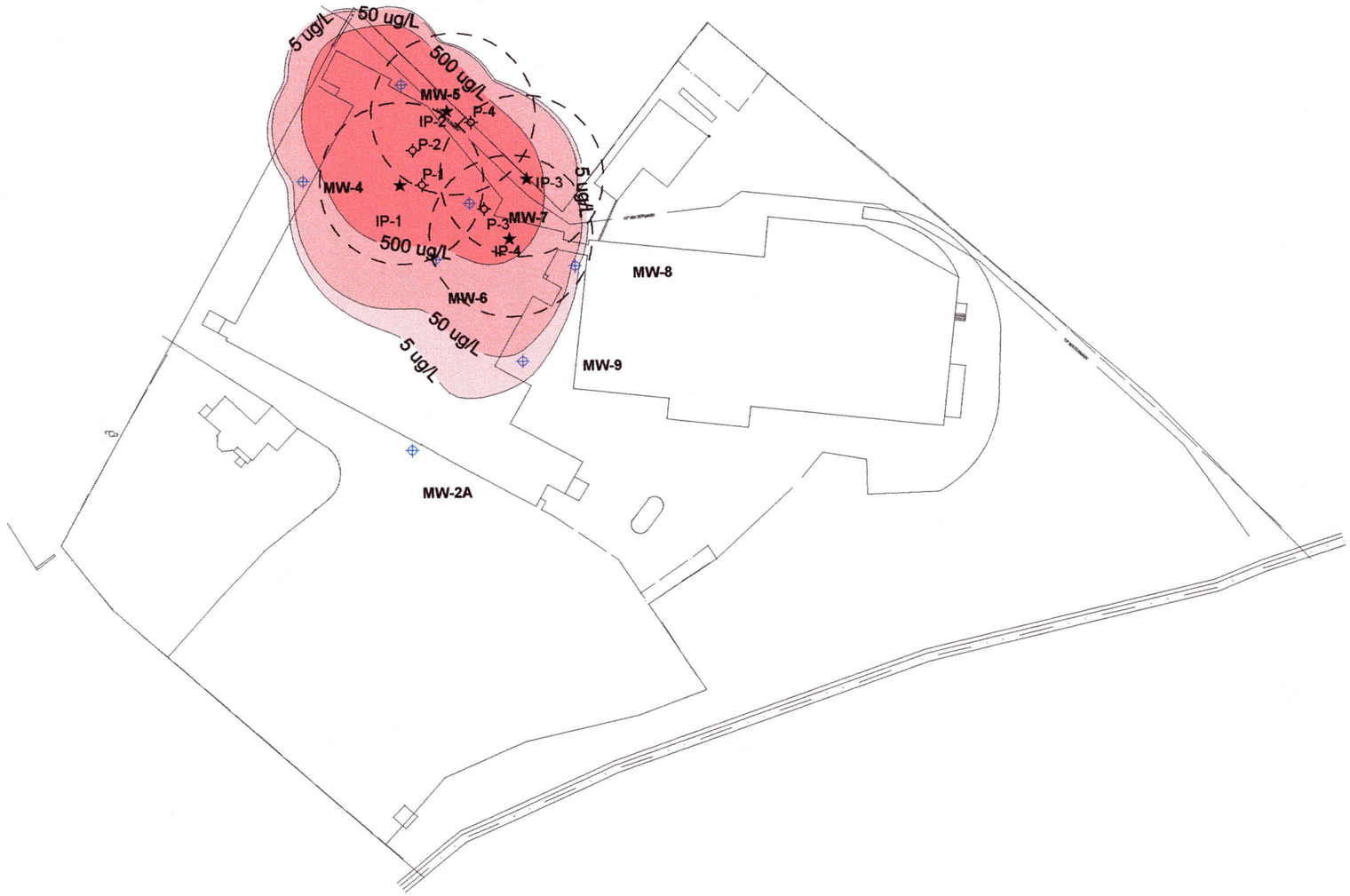
Figure 3: Post Remediation Total VOC Concentration Isopleth Map - March 2002

Project Name: Waters Edge
200 East Main Street
Port Jervis, New York

Project No.: E1066016

IVI Environmental, Inc.
105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Scale: 1"=100'



N

Legend

- Pieziometer
- Injection Point
- 60' Injection Point Radius of Influence
- Monitoring Well Location
- 5 ug/L Total VOC Isopleth Line

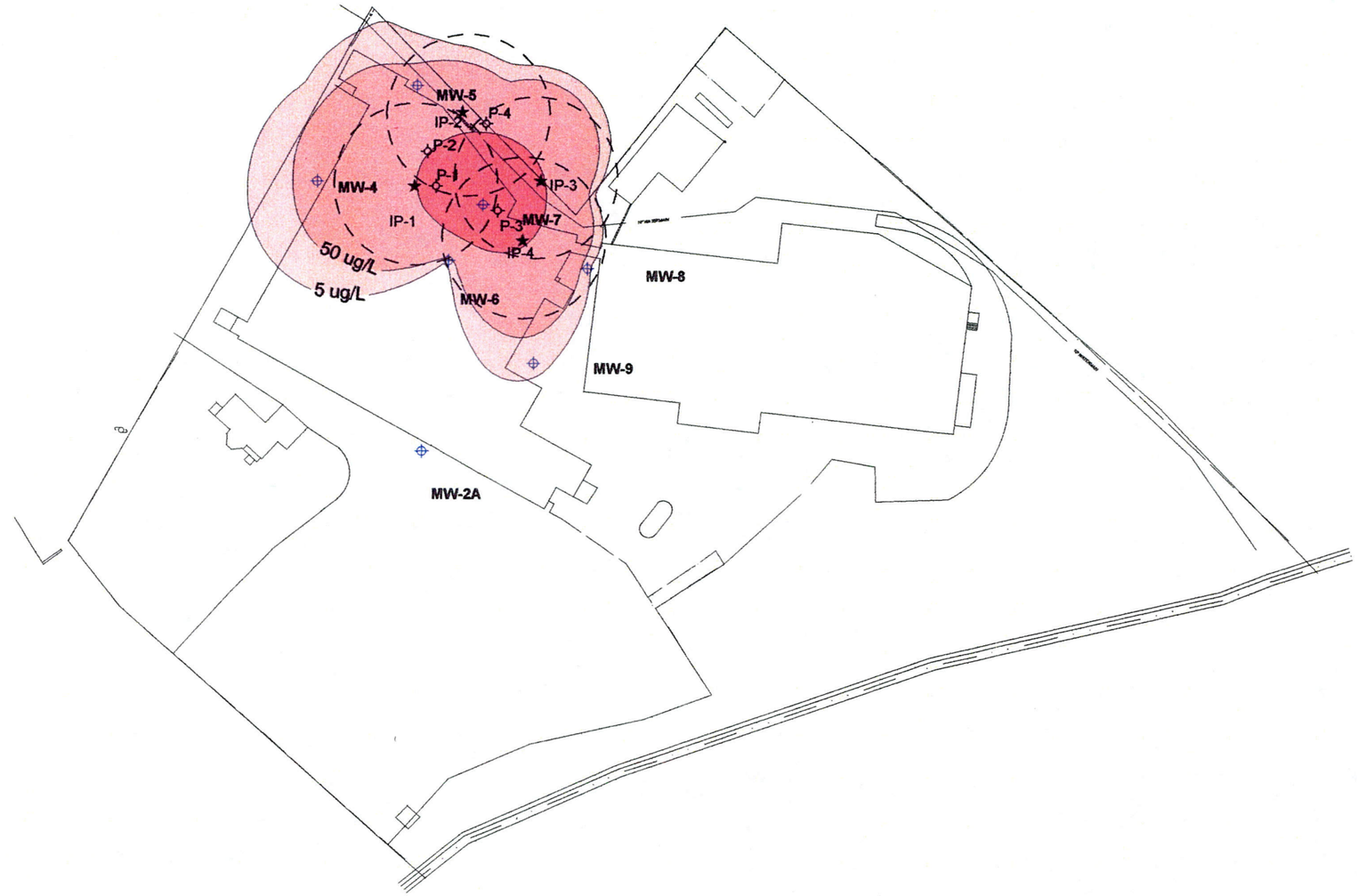
Figure 4: Post Remediation Total VOC Concentration Isopleth Map - May 2002

Project Name: Waters Edge
200 East Main Street
Port Jervis, New York

Project No.: E1066016

IVI Environmental, Inc.
105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Scale: 1"=100'



N

Legend

- Pieziometer
- Injection Point
- 60' Injection Point Radius of Influence
- Monitoring Well Location
- 5 ug/L Total VOC Isopleth Line

Figure 5: Post Remediation Total VOC Concentration Isopleth Map - July 2002

Project Name: Waters Edge
200 East Main Street
Port Jervis, New York

Project No.: E1066016

IVI Environmental, Inc.
105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Scale: 1"=100'

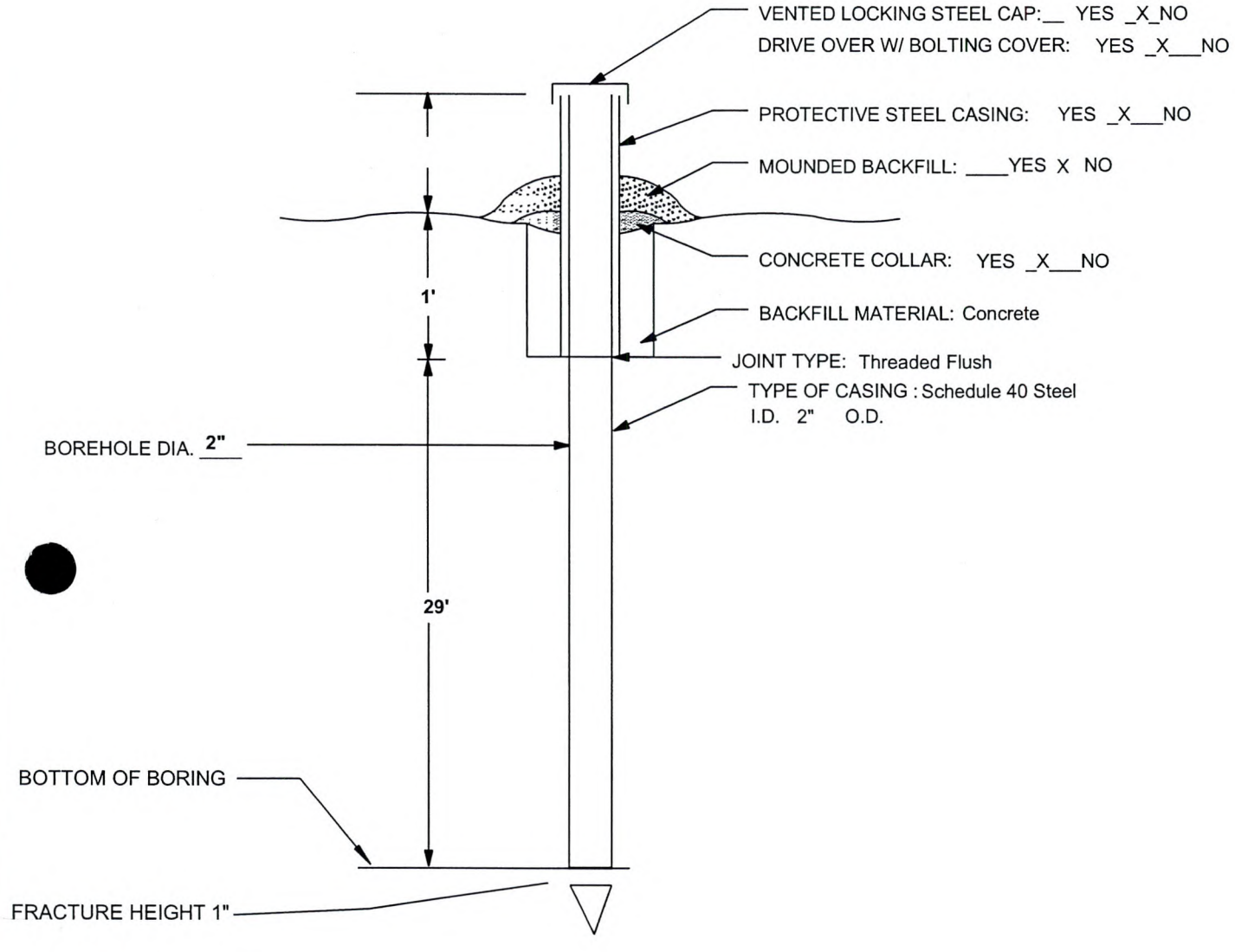


Figure 6 - Typical Groundwater Injection Point Construction Detail

INJECTION POINT NO.: PROJECT NAME:	IVI ENVIRONMENTAL, INC.. 105 CORPORATE PARK DRIVE WHITE PLAINS, NY 10604 (914) 694-9600(tel) (914) 694-1335(fax)	DATE INSTALLED:
IVI PROJECT MANAGER: IVI PROJECT NUMBER:		DRILLER:

Table 1
Summary of In-situ Chemical Reagents Injected
Waters Edge
Port Jervis, New York

Remediation Event	Injection Point/ Monitoring Well	75% Proprietary Acid Solution	35% Hydrogen Peroxide Solution (gals)	3.5% Proprietary Catalyst Solution	
		Gallons	Gallons	Pounds	Gallons
1st Injection Round	1	140	315	100	350
	2	330	755	250	835
	3	140	315	100	350
	4	140	315	100	350
2nd Injection Round	1	220	500	160	550
	2	350	796	264	900
	3	220	500	160	550
	4	220	500	160	550
3rd Injection Round	1	----------	112	----------	----------
	2	120	280	290	1000
	3	----------	----------	----------	----------
	4	37	80	116	400
	BU3	37	295	----------	----------
	P2	----------	120	----------	----------
	MW-6	----------	20	----------	----------
	MW-7	----------	20	----------	----------
	Total	1,954	4,651	1,700	5,835

---------- = No chemical injected

Table 2
LBP Testing Results

Structure	Surface	Location	Height (feet)	Concentration (mg/cm3)
5 Story Building	Exterior South Wall	Right Edge	5	**1.9**
5 Story Building	Exterior South Wall	Right Edge	10	0.4
5 Story Building	Exterior South Wall	Right Edge	15	**2.7**
5 Story Building	Exterior South Wall	Right Center	5	0
5 Story Building	Exterior South Wall	Right Center	10	0
5 Story Building	Exterior South Wall	Right Center	15	0
5 Story Building	Exterior South Wall	Right Center	20	0
5 Story Building	Exterior South Wall	Center	5	0
5 Story Building	Exterior South Wall	Center	10	0.4
5 Story Building	Exterior South Wall	Center	15	0
5 Story Building	Exterior South Wall	Center	20	0
5 Story Building	Exterior South Wall	Left Center	5	0
5 Story Building	Exterior South Wall	Left Center	10	0
5 Story Building	Exterior South Wall	Left Center	15	0.2
5 Story Building	Exterior South Wall	Left Edge	5	0.2
5 Story Building	Exterior South Wall	Left Edge	10	0
5 Story Building	Exterior South Wall	Left Edge	15	0
5 Story Building	Exterior West Wall	Right Edge	5	0.2
5 Story Building	Exterior West Wall	Right Edge	10	0.1
5 Story Building	Exterior West Wall	Right Edge	15	0
5 Story Building	Exterior West Wall	Right Center	5	0
5 Story Building	Exterior West Wall	Right Center	10	0.2
5 Story Building	Exterior West Wall	Right Center	15	0.1
5 Story Building	Exterior West Wall	Center	5	0.4
5 Story Building	Exterior West Wall	Center	10	0.3
5 Story Building	Exterior West Wall	Center	15	0.2
5 Story Building	Exterior West Wall	Left Center	5	0
5 Story Building	Exterior West Wall	Left Center	10	0
5 Story Building	Exterior West Wall	Left Center	15	0.1
5 Story Building	Exterior West Wall	Left Edge	5	0
5 Story Building	Exterior West Wall	Left Edge	10	0.2
5 Story Building	Exterior West Wall	Left Edge	15	0
5 Story Building	Exterior East Wall	Adjacent Loading Dock	5	0
5 Story Building	Exterior East Wall	Adjacent Loading Dock	10	0
5 Story Building	Exterior East Wall	Adjacent Loading Bay	5	0
5 Story Building	Exterior East Wall	Adjacent Loading Bay	10	0
5 Story Building	Exterior East Wall	Center	5	0
5 Story Building	Exterior East Wall	Center	10	0
5 Story Building	Exterior East Wall	Right Edge	4	0
5 Story Building	Exterior East Wall	Right Edge	8	0
5 Story Building	Connecting Wall	Right Side	5	0
5 Story Building	Connecting Wall	Right Side	10	0
5 Story Building	Connecting Wall	Left Side	5	0
5 Story Building	Connecting Wall	Left Side	10	0
5 Story Building	Basement South Wall	Right Edge	3	0
5 Story Building	Basement South Wall	Right Edge	7	0
5 Story Building	Basement South Wall	Right Center	3	0.1
5 Story Building	Basement South Wall	Right Center	7	0
5 Story Building	Basement South Wall	Center	3	0.1
5 Story Building	Basement South Wall	Center	7	0
5 Story Building	Basement South Wall	Left Center	3	0

Table 2
LBP Testing Results

Structure	Surface	Location	Height (feet)	Concentration (mg/cm3)
5 Story Building	Basement South Wall	Left Center	7	0
5 Story Building	Basement South Wall	Left Edge	3	0
5 Story Building	Basement South Wall	Left Edge	7	0
5 Story Building	Basement West Wall	Right Edge	3	0.1
5 Story Building	Basement West Wall	Right Edge	7	0.1
5 Story Building	Basement West Wall	Right Center	3	0
5 Story Building	Basement West Wall	Right Center	7	0
5 Story Building	Basement West Wall	Center	3	0
5 Story Building	Basement West Wall	Center	7	0
5 Story Building	Basement West Wall	Left Center	3	0
5 Story Building	Basement West Wall	Left Center	7	0
5 Story Building	Basement West Wall	Left Edge	3	0.2
5 Story Building	Basement West Wall	Left Edge	7	0
5 Story Building	Basement East Wall	Right Edge	3	0
5 Story Building	Basement East Wall	Right Edge	7	0.1
5 Story Building	Basement East Wall	Right Center	3	0
5 Story Building	Basement East Wall	Right Center	7	0.1
5 Story Building	Basement East Wall	Center	3	0
5 Story Building	Basement East Wall	Center	7	0
5 Story Building	Basement East Wall	Left Center	3	0
5 Story Building	Basement East Wall	Left Center	7	0
5 Story Building	Basement East Wall	Left Edge	3	0
5 Story Building	Basement East Wall	Left Edge	7	0.1
5 Story Building	Basement North Wall	Right Edge	3	0.1
5 Story Building	Basement North Wall	Right Edge	7	0
5 Story Building	Basement North Wall	Right Center	3	0
5 Story Building	Basement North Wall	Right Center	7	0
5 Story Building	Basement North Wall	Center	3	0
5 Story Building	Basement North Wall	Center	7	0
5 Story Building	Basement North Wall	Left Center	3	0.1
5 Story Building	Basement North Wall	Left Center	7	0.2
5 Story Building	Basement North Wall	Left Edge	3	0
5 Story Building	Basement North Wall	Left Edge	7	0.1
1 Story Building	Interior Wall	Right Edge	3	0.1
1 Story Building	Interior Wall	Right Edge	7	0
1 Story Building	Interior Wall	Right Center	3	0
1 Story Building	Interior Wall	Right Center	7	0
1 Story Building	Interior Wall	Center	3	0
1 Story Building	Interior Wall	Center	7	0
1 Story Building	Interior Wall	Left Center	3	0
1 Story Building	Interior Wall	Left Center	7	0
1 Story Building	Interior Wall	Left Edge	3	0
1 Story Building	Interior Wall	Left Edge	7	0.1
1 Story Building	Window Sill	South Wall	NA	0.9
1 Story Building	Window Sill	South Wall	NA	**1.1**
1 Story Building	Exterior South Wall	Right Edge	5	0
1 Story Building	Exterior South Wall	Right Edge	10	0
1 Story Building	Exterior South Wall	Center	5	0
1 Story Building	Exterior South Wall	Center	10	0
1 Story Building	Exterior South Wall	Left Edge	5	0
1 Story Building	Exterior South Wall	Left Edge	10	0

Table 2
LBP Testing Results

Notes:

1. North side of 5 story building was unpainted brick.
2. Upper floors of 5 story building unpainted.
3. North, east and west sides of 1 story building were unpainted brick.
4. Most interior walls of the 1 story building were unpainted gypsum board or concrete.
5. Height is give in feet above ground surface.
6. Concentration is given in mg/cm2
7. Concentrations greater than 1.0 mg/cm3 EPA level are considered LBP and are bolded.

Table 3
Summary of Laboratory Results for Post Excavation and Stock Pile Composite Soil Samples
Waters Edge
Port Jervis, New York

Analytical Parameter/Constituent	NYSDEC TAGM # 4046 RSCO	Sample Locations and Concentrations						
		NSW	SSW	ESW	WSW	Bottom	Comp 1	Comp 2
Semi-Volatile Organic Compounds (ug/kg)								
Phenathrene	50,000	440	410	450	2100	430	1100	ND
Anthracene	50,000	ND	ND	ND	440	ND	ND	ND
Flouranthene	50,000	990	950	950	2600	910	1500	400
Pyrene	50,000	960	920	990	2600	870	1500	370
Benzo(a)anthracene	224	**570**	**520**	**540**	**1500**	**500**	**770**	ND
Chrysene	400	**540**	**500**	**530**	**1300**	**470**	**720**	ND
Benzo(b)flouranthene	1,100	540	550	530	**1200**	430	580	330
Benzo(k)flouranthene	1,100	830	620	720	**1600**	ND	ND	ND
Benzo(a)pyrene	61	**580**	**540**	**540**	**1200**	**480**	**710**	ND
Indeno(1,2,3-cd)pyrene	3,200	440	470	400	740	ND	400	ND
Benzo(g,h,I)perylene	50,000	480	500	420	730	ND	ND	ND
Volatile Organic Compounds (ug/kg)								
1,3.5-Trimethylbenzene	NS/100*	ND	ND	6	ND	ND	ND	ND
Toluene	1,500	ND	ND	5	ND	ND	ND	ND

Notes:

1. NYSDEC = New York State Department of Environmental Conservation.
2. TAGM = Technical Administrative Guidance Memorandum.
3. RSCO = Recommended Soil Cleanup Objective.
4. ND = Compound not detected.
5. NA = Sample not analyzed for this compound.
6. NS= No RSCO exists for this compound. NYSDEC STARS Alternative Guidance Value (AGV) used
7. Only constituents detected in at least one sample are shown.
8. Bolded results indicate an exceedance of NYSDEC TAGM RSCO.

T

Cumulative Summary of Groundwater Analytical Results

Waters Edge
Port Jervis, New York

Sampling Locations	Tetrachloroethene					Trichloroethene					1,2-Dichloroethene					Total VOCs				
	Sampling Dates & Concentrations				% Reduction	Sampling Dates & Concentrations				% Reduction	Sampling Dates & Concentrations				% Reduction	Sampling Dates & Concentrations				% Reduction
	10/19/01	3/27/02	5/21/02	7/17/2002		10/19/01	3/27/02	5/21/02	7/17/2002		10/19/01	3/27/02	5/21/02	7/17/2002		10/19/01	3/27/02	5/21/02	7/17/2002	
MW-2A	ND	ND	ND	ND	NA	ND	2	ND	ND	100	ND	ND	ND	ND	NA	2	3	2	ND	100
MW-4	2	1	2	3	NA	**78**	**50**	**72**	**82**	NA	ND	ND	ND	ND	NA	**104**	**51**	**113**	**85**	18
MW-5/P4	1	4	ND	ND	100	**8200**	**6200**	**3300**	**91**	99	**18**	**18**	**10**	ND	44	**8291**	**6272**	**3385**	**91**	99
MW-6	4	ND	2	ND	100	**77**	**14**	**47**	ND	100	ND	ND	ND	ND	NA	**247**	**27**	**167**	ND	100
MW-7	4	9	ND	2	50	**4200**	**1100**	**830**	**730**	83	**860**	**14**	**840**	**600**	30	**5723**	**2020**	**1768**	**1332**	77
MW-8	ND	3	ND	3	NA	**7**	**7**	**21**	**7**	NA	1	1	ND	ND	100	**31**	**45**	**21**	**10**	68
MW-9	ND	ND	3	ND	100	**18**	**18**	**8**	**20**	NA	ND	ND	1	ND	NA	**22**	**21**	**37**	**20**	9

Notes:

1. All concentrations reported in micrograms/per liter (ug/L)
2. ND = Not Detected
3. NA = Not Applicable
4. Samples collected after March 12, 2002 represent conditions following in-situ chemical remediation.
5. Acetone and methylene chloride were not included in Total VOC concentrations because these are common laboratory contaminants.
6. Laboratory estimated concentration utilized when provided.
7. Wells, MW-2A, MW-8, and MW-9, are not located within the remedial action treatment area.
8. P4 was sampled in place of MW-5 during the March 27, 2001 post remediation sampling event because MW-5 was rendered unusable due to heavy silting. MW-5 was removed and reinstalled to facilitate sampling of this point.
9. MW-7 was destroyed during site redevelopment activities and was replaced approximatly 20' to the west of the original position.
10. The replaced MW-7 was rendered unusable due to heavy silting caused during the second round of remediation. As such the well was removed and replaced in the same location.
11. Bolded results indicate an exceedance of the NYSDEC Groundwater Quality Standard (GQS) of 5 ug/L for these chemicals.

Table 5
Summary of Total VOC Groundwater Contaminant Mass Reduction
Waters Edge

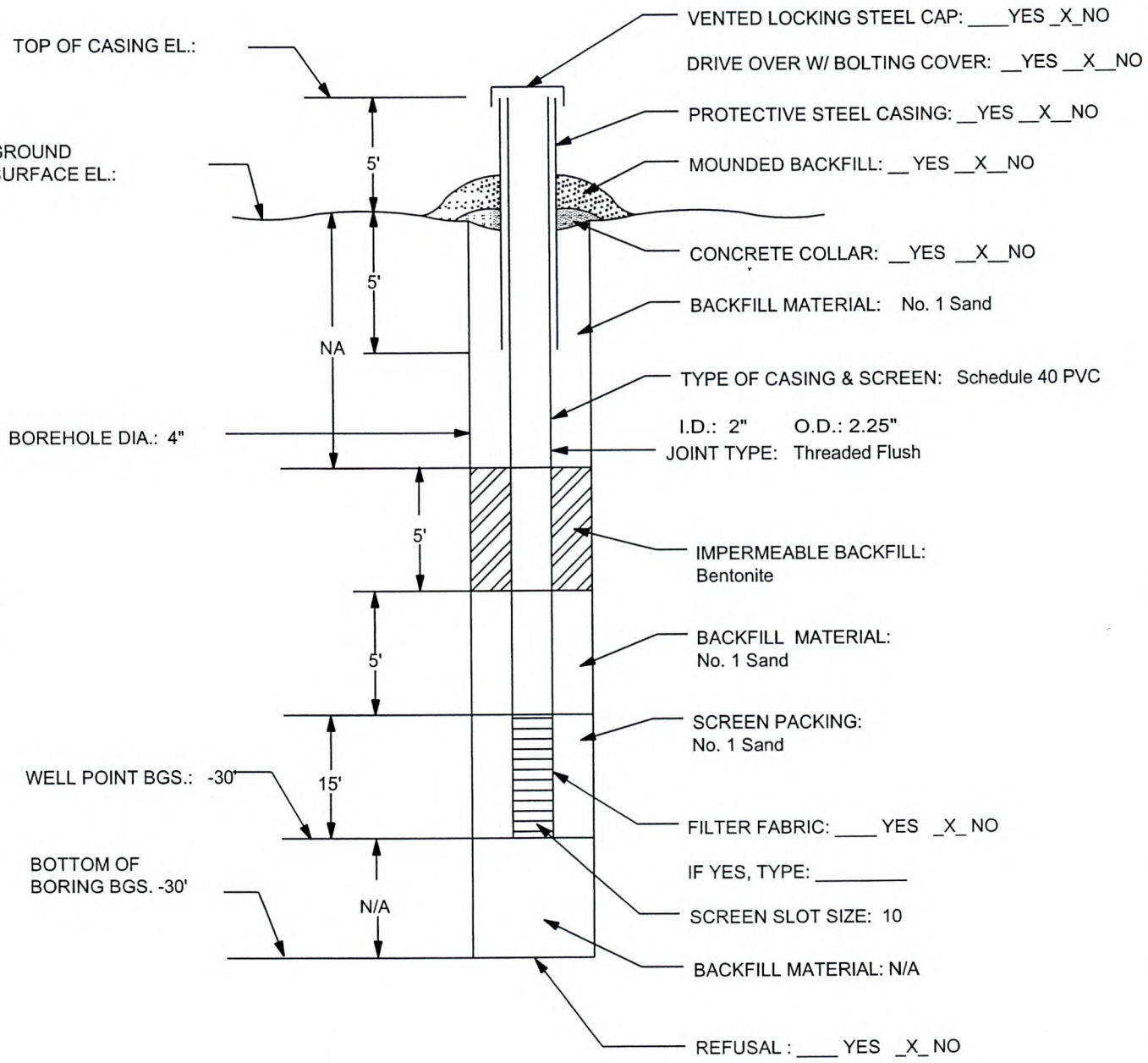
Port Jervis, New York

	Date						
	Oct-01	Mar-02		May-02		Jul-02	
Total VOC concentration	Pounds	Pounds	% Reduction	Pounds	% Reduction	Pounds	% Reduction
>50 ug/l, <500 ug/l	0.72	1.12	NA	1.641	NA	2.349	NA
>500 ug/l, <5,000 ug/l	20.23	21.29	NA	13.912	31.23	1.987	90.18
>5,000 ug/l	31.80	5.87	81.54	0.000	100.00	0.000	100.00
Totals	52.75	28.28	46.38	15.55	70.52	4.34	91.78

Table 6
Summary of Total VOC Groundwater Contaminant Area Reductions
Waters Edge
Port Jervis, New York

	Date										
	Oct-02		Mar-02			2-May			2-Jul		
	Area		Area			Area			Area		
Total VOC concentration (µg/L)	Square Feet	Acres	Square Feet	Acres	% Reduction	Square Feet	Acres	% Reduction	Square Feet	Acres	% Reduction
> 50	43,526	1.00	40,535	0.93	6.87	42150	0.97	3.16	34299	0.79	21.20
> 500	35,085	0.81	27,419	0.63	21.85	22990	0.53	34.47	6752	0.16	80.76
>5000	11,469	0.26	2,566	0.06	77.63	0	0.00	100.00	0	0.00	100.00

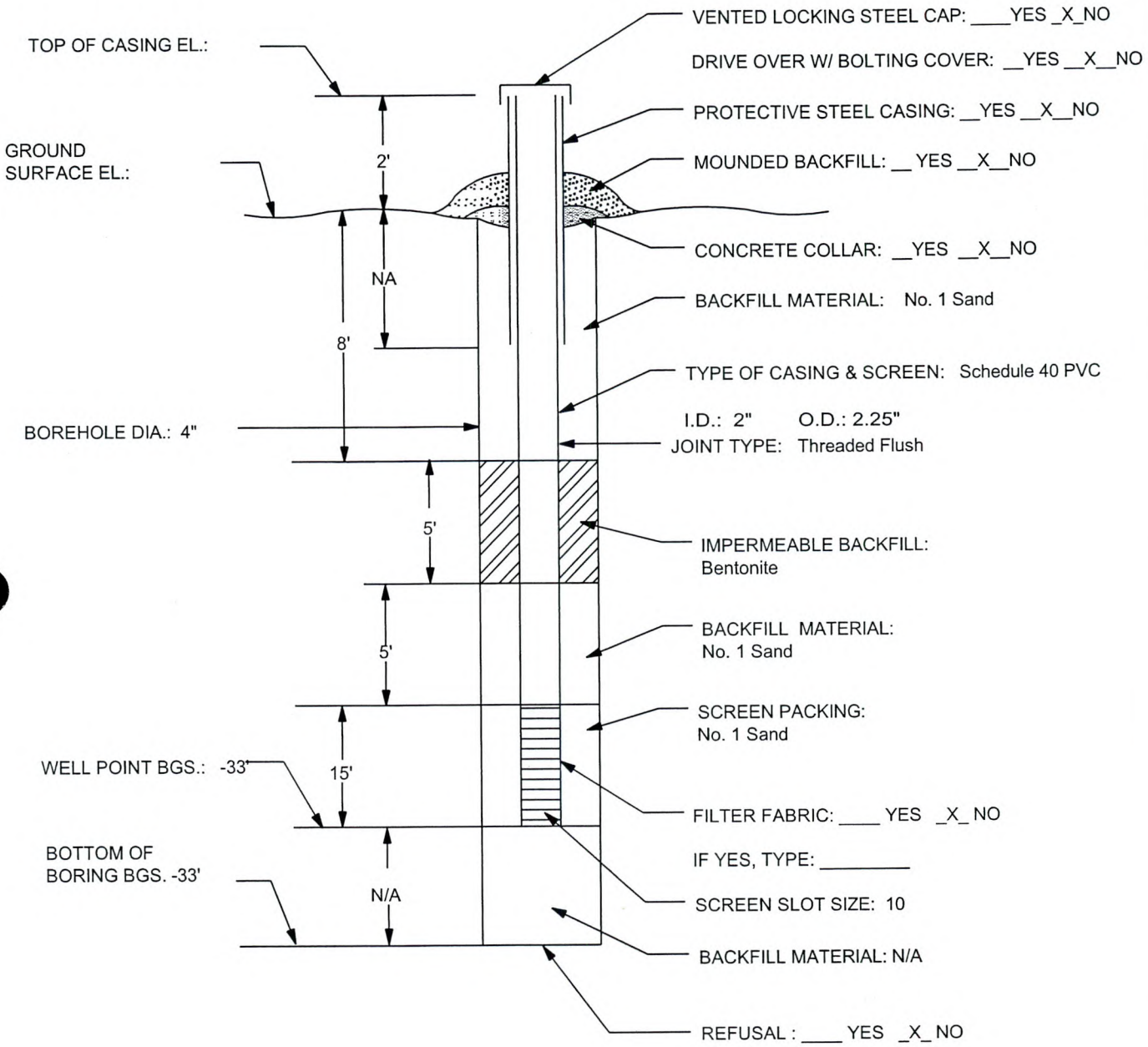
MONITORING WELL NO.: MW-2A



MONITORING WELL INSTALLATION DETAIL

MONITORING WELL NO.: MW-2A PROJECT NAME: Waters Edge	IVI ENVIRONMENTAL, INC. 105 CORPORATE PARK DRIVE WHITE PLAINS, NY 10604 (914) 694-9600(tel) (914) 694-1335(fax)	DATE INSTALLED: October 16, 2001
IVI PROJECT MANAGER: Charles Mulligan IVI PROJECT NUMBER: E1066016		DRILLER: AmeriDrill

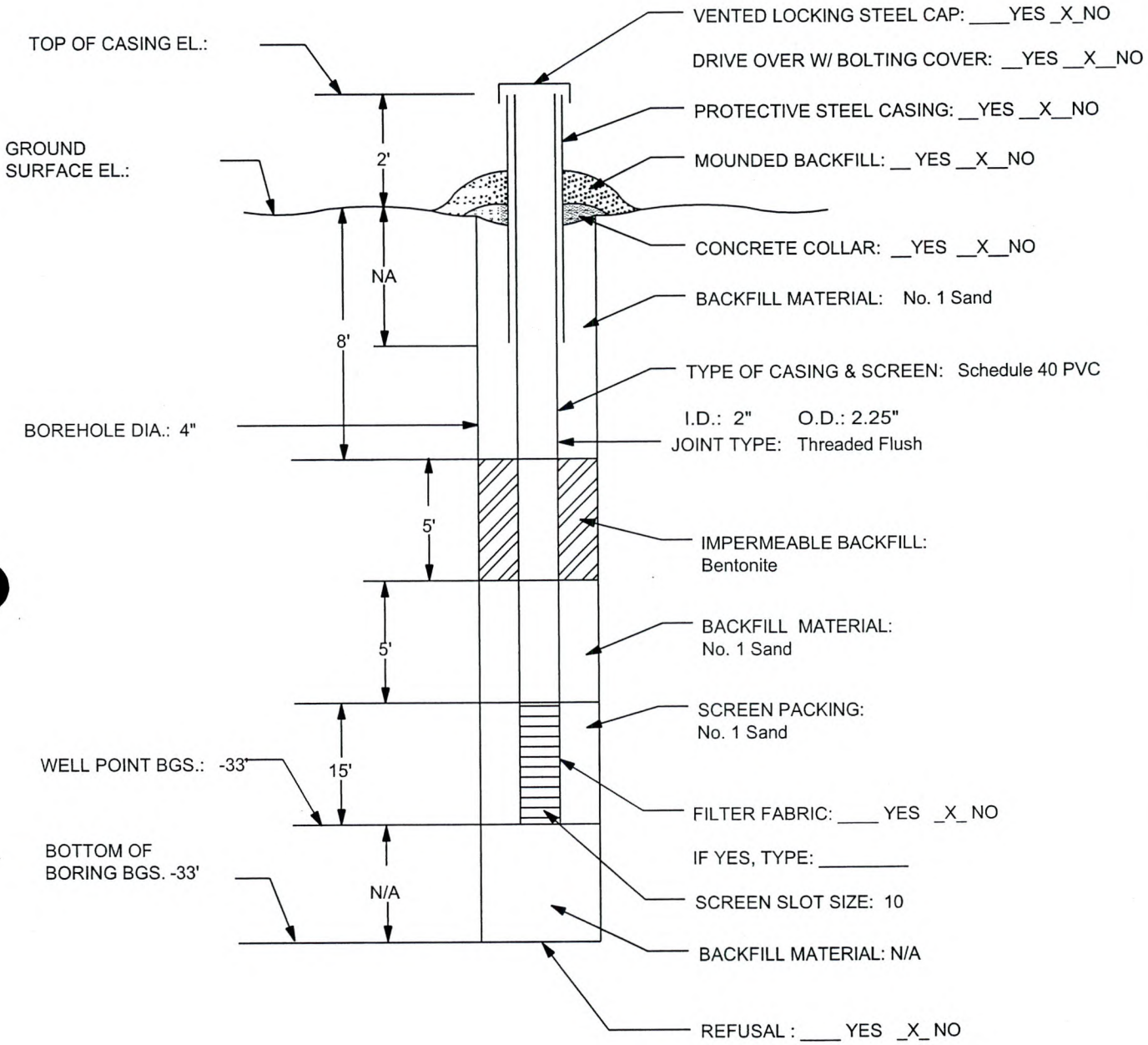
MONITORING WELL NO.: MW-4



MONITORING WELL INSTALLATION DETAIL

MONITORING WELL NO.: MW-4 PROJECT NAME: Waters Edge	IVI ENVIRONMENTAL, INC. 105 CORPORATE PARK DRIVE WHITE PLAINS, NY 10604 (914) 694-9600(tel) (914) 694-1335(fax)	DATE INSTALLED: October 16, 2001
IVI PROJECT MANAGER: Charles Mulligan IVI PROJECT NUMBER: E1066016		DRILLER: AmeriDrill

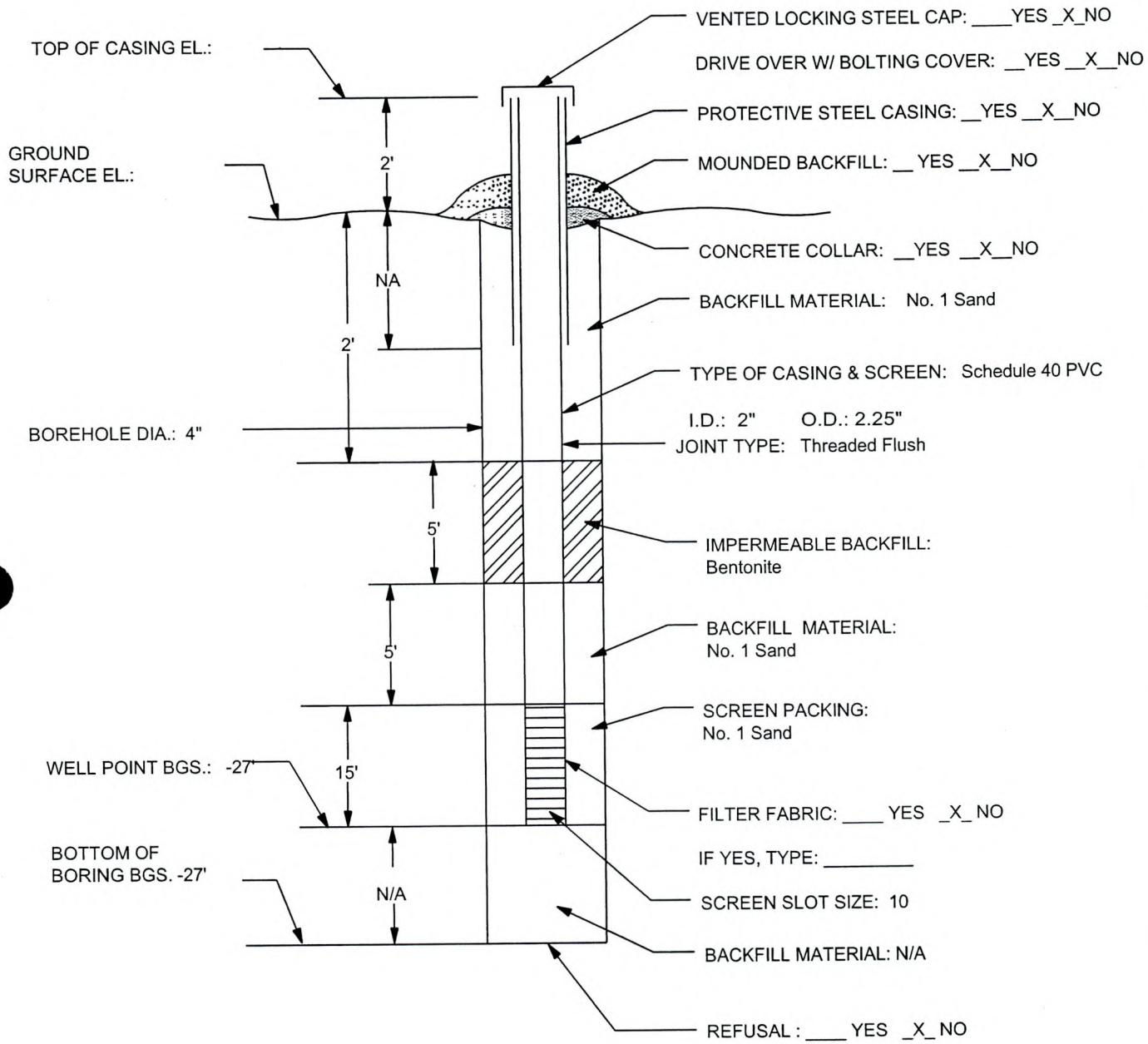
MONITORING WELL NO.: MW-5



MONITORING WELL INSTALLATION DETAIL

MONITORING WELL NO.: MW-5 PROJECT NAME: Waters Edge	IVI ENVIRONMENTAL, INC. 105 CORPORATE PARK DRIVE WHITE PLAINS, NY 10604 (914) 694-9600(tel) (914) 694-1335(fax)	DATE INSTALLED: October 16, 2001
IVI PROJECT MANAGER: Charles Mulligan IVI PROJECT NUMBER: E1066016		DRILLER: AmeriDrill

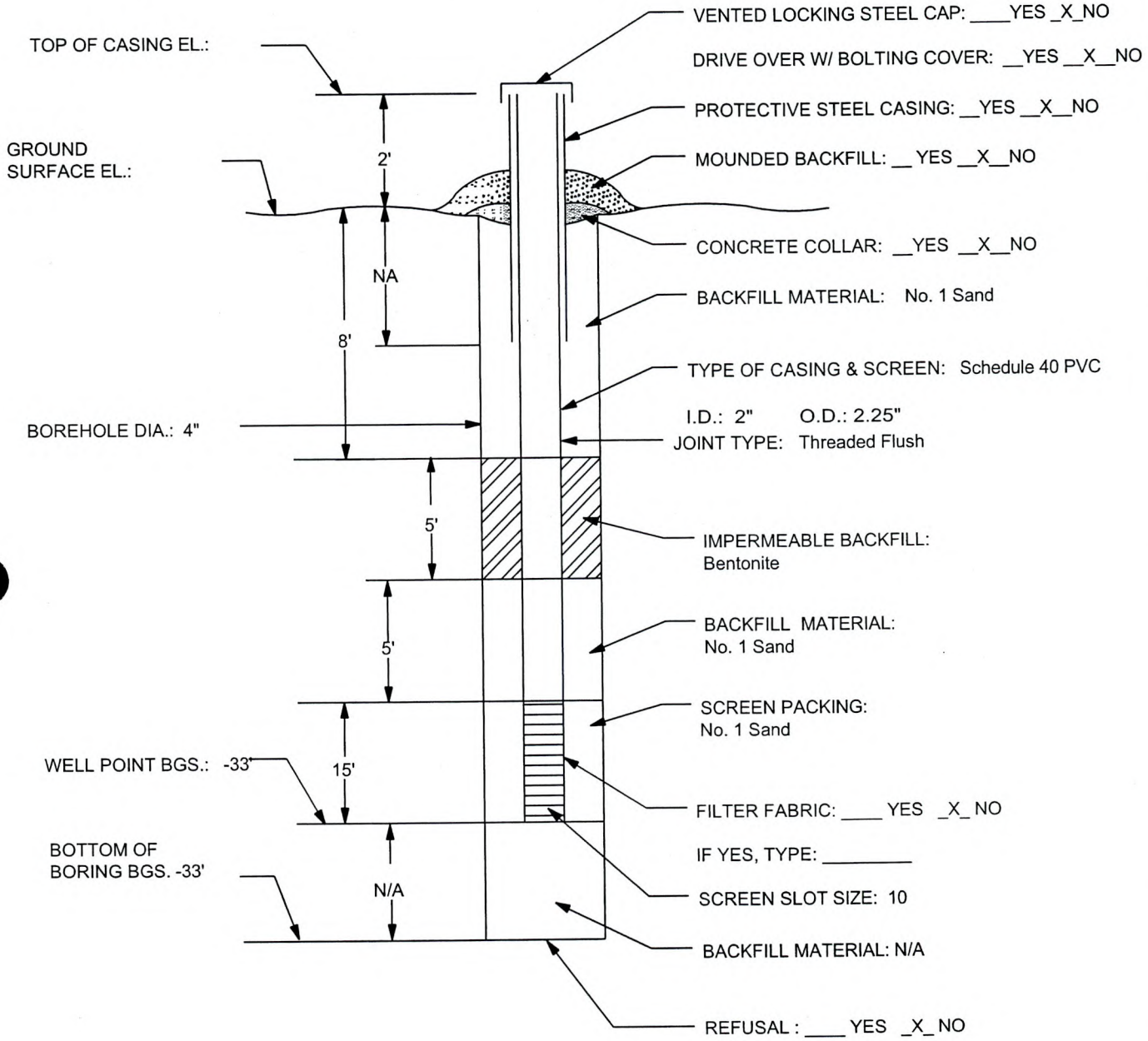
MONITORING WELL NO.: MW-6



MONITORING WELL INSTALLATION DETAIL

MONITORING WELL NO.: MW-6 PROJECT NAME: Waters Edge	IVI ENVIRONMENTAL, INC. 105 CORPORATE PARK DRIVE WHITE PLAINS, NY 10604 (914) 694-9600(tel) (914) 694-1335(fax)	DATE INSTALLED: October 16, 2001
IVI PROJECT MANAGER: Charles Mulligan IVI PROJECT NUMBER: E1066016		DRILLER: AmeriDrill

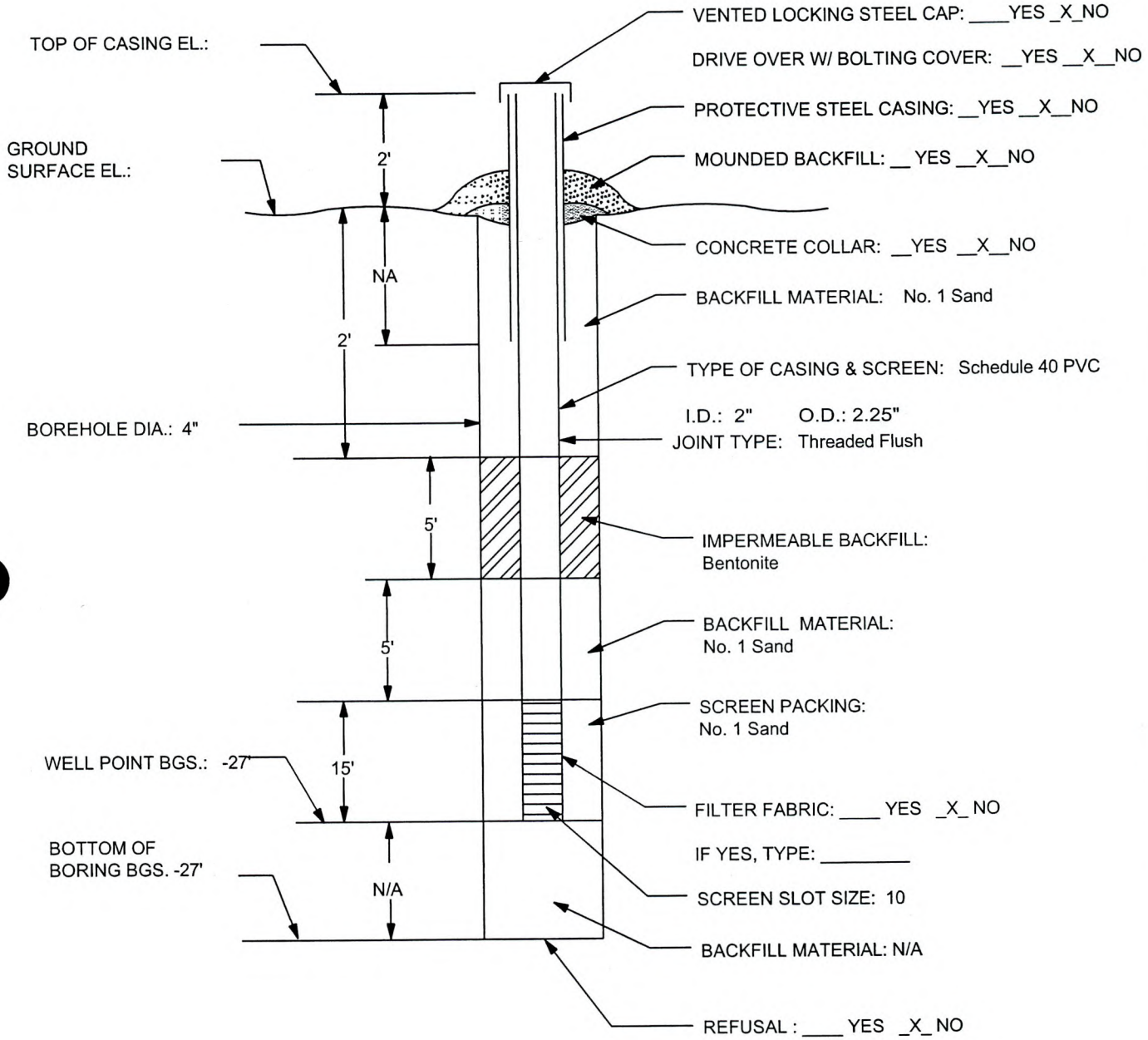
MONITORING WELL NO.: MW-7



MONITORING WELL INSTALLATION DETAIL

MONITORING WELL NO.: MW-7 PROJECT NAME: Waters Edge	IVI ENVIRONMENTAL, INC. 105 CORPORATE PARK DRIVE WHITE PLAINS, NY 10604 (914) 694-9600(tel) (914) 694-1335(fax)	DATE INSTALLED: October 16, 2001
IVI PROJECT MANAGER: Charles Mulligan IVI PROJECT NUMBER: E1066016		DRILLER: AmeriDrill

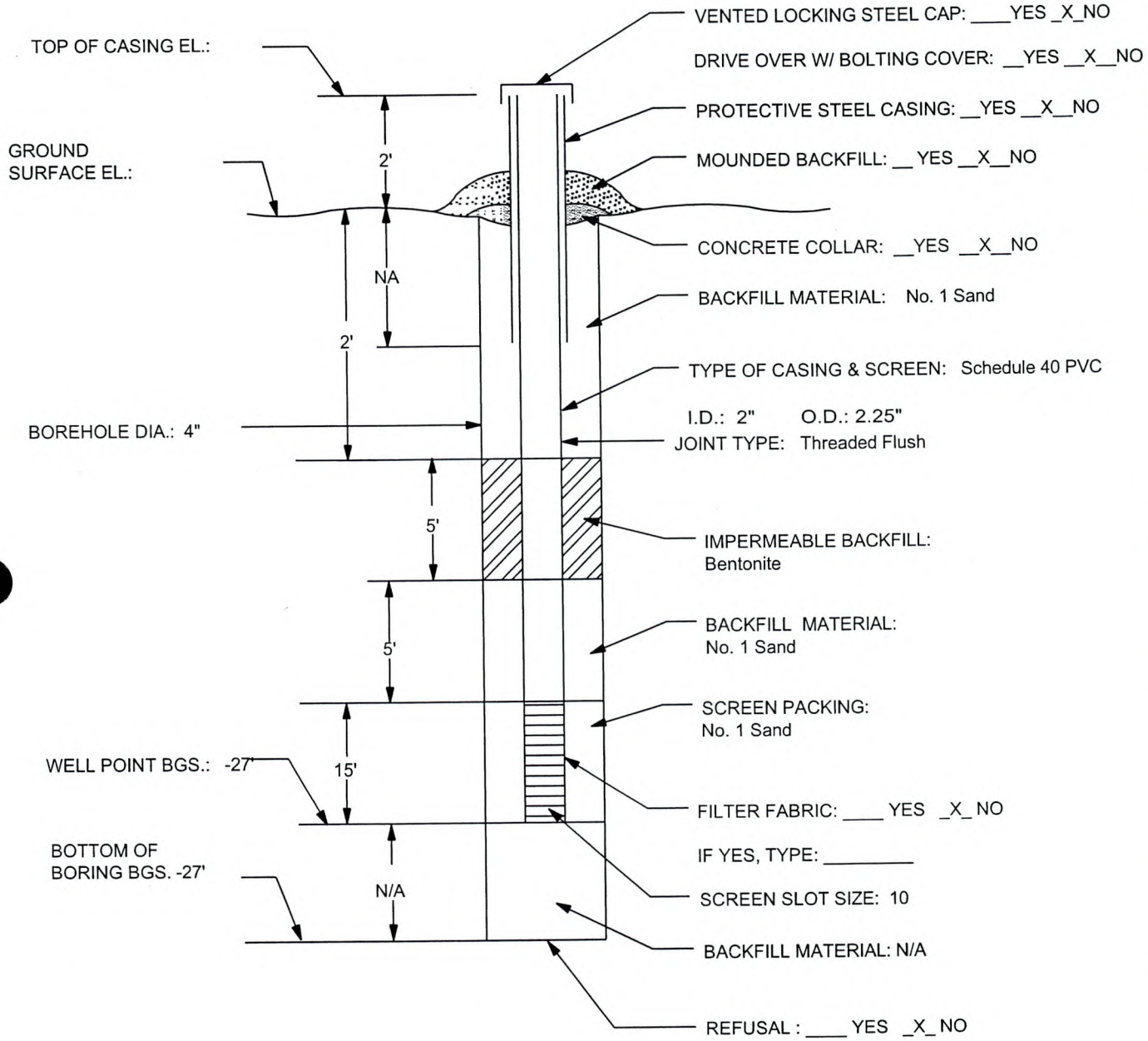
MONITORING WELL NO.: MW-8



MONITORING WELL INSTALLATION DETAIL

MONITORING WELL NO.: MW-8 PROJECT NAME: Waters Edge	IVI ENVIRONMENTAL, INC. 105 CORPORATE PARK DRIVE WHITE PLAINS, NY 10604 (914) 694-9600(tel) (914) 694-1335(fax)	DATE INSTALLED: October 16, 2001
IVI PROJECT MANAGER: Charles Mulligan IVI PROJECT NUMBER: E1066016		DRILLER: AmeriDrill

MONITORING WELL NO.: MW-9



MONITORING WELL INSTALLATION DETAIL

MONITORING WELL NO.: MW-9 PROJECT NAME: Waters Edge	IVI ENVIRONMENTAL, INC. 105 CORPORATE PARK DRIVE WHITE PLAINS, NY 10604 (914) 694-9600(tel) (914) 694-1335(fax)	DATE INSTALLED: October 16, 2001
IVI PROJECT MANAGER: Charles Mulligan IVI PROJECT NUMBER: E1066016		DRILLER: AmeriDrill

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Boring Log

Project No.: E1066016

Project Name: Waters Edge

Project Manager: Chuck Mulligan

Total Depth: 30'

Water Table Depth:

Date: October 16, 2001

Location: Port Jervis, New York

Drilling Company: Ameridrill

Method Used: Hollow Stem Auger

Boring No.: MW-2A

Depth (feet)	Sample No.	Sample Interval	Recovered %	Field Screening Result (ppm)	Soil Identification and Remarks (include color, composition, moisture, and visual and olfactory observations of contamination)
0-5					Brown M-C SAND
5-10					Brown M-C SAND, some Gravel
10-15					Brown M-C SAND
15-20					Brown M-C SAND, some Silt
20-25					Brown SILT, some F Sand
					Wet
25-30					Brown SILT, some F Sand
					Wet
					Bottom of well set at 30'

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Boring Log

Project No.: E1066016
Project Name: Waters Edge
Project Manager: Chuck Mulligan
Total Depth: 33'
Water Table Depth:

Date: October 16, 2001
Location: Port Jervis, New York
Drilling Company: Ameridrill
Method Used: Hollow Stem Auger
Boring No.: MW-4

Depth (feet)	Sample No.	Sample Interval	Recovered %	Field Screening Result (ppm)	Soil Identification and Remarks (include color, composition, moisture, and visual and olfactory observations of contamination)
0-5					Brown M-C SAND
5-10					Brown M-C SAND, some Gravel
10-15					Brown M-C SAND
15-20					Brown M-C SAND, some Silt
20-25					Brown SILT, some F Sand
					Wet
25-33					Brown SILT, some F Sand
					Wet
					Bottom of well set at 33'

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Boring Log

Project No.: E1066016

Project Name: Waters Edge

Project Manager: Chuck Mulligan

Total Depth: 33'

Water Table Depth:

Date: October 16, 2001

Location: Port Jervis, New York

Drilling Company: Ameridrill

Method Used: Hollow Stem Auger

Boring No.: MW-5

Depth (feet)	Sample No.	Sample Interval	Recovered %	Field Screening Result (ppm)	Soil Identification and Remarks (include color, composition, moisture, and visual and olfactory observations of contamination)
0-5					Brown M-C SAND
5-10					Brown M-C SAND, some Gravel
10-15					Brown M-C SAND
15-20					Brown SILT and M-F SAND
20-25					Brown SILT, and F SAND
					Wet at 23'
25-33					Brown SILT, some F Sand
					Wet
					Bottom of well set at 33'

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Boring Log

Project No.: E1066016

Project Name: Waters Edge

Project Manager: Chuck Mulligan

Total Depth: 27'

Water Table Depth: 17'

Date: October 16, 2001

Location: Port Jervis, New York

Drilling Company: Ameridrill

Method Used: Hollow Stem Auger

Boring No.: MW-6

Depth (feet)	Sample No.	Sample Interval	Recovered %	Field Screening Result (ppm)	Soil Identification and Remarks (include color, composition, moisture, and visual and olfactory observations of contamination)
0-5					Brown M-C SAND
5-10					Brown M-C SAND, some Gravel
10-15					Brown SILT, trace Sand and Clay
15-20	MW6	19-20			Brown SILT, some Sand and Clay
					Wet at 17'
20-27					Brown SILT, some Sand
					Wet
					Bottom of well set at 27'

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Boring Log

Project No.: E1066016
Project Name: Waters Edge
Project Manager: Chuck Mulligan
Total Depth: 33'
Water Table Depth:

Date: February, 2002
Location: Port Jervis, New York
Drilling Company: Kendrick
Method Used: Air Rotary
Boring No.: MW-7

Depth (feet)	Sample No.	Sample Interval	Recovered %	Field Screening Result (ppm)	Soil Identification and Remarks (include color, composition, moisture, and visual and olfactory observations of contamination)
					Replacement Well
					Drilled to and set well at 33'

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Boring Log

Project No.: E1066016

Project Name: Waters Edge

Project Manager: Chuck Mulligan

Total Depth: 33'

Water Table Depth:

Date: June 13,2002

Location: Port Jervis, New York

Drilling Company: Kendrick

Method Used: ADT

Boring No.: MW-7

Depth (feet)	Sample No.	Sample Interval	Recovered %	Field Screening Result (ppm)	Soil Identification and Remarks (include color, composition, moisture, and visual and olfactory observations of contamination)
					Replacement Well again
					Drilled to and set well at 33'

IVI Environmental, Inc.

105 Corporate Park Drive
[redacted]e Plains, New York 10604
([redacted]) 694-9600 (tel)
(914) 694-2903 (fax)

Boring Log

Project No.: E1066016

Project Name: Waters Edge

Project Manager: Chuck Mulligan

Total Depth: 27'

Water Table Depth: 17'

Date: October 16, 2001

Location: Port Jervis, New York

Drilling Company: Ameridrill

Method Used: Hollow Stem Auger

Boring No.: MW-8

Depth (feet)	Sample No.	Sample Interval	Recovered %	Field Screening Result (ppm)	Soil Identification and Remarks (include color, composition, moisture, and visual and olfactory observations of contamination)
0-5					Brown M-C SAND
5-10					Brown M-C SAND, some Gravel
[redacted]					
10-15					Brown SILT, trace Sand and Clay
15-20	MW8	18-19			Brown SILT, some Sand and Clay
					Wet at 17'
20-27					Brown SILT, some Sand
					Wet
					Bottom of well set at 27'
[redacted]					

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600 (tel)
(914) 694-2903 (fax)

Boring Log

Project No.: E1066016
Project Name: Waters Edge
Project Manager: Chuck Mulligan
Total Depth: 27'
Water Table Depth: 17'

Date: October 16, 2001
Location: Port Jervis, New York
Drilling Company: Ameridrill
Method Used: Hollow Stem Auger
Boring No.: MW-9

Depth (feet)	Sample No.	Sample Interval	Recovered %	Field Screening Result (ppm)	Soil Identification and Remarks (include color, composition, moisture, and visual and olfactory observations of contamination)
0-5					Brown M-C SAND
5-10					Brown M-C SAND, some Gravel
10-15					Brown SILT, trace Sand and Clay
15-20	MW9	18-19			Brown SILT, some Sand and Clay
					Wet at 17'
20-27					Brown SILT, some Sand
					Wet
					Bottom of well set at 27'

Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge
Injection Point: 1

Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	Water Quality Analyzer Parameters				Toxic/Combustible Gas				
				pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)	Total VOCs (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P3	1st batch/ 175 gallons	3/4/2002	10:06	NA	NA	NA	NA	NA	NA	NA	NA	0
MW 7	1st batch/ 175 gallons	3/4/2002	10:12	NA	NA	NA	NA	NA	NA	NA	NA	0
MW 6	1st batch/ 175 gallons	3/4/2002	10:16	NA	NA	NA	NA	NA	NA	NA	NA	0
P1	1st batch/ 175 gallons	3/4/2002	10:19	6.6	9.91	2.41	7.29	0	NA	20.9	NA	0
P2	1st batch/ 175 gallons	3/4/2002	10:21	6.37	9.47	0.34	5.7	0	NA	21.1	NA	0
MW 4	1st batch/ 175 gallons	3/4/2002	10:23	6.2	11.3	0.17	5.7	0	NA	21.2	NA	0
P1	1st batch/ 175 gallons	3/4/2002	12:15	3.4	10	2.2	6.7	0	6	16	5000	0
P2	1st batch/ 175 gallons	3/4/2002	12:20	4.5	11.3	0.25	9.6	0	NA	21.5	5650	0
MW 4	1st batch/ 175 gallons	3/4/2002	12:23	5	11	0.18	6.1	0	NA	20.5	50	0
P1	1st batch/ 175 gallons	3/4/2002	12:30	NA	NA	NA	NA	NA	NA	20.5	2100	0
P2	1st batch/ 175 gallons	3/4/2002	12:40	0.8	11	1.9	9.1	NA	NA	20.9	3000	0
MW 4	1st batch/ 175 gallons	3/4/2002	12:49	NA	NA	NA	NA	NA	NA	21.5	800	0
P1	2nd batch/ 175 gallons	3/4/2002	2:40	NA	NA	NA	NA	NA	NA	20.9	1400	0
P2	2nd batch/ 175 gallons	3/4/2002	2:45	2.8	10	1	11.6	0	NA	20.7	2150	0
MW 4	2nd batch/ 175 gallons	3/4/2002	2:48	4.9	11	0.27	4.6	0	3	15	>10K	0
P1	2nd batch/ 175 gallons	3/4/2002	2:50	NA	NA	NA	NA	NA	NA	20.9	NA	0
P2	2nd batch/ 175 gallons	3/4/2002	2:59	3.4	10	0.31	3.4	0.5	NA	20.9	700	0
MW 4	2nd batch/ 175 gallons	3/4/2002	3:05	4.5	11	0.17	5.5	7	19	18	>10K	0
P1	2nd batch/ 175 gallons	3/4/2002	3:15	NA	NA	NA	NA	NA	NA	NA	NA	0
P2	2nd batch/ 175 gallons	3/4/2002	3:17	0.9	11	13	19.9	NA	NA	20.9	300	0
MW 4	2nd batch/ 175 gallons	3/4/2002	3:22	1.3	12	4	18.8	9	48	37	>10K	0

1. TDS = Total Dissolved Solids
2. ppm = Parts per million
3. NA = Not Analyzed
4. CVOC = Chlorinated Volatile Organic Compounds
5. ppb = Parts per billion
6. VOC = Volatile Organic Compounds
7. LEL = Lower Explosive Limit

Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge
Injection Point: 2

Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	Water Quality Analyzer Parameters					Toxic/Combustible Gas			
				pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)	Total VOCs (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P 1	1st Batch/ 200 gallons	3/5/2002	1:00	NA	NA	NA	NA	1	3	>40K	>10K	0
P 2	1st Batch/ 200 gallons	3/5/2002	1:00	NA	NA	NA	NA	0.5	NA	22	0	0
M 5	1st Batch/ 200 gallons	3/5/2002	1:00	NA	NA	NA	NA	0	3	19	>10K	0
P 3	1st Batch/ 200 gallons	3/5/2002	1:00	6	10	0.38	6.9	5	NA	20.9	450	0
P 1	1st Batch/ 200 gallons	3/5/2002	1:25	NA	NA	NA	NA	2.3	3	40	>10K	0
P 2	1st Batch/ 200 gallons	3/5/2002	1:25	NA	NA	NA	NA	0	0	22.6	500	0
M 5	1st Batch/ 200 gallons	3/5/2002	1:25	NA	NA	NA	NA	0	0	20.9	0	0
P 3	1st Batch/ 200 gallons	3/5/2002	1:25	5.6	10	3.7	5.9	3.4	0	20.9	250	0
P 1	1st Batch/ 200 gallons	3/5/2002	1:35	NA	NA	NA	NA	1.3	2	>40	>10K	0
P 2	1st Batch/ 200 gallons	3/5/2002	1:35	NA	NA	NA	NA	0	0	21.6	300	0
M 5	1st Batch/ 200 gallons	3/5/2002	1:35	NA	NA	NA	NA	3.4	0	20.9	900	0
P 3	1st Batch/ 200 gallons	3/5/2002	1:35	6.2	10	0.4	11.9	54.3	0	20.9	1250	0
P 1	2nd Batch/ 200 gallons	3/6/2002	10:55	NA	NA	NA	NA	0	0	20.9	0	0
P 2	2nd Batch/ 200 gallons	3/6/2002	10:55	4.4	10	0.29	13.8	0.1	0	20.9	0	0
P3	2nd Batch/ 200 gallons	3/6/2002	10:55	4.9	10	0.32	7.4	0	0	20.9	0	0
MW 5	2nd Batch/ 200 gallons	3/6/2002	10:55	5.5	10	0.05	16.1	3.2	3	>40	>10K	0
MW 4	2nd Batch/ 200 gallons	3/6/2002	10:55	NA	NA	NA	NA	10	3	>40	>10K	0
P 1	2nd Batch/ 200 gallons	3/6/2002	11:11	NA	NA	NA	NA	0	0	20.9	0	0
P 2	2nd Batch/ 200 gallons	3/6/2002	11:11	4.4	11	0.19	19.9	0	0	20.9	0	0
P 3	2nd Batch/ 200 gallons	3/6/2002	11:11	3.9	5	0	19.9	3	0	20.9	350	0
M 4	2nd Batch/ 200 gallons	3/6/2002	11:11	4.8	10	0.16	14.1	12	3	>40	>10K	0
M 5	2nd Batch/ 200 gallons	3/6/2002	11:11	NA	NA	NA	NA	9	3	>40	>10K	0
P1	3rd Batch/ 200 gallons	3/7/2002	11:25	NA	NA	NA	NA	6.7	0	20.9	250	0
P2	3rd Batch/ 200 gallons	3/7/2002	11:25	5.6	4	0.1	18.1	5	0	20.9	500	0
P3	3rd Batch/ 200 gallons	3/7/2002	11:25	5.2	4	0.26	17.5	95	NA	NA	NA	NA
MW 4	3rd Batch/ 200 gallons	3/7/2002	11:25	NA	NA	NA	NA	14	1	>40	85K	0
MW 5	3rd Batch/ 200 gallons	3/7/2002	11:25	NA	NA	NA	NA	30.3	NA	NA	NA	NA
P1	3rd Batch/ 200 gallons	3/7/2002	11:55	NA	NA	NA	NA	9.1	0	20.9	250	0
P2	3rd Batch/ 200 gallons	3/7/2002	11:55	6.1	10	0.21	12.8	2.4	0	20.4	815	0
P3	3rd Batch/ 200 gallons	3/7/2002	11:55	5	6	0.36	47	51.7	0	20.9	850	0
MW 4	3rd Batch/ 200 gallons	3/7/2002	11:55	5.2	8	0.16	19.9	53.5	3	>40	>10K	0
MW 5	3rd Batch/ 200 gallons	3/7/2002	11:55	NA	NA	NA	NA	19.8	0	23.9	650	0

Injection Point 2 continued

Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	Water Quality Analyzer Parameters					Toxic/Combustible Gas			
				pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)	Total VOCs (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P1	3rd Batch/ 200 gallons	3/7/2002	12:16	NA	NA	NA	NA	0.1	NA	NA	NA	NA
P2	3rd Batch/ 200 gallons	3/7/2002	12:16	NA	NA	NA	NA	2.4	0	22	550	0
P3	3rd Batch/ 200 gallons	3/7/2002	12:16	NA	NA	NA	NA	2.1	0	305	800	0
MW 4	3rd Batch/ 200 gallons	3/7/2002	12:16	4.9	10	0.16	13.2	NA	0	20.1	8000	0
MW 5	3rd Batch/ 200 gallons	3/7/2002	12:16	NA	NA	NA	NA	3.5	2	>40	10000	0
P1	4th Batch/ 200 Gallons	3/7/2002	1:43	1.6	16	7.6	19.9	120	2	>40	>10K	0
P2	4th Batch/ 200 Gallons	3/7/2002	1:43	5	11	0.16	14	17	0	20.5	100	0
P3	4th Batch/ 200 Gallons	3/7/2002	1:43	1.9	10	2.1	19.9	200	0	20.9	950	0
MW 4	4th Batch/ 200 Gallons	3/7/2002	1:43	5.4	12	0.16	14.7	16	4	>40	>10K	0
MW 5	4th Batch/ 200 Gallons	3/7/2002	1:43	1.8	12	2.6	19.9	0.5	3	>40	>10K	0
P1	5th Batch/ 200 Gallons	3/8/2002	10:00	NA	NA	NA	NA	>9999	5	>40	>10K	0
P2	5th Batch/ 200 Gallons	3/8/2002	10:00	5.2	12	0.54	19.9	12	0	20.9	0	0
P3	5th Batch/ 200 Gallons	3/8/2002	10:00	5.2	11	0.41	19.9	350	0	20.9	0	0
MW 4	5th Batch/ 200 Gallons	3/8/2002	10:00	NA	NA	NA	NA	1700	3	>40	>10000	0
MW 5	5th Batch/ 200 Gallons	3/8/2002	10:00	1	14	64	15.9	7	1	0.4	2650	0
P1	5th Batch/ 200 Gallons	3/8/2002	10:30	NA	NA	NA	NA	64	3	>40	>10K	0
P2	5th Batch/ 200 Gallons	3/8/2002	10:30	2.8	12	0.51	19.8	28	0	20.9	0	0
P3	5th Batch/ 200 Gallons	3/8/2002	10:30	5.3	12	1	19.9	200	0	20.9	0	0
MW 4	5th Batch/ 200 Gallons	3/8/2002	10:30	5.2	12	0.2	19.9	68	3	>40	>10K	0
MW 5	5th Batch/ 200 Gallons	3/8/2002	10:30	NA	NA	NA	NA	6	1	>40	2800	0
P 2	5th Batch/ 200 Gallons	3/8/2002	11:15	4.2	12	0.2	19.9	0	0	20.9	250	0
P 1	5th Batch/ 200 Gallons	3/8/2002	11:15	NA	NA	NA	NA	50	4	>40	>10K	0
P 3	5th Batch/ 200 Gallons	3/8/2002	11:15	5.1	11	0.34	19.9	50	0	28	6500	0
MW 5	5th Batch/ 200 Gallons	3/8/2002	11:15	NA	NA	NA	NA	11	0	20.9	0	0
P 2	5th Batch/ 200 Gallons	3/8/2002	11:30	5.2	12	0.17	19.9	3	0	20.9	400	0
P 1	5th Batch/ 200 Gallons	3/8/2002	11:30	NA	NA	NA	NA	50	4	>40	>10K	0
P 3	5th Batch/ 200 Gallons	3/8/2002	11:30	5.3	11	0.35	19.9	350	1	>40	>10K	0
MW 5	5th Batch/ 200 Gallons	3/8/2002	11:30	NA	NA	NA	NA	NA	NA	NA	NA	NA
P2	6th Batch/ 85 Gallons	3/8/2002	12:05	5.6	12	0.17	17.9	38	0	31	>10K	0
P3	6th Batch/ 85 Gallons	3/8/2002	12:05	5.4	12	0.37	16.8	322	1	>40	>10K	0
P1	6th Batch/ 85 Gallons	3/8/2002	12:05	NA	NA	NA	NA	56	3	>40	>10	0

1. TDS = Total Dissolved Solids
2. ppm = Parts per million
3. NA = Not Analyzed
4. CVOC = Chlorinated Volatile Organic Compounds
5. ppb = Parts per billion
6. VOC = Volatile Organic Compounds
7. LEL = Lower Explosive Limit

Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge
Injection Point: 3

Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	Water Quality Analyzer Parameters				Toxic/Combustible Gas				
				pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)	Total VOCs (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P3	1st Batch / 200 Gallons	3/7/2002	11:07	4	12	0.47	19.9	20	2	20.9	40	0
M7	1st Batch / 200 Gallons	3/7/2002	11:07	2.5	12	4.5	19.9	20	0	20.6	400	0
M7	1st Batch / 200 Gallons	3/7/2002	11:07	4.5	11	1.1	5.4	1	0	20.4	1000	0
P1	1st Batch / 200 Gallons	3/7/2002	11:07	DRY	DRY	DRY	DRY	50	3	>40	>10,000	0
P3	1st Batch / 200 Gallons	3/7/2002	12:10	5.7	12	0.37	13.2	170	0	17.7	>10,000	0
P1	1st Batch / 200 Gallons	3/7/2002	12:10	DRY	DRY	DRY	DRY	55	3	>40	>10,000	0
M7	1st Batch / 200 Gallons	3/7/2002	12:10	2.5	12	4.3	19.9	34	3	>40	>10,000	0
M6	1st Batch / 200 Gallons	3/7/2002	12:10	3.9	12	1.1	19.9	16	0	18.8	7800	0
P3	2nd Batch / 55 Gallons	3/7/2002	2:05	5	13	0.36	12.6	8	0	20.9	1500	0
P1	2nd Batch / 55 Gallons	3/7/2002	2:05	DRY	DRY	DRY	DRY	1	0	30.8	8750	0
M7	2nd Batch / 55 Gallons	3/7/2002	2:05	2.3	12	4.4	19.9	1	2	>40	>10,000	0
M6	2nd Batch / 55 Gallons	3/7/2002	2:05	2.9	11	1.6	2.1	0	0	20.9	3500	0
P1	2nd Batch / 55 Gallons	3/7/2002	2:23	DRY	DRY	DRY	DRY	0	2	>40	>10,000	0
P3	2nd Batch / 55 Gallons	3/7/2002	2:23	5.2	12	0.38	13.7	100	0	20.9	3000	0
M7	2nd Batch / 55 Gallons	3/7/2002	2:23	2.2	11	4.4	19.9	4	1	>40	>10,000	0
M6	2nd Batch / 55 Gallons	3/7/2002	2:23	3.3	11	1.7	2.1	11	0	19	4000	0
P3	3rd Batch / 200 Gallons	3/12/2002	10:45	NA	NA	NA	NA	NA	4	>40	>10,000	0
M7	3rd Batch / 200 Gallons	3/12/2002	10:45	NA	NA	NA	NA	NA	4	>40	>10,000	0
IP 4	3rd Batch / 200 Gallons	3/12/2002	10:45	NA	NA	NA	NA	NA	4	>40	>10,000	0
M5	3rd Batch / 200 Gallons	3/12/2002	10:45	NA	NA	NA	NA	NA	4	>40	>10,000	0
P3	3rd Batch / 200 Gallons	3/12/2002	11:00	NA	NA	NA	NA	NA	1	>40	>10,000	0
M7	3rd Batch / 200 Gallons	3/12/2002	11:00	NA	NA	NA	NA	NA	1	>40	>10,000	0
IP4	3rd Batch / 200 Gallons	3/12/2002	11:00	NA	NA	NA	NA	NA	2	>40	>10,000	0
M5	3rd Batch / 200 Gallons	3/12/2002	11:00	NA	NA	NA	NA	NA	5	>40	>10,000	0

1. TDS = Total Dissolved Solids
2. ppm = Parts per million
3. NA = Not Analyzed
4. CVOC = Chlorinated Volatile Organic Compounds
5. ppb = Parts per billion
6. VOC = Volatile Organic Compounds
7. LEL = Lower Explosive Limit

Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge
Injection Point: 4

Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	Water Quality Analyzer Parameters					Toxic/Combustible Gas			
				pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)	Total VOCs (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P 1	1st Batch/ 200 Gallons	3/8/2002	10:20	NA	NA	NA	NA	250	5	>40	>10K	0
P 3	1st Batch/ 200 Gallons	3/8/2002	10:20	5.1	11	0.35	19.9	50	3	>40	>10K	0
M 7	1st Batch/ 200 Gallons	3/8/2002	10:20	2	11	2.4	19.9	20	2	>40	>10K	0
M 6	1st Batch/ 200 Gallons	3/8/2002	10:20	2.8	11	0.92	19.9	350	0	21.5	1500	0
P 3	1st Batch/ 200 Gallons	3/8/2002	10:40	5.1	11	0.38	19.9	50	3	>40	>10K	0
M 7	1st Batch/ 200 Gallons	3/8/2002	10:40	3.8	12	4.4	19.9	0	3	>40	>10K	0
M 6	1st Batch/ 200 Gallons	3/8/2002	10:40	2.6	12	0.99	17.2	0	3	>40	>10K	0
P 3	2nd Batch/ 200 Gallons	3/11/2002	11:40	4.6	11	0.38	19.9	0	0	20.9	0	0
M 7	2nd Batch/ 200 Gallons	3/11/2002	11:40	1.3	10	20	19.9	0	0	20.9	0	0
M 6	2nd Batch/ 200 Gallons	3/11/2002	11:40	NA	NA	NA	NA	0	0	20.9	0	0
P 3	2nd Batch/ 200 Gallons	3/11/2002	12:00	4.4	10	0.35	19.9	180	0	26	250	0
M 7	2nd Batch/ 200 Gallons	3/11/2002	12:00	3	10	0.73	19.9	1	0	28	500	0
M 6	2nd Batch/ 200 Gallons	3/11/2002	12:00	NA	NA	NA	NA	1.5	0	26	250	0
P 3	2nd Batch/ 200 Gallons	3/11/2002	1:25	5.6	10	0.35	19.9	28	3	40	100	0
M 7	2nd Batch/ 200 Gallons	3/11/2002	1:25	3.3	10	11	19.8	17	2	40	1000	0
M 6	2nd Batch/ 200 Gallons	3/11/2002	1:25	NA	NA	NA	NA	NA	NA	NA	NA	NA
P 1	3rd Batch/ 55 Gallons	3/11/2002	3:30	2.4	11	10	14	0	0	20.9	400	0
P 2	3rd Batch/ 55 Gallons	3/11/2002	3:30	NA	11	NA	14	11.7	51	40	>10K	0
M 4	3rd Batch/ 55 Gallons	3/11/2002	3:30	3.9	NA	0.24	14.9	0	NA	NA	NA	NA
P 1	3rd Batch/ 55 Gallons	3/11/2002	3:45	NA	NA	NA	NA	0.1	0	20.9	0	0
P 2	3rd Batch/ 55 Gallons	3/11/2002	3:45	4.5	9	0.23	12.3	4	0	20.9	450	0
M 4	3rd Batch/ 55 Gallons	3/11/2002	3:45	5.1	8	0.16	6.7	190	51	40	>10K	0

1. TDS = Total Dissolved Solids
2. ppm = Parts per million
3. NA = Not Analyzed
4. CVOC = Chlorinated Volatile Organic Compounds
5. ppb = Parts per billion
6. VOC = Volatile Organic Compounds
7. LEL = Lower Explosive Limit

Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge
Injection Point: 4

Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	Water Quality Analyzer Parameters					Toxic/Combustible Gas			
				pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)	Total VOCs (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P 1	1st Batch/ 200 Gallons	3/8/2002	10:20	NA	NA	NA	NA	250	5	>40	>10K	0
P 3	1st Batch/ 200 Gallons	3/8/2002	10:20	5.1	11	0.35	19.9	50	3	>40	>10K	0
M 7	1st Batch/ 200 Gallons	3/8/2002	10:20	2	11	2.4	19.9	20	2	>40	>10K	0
M 6	1st Batch/ 200 Gallons	3/8/2002	10:20	2.8	11	0.92	19.9	350	0	21.5	1500	0
P 3	1st Batch/ 200 Gallons	3/8/2002	10:40	5.1	11	0.38	19.9	50	3	>40	>10K	0
M 7	1st Batch/ 200 Gallons	3/8/2002	10:40	3.8	12	4.4	19.9	0	3	>40	>10K	0
M 6	1st Batch/ 200 Gallons	3/8/2002	10:40	2.6	12	0.99	17.2	0	3	>40	>10K	0
P 3	2nd Batch/ 200 Gallons	3/11/2002	11:40	4.6	11	0.38	19.9	0	0	20.9	0	0
M 7	2nd Batch/ 200 Gallons	3/11/2002	11:40	1.3	10	20	19.9	0	0	20.9	0	0
M 6	2nd Batch/ 200 Gallons	3/11/2002	11:40	NA	NA	NA	NA	0	0	20.9	0	0
P 3	2nd Batch/ 200 Gallons	3/11/2002	12:00	4.4	10	0.35	19.9	180	0	26	250	0
M 7	2nd Batch/ 200 Gallons	3/11/2002	12:00	3	10	0.73	19.9	1	0	28	500	0
M 6	2nd Batch/ 200 Gallons	3/11/2002	12:00	NA	NA	NA	NA	1.5	0	26	250	0
P 3	2nd Batch/ 200 Gallons	3/11/2002	1:25	5.6	10	0.35	19.9	28	3	40	100	0
M 7	2nd Batch/ 200 Gallons	3/11/2002	1:25	3.3	10	11	19.8	17	2	40	1000	0
M 6	2nd Batch/ 200 Gallons	3/11/2002	1:25	NA	NA	NA	NA	NA	NA	NA	NA	NA
P 1	3rd Batch/ 55 Gallons	3/11/2002	3:30	2.4	11	10	14	0	0	20.9	400	0
P 2	3rd Batch/ 55 Gallons	3/11/2002	3:30	NA	11	NA	14	11.7	51	40	>10K	0
M 4	3rd Batch/ 55 Gallons	3/11/2002	3:30	3.9	NA	0.24	14.9	0	NA	NA	NA	NA
P 1	3rd Batch/ 55 Gallons	3/11/2002	3:45	NA	NA	NA	NA	0.1	0	20.9	0	0
P 2	3rd Batch/ 55 Gallons	3/11/2002	3:45	4.5	9	0.23	12.3	4	0	20.9	450	0
M 4	3rd Batch/ 55 Gallons	3/11/2002	3:45	5.1	8	0.16	6.7	190	51	40	>10K	0

1. TDS = Total Dissolved Solids
2. ppm = Parts per million
3. NA = Not Analyzed
4. CVOC = Chlorinated Volatile Organic Compounds
5. ppb = Parts per billion
6. VOC = Volatile Organic Compounds
7. LEL = Lower Explosive Limit

Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge
Injection Point: 1

Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	Water Quality Analyzer Parameters				Total VOCs (ppm)	Toxic/Combustible Gas			
				pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)		LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P1	1st batch/ 200 gallons	4/24/2002	11:00	NA	NA	NA	NA	NA	NA	NA	NA	0
P2	1st batch/ 200 gallons	4/24/2002	11:00	7.7	11	0.07	14.9	NA	NA	20.9	NA	0
MW4	1st batch/ 200 gallons	4/24/2002	11:00	6.7	11	0.18	14.7	NA	NA	20.9	NA	0
P1	1st batch/ 200 gallons	4/24/2002	11:42	NA	NA	NA	NA	0	2	27.3	8500	0
P2	1st batch/ 200 gallons	4/24/2002	11:42	6.6	12	0.19	19.9	0	0	20.9	2800	0
MW 4	1st batch/ 200 gallons	4/24/2002	11:42	6.6	12	0.14	19.9	0	0	20.9	0	0
P1	1st batch/ 200 gallons	4/24/2002	12:12	NA	NA	NA	NA	NA	0	20.9	0	0
P2	1st batch/ 200 gallons	4/24/2002	12:12	7.6	12	0.19	19.9	NA	0	21.4	7250	0
MW 4	1st batch/ 200 gallons	4/24/2002	12:12	6.9	12	0.14	19.9	NA	0	29.5	7200	0
P1	2nd batch/ 200 gallons	4/24/2002	1:30	NA	NA	NA	NA	NA	NA	NA	NA	NA
P2	2nd batch/ 200 gallons	4/24/2002	1:30	7	12	0.15	19.9	0	0	21.4	8500	0
MW 4	2nd batch/ 200 gallons	4/24/2002	1:30	6.9	12	0.14	19.9	1.5	2	>40	>10K	0
P1	2nd batch/ 200 gallons	4/24/2002	2:10	NA	NA	NA	NA	NA	NA	NA	NA	NA
P2	2nd batch/ 200 gallons	4/24/2002	2:10	6.3	12	0.15	18.6	0	0	20.9	200	0
MW 4	2nd batch/ 200 gallons	4/24/2002	2:10	6.4	12	0.15	19.9	5	3	>40	>10K	0
P1	2nd batch/ 200 gallons	4/24/2002	2:40	NA	NA	NA	NA	NA	NA	NA	NA	NA
P2	2nd batch/ 200 gallons	4/24/2002	2:59	NA	NA	NA	NA	0	0	20.9	200	0
MW 4	2nd batch/ 200 gallons	4/24/2002	2:59	NA	NA	NA	NA	0.2	4	>40	>10K	0
P1	3rd batch/ 200 gallons	4/25/2002	11:20	NA	NA	NA	NA	10	3	>40	>10K	0
P2	3rd batch/ 200 gallons	4/25/2002	11:20	5.4	11	0.18	19.9	0	0	20.5	100	0
MW 4	3rd batch/ 200 gallons	4/25/2002	11:20	6.5	11	0.28	19.9	3.1	2	>40	>10K	0
P1	3rd batch/ 200 gallons	4/25/2002	11:50	NA	NA	NA	NA	10	3	>40	>10K	0
P2	3rd batch/ 200 gallons	4/25/2002	11:50	5.4	11	0.19	19.9	0	0	20.9	300	0
MW 4	3rd batch/ 200 gallons	4/25/2002	11:50	6.7	11	0.26	19.9	5	2	>40	>10k	0

1. TDS = Total Dissolved Solids
2. ppm = Parts per million
3. NA = Not Analyzed
4. CVOC = Chlorinated Volatile Organic Compounds
5. ppb = Parts per billion
6. VOC = Volatile Organic Compounds
7. LEL = Lower Explosive Limit

Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge
Injection Point: 2

				Water Quality Analyzer Parameters					Toxic/Combustible Gas			
Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)	Total VOCs (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P 1	1st Batch/ 80 gallons	4/25/2002	3:12	NA	NA	NA	NA	0	NA	NA	NA	NA
P 2	1st Batch/ 80 gallons	4/25/2002	3:12	NA	NA	NA	NA	0	NA	NA	NA	NA
M 5	1st Batch/ 80 gallons	4/25/2002	3:12	6.3	11	0.15	19.9	25	NA	NA	NA	NA
P 1	1st Batch/ 80 gallons	4/25/2002	3:30	NA	NA	NA	NA	NA	NA	NA	NA	NA
P 2	1st Batch/ 80 gallons	4/25/2002	3:30	6	11	0.17	19.9	NA	NA	NA	NA	NA
M 5	1st Batch/ 80 gallons	4/25/2002	3:30	NA	NA	NA	NA	NA	NA	NA	NA	NA
P 1	2nd Batch/ 200 gallons	4/26/2002	10:00	NA	NA	NA	NA	NA	0	21	50	0
P 2	2nd Batch/ 200 gallons	4/26/2002	10:00	6.2	10	0.19	19.9	NA	0	22.5	200	0
M 5	2nd Batch/ 200 gallons	4/26/2002	10:00	NA	NA	NA	NA	3.4	0	22	50	0
P 1	2nd Batch/ 200 gallons	4/26/2002	11:52	NA	NA	NA	NA	NA	0	20.9	50	0
P 2	2nd Batch/ 200 gallons	4/26/2002	11:52	4.4	10	0.29	13.8	NA	1	>40	>10K	0
MW 5	2nd Batch/ 200 gallons	4/26/2002	11:52	NA	NA	NA	NA	NA	0	22.5	500	0
P 1	2nd Batch/ 200 gallons	4/26/2002	12:10	NA	NA	NA	NA	NA	0	20.9	50	0
P 2	2nd Batch/ 200 gallons	4/26/2002	12:10	5.4	11	0.12	19.9	NA	1	>40	>10K	0
M 5	2nd Batch/ 200 gallons	4/26/2002	12:10	NA	NA	NA	NA	NA	0	22	400	0
P1	3rd Batch/ 200 gallons	4/29/2002	11:38	NA	NA	NA	NA	NA	0	20.9	0	0
P2	3rd Batch/ 200 gallons	4/29/2002	11:38	5.6	11	0.26	19.9	NA	0	25	3200	0
MW 5	3rd Batch/ 200 gallons	4/29/2002	11:38	NA	NA	NA	NA	NA	1	40	700	0
P1	3rd Batch/ 200 gallons	4/29/2002	12:18	NA	NA	NA	NA	NA	0	20.9	0	0
P2	3rd Batch/ 200 gallons	4/29/2002	12:18	5.6	11	0.2	19.9	NA	0	215	800	0
MW 5	3rd Batch/ 200 gallons	4/29/2002	12:18	NA	NA	NA	NA	NA	1	40	135	0

Injection Point 2 continued

Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	Water Quality Analyzer Parameters					Toxic/Combustible Gas			
				pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)	Total VOCs (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P1	3rd Batch/ 200 gallons	4/29/2002	12:47	NA	NA	NA	NA	NA	0	20.9	0	0
P2	3rd Batch/ 200 gallons	4/29/2002	12:47	6.9	10	0.22	19.9	NA	0	21.5	800	0
MW 5	3rd Batch/ 200 gallons	4/29/2002	12:47	NA	NA	NA	NA	NA	2	40	135	0
P1	4th Batch/ 200 gallons	4/29/2002	2:12	NA	NA	NA	NA	NA	0	20.9	0	0
P2	4th Batch/ 200 gallons	4/29/2002	2:12	6.1	10	0.2	19.9	NA	0	21.5	450	0
MW 5	4th Batch/ 200 gallons	4/29/2002	2:12	NA	NA	NA	NA	NA	2	40	300	0

1. TDS = Total Dissolved Solids
2. ppm = Parts per million
3. NA = Not Analyzed
4. CVOC = Chlorinated Volatile Organic Compounds
5. ppb = Parts per billion
6. VOC = Volatile Organic Compounds
7. LEL = Lower Explosive Limit

Project N[redacted]er: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge
Injection Point: 3

Monitoring Point	Batch Number/ Volume	Date	Time (hrs:mins)	Water Quality Analyzer Parameters					Toxic/Combustible Gas			
				pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	Dissolved Oxygen (ppm)	Total VOCs (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P3	1st Batch / 200 Gallons	4/29/2002	2:30	NA	NA	NA	NA	NA	0	20.9	0	0
M7	1st Batch / 200 Gallons	4/29/2002	2:30	2.5	12	4.5	19.9	NA	0	20.9	500	0
M5	1st Batch / 200 Gallons	4/29/2002	2:30	NA	NA	NA	NA	NA	0	40	300	0
P3	1st Batch / 200 Gallons	4/29/2002	3:15	NA	NA	NA	NA	NA	0	20.9	0	0
M7	1st Batch / 200 Gallons	4/29/2002	3:15	5.9	10	0.37	19.9	NA	0	24.2	10K	0
M5	1st Batch / 200 Gallons	4/29/2002	3:15	NA	NA	NA	NA	NA	1	40	1000	0

1. TDS = Total Dissolved Solids
2. ppm = Parts per million
3. NA = Not Analyzed
4. CVOC = Chlorinated Volatile Organic Compounds
5. ppb = Parts per billion
6. VOC = Volatile Organic Compounds
7. LEL = Lower Explosive Limit

Project Name: Waters Edge
Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge

1st Batch 200-gallons Acid/ Peroxide

Injection Point: 2
Date: 6/28/02

Monitoring Point Identification (Well/ Piezometer Number)	Time (hrs:mins)	Oil/Water Interface Parameters Distance from Top of Well Casing to: Water (ft)	Water Quality Analyzer pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	PID Reading Total VOC in Vapor (ppm)	Toxic/Combustible Gas Indicator Parameters LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
P2	10:10	29.13	4.7	17	0.32	0	0	20.9	0	0
M5	10:10	19.46	3.5	17	2.7	0	0	20.9	0	0
M7	10:10	NT	3	15	2	0	0	20.8	0	0
Pump On 11:14										
P2	11:18	29.85	Silted Up	Silted Up	Silted Up	0	0	20.9	0	0
M5	11:18	19.45	3.4	15	0.04	0	0	21	200	0
M7	11:18	20.97	3.2	15	0.89	0	0	20.8	0	0
Pump Off 11:25										
P2	11:35	29.82	4	13	0.34	0	0	20.9	0	0
M5	11:35	19.3	3.4	16	3.2	0	0	20.9	0	0
M7	11:35	20.85	3.2	15	0.91	0	0	20.8	0	0

Notes:
1. TDS = Total Dissolved Solids
2. Ppm = Parts per million
3. TPH = Total Petroleum Hydrocarbons
4. CVOC = Chlorinated Volatile Organic Compounds
5. Ppb = Parts per billion
6. PID = Photoionization Detector
7. VOC = Volatile Organic Compounds
8. LEL = Lower Explosive Limit

]

Project Name: Waters Edge
Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge

2nd Batch 200-gallons Acid/ Peroxide Mixt

Injection Point: 2
Date: 6/28/02

Monitoring Point Identification (Well/ Piezometer Number)	Time (hrs:mins)	Oil/Water Interface Parameters Distance from Top of Well Casing to: Water (ft)	Water Quality Analyzer pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)	PID Reading Total VOC in Vapor (ppm)	Toxic/Combustible Gas Indicator Parameters LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
Pump On 12:05										
P2	12:10	Dry	Dry	Dry	Dry	0	0	22	2,500	0
M5	12:10	Dry	Dry	Dry	Dry	0	0	20.9	0	0
M7	12:10	Dry	Dry	Dry	Dry	0	0	20.8	0	0
Soil breakthrough occurred.										
No readings taken.										

Notes:
1. TDS = Total Dissolved Solids
2. Ppm = Parts per million
3. TPH = Total Petroleum Hydrocarbons
4. CVOC = Chlorinated Volatile Organic Compounds
5. Ppb = Parts per billion
6. PID = Photoionization Detector
7. VOC = Volatile Organic Compounds
8. LEL = Lower Explosive Limit

Project Name: Waters Edge
Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge

4th Batch 200-gallons Acid/ Peroxide Mixtu

Injection Point: 4/ BU3
Date: 7/2/02

Monitoring Point Identification (Well/ Piezometer Number)	Time (hrs:mins)	Oil/Water Interface Parameters	Water Quality Analyzer			PID Reading	Toxic/Combustible Gas Indicator Parameters			
		Distance from Top of Well Casing to:				Total VOC in Vapor (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
		Water (ft)	pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)					
M7	8:53	NT	2.8	23	0.71	0	1	40+	10,000+	0
Pump On 9:35										
M7	9:46	NT	2.9	19	1.4	0	1	40+	10,000+	0
Pump Off 10:08										
M7	10:28	NT	2.9	18	0.99	0	1	40+	10,000+	0

Notes:
1. TDS = Total Dissolved Solids
2. Ppm = Parts per million
3. TPH = Total Petroleum Hydrocarbons
4. CVOC = Chlorinated Volatile Organic Compounds
5. Ppb = Parts per billion
6. PID = Photoionization Detector
7. VOC = Volatile Organic Compounds
8. LEL = Lower Explosive Limit

Project Name: Waters Edge
Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge

5th Batch 200-gallons Acid/ Peroxide Mixtu

Injection Point: IP-1/ P2
Date: 7/2/02

Monitoring Point Identification (Well/ Piezometer Number)	Time (hrs:mins)	Oil/Water Interface Parameters	Water Quality Analyzer			PID Reading	Toxic/Combustible Gas Indicator Parameters			
		Distance from Top of Well Casing to:				Total VOC in Vapor (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
		Water (ft)	pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)					
P1	10:20	Silted				0	0	20.9	50	0
P2	10:20	Silted				0	0	20.9	50	0
Pump on 10:30										
P1	10:50	Silted				0	0	20.6	0	0
P2	10:50	Silted				0	0	20.6	0	0
Pump off 10:52										
n on 11:10, into P2										
P1	11:23	Silted				0	0	20.9	0	0
IP1	11:23	Silted				0	0	20.9	0	0
BU3	11:23	Silted				0	2	40+	10,000+	0
M7	11:23	Silted				0	0	26	3300	0
Pump off 11:30										

Notes:
1. TDS = Total Dissolved Solids
2. Ppm = Parts per million
3. TPH = Total Petroleum Hydrocarbons
4. CVOC = Chlorinated Volatile Organic Compounds
5. Ppb = Parts per billion
6. PID = Photoionization Detector
7. VOC = Volatile Organic Compounds
8. LEL = Lower Explosive Limit

Project Name: Waters Edge
Project Number: E1066016
Project Manager: Charles Mulligan
Project Location: Waters Edge

3rd Batch 200-gallons Acid/ Peroxide Mixtu

Injection Point: 4/ BU3
Date: 7/1/02

Monitoring Point Identification (Well/ Piezometer Number)	Time (hrs:mins)	Oil/Water Interface Parameters	Water Quality Analyzer			PID Reading	Toxic/Combustible Gas Indicator Parameters			
		Distance from Top of Well Casing to:				Total VOC in Vapor (ppm)	LEL/Total non-CVOC (%/ppm)	Oxygen (%)	Carbon Dioxide (ppm)	Chlorine (ppm)
		Water (ft)	pH	Temp-erature (°C)	Cond-uctivity (ppm TDS)					
M7	11:15	19.82	2.5	21	3.2	0	1	31	10,000+	0
M6	11:15	18.1	NT	NT	NT	0	3	40+	10,000+	0
M5	11:15	20.05	2.7	18	2.7	0	1	37.3	10,000+	0
Pump on 11:47										
M7	12:10	19.65	2.5	22	3	0	Battery Dead on TGI			
M6	12:10	0	NT	NT	NT	0				
M5	12:10	19.5	2.7	18	2.9	0				
Pump off 12:20										
M7	1:48	19.55	NT	NT	NT	0	1	31	1,500	0
M6	1:48	0	NT	NT	NT	0	3	40+	2,800	0

Notes:
1. TDS = Total Dissolved Solids
2. Ppm = Parts per million
3. TPH = Total Petroleum Hydrocarbons
4. CVOC = Chlorinated Volatile Organic Compounds
5. ppb = Parts per billion
6. PID = Photoionization Detector
7. VOC = Volatile Organic Compounds
8. LEL = Lower Explosive Limit

Project Name:_Waters Edge_____ Project Location:__Port Jervis, NY_____

Project Number:_E106616_____

Project Manager:_Chuck Mulligan_____

Date	Injection Point - Batch No.	Time Centrifugal Injection Pump Turned On (hrs:mins)	Process Data Reading Time (hrs:mins)	Injection Pump Flow Rate (gpm)	Injection Pump Discharge Pressure (psi)	Injection Point (IP) Manifold Pressure (Pump Side) (psi)	Injection Point (IP) Manifold Pressure (IP Side) (psi)	Time Centrifugal Injection Pump Turned Off (hrs:mins)	Total Mix Tank Batch Injection Time (mins)	Total Volume of Solution Injected (gallons)	Average Injection Flow Rate (gpm)
	IP 2/ 1st	10:47		20	5	5	5				
			10:51	10	10	10	10				
			10:59	13	10	2	2				
								11:03	16	175	11
25-Jun-02	IP2/ 2nd	12:57		21.7	25	0	0				
			1:01	10.2	10	0	0				
			1:07	11.3	10	0	0				
			1:15	9.8	9	0	0				
								1:17	20	200	10
	IP 2/ 3rd	10:58		23.48	10	0	0				
			11:01	9.5	5	0	0				
								11:18	20	200	10
-Jun-02	IP2/ 4th	12:03		20	25	3	3				
			12:08	10	10	0	0				
			12:15	13	11	0	0				
								12:23	22	200	9
	IP 2/ 5th	10:28		24	25	5	5				
			10:33	16	20	3	3				
								10:40	12	200	16.6
	IP2/ 5th	11:09		NR	0	0	0				
								11:16	7	168	24
	IP 4/ 1st	12:05		15	20	10	10				
27-Jun-02			12:11	15	30	10	10				
								12:19	14	200	14.2
	IP4/ 2nd	2:16		NR	25	8	8				
								2:30	14	200	14.2
	IP4/ 3rd	2:50		NR	25	10	10				
								3:07	17	202	11.8

te	Injection Point - Batch No.	Time Centrifugal Injection Pump Turned On (hrs:mins)	Process Data Reading Time (hrs:mins)	Injection Pump Flow Rate (gpm)	Injection Pump Discharge Pressure (psi)	Injection Point (IP) Manifold Pressure (Pump Side) (psi)	Injection Point (IP) Manifold Pressure (IP Side) (psi)	Time Centrifugal Injection Pump Turned Off (hrs:mins)	Total Mix Tank Batch Injection Time (mins)	Total Volume of Solution Injected (gallons)	Average Injection Flow Rate (gpm)
	IP 2/ 1st	11:14		NR	25	3	3				
								11:25	14	200	19
28-Jun-02	IP 2/ 2nd	12:05		19	30	3	5				
			12:08	11.5	10	0	0				
								12:25	20	100	5
	IP 4	11:47		15	30	16	18				
	BW3	11:57		5	0	0	0				
								12:20	25	160	6.4
	BW3	1:50		5	15	4	4				
1-Jul-02				4	15	8	10				
										75	
	IP1									125	
	BW3	9:35		41	26	0	0				
			9:37	5	11	0	8				
			9:50	6.5	16	9	10				
			10:07	6	13	5	6				
								10:08	43	200	5
	IP1	10:30		27	30	1	0				
			10:42	6.7	12	0	0				
								10:50	20	80	4
2-Jul-02											
	P2	11:10									
			11:12	4.22	11	0	0				
			11:28	5							
								11:30	20	120	6
	BW3	2:20									
			2:22	8.6	8	0				60	

Notes:

1. Gpm = Gallons per minute
2. Psi = Pounds per square inch

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-2A**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 26.43'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 34.8'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.3 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 26.43 ft.

Distance from top of well casing to free product: 34.8 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.24	99	8.4	12	6.0
2	0.26	75	14.4	12	6.0
3	0.25	70	14.8	12	6.1
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-4**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 27.83'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 34'**
Water Analyzer Used: Horiba U10	**Well Volume: 1 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 27.83 ft.

Distance from top of well casing to free product: 34 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.15	99	16.1	11	6.0
2	0.14	78	15.7	11	6.0
3	0.16	74	16.4	11	5.5
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-6**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 22.55'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 30'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.2 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 22.55 ft.

Distance from top of well casing to free product: 30 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	4.8	82	17.2	11	2.0
2	4.5	30	19.9	11	2.7
3	4.7	30	19.9	11	2.8
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-7**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 22.8'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 30'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.2 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 22.8 ft.

Distance from top of well casing to free product: 30 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.65	85	15.1	11	6.0
2	0.64	78	18.2	12	6.0
3	0.66	74	18.9	11	5.8
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-8**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 22.65'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 32.8'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.6 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 22.65 ft.

Distance from top of well casing to free product: 32.8 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.38	99	5.0	10	5.0
2	0.39	63	14.9	10	5.0
3	0.38	68	14.4	10	5.3
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

1[illegible] Corporate Park Drive
W[illegible]e Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016
Project Name: Waters Edge
Project Manager: Charles Mulligan
Project Location: Port Jervis, NY
Water Analyzer Used: Horiba U10

Monitoring Well: MW-9
Well Casing Diameter: 2"
Depth to Water: 19.9'
Depth of Well from Top of Well Casing. 32.6'
Well Volume: 2 gal

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 19.9 ft.

Distance from top of well casing to free product: 32.6 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.40	99	6.0	10	5.0
2	0.43	30	19.9	10	5.5
3	0.41	27	17.2	10	5.3
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-2A**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 26.43'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 34.8'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.3 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 26.43 ft.

Distance from top of well casing to free product: 34.8 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.24	99	8.4	12	6.0
2	0.26	75	14.4	12	6.0
3	0.25	70	14.8	12	6.1
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-4**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 27.83'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 34'**
Water Analyzer Used: Horiba U10	**Well Volume: 1 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 27.83 ft.

Distance from top of well casing to free product: 34 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.15	99	16.1	11	6.0
2	0.14	78	15.7	11	6.0
3	0.16	74	16.4	11	5.5
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-6**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 22.55'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 30'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.2 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 22.55 ft.

Distance from top of well casing to free product: 30 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	4.8	82	17.2	11	2.0
2	4.5	30	19.9	11	2.7
3	4.7	30	19.9	11	2.8
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-7**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 22.8'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 30'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.2 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 22.8 ft.

Distance from top of well casing to free product: 30 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.65	85	15.1	11	6.0
2	0.64	78	18.2	12	6.0
3	0.66	74	18.9	11	5.8
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-8**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 22.65'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 32.8'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.6 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 22.65 ft.

Distance from top of well casing to free product: 32.8 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.38	99	5.0	10	5.0
2	0.39	63	14.9	10	5.0
3	0.38	68	14.4	10	5.3
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-8**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 19.9'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 32.6'**
Water Analyzer Used: Horiba U10	**Well Volume: 2 gal**

WELL PURGING AND SAMPLING DATA

DATE: 3/25/02

Distance from top of well casing to water: 19.9 ft.

Distance from top of well casing to free product: 32.6 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.40	99	6.0	10	5.0
2	0.43	30	19.9	10	5.5
3	0.41	27	17.2	10	5.3
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-2A**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 20.5'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 31'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.7 gal**

WELL PURGING AND SAMPLING DATA

DATE: 7/17/02

Distance from top of well casing to water: 20.5 ft.

Distance from top of well casing to free product: 31 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0	0.32	85	3.1	16	4.5
1	0.21	80	2.2	14	4.7
2	0.19	70	2.4	18	4.9
3	0.20	72	2.3	18	5.0
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
[redacted]e Plains, New York 10604
([redacted]) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-4**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 24.2'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 32'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.27 gal**

WELL PURGING AND SAMPLING DATA

DATE: 7/17/02

Distance from top of well casing to water: 24.2 ft.

Distance from top of well casing to free product: 32 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	PH
0					
1[redacted]	0.25	99	3.1	15	4.0
2	0.25	99	3.1	14	4.2
3	0.23	99	2.7	14	4.2
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-5**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 22'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 22.5'**
Water Analyzer Used: Horiba U10	**Well Volume: 0.08 gal**

WELL PURGING AND SAMPLING DATA

DATE: 7/17/02

Distance from top of well casing to water: 22 ft.

Distance from top of well casing to free product: 22.5 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1					
2					
3					
4					
5					

Comments: Not purged due to low volume of water.

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-6**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 18.65'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 23'**
Water Analyzer Used: Horiba U10	**Well Volume: 0.7 gal**

WELL PURGING AND SAMPLING DATA

DATE: 7/17/02

Distance from top of well casing to water: 18.65 ft.

Distance from top of well casing to free product: 23 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	11	99	3.4	19	1.6
2	11	99	3.6	16	1.5
3	12	80	3.9	17	1.6
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
( ) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-7**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 20.20'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 30'**
Water Analyzer Used: Horiba U10	**Well Volume: 1.6 gal**

WELL PURGING AND SAMPLING DATA

DATE: 7/17/02

Distance from top of well casing to water: 20.20 ft.

Distance from top of well casing to free product: 30 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	4.8	31	4.7	17	2.4
2	3.3	33	2.9	15	2.5
3	1.3	25	2.9	15	2.8
4	0.89	30	2.9	15	2.8
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-8**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 15.6'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 28.35'**
Water Analyzer Used: Horiba U10	**Well Volume: 2 gal**

WELL PURGING AND SAMPLING DATA					
DATE: 7/17/02					
Distance from top of well casing to water: 15.6 ft.					
Distance from top of well casing to free product: 28.35 ft.					
Number of Well Volumes	**Conductivity uS/cm**	**Turbidity (NTU)**	**Dissolved Oxygen (ppm)**	**Temp °C**	**pH**
0					
1	0.42	99	4.7	15	4.6
2	0.34	99	1.4	14	5.0
3	0.30	99	1.5	14	5.2
4					
5					
Comments:					

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

IVI Environmental, Inc.

105 Corporate Park Drive
White Plains, New York 10604
(914) 694-9600

Monitoring Well Sampling Log

Project No.: E1066016	**Monitoring Well: MW-9**
Project Name: Waters Edge	**Well Casing Diameter: 2"**
Project Manager: Charles Mulligan	**Depth to Water: 14.25'**
Project Location: Port Jervis, NY	**Depth of Well from Top of Well Casing. 26.4'**
Water Analyzer Used: Horiba U10	**Well Volume: 2 gal**

WELL PURGING AND SAMPLING DATA

DATE: 7/17/02

Distance from top of well casing to water: 14.25 ft.

Distance from top of well casing to free product: 26.4 ft.

Number of Well Volumes	Conductivity uS/cm	Turbidity (NTU)	Dissolved Oxygen (ppm)	Temp °C	pH
0					
1	0.55	99	1.0	15	3.5
2	0.61	99	1.2	14	3.6
3	0.58	99	1.2	14	3.9
4					
5					

Comments:

Notes:

[1]Volume Factor = 0.163 gal./ft. and 0.653 gal./ft. for 2" and 4" diameter well casings, respectively.
NA = Not Applicable

FJF CONSTRUCTION ASSOC., LTD.
PO Box 604
Goshen, NY 10924
(845) 294-7148

September 25, 2001

Mr. Jonah Mendelbaum
MJJ BUILDERS CORP.
One Crescent Avenue
Warwick, NY 10990

RE: Waters Edge - Port Jervis

Dear Sir:

This is to certify that approximately 2,500 square feet of lead paint has been removed from the Old Barrier Building on East Main Street in Port Jervis, NY. The areas of removal were in the following locations:

1. Two (2) window sills (Building #2)
2. Block wall next to parking lot (Building #1)
3. Front of building - two areas (Building #1)

All work was done by workers receiving diplomas in lead abatement and all materials removed were disposed of in a 55 gallon ring top, steel barrel.

Thank you,

Frank Foremny

ASBESTOS DISPOSAL MANIFEST

GENERATOR INFORMATION (must be filled in by generator or operator)

1. **Work Site Name and Address** (MUST BE COMPLETED IN FULL) State regulations require a copy of this manifest be sent to the generator after disposal of the asbestos described below.

Work Site Name	Work Site Owner's Name	Owner's Telephone Number
WATERS EDGE / OLD BANNER CO	WATERS EDGE	845-986-

Work Site Address
Street: 200 EAST MAIN ST City: PT JERVIS State: NY Zip Code:

2. **Operator Name and Mailing Address** (Remover of ~~asbestos~~ LEAD)

Operator's Name	Operator's Telephone Number
ANDRZEJ CIBOROWSKI (LEAD LIC# 07-15-49.3162)	718-871-3658

APT B 6
Street: 126 AVE O City: BROOKLYN State: NY Zip Code:

3. **Waste Disposal Site (WDS) Name, Address, and Physical Site Location**
SOUTHERN ALLEGHENIES LANDFILL, INC.
843 MILLER PICKING ROAD
DAVIDSVILLE, PA 15928

WDS Phone Number (814) 479-2483

4. **Name and Address of EPA Office, local, state or regional (Check the appropriate box)**
- ☐ PADER, 400 Waterfront Drive, Pittsburgh, PA 15222
- ☒ USEPA, 841 Chestnut Street, Philadelphia, PA 19107
- ☐ Other (specify) ____________

5. ~~Type of Asbestos (Friable / nonfriable)~~	6. Description of Material	7. Estimated Total Quantity (tons) (cubic yards)
LEAD PAINT CHIPS	DRUM	1X 20 G

8. **Special handling instructions and 24-hour emergency response telephone number (provided by Generator)**
CHEMTREC 800-424-9300

Individual packages (bags or drums) of friable asbestos must be:
a. Marked with Asbestos, NA2212, RQ
b. Labeled with a Class 9 Label
c. Tagged or labeled with the Generator Name and Location

9. **OPERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

Printed / Typed Name and Title	Signature	Date
Frank Fanini /	[signature]	9-10-01

TRANSPORTER INFORMATION

10. **Friable Asbestos Shipping Information**
a. Shipping Name: Asbestos
b. Hazard Class: 9
c. Additional Description: RQ (Reportable Quantity is 1 pound)
d. Identification Number: NA2212
e. Packing Group: III

11. **TRANSPORTER CERTIFICATION (ACKNOWLEDGEMENT OF RECEIPT OF MATERIALS)**

Asbestos Hauler Name: SOTS LEASING CORP.

Hauler Mailing Address
Street: 1941 Richmond Terrace City: Staten Island State: NY Zip Code: 10310

Printed / Typed Name and Title	Signature	Date
JOHN LANZA	[signature]	9-10-01

DISPOSAL SITE INFORMATION

12. **Problems with Containment or Packaging**
- ☐ No
- ☐ Yes (Explain)

ACW Load Rejected
- ☐ No
- ☐ Yes (See No. 12)

13. **WASTE DISPOSAL SITE OWNER OR OPERATOR:**
Certification of receipt of asbestos materials covered by this manifest except as noted in Item Number 12.

Printed / Typed Name and Title	Signature	Date

White — Landfill   Canary — Sent by Landfill to Generator   Pink — Hauler   Goldenrod — Generator

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for

IVI Environmental, Inc.
105 Corporate Park Dr.
White Plains, NY 10604
Attention: Chuck Mulligan

Report Date: 8/1/2001
Re: Client Project ID: E1066016
York Project No.: 01070548

CT License No. PH-0723 New York License No. 10854 Mass. License No. M-CT106 Rhode Island License No. 93 EPA I.D. No. CT00106

ONE RESEARCH DRIVE STAMFORD, CT 06906 (203) 325-1371 FAX (203) 357-0166

Report Date: 8/1/2001
Client Project ID: E1066016
York Project No.: 01070548

IVI Environmental, Inc.
105 Corporate Park Dr.
White Plains, NY 10604
Attention: Chuck Mulligan

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 07/25/01. The project was identifed as your project "E1066016 ".

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables .

All samples were received in proper condition meeting the NELAC acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All the analyses met the method and laboratory standard operating procedure requirements except as indicated under the Notes section of this report, or as indicated by any data flags, the meaning of which is explained in the attachment to this report, if applicable.

The results of the analyses, which are all reported on an as-received basis unless otherwise noted, are summarized in the following table(s).

Analysis Results

Client Sample ID			**NSW**		**SSW**	
York Sample ID			**01070548-01**		**01070548-02**	
Matrix			**SOIL**		**SOIL**	
Parameter	**Method**	**Units**	**Results**	**MDL**	**Results**	**MDL**
Volatiles-8021 STARS soil	SW846-8260	ug/Kg	---	---	---	---
1,2,4-Trimethylbenzene			Not detected	5.0	Not detected	5.0
1,3,5-Trimethylbenzene			Not detected	5.0	Not detected	5.0
Benzene			Not detected	5.0	Not detected	5.0
Ethylbenzene			Not detected	5.0	Not detected	5.0
Isopropylbenzene			Not detected	5.0	Not detected	5.0
Methyl-tert-butyl ether (MTBE)			Not detected	5.0	Not detected	5.0
Naphthalene			Not detected	5.0	Not detected	5.0
n-Butylbenzene			Not detected	5.0	Not detected	5.0
n-Propylbenzene			Not detected	5.0	Not detected	5.0
o-Xylene			Not detected	10	Not detected	10
p- & m-Xylenes			Not detected	10	Not detected	10
p-Isopropyltoluene			Not detected	5.0	Not detected	5.0
sec-Butylbenzene			Not detected	5.0	Not detected	5.0
tert-Butylbenzene			Not detected	5.0	Not detected	5.0
Toluene			Not detected	5.0	Not detected	5.0
Total Xylenes			Not detected	10	Not detected	10

YORK

Client Sample ID			NSW		SSW	
York Sample ID			01070548-01		01070548-02	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Polynuclear Aromatic Hydroc.(BN)	SW846-8270	ug/kG	---	---	---	---
Acenaphthene			Not detected	330	Not detected	330
Acenaphthylene			Not detected	330	Not detected	330
Anthracene			Not detected	330	Not detected	330
Benzo[a]anthracene			570	330	520	330
Benzo[a]pyrene			580	330	540	330
Benzo[b]fluoranthene			540	330	550	330
Benzo[g,h,i]perylene			480	330	500	330
Benzo[k]fluoranthene			830	330	620	330
Chrysene			540	330	500	330
Dibenz[a,h]anthracene			Not detected	330	Not detected	330
Fluoranthene			990	330	950	330
Fluorene			Not detected	330	Not detected	330
Indeno[1,2,3-cd]pyrene			440	330	470	330
Naphthalene			Not detected	330	Not detected	330
Phenanthrene			440	330	410	330
Pyrene			960	330	920	330

Client Sample ID			ESW		WSW	
York Sample ID			01070548-03		01070548-04	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Volatiles-8021 STARS soil	SW846-8260	ug/Kg	---	---	---	---
1,2,4-Trimethylbenzene			Not detected	5.0	Not detected	5.0
1,3,5-Trimethylbenzene			6	5.0	Not detected	5.0
Benzene			Not detected	5.0	Not detected	5.0
Ethylbenzene			Not detected	5.0	Not detected	5.0
Isopropylbenzene			Not detected	5.0	Not detected	5.0
Methyl-tert-butyl ether (MTBE)			Not detected	5.0	Not detected	5.0
Naphthalene			Not detected	5.0	Not detected	5.0
n-Butylbenzene			Not detected	5.0	Not detected	5.0
n-Propylbenzene			Not detected	5.0	Not detected	5.0
o-Xylene			Not detected	10	Not detected	10
p- & m-Xylenes			Not detected	10	Not detected	10
p-Isopropyltoluene			Not detected	5.0	Not detected	5.0
sec-Butylbenzene			Not detected	5.0	Not detected	5.0
tert-Butylbenzene			Not detected	5.0	Not detected	5.0
Toluene			5	5.0	Not detected	5.0
Total Xylenes			Not detected	10	Not detected	10
Polynuclear Aromatic Hydroc.(BN)	SW846-8270	ug/kG	---	---	---	---
Acenaphthene			Not detected	330	Not detected	330
Acenaphthylene			Not detected	330	Not detected	330
Anthracene			Not detected	330	440	330
Benzo[a]anthracene			540	330	1500	330
Benzo[a]pyrene			540	330	1200	330
Benzo[b]fluoranthene			530	330	1200	330
Benzo[g,h,i]perylene			420	330	730	330
Benzo[k]fluoranthene			720	330	1600	330
Chrysene			530	330	1300	330

YORK

Client Sample ID			ESW		WSW	
York Sample ID			01070548-03		01070548-04	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Dibenz[a,h]anthracene			Not detected	330	Not detected	330
Fluoranthene			950	330	2900	330
Fluorene			Not detected	330	Not detected	330
Indeno[1,2,3-cd]pyrene			400	330	740	330
Naphthalene			Not detected	330	Not detected	330
Phenanthrene			450	330	2100	330
Pyrene			990	330	2600	330

Client Sample ID			Bottom		Comp 1	
York Sample ID			01070548-05		01070548-06	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Volatiles-8021 STARS soil	SW846-8260	ug/Kg	---	---	---	---
1,2,4-Trimethylbenzene			Not detected	5.0	Not detected	5.0
1,3,5-Trimethylbenzene			Not detected	5.0	Not detected	5.0
Benzene			Not detected	5.0	Not detected	5.0
Ethylbenzene			Not detected	5.0	Not detected	5.0
Isopropylbenzene			Not detected	5.0	Not detected	5.0
Methyl-tert-butyl ether (MTBE)			Not detected	5.0	Not detected	5.0
Naphthalene			Not detected	5.0	Not detected	5.0
n-Butylbenzene			Not detected	5.0	Not detected	5.0
n-Propylbenzene			Not detected	5.0	Not detected	5.0
o-Xylene			Not detected	10	Not detected	10
p- & m-Xylenes			Not detected	10	Not detected	10
p-Isopropyltoluene			Not detected	5.0	Not detected	5.0
sec-Butylbenzene			Not detected	5.0	Not detected	5.0
tert-Butylbenzene			Not detected	5.0	Not detected	5.0
Toluene			Not detected	5.0	Not detected	5.0
Total Xylenes			Not detected	10	Not detected	10
Polynuclear Aromatic Hydroc.(BN)	SW846-8270	ug/kG	---	---	---	---
Acenaphthene			Not detected	330	Not detected	330
Acenaphthylene			Not detected	330	Not detected	330
Anthracene			Not detected	330	Not detected	330
Benzo[a]anthracene			500	330	770	330
Benzo[a]pyrene			480	330	710	330
Benzo[b]fluoranthene			430	330	580	330
Benzo[g,h,i]perylene			340	330	420	330
Benzo[k]fluoranthene			700	330	1000	330
Chrysene			470	330	720	330
Dibenz[a,h]anthracene			Not detected	330	Not detected	330
Fluoranthene			910	330	1500	330
Fluorene			Not detected	330	Not detected	330
Indeno[1,2,3-cd]pyrene			Not detected	330	400	330
Naphthalene			Not detected	330	Not detected	330
Phenanthrene			430	330	1100	330
Pyrene			870	330	1500	330

YORK

Client Sample ID			Comp 2	
York Sample ID			01070548-07	
Matrix			SOIL	
Parameter	Method	Units	Results	MDL
Volatiles-8021 STARS soil	SW846-8260	ug/Kg	---	---
1,2,4-Trimethylbenzene			Not detected	5.0
1,3,5-Trimethylbenzene			Not detected	5.0
Benzene			Not detected	5.0
Ethylbenzene			Not detected	5.0
Isopropylbenzene			Not detected	5.0
Methyl-tert-butyl ether (MTBE)			Not detected	5.0
Naphthalene			Not detected	5.0
n-Butylbenzene			Not detected	5.0
n-Propylbenzene			Not detected	5.0
o-Xylene			Not detected	10
p- & m-Xylenes			Not detected	10
p-Isopropyltoluene			Not detected	5.0
sec-Butylbenzene			Not detected	5.0
tert-Butylbenzene			Not detected	5.0
Toluene			Not detected	5.0
Total Xylenes			Not detected	10
Polynuclear Aromatic Hydroc.(BN)	SW846-8270	ug/kG	---	---
Acenaphthene			Not detected	330
Acenaphthylene			Not detected	330
Anthracene			Not detected	330
Benzo[a]anthracene			Not detected	330
Benzo[a]pyrene			Not detected	330
Benzo[b]fluoranthene			330	330
Benzo[g,h,i]perylene			Not detected	330
Benzo[k]fluoranthene			340	330
Chrysene			Not detected	330
Dibenz[a,h]anthracene			Not detected	330
Fluoranthene			400	330
Fluorene			Not detected	330
Indeno[1,2,3-cd]pyrene			Not detected	330
Naphthalene			Not detected	330
Phenanthrene			Not detected	330
Pyrene			370	330

Units Key: For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm ; ug/kg = ppb

YORK

Notes for York Project No. 01070548

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation.
6. All analyses conducted met method or Laboratory SOP requirements.
7. It is noted that no analyses reported herein were subcontracted to another laboratory.

Approved By: _____ **Date:** 8/1/2001
Robert Q. Bradley
Managing Director

YORK

YORK

Analytical Laboratories, Inc.

QA/QC Summary Report

Associated Samples: AB18947

01-Aug-01

Client: IVI Environmental, Inc.

Analysis Name: ***Base Neutral fraction QC***
Unit of Measure: ppb

Batch Name: $BN1-6660

QA Sample #: AB18947
York's Sample ID: 01070548-01

Parameter	LCS(%)	Unspiked Result	Blank	Matrix Spike Amount	Matrix Spike Result	Matrix Spike Recovery, %	Spike Duplicate Duplicate	Spike Duplicate Recovery,%	Precision, RPD
Pyrene	72	Not detected	Not detected	100	72	**72.000**	72	**72.000**	**0.000**
N-Nitroso-di-n-propyl	59	Not detected	Not detected	100	60	**60.000**	58	**58.000**	**3.390**
Acenapthene	66	Not detected	Not detected	100	66	**66.000**	67	**67.000**	**1.504**
2,4-Dinitrotoluene	66	Not detected	Not detected	100	66	**66.000**	66	**66.000**	**0.000**
1,4-Dichlorobenzene	51	Not detected	Not detected	100	51	**51.000**	51	**51.000**	**0.000**
1,2,4-Trichlorobenze	62	Not detected	Not detected	100	62	**62.000**	62	**62.000**	**0.000**

Associated Samples: AB18947

01-Aug-01

Client: IVI Environmental, Inc.

Analysis Name: ***VOA QC***
Unit of Measure: ppb

Batch Name: $VOA1-6661

QA Sample #: AB18947
York's Sample ID: 01070548-01

Parameter	LCS(%)	Unspiked Result	Blank	Matrix Spike Amount	Matrix Spike Result	Matrix Spike Recovery, %	Spike Duplicate Duplicate	Spike Duplicate Recovery,%	Precision, RPD
Trichloroethylene	76	Not detected	Not detected	50	42	**84.0**	40	**80.0**	**4.9**
Toluene	104	Not detected	Not detected	50	50	**100.0**	55	**110.0**	**9.5**
Chlorobenzene	112	Not detected	Not detected	50	55	**110.0**	58	**116.0**	**5.3**
Benzene	100	Not detected	Not detected	50	55	**110.0**	59	**118.0**	**7.0**
1,1-Dichloroethylene	84	Not detected	Not detected	50	41	**82.0**	40	**80.0**	**2.5**

YORK
ANALYTICAL LABORATORIES, INC.
ONE RESEARCH DRIVE
STAMFORD, CT 06906
(203) 325-1371 FAX (203) 357-0166

0107054S

Page 1 of 1

Field Chain-of-Custody Record

Company Name	Report To:	Invoice To:	Project ID/No.	Samples Collected By (Signature) / Name (Printed)
IVI	Chuck	Chuck	E1066016 Waters Edge TANK removal	C. Mulligan

Sample No.	Location/ID	Date Sampled	Sample Matrix: Water	Soil	Air	OTHER	ANALYSES REQUESTED	Container Description(s)
NSW	North sidewall	7/16		X			STARS 8021 8270	
SSW	South Sidewall	7/16		X			"	
ESW	East Side Wall	7/16		X			"	
WSW	West side wall	7/16		X			"	
Bottom	Bottom of Excavn	7/16		X			"	
Comp 1	Southern Stockpile	7/16		X			"	
Comp 2	Northern Stockpile	7/16		X			"	

Chain-of-Custody Record

Bottles Relinquished from Lab by	Date/Time	Sample Relinquished by: C. Mulligan	Date/Time: 7/25/01
Bottles Received in Field by	Date/Time	Sample Relinquished by	Date/Time
Sample Received by: Wayne	Date/Time: 7/25/01 1000		
Sample Received in LAB by: J. [illegible]	Date/Time: 7-25-01/1400		

Comments/Special Instructions: Cooler Temp = 4.3°C

Turn-Around Time

___ Standard X RUSH(define) 5 Day