Garlock Sealing Technologies Site #3

WAYNE COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: C859028

Prepared for:
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Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date
0	9/19/11	1st Revision Prepared in adavance of completing all remedial tasks.	
1	11/16/11	2nd revision completed after completion of remedial tasks.	
2	12/7/11	3rd revision containing minor modifications to select text and figures.	

JULY 2011

I, Damian J. Vanetti, certify that I am currently a NYS registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Date: December 8, 2011

NYS Professional Engineer # 068011

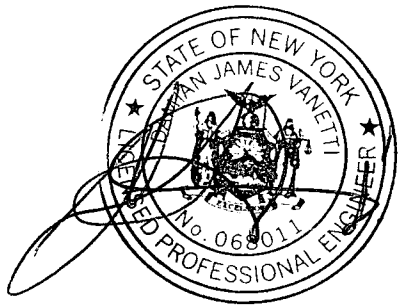


TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at the Garlock Sealing Technologies Site No.3 (hereinafter referred to as the "Site") under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index# B8-0690-05-04B, Site No. C859028, which was executed on December 16, 2008.

The site is located in the Town of Palmyra, County of Wayne, New York (Figure 1) and is identified as a portion of tax map no. 064111-00-5. The site is an approximately 28 acre area bounded by Red Creek to the north, Mud Creek to the south, a New York State DOT right-of-way to the east, and Garlock owned property to the west (see Figure 2). The boundaries of the site are more fully described in Appendix A – Metes and Bounds.

1.1.1 General

Garlock Sealing Technologies entered into a BCA with the NYSDEC to remediate a 28 acre property located in the Town of Palmyra, Wayne County, New York. This BCA required the Remedial Party, Garlock Sealing Technologies, to investigate and remediate contaminated media at the site. A figure showing the site location is provided in Figure 1. Figure 2 is a depiction of the boundaries of this site. The boundaries of the site are more fully described in the metes and bounds site description (Appendix A) that is part of the Environmental Easement.

After completion of the remedial work described in the Remedial Work Plan, some contamination was left in the subsurface at this site, which is hereafter referred to as 'remaining contamination." This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be

viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by S&W Redevelopment of North America, LLC (SWRNA), on behalf of Garlock Sealing Technologies (Garlock), in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

1.1.2 Purpose

The site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Wayne County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site (Appendix A). The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial treatment systems.

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the environmental easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Index # B8-0670-05-04B; Site #C859028) for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

Garlock Sealing Technologies owns and operates a manufacturing facility located in the Town of Palmyra, NY where they have been making and distributing gaskets and seals for over one hundred years. As part of a modernization process Garlock entered the New York State Brownfield Cleanup Program (BCP) to address historic site contamination.

The overall site being addressed under the BCP is approximately 45 acres. Two COC's have been issued previously for two separate BCP sites at the Garlock facility: Site No. 1 (Klozures Site) comprising approximately 7 acres; and Site No. 2 (Gylon Site) comprising approximately 10 acres. Site No. 3 is addressed in this SMP and consists of approximately 28 acres. Figure 2 depicts the location of each if the three BCP sites.

Over the course of it's long history of manufacturing at the site a number of activities have caused contamination issues requiring action under the BCP. A comprehensive remedial investigation was conducted for the site and based on that work seven Areas of Concern (AOCs) were identified. Volatile organic compound impacts were identified in seven discreet areas designated as AOCs 1,2,3,4,5, the "Carbon Tet"

area, and the "tank farm" AOC. Chlorinated organics and other volatile organic compounds were impacting groundwater in all seven AOCs.

Remedial actions at the seven AOCs include:

- In-Situ chemical oxidation (ISCO) for AOCs 1 and 2;
- Source removal for AOC 3, AOC-4, and the toluene area; and
- . In-situ chemical reduction for AOC-5 and the Carbon Tet area.

Based on the presence of volatile organics in groundwater sub-slab depressurization systems (SSDS) have been installed in Site No. 3 buildings that are occupied (Buildings 8, 14, 15, 17/17A, 20, 25, and 31). The purpose of the SSDS is to minimize the potential for migration of volatile organic compound vapors from the sub-surface into occupied buildings. Those buildings are being addressed under this SMP. It should be noted that a number of buildings within the BCP Site No. 2 (Buildings 1D, 2, 4/4A/4C6/6A, 5A/5B/5C/5D, 11A-B, and 11C) were retrofitted with SSDSs concurrent with Site No. 3 SSDS installation. The buildings that are part of Site No. 2 will be addressed as a revision to the existing Site No. 2 SMP.

Limited polychlorinated biphenyls (PCB) contamination was discovered in the pond that borders the north side of the facility. Based on potential ecological impact, a discrete area of sediments was removed from the pond and the sediments replaced with clean material (Figure 14). Based on the results of sediment sample analytical results sediments were re-used as on-site fill since PCB concentrations were below Industrial Soil Cleanup Objectives.

As defined later in this document there are deed restrictions and engineering controls that apply to this site that will be maintained.

1.2.2 Site History

Site No. 3 is a portion of a parcel of land that has been under the ownership and control of Garlock Sealing Technologies for over one hundred years. During that time the land owned by Garlock has increased to about 140 acres, approximately 45 acres of which are in the BCP. Site No. 3 is one of three BCP sites.

Throughout it's history Garlock has manufactured gaskets and seals of many varieties and sizes for use in various industries. The history of use of the property and the recognized environmental condition (RECs) are discussed in a Phase I Environmental Site Assessment (Ecology and Environment, September 2003). The RECs identified in the Phase I were further discussed and characterized during investigations conducted by Conestoga Rovers. A summary of previous environmental investigations and the Remedial Investigation conducted under the Brownfield Cleanup Agreement (BCA) is included in the Remedial Investigation Report (S&W Redevelopment of NA, LLC, May 2008). The RECs identified in the Phase I and characterized during the Remedial Investigation were the focus of the remedial activities completed at the site.

1.2.3 Geologic Conditions

The Garlock site is at or near a transition zone between lacustrine sediments (post glacial lake bottom silts and clays) and glacial till deposits overlying sedimentary limestone, shale, sandstone and dolostone at depth.

On the site proper much of the top several feet of material is comprised of fill material overlying lacustrine silts, clays and sand lenses which in turn overlies lodgment till at depth. A typical cross section of the site (north-south) is attached (Figure 3). Fill thickness are from a few to fifteen feet. Lacustrine deposits have thicknesses of five to twenty feet. The thickness of glacial till over bedrock is not known with certainty.

The site is somewhat constrained hydraulically by Mud Creek and the Erie Canal to the south and Red Creek to the north. Groundwater flow on the site moves primarily northward toward Red Creek with the exception of groundwater in the southern section of the site which migrates to the south toward Mud Creek. A general depiction of groundwater flow is shown on Figure 4.

Within the site the direction of groundwater flow is affected by heterogeneities in the subsurface. These heterogeneities create modifications in the direction of

groundwater flow causing it to move at angles to the general south to north flow direction.

The depth to groundwater varies across the site from a couple feet below grade to several feet below grade. Based on an extensive investigation it has been determined that impacted groundwater occurs in shallow groundwater. Rates of groundwater flow in the fill/lacustrine/till sequence are quite low. These low groundwater seepage velocities have limited both the lateral and downgradient extent of contaminant plumes.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the Remedial Investigation Report (RIR) and four addenda to the RIR as indicated below:

Remedial Investigation Report. May 2008. S&W Redevelopment of NA, LLC,

RIR Addendum 1. *Human Health and Ecological Risk From Concentration of PCBs In Fish Adjacent To The Garlock Sealing Technology, Gylon Brownfield Site*. June 2008. S&W Redevelopment of North America, LLC.

RIR Addendum 2. *Creek Bank Sampling Summary*. Letter. August 6, 2008. S&W Redevlopment of North America, LLC.

RIR Addendum 3. *Supplemental Sediment Investigation Results*. Letter. August 28, 2008. S&W Redevelopment of North America, LLC.

RIR Addendum 4. *Indoor Air Sampling Summary*. Letter. September 9, 2008. S&W Redevelopment of North America, LLC.

Generally, the results of the Remedial Investigation (RI) as well as subsequent remedial design based investigations defined the locations where remedial actions were required . As a broad overview the various media on-site can be described in the context of the nature and degree of impact and required remedies.

Soil

Surficial soils across the site, much of which are fill, generally meet industrial SCOs based on sample results (Figure 5). The ground surface is covered by one foot of soil that is acceptable for the site's future industrial use, in addition to building slabs and pavement, all of which constitute site engineering control (Figure 6) to preclude direct human contact with subsurface soils. Due to the limited subsurface (below a depth of one foot) soil data available, it will be assumed that subsurface soils do not meet Industrial SCOs, and any disturbance of subsurface soils will be conducted in accordance with the Excavation Work Plan in Appendix B.

Groundwater

Based on the Remedial Investigation and subsequent AOC specific investigations it was determined that groundwater impact existed in seven locations across the site. The primary contaminant of concern at the site is trichloroethene and its degradation by-products, dichloroethene and vinyl chloride.

Of the seven groundwater Areas of Concern, three are impacted primarily with TCE, DCE, and VC (AOCs 1, 2, and 5). One of them (former tank farm area) is impacted by toluene. Two of the AOCs (AOCs 3&4) contain TCE, DCE and VC along with toluene. One AOC was impacted by Carbon Tetrachloride. Prior to remediation concentrations of TCE and DCE in groundwater were as high as 30,000 ppb. The highest concentrations appear to have been very localized due to the low seepage velocities. As part of the remedial approach for each AOC, monitoring wells that were installed during the RI and remedial activities will be maintained and monitored to demonstrate the on-going effectiveness of the remedial actions.

Soil Vapor

Garlock has historically used solvents containing volatile organic compounds (VOCs) throughout the facility. To address the potential for migration of significant

concentrations of volatile organic vapors into occupied buildings, Garlock installed sub slab depressurization systems into occupied site buildings as a proactive measure based on the supposition that VOCs are likely to be present below building slabs. Details of the soil vapor building mitigation systems are discussed more fully in this report.

Surface Water

Surface water samples were taken from Red Creek and Mud Creek during the RI. Sample analyses did not identify site related contaminants in samples.

Sediments

Sediment samples were taken from Red Creek and Mud Creek adjacent to the to the three BCP sites. An impoundment of Red Creek exists along the northwestern border of the Garlock complex. Based on sample analytical results it was determined that sediments in a limited area of the impoundment were impacted by polychlorinated biphenyls (PCBs). The highest concentration measured in sediments within this limited area was 2.3 ppm PCBs. It was determined based on a Fish and Wildlife Impact Analysis that the PCBs in sediment were a potential source of ecological impact if not mitigated.

1.4 SUMMARY OF REMEDIAL ACTIONS

The site was remediated in accordance with the following NYSDEC-approved six Remedial Design Documents (RDDs) and two Interim Remedial Measure Workplans.

- AOC-1 RDD (SWRNA, November 2008)
- AOC-2 RDD (SWRNA, March 2011)
- AOC-5 RDD (SWRNA, July 2011)
- Carbon Tet RDD (SWRNA, August 2011)
- Sediment RDD (SWRNA, July 2011)
- Subslab Depressurization System Design Document (SWRNA, July 2011)
- Toluene Tank Farm Soil Excavation Workplan (SWRNA, October 2009)
- AOC-3 and 4 Interim Remedial Measures Workplan (SWRNA, September 2008)

A summary of Remedial Actions taken is as follows:

- AOC-1: This area of concern was a zone of groundwater impacted primarily with TCE, DCE and Vinyl Chloride. The target treatment zone was about 1000 ft2 (Figure 7). In situ chemical oxidation (ISCO) was the used to treat contaminated groundwater via injection of potassium permanganate solution using 17 injection wells. While the primary focus of this injection was on TCE, DCE and VC some of the ISCO approach targeted a zone of residual toluene impact. Approximately 29,000 gallons of 3% potassium permanganate solution was injected. Post ISCO monitoring indicates that this remedy is working as designed.
- AOC-2: This area of the site is close to the banks of Red Creek and is an area of TCE, DCE, and VC impact of about 7,565 ft^2 (Figure 8). A total of 32,000 gallons of 8-10% solution of sodium permanganate was injected into 18 injection wells. The results of the injection are being monitored with five downgradient observation wells.
- AOCs 3&4: Two areas of contamination were identified within eastern portions of the site during installation of the Remedial monitoring wells (Figure 9 and Figure 10). Groundwater samples from well OW 3-2 in AOC 3 and well OW 4-3 in AOC-4 identified concentrations of VOCs suggesting the likely presence of non-aqueous phase liquid (NAPL). Based on these concentrations, a test pit investigation was implemented with test pit excavations centered on the respective wells. During test pitting contaminated soil, debris, and containers that appeared to contain NAPL were observed. Based on these observations, a source removal IRM was completed.

  A total of approximately 355 cubic yards (CYs) of soil from AOC-3 and 70 CYs of soil from AOC-4 was excavated. This source removal is expected to result in a significant reduction in the on-going contamination of groundwater in these AOCs. Monitoring wells have been installed to allow the measurement of the effects of the AOC 3&4 source removal groundwater quality.
- AOC-5: Several phases of investigation were completed in AOC-5 to delineate solvent contamination consisting of a discrete area of TCE, DCE

and VC contamination. The highest concentrations of TCE and DCE were identified underneath Building 15 (Figure 11). The area of contamination was treated using an in-situ chemical reduction (ISCR) approach (a combination of zero valent iron and carbon). The remedial approach included treating the area of highest groundwater concentration under Building 15, and injecting a linear treatment array north of Building 15 to serve as a permeable reactive barrier. Injections were completed in August 2011. Monitoring of the performance of the ISCR remedy is on-going.

- Carbon Tetrachloride: Investigation activities related to the Carbon Tetrachloride ("carbon tet") area began in the fall of 2008 when well MW-60 was installed and carbon tetrachloride, a VOC not associated with a known Garlock process, was detected. Based on several phases of remedial delineation the extent of Carbon Tet groundwater impact, just west of the new Gylon Building, was defined (Figure 12). The impacted groundwater lies within an approximate 30 x 80 foot area with a 15-foot saturated thickness. A total of 14,000 lbs of EHC was injected through a total of 28 injection points. Post injection monitoring to measure the reduction in Carbon Tet levels is on-going.
- Toluene Tank Farm Soil Removal (Figure 13): In fall of 2009 Toluene Impacted Soil was removed from an area immediately upgradient of AOC-1. This source removal is anticipated to mitigate Toluene groundwater impacts. Ongoing groundwater monitoring of this area continues.
- Sediment Removal: A series of investigations reported in the Remedial Investigation Report and its addenda, revealed the presence of polychlorinated biphenyls in sediment within the impoundment of Red Creek. A Remedial Design Document for removal of approximately 1,333 cubic yards of sediment and replacement with clean material (Figure 14) was approved in August 2011, and implemented in October, and November of 2011. The sediment removal took place within a 100 foot radius from the location of sediment sample station RC-SED-22 as agreed by NYSDEC and Garlock. The removed sediment was dewatered on-site and after testing this material was beneficially reused as onsite fill since it was demonstrated to meet Industrial Soil Cleanup objectives. The

sediment was placed in the area of the former ballfield located on the eastern portion of the site.

- Subslab Depressurization Systems: As a proactive measure Garlock agreed to an approach to mitigate the potential for volatile organics to migrate into occupied buildings. All remaining occupied Site No.3 buildings have been retrofitted with subslab depressurization systems, except Building 11A-A and 24. Building 11A-A is occupied by machine pits which prevent installation of suction points, and solvents are actively used in Building 24 (Figure 2). The following is a list of all of the buildings within which SSDS systems have been installed and are operating:

  Buildings with operating SSD Systems

  8, 14, 15, 17/17A, 20, 25, and 31.

  Testing of the operating SSDS systems indicates that all systems are operating properly.

1.4.1 Removal of Contaminated Materials from the Site

The Garlock site is industrial and as such, Industrial Soil cleanup Objectives apply to soil remaining at the site. (Appendix K). Other SCOs may apply to the site cleanup process, most notably the groundwater cleanup objectives, however, areas of significant groundwater contamination are being addressed via remedial actions for each area.

Soils from discrete areas of the site have been removed and disposed of off-site at a permitted disposal facility. Figure 15 shows the location from which the contaminated soils were removed. These soils are from the following locations:

1. Soil Pile SP-4. A soil pile staged in the former ballfield area that had zinc concentrations exceeding industrial SCOs. This pile had a volume of approximately 200 yd^3 and was treated at a permitted facility.
2. Toluene Tank Farm. Toluene impacted soils were excavated from the former tank farm area. Approximately 195 tons of toluene impacted soil were removed and

disposed of off-site at a permitted treatment facility, following receipt of a NYSDEC contained-in determination. Monitoring data is provided in Table 7.

3. AOC-3 & 4: Two hot spots were identified in former fill areas in the eastern portion of the site. , Approximately 350 yd^3 was removed from AOC-3 and approximately 70 yd^3 were removed from AOC-4. A total for both AOCs of approximately 224 tons of soil was treated and disposed of off-site at permitted hazardous waste management facilities.

The AOC-3 and -4 soil excavation IRM is documented in letter report Interim *Remedial Measures (IRM): AOC-3 and -4 Test Pit Source Removal* (SWRNA, October 17, 2011), which was submitted separately and is attached to the Final Engineering Report for Site No. 3. Monitoring data is provided in Table 4..

1.4.2 Site-Related Treatment

As noted previously a number of groundwater treatment remedial actions were completed across the site including:

1. The AOC-1 ISCO
2. The AOC-2 ISCO
3. The AOC-5 ISCR
4. The Carbon Tetrachloride ISCR system.

These groundwater remedial actions included the in-situ treatment of groundwater by injecting groundwater amendments to destroy the contaminants of concern. The destruction of groundwater contamination will continue with time and will be monitored as part of the site wide monitoring program.

In addition to groundwater treatment, occupied buildings remaining on Site No. 3 have had subslab depressurization systems that are installed and operating, except Building 24 in which solvents are openly dispensed. SSDS systems for Site No. 3 include Building 8, 14, 15, 17/17A, 20, 25, and 31. All of these systems are subject to this SMP.

Specific treatment approaches are discussed below.

Groundwater Treatment

AOC-1: The treatment zone is depicted on Figure 7. The target treatment zone was about 1000 ft2. Treatment of the TCE, DCE, and VC contamination of groundwater was achieved via injection of 29,000 gallons of 3% potassium permanganate solution using seventeen injection wells. Injection was completed December 2008. On-going monitoring (Table 2) has been conducted on a quarterly basis since ISCO injection was completed.

AOC-2: This portion of the site was found to be contaminated with TCE, DCE, and VC. The area of impact was determined to be about 7565 ft^2 (Figure 8). A total of 32,000 gallons of 8-10% solution of sodium permanganate was injected into 18 injection wells. Injection was competed in early August, 2011. Monitoring (Table 3) of system performance is on-going.

AOC-5: This portion of the site was also found to be impacted with TCE, DCE, and VC (Figure 11). For a number of technical and practical reasons it was determined that In-Situ Chemical Reduction (ISCR) should be used in this location using EHC: a mixture of particulate iron and cellulose derived carbon. About 20,250 lbs of EHC were injected as slurry into 58 closely spaced injection points, under pressure. Injection was completed in August 2011. Monitoring of injection effectiveness is ongoing (Table 5).

Carbon Tet: A limited area north of former building 16-2 and south of AOC-1 was found to have groundwater impacted with Carbon Tetrachloride (Carbon Tet). The impacted area had an extent of about 30 x 80 feet (Figure 12). ISCR in the form of EHC was used to remediate the carbon tet impacted groundwater. A total of 14,400 pounds of EHC was injected as slurry in 28 injection points. Injection was completed in August 2011. Post injection monitoring (Table 6) in September and October 2011 has been completed to confirm the effectiveness of this remedy.

Soil Vapor Mitigation Systems

Subslab depressurization systems were installed in buildings 8, 14, 15, 17/17A, 20, 25, and 31 on Site No. 3 (Figures 16 through 22). All of the SSDS installations have been shown to be effective based on pressure field extension test results. An SSDS was not required by NYSDEC and NYSDOH in Building 24 because solvents are actively used, and building construction (slab-on-grade construction, 30 foot ceilings, and poor windows) likely reduce soil vapor intrusion risks.

1.4.3 Remaining Contamination

The Garlock site is large and has experienced over one hundred years of industrial activity. A number of remedial measures have been taken across the site to address issues of site contamination. Soil testing in grassy areas across the site indicate that the upper foot of soil meets Industrial Soil Cleanup Objectives (Appendix L). These grassy areas combined with building slabs, and asphalt form a continuous soil cover system which constitutes a site engineering control. The cover system will be maintained as an engineering control in accordance with this SMP. If in the future the cover system is disturbed, one of the following three approaches will be implemented to re-establish the soil cover: 1) soil sampling will be completed to demonstrate that the newly exposed upper foot of soil meets Industrial SCOs ; 2) the building or paving will be replaced with an impervious surface such as concrete or asphalt; or 3) a demarcation layer and one foot of soil will be placed that meets Commercial SCOs.

Figure 5 shows surface soil data and corresponding sample locations. These results indicate that the exposed surface soils on Garlock Site No. 3 are acceptable for the planned future industrial use of the site.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated groundwater, soil, and soil vapor potentially exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site.

2.1.2 Purpose

The purpose of the Engineering and Institutional Control Plan is to set forward those mechanisms and procedures necessary to protect human health and the environment as they might be impacted by contamination that remains in soil, soil vapor and groundwater.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

2.2.1.1 Soil Cover

Exposure to remaining contamination in soil/fill at the site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 12 inches of clean soil, asphalt pavement, concrete-covered sidewalks, and concrete building slabs. The Excavation Work Plan that appears in Appendix B outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection and maintenance of this cover are provided in the Monitoring Plan included in Section 3 of this SMP. Since limited information is available relating to remaining contamination below the cover system, the Excavation Plan (Appendix B) will be implemented whenever the cover system is penetrated.

Sample laboratory data from soil covered areas of the site indicate that exposed surface soils (i.e. upper 12-inches of soil) on Site No.3 generally meet Industrial Soil Cleanup Objectives. Portions of the site that are paved or covered with building slabs overly non-exposed soils that have not been tested; therefore, the exposed surface soil, building slabs, and paved areas constitute a soil cover and will serve as engineering controls to prevent direct human contact with soils that could be found to exceed Industrial SCOs.

The Excavation Workplan included in Appendix B discusses the approach to be taken when building foundations and paved areas are breached or removed, exposing soil that may exceed SCOs.

2.2.1.2 Sub-Slab Depressurization System (SSD System)

The sub-slab depressurization systems (SSD systems) were installed in buildings, 8, 14, 15, 17/ 17A, 20, 25, and 31 located on Site No.3 in accordance with the approved SSDS Remedial Design Document (August 2011).

The SSDS systems were installed using a series of vertical suction points into the granular material underlying building slabs. Using a system of manifolds and blowers, a vacuum is created that draws volatile organic vapors from beneath each building slab and prevents any subslab volatile organics from migrating into occupied, closed building spaces. The SSDS system, once operating successfully, can be maintained by observing and adjusting, if necessary, the measured negative pressure at each measuring point.

Procedures for operating and maintaining the SSDS are documented in the Operation and Maintenance Plan (Section 4 of this SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the site, occurs.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives

identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 Cover Systems

Surface soils, building slabs and asphalt being maintained as a cover system are included in this document as a conservative measure largely to preclude future exposure to soils that could be but are not known to exceed Industrial SCOs. The cover system will be inspected periodically to verify that they are continuing to function as engineering controls.

2.2.2.2 Sub-slab Depressurization System (SSDS)

The active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD system is no longer required, a proposal to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH.

2.2.2.3 Natural Attenuation for Toluene and AOC-3 and 4

Groundwater monitoring activities will continue to measure the reduction of VOC concentrations in groundwater as a result of source removal, until residual groundwater concentrations are found to be consistently below NYSDEC standards, or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NSYDEC. If necessary a monitored natural attenuation approach will be implemented to determine if natural degradation processes are occurring. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the Decision Document to (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to Industrial uses only.

Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.
- Groundwater monitoring and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for Industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;

- The potential for vapor intrusion must be evaluated for any buildings developed on Site No. 3 (Figure 2), and any potential impacts that are identified must be monitored or mitigated;
- Vegetable gardens and farming on site soils on the property are prohibited;
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

The site has been remediated for restricted industrial use. Any future intrusive work that will penetrate any engineering controls, or encounter or disturb the remaining contamination, including any modifications or repairs to paved areas or building foundations will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix B to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A sample CAMP is attached as Appendix C. A sample HASP is attached as Appendix D to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any enclosed structures located over areas within this site, an SVI evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and a sub-slab depressurization system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York". Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of groundwater during monitoring events;
- If site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Brownfield Cleanup Agreement (BCA), 6NYCRR Part 375, and/or Environmental Conservation Law.

- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundations or structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Brownfield Cleanup Agreement (BCA) and all approved work plans and reports, including this SMP
- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to David

Stoner. These emergency contact lists must be maintained in an easily accessible location at the site.

Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Other Contact Numbers

Garlock Sealing Technologies Karin Klock	(315) 597-3065
S&W Redevelopment of North America, LLC David W. Stoner	(315) 422-4949
Radon Home Services (Soil Vapor Mitigation Systems)	(315) 478-1743

* Note: Contact numbers subject to change and should be updated as necessary

2.5.3 Response Procedures

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan. The list will also be posted prominently at the site and made readily available to all personnel at all times.

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 1666 Division Street, Palmyra, New York 14522

Nearest Hospital Name: Newark Wayne Community Hospital

Hospital Location: 1200 Driving Park Avenue, Newark, New York 14513

Hospital Telephone: (315) 332-2022

Directions to the Hospital (a map is provided in Appendix D):

1. Head **south** on **Division St** toward **Quaker Rd**	0.2 mi
2. Slight left onto **Canal St**	23 feet
3. Slight right onto **Market St**	0.1 mi
4. Take the 1st left onto **NY-31 E/E Main St** Continue to follow NY-31 E	8.5 mi
5. Turn left onto **N Main St**	0.7 mi
6. Turn left onto **Stuerwald Ave**	0.2 mi
7. Take the 1st right onto **Driving Park Ave** Destination will be on the left	0.2 mi

Total Distance: 10 miles

TOTAL ESTIMATED TIME: 16 MINS

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater),
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards;
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Quarterly monitoring of the performance of the remedy and overall reduction in contamination on-site will be conducted for the first year. The frequency thereafter will

be determined by NYSDEC. Monitoring programs are summarized in Table 8 and outlined in detail in Sections 3.2 and 3.3 below.

Trends in contaminant levels in groundwater in the affected areas, will be evaluated to determine if the remedy continues to be effective in achieving remedial goals.

Table 8 Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
AOC-1 Groundwater	Quarterly for first year	Groundwater: Wells OW-1, OW-2, OW-3, OW-4, MW 26, MW 27, OW1-1, OW1-2, OW1-3, and OW1-4	TCL VOCs, TOC, COD, and field parameters (Eh, pH, spec cond, temp, turbidity, D.O.)
AOC-2 Groundwater	Quarterly for first year	Groundwater wells: OW-1, OW-3, OW-5, MW-28, and MW-41	TCL VOCs, COD, TOC field parameters
Toluene Area	Quarterly for first year	Groundwater wells: IW-1, IW-2	TCL VOCs, field parameters
AOC-3	Quarterly for first year	Groundwater wells: Culvert wells, OW3-1	TCL VOCs, field parameters
AOC-4	Quarterly for first year	Groundwater wells: Culvert well, MW-40A	TCL VOCs, field parameters
AOC-5	Quarterly for first year	MW-63, MW-0610-1, replacement for TW111-02	TCL VOCs, TOC, DOC, BOD, hardness, alkalinity, iron, magnesium, manganese, chloride, sulfate, nitrate, ethane, ethane, methane, and field parameters
Carbon Tet impact	Quarterly for first year	MW0610-4, MW0610-5 and new well MW0610-6	TCL VOCs, TOC, DOC, BOD, hardness, alkalinity, iron, magnesium, manganese, chloride, sulfate, nitrate, ethane, ethane, methane, and field parameters

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

3.2 SOIL COVER SYSTEM MONITORING

Soil cover systems as described in the Final Engineering Report (FER) and included in the Environmental Easement will be inspected annually to verify that such cover systems are being maintained properly. Based on periodic inspections any corrective measures necessary will be implemented and reported to NYSDEC/DOH.

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the ECs implemented at the site.

3.3 MEDIA MONITORING PROGRAM

3.3.1 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy.

As shown on Table 8 the groundwater monitoring program addresses issues in seven groundwater areas of concern as shown on Figures 7 through 13. The details of post remediation monitoring wells and the placement of those wells are included in Remedial Design Documents for AOC-1, AOC-2, AOC-5, and the Carbon Tet area. Source removal was completed for AOC-3 and 4 and the Toluene Area. Monitoring well construction logs are included in Appendix E. The monitoring to measure groundwater quality downgradient of these areas is as follows:

AOC-1:

Quarterly monitoring of observation wells has been occurring since the completion of ISCO injection. The analytical data from each quarterly monitoring event have been reported to NYSDEC and NYSDOH regularly.

AOC-2:

Two post ISCO injection sampling events were in September 2011 and October 2011. As shown on Table 8 quarterly monitoring will continue until sampling frequency is modified with the concurrence of DEC.

AOC-3, 4, and Toluene Tank Farm:

Source removal was completed in the fall of 2010 (tank farm) and spring of 2011 (AOC-3 and -4). Monitoring wells were installed to measure the reduction in VOC concentrations in groundwater that is anticipated to occur downgradient of each AOC. Post removal groundwater monitoring events were completed in September and October 2011. Quarterly monitoring will commence in the first quarter of 2012 and will continue until frequency is modified in concurrence with DEC.

AOC-5:

EHC injection was completed in August 2011. Post ISCR sampling was completed in September and October 2011. Quarterly monitoring of observation wells will be completed as defined on Table 8.

Carbon Tet Area:

EHC injection was completed in September 2011. Post ISCR sampling was completed in September and October 2011. Quarterly monitoring of observation wells will be completed as defined on Table 8.

The sampling frequency may be modified with the approval of NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

Deliverables for the groundwater monitoring program are specified below.

3.3.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix F. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network. All sampling will be completed in accordance with the approved Quality Assurance Project Plan (QAPP) included as Appendix H.

3.3.1.2 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.4 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form (Appendix G) will be completed. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records are up to date.

3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the QAPP prepared for the site (Appendix H).

• QA/QC Objectives for Data Measurement;

• Sampling Program:

• Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.

• Sample holding times will be in accordance with the NYSDEC ASP requirements.

• Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.

• Sample Tracking and Custody;

• Calibration Procedures:

• All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.

• The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.

• Analytical Procedures;

• Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representative ness, comparability, and completeness for each analytical method.

• Internal QC and Checks;

3.6 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared subsequent to each sampling event. The report will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 8 below.

Table 9: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Groundwater Monitoring, Seven AOCs (See Table 8)	Quarterly Data Submittal Annual Reporting
SSDS pressure gauge monitoring	Monthly Inspection Records, Annual Reporting
Engineering Control Inspections (Soil Cover, SSDS)	Annually

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

SECTION 4 OPERATION AND MAINTENANCE (O&M) PLAN

4.1 INTRODUCTION

This O&M Plan describes the measures necessary to operate, monitor, and maintain the mechanical components of the ECs implemented, which for the site includes the sub-slab depressurization systems (SSDSs). This O&M Plan:

- Includes the steps necessary to allow individuals unfamiliar with the site to operate and maintain the SSDSs;
- Includes an operation and maintenance contingency plan; and,
- Will be updated periodically to reflect changes in site conditions or the manner in which the SSDSs are operated and maintained.

Information on non-mechanical Engineering Controls (i.e. soil cover system) is provided in Section 3 - Engineering and Institutional Control Plan. A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP.

4.2 SSDS System Engineering Control System Operation and Maintenance

4.2.1 General

SSDS's function by creating a pressure differential across the floor slab that precludes soil vapor intrusion (SVI), which is a process by which vapors move upward from below the slab into a building. Because vapors migrate from high pressure to low pressure, SVI cannot occur as long as the air pressure below the floor slab is less than the air pressure inside the building. The SSDS mitigates SVI by maintaining a vacuum below the floor slab, such that any vapor movement will be downward from the building into the subsurface.

This is done by a network of suction points, made of PVC pipe, attached to a high-pressure fan. Vapors are pulled from below the floor slab by the fan, which is mounted on the roof, and vented into the atmosphere.

4.2.2 SSDS Layout

Figures 16 through 21 illustrate the layout of the SSDSs currently operating on Site No. 3.

Each SSDS utilizes 3-inch diameter vertical suction points that penetrate below the floor slab. Each suction point was sealed with a non-VOC emitting polyurethane caulk at the pipe penetration into the concrete floor slab and at wall penetrations. Generalized SSDS construction details are provided in Figure 21.

The vertical suction points lead to the ceiling where they connect to 4-inch diameter horizontal piping runs that connect to a high pressure blower, which is mounted on the roof. The blower is either a 5 horsepower Cincinnati HPD series high pressure blower rated for air flows as high as 800 cubic feet per minute (cfm), a RadonAway RP260 (Building 14 and 31), or a RadonAwayXP-201 (Building 17/17A). Blower specification and manufacturer information is provided in Appendix I of this SMP.

A magnehelic pressure gauge is mounted on each of the suction risers. In accordance with standard practices for monitoring radon mitigation systems (ASTM 2121E and EPA-625/R-92/016), the SSDS pressure gauges provide a visual indication of system performance. Pressure gauge specifications and manufacturer information is provided in Appendix I of this SMP.

Each of the vertical suction pipes has a built-in baffle that may be used to adjust flow as necessary based on pressure readings. The pressure gauges are used to monitor continued future system performance, as discussed in Section 4.3.

4.2.3 Scope

The SSDS is designed to operate continuously, and aside from the roof-mounted fan, has no mechanical components.

Negative pressure is confirmed by monitoring the magnehelic gauges on each suction pipe. Pressure readings were taken below the floor slab after the SSDS was initially activated in November 2011, and indicated that the SSDS creates more than adequate negative pressure differential (-0.002 in WC or less) across each building footprint.

The O&M requirements specified in this SMP will be kept onsite for the Site owner's personnel. The responsibility for inspecting and maintaining the system will reside with personnel designated by the Site owner, who will be responsible for conducting monthly visual inspections of the SSDS, for documenting those inspections, and communicating to the designated building/facility manager any issues requiring maintenance or other attention.

4.2.4 System Start-Up and Testing

SSDS inspections will also occur after any power outages or interruptions, to make sure that the roof fan is operating and that the pressure gauges indicate pressures similar to those recorded prior to the power outage are reached after power is restored. The electrical service panel for each SSDS blower fan is located on the roof.

After start-up, the visual inspection of the system will include the following components:

- **Roof fan**. The fan should be visually inspected to make sure it is running and is clear of debris, especially the exhaust port. Any debris should be cleared, and any apparent damage to the fan should be documented and repairs scheduled as appropriate.
- **Pressure gauges**. Each pressure gauge should be checked and measurements recorded to assure that pressure is being maintained at levels similar to those demonstrated during the pressure field extension test. If adequate pressure is not maintained, the baffle on that particular suction riser may be adjusted to correct the problem. If the pressure gauge is damaged or not functioning it should be replaced (see Appendix I). In the event of a power outage, the pressure gauges on each suction riser should be checked after power is restored to make sure that adequate suction has been restored.
- **Piping**. A quick inspection of visible piping runs should be done to identify damage and/or cracks requiring repair. The penetration into the slab and walls at each suction point should be inspected to determine if the caulk seal is intact. Small cracks and leaks may often be repaired by application of

polyurethane caulk. Larger cracks or damage may require a service call from an SSDS contractor. As designed, any leaks in the PVC piping network could cause the system to lose pressure and the SSDS will not operate as effectively. Because the entire piping network inside the building is under negative pressure, no VOCs will leak from the piping into the building if cracks or leaks occur. Regardless, steps should be taken to repair upon discovery any confirmed or suspected damage to piping.

- **Building 17**. For Building 17, should pressure field extension tests indicate a negative pressure differential that is inadequate (less than 0.002 inches of WC), data will be collected documenting that the building is pressurized.

The system testing described above will also be conducted if, in the course of the SSDS lifetime, significant changes are made to the system, and the system must be restarted.

4.2.5 System Operation: Routine Operation Procedures

The SSDS will operate continuously. The roof-mounted fan is the only mechanical part of the system and requires little maintenance. The visual inspection described above in Section 4.2.4 will occur each quarter. Routine and non-routine maintenance and repairs should be made as needed as described in Section 4.2.6 and 4.2.7. See Appendix I of this SMP for manufacturer's equipment specification for routine operation and maintenance of the fan.

4.2.6 System Operation: Routine Equipment Maintenance

As appropriate, preventative maintenance such as replacing the vent fan, repairs, and adjustments should be made to the system. The need for such maintenance will depend upon the life expectancy or warranty information associated with different system components.

4.2.7 System Operation: Non-Routine Equipment Maintenance

Non-routine maintenance may also be necessary under certain circumstances that

might occur independent of a scheduled inspection, such as:

- A building occupant discovers that the SSDS is no longer properly functioning (i.e. exhaust fan not working, or pressure gauges indicate pressure field not adequate);
- Component(s) of SSDS becomes damaged; and
- After power is restored following any power outage or interruption, the pressure gauges on each suction riser should be checked to determine that negative pressure has been restored to levels that were observed prior to the power outage.

The designated building/facility manager will be notified immediately upon discovery that the SSDS is not functioning properly or has been damaged, and will notify NYSDEC within 24 hours of such discovery and how the problem was resolved.

Significant building renovations may also potentially reduce effectiveness of the SSDS, which may require maintenance or modification. Renovations that may potentially reduce indoor air pressure, such as installing vents, blowers, or fume hoods that exhaust to the outdoors, should be avoided. If these installations are absolutely necessary, there must be a commensurate makeup air system to maintain the existing indoor air pressure, and ideally the makeup air should increase indoor air pressure.

Floor penetrations (i.e. installation of sumps, floor drains, etc.) should also be avoided. Floor penetrations may weaken the negative pressure field below the floor slab and render the SSDS less effective. If there is no feasible alternative to a floor penetration, it must be properly sealed to prevent air flow through the penetration that may affect the operation of the SSDS.

4.3 ENGINEERING CONTROL SYSTEM PERFORMANCE MONITORING

4.3.1 Monitoring Schedule

The SSDSs will be inspected monthly following the procedures described in Section 4.2.4. Inspection frequency is subject to change with the approval of the

NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSDS has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverable for the SSDS are specified later in the SMP.

A complete list of components to be checked is provided in the Inspection Checklist, presented in Appendix J. If any equipment readings are not within their typical range, any equipment is observed to be malfunctioning, or the system is not performing within specifications, maintenance and repair as per the Operation and Maintenance Plan are required immediately, and the SSDS restarted.

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSDS has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverables for the SSDS are specified later in this Plan.

4.3.2 General Equipment Monitoring

A visual inspection of the complete system will be conducted during the monitoring event. SSDS components to be monitored include, but are not limited to, the following:

- Vacuum blower;
- General system piping;
- Magnehelic gauges; and
- Suction point riser baffles.

A complete list of components to be checked is provided in the Inspection Checklist, presented in Appendix J. If any equipment readings are not within their typical range, any equipment is observed to be malfunctioning, or the system is not performing within specifications, maintenance and repair as per the Operation and Maintenance Plan are required immediately, and the SSDS restarted.

4.3.3 System Monitoring Devices and Alarms

The SSDS has pressure gauges on each suction risers to indicate that the system is

operating properly. When properly functioning, the pressure gauges should indicate a vacuum similar to that recorded during the pressure field extension test. In the event that the pressure gauges indicate that pressure is greater than during the pressure field extension test, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSDS restarted. Operational problems will be noted in the subsequent Periodic Review Report.

4.4 MAINTENANCE AND PERFORMANCE MONITORING REPORTING REQUIREMENTS

Maintenance reports and any other information generated during regular operations at the Site will be kept on-file on-site. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the Periodic Review Report, as specified in Section 5 of this SMP.

4.4.1 Routine Maintenance Reports

Checklists or forms (see Appendix J) will be completed during each routine maintenance event. Checklists/forms will include, but not be limited to the following information:

- Date;
- Name, company, and position of person(s) conducting maintenance activities;
- Maintenance activities conducted;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

4.4.2 Non-Routine Maintenance Reports

During each non-routine maintenance event, a form will be completed which will

include, but not be limited to, the following information:

- Date;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Presence of components requiring repair;
- Date of repair;
- Other repairs or adjustments made to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and,
- Other documentation as appropriate, such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system which are contained in Appendices (G - Site Inspection Form, and J - Subslab Depressurization System Inspection Checklist).

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State, or Qualified Environmental Professional as described in DER-10, will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- Use of the site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner or Owner's Designated Site Representative] for the site.

- The signed certification will be included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning eighteen months after the Certificate of Completion is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix A (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of all groundwater contaminants of concern including a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the site-specific Decision Document;

- Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
- Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
- The overall performance and effectiveness of the remedy.

In addition to the information described above, Garlock will also report the land use and ownership of two adjacent parcels depicted on Figure 31 and referred to as the "Blazey parcel" and the "Santelli parcel". During the certification process the two properties will be observed to verify that no change in use has occurred based on physical evidence. It will also be verified, via the Wayne County records, that the property has not changed ownership. Land use and ownership status will be reported in the Periodic Review Report.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Regional Office in which the Site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

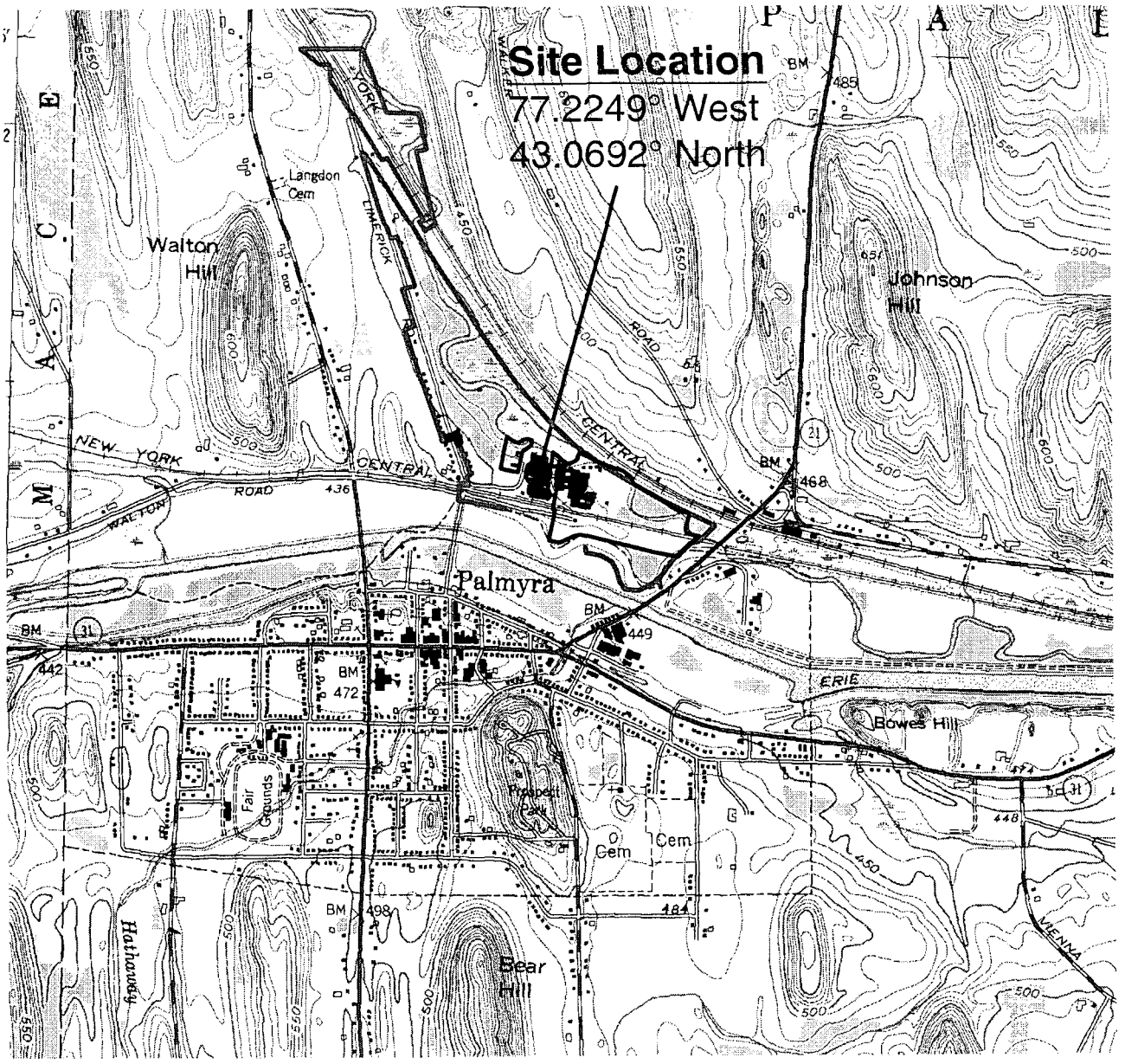
5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

For the groundwater remedy, corrective measures may include additional ISCO or ISCR injections in particular areas. Corrective measures may also consider monitored natural attenuation (MNA) as an ongoing remedial approach for groundwater. The Periodic Review Report will include an assessment of each groundwater remedy that has been implemented on this site including AOC-1, AOC-2, AOC-3, AOC-4, AOC-5, the Carbon Tet area and the Toluene Tank Farm. Each assessment will describe whether the

remedy, as reflected by groundwater monitoring data, reflects an on-going reduction in groundwater concentrations. If, after discussions with Garlock, NYSDEC and NYSDOH determine that additional corrective measures are warranted Garlock will submit a corrective measures workplan for review and approval. For MNA to be implemented as a corrective measure would require an MNA Design Document to be prepared and submitted to NYSDEC for review and approval, in accordance with USEPA guidance for MNA (OSWER Directive 9200.4-17).

Figures



Approximate boundary of BCP Site No. 3

Approximate Garlock property boundary

QUADRANGLE LOCATION

SCALE in FEET

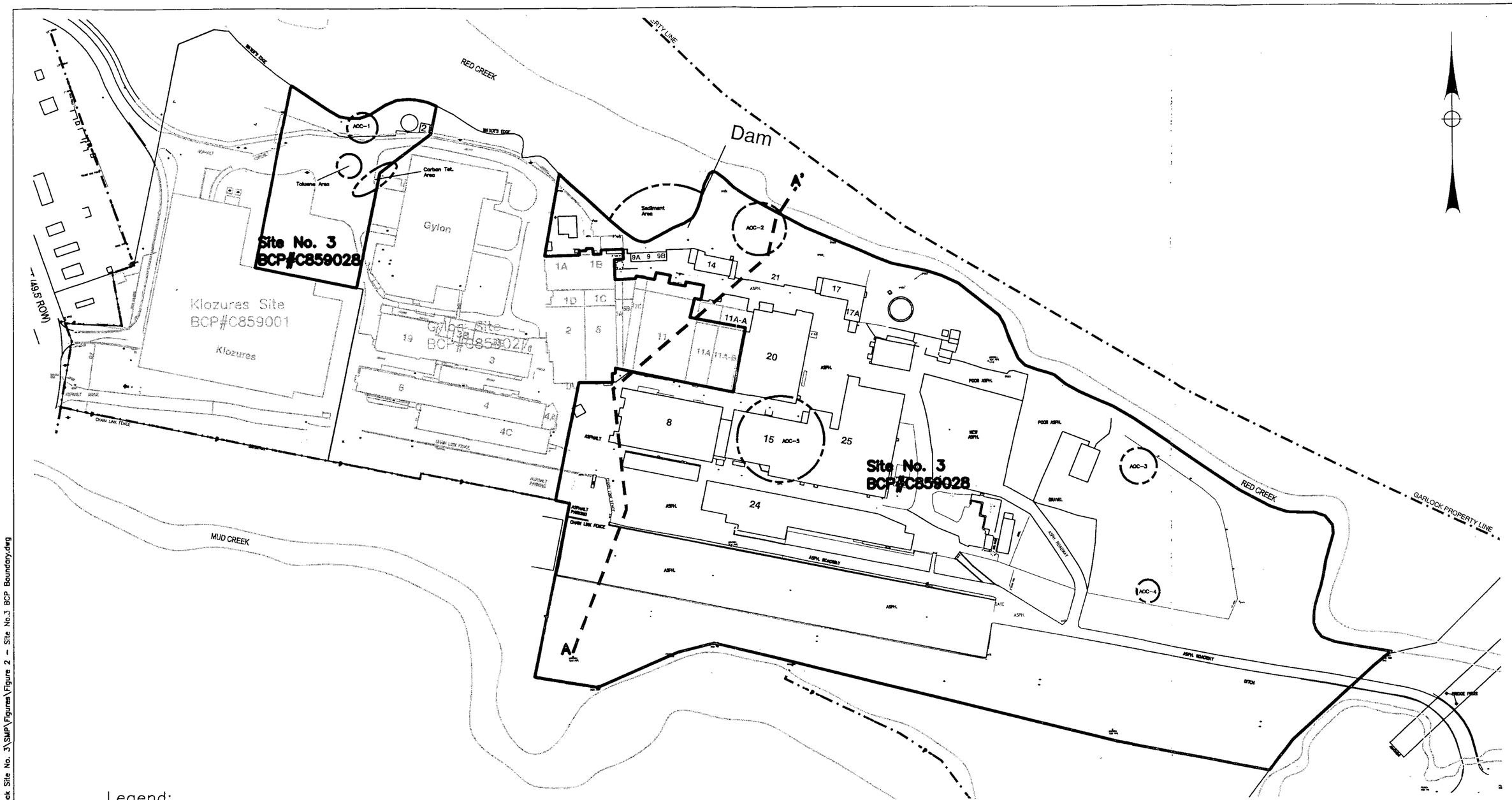
1,000 0 1,000 3,000 5,000

Contour Interval: 10 Feet

Map Taken From: USGS 7.5 Minute Series
Topographic Quadrangle Palmyra (1952)
(www.nysgis.state.ny.us/quads/usgsdrg.htm)

S&W Redevelopment of North America, LLC. Syracuse, New York DATE: 11/2011 JOB No.: N1011	Garlock BCP Site No. 3 (BCP# C859028) Site Management Plan 1666 Division St, Palmyra, Wayne County, New York Figure 1 Site Location Map

X-REF: Palmyra043077A2.tif
2006/Aug/Syr/jlk
J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\SMP\Figures\Figure 1 - Site Location.dwg



Legend:

- Approximate Boundary of BCP Site No. 3
- Garlock Property Boundary (approximate)
- Line of Cross Section Depicted in Figure 3
- Approximate Area of Concern

SCALE in FEET

0 100 200 400

Site base survey provided by Lu Engineers 6/2006

Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

S&W Redevelopment of North America, LLC. Syracuse, New York DATE: 11/2011 JOB No: N1011	Garlock BCP Site No. 3 (BCP #C859028) Site Management Plan 1666 Division Street, Palmyra Wayne County, New York
	Figure 2 Site No. 3 BCP Boundary

X-REF: NAMES?
2010/sep/syr/lem
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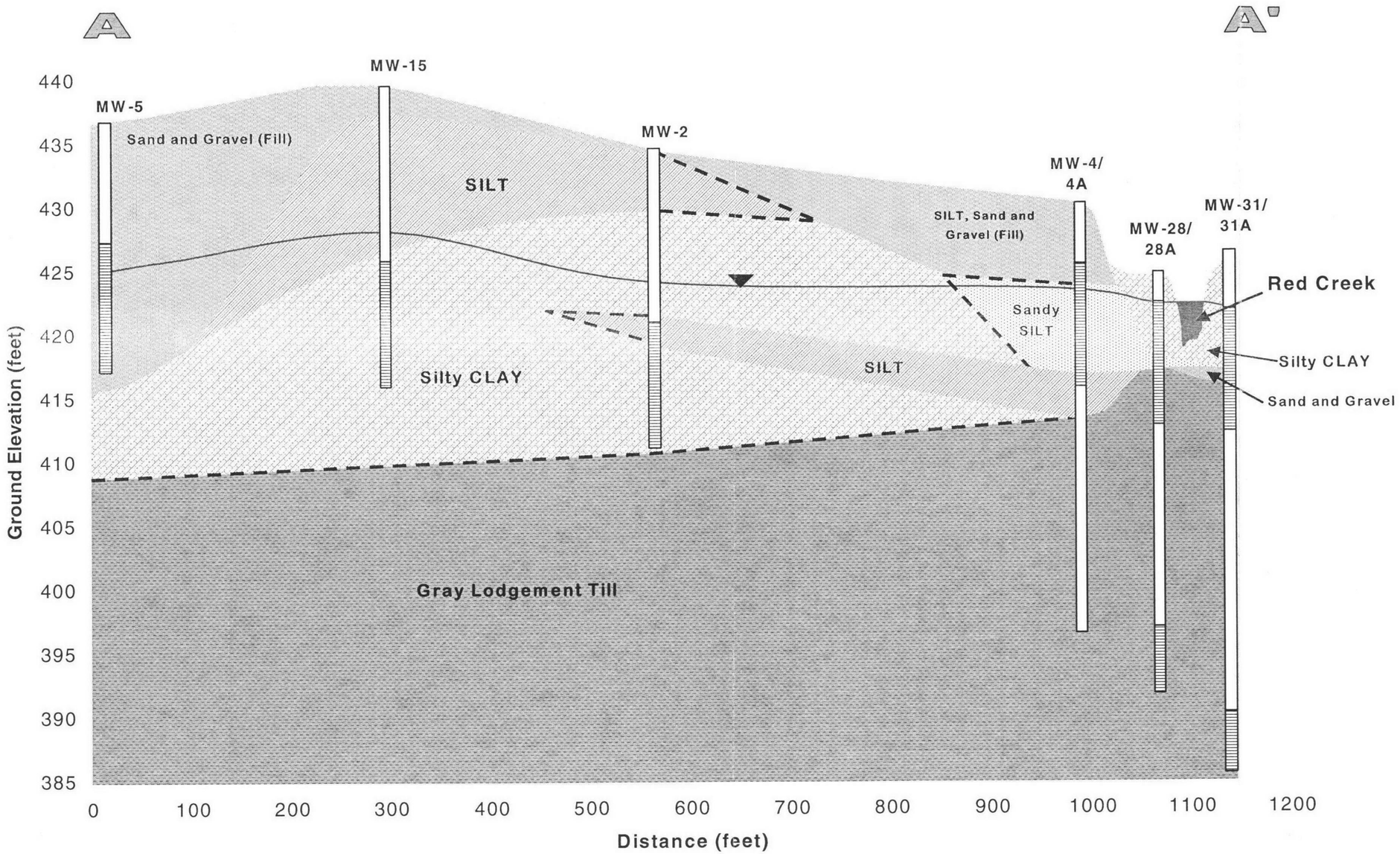

▼ Groundwater Level

Note:
Cross section from approved Remedial Investigation Report (SWRNA, May 2008)

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Syracuse, NY

Date: 11/2011 Job No. N1011

Garlock Site No. 3 BCP Site (Site #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 3 – Typical South-North
Site No. 3 Geologic Cross-Section

SITE No.3
KLOZURES BCP SITE #C859001

GYLON BCP SITE #C859027

SITE No.3 BCP Site #859028

Dam

RED CREEK

GARLOCK PROPERTY LINE

Gylon

Klozures

AOC–2 and AOC–5

INSET SCALE in FEET
0.50' Contour Interval

AOC–1 and Carbon Tet. Area

INSET SCALE in FEET
0.50' Contour Interval

Legend:

- MW-8 — Monitoring Well Location and ID
- RC-1 — Surface Water Elevation Location and ID
- IW3-1 — Injection Well Location and ID
- 422.84' — Groundwater Elevation (feet)
- NM — Groundwater Elevation Not Measured
- Groundwater Contour
- Estimated Groundwater Contour
- Approximate BCP Site Boundary
- Property Line

SCALE in FEET
1.00' Contour Interval

Site base survey provided by Lu Engineers 6/2006
Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

X-REF: NAMES?
2010/sep/grr/sm
J:\PROJECTS\N-xxxx\N1000\N1011 – Garlock Site No. 3\Site Wide Groundwater

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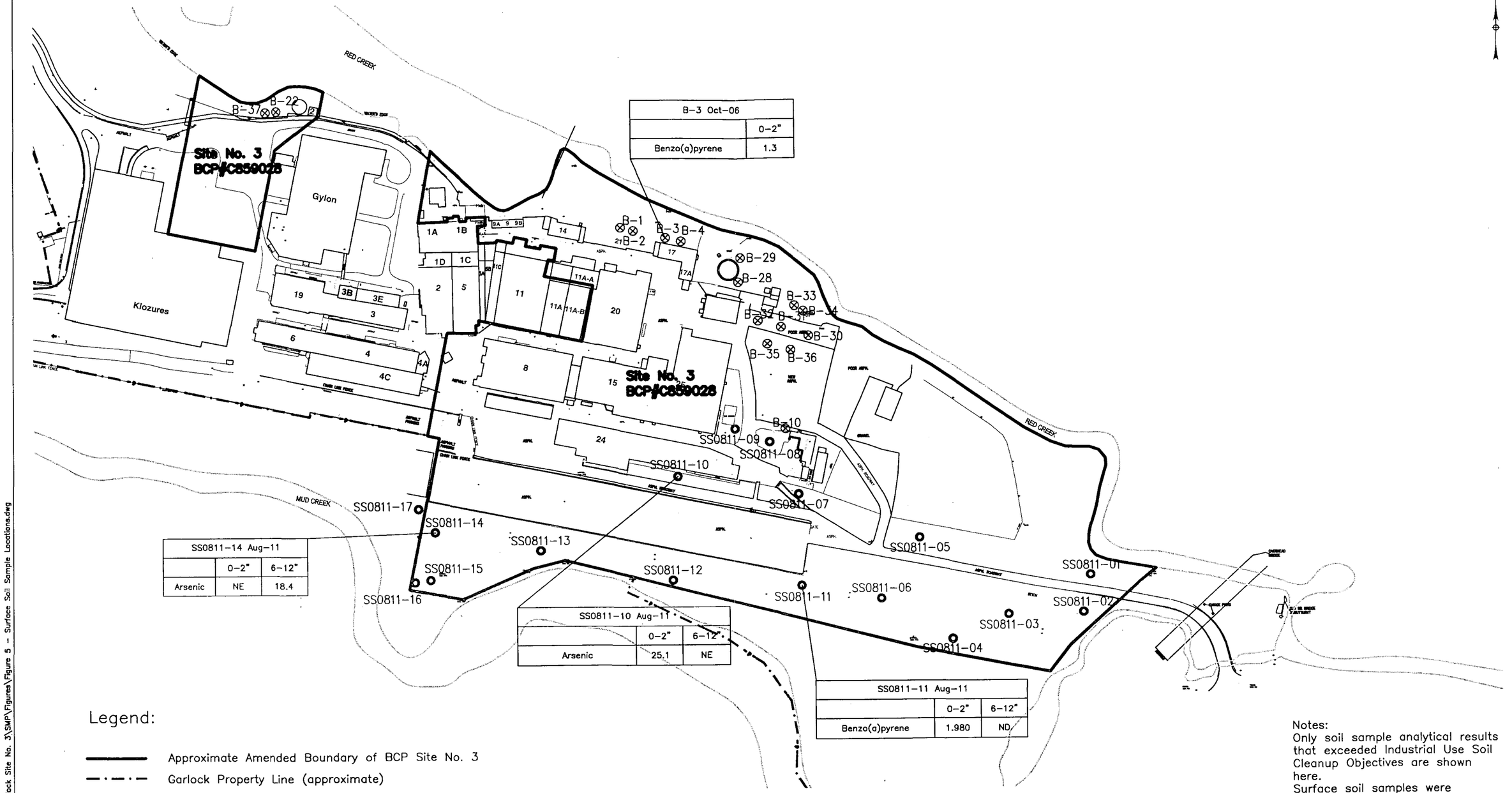
Garlock Site No. 3 BCP Site (Site #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 4
Generalized Groundwater Flow



B-3 Oct-06	
	0-2"
Benzo(a)pyrene	1.3

SS0811-14 Aug-11		
	0-2"	6-12"
Arsenic	NE	18.4

SS0811-10 Aug-11		
	0-2"	6-12"
Arsenic	25.1	NE

SS0811-11 Aug-11		
	0-2"	6-12"
Benzo(a)pyrene	1.980	ND

Legend:

- Approximate Amended Boundary of BCP Site No. 3
- Garlock Property Line (approximate)
- B-1 ⊗ 2006 Surface Soil Sample Location and ID
- SS0811-01 ⊙ 2011 Surface Soil Sample Location and ID

Sample Identification and Date		
	Depth of Sample	Depth of Sample
Analyte	Result (mg/kg)	Result (mg/kg)

Surface Soil Analytical Results
ND – Not Detected
NE – No Exceedances

SCALE in FEET
0 115 230 460

Site base survey provided by Lu Engineers 6/2006

Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

Notes:
Only soil sample analytical results that exceeded Industrial Use Soil Cleanup Objectives are shown here.
Surface soil samples were collected from 0 to 2 inches below bottom of root zone.

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Garlock BCP Site No. 3 (BCP #C859028)
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Wayne County, New York

Figure 5
Surface Soil Analytical Results

X-REF: NAMES?
2010/dwg/grr/lwm
J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\SMP\Figures\Figure 5 - Surface Soil Sample Locations.dwg

POINT OF BEGINNING
ENVIRONMENTAL EASEMENT
3E

GYLON BUILDING
ENVIRONMENTAL
EASEMENT

LOT 3E
ENVIRONMENTAL EASEMENT AREA=
1,172,341° SQ FT°
OR
26.913 ACRES
MORE OR LESS
T.A. # 064.111-00-839.937

EALING
E.S. LLC
10-839.937

LOT 1
LOZURE BUILDING

N/F
GARLOCK SEALING
TECHNOLOGIES, LLC
T.A. # 064.111-00-839.937

N/F
JAMES E. &
ANTHONY J. SANTELLI
T.A. # 064.111-00-821.367

Legend:

ENGINEERING / INSTITUTIONAL CONTROLS LEGEND

- SSDS AREAS
- BUILDING SLAB, ASPHALT, SOIL OR GRAVEL MEETING INDUSTRIAL SCOs.
  - CONCRETE AREA
  - GRAVEL AREA
  - ASPHALT AREA

ENVIRONMENTAL EASEMENT AREA

SCALE in FEET

0 156 312 624

Survey from Environmental Easement Lots 3W and 3E provided by LaBella Associates, P.C., April 2011.

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of North America, LLC.

Syracuse, New York

DATE: 11/2011 JOB No: N1011

Garlock BCP Site No. 3 (BCP #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 6
Engineering Controls

X-REF: NAMES?
2010/dwp/jyr/iem
J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\SMP\Figures\Figure 6 - Engineering Controls.dwg

OW-8				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	14	26	9.03	8.28
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	ND	2.6	ND	ND
cis-1,2-Dichloroethene	13	14	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	5	4.6	ND	ND

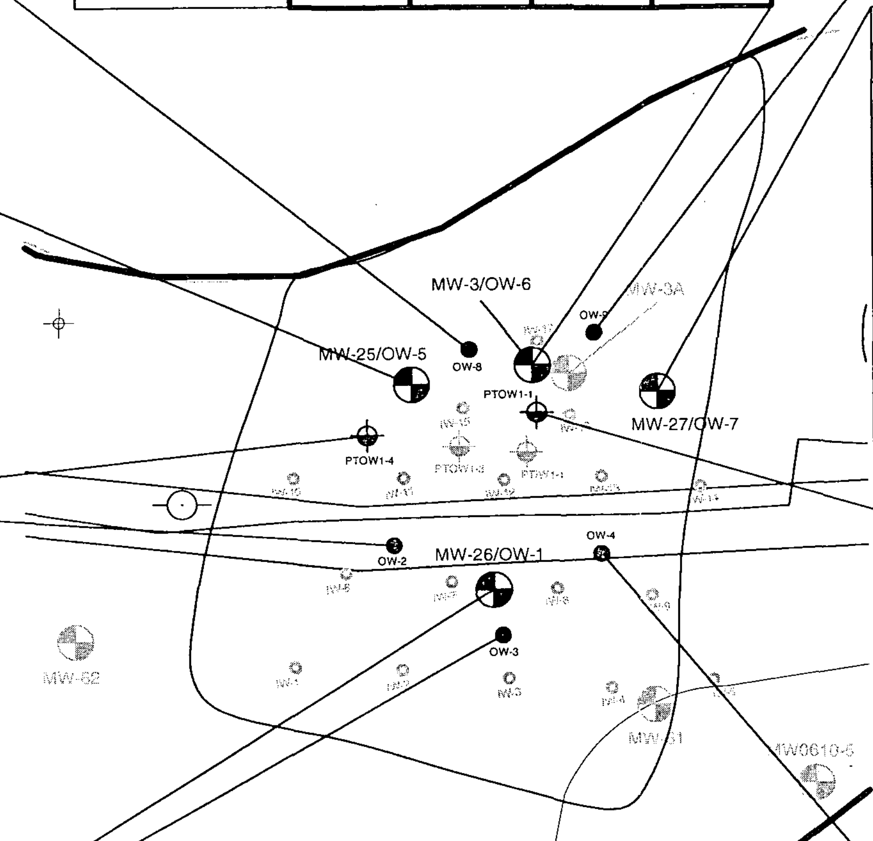
OW-5 (MW-25)				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	6.4	13	6.07	9.49
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
cis-1,2-Dichloroethene	23	12.0	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	12	7.6	ND	ND

PT OW1-4				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	59	3.5	ND	ND
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	0.17	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND

OW-2				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	120	470	16.2	16.4
Methylene Chloride	ND	110	ND	ND
Toluene	56	9,400	ND	ND
Xylenes (Total)	39	ND	2.35	ND
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND

OW-1 (MW-26)				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	19	60	ND.	ND
Methyl Ethyl Ketone	160	75	ND	ND
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
cis-1,2-Dichloroethene	11	1.3	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	11	3.9	ND	ND

OW-6 (MW-3)				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	95	72	90	87.9
Chloroform	51	69	8.54	16.1
Methylene Chloride	43	49	ND	ND
Ethylbenzene	ND	ND	4.53	5.13
Toluene	ND	ND	13.4	12.7
Tetrachloroethene	ND	65	ND	ND
Trichloroethene	1,500	4,100	46.6	238
cis-1,2-Dichloroethene	3,600	2,400	595	802
trans-1,2-Dichloroethene	ND	ND	3.01	ND
Vinyl Chloride	1,600	840	560	331



OW-3				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	6.9	9	1.89	1.79
Toluene	26	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
cis-1,2-Dichloroethene	62	56	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	32	54	ND	ND

OW-9				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	ND	150	101	125
Chloroform	470	250	ND	ND
Methylene Chloride	ND	45	ND	ND
Toluene	ND	31	9.5	6.01
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	7,000	3,300	26.5	47.0
cis-1,2-Dichloroethene	620	2,600	38.2	81.9
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	130	160	12.9	23.4

OW-7 (MW-27)				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	93	530	76.8	118
Methyl Ethyl Ketone	ND	120	ND	ND
Chloroform	ND	15	ND	ND
Methylene Chloride	ND	17	ND	ND
Toluene	5.1	180	14.4	ND
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	2	12	6.37	8.69
cis-1,2-Dichloroethene	2.2	ND	3.78	5.89
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND

PT OW1-1				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	45	18	12.5	21.5
Xylenes (Total)	8.9	4.0	ND	ND
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	1.2	ND	ND	ND
cis-1,2-Dichloroethene	2.7	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	0.51	ND	ND	ND

OW-4				
	11/12/2008	3/25/2009	5/25/2011	8/30/2011
Benzene	1.2	1.7	5.74	8.19
Tetrachloroethene	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
cis-1,2-Dichloroethene	6.4	1.9	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Chloride	ND	3.2	ND	ND

Legend:

- MW-26 — ISCO Effectiveness Monitoring Well Location and ID (surveyed)
- OW-2 — ISCO Effectiveness Observation Well Location and ID (surveyed)
- PTIW1-1 — ISCO Effectiveness Observation Well Location and ID (surveyed)
- Pilot Test Observation Well Location and ID (surveyed)
- ISCO Injection Well Location and ID (surveyed)
- MW-62 — Monitoring Well Location and ID (surveyed)
- BCP Site No. 3 Boundary (approximate)
- AOC-1 Boundary (approximate)

Groundwater Analytical Results

Well ID	
	Date Sampled
Analyte	Concentration (ug/L)

ND – Non-Detect
Thick outlined results indicate exceedance of standards

SCALE in FEET
0 15 30 60

Site base survey provided by Lu Engineers 6/2006

Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

S&W Redevelopment
of North America, LLC.
Syracuse, New York
DATE: 11/2011 JOB No: N1011

Garlock BCP Site No. 3 (BCP #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 7
AOC-1

X-REF: NAMES?
2010/sep/syr/iem
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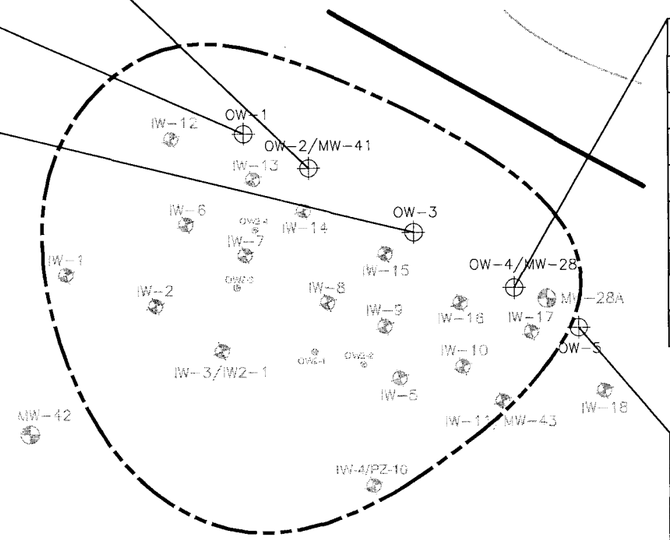
OW-1			
	6/17/2011	10/4/2011	10/27/2011
Acetone	ND	150	n/a
Tetrachloroethene	ND	ND	n/a
Trichloroethene	3.1	1.9	n/a
cis-1,2-Dichloroethene	17	6.8	n/a
trans-1,2-Dichloroethene	ND	ND	n/a
Vinyl Chloride	9.6	ND	n/a

OW-2/MW-41			
	6/17/2011	10/4/2011	10/27/2011
Acetone	150	ND	ND
1,1-Dichloroethane	290	340	ND
1,1-Dichloroethene	55	40	360
Tetrachloroethene	ND	ND	ND
Trichloroethene	1,100	260	270
cis-1,2-Dichloroethene	4,300	5,700	6,200
trans-1,2-Dichloroethene	ND	ND	ND
Vinyl Chloride	140	910	620

OW-3			
	6/17/2011	10/4/2011	10/27/2011
Acetone	ND	1,700	2,400
Chloroform	83	ND	ND
1,1-Dichloroethane	2,600	2,000	2,200
1,1-Dichloroethene	230	ND	260
Methylene Chloride	960	ND	ND
Tetrachloroethene	ND	ND	ND
Trichloroethene	6,100	2,800	2,900
cis-1,2-Dichloroethene	38,000	26,000	28,000
trans-1,2-Dichloroethene	120	ND	ND
Vinyl Chloride	330	3,300	5,500

OW-4/MW-28			
	6/17/2011	10/4/2011	10/27/2011
1,1-Dichloroethane	39	n/a	n/a
Methylene Chloride	32	n/a	n/a
Tetrachloroethene	4.6	n/a	n/a
Trichloroethene	28	n/a	n/a
cis-1,2-Dichloroethene	850	n/a	n/a
trans-1,2-Dichloroethene	4.9	n/a	n/a
Vinyl Chloride	130	n/a	n/a



OW-5			
	6/17/2011	10/4/2011*	10/27/2011
1,1-Dichloroethane	30	3.8	n/a
1,1-Dichloroethene	5.8	ND	n/a
Tetrachloroethene	ND	ND	n/a
Trichloroethene	77	ND	n/a
cis-1,2-Dichloroethene	850	ND	n/a
trans-1,2-Dichloroethene	5.2	ND	n/a
Vinyl Chloride	120	ND	n/a

* - Sample water contained diluted permanganate solution

Legend:

OW-1 — ISCO Effectiveness Observation Well Location and ID (Surveyed)

IW-1 — ISCO Injection Well Location and ID (Surveyed) (not sampled)

MW-28 — Monitoring Well Location and ID (Surveyed) (not sampled)

BCP Site No. 3 Boundary (approximate)

AOC-2 Target Treatment Zone (approximate)

Well ID	
	Date Sampled
Analyte	Concentration (ug/L)

Groundwater Analytical Results
ND - Not Detected
n/a - Not Analyzed due to presence of permanganate
Thick outline indicates exceedance of standards

SCALE in FEET

0 15 30 60

Site base survey provided by Lu Engineers 6/2006

Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

S&W Redevelopment
of North America, LLC.
Syracuse, New York

DATE: 11/2011 JOB No: N1011

Garlock BCP Site No. 3 (BCP #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 8
AOC-2

X-REF: NAMES?
2010/dep/fgr/lam
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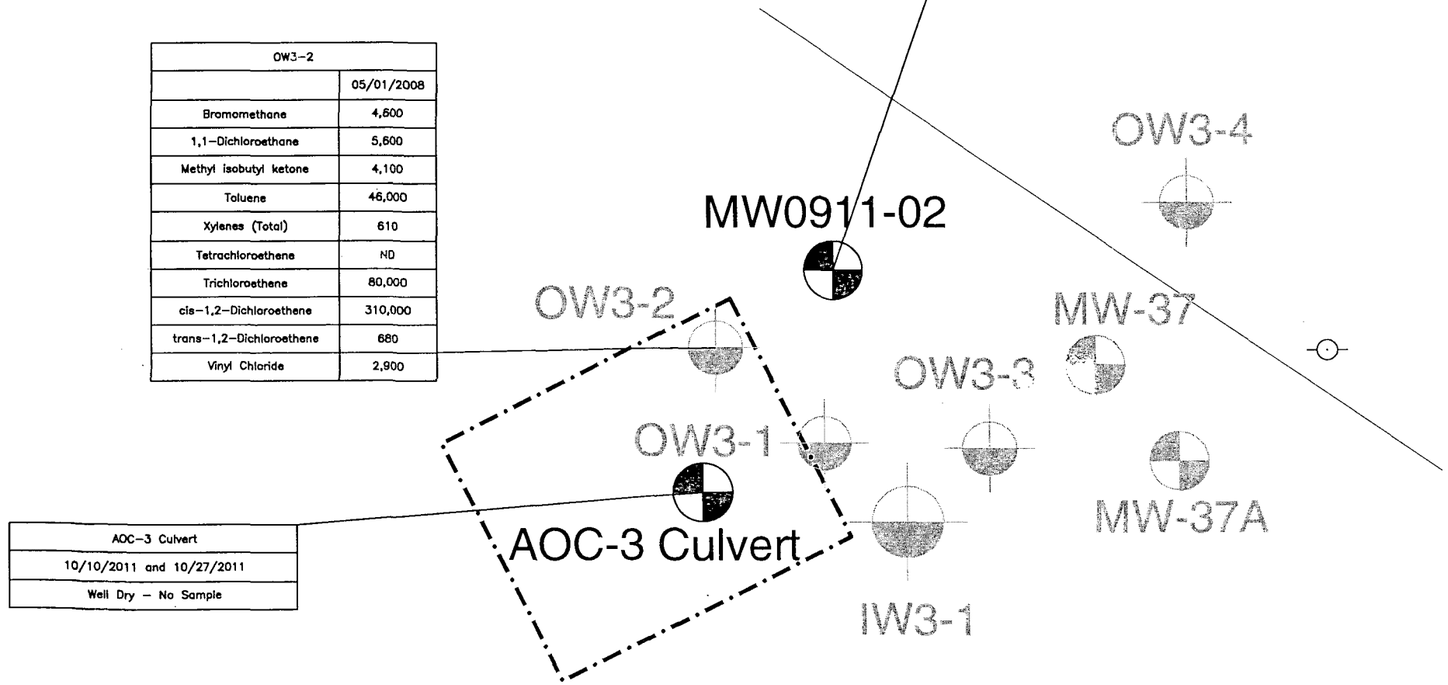
MW0911-02		
	10/10/2011	10/27/2011
1,1-Dichloroethane	4,200	4,200
Toluene	14,000	17,000
Tetrachloroethene	ND	ND
Trichloroethene	ND	ND
cis-1,2-Dichloroethene	230,000	230,000
trans-1,2-Dichloroethene	ND	ND
Vinyl Chloride	13,000	12,000

OW3-2	
	05/01/2008
Bromomethane	4,600
1,1-Dichloroethane	5,600
Methyl isobutyl ketone	4,100
Toluene	46,000
Xylenes (Total)	610
Tetrachloroethene	ND
Trichloroethene	80,000
cis-1,2-Dichloroethene	310,000
trans-1,2-Dichloroethene	680
Vinyl Chloride	2,900



AOC-3 Culvert
10/10/2011 and 10/27/2011
Well Dry - No Sample

Legend:

MW0911-02 — IRM Effectiveness Monitoring Well Location and ID (surveyed)

MW-37 — Monitoring Well Location and ID (not sampled)

OW3-1
IW3-1 — Observation and Injection Well Location and ID (not sampled)

Approximate Excavation Extent

Sample ID	
	Date Sampled
Analyte	Concentration (ug/L)

Groundwater Analytical Results

Notes:

OW3-2 was removed during excavation. No post IRM samples can be collected from the well.

MW0911-02 and AOC-3 Culvert did not exist until after IRM excavation.

SCALE in FEET

0
7 14 28

Site base survey provided by Lu Engineers 6/2006

Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

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Syracuse, New York
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1666 Division Street, Palmyra
Wayne County, New York

Figure 9
AOC-3

X-REF: NAMES?
2010/sep/sy/lem
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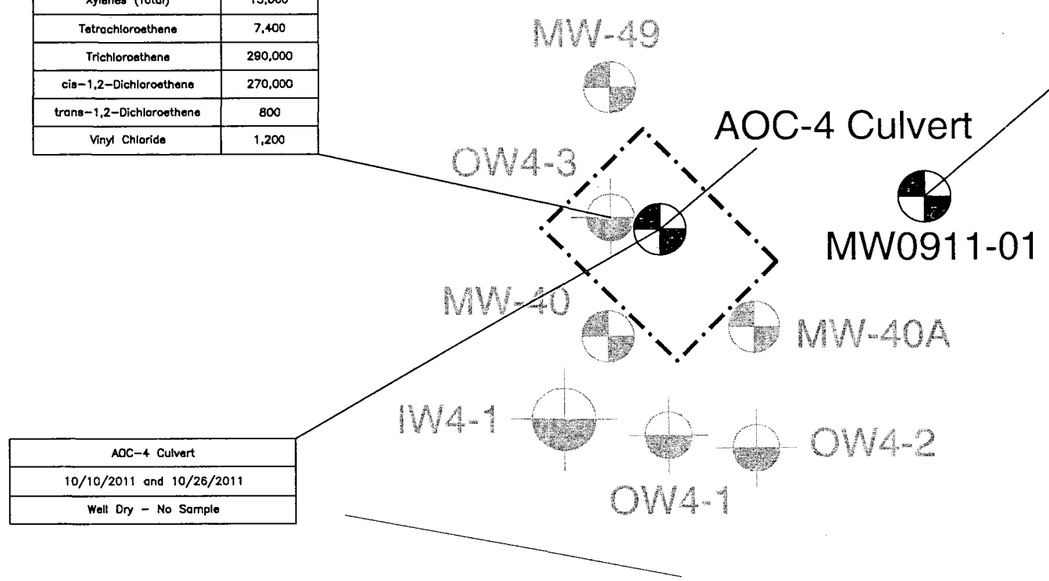
OW4-3	
	05/07/2008
1,1-Dichloroethene	630
1,1-Dichloroethane	4,100
1,1,1-Trichloroethane	15,000
Toluene	49,000
Ethylbenzene	2,600
Xylenes (Total)	13,000
Tetrachloroethene	7,400
Trichloroethene	290,000
cis-1,2-Dichloroethene	270,000
trans-1,2-Dichloroethene	800
Vinyl Chloride	1,200

MW0911-01		
	10/10/2011	10/26/2011
1,1-Dichloroethane	140	130
1,1,1-Trichloroethane	160	150
Toluene	330	220
Ethylbenzene	240	180
Xylenes (Total)	1,200	980
Tetrachloroethene	ND	ND
Trichloroethene	790	630
cis-1,2-Dichloroethene	8,400	7,400
trans-1,2-Dichloroethene	ND	ND
Vinyl Chloride	740	650



AOC-4 Culvert
10/10/2011 and 10/26/2011
Well Dry - No Sample

Legend:

MW0911-01 — IRM Effectiveness Monitoring Well Location and ID (surveyed)

RMW-40A — Monitoring Well Location and ID (not sampled)

OW4-2 IW4-1 — Observation and Injection Well Location and ID (not sampled)

Approximate Excavation Extent

Sample ID	
	Date Sampled
Analyte	Concentration (ug/L)

Groundwater Analytical Results

Notes:

OW4-3 was removed during excavation. No post IRM samples can be collected from the well.

MW0911-01 and AOC-4 Culvert did not exist until after IRM excavation.

SCALE in FEET

0 40 80 160

Site base survey provided by Lu Engineers 6/2006

Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

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Figure 10
AOC-4

X-REF: NAMES?
2010/Sep/Syr/lam
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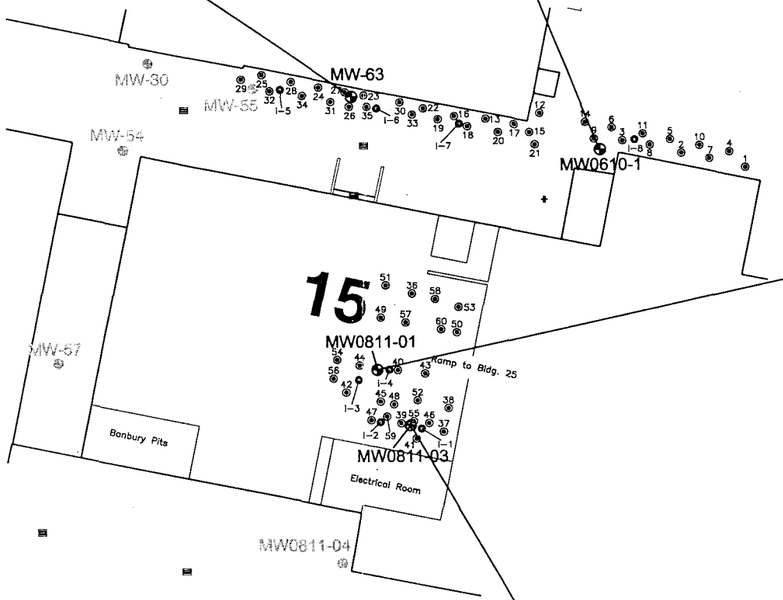
MW-63			
	8/8/2011	9/29/2011	10/26/2011
Tetrachloroethene	ND	ND	ND
Trichloroethene	ND	2.3	ND
cis-1,2-Dichloroethene	61	180	97
trans-1,2-Dichloroethene	ND	ND	9.8
Vinyl Chloride	ND	23	79

MW0610-1			
	8/8/2011	9/29/2011	10/26/2011
Tetrachloroethene	ND	ND	ND
Trichloroethene	820	29	12
cis-1,2-Dichloroethene	2,600	890	1,400
trans-1,2-Dichloroethene	ND	ND	ND
Vinyl Chloride	610	130	450



MW0811-01			
	8/8/2011	9/29/2011	10/26/2011
Tetrachloroethene	ND	ND	ND
Trichloroethene	99	ND	ND
cis-1,2-Dichloroethene	6,300	670	580
trans-1,2-Dichloroethene	ND	47	33
Vinyl Chloride	800	1,500	670

MW0811-03			
	8/8/2011	9/29/2011	10/26/2011
Tetrachloroethene	ND	ND	ND
Trichloroethene	5,800	240	ND
cis-1,2-Dichloroethene	7,400	5,700	3,600
trans-1,2-Dichloroethene	ND	ND	ND
Vinyl Chloride	960	470	1,600

Legend:

MW-63 — ISCR Effectiveness Monitoring Well Location and ID (Surveyed)

MW-30 — Monitoring Well Location and ID (Surveyed)

1 — EHC Injection Boring (approximate)

I-1 — Inoculum Injection Boring (approximate)

Well ID	
Date Sampled	
Analyte	Concentration (ug/L)

Groundwater Analytical Results
ND – Non-detect
Bold outlined cells indicate and exceedance of groundwater standards

SCALE in FEET
0
25 50 100

Site base survey provided by Lu Engineers 6/2006

Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

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Garlock BCP Site No. 3 (BCP #C859028)
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Figure 11
AOC-5

X-REF: NAMES?
2010/sep/syr/lam
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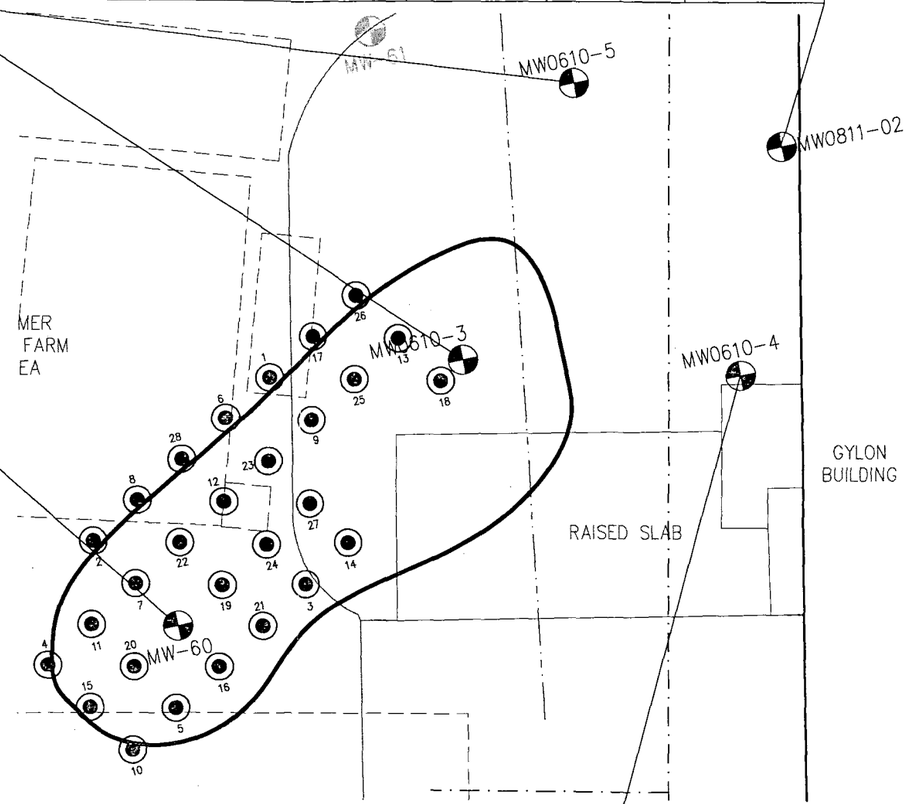
MW0610-5			
	8/5/2011	9/29/2011	10/28/2011
Benzene	1.3	21	19
Carbon Tetrachloride	11	ND	ND
Chloroform	4.0	ND	ND
Tetrachloroethene	ND	ND	ND
Trichloroethene	ND	ND	ND
cis-1,2-Dichloroethene	6.3	25	21
trans-1,2-Dichloroethene	ND	ND	ND
Vinyl Chloride	11	9.9	8.2

MW0811-02			
	8/5/2011	9/29/2011	10/28/2011
Benzene	ND	5.4	1.8
Carbon Tetrachloride	6.5	ND	ND
Chloroform	1.2	ND	ND
Tetrachloroethene	ND	ND	ND
Trichloroethene	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND
Vinyl Chloride	ND	ND	ND

MW0610-3			
	8/5/2011	9/29/2011	10/28/2011
Benzene	ND	60	53
Carbon Tetrachloride	4,400	1,900	1,800
Chloroform	1,400	1,300	2,100
Methyl Ethyl Ketone	ND	98	290
Methylene Chloride	ND	26	47
Toluene	ND	61	71
Tetrachloroethene	ND	20	24
Trichloroethene	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND
Vinyl Chloride	ND	ND	ND

MW-60			
	8/5/2011	9/29/2011	10/28/2011
Acetone	ND	130	ND
Carbon Disulfide	38	110	24
Carbon Tetrachloride	1,500	1,500	1,600
Chloroform	1,000	1,700	1,200
Methyl Ethyl Ketone	ND	400	930
Methylene Chloride	12	92	120
Toluene	20	35	46
Tetrachloroethene	37	68	100
Trichloroethene	14	32	50
cis-1,2-Dichloroethene	ND	38	75
trans-1,2-Dichloroethene	ND	ND	ND
Vinyl Chloride	ND	ND	ND



Legend:

- EHC Injection Point Location and ID (approximate)
- ISCR Effectiveness Monitoring Well Location (surveyed)
- MW-60 — ISCR Effectiveness Monitoring Well ID
- Monitoring Well Location (surveyed)
- MW-61 — Monitoring Well ID
- Outline of former Site structures
- Groundwater Analytical Results (Well ID / Date Sampled / Analyte / Concentration (ug/L))
  ND - Non Detect
  Thick outline indicates an exceedance of groundwater standards
- Approximate location of water line
- Approximate location of storm sewer
- Carbon Tetrachloride Area Boundary (approximate)

MW0610-4			
	8/5/2011	9/29/2011	10/28/2011
Benzene	1.5	7.8	5.2
Carbon Tetrachloride	28	ND	ND
Chloroform	30	ND	ND
Tetrachloroethene	ND	ND	ND
Trichloroethene	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND
Vinyl Chloride	ND	ND	ND

SCALE in FEET

0 10 2 20 40

Site base survey provided by Lu Engineers 6/2006
Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

X-REF: NAMES?
2010/July/Syr/Item
J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\SMP\Figures\Figure 12 - Carbon Tet Area.dwg

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DATE: 11/2011 JOB No: N1011

Garlock BCP Site No. 3 (BCP #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 12
Carbon Tetrachloride Area

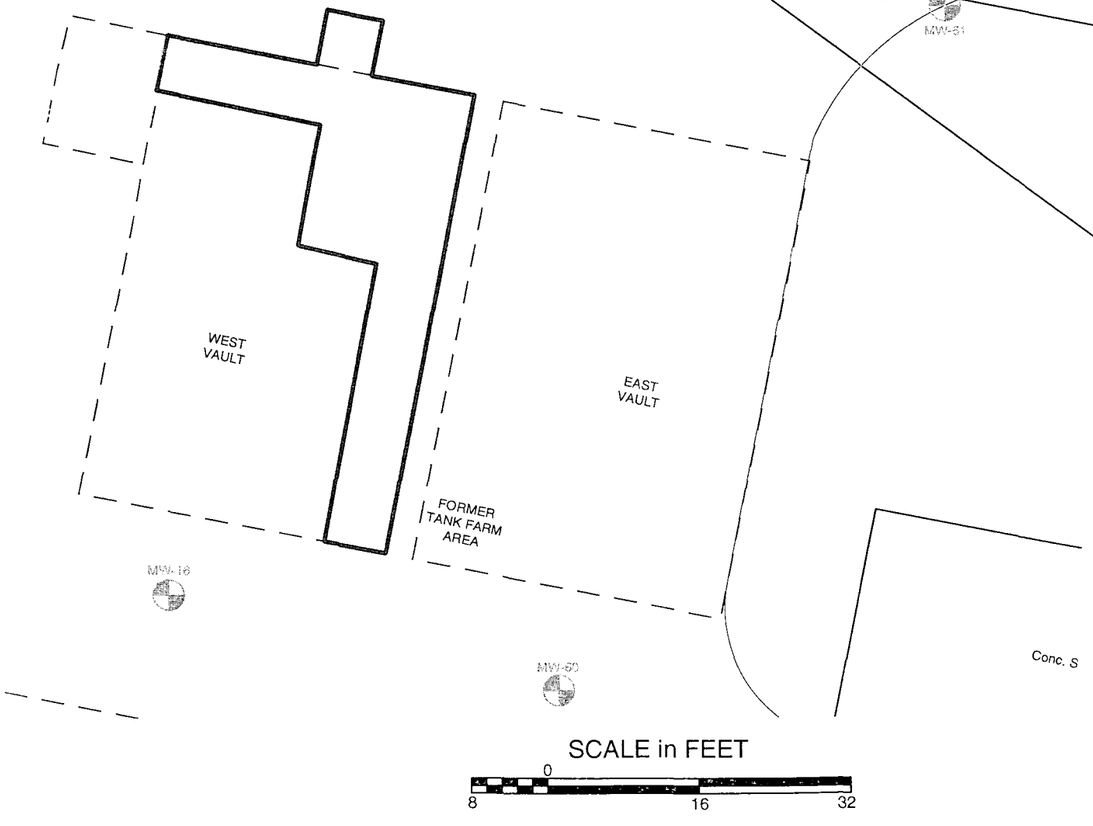
IW-1			
	Oct-10	Sep-11	Oct-11
Toluene	36,000	2,900	3,700
Acetone	610	ND	ND

IW-2			
	Oct-10	Sep-11	Oct-11
Toluene	77,000	1,300	3,400
Acetone	1,200	ND	ND
Benzene	260	89	65
Carbon Disulfide	450	ND	ND
Methylene Chloride	1,200	ND	ND

IW-5	
	Oct-10
Toluene	ND
Benzene	3.6
cis-1,2-Dichloroethene	11
Vinyl Chloride	9.8

IW-4	
	Oct-10
Toluene	ND
Benzene	6.9

IW-3	
	Oct-10
Toluene	0.21
Benzene	33



Legend:

IW-1 — IRM Effectiveness Monitoring Well Location and ID (surveyed)

MW-16 — Monitoring Well Location and ID (surveyed) (not sampled)

Approximate Extent of Excavation (November 2010)

Outline of Former Site Features (approximate)

Well I.D.	
	Date Sampled
Analyte	Concentration (ug/L)

Groundwater Analytical Results
Thick outline indicates an exceedance of groundwater standards

Notes:
ND - Analyzed for but Not Detected.

Site base survey provided by Lu Engineers 6/2006

Features from survey by LaBella Associates P.C. 10/2007, 7/2010, 9/2010, and 11/2010

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Garlock Site No. 3 BCP Site #C859028
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Figure 13
Toluene Area

X-REF: NAMES?
2010/nov/syr/lam
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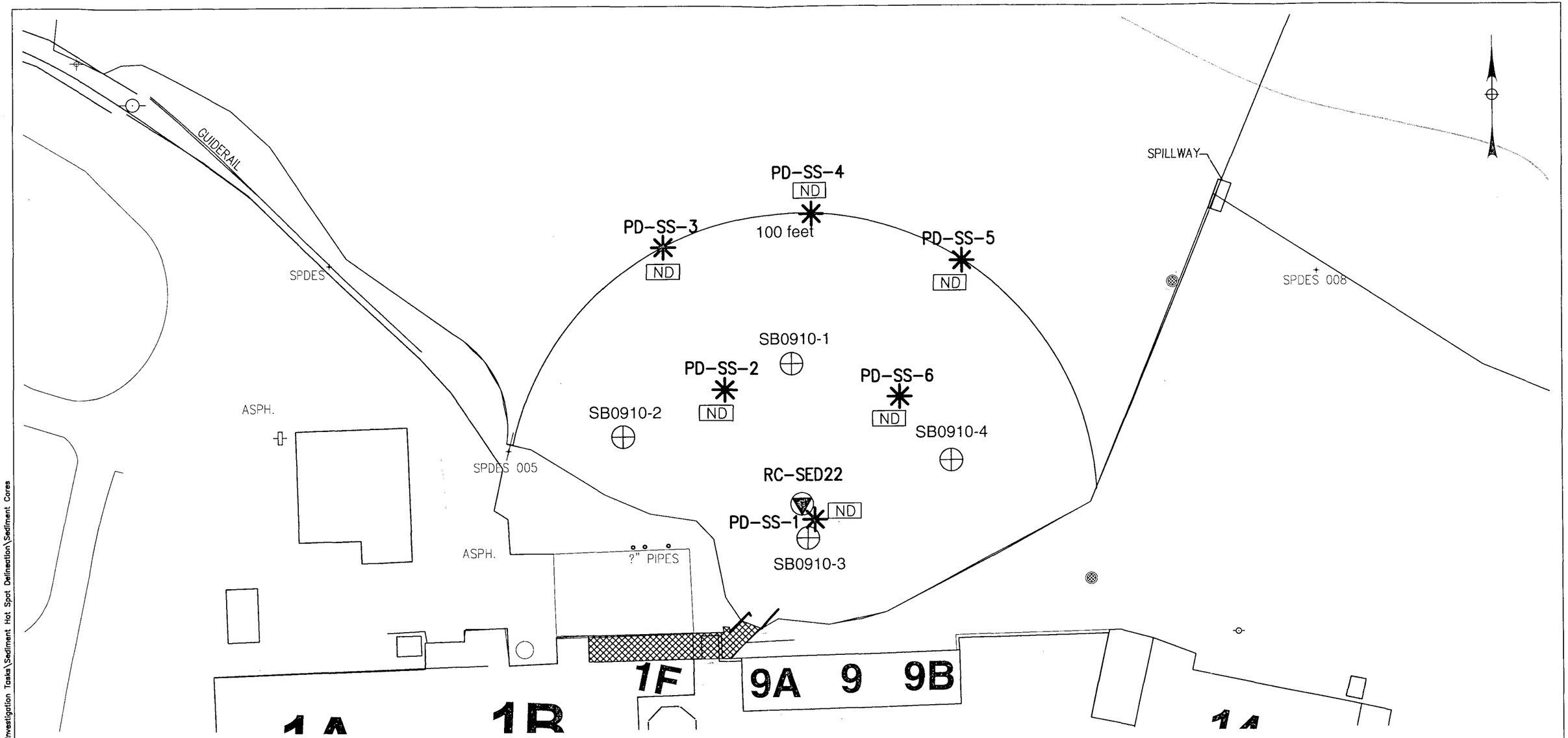

Legend:

RC-SED22 — Sediment Analytical Sample Location and ID (approximate)

SB0910-4 — Sediment Physical Characteristics Sample Location and ID (approximate)

PD-SS-1 — Documentation Sediment Sample Location and ID (approximate)

ND — Non-Detect for Polychlorinated Biphenyls

Notes:
Water elevation during survey was 426.26 feet.
Sediment will be removed from the shore to the 100 foot radius line.
Figure taken from Sediment Remedial Design Document (SWRNA, August 2011).

SCALE in FEET

0 — 16.5 — 33 — 66

Site base survey provided by Lu Engineers 6/2006

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Garlock BCP Site No. 3 (BCP Site #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 14
Sediment Removal Area

X-REF: NAMES?
2010/asp/syr/iem
J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\Supp Investigation Tasks\Sediment Hot Spot Delineation\Sediment Cores

Dam

Toluene Soil Removal Area

Site No. 3
BCP#C859028

Gylon

Klozures

AOC–3 Soil Removal Area

Site No. 3
BCP#C859028

SP–4 Soil Removal Area

AOC–4 Soil Removal Area

MUD CREEK

RED CREEK

ASPHALT PARKING

CHAIN LINK FENCE

ASPH. ROADWAY

POOR ASPH.

NEW ASPH.

GRAVEL

WATER'S EDGE

MW-1 MW-2 MW-3 MW-3A MW-4 MW-4A MW-5 MW-6 MW-7 MW-8 MW-10 MW-11 MW-12 MW-13 MW-14 MW-15 MW-17 MW-18 MW-19 MW-20 MW-21 MW-21A MW-22 MW-23 MW-25 MW-26 MW-27 MW-28 MW-28A MW-29 MW-30 MW-31 MW-31A MW-35 MW-36 MW-37 MW-37A MW-38 MW-39 MW-40 MW-40A MW-41 MW-42 MW-43 MW-44 MW-45 MW-46 MW-47 MW-48 MW-49 MW-50 MW-51 MW-52 MW-53 MW-54 MW-55 MW-56 MW-57 MW-58 MW-59 MW-60 MW-61 MW-63

MW0610-1 MW0610-2 MW0610-3 MW0610-4 MW0610-5

1A 1B 1C 1D 2 3 3B 3E 4 4A 4C 5 5A 5B 6 8 9A 9 9B 11 11A 11A-A 11A-B 11C 14 15 17 17A 19 20 21 24 25

Legend:

MW-8 — Monitoring Well Location and ID

Approximate Location of Soil Removal

BCP Site No. 3 Boundary (approximate)

SCALE in FEET

0 75 150 300

Site base survey provided by Lu Engineers 6/2006

Features from survey by LaBella Associates P.C. 10/2007, 7/2010, and 9/2010

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Garlock BCP Site No. 3 (BCP #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 15
Location of Removed Soils

X-REF: NAMES?
2010/sep/syr/lem
J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\SMP\Figures\Figure 15 - Location of Removed Soils.dwg

Legend:

15-1 — Floor penetration/suction point location and ID. (3–inch diameter schedule 40 PVC riser with a magnehelic gauge) (approximate location)

Manifold/trunk line. (4 inch diameter schedule 40 PVC) (approximate location)

Roof mounted fan location. (Access by stairway between Building 8 and Building 15) (approximate location)

T-10 (-0.130) — Pressure Field Extension (PFE) test hole location and ID (pressure recorded in in/WC) (approximate location)

Notes:

Fan disconnect switch located on roof of Building 8 near fan.

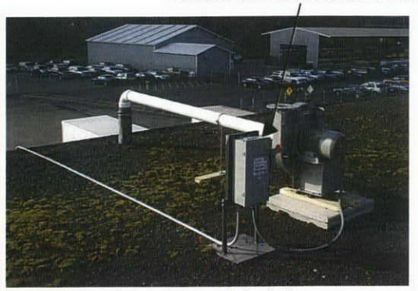
PFE Test data collected and provided by Radon Home Services, November 11 and 14, 2011.

Locations are approximate based on field observations and are not surveyed.

Trunk lines as shown are general piping run locations and are not surveyed.

System consists of a 3–inch schedule 40 PVC riser and suction point through the concrete connected to a 4–inch schedule 40 PVC trunk line. Each riser has a volume damper installed for adjusting pressures at individual suction points to equalize system pressure. Each riser also has a magnehelic gauge installed so that system pressure can be easily verified visually to ensure system performance. Piping is secured using standard galvanized split ring hangers and threaded rods. The 4–inch trunk line penetrates to the exterior through the side–wall or the roof. A blower is mounted on the roof and connected to the 4–inch trunk line. The blower is single phase, 480 volt, and continuous duty. Electrical was installed by Garlock maintenance staff.

Junction Box and Disconnect Switch



Buildings 8 and 15 Roof Fan

Circuit schematic provided by Garlock

Magnehelic Gauge Readings			
Gauge I.D.	Baseline Reading (in/WC)	Gauge I.D.	Baseline Reading (in/WC)
8–1	7.00	8–11	5.00
8–2	7.00	8–12	5.50
8–3	7.00	8–13	5.00
8–4	7.50	8–14	5.25
8–5	7.00	8–15	4.75
8–6	7.25	15–1	3.50
8–7	10.00	15–2	3.75
8–8	7.25	15–3	3.50
8–9	7.25	15–4	3.50
8–10	5.50		

SCALE in FEET

0 15 30 60

Site base survey provided by Lu Engineers 6/2006

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Garlock BCP Site No. 3 (BCP #C859028)
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Figure 16 – Buildings 8 and 15 SSDS Layout and PFE Test Results

X-REF: NAMES?
2010/sep/syr/lem
J:\PROJECTS\N-xxxx\N1000\N1011 – Garlock Site No. 3\SMP\Figures\Figure 16 – Buildings 8 and 15 SSDS.dwg

Disconnect Switch
(located inside Building
14 on north wall)

Building 14 Roof Fan

Legend:

14-1 — Floor penetration/suction point location and ID. (3–inch diameter schedule 40 PVC riser with a magnehelic gauge) (approximate location)

Manifold/trunk line. (4 inch diameter schedule 40 PVC) (approximate location)

Roof mounted fan location. (Access by extension ladder only) (approximate location)

T-1 (-0.003) — Pressure Field Extension (PFE) test hole location and ID (pressure recorded in in/WC) (approximate location)

Notes:

Fan disconnect switch located on wall inside Building 14 beneath fan.

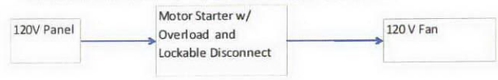
PFE Test data collected and provided by Radon Home Services, November 11, 2011.

Locations are approximate based on field observations and are not surveyed.

Trunk lines as shown are general piping run locations and are not surveyed.

System consists of a 3–inch schedule 40 PVC riser and suction point through the concrete connected to a 4–inch schedule 40 PVC trunk line. Each riser has a volume damper installed for adjusting pressures at individual suction points to equalize system pressure. Each riser also has a magnehelic gauge installed so that system pressure can be easily verified visually to ensure system performance. Piping is secured using standard galvanized split ring hangers and threaded rods. The 4–inch trunk line penetrates to the exterior through the roof. A blower is mounted on the roof and connected to the 4–inch trunk line. The blower is single phase, 220 volt, and continuous duty. Electrical was installed by Garlock maintenance staff.

Circuit schematic provided by Garlock



Magnehelic Gauge Readings	
Gauge I.D.	Baseline Reading (in/WC)
14–1	1.25
14–2	1.25

SCALE in FEET

0 5 10 20

Site base survey provided by Lu Engineers 6/2006

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Garlock BCP Site No. 3 (BCP #C859028)
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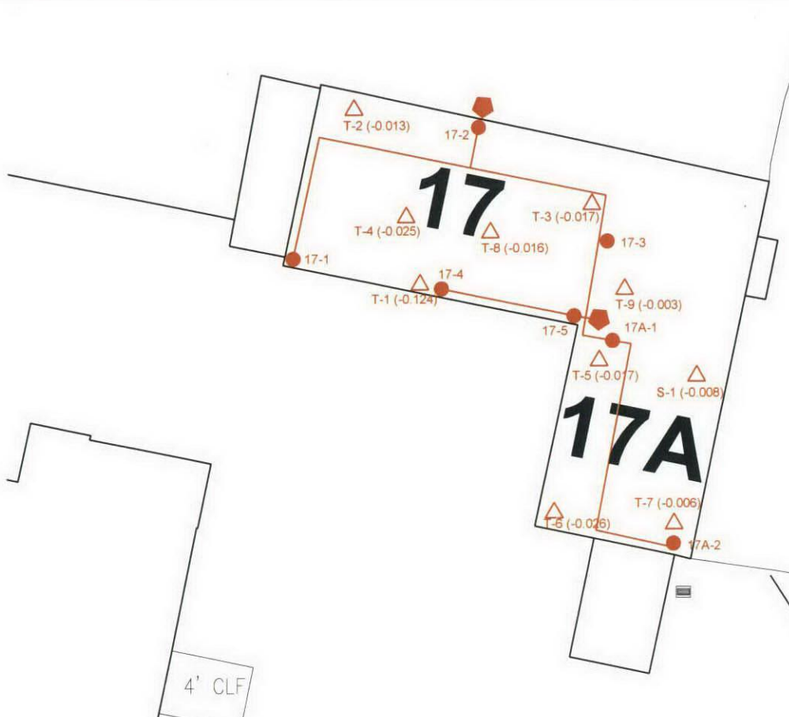
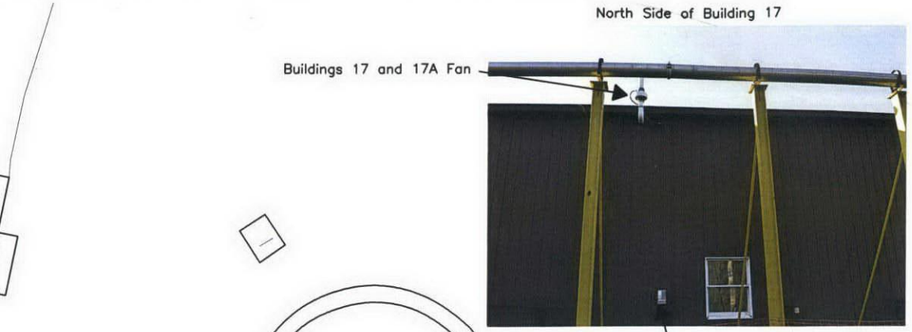
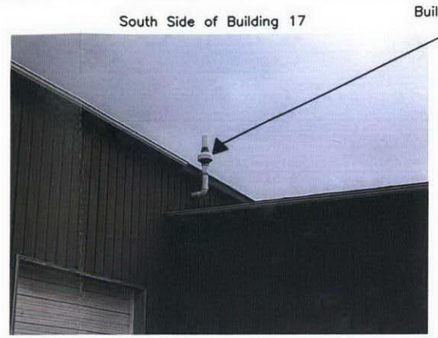
Figure 17

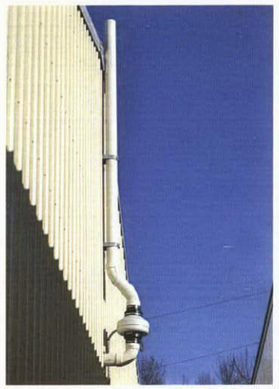
Building 14 SSDS Layout and PFE Test Results

X-REF: NAMES?
2010/swp/syr/fem
J:\PROJECTS\N-xxxx\N1000\N1011 – Garlock Site No. 3\SMP\Figures\Figure 17 – Building 14 SSDS.dwg



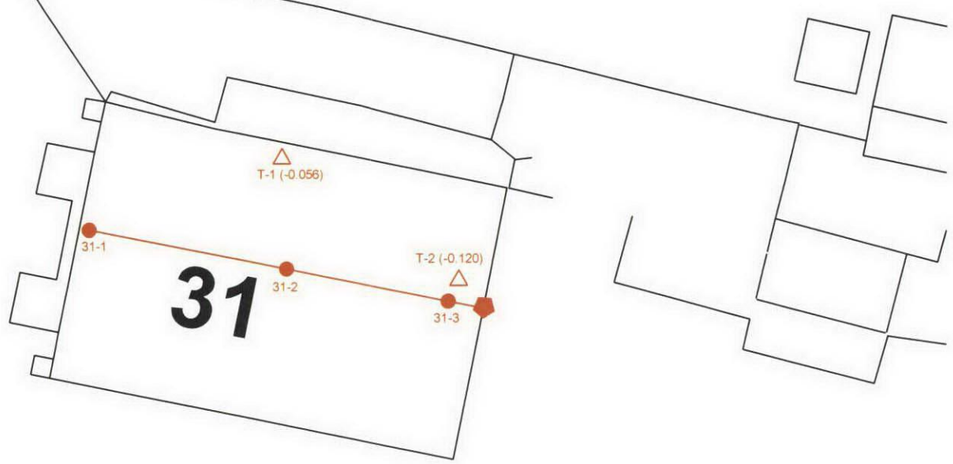






Building 31 Fan

Disconnect Switch (located inside Bldg 31 on east wall beneath fan)



Legend:

- 17-1 — Floor penetration/suction point location and ID. (3–inch diameter schedule 40 PVC riser with a magnehelic gauge) (approximate location)
- Manifold/trunk line. (4 inch diameter schedule 40 PVC) (approximate location)
- Roof mounted fan location. (Access by extension ladder only) (approximate location)
- T-1 (-0.124) — Pressure Field Extension (PFE) test hole location and ID (pressure recorded in in/WC) (approximate location)

Notes:

Two fans are installed on Building 17. The fan on the north side of the building services suction points 17–1, 17–2, 17–3, 17A–1, and 17A–2. The one on the south side of the building services suction points 17–4 and 17–5.

Fan disconnect switch for the south fan on Building 17 is located on wall inside Building 17, beneath the fan.

Fan disconnect switch for the fan located on Building 31 is located on wall inside Building 31 beneath fan.

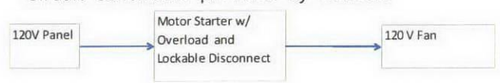
PFE Test data collected and provided by Radon Home Services, November 11, 2011.

Locations are approximate based on field observations and are not surveyed.

Trunk lines as shown are general piping run locations and are not surveyed.

System consists of a 3–inch schedule 40 PVC riser and suction point through the concrete connected to a 4–inch schedule 40 PVC trunk line. Each riser has a volume damper installed for adjusting pressures at individual suction points to equalize system pressure. Each riser also has a magnehelic gauge installed so that system pressure can be easily verified visually to ensure system performance. Piping is secured using standards galvanized split ring hangers and threaded rods. The 4–inch trunk line penetrates to the exterior through the side–wall. A blower is mounted on the exterior side–wall and connected to the 4–inch trunk line. The blower is single phase, 120 volt, and continuous duty. Electrical was installed by Garlock maintenance staff.

Circuit schematic provided by Garlock



Magnehelic Gauge Readings			
Gauge I.D.	Baseline Reading (in/WC)	Gauge I.D.	Baseline Reading (in/WC)
17–1	0.00	17A–1	0.00
17–2	0.00	17A–2	0.00
17–3	0.25	31–1	1.50
17–4	2.00	31–2	1.50
17–5	2.00	31–3	1.50

SCALE in FEET

0 15 30 60

Site base survey provided by Lu Engineers 6/2006

S&W Redevelopment

of North America, LLC.

Syracuse, New York

DATE: 11/2011 JOB No: N1011

Garlock BCP Site No. 3 (BCP #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 18 – Building 17, 17A, and 31 SSDS Layout and PFE Test Results

X-REF: NAMES?
2010/asp/syr/fem
J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\SMP\Figures\Figure 18 - Buildings 17, 17A, and 31 SSDS.dwg

Buildings 11A–A, 11A–B, and 20 Roof Mounted Fan and Disconnect Switch

Legend:

- 20-1 — Floor penetration/suction point location and ID. (3–inch diameter schedule 40 PVC riser with a magnehelic gauge) (approximate location)
- Manifold/trunk line. (4 inch diameter schedule 40 PVC) (approximate location)
- Roof mounted fan location. (Access by ladder on north side of Bldg 11A–A) (approximate location)
- T-1 (-0.012) — Pressure Field Extension (PFE) test hole location and ID (pressure recorded in in/WC) (approximate location)

Notes:

Fan disconnect switch located on roof of Building 11A–B near fan.

PFE Test data collected and provided by Radon Home Services, November 11,2011.

Locations are approximate based on field observations and are not surveyed.

Trunk lines as shown are general piping run locations and are not surveyed.

System consists of 3–inch schedule 40 PVC riser and suction point through the concrete connected to a 4–inch schedule 40 PVC trunk line. Each riser has a volume damper installed for adjusting pressures at individual suction points to equalize system pressure. Each riser also has a magnehelic gauge installed so that system pressure can be easily verified visually to ensure system performance. Piping is secured using standard galvanized split ring hangers and threaded rods. The 4–inch trunk line penetrates to the exterior through the roof. A blower is mounted on the roof and connected to the 4–inch trunk line. The blower is single phase, 480 volt, and continuous duty. Electrical was installed by Garlock maintenance staff.

Magnehelic Gauge Readings			
Gauge I.D.	Baseline Reading (in/WC)	Gauge I.D.	Baseline Reading (in/WC)
11A–B–1	2.25	20–4	1.00
11A–B–2	2.50	20–5	0.75
11A–B–3	5.00	20–6	0.75
11A–B–4	6.75	20–7	0.75
20–1	0.75	20–8	0.45
20–2	0.75	20–9	0.50
20–3	0.75	20–10	0.50

SCALE in FEET

0 15 30 60

Circuit schematic provided by Garlock

Site base survey provided by Lu Engineers 6/2006

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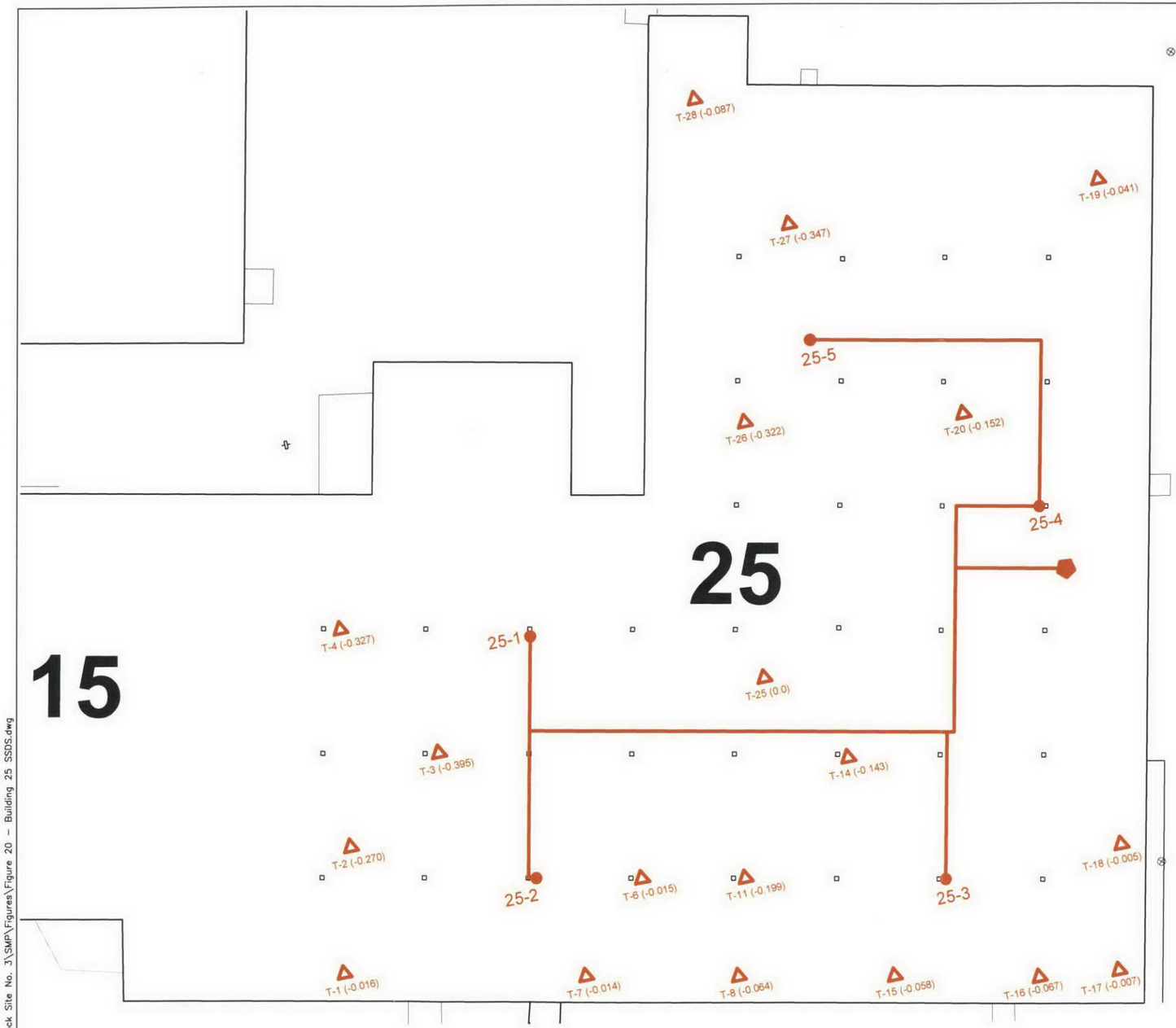
Syracuse, New York

DATE: 11/2011 JOB No: N1011

Garlock BCP Site No. 3 (BCP #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 19 – Building 20
SSDS Layout and PFE Test Results

X-REF: NAMES?
J:\PROJECTS\N-xxxx\N1000\N1011 – Garlock Site No. 3\SMP\Figures\Figure 19 – Buildings 11A–A and 20 SSDS.dwg
2010/sep/syr/lem



Legend:

- Building Support Column
- 25-1 — Floor penetration/suction point. (3 inch diameter schedule 40 PVC riser) (approximate location)
- 4 inch diameter schedule 40 PVC manifold/trunk line (approximate location).
- Roof mounted fan. (Access by the center stairwell to roof) (approximate location)
- T-1 (-0.016) — Pressure Field Extension (PFE) test hole location and ID (pressure recorded in in/WC) (approximate location)

Notes:

Fan disconnect switch located on roof of Building 25 near fan.

PFE Test data collected and provided by Radon Home Services.

Locations are approximate based on field observations and are not surveyed.

Trunk lines as shown are general piping run locations and are not surveyed.

System consists of 3-inch schedule 40 PVC riser and suction point through the concrete connected to a 4-inch schedule 40 PVC trunk line. Each riser has a volume damper installed for adjusting pressures at individual suction points to equalize system pressure. Each riser also has a magnehelic gauge installed so that system pressure can be easily verified visually to ensure system performance. Piping is secured using standard galvanized split ring hangers and threaded rods. the 4-inch trunk line penetrates to the exterior through the roof. A blower is mounted on the roof and connected to the 4-inch trunk line. The blower is single phase, 480 volt, and continuous duty. Electrical was installed by Garlock maintenance staff.

Magnehelic Gauge Readings	
Gauge I.D.	Baseline Reading (in/WC)
25-1	10.50
25-2	10.00
25-3	12.25
25-4	13.50
25-5	12.50

Fan Junction Box and Disconnect Switch

Building 25 Roof Mounted Fan

SCALE in FEET

15 0 30 60

Site base survey provided by Lu Engineers 6/2006.

Circuit schematic provided by Garlock

480V Buss Bar → Disconnect at Buss → Motor Starter w/ Overload and Lockable Disconnect → Disconnect at unit → 480 V Fan

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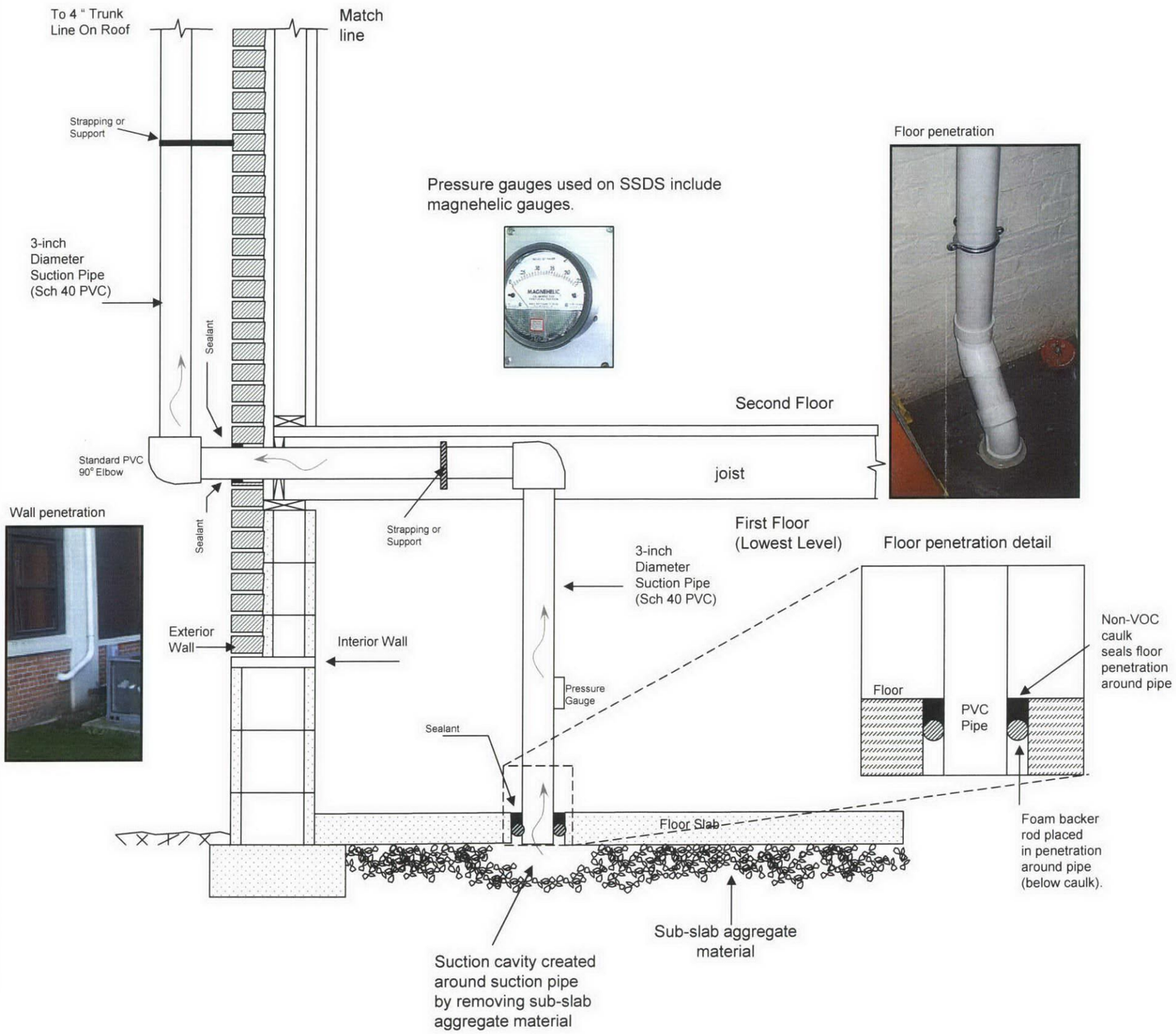
Garlock BCP Site No. 3 (BCP #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 20 – Building 25
SSDS Layout and PFE Test Results

X-REF: NAMES?
2008 /myXref /jlk
J:\PROJECTS\N-xxxx\N1000\N1011 – Garlock Site No. 3\SMP\Figures\Figure 20 – Building 25 SSDS.dwg

Interior Components
(Not To Scale)



Pressure gauges used on SSDS include magnehelic gauges.

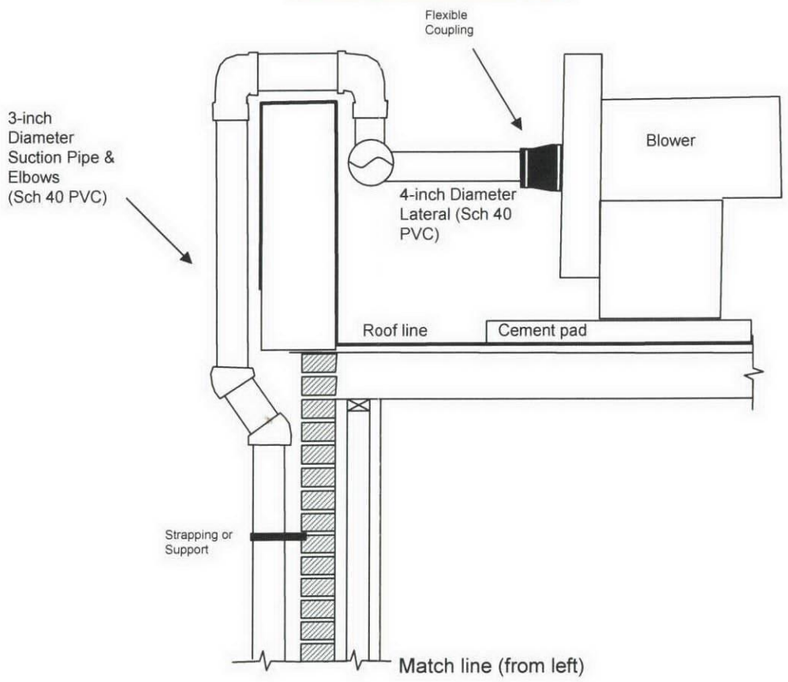
Floor penetration

Floor penetration detail

Wall penetration

Exterior Components
(Not To Scale)

Blower



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DATE: 11/2011 JOB No. N1011

Garlock BCP Site No. 3 (BCP #C859028)
Site Management Plan
1666 Division Street, Palmyra
Wayne County, New York

Figure 21
Sub-Slab Depressurization System (SSDS)
Equipment/Construction Details

Tables

Table 1: (Page 1 of 7). Surface Soil Sample Analytical Results. Garlock BCP Site No. 3. Palmyra, New York

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification																	
	Unrestricted Use	Industrial Use	SS0811-01 (6-12)		SS0811-02 (6-12)		SS0811-03 (6-12)		SS0811-04 (6-12)		SS0811-05 (6-12)		SS0811-06 (6-12)		SS0811-07 (6-12)		SS0811-08 (6-12)		SS0811-09 (6-12)	
VOCs by EPA Method 8260B				D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
Acetone	0.05	1,000	U	0.0205	0.0171 JB		U	0.0239	U	0.0260	0.0251 B		0.0983 B		U	0.0173	0.0217 JB		U	0.0224
Benzene	0.06	89	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Bromochloromethane			U	0.0103	U	0.0104	U	0.0120	U	0.0130	U	0.0111	U	0.0114	U	0.00866	U	0.0114	U	0.0112
Bromodichloromethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Bromoform			U	0.0103	U	0.0104	U	0.0120	U	0.0130	U	0.0111	U	0.0114	U	0.0087	U	0.0114	U	0.0112
Bromomethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
2-Butanone	0.12	1,000	U	0.0205	U	0.0208	U	0.0239	U	0.0260	U	0.0221	U	0.0227	U	0.0173	U	0.0228	U	0.0224
Carbon disulfide			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Carbon tetrachloride	0.76	44	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Chlorobenzene	1.1	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Chloroethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Chloroform	0.37	700	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Chloromethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Cyclohexane			U	0.0205	U	0.0208	U	0.0239	U	0.0260	U	0.0221	U	0.0227	U	0.0173	U	0.0228	U	0.0224
Dibromochloromethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,2-Dibromo-3-Chloropropane			U	0.0205	U	0.0208	U	0.0239	U	0.0260	U	0.0221	U	0.0227	U	0.0173	U	0.0228	U	0.0224
1,2-Dibromoethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,2-Dichlorobenzene	1.1	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,3-Dichlorobenzene	2.4	560	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,4-Dichlorobenzene	1.8	250	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Dichlorodifluoromethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,1-Dichloroethane	0.27	480	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,2-Dichloroethane	0.02	60	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,1-Dichloroethene	0.33	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
cis-1,2-Dichloroethene	0.25	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
trans-1,2-Dichloroethene	0.19	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,2-Dichloropropane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
cis-1,3-Dichloropropene			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
trans-1,3-Dichloropropene			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Ethylbenzene	1	780	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Freon 113			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
2-Hexanone			U	0.0103	U	0.0104	U	0.0120	U	0.0130	U	0.0111	U	0.0114	U	0.00866	U	0.0114	U	0.0112
Isopropylbenzene			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Methyl acetate			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Methyl tert-butyl Ether	0.93	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Methylcyclohexane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Methylene chloride	0.05	1,000	U	0.0103	U	0.0104	U	0.0120	0.0293		U	0.0111	0.00781 J		0.00752 J		U	0.0114	0.019	
4-Methyl-2-pentanone			U	0.0103	U	0.0104	U	0.0120	U	0.0130	U	0.0111	U	0.0114	U	0.00866	U	0.0114	U	0.0112
Styrene			U	0.0103	U	0.0104	U	0.0120	U	0.0130	U	0.0111	U	0.0114	U	0.00866	U	0.0114	U	0.0112
1,1,2,2-Tetrachloroethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Tetrachloroethene	1.3	300	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Toluene	0.7	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,2,3-Trichlorobenzene			U	0.0103	U	0.0104	U	0.0120	U	0.0130	U	0.0111	U	0.0114	U	0.00866	U	0.0114	U	0.0112
1,2,4-Trichlorobenzene			U	0.0103	U	0.0104	U	0.0120	U	0.0130	U	0.0111	U	0.0114	U	0.00866	U	0.0114	U	0.0112
1,1,1-Trichloroethane	0.68	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
1,1,2-Trichloroethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Trichloroethene	0.47	400	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	0.0681		0.0108	
Trichlorofluoromethane			U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
Vinyl chloride	0.02	27	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
m,p-Xylene	0.26	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448
o-Xylene	0.26	1,000	U	0.0041	U	0.00415	U	0.00478	U	0.00521	U	0.00443	U	0.00454	U	0.00347	U	0.00457	U	0.00448

*Soil Cleanup Objectives from 6NYCRR Part 375-6 (December 14, 2006).

U - Analyzed for but not detected

J - Estimated Value

B - Analyte also detected in the associated laboratory method blank

D.L. - Detection Limit

Bold and boxed results indicate an exceedance of Unrestricted Use SCOs

Bold, boxed, and shaded results indicate an exceedance of Industrial Use SCOs

Table 1: (Page 2 of 7). Surface Soil Sample Analytical Results. Garlock BCP Site No. 3. Palmyra, New York

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification																	
	Unrestricted Use	Industrial Use	SS0811-10 (6-12)		SS0811-11 (6-12)		SS0811-12 (6-12)		SS0811-13 (6-12)		SS0811-14 (6-12)		SS0811-15 (6-12)		SS0811-16 (6-12)		SS0811-17 (6-12)		Duplicate (6-12)	
																			(SS0811-09)	
VOCs by EPA Method 8260B				D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
Acetone	0.05	1,000	U	0.0204	U	0.0233	U	0.0190	U	0.0228	U	0.0251	U	0.0221	U	0.0222	U	0.0231	0.0167 JB	
Benzene	0.06	89	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Bromochloromethane			U	0.0102	U	0.0116	U	0.00951	U	0.0114	U	0.0125	U	0.0110	U	0.0111	U	0.0116		U 0.01220
Bromodichloromethane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Bromoform			U	0.0102	U	0.0116	U	0.00951	U	0.0114	U	0.0125	U	0.0110	U	0.0111	U	0.0116		U 0.01220
Bromomethane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
2-Butanone	0.12	1,000	U	0.0204	U	0.0233	U	0.0190	U	0.0228	U	0.0251	U	0.0221	U	0.0222	U	0.0231		U 0.02440
Carbon disulfide			U	0.00406	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Carbon tetrachloride	0.76	44	U	0.00406	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Chlorobenzene	1.1	1,000	U	0.00406	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Chloroethane			U	0.00406	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Chloroform	0.37	700	U	0.00406	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Chloromethane			U	0.00406	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Cyclohexane			U	0.0204	U	0.0233	U	0.0190	U	0.0228	U	0.0251	U	0.0221	U	0.0222	U	0.0231		U 0.0244
Dibromochloromethane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,2-Dibromo-3-Chloropropane			U	0.0204	U	0.0233	U	0.0190	U	0.0228	U	0.0251	U	0.0221	U	0.0222	U	0.0231		U 0.0244
1,2-Dibromoethane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,2-Dichlorobenzene	1.1	1,000	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,3-Dichlorobenzene	2.4	560	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,4-Dichlorobenzene	1.8	250	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Dichlorodifluoromethane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,1-Dichloroethane	0.27	480	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,2-Dichloroethane	0.02	60	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,1-Dichloroethene	0.33	1,000	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
cis-1,2-Dichloroethene	0.25	1,000	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
trans-1,2-Dichloroethene	0.19	1,000	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,2-Dichloropropane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
cis-1,3-Dichloropropene			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
trans-1,3-Dichloropropene			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Ethylbenzene	1	780	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Freon 113			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
2-Hexanone			U	0.0102	U	0.0116	U	0.00951	U	0.0114	U	0.0125	U	0.0110	U	0.0111	U	0.0116		U 0.0122
Isopropylbenzene			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Methyl acetate			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Methyl tert-butyl Ether	0.93	1,000	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Methylcyclohexane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Methylene chloride	0.05	1,000	0.0225		U	0.0116	U	0.00951	U	0.0114	U	0.0125	U	0.0110	U	0.0111	U	0.0116	0.0209	
4-Methyl-2-pentanone			U	0.0102	U	0.0116	U	0.00951	U	0.0114	U	0.0125	U	0.0110	U	0.0111	U	0.0116		U 0.0122
Styrene			U	0.0102	U	0.0116	U	0.00951	U	0.0114	U	0.0125	U	0.0110	U	0.0111	U	0.0116		U 0.0122
1,1,2,2-Tetrachloroethane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Tetrachloroethene	1.3	300	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Toluene	0.7	1,000	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,2,3-Trichlorobenzene			U	0.0102	U	0.0116	U	0.00951	U	0.0114	U	0.0125	U	0.0110	U	0.0111	U	0.0116		U 0.0122
1,2,4-Trichlorobenzene			U	0.0102	U	0.0116	U	0.00951	U	0.0114	U	0.0125	U	0.0110	U	0.0111	U	0.0116		U 0.0122
1,1,1-Trichloroethane	0.68	1,000	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
1,1,2-Trichloroethane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Trichloroethene	0.47	400	0.04		U	0.00466	U	0.00380	0.0358		U	0.00502	U	0.00441	U	0.00444	U	0.00463	0.0271	
Trichlorofluoromethane			U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
Vinyl chloride	0.02	27	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
m,p-Xylene	0.26	1,000	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489
o-Xylene	0.26	1,000	U	0.00409	U	0.00466	U	0.00380	U	0.00455	U	0.00502	U	0.00441	U	0.00444	U	0.00463		U 0.00489

*Soil Cleanup Objectives from 6NYCRR Part 375-6 (December 14, 2006).

U - Analyzed for but not detected

J - Estimated Value

B - Analyte also detected in the associated laboratory method blank

D.L. - Detection Limit

Bold and boxed results indicate an exceedance of Unrestricted Use SCOs

Bold, boxed, and shaded results indicate an exceedance of Industrial Use SCOs

Table 1: (Page 3 of 7). Surface Soil Sample Analytical Results. Garlock BCP Site No. 3. Palmyra, New York

Analyte (mg/kg)	Soil Cleanup Objectives*.		Sample Identification													
	Unrestricted Use	Industrial Use	SS0811-01 (0-2)	SS0811-01 (6-12)	SS0811-02 (0-2)	SS0811-02 (6-12)	SS0811-03 (0-2)	SS0811-03 (6-12)	SS0811-04 (0-2)	SS0811-04 (6-12)	SS0811-05 (0-2)	SS0811-05 (6-12)	SS0811-06 (0-2)	SS0811-06 (6-12)
SVOCs by EPA Method 8270C			D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.
Acenaphthene	20	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Acenaphthylene	100	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Acetophenone			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Anthracene	100	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Atrazine			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Benzaldehyde			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Benzo(a)anthracene	1	11	0.183 J	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Benzo(a)pyrene	1	1.1	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Benzo(b)fluoranthene	1	11	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Benzo(g,h,i)perylene	100	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Benzo(k)fluoranthene	0.8	110	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Biphenyl			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Bis(2-chloroethyl) ether			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Bis(2-chloroethoxy) methane			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Bis(2-ethylhexyl) phthalate			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Bis(2-chloroisopropyl) ether			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
4-Bromophenyl phenyl ether			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Butylbenzylphthalate			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Caprolactam			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Carbazole			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
4-Chloroaniline			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
4-Chloro-3-methylphenol			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2-Chloronaphthalene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2-Chlorophenol			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
4-Chlorophenyl phenyl ether			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Chrysene	1	110	0.190 J	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
1,3-Dichlorobenzene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
1,4-Dichlorobenzene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
1,2-Dichlorobenzene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Dibenz(a,h)anthracene	0.33	1.1	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Dibenzofuran			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
3,3'-Dichlorobenzidine			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2,4-Dichlorophenol			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Diethyl phthalate			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2,4-Dimethylphenol			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Dimethyl Phthalate			U 0.861	U 0.823	U 0.916	U 0.871	U 0.887	U 0.865	U 1.020	U 0.955	U 0.858	U 0.831	U 0.860	U 0.914
Di-n-butyl phthalate			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
4,6-Dinitro-2-methylphenol			U 0.861	U 0.823	U 0.916	U 0.871	U 0.887	U 0.895	U 1.020	U 0.955	U 0.858	U 0.831	U 0.860	U 0.914
2,4-Dinitrophenol			U 0.861	U 0.823	U 0.916	U 0.871	U 0.887	U 0.895	U 1.020	U 0.955	U 0.858	U 0.831	U 0.860	U 0.914
2,4-Dinitrotoluene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2,6-Dinitrotoluene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Di-n-octylphthalate			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Fluoranthene	100	1,000	0.366	U 0.329	U 0.366	U 0.348	0.196 J	U 0.358	U 0.410	0.242 J	U 0.343	U 0.332	0.236 J	U 0.366
Fluorene	30	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Hexachlorobenzene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Hexachlorobutadiene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Hexachlorocyclopentadiene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Hexachloroethane			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Indeno(1,2,3-cd)pyrene	0.5	11	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Isophorone			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2-Methylnaphthalene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2-Methylphenol	0.33	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
3&4-Methylphenol	0.33	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Naphthalene	12	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2-Nitroaniline			U 0.861	U 0.823	U 0.916	U 0.871	U 0.887	U 0.895	U 1.020	U 0.955	U 0.858	U 0.831	U 0.860	U 0.914
3-Nitroaniline			U 0.861	U 0.823	U 0.916	U 0.871	U 0.887	U 0.895	U 1.020	U 0.955	U 0.858	U 0.831	U 0.860	U 0.914
4-Nitroaniline			U 0.861	U 0.823	U 0.916	U 0.871	U 0.887	U 0.895	U 1.020	U 0.955	U 0.858	U 0.831	U 0.860	U 0.914
Nitrobenzene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2-Nitrophenol			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
4-Nitrophenol			U 0.861	U 0.82	U 0.916	U 0.871	U 0.887	U 0.895	U 1.020	U 0.955	U 0.858	U 0.831	U 0.860	U 0.914
N-Nitroso-di-n-propylamine			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
N-Nitrosodiphenylamine			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Pentachlorophenol	0.8	55	U 0.861	U 0.823	U 0.916	U 0.871	U 0.887	U 0.895	U 1.020	U 0.955	U 0.858	U 0.831	U 0.860	U 0.914
Phenanthrene	100	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Phenol	0.33	1,000	U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
Pyrene	100	1,000	0.299 J	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	0.200 J	U 0.343	U 0.332	0.209 J	U 0.366
1,2,4-Trichlorobenzene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2,4,5-Trichlorophenol			U 0.861	U 0.823	U 0.916	U 0.871	U 0.887	U 0.895	U 1.020	U 0.955	U 0.858	U 0.831	U 0.860	U 0.914
2,4,6-Trichlorophenol			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
1,2,4,5-Tetrachlorobenzene			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366
2,3,4,6-Tetrachlorophenol			U 0.344	U 0.329	U 0.366	U 0.348	U 0.355	U 0.358	U 0.410	U 0.382	U 0.343	U 0.332	U 0.344	U 0.366

*Soil Cleanup Objectives from 6NYCRR Part 375-6 (December 14, 2006).

U - Analyzed for but not detected

J - Estimated Value

D - The percent difference between the LCS and the LCS Duplicate calculated outside QC limits

B - Analyte also detected in the associated laboratory method blank

M - The percent difference between the Matrix Spike and the Matrix Spike Duplicate calculated outside QC limits

D.L. - Detection Limit

Bold and boxed results indicate an exceedance of Unrestricted Use SCOs

Bold, boxed, and shaded results indicate an exceedance of Industrial Use SCOs

Table 1: (Page 4 of 7). Surface Soil Sample Analytical Results. Garlock BCP Site No. 3. Palmyra, New York

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification																			
	Unrestricted Use	Industrial Use	SS0811-07 (0-2)		SS0811-07 (6-12)		SS0811-08 (0-2)		SS0811-08 (6-12)		SS0811-09 (0-2)		SS0811-09 (6-12)		SS0811-10 (0-2)		SS0811-10 (6-12)		SS0811-11 (0-2)		SS0811-11 (6-12)		SS0811-12 (0-2)		SS0811-12 (6-12)	
SVOCs by EPA Method 8270C				D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
Acenaphthene	20	1,000	U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Acenaphthylene	100	1,000	U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	0.485		U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Acetophenone			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Anthracene	100	1,000	U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	0.366	J	U	0.342	0.705		U	0.342	U	0.324	U	0.331
Atrazine			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Benzaldehyde			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Benzo(a)anthracene	1	11	U	0.306	U	0.305	0.219	J	U	0.323	0.457		0.515		1.340		U	0.342	2.210		U	0.342	U	0.324	U	0.331
Benzo(a)pyrene	1	1.1	U	0.306	U	0.305	0.212	J	U	0.323	0.389		0.315	J	1.070		U	0.342	1.980		U	0.342	U	0.324	U	0.331
Benzo(b)fluoranthene	1	11	U	0.306	U	0.305	0.241	J	U	0.323	0.417		0.337	J	1.550		U	0.342	2.220		U	0.342	U	0.324	U	0.331
Benzo(g,h,i)perylene	100	1,000	U	0.306	U	0.305	0.171	J	U	0.323	0.270	J	0.195	J	0.827		U	0.342	1.540		U	0.342	U	0.324	U	0.331
Benzo(k)fluoranthene	0.8	110	U	0.306	U	0.305	U	0.335	U	0.323	0.309	J	0.279	J	1.030		U	0.342	1.560		U	0.342	U	0.324	U	0.331
Biphenyl			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Bis(2-chloroethyl) ether			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Bis(2-chloroethoxy) methane			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Bis(2-ethylhexyl) phthalate			U	0.306	U	0.305	U	0.335	U	0.323	1.460		U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Bis(2-chloroisopropyl) ether			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
4-Bromophenyl phenyl ether			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Butylbenzylphthalate			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Caprolactam			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Carbazole			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
4-Chloroaniline			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
4-Chloro-3-methylphenol			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2-Chloronaphthalene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2-Chlorophenol			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
4-Chlorophenyl phenyl ether			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Chrysene	1	110	0.153	J 0.306	U	0.305	0.270	J	U	0.323	0.551		0.542		1.980		U	0.342	2.770		U	0.342	U	0.324	U	0.331
1,3-Dichlorobenzene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
1,4-Dichlorobenzene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
1,2-Dichlorobenzene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Dibenz(a,h)anthracene	0.33	1.1	U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	0.367		U	0.342	U	0.324	U	0.331
Dibenzofuran			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
3,3'-Dichlorobenzidine			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2,4-Dichlorophenol			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Diethyl phthalate			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2,4-Dimethylphenol			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Dimethyl Phthalate			U	0.765	U	0.762	U	0.837	U	0.808	U	0.883	U	0.860	U	0.992	U	0.855	U	0.857	U	0.856	U	0.811	U	0.828
Di-n-butyl phthalate			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
4,6-Dinitro-2-methylphenol			U	0.765	U	0.762	U	0.837	U	0.808	U	0.883	U	0.860	U	0.992	U	0.855	U	0.857	U	0.856	U	0.811	U	0.828
2,4-Dinitrophenol			U	0.765	U	0.762	U	0.837	U	0.808	U	0.883	U	0.860	U	0.992	U	0.855	U	0.857	U	0.856	U	0.811	U	0.828
2,4-Dinitrotoluene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2,6-Dinitrotoluene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Di-n-octylphthalate			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Fluoranthene	100	1,000	0.292	J	U	0.305	0.482		U	0.323	1.080		1.200		2.740		0.289	J	5.020		0.262	J	U	0.324	U	0.331
Fluorene	30	1,000	U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Hexachlorobenzene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Hexachlorobutadiene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Hexachlorocyclopentadiene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Hexachloroethane			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Indeno(1,2,3-cd)pyrene	0.5	11	U	0.306	U	0.305	U	0.335	U	0.323	0.195	J	U	0.344	0.605		U	0.342	1.160		U	0.342	U	0.324	U	0.331
Isophorone			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2-Methylnaphthalene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2-Methylphenol	0.33	1,000	U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
3&4-Methylphenol	0.33	1,000	U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Naphthalene	12	1,000	U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2-Nitroaniline			U	0.765	U	0.762	U	0.837	U	0.808	U	0.883	U	0.860	U	0.992	U	0.855	U	0.857	U	0.856	U	0.811	U	0.828
3-Nitroaniline			U	0.765	U	0.762	U	0.837	U	0.808	U	0.883	U	0.860	U	0.992	U	0.855	U	0.857	U	0.856	U	0.811	U	0.828
4-Nitroaniline			U	0.765	U	0.762	U	0.837	U	0.808	U	0.883	U	0.860	U	0.992	U	0.855	U	0.857	U	0.856	U	0.811	U	0.828
Nitrobenzene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2-Nitrophenol			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
4-Nitrophenol			U	0.765	U	0.762	U	0.837	U	0.808	U	0.883	U	0.860	U	0.992	U	0.855	U	0.857	U	0.856	U	0.811	U	0.828
N-Nitroso-di-n-propylamine			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
N-Nitrosodiphenylamine			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Pentachlorophenol	0.8	55	U	0.765	U	0.762	U	0.837	U	0.808	U	0.883	U	0.860	U	0.992	U	0.855	U	0.857	U	0.856	U	0.811	U	0.828
Phenanthrene	100	1,000	U	0.306	U	0.305	U	0.335	U	0.323	0.549		0.636		0.836		U	0.342	2.470		U	0.343	U	0.324	U	0.331
Phenol	0.33	1,000	U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
Pyrene	100	1,000	0.258	J	U	0.305	0.405		U	0.323	0.881		1.000		2.340		0.222	J	4.160		0.214	J	U	0.324	U	0.331
1,2,4-Trichlorobenzene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2,4,5-Trichlorophenol			U	0.765	U	0.762	U	0.837	U	0.808	U	0.883	U	0.860	U	0.992	U	0.855	U	0.857	U	0.856	U	0.811	U	0.828
2,4,6-Trichlorophenol			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
1,2,4,5-Tetrachlorobenzene			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331
2,3,4,6-Tetrachlorophenol			U	0.306	U	0.305	U	0.335	U	0.323	U	0.353	U	0.344	U	0.397	U	0.342	U	0.343	U	0.342	U	0.324	U	0.331

*Soil Cleanup Objectives from 6NYCRR Part 375-6 (December 14, 2006).

U - Analyzed for but not detected

J - Estimated Value

D - The percent difference between the LCS and the LCS Duplicate calculated outside QC limits

B - Analyte also detected in the associated laboratory method blank

M - The percent difference between the Matrix Spike and the Matrix Spike Duplicate calculated outside QC limits

D.L. - Detection Limit

Bold and boxed results indicate an exceedance of Unrestricted Use SCOs

Bold, boxed, and shaded results indicate an exceedance of Industrial Use SCOs

N1011

Table 1: (Page 5 of 7). Surface Soil Sample Analytical Results. Garlock BCP Site No. 3. Palmyra, New York

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification																					
	Unrestricted Use	Industrial Use	SS0811-13 (0-2)		SS0811-13 (6-12)		SS0811-14 (0-2)		SS0811-14 (6-12)		SS0811-15 (0-2)		SS0811-15 (6-12)		SS0811-16 (0-2)		SS0811-16 (6-12)		SS0811-17 (0-2)		SS0811-17 (6-12)		Duplicate (0-2) (SS0811-12)		Duplicate (6-12) (SS0811-09)	
SVOCs by EPA Method 8270C				D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
Acenaphthene	20	1,000		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Acenaphthylene	100	1,000		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Acetophenone				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Anthracene	100	1,000		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Atrazine				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Benzaldehyde				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Benzo(a)anthracene	1	11	0.230 J			U 0.368		U 0.375		U 0.416		U 0.353	0.328 J			U 0.405		U 0.378		U 0.314	0.247 J			U 0.331	0.217 J	
Benzo(a)pyrene	1	1.1	0.218 J			U 0.368		U 0.375		U 0.416		U 0.353	0.282 J			U 0.405		U 0.378		U 0.314	0.199 J			U 0.331		U 0.353
Benzo(b)fluoranthene	1	11	0.227 J		0.208 J			U 0.375		U 0.416		U 0.353	0.301 J			U 0.405		U 0.378		U 0.314	0.231 J			U 0.331		U 0.353
Benzo(g,h,i)perylene	100	1,000		U 0.371	0.767			U 0.375		U 0.416		U 0.353	0.204 J			U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Benzo(k)fluoranthene	0.8	110	0.201 J			U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Biphenyl				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Bis(2-chloroethyl) ether				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Bis(2-chloroethoxy) methane				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Bis(2-ethylhexyl) phthalate				U 0.371	4.670			U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Bis(2-chloroisopropyl) ether				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
4-Bromophenyl phenyl ether				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Butylbenzylphthalate				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Caprolactam				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Carbazole				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
4-Chloroaniline				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
4-Chloro-3-methylphenol				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2-Chloronaphthalene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2-Chlorophenol				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
4-Chlorophenyl phenyl ether				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Chrysene	1	110	0.305 J		0.221 J			U 0.375		U 0.416		U 0.353	0.323 J		0.213 J			U 0.378		U 0.314	0.250 J			U 0.331	0.248 J	
1,3-Dichlorobenzene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
1,4-Dichlorobenzene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
1,2-Dichlorobenzene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Dibenz(a,h)anthracene	0.33	1.1		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Dibenzofuran				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
3,3'-Dichlorobenzidine				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2,4-Dichlorophenol				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Diethyl phthalate				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2,4-Dimethylphenol				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Dimethyl Phthalate				U 0.926		U 0.919		U 0.938		U 1.040		U 0.882		U 0.880		U 1.010		U 0.945		U 0.785		U 0.825		U 0.828		U 0.883
Di-n-butyl phthalate				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
4,6-Dinitro-2-methylphenol				U 0.926		U 0.919		U 0.938		U 1.040		U 0.882		U 0.880		U 1.010		U 0.945		U 0.785		U 0.825		U 0.828		U 0.883
2,4-Dinitrophenol				U 0.926		U 0.919		U 0.938		U 1.040		U 0.882		U 0.880		U 1.010		U 0.945		U 0.785		U 0.825		U 0.828		U 0.883
2,4-Dinitrotoluene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2,6-Dinitrotoluene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Di-n-octylphthalate				U 0.371	0.279 J			U 0.375		U 0.416		U 0.353		U 0.352	0.307 J			U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Fluoranthene	100	1,000	0.507		0.427			U 0.375		U 0.416	0.264 J		0.714			U 0.405	0.195 J			U 0.314	0.491			U 0.331	0.456	
Fluorene	30	1,000		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Hexachlorobenzene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Hexachlorobutadiene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Hexachlorocyclopentadiene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Hexachloroethane				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Indeno(1,2,3-cd)pyrene	0.5	11		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Isophorone				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2-Methylnaphthalene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2-Methylphenol	0.33	1,000		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
3&4-Methylphenol	0.33	1,000		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Naphthalene	12	1,000		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2-Nitroaniline				U 0.926		U 0.919		U 0.938		U 1.040		U 0.882		U 0.880		U 1.010		U 0.945		U 0.785		U 0.825		U 0.828		U 0.883
3-Nitroaniline				U 0.926		U 0.919		U 0.938		U 1.040		U 0.882		U 0.880		U 1.010		U 0.945		U 0.785		U 0.825		U 0.828		U 0.883
4-Nitroaniline				U 0.926		U 0.919		U 0.938		U 1.040		U 0.882		U 0.880		U 1.010		U 0.945		U 0.785		U 0.825		U 0.828		U 0.883
Nitrobenzene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2-Nitrophenol				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
4-Nitrophenol				U 0.926		U 0.919		U 0.938		U 1.040		U 0.882		U 0.880		U 1.010		U 0.945		U 0.785		U 0.825		U 0.828		U 0.883
N-Nitroso-di-n-propylamine				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
N-Nitrosodiphenylamine				U 0.371	0.607			U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Pentachlorophenol	0.8	55		U 0.926		U 0.919		U 0.938		U 1.040		U 0.882		U 0.880		U 1.010		U 0.945		U 0.785		U 0.825		U 0.828		U 0.883
Phenanthrene	100	1,000		U 0.371	0.204 J			U 0.375		U 0.416		U 0.353	0.356			U 0.405		U 0.378		U 0.314		U 0.330		U 0.331	0.217 J	
Phenol	0.33	1,000		U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
Pyrene	100	1,000	0.408		0.459			U 0.375		U 0.416	0.226 J		0.619			U 0.405		U 0.378		U 0.314	0.401			U 0.331	0.403	
1,2,4-Trichlorobenzene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2,4,5-Trichlorophenol				U 0.926		U 0.919		U 0.938		U 1.010		U 0.882		U 0.880		U 1.010		U 0.945		U 0.785		U 0.825		U 0.828		U 0.883
2,4,6-Trichlorophenol				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
1,2,4,5-Tetrachlorobenzene				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353
2,3,4,6-Tetrachlorophenol				U 0.371		U 0.368		U 0.375		U 0.416		U 0.353		U 0.352		U 0.405		U 0.378		U 0.314		U 0.330		U 0.331		U 0.353

*Soil Cleanup Objectives from 6NYCRR Part 375-6 (December 14, 2006).

U - Analyzed for but not detected

J - Estimated Value

D - The percent difference between the LCS and the LCS Duplicate calculated outside QC limits

B - Analyte also detected in the associated laboratory method blank

M - The percent difference between the Matrix Spike and the Matrix Spike Duplicate calculated outside QC limits

D.L. - Detection Limit

Bold and boxed results indicate an exceedance of Unrestricted Use SCOs

Bold, boxed, and shaded results indicate an exceedance of Industrial Use SCOs

N1011

Table 1: (Page 6 of 7). Surface Soil Sample Analytical Results. Garlock BCP Site No. 3, Palmyra, New York

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification																			
	Unrestricted Use	Industrial Use	SS0811-01 (0-2)		SS0811-01 (6-12)		SS0811-02 (0-2)		SS0811-02 (6-12)		SS0811-03 (0-2)		SS0811-03 (6-12)		SS0811-04 (0-2)		SS0811-04 (6-12)		SS0811-05 (0-2)		SS0811-05 (6-12)		SS0811-06 (0-2)		SS0811-06 (6-12)	
Metals by EPA Method SW846 6010				D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
Arsenic	13	16	4.04		4.83		4.96		3.09		5.64		4.15		**14.10**		**14.90**		3.31		2.57		4.00		1.32	
Barium	350	10,000	58.6		47.0		161		149		129		139		166		98.1		27.2		29.0		43.1		10.5	J
Cadmium	2.5	60	0.373	J		U 0.538	0.418	J	0.328	J	0.452	J	0.389	J	0.987		0.697			U 0.515		U 0.578		U 0.560		U 0.610
Chromium	30	6,800	15.3		15.3		22.1		20.2		19.6		21.3		18.0		16.8		13.1		24.4		16.7		4.58	
Copper	50	10,000	25.7		15.9		18.5		14.5		19.3		18.6		26.8		23.5		8.17		12.6		8.23		12.6	
Lead	63	3,900	28.0		16.4		14.5		11.7		19.4		14.2		6.28		9.68		8.47		6.53		12.6			U 1.22
Mercury	0.18	5.7	0.0394		0.0210		0.0563		0.0496		0.0662		0.0569		0.0111	J	0.0157		0.0249		0.0214		0.0309		0.0067	JD
Nickel	30	10,000	17.7		19.5		28.0		23.5		24.3		25.9		23.7		19.8		14.3		24.2		18.3		13.6	
Selenium	3.9	6,800		U 1.07		U 1.08		U 1.26		U 1.21		U 1.01		U 1.20		U 1.37		U 1.33	0.536	J		U 1.16		U 1.12		U 1.22
Silver	2	6,800		U 1.07		U 1.08		U 1.26		U 1.21		U 1.01		U 1.20		U 1.37		U 1.33		U 1.03		U 1.16		U 1.12		U 1.22
Zinc	109	10,000	97.8		59.5		94.2		73.5		101		82.1		99.0		**126**		41.0		59.4		52.1		13.0	

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification																			
	Unrestricted Use	Industrial Use	SS0811-07 (0-2)		SS0811-07 (6-12)		SS0811-08 (0-2)		SS0811-08 (6-12)		SS0811-09 (0-2)		SS0811-09 (6-12)		SS0811-10 (0-2)		SS0811-10 (6-12)		SS0811-11 (0-2)		SS0811-11 (6-12)		SS0811-12 (0-2)		SS0811-12 (6-12)	
Metals by EPA Method SW846 6010				D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
Arsenic	13	16	3.16	B	1.99	B	3.52	B	1.93	B	3.93	B	8.22		**25.1**		11.9	DM	4.50	B	1.53	B	1.85	B		U 1.10
Barium	350	10,000	44.4		38.7		166		39.8		136		**391**		106		**416**		55.5		37.0		43.6		27.2	
Cadmium	2.5	60		U 0.499		U 0.514	0.501	J		U 0.497	0.628		0.800		0.665		0.638	DM	0.304	J	0.294	J	0.327	J		U 0.549
Chromium	30	6,800	5.86		5.82		14.1		7.51		13.9		**41.5**		9.44		11.3	M	17.7		29.3		24.9		**32.9**	
Copper	50	10,000	17.7		14.4		15.0		12.4		21.0		**67.2**		**156**		**199**	**DM**	12.0		6.27		7.69		2.87	
Lead	63	3,900	9.23		4.45		18.2		6.46		32.7		**148**		**72.2**		**259**		22.3		9.10		6.64			U 1.10
Mercury	0.18	5.7	0.0139		0.0101		0.0435		0.0112		0.0433		0.0504		0.0640		0.0295	DM	0.0270		0.0144		0.0199		0.0050	J
Nickel	30	10,000	7.36		7.01		16.8		9.09		15.0		**37.2**		19.2		19.1	D	20.5		**37.1**		**34.4**		**42.2**	
Selenium	3.9	6,800	0.738	J		U 1.03		U 1.14		U 0.993	0.853	J		U 1.07	1.61		1.02	J		U 1.14		U 1.06		U 1.08		U 1.10
Silver	2	6,800		U 0.998		U 1.03		U 1.14		U 0.993		U 1.07		U 1.07		U 1.13		U 1.15		U 1.14		U 1.06		U 1.08		U 1.10
Zinc	109	10,000	75.3		40.4		**188**		74.0		**306**		**1,040**		**135**		**1,540**	**DM**	81.3		65.7		65.3		51.9	

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification																			
	Unrestricted Use	Industrial Use	SS0811-13 (0-2)		SS0811-13 (6-12)		SS0811-14 (0-2)		SS0811-14 (6-12)		SS0811-15 (0-2)		SS0811-15 (6-12)		SS0811-16 (0-2)		SS0811-16 (6-12)		SS0811-17 (0-2)		SS0811-17 (6-12)		Duplicate (0-2) (SS0811-12)		Duplicate (6-12) (SS0811-09)	
Metals by EPA Method SW846 6010				D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
Arsenic	13	16	6.16	B	1.73	B	**14.1**		**18.4**		4.49	B	3.22	B	6.25	B	5.03	B	3.60	B	10.4		0.594	JB	12.70	
Barium	350	10,000	127		**1,066**		58.1		67.3		89.8		39.4		75.2		53.1		41.1		123		31.4		**431**	
Cadmium	2.5	60	0.533	J	1.06		0.393	J		U 0.684	0.411	J		U 0.555	0.581	J	0.539	J		U 0.506		U 0.493		U 0.527	1.07002	
Chromium	30	6,800	19.5		26.1		8.75		9.83		15.3		6.01		23.10		9.89		7.28		13.1		**30.3**		13.1	
Copper	50	10,000	23.7		**108**		31.6		29.6		16.1		20.3		26.4		20.8		14.9		27.8		5.14		**106**	
Lead	63	3,900	24.5		**79.6**		27.0		12.7		21.1		4.04		30.6		23.5		8.30		36.7		2.06		**220**	
Mercury	0.18	5.7	0.0747		0.0149		0.0551		0.0334		0.0623		0.0319		0.0655		0.0467		0.0062	J	0.0248		0.0091		0.04B3	
Nickel	30	10,000	25.3		22.4		20.4		25.8		19.5		18.3		**80.3**		20.6		9.56		16.9		**40.5**		20.8	
Selenium	3.9	6,800		U 1.28		U 1.29		U 1.25	0.740	J	0.949	J		U 1.11		U 1.38	0.798	J		U 1.01		U 0.985		U 1.05		U 1.21
Silver	2	6,800		U 1.28	0.644	J		U 1.25		U 1.37		U 1.04		U 1.11		U 1.38		U 1.26		U 1.01		U 0.985		U 1.05		U 1.21
Zinc	109	10,000	**185**		**6,404**		**221**		105		106		64.4		**271**		**284**		64.4		**326**		70.9		**2,040**	

*Soil Cleanup Objectives from 6NYCRR Part 375-6 (December 14, 2006).

U - Analyzed for but not detected

J - Estimated Value

D - The percent difference between the LCS and the LCS Duplicate calculated outside QC limits

B - Analyte also detected in the associated laboratory method blank

M - The percent difference between the Matrix Spike and the Matrix Spike Duplicate calculated outside QC limits

D.L. - Detection Limit

Bold and boxed results indicate an exceedance of Unrestricted Use SCOs

Bold, boxed, and shaded results indicate an exceedance of Industrial Use SCOs

Table 1: (Page 7 of 7). Surface Soil Sample Analytical Results. Garlock BCP Site No. 3. Palmyra, New York

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification													
	Unrestricted Use	Industrial Use	SS0811-01 (0-2)	SS0811-01 (6-12)	SS0811-02 (0-2)	SS0811-02 (6-12)	SS0811-03 (0-2)	SS0811-03 (6-12)	SS0811-04 (0-2)	SS0811-04 (6-12)	SS0811-05 (0-2)	SS0811-05 (6-12)	SS0811-06 (0-2)	SS0811-06 (6-12)
PCBs by EPA Method 8082A			D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.
Aroclor 1016			U 0.0344	U 0.0329	U 0.0366	U 0.0348	U 0.0355	U 0.0358	U 0.0410	U 0.0382	U 0.0343	U 0.0332	U 0.0344	U 0.0366
Aroclor 1221			U 0.0344	U 0.0329	U 0.0366	U 0.0348	U 0.0355	U 0.0358	U 0.0410	U 0.0382	U 0.0343	U 0.0332	U 0.0344	U 0.0366
Aroclor 1232			U 0.0344	U 0.0329	U 0.0366	U 0.0348	U 0.0355	U 0.0358	U 0.0410	U 0.0382	U 0.0343	U 0.0332	U 0.0344	U 0.0366
Aroclor 1242			U 0.0344	U 0.0329	U 0.0366	U 0.0348	U 0.0355	U 0.0358	U 0.0410	U 0.0382	U 0.0343	U 0.0332	U 0.0344	U 0.0366
Aroclor 1248			U 0.0344	U 0.0329	U 0.0366	U 0.0348	U 0.0355	U 0.0358	U 0.0410	U 0.0382	U 0.0343	U 0.0332	U 0.0344	U 0.0366
Aroclor 1254			U 0.0344	U 0.0329	U 0.0366	U 0.0348	U 0.0355	U 0.0358	U 0.0410	U 0.0382	U 0.0343	U 0.0332	U 0.0344	U 0.0366
Aroclor 1260			U 0.0344	U 0.0329	U 0.0366	U 0.0348	U 0.0355	U 0.0358	U 0.0410	U 0.0382	U 0.0343	U 0.0332	U 0.0344	U 0.0366
Total PCBs	0.1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification											
	Unrestricted Use	Industrial Use	SS0811-07 (0-2)	SS0811-07 (6-12)	SS0811-08 (0-2)	SS0811-08 (6-12)	SS0811-09 (0-2)	SS0811-09 (6-12)	SS0811-10 (0-2)	SS0811-10 (6-12)	SS0811-11 (0-2)	SS0811-11 (6-12)	SS0811-12 (0-2)	SS0811-12 (6-12)
PCBs by EPA Method 8082A			D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.
Aroclor 1016			U 0.0306	U 0.0305	U 0.0335	U 0.0323	U 0.0353	U 0.0344	U 0.0397	U 0.0342	U 0.0342	U 0.0341	U 0.0324	U 0.0329
Aroclor 1221			U 0.0306	U 0.0305	U 0.0335	U 0.0323	U 0.0353	U 0.0344	U 0.0397	U 0.0342	U 0.0342	U 0.0341	U 0.0324	U 0.0329
Aroclor 1232			U 0.0306	U 0.0305	U 0.0335	U 0.0323	U 0.0353	U 0.0344	U 0.0397	U 0.0342	U 0.0342	U 0.0341	U 0.0324	U 0.0329
Aroclor 1242			U 0.0306	U 0.0305	U 0.0335	U 0.0323	U 0.0353	U 0.0344	U 0.0397	U 0.0342	U 0.0342	U 0.0341	U 0.0324	U 0.0329
Aroclor 1248			U 0.0306	U 0.0305	U 0.0335	U 0.0323	U 0.0353	U 0.0344	U 0.0397	U 0.0342	U 0.0342	U 0.0341	U 0.0324	U 0.0329
Aroclor 1254			U 0.0306	U 0.0305	U 0.0335	U 0.0323	U 0.0353	U 0.0344	U 0.0397	U 0.0342	U 0.0342	U 0.0341	U 0.0324	U 0.0329
Aroclor 1260			U 0.0306	U 0.0305	U 0.0335	U 0.0323	U 0.0353	U 0.0344	U 0.0397	U 0.0342	U 0.0342	U 0.0341	U 0.0324	U 0.0329
Total PCBs	0.1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Analyte (mg/kg)	Soil Cleanup Objectives*		Sample Identification											
	Unrestricted Use	Industrial Use	SS0811-13 (0-2)	SS0811-13 (6-12)	SS0811-14 (0-2)	SS0811-14 (6-12)	SS0811-15 (0-2)	SS0811-15 (6-12)	SS0811-16 (0-2)	SS0811-16 (6-12)	SS0811-17 (0-2)	SS0811-17 (6-12)	Duplicate (0-2) (SS0811-12)	Duplicate (6-12) (SS0811-09)
PCBs by EPA Method 8082A			D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.
Aroclor 1016			U 0.0371	U 0.0371	U 0.0371	U 0.0413	U 0.0352	U 0.0350	U 0.0409	U 0.0377	U 0.0314	U 0.0326	U 0.0329	U 0.0351
Aroclor 1221			U 0.0371	U 0.0371	U 0.0371	U 0.0413	U 0.0352	U 0.0350	U 0.0409	U 0.0377	U 0.0314	U 0.0326	U 0.0329	U 0.0351
Aroclor 1232			U 0.0371	U 0.0371	U 0.0371	U 0.0413	U 0.0352	U 0.0350	U 0.0409	U 0.0377	U 0.0314	U 0.0326	U 0.0329	U 0.0351
Aroclor 1242			U 0.0371	U 0.0371	U 0.0371	U 0.0413	U 0.0352	U 0.0350	U 0.0409	U 0.0377	U 0.0314	U 0.0326	U 0.0329	U 0.0351
Aroclor 1248			U 0.0371	U 0.0371	U 0.0371	U 0.0413	U 0.0352	U 0.0350	U 0.0409	U 0.0377	U 0.0314	U 0.0326	U 0.0329	U 0.0351
Aroclor 1254			U 0.0371	U 0.0371	U 0.0371	U 0.0413	U 0.0352	U 0.0350	U 0.0409	U 0.0377	U 0.0314	U 0.0326	U 0.0329	U 0.0351
Aroclor 1260			U 0.0371	U 0.0371	U 0.0371	U 0.0413	U 0.0352	U 0.0350	U 0.0409	0.0359 J	U 0.0314	0.0208 J	U 0.0329	U 0.0351
Total PCBs	0.1	25	ND	ND	ND	ND	ND	ND	ND	0.0359	ND	0.0208	ND	ND

Soil Cleanup Objectives from 6NYCRR Part 375-6 (December 14, 2006).

U - Analyzed for but not detected

J - Estimated Value

ND - Non Detect

D.L. - Detection Limit

Bold and boxed results indicate an exceedance of Unrestricted Use SCOs

Bold, boxed, and shaded results indicate an exceedance of Industrial Use SCOs

N1011

Table 2: (Page 1 of 11). Groundwater Analytical Results for AOC-1. Garlock BCP Site No. 3. Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	OW-1 (MW-26)													
		9/6/07	5/9/08	9/25/08	11/12/08	03/25/09	06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/25/11	08/30/11
VOCs by EPA Method 8260B															
Acetone	50(G)	U	U	U	6.1 J	U	U	U	U	U	U	U	U	U	U
Benzene	1	36	130	6	19 J	60	32.1	24	1.1	10.3	U	U	U	U	U
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50(G)				U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	50(G)	U	U	43	160	75	U	U	U	U	U	U	U	U	U
Carbon disulfide	60	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	7				U	U	U	U	U	U	U	U	U	U	U
Chloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl Ether							U	U	U	U	U	U	U	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3						U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3						U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3						U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	5	0.66 U	U	0.54	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	0.29	U	0.12	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone		U	U	U			U	U	U	U	U	U	U	U	U
Methylene Chloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Methyl isobutyl ketone					U	1.7 J									
Styrene	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	5	U	13,000	0.95	U	2.3 J	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane							U	U	U	U	U	U	U	U	U
Vinyl acetate							U	U	U	U	U	U	U	U	U
Vinyl chloride	2	2.8	U	2.3	11 J	3.9 J	U	U	U	U	U	U	U	U	U
m,p-Xylene							U	U	U	U	U	U	U	U	U
o-Xylene							U	U	U	U	U	U	U	U	U
Xylene (Mixed)	5	2.8	23	1.6			U	U	U	U					
Xylenes, Total	5				U	U									
cis-1,2-Dichloroethene	5	6.3	U	1.7	11 J	1.3 J	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
TOC by EPA Method SM5310C															
Total Organic Carbon		N/A	N/A	N/A	U	30,700	16,200	14,000	12,600	6,000	9,500	6,980	7,700	6,100	11,000
COD by EPA Method 410.4															
Chemical Oxygen Demand		N/A	N/A	N/A	31,000	123,000	45,000	38,000	55,000	38,000	22,000	21,500	183,000	38,000	66,200
Metals by EPA Method 200.7															
Iron	300	N/A	N/A	N/A	29,600	18,000	11,300	10,500	18,000	36,100	9,300	8,880	26,400	10,900	5,980
Manganese	300	N/A	N/A	N/A	1,700	6,200	2,780	2,270	4,700	13,100	3,910	4,590	17,600	8,740	4,480

All values reported as ug/L (ppb)

[1] - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

N/A - Not analyzed for

Bold Highlighted Cell signifies an exceedance of Class GA Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 2: (Page 2 of 11). Groundwater Analytical Results for AOC-1, Garlock BCP Site No. 3, Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	OW-2										
		11/12/08	03/25/09	6/29/09	9/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/26/11	08/31/11
Acetone	50(G)	U	U	U	U	U	U	U	U	NS	U	U
Benzene	1	120	470 J	210	120	66.3	88.8	83.7	31.3	NS	16.2	16.4
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	NS	U	U
Bromoform	50(G)	U	U	U	U	U	U	U	U	NS	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	NS	U	U
Methyl Ethyl Ketone	50(G)	U	U	U	U	U	U	U	U	NS	U	U
Carbon disulfide	60	U	U	U	U	U	U	U	U	NS	U	U
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	NS	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	NS	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	NS	U	U
Chloroform	7	U	U	U	U	3.19	U	U	U	NS	U	U
Chloromethane	5	U	U	U	U	U	U	U	U	NS	U	U
2-Chloroethyl vinyl Ether				U	U	U	U	U	U	NS	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	NS	U	U
1,2-Dichlorobenzene	3			U	U	U	U	U	U	NS	U	U
1,3-Dichlorobenzene	3			U	U	U	U	U	U	NS	U	U
1,4-Dichlorobenzene	3			U	U	U	U	U	U	NS	U	U
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	NS	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	NS	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	NS	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	NS	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	NS	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	NS	U	U
Ethylbenzene	5	4.9 J	U	5.36	3	2.3	2.83	U	U	NS	U	U
2-Hexanone	50(G)	U	U	U	U	U	U	U	U	NS	U	U
4-Methyl-2-pentanone		U	U	U	U	U	U	U	U	NS	U	U
Methylene Chloride	5	U	110 JB	U	U	U	U	U	U	NS	U	U
Methyl isobutyl ketone		U	U	U	U	U	U	U	U	NS	U	U
Styrene	50	U	U	U	U	U	U	U	U	NS	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	NS	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	NS	U	U
Toluene	5	56	9,400	27.1	U	2.27	205	U	U	NS	U	U
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	NS	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	NS	U	U
Trichloroethene	5	U	U	U	U	U	U	U	U	NS	U	U
Trichlorofluoromethane				U	U	U	U	U	U	NS	U	U
Vinyl acetate				U	U	U	U	U	U	NS	U	U
Vinyl chloride	2	U	U	U	U	U	U	U	U	NS	U	U
m,p-Xylene				21.6	11.3	5.3	U	5.93	U	NS	2.35	U
o-Xylene				U	U	U	U	U	U	NS	U	U
Xylene (Mixed)	5			21.6	11.3	5.3	13.7	U	U	NS	U	U
Xylenes, Total	5	39	U	U	U	U	U	U	U	NS	U	U
cis-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	NS	U	U
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	NS	U	U
TOC by EPA Method SM5310C												
Total Organic Carbon		U	6,000	10,700	12,500	5,700	8,200	9,600	4,640	NS	5,600	10,800
COD by EPA Method 410.4												
Chemical Oxygen Demand		17,000	82,300	30,000	34,000	18,000	34,000	22,000	31,400	NS	13,000	61,400
Metals by EPA Method 200.7												
Iron	300	20,500	6,400	2,380	2,430	1,850	6,780	4,700	7,010 M	NS	15,300	6,020
Manganese	300	1,000	25,100	6,630	4,140	6,720 M	16,100	5,300	6,630 M	NS	16,300	4,900

All values reported as ug/L (ppb)

1 - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

M - Matrix spike recoveries outside QC limits. Matrix bias indicated.

NS- Not sampled

Bold Hightlighted Cell signifies an exceedance of Class GA Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 2: (Page 3 of 11). Groundwater Analytical Results for AOC-1, Garlock BCP Site No. 3, Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	OW-3											
		11/12/08	03/25/09	06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/25/11	08/30/11	
Acetone	50(G)	10 J	8.3 J	U	U	U	U	U	U	U	U	U	
Benzene	1	6.9	9.1	5.12	4.67	6.45	6.03	5.20	4.57	3.98	1.89	1.79	
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50(G)	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	50(G)	7 J	10	U	U	U	U	U	U	U	U	U	U
Carbon disulfide	60	U	U	U	U	U	U	U	U	U	U	U	U
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	7	U	U	U	U	U	U	U	U	U	U	U	U
Chloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl Ether				U	U	U	U	U	U	U	U	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3			U	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3			U	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3			U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	U	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone		U	U	U	U	U	U	U	U	U	U	U	U
Methylene Chloride	5	U	U	U	U	U	U	U	U	U	U	U	U
Methyl isobutyl ketone		U	U							U	U	U	U
Styrene	50	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	5	26	U	U	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane				U	U	U	U	U	U	U	U	U	U
Vinyl acetate				U	U	U	U	U	U	U	U	U	U
Vinyl chloride	2	32	54	44.3	8.91	5.54	3.11	6.73	3.61	U	U	U	U
m,p-Xylene				U	U	U	U	U	U	U	U	U	U
o-Xylene				U	U	U	U	U	U	U	U	U	U
Xylene (Mixed)	5			U	U	U	U						U
Xylenes, Total	5	U	U										U
cis-1,2-Dichloroethene	5	62	56	19.5	3.14	2.91	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U
TOC by EPA Method SM5310C													
Total Organic Carbon		4,500	8,400	6,400	20,500	6,900	21,000	4,100	2,850	5,900	5,300	U	
COD by EPA Method 410.4													
Chemical Oxygen Demand		28,400	60,900	13,000	26,000	38,000	59,000	9,000	44,000	22,000	18,000	U	
Metals by EPA Method 200.7													
Iron	300	3,400	6,100	4,750	12,800	5,930	31,600	3,170	2,490	12,200	9,320	2490	
Manganese	300	540	1,400	700	3,150	2,640	4,360	460	330	1,830	956	313	

All values reported as ug/L (ppb)

[1] - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compound detected in laboratory blank.

Bold Hightlighted Cell signifies an exceedance of Class GA Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 2: (Page 4 of 11). Groundwater Analytical Results for AOC-1. Garlock BCP Site No. 3. Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	OW-4													
		11/12/08		03/25/09		06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/25/11	08/30/11	
Acetone	50(G)	2.3	J	U		U	U	U	U	U	U	U	U	U	U
Benzene	1	1.2	J	1.7	J	1.24	3.08	3.52	4.72	12.9	12.2	7.89	5.74	8.19	
Bromodichloromethane	50(G)		U		U	U	U	U	U	U	U	U	U		U
Bromoform	50(G)		U		U	U	U	U	U	U	U	U	U		U
Bromomethane	5		U		U	U	U	U	U	U	U	U	U		U
Methyl Ethyl Ketone	50(G)	12		2.3	J	U	U	U	U	U	U	U	U		U
Carbon disulfide	60		U		U	U	U	U	U	U	U	U	U		U
Carbon tetrachloride	5		U		U	U	U	U	U	U	U	U	U		U
Chlorobenzene	5		U		U	U	U	U	U	U	U	U	U		U
Chloroethane	5		U		U	U	U	U	U	U	U	U	U		U
Chloroform	7	1.9	J	0.84	J	U	U	U	U	U	U	U	U		U
Chloromethane	5		U		U	U	U	U	U	U	U	U	U		U
2-Chloroethyl vinyl Ether						U	U	U	U	U	U	U	U		U
Dibromochloromethane	5		U		U	U	U	U	U	U	U	U	U		U
1,2-Dichlorobenzene	3					U	U	U	U	U	U	U	U		U
1,3-Dichlorobenzene	3					U	U	U	U	U	U	U	U		U
1,4-Dichlorobenzene	3					U	U	U	U	U	U	U	U		U
1,1-Dichloroethane	5		U		U	U	U	U	U	U	U	U	U		U
1,2-Dichloroethane	0.6		U		U	U	U	U	U	U	U	U	U		U
1,1-Dichloroethene	5		U		U	U	U	U	U	U	U	U	U		U
1,2-Dichloropropane	1		U		U	U	U	U	U	U	U	U	U		U
cis-1,3-Dichloropropene	0.4		U		U	U	U	U	U	U	U	U	U		U
trans-1,3-Dichloropropene	0.4		U		U	U	U	U	U	U	U	U	U		U
Ethylbenzene	5		U		U	U	U	U	U	U	U	U	U		U
2-Hexanone	50(G)		U		U	U	U	U	U	U	U	U	U		U
4-Methyl-2-pentanone						U	U	U	U	U	U	U	U		U
Methylene Chloride	5		U		U	U	U	U	U	U	U	U	U		U
Methyl isobutyl ketone			U		U										U
Styrene	50		U		U	U	U	U	U	U	U	U	U		U
1,1,2,2-Tetrachloroethane	5		U		U	U	U	U	U	U	U	U	U		U
Tetrachloroethene	5		U		U	U	U	U	U	U	U	U	U		U
Toluene	5		U		U	U	U	U	U	U	U	U	U		U
1,1,1-Trichloroethane	5		U		U	U	U	U	U	U	U	U	U		U
1,1,2-Trichloroethane	1		U		U	U	U	U	U	U	U	U	U		U
Trichloroethene	5		U		U	U	U	U	U	U	U	U	U		U
Trichlorofluoromethane						U	U	U	U	U	U	U	U		U
Vinyl acetate						U	U	U	U	U	U	U	U		U
Vinyl chloride	2		U	3.2	J		2.2	2.06	2.16	U	U	U	U		U
m,p-Xylene						U	U	U	U	U	U	U	U		U
o-Xylene						U	U	U	U	U	U	U	U		U
Xylene (Mixed)	5					U	U	U	U						U
Xylenes, Total	5		U		U										U
cis-1,2-Dichloroethene	5	6.4		1.9	J	U	U	U	U	U	U	U	U		U
trans-1,2-Dichloroethene	5		U		U	U	U	U	U	U	U	U	U		U
TOC by EPA Method SM5310C															
Total Organic Carbon		360	J	6,300		9,900	11,300	6,500	5,000	6,000	6,140	6,400	3,800		U
COD by EPA Method 410.4															
Chemical Oxygen Demand		30,300		62,000		30,000	42,000	26,000	22,000	18,000	25,400	22,000	22,000	51,900	
Metals by EPA Method 200.7															
Iron	300	1,400		2,800		1,650	1,810	1,220	1,430	873	1,610	896	3,460	385	
Manganese	300	200		490		589	327	535	857	609	602	934	910	835	

All values reported as ug/L (ppb)

^ - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

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Table 2: (Page 5 of 11). Groundwater Analytical Results for AOC-1. Garlock BCP Site No. 3. Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	OW-5 (MW-25)												
		09/06/07	05/05/08	11/12/08	03/26/09	06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/25/11	
Acetone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U
Benzene	1	5.4	4.7	6.4	13	30.2	42.7	15.2	20.7	25.4	14.8	10.9	6.07	9.49
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50(G)			U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	50(G)	U	U	1.2 J	U	U	U	U	U	U	U	U	U	U
Carbon disulfide	60	U	U	U	U	U	U	U	U	U	U	U	U	U
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	7	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl Ether						U	U	U	U	U	U	U	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3					U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3					U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3					U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	5	U	0.21		U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U		U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U		U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U		U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U		U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U		U	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	U	U		U	U	U	U	U	U	U	U	U	U
2-Hexanone	50(G)	U	U		U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone		U	U			U	U	U	U	U	U	U	U	U
Methylene Chloride	5	U	U		U	3.0 JB	U	U	U	U	U	U	U	U
Methyl isobutyl ketone					U	U								U
Styrene	50	U	U		U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U		U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U		U	U	U	U	U	U	U	U	U	U
Toluene	5	U	U		U	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	5	U	U		U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U		U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U		U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane						U	U	U	U	U	U	U	U	U
Vinyl acetate						U	U	U	U	U	U	U	U	U
Vinyl chloride	2	8.3	4.9	12	7.6 J	U	4.55	U	2.64	U	U	U	U	U
m,p-Xylene						U	U	U	U	U	U	U	U	U
o-Xylene						U	U	U	U	U	U	U	U	U
Xylene (Mixed)	5	5	U			U	U	U	U					U
Xylenes, Total	5			U	U									U
cis-1,2-Dichloroethene	5	13	12	23	12	5.94	3.5	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U
TOC by EPA Method SM5310C														
Total Organic Carbon		N/A	N/A	U	21,200	24,700	19,400	11,100	10,200	11,700	9,310	8,900	5,600	U
COD by EPA Method 410.4														
Chemical Oxygen Demand		N/A	N/A	28,400	119,000	93,000	85,000	68,000	45,000	59,000	88,000	136,000	26,000	75,800
Metals by EPA Method 200.7														
Iron	300	N/A	N/A	940	710	1,120	1,250	1,030	601	4,750	3,800	4,050	649	821
Manganese	300	N/A	N/A	130	99	343	583	221	1,460	1,340	726	1,770	888	1,110

All values reported as ug/L (ppb)

[1] - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

N/A - Not analyzed for

Bold Highlighted *Cell signifies an exceedance of* Class GA Standards

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Table 2: (Page 6 of 11). Groundwater Analytical Results for AOC-1. Garlock BCP Site No. 3. Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	OW-6 (MW-3)													
		12/04/06	09/10/07	05/05/08	11/12/08	03/26/09	06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/26/11	08/31/11
Acetone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Benzene	1	U	76	100	95 J	72 J	84.7	U	74.2	106	81.1	84.7	57.1	90.0	87.9
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50(G)				U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Carbon disulfide	60	U	U	11	U	U	5.22	U	U	U	U	104	93.1	3.21	4.83
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	7	380	140	100	51 J	69 J	14.1	U	66.6	27.8	29.6	46.1	30.3	8.54	16.1
Chloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl Ether							U	U	U	U	U	U	U	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3						U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3						U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3						U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	20	25	U	U	11.5	U	U	12.8	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	U	U	U	U	U	5.26	U	U	U	U	U	U	4.53	5.13
2-Hexanone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone		U	U	U			U	U	U	U	U	U	U	U	U
Methylene Chloride	5	81	30	U	43 J	49 JB	U	U	U	U	U	U	U	U	U
Methyl isobutyl ketone					U	U									U
Styrene	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	210	170	95	U	65 J	29.8	U	U	27.8	10.1	12.7	20.0	U	U
Toluene	5	U	15	U	U	U	11.5	U	U	18.7	11.0	11.7	U	13.4	12.7
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	28,000	7,000	5,100	1,500	4,100	994	U	2,040	1,730	859	1,950	2,030	46.6	238
Trichlorofluoromethane							U	U	U	U	U	U	U	U	U
Vinyl acetate							U	U	U	U	U	U	U	U	U
Vinyl chloride	2	670	1,200	2,000	1,600	840	1,150	U	387	606	156	258	156	560	331
m,p-Xylene							24.2	U	U	30.8	21.4	20.7	18.8	19.2	23.6
o-Xylene							20.8	U	U	23.5	17.8	17.7	15.9	18.6	21.4
Xylene (Mixed)	5	U	55	45			45	U	U	U					45
Xylenes, Total	5				U	U									U
cis-1,2-Dichloroethene	5	3,000	4,600	4,600	3,600	2,400	1,220	U	1,460	903	1,120	1,980	887	595	802
trans-1,2-Dichloroethene	5	U	U	13	U	U	8.16	U	U	U	U	U	U	3.01	U
TOC by EPA Method SM5310C															
Total Organic Carbon		N/A	N/A	N/A	8,500	15,100	17,400	1,100	19,400	17,200	17,100	13,100	11,800	13,900	U
COD by EPA Method 410.4															
Chemical Oxygen Demand		N/A	N/A	N/A	143,000	139,000	83,000	30,000	171,000	103,000	91,000	163,000	113,000	38,000	77,500
Metals by EPA Method 200.7															
Iron	300	N/A	N/A	N/A	690	2,000	5,130	1,670	2,370	838	1,390	440	953	3,080	1560
Manganese	300	N/A	N/A	N/A	530	860	783	249	651	631	610	637	551	998	944

All values reported as ug/L (ppb)

1 - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

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Bold Highlighted Cell signifies an exceedance of Class GA Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 2: (Page 7 of 11). Groundwater Analytical Results for AOC-1, Garlock BCP Site No. 3, Palmyra, New York

Analyte (ug/L)	GW Std ^ (ug/L)	OW-7 (MW-27) 09/06/07	05/09/08	11/12/08	03/25/09	06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/26/11	08/31/11
Acetone	50(G)	U	U	23	U	165	103	U	48.6	26.8	21.7	12.6	U	U
Benzene	1	65	45	93	530	304	253	221	165	197	171	111	76.8	118
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50(G)			U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	50(G)	U	U	U	120	32	32		U	U	U	U	U	U
Carbon disulfide	60	1.3		U	U	U	U	U	U	U	5.91	7.77	2.27	U
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	7	3.6		U	15 J	8.04	5.23		U	U	U	U	U	U
Chloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl Ether						U	U	U	U	U	U	U	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3					U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3					U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3					U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	0.35	0.14	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone		U	U			U	U	U	U	U	U	U	U	U
Methylene Chloride	5	U	U	U	17 JB	U	U	U	U	U	U	U	U	U
Methyl isobutyl ketone				U	U									U
Styrene	50	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	4.6	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	5	U	39	5.1 J	180	117	92.8	97.5	72.5	63.2	48.6	39.5	14.4	U
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	21	U	2 J	12 J	9.35	10.7	U	11	17.1	11.8	7.63	6.37	8.69
Trichlorofluoromethane						U	U	U	U	U	U	U	U	U
Vinyl acetate						U	U	U	U	U	U	U	U	U
Vinyl chloride	2	7.8	0.15	U	U	U	U	U	U	6.09	2.02	U	U	U
m,p-Xylene						U	U	U	5.9	4.89	4.05	3.90	2.79	U
o-Xylene						U	U	U	U	U	U	U	U	U
Xylene (Mixed)	5	5.6	2.3			U	U	U	U					U
Xylenes, Total	5			U	33 J									U
cis-1,2-Dichloroethene	5	16	0.26	2.2 J	U	4.26	4.9	U	5.73	9.92	6.70	4.14	3.78	5.89
trans-1,2-Dichloroethene	5	1.2	0.2	U	U	U	U	U	U	U	U	U	U	U
TOC by EPA Method SM5310C														
Total Organic Carbon		N/A	N/A	12,900	346,000	232,000	190,000	156,000	78,200	75,400	42,600	24,800	5,900	10,100
COD by EPA Method 410.4														
Chemical Oxygen Demand		N/A	N/A	81,400	515,000	541,000	576,000	576,000	325,000	284,000	238,000	183,000	45,000	123,000
Metals by EPA Method 200.7														
Iron	300	N/A	N/A	340	540	331	589	213	172	585	235	177	176	292
Manganese	300	N/A	N/A	840	1,500	775	448	201	129	266	130	134	341	284

All values reported as ug/L (ppb)

' - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

N/A - Not analyzed for

Bold Highlighted Cell signifies an exceedance of Class GA Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 2: (Page 8 of 11). Groundwater Analytical Results for AOC-1. Garlock BCP Site No. 3. Palmyra. New York

Analyte (ug/L)	GW Std^ (ug/L)	OW-8											
		11/12/08	03/26/09	06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/25/11	08/30/11	
Acetone	50(G)	3.3 J	U	U	U	U	U	U	U	U	U	U	U
Benzene	1	14	26	11	U	12.1	31.9	37.2	U	4.36	9.03	8.28	
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50(G)	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	50(G)	31	U	U	U	U	U	U	U	U	U	U	U
Carbon disulfide	60	U	2.3 J	U	U	U	U	U	U	U	U	U	U
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	7	U	U	U	U	U	U	U	U	U	U	U	U
Chloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl Ether				U	U	U	U	U	U	U	U	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3			U	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3			U	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3			U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	U	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone				U	U	U	U	U	U	U	U	U	U
Methylene Chloride	5	U	U	U	U	U	U	U	U	U	U	U	U
Methyl isobutyl ketone		U	U										U
Styrene	50	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	5	U	1.6 J	U	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	2.6 J	U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane				U	U	U	U	U	U	U	U	U	U
Vinyl acetate				U	U	U	U	U	U	U	U	U	U
Vinyl chloride	2	5	4.6 J	U	U	U	U	U	U	U	U	U	U
m,p-Xylene				U	U	U	U	U	U	U	U	U	U
o-Xylene				U	U	U	U	U	U	U	U	U	U
Xylene (Mixed)	5			U	U	U	U	U	U	U	U	U	U
Xylenes, Total	5	U	U			U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	13	14	U	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U
TOC by EPA Method SM5310C													
Total Organic Carbon		520 J	35,200	14,100	12,800	6,800	9,600	9,300	5,160	7,000	9,200		
COD by EPA Method 410.4													
Chemical Oxygen Demand		22,700	133,000	30,000	34,000	26,000	30,000	18,000	17,000	594,000	30,000		
Metals by EPA Method 200.7													
Iron	300	1,000	260	2,560	706	1,240	1,300	196	1,800	429	1,330		
Manganese	300	110	780	336	51	958	2,170	1,950	60	950	1,530		

All values reported as ug/L (ppb)

1 - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

Bold Highlighted Cell signifies an exceedance of Class GA Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 2: (Page 9 of 11). Groundwater Analytical Results for AOC-1. Garlock BCP Site No. 3. Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	OW-9										
		11/12/08	03/26/09	06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/26/11	08/31/11
Acetone	50(G)	U	U	5.39	U	U	18.6	U	U	U	U	U
Benzene	1	U	150	142	127	183	164	119	169	129	101	125
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50(G)	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	50(G)	U	U	U	U	U	U	U	U	U	U	U
Carbon disulfide	60	U	U	U	U	U	U	U	13.0	5.50	U	U
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U
Chloroform	7	470 J	250	122	218	17.1	3.1	354	275	27.9	U	U
Chloromethane	5	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl Ether				U	U	U	U	U	U	U	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3			U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3			U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3			U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U 3.88		U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone	50(G)	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone				U	U	U	U	U	U	U	U	U
Methylene Chloride	5	U	45 JB	U	U	U	U	39.2	29.7	U	U	U
Methyl isobutyl ketone		U	U								U	U
Styrene	50	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U	13.4	U	U	U	21.2	U	U	U	U
Toluene	5	U	31 J	28.4	U	26.2	42.2	17.5	30.7	18.2	9.50	6.01
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	7,000	3,300	850	1,800	247	57	2,600	1,620	211	26.5	47
Trichlorofluoromethane				U	U	U	U	U	U	U	U	U
Vinyl acetate				U	U	U	U	U	U	U	U	U
Vinyl chloride	2	130 J	160	128	318	55.7	16.2	545	545	62.9	12.9	23.4
m,p-Xylene				4.43	U	U	4.64	U	U	3.91	3.33	U
o-Xylene				2.15	U	U	U	U	U	U	U	U
Xylene (Mixed)	5			6.58	U	U	U					3.84
Xylenes, Total	5	U	U									U
cis-1,2-Dichloroethene	5	620	2,600	1,640	1,620	225	55.7	2,400	2,280	229	38.2	81.9
trans-1,2-Dichloroethene	5	U	U	6.94	U	U	U	13.0	11.5	U	U	U
TOC by EPA Method SM5310C												
Total Organic Carbon		8,800	115,000	105,000	108,000	172,000	101,000	51,600	38,100	47,500	10,300	
COD by EPA Method 410.4												
Chemical Oxygen Demand		45,800	335,000	284,000	353,000	459,000	382,000	141,000	166,000	208,000	59,000	
Metals by EPA Method 200.7												
Iron	300	2,600	350 J	572	728	413	512	357 D	386	230	519 D	
Manganese	300	350	79	65	33	13	51	67 D	37	16	47 D	

All values reported as ug/L (ppb)

[1] - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

D - Duplicate results outside QC limits. May indicate a non-homogenous matrix.

Bold Hightlighted Cell signifies an exceedance of Class GA Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 2: (Page 10 of 11). Groundwater Analytical Results for AOC-1. Garlock BCP Site No. 3. Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	Pilot Test OW 1-1															
		05/02/08	05/02/08	07/02/08	11/13/08	03/25/09	06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/25/11	08/30/11
Acetone	50(G)	U	5 J	U	3.4	U	U	U	U	U	U	U	U	U	U
Benzene	1	5.6	16	30	45	18	3.35	17.8	6.87	13.3	22.6	2.34	12.2	12.5	21.5
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50(G)				U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	50(G)	U	U 21		U	22	U	U	U	U	U	U	U	U	U
Carbon disulfide	60	2.2	2.2	U	48	4.1 J	U	U	U	U	U	U	U	U	U
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	7	U	0.19 J 2.2		U	U	U	U	U	U	U	U	U	U	U
Chloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl Ether							U	U	U	U	U	U	U	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3						U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3						U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3						U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	U	0.26 J	U	1.0	U	U	U	U	U	U	U	U	U	U
2-Hexanone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone		U	U	U			U	U	U	U	U	U	U	U	U
Methylene Chloride	5	U	U	U	0.46 JB	U					U	U	U	U	U
Methyl isobutyl ketone		U	U	U	U	U	U	U	U	U					U
Styrene	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	5	1.9	13	2.5	1.2 B	2.2 J	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	0.46	2.1	U	1.2	U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane							U	U	U	U	U	U	U	U	U
Vinyl acetate							U	U	U	U	U	U	U	U	U
Vinyl chloride	2	0.29	0.29 J	U	0.51	U	U	U	U	U	U	U	U	U	U
m,p-Xylene							U	U	U	U	U	U	U	U	U
o-Xylene							U	U	U	U	U	U	U	U	U
Xylene (Mixed)	5	0.7	2.3	3.3			U	U	U	U					
Xylenes, Total	5				8.9	4.0 J									
cis-1,2-Dichloroethene	5	1.6	1.5	2.6	2.7	U	U	U	U	U	U	U	U	U	
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	
TOC by EPA Method SM5310C															
Total Organic Carbon		N/A	N/A	N/A	6,000	11,200	12,900	13,200	4,900	7,700	12,300	5,750	7,500	9,900	
COD by EPA Method 410.4															
Chemical Oxygen Demand		N/A	N/A	N/A	1,430,000	534,000	30,000	30,000	13,000	22,000	34,000	59,600	102,000	26,000	
Metals by EPA Method 200.7															
Iron	300	N/A	N/A	N/A	N/A	71,700	10,300	23,200	5,110	3,110	10,700	5,870	10,000	9,540	
Manganese	300	N/A	N/A	N/A	N/A	1,400	334	547	394	318	670	220	880	398	

All values reported as ug/L (ppb)

1 - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

N/A - Not analyzed for

Bold Hightighted Cell signifies an exceedance of Class GA Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 2: (Page 11 of 11). Groundwater Analytical Results for AOC-1, Garlock BCP Site No. 3, Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	Pilot Test OW 1-4														
		05/05/08	07/01/08	11/13/08	03/26/09	06/29/09	09/30/09	12/31/09	03/30/10	08/30/10	11/17/10	02/22/11	05/25/11	08/30/11
Acetone	50(G)	U	U	1.7 J	U	U	U	U	U	U	U	U	U	U
Benzene	1	160	120	59	3.5 J	U	U	U	U	U	U	U	U	U
Bromodichloromethane	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50(G)			U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U
Carbon disulfide	60	U	U	U	U	U	U	U	U	U	U	U	U	U
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	7	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl Ether						U	U	U	U	U	U	U	U	U
Dibromochloromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3					U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3					U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3					U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	5	U	U	0.87	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	U	U	0.53	U	U	U	U	U	U	U	U	U	U
2-Hexanone	50(G)	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone		U	U			U	U	U	U	U	U	U	U	U
Methylene Chloride	5	U	U	0.33 JB	U	U	U	U	U	U	U	U	U	U
Methyl isobutyl ketone				U	U									U
Styrene	50	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	5	92,000	11,000	1.6 B	1.2 J	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U	0.17 J	U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane						U	U	U	U	U	U	U	U	U
Vinyl acetate						U	U	U	U	U	U	U	U	U
Vinyl chloride	2	U	U	U	U	U	U	U	U	U	U	U	U	U
m,p-Xylene						U	U	U	U	U	U	U	U	U
o-Xylene						U	U	U	U	U	U	U	U	U
Xylene (Mixed)	5	U	U			U	U	U	U					U
Xylenes, Total	5			0.66 J	U									U
cis-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U
TOC by EPA Method SM5310C														
Total Organic Carbon		N/A	N/A	1,800	5,200	7,700	5,600	4,300	6,900	5,600	4,600	6,400	3,800	
COD by EPA Method 410.4														
Chemical Oxygen Demand		N/A	N/A	420,000	31,000	9,000	9,000	49,000	18,000	9,000	29,000	670,000	22,000	
Metals by EPA Method 200.7														
Iron	300	N/A	N/A	N/A	11,700	U	555	927 D	606	111	1,610	U	232	
Manganese	300	N/A	N/A	N/A	11,400	704	1,190	4,280 DM	526	2,700	602	1,850	473	

All values reported as ug/L (ppb)

[1] - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

U - Analyzed for but not detected.

J - Estimated Value.

B - Compund detected in laboratory blank.

D - Duplicate results outside QC limits. May indicate a non-homogenous matrix.

M - Matrix spike recoveries outside QC limits. Matrix bias indicated.

N/A - Not analyzed for

Bold Highlighted Cell signifies an exceedance of Class GA Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

Table 3: (Page 1 of 1). Groundwater Analytical Results for AOC-2, Garlock BCP Site No. 3, Palmyra, New York.

Compound - µg/L (ppb)	NYS Standard	OW-1		OW-2/MW-41		OW-3		OW-4/MW-28			OW-5			Duplicate
Sample Date		Jun-11	10/4/11	Jun-11	10/4/11	Jun-11	10/4/11	Jun-11		10/4/11	Jun-11	10/4/2011**		Jun-11 (OW-1)
VOCs by EPA Method 8260B														
Acetone	50 (G)	U	150	150 J	U	U	1,700	U		n/a	6.4 J	26		3.8
Benzene	1	U	U	U	U	U	U	U		n/a	U		U	U
Bromodichloromethane	50 (G)	U	U	U	U	U	U	U		n/a	U		U	U
Bromoform	50 (G)	U	U	U	U	U	U	U		n/a	U		U	U
Bromomethane	5	U	U	U*	U	U	U	U		n/a	U*		U	U*
Methyl Ethyl Ketone	50 (G)	U	5.3 J	U	U	U	U	U		n/a	U	2.2	J	U
Carbon disulfide	60 (G)	U	0.51 J	U	U	U	U	U		n/a	U	0.42	J	U
Carbon tetrachloride	5	U	U	U	U	U	U	U		n/a	U		U	U
Chlorobenzene	5	U	U	U	U	U	U	U		n/a	U		U	U
Chloroethane	5	U	U	U*	U	U	U	U		n/a	U*		U	U*
Chloroform	7	U	U	U	U	83 JB	U	3.2	JB	n/a	1.6 JB		U	U
Chloromethane		U	U	U	U	U	U	U		n/a	U		U	U
Dibromochloromethane	50 (G)	U	U	U	U	U	U	U		n/a	U		U	U
1,1-Dichloroethane	5	U	U	290	340	2,600	2,000	39		n/a	30	3.8		0.25 J
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U		n/a	U		U	U
1,1-Dichloroethene	5	U	U	55	40 J	230 J	U	U		n/a	5.8		U	U
cis-1,2-Dichloroethene	5	17	6.8	4,300	5,700	38,000	26,000	850		n/a	850		U	16
trans-1,2-Dichloroethene	5	U	U	U	U	120 J	U	4.9	J	n/a	5.2		U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U		n/a	U		U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U		n/a	U		U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U		n/a	U		U	U
Ethylbenzene	5	U	U	U	U	U	U	U		n/a	U		U	U
2-Hexanone	50 (G)	U	U	U	U	U	U	U		n/a	U		U	U
Methylene Chloride	5	U	U	U	U	960 JB	U	32	JB	n/a	U		U	U
methyl isobutyl ketone		U	U	U	U	U	U	U		n/a	U		U	U
Styrene	5	U	U	U	U	U	U	U		n/a	U		U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U		n/a	U		U	U
Tetrachloroethene	5	U	U	U	U	U	U	4.6	J	n/a	U		U	U
Toluene	5	U	U	U	U	U	U	U		n/a	U		U	U
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U		n/a	U		U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U		n/a	U		U	U
Trichloroethene	5	3.1	1.9	1,100	260	6,100	2,800	28		n/a	77		U	2.9
Vinyl chloride	2	9.6	U	140	910	330	3,300	130		n/a	120		U	8.8
Xylenes, Total	5	U	U	U	U	U	U	U		n/a	U		U	U
TOC by EPA Method 9060														
Total Organic Carbon		U	60,900	U	22,300	U	209,000	U		n/a	U	54,000		U
COD by EPA Method 410.4														
Chemical Oxygen Demand		14,700	148,000	10,200	62,000	10,500	608,000	5,000	J	n/a	4,100 J	102,000		12,400

All values reported as ug/L (parts per billion)

Groundwater Standards from Technical and Operational Guidance Series (TOGS) Class GA ambient water quality standards - New York State Department of Environmental Conservation (June 1998)

(G) *Signifies a NYSDEC guidance value where a standard has not been established.*

U - Not Detected

J - Estimated value

NS - Not sampled

n/a - not sampled due to presence of ISCO solution

** - sample water was pink due to presence of dilute ISCO solution, results may not be representative of true groundwater conditions

Bold and boxed results indicate an exceedance of NYS standards

Jun-11 data represent Pre-ISCO conditions (baseline sampling event).

Sep-11 onward represents Post-ISCO effectiveness monitoring

N1011

Table 4: (Page 1 of 2) Groundwater Analytical Results for AOC-3 and AOC-4. Garlock BCP Site No. 3. Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	OW3-2 05/01/08		AOC-3 Culvert 10/10/11	MW0911-02 10/10/11	
Chloromethane			UJ	-		U
VinylChloride	2	**2,900**	**J**	-	**13,000**	
Bromomethane	5	**4,600**	**J**	-		U
Chloroethane	5		UJ	-		U
1,1-Dichloroethene	5		UJ	-		U
Carbon disulfide			UJ	-		U
Acetone	50(G)		UJ	-		U
Methylene chloride	5		UJ	-		U
Methyl Isobutyl Ketone		4,100	J	-		U
trans-1,2-Dichloroethene	5	**680**	**J**	-		U
1,1-Dichloroethane	5	**5,600**	**J**	-	**4,200**	**J**
cis-1,2-Dichloroethene	5	**310,000**	**J**	-	**230,000**	
Methyl Ethyl Ketone	50(G)		UJ	-		U
Chloroform	7		UJ	-		U
1,1,1-Trichloroethane	5		UJ	-		U
Carbon tetrachloride	5		UJ	-		U
Benzene	1		UJ	-		U
1,2-Dichloroethane	0.6		UJ	-		U
Trichloroethene	5	**80,000**	**J**	-		U
1,2-Dichloropropane	1		UJ	-		U
Bromodichloromethane	50(G)		UJ	-		U
cis-1,3-Dichloropropene	0.4		UJ	-		U
4-Methyl-2-pentanone			UJ	-		U
Toluene	5	**46,000**	**J**	-	**14,000**	
trans-1,3-Dichloropropene	0.4		UJ	-		U
1,1,2-Trichloroethane	1		UJ	-		U
Tetrachloroethene	5		UJ	-		U
2-Hexanone	50(G)		UJ	-		U
Dibromochloromethane	5		UJ	-		U
Chlorobenzene	5		UJ	-		U
Ethylbenzene	5		UJ	-		U
Styrene	50		UJ	-		U
Bromoform	50(G)		UJ	-		U
1,1,2,2-Tetrachloroethane	5		UJ	-		U
Xylenes (total)	5	**610**	**J**	-		U
1,4-Dioxane			UJ	-		U
Total VOCs		454,490		-	261,200	
Total Chorinated VOCs[1]		392,900		-	243,000	

^ - From Technical and Operational Guidance Series (TOGS) Class GA ambient water quality standards - New York State Department of Environmental Conservation

(G) Signifies a NYSDEC guidance value where a standard has not been established.

[1] - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

(-) - Well was dry at time of sampling, no sample collected

U - Analyzed for but not detected.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.

B - Analyte was found in an associated blank as well as in the sample.

Bold Hightlighted Cell signifies an exceedance of Class GA Standards

Table 4: (Page 2 of 2) Groundwater Analytical Results for AOC-3 and AOC-4. Garlock BCP Site No. 3. Palmyra, New York

Analyte (ug/L)	GW Std^ (ug/L)	OW4-3 05/07/08		AOC-4 Culvert 10/10/11	MW0911-01 10/10/11	
Chloromethane			UJ	-		U
VinylChloride	2	**1,200**	**J**	-	**740**	
Bromomethane	5		UJ	-		U
Chloroethane	5		UJ	-		U
1,1-Dichloroethene	5	**630**	**J**	-		U
Carbon disulfide	60		UJ	-		U
Acetone	50(G)		UJ	-		U
Methylene chloride	5		UJ	-		U
trans-1,2-Dichloroethene	5	**800**	**J**	-		U
1,1-Dichloroethane	5	**4,100**	**J**	-	**140**	**J**
cis-1,2-Dichloroethene	5	**270,000**	**J**	-	**8,400**	
Methyl Ethyl Ketone	50(G)		UJ	-		U
Chloroform	7		UJ	-		U
1,1,1-Trichloroethane	5	**15,000**	**J**	-	**160**	**J**
Carbon tetrachloride	5		UJ	-		U
Benzene	1		UJ	-		U
1,2-Dichloroethane	0.6		UJ	-		U
Trichloroethene	5	**290,000**	**J**	-	**790**	
1,2-Dichloropropane	1		UJ	-		U
Bromodichloromethane	50(G)		UJ	-		U
cis-1,3-Dichloropropene	0.4		UJ	-		U
4-Methyl-2-pentanone			UJ	-		U
Toluene	5	**49,000**	**J**	-	**330**	
trans-1,3-Dichloropropene	0.4		UJ	-		U
1,1,2-Trichloroethane	1		UJ	-		U
Tetrachloroethene	5	**7,400**	**J**	-		U
2-Hexanone	50(G)		UJ	-		U
Dibromochloromethane	5		UJ	-		U
Chlorobenzene	5		UJ	-		U
Ethylbenzene	5	**2,600**	**J**	-	**240**	
Styrene	50		UJ	-		U
Bromoform	50(G)		UJ	-		U
1,1,2,2-Tetrachloroethane	5		UJ	-		U
Xylenes (total)	5	**13,000**	**J**	-	**1,200**	
1,4-Dioxane			UJ	-		U
Total VOCs		653,730		-	12,000	
Total Chorinated VOCs[1]		568,600		-	9,930	

^ - From Technical and Operational Guidance Series (TOGS) Class GA ambient water quality standards - New York State Department of Environmental Conservation

(G) Signifies a NYSDEC guidance value where a standard has not been established.

[1] - Total Chlorinated VOCs includes cis-1,2-Dichloroethene, Vinyl Chloride, Trichloroethene, and Tetrachloroethene .

(-) - Well was dry at time of sampling, no sample collected

U - Analyzed for but not detected.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.

B - Analyte was found in an associated blank as well as in the sample.

Bold Hightlighted Cell signifies an exceedance of Class GA Standards

Table 5: (Page 1 of 2) Groundwater Analytical Results for AOC-5. Garlock BCP Site No. 3. Palmyra, New York

Analyte	GW Std^ (ug/L)	Sample Identification: MW-63						MW0610-01						MW0811-01					
Date Sampled		Historic Data		Aug-11		Sep-11		Historic Data		Aug-11		Sep-11		Historic Data		Aug-11		Sep-11	
VOCs by EPA Method 8260B			D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
Tetrachloroethene	5	U		U	0.36	UH	1.4	U		UH	14	UH	3.6	-		UH	36	U	7.2
Trichloroethene	5	10 J		U	0.46	2.3 JH		300		820 H		29 H		-		99 JH		U	9.2
cis-1,2-dichloroethene	5	1,200		61		180 H		1,700		2,600 H		890 H		-		6,300 H		670	
trans-1,2-dichloroethene	5	U		U	0.9	UH	3.6	U		UH	36	UH	9.0	-		UH	90	47	
Vinyl chloride	2	640		U	0.9	23 H		710		610 H		130 H		-		800 H		1,500	
EPA Method RSK-175																			
Ethane		NS		U	0.49	U	49	NS		14		U	49	-		22		38	
Ethylene		NS		U	0.52	U	52	NS		14		U	52	-		29		330	
Methane		NS		2.6		5,700		NS		87		1,400		-		96		120	
EPA Method 6010B (total)																			
Calcium		NS		358,000 B		528,000		NS		374,000 B		255,000		-		497,000 B		507,000	
Iron	300	NS		1,300		62,400		NS		180		29,700		-		260		17,900	
Magnesium	35,000	NS		122,000		167,000		NS		76,600		83,000		-		74,200		102,000	
Manganese	300	NS		66		4,500 B		NS		240		1,800 B		-		220		2,800 B	
EPA Method 6010B (dissolved)																			
Calcium		NS		352,000		544,000		NS		381,000		266,000		-		535,000		477,000	
Iron	300	NS		53		83,400		NS		440		32,800		-		24,300		16,900	
Magnesium	35,000	NS		122,000		173,000		NS		80,600		81,600		-		110,000		95,100	
Manganese	300	NS		16		5,200		NS		210		1,700		-		500		2,600	

Analyte	GW Std^ (ug/L)	Sample Identification: MW0811-03						MW0811-04						Duplicate					
Date Sampled		Historic Data		Aug-11		Sep-11		Historic Data		Aug-11		Sep-11		Historic Data		Aug-11 (MW0610-01)		Sep-11	
VOCs by EPA Method 8260B			D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
Tetrachloroethene	5	-		U	29	UH	36	-		U	0.72	NS		NS		UH	14	NS	
Trichloroethene	5	-		5,800		240 H		-		150		NS		NS		810 H		NS	
cis-1,2-dichloroethene	5	-		7,400		5,700 H		-		30		NS		NS		2,600 H		NS	
trans-1,2-dichloroethene	5	-		U	72	UH	90	-		U	1.8	NS		NS		UH	36	NS	
Vinyl chloride	2	-		960		470 H		-		U	1.8	NS		NS		620 H		NS	
EPA Method RSK-175																			
Ethane		-		24		U	25	-		U	0.49	NS		NS		11		NS	
Ethylene		-		17		U	26	-		U	0.52	NS		NS		10		NS	
Methane		-		190		U	11	-		5.4		NS		NS		130		NS	
EPA Method 6010B (total)																			
Calcium		-		379,000		1,330,000		-		55,600		NS		NS		393,000 B		NS	
Iron	300	-		2,700		1,440,000		-		19,800		NS		NS		210		NS	
Magnesium	35,000	-		81,700		442,000		-		30,200		NS		NS		78,800		NS	
Manganese	300	-		860		39,000 B		-		350		NS		NS		200		NS	
EPA Method 6010B (dissolved)																			
Calcium		-		419,000		NA		-		33,800		NS		NS		364,000		NS	
Iron	300	-		U	0.019	NA		-		1,900		NS		NS		890		NS	
Magnesium	35,000	-		80,000		NA		-		7,800		NS		NS		76,000		NS	
Manganese	300	-		890		NA		-		45		NS		NS		260		NS	

All values reported as ug/L
U - Analyzed for but not detected
J - Indicates an estimated value
B - Analyte detected in the assoicated laboratory method blank
H - Sample was prepped or analyzed beyond the specified holding time
NA - Not analyzed for
NS - Not sampled
(-) - Well did not exist prior to August 2011 sampling event
D.L. - Laboratory detection limit
Historic Data - Collected July 2010
Aug-11 data represents full scale ISCR injection baseline
Sep-11 and onward represents Post-ISCR effectiveness monitoring
Bold and boxed results indicate an exceedance of Groundwater Standards
^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

N1011

Table 5: (Page 2 of 2) Groundwater Analytical Results for AOC-5. Garlock BCP Site No. 3. Palmyra, New York

Analyte	GW Std^ (mg/L)	Sample Identification: MW-63			MW0610-01			MW0811-01		
Date Sampled		Historic Data	Aug-11	Sep-11	Historic Data	Aug-11	Sep-11	Historic Data	Aug-11	Sep-11
EPA Method 300		D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.
Nitrate as N	10	NS	1.8	U 0.033	NS	U 0.011	U 0.033	-	U 0.011	0.057 J
Sulfate	250	NS	**378**	13.9	NS	**692**	120	-	**882**	**575**
Chloride	250	NS	**1,680**	**1,760**	NS	**688**	**1,400**	-	**535**	**478**
EPA Method SM5310C										
Dissolved Organic Carbon - Quad		NS	U 0.43	526	NS	0.9 J	173	-	1.5	48.3
Total Organic Carbon - Quad		NS	2.6	557	NS	1.7	139	-	2.1	39.9
EPA Method 2320B										
Alkalinity		NS	222	1,290	NS	283	650	-	316	801
EPA Method SM2340B										
Hardness as Calcium Carbonate		NS	1,400	2,010	NS	1,250	979	-	1,550	1,680
EPA Method SM5210B										
Biochemical Oxygen Demand		NS	U 2	576	NS	U 2	216	-	U 2	48.2

Analyte	GW Std^ (mg/L)	Sample Identification: MW0811-03			MW0811-04			Duplicate		
Date Sampled		Historic Data	Aug-11	Sep-11	Historic Data	Aug-11	Sep-11	Historic Data	Aug-11 (MW0610-01)	Sep-11
EPA Method 300		D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.
Nitrate as N	10	-	0.033 J	UH 0.011	-	0.41	NS	NS	U 0.011	NS
Sulfate	250	-	**257**	8.9	-	95	NS	NS	**772**	NS
Chloride	250	-	**760**	80.3	-	**679**	NS	NS	**562**	NS
EPA Method SM5310C										
Dissolved Organic Carbon - Quad		-	3.5	5,920	-	13.2	NS	NS	0.75 J	NS
Total Organic Carbon - Quad		-	2.0	5,970	-	8.0	NS	NS	1.5	NS
EPA Method 2320B										
Alkalinity		-	325	2,900 B	-	124	NS	NS	287	NS
EPA Method SM2340B										
Hardness as Calcium Carbonate		-	1,280	5,150	-	263	NS	NS	1,310	NS
EPA Method SM5210B										
Biochemical Oxygen Demand		-	2.9	NA	-	9.4	NS	NS	U 2	NS

All values reported as mg/L
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B - Analyte detected in the assoicated laboratory method blank
H - Sample was prepped or analyzed beyond the specified holding time
NS - Not sampled
(-) - Well did not exist prior to August 2011 sampling event
D.L. - Laboratory detection limit
Historic Data - Collected July 2010
Aug-11 data represents full scale ISCR injection baseline
Sep-11 and onward represents Post-ISCR effectiveness monitoring
Bold and boxed *results indicate an exceedance* of Groundwater Standards
^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) *Division* of Water Technical and Operational Guidance Series (June 1998).

Table 6: (Page 1 of 3) Laboratory Analytical Results for Carbon Tetrachloride Area. Garlock BCP Site No. 3. Palmyra, New York.

Analyte	GW Std^ (ug/L)	Sample Identification: MW-60			MW0610-03			MW0610-04		
Date Sampled		Historic Data	Aug-11	Sep-11	Historic Data	Aug-11	Sep-11	Historic Data	Aug-11	Sep-11
VOCs by EPA Method 8260B		D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.	D.L.
1,1,1-Trichloroethane	5	U 8	UH 16	U 21	U 16	UH 82	U 21	U 0.16	UH 0.82	U 0.82
1,1,2,2-Tetrachloroethane	5	U 7.5	UH 4.2	U 5.3	U 15	UH 21	U 5.3	U 0.15	UH 0.21	U 0.21
1,1,2-Trichloroethane	1	U 5.5	UH 4.6	U 5.8	U 11	UH 23	U 5.8	U 0.11	UH 0.23	U 0.23
1,1-Dichloroethane	5	U 6.5	UH 7.6	U 9.5	U 13	UH 38	U 9.5	0.34 J	UH 0.38	U 0.38
1,1-Dichloroethene	5	U 9.5	UH 5.8	U 7.3	U 19	UH 29	U 7.3	U 0.19	UH 0.29	U 0.29
1,2-Dichloroethane	0.6	U 6	UH 4.2	U 5.3	U 12	UH 21	U 5.3	U 0.12	UH 0.21	U 0.21
1,2-Dichloroethene, Total	5		UH 14	**38 J**		UH 70	U 18		UH 0.70	U 0.70
1,2-Dichloropropane	1	U 5.5	UH 14	U 18	U 11	UH 72	U 18	U 0.11	UH 0.72	U 0.72
2-Hexanone	50	U 26	UH 25	U 31	U 51	UH 120	U 31	U 0.51	UH 1.2	U 1.2
Acetone	50	**180 B**	UH 60	**130 J**	**290 B**	UH 300	U 75	U 0.58	UH 3.0	U 3.0
Benzene	1	U 7	UH 8.2	U 10	**49 J**	UH 41	**60**	**14**	**1.5 H**	**7.8**
Bromodichloromethane	50	U 3.9	UH 7.8	U 9.8	U 7.8	UH 39	U 9.8	U 0.078	UH 0.39	U 0.39
Bromoform	50	U 6.5	UH 5.2	U 6.5	U 13	UH 26	U 6.5	U 0.13	UH 0.26	U 0.26
Bromomethane	5	U 10	UH 14	U 17	U 21	UH 69	U 17	U 0.21	UH 0.69	U 0.69
Carbon disulfide	60	**80**	38 H	**110**	U 7.7	UH 19	49	U 0.077	UH 0.19	0.63 J
Carbon tetrachloride	5	**3,800 B**	**1,500 H**	**1,500**	**6,500 B**	**4,400 H**	**1,900**	U 0.10	**28 H**	U 0.27
Chlorobenzene	5	U 2.8	UH 15	U 19	U 5.7	UH 75	U 19	U 0.057	UH 0.75	U 0.75
Chloroethane	5	U 7.5	UH 6.4	U 8.0	U 15	UH 32	U 8.0	U 0.15	UH 0.32	U 0.32
Chloroform	7	**1,300**	**1,000 H**	**1,700**	**2,200**	**1,400 H**	**1,300**	U 0.12	**30 H**	U 0.34
Chloromethane		U 10	UH 7.0	U 8.8	U 20	UH 35	U 8.8	U 0.20	UH 0.35	U 0.35
cis-1,2-Dichloroethene	5	**26**	UH 16	**38**	U 21	UH 81	U 20	0.23 J	UH 0.81	U 0.81
cis-1,3-Dichloropropene	0.4	U 6.5	UH 7.2	U 9.0	U 13	UH 36	U 9.0	U 0.13	UH 0.36	U 0.36
Dibromochloromethane	50	U 4.4	UH 6.4	U 8.0	U 8.8	UH 32	U 8.0	U 0.088	UH 0.32	U 0.32
Ethylbenzene	5	U 7	UH 15	U 19	U 14	UH 74	U 19	U 0.14	UH 0.74	U 0.74
m,p-Xylene	5		UH 13	U 17		UH 66	U 17		UH 0.66	1.0 J
Methyl ethyl ketone	50	U 16	UH 26	**400**	U 32	UH 130	**98 J**	U 0.32	UH 1.3	U 1.3
Methyl isobutyl ketone		U 15	UH 42	U 53	U 30	UH 210	U 53	U 0.30	UH 2.1	U 2.1
Methylene chloride	5	**99 JB**	**12 JH**	**92**	**210 B**	UH 44	**26**	U 0.091	UH 0.44	U 0.44
o-Xylene	5		UH 15	U 19		UH 76	U 19		UH 0.76	U 0.76
Styrene	5	U 8.5	UH 15	U 18	U 17	UH 73	U 18	U 0.17	UH 0.73	U 0.73
Tetrachloroethene	5	**69**	**37 H**	**68**	**24 J**	UH 36	**20 J**	U 0.11	UH 0.36	U 0.36
Toluene	5	**36**	**20 H**	**35**	**110**	UH 51	**61**	1.4	UH 0.51	U 0.51
trans-1,2-Dichloroethene	5	U 12	UH 18	U 23	U 24	UH 90	U 23	U 0.24	UH 0.90	U 0.90
trans-1,3-Dichloropropene	0.4	U 9.5	UH 7.4	U 9.3	U 19	UH 37	U 9.3	U 0.19	UH 0.37	U 0.37
Trichloroethene	5	**30**	**14 JH**	**32**	U 11	UH 46	U 12	U 0.11	UH 0.46	U 0.46
Vinyl chloride	2	U 7	UH 18	U 23	U 14	UH 90	U 23	U 0.14	UH 0.90	U 0.90
Xylenes, Total	5	U 15	UH 13	U 17	U 30	UH 66	U 17	2.1	UH 0.66	1.0 J
EPA Method RSK-175										
Ethane		NS	U 0.49	U 0.49	NS	U 0.49	U 0.49	NS	U 0.49	U 98
Ethylene		NS	U 0.52	3.3	NS	U 0.52	U 0.52	NS	U 0.52	U 100
Methane		NS	42	47	NS	380	1,700	NS	1,300	3,100
EPA Method 6010B (total)										
Calcium		NS	325,000	489,000	NS	290,000	331,000	NS	454,000	302,000
Iron	300	NS	**1,600**	**33,100**	NS	**3,000**	**14,000**	NS	**1,300**	**870**
Magnesium	35,000	NS	**69,300**	**107,000**	NS	**87,400**	**95,100**	NS	**78,400**	**57,000**
Manganese	300	NS	**390**	**3,800 B**	NS	**1,600**	**2,000 B**	NS	**970**	**820 B**
EPA Method 6010B (dissolved)										
Calcium		NS	348,000	480,000	NS	301,000	304,000	NS	454,000	272,000
Iron	300	NS	**1,400**	**40,000**	NS	**820**	**15,200**	NS	140	94
Magnesium	35,000	NS	**71,800**	**107,000**	NS	**90,000**	**90,900**	NS	**76,500**	**53,300**
Manganese	300	NS	**390**	**3,700**	NS	**1,500**	**2,000**	NS	**900**	**770**

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(-) - Well did not exist prior to August 2011 sampling event

D.L. - Laboratory detection limit

Historic Data - Collected July 2010

Aug-11 data represents full scale ISCR injection baseline

Sep-11 onward represents Post-ISCR effectiveness monitoring

Bold and boxed results indicate an exceedance of Groundwater Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

N1011

Table 6: (Page 2 of 3) Laboratory Analytical Results for Carbon Tetrachloride Area. Garlock BCP Site No. 3. Palmyra, New York.

Analyte	GW Std^ (ug/L)	Sample Identification: MW0610-05						MW0811-02						Duplicate					
Date Sampled		Historic Data		Aug-11		Sep-11		Historic Data		Aug-11		Sep-11		Historic Data (MW06-10-3)		Aug-11 (MW0610-04)		Sep-11 (MW-60)	
VOCs by EPA Method 8260B			D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.		D.L.
1,1,1-Trichloroethane	5	U	0.16	UH	0.82	U	0.82	-		UH	0.82	U	0.82	U	16	U	0.82	U	21
1,1,2,2-Tetrachloroethane	5	U	0.15	UH	0.21	U	0.21	-		UH	0.21	U	0.21	U	15	U	0.21	U	5.3
1,1,2-Trichloroethane	1	U	0.11	UH	0.23	U	0.23	-		UH	0.23	U	0.23	U	11	U	0.23	U	5.8
1,1-Dichloroethane	5	0.56		UH	0.38	U	0.38	-		UH	0.38	U	0.38	U	13	U	0.38	U	9.5
1,1-Dichloroethene	5	0.33 J		UH	0.29	U	0.29	-		UH	0.29	U	0.29	U	19	U	0.29	U	7.3
1,2-Dichloroethane	0.6	U	0.12	UH	0.21	U	0.21	-		UH	0.21	U	0.21	U	12	U	0.21	U	5.3
1,2-Dichloroethene, Total	5			**6.3 H**		**25**		-		UH	0.70	U	0.70			U	0.70	**30 J**	
1,2-Dichloropropane	1	U	0.11	UH	0.72	U	0.72	-		UH	0.72	U	0.72	U	11	U	0.72	U	18
2-Hexanone	50	U	0.51	UH	1.2	U	1.2	-		UH	1.2	U	1.2	U	51	U	1.2	U	31
Acetone	50	1.4 JB		6.3 JH		U	3.0	-		UH	3.0	U	3.0	**330 B**		U	3.0	**77 J**	
Benzene	1	**17**		**1.3 H**		**21**		-		UH	0.41	**5.4**		**49 J**		**1.5**		U	10
Bromodichloromethane	50	U	0.078	UH	0.39	U	0.39	-		UH	0.39	U	0.39	U	7.8	U	0.39	U	9.8
Bromoform	50	U	0.13	UH	0.26	U	0.26	-		UH	0.26	U	0.26	U	13	U	0.26	U	6.5
Bromomethane	5	U	0.21	UH	0.69	U	0.69	-		UH	0.69	U	0.69	U	21	U	0.69	U	17
Carbon disulfide	60	U	0.077	0.80 JH		U	0.19	-		UH	0.19	U	0.19	U	7.7	1.3		**110**	
Carbon tetrachloride	5	U	0.10	**11 H**		U	0.27	-	**6.5 H**			U	0.27	**6,600 B**		**17**		**1,400**	
Chlorobenzene	5	U	0.057	UH	0.75	U	0.75	-		UH	0.75	U	0.75	U	5.7	U	0.75	U	19
Chloroethane	5	U	0.15	UH	0.32	U	0.32	-		UH	0.32	U	0.32	U	15	U	0.32	U	8.0
Chloroform	7	U	0.12	4.0 H		U	0.34	-	1.2 H			U	0.34	**2,200**		**18**		**1,500**	
Chloromethane		U	0.20	UH	0.35	U	0.35	-		UH	0.35	U	0.35	U	20	U	0.35	U	8.8
cis-1,2-Dichloroethene	5	**30**		**6.3 H**		**25**		-		UH	0.81	U	0.81	U	21	U	0.81	**30**	
cis-1,3-Dichloropropene	0.4	U	0.13	UH	0.36	U	0.36	-		UH	0.36	U	0.36	U	13	U	0.36	U	9.0
Dibromochloromethane	50	U	0.088	UH	0.32	U	0.32	-		UH	0.32	U	0.32	U	8.8	U	0.32	U	8.0
Ethylbenzene	5	U	0.14	UH	0.74	U	0.74	-		UH	0.74	U	0.74	U	14	U	0.74	U	19
m,p-Xylene	5			UH	0.66	1.0 J		-		UH	0.66	U	0.66			U	0.66	U	17
Methyl ethyl ketone	50	11 B		UH	1.3	U	1.3	-		UH	1.3	U	1.3	U	32	U	1.3	**300**	
Methyl isobutyl ketone		U	0.30	UH	2.1	U	2.1	-		UH	2.1	U	2.1	U	30	U	2.1	U	53
Methylene chloride	5	U	0.091	UH	0.44	U	0.44	-		UH	0.44	U	0.44	**210 B**		U	0.44	**66**	
o-Xylene	5			UH	0.76	U	0.76	-		UH	0.76	U	0.76			U	0.76	U	19
Styrene	5	U	0.17	UH	0.73	U	0.73	-		UH	0.73	U	0.73	U	17	U	0.73	U	18
Tetrachloroethene	5	0.34 J		UH	0.36	U	0.36	-		UH	0.36	U	0.36	**26 J**		U	0.36	**59**	
Toluene	5	0.52		UH	0.51	U	0.51	-		UH	0.51	U	0.51	**110**		0.73 J		**31**	
trans-1,2-Dichloroethene	5	0.56		UH	0.90	U	0.9	-		UH	0.90	U	0.90	U	24	U	0.90	U	23
trans-1,3-Dichloropropene	0.4	U	0.19	UH	0.37	U	0.37	-		UH	0.37	U	0.37	U	19	U	0.39	U	9.3
Trichloroethene	5	0.29 J		UH	0.46	U	0.46	-		UH	0.46	U	0.46	U	11	0.51 J		**24 J**	
Vinyl chloride	2	**13**		**11 H**		**9.9**		-		UH	0.90	U	0.90	U	14	U	0.90	U	23
Xylenes, Total	5	1.5		UH	0.66	1.0 J		-		UH	0.66	U	0.66	U	30	U	0.66	U	17
EPA Method RSK-175																			
Ethane		NS		1.0 J		1.5		-		U	0.49	U	49	NS		U	0.49	U	0.49
Ethylene		NS		1.8		U	0.52	-		U	0.52	U	52	NS		U	0.52	0.57 J	
Methane		NS		250		2,700		-	1,500		1,100			NS		1,500		29	
EPA Method 6010B (total)																			
Calcium		NS		560,000		423,000		-	190,000		152,000			NS		461,000		483,000	
Iron	300	NS		**2,500**		**2,900**		-	**2,500**		**1,400**			NS		**2,100**		**32,700**	
Magnesium	35,000	NS		**61,400**		**61,000**		-	**36,800**		24,400			NS		**77,600**		**106,000**	
Manganese	300	NS		240		**2,200 B**		-	**2,500**		**600 B**			NS		**970**		**3,800 B**	
EPA Method 6010B (dissolved)																			
Calcium		NS		464,000		380,000		-	187,000		133,000			NS		447,000		466,000	
Iron	300	NS		120		210		-	**550**		**780**			NS		91		**37,500**	
Magnesium	35,000	NS		**59,900**		**56,800**		-	**37,000**		22,800			NS		**76,800**		**105,000**	
Manganese	300	NS		230		**2,200**		-	**2,400**		**620**			NS		**900**		**3,600**	

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NS - Not sampled
(-) - Well did not exist prior to August 2011 sampling event
D.L. - Laboratory detection limit
Historic Data - Collected July 2010
Aug-11 data represents full scale ISCR injection baseline
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N1011

Table 6: (Page 3 of 3) Laboratory Analytical Results for Carbon Tetrachloride Area. Garlock BCP Site No. 3. Palmyra, New York.

Analyte	GW Std^ (mg/L)	Sample Identification: MW-60						MW0610-03						MW0610-04					
Date Sampled		Historic Data			Aug-11			Sep-11		Historic Data			Aug-11			Sep-11		Historic Data			Aug-11			Sep-11	
EPA Method 300			D.L.			D.L.			D.L.		D.L.			D.L.			D.L.		D.L.			D.L.		D.L.
Nitrate as N	10	NS			0.35	H		U	0.033	NS			0.38	H		U	0.033	NS		UH	0.011	0.15		
Sulfate	250	NS			**446**			32.2		NS			237			176		NS			**292**			159	
Chloride	250	NS			**498**			**896**		NS			**809**			**864**		NS			**828**			**1,250**	
EPA Method SM5310C																									
Dissolved Organic Carbon - Quad		NS			2.2			361		NS			1.2			144		NS			5.5			8.9	
Total Organic Carbon - Quad		NS			1.5	B		493		NS			2.6	B		127		NS			8.9	B		7.8	
EPA Method 2320B																									
Alkalinity		NS			298	B		1,000		NS			353	B		511		NS			816	B		616	
EPA Method SM2340B																									
Hardness as Calcium Carbonate		NS			1,100			1,660		NS			1,080			1,220		NS			1,460			988	
EPA Method SM5210B																									
Biochemical Oxygen Demand		NS				U	2	906		NS				U	2	229		NS			32.5			17.0	

Analyte	GW Std^ (mg/L)	Sample Identification: MW0610-05						MW0811-02						Duplicate					
Date Sampled		Historic Data			Aug-11		Sep-11	Historic Data			Aug-11		Sep-11	Historic Data			Aug-11 (MW0610-04)		Sep-11 (MW-60)
EPA Method 300			D.L.			D.L.	D.L.		D.L.			D.L.	D.L.		D.L.			D.L.	D.L.
Nitrate as N	10	NS			0.15	H	0.46	-			UH	0.011	3.5	NS			UH	0.011	U 0.033
Sulfate	250	NS			**683**		**407**	-		148			**278**	NS			**301**		32.7
Chloride	250	NS			**402**		**744**	-		**2,210**			**465**	NS			**760**		**873**
EPA Method SM5310C																			
Dissolved Organic Carbon - Quad		NS			4.2		6.3	-			U	0.43	12.8	NS			5.7		526
Total Organic Carbon - Quad		NS			1.4	B	6.2	-		5.8			9.7	NS			9.2		531
EPA Method 2320B																			
Alkalinity		NS			458	B	535	-		412	B		421	NS			808	B	1,000
EPA Method SM2340B																			
Hardness as Calcium Carbonate		NS			1,650		1,310	-		626			481	NS			1,470		1,640
EPA Method SM5210B																			
Biochemical Oxygen Demand		NS			2.7		17.0	-		2.8			4.3	NS			43.7		876

All values reported as mg/L

U - Analyzed for but not detected

J - Indicates an estimated value

B - Analyte detected in the assoicated laboratory method blank

H - Sample was prepped or analyzed beyond the specified holding time

NS - Not sampled

(-) - Well did not exist prior to August 2011 sampling event

D.L. - Laboratory detection limit

Historic Data - Collected July 2010

Aug-11 data represents full scale ISCR injection baseline

Sep-11 onward represents Post-ISCR effectiveness monitoring

Bold and boxed results indicate an exceedance of Groundwater Standards

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998). Originally reported as ug/L.

Table 7: (Page 1 of 1). Groundwater Sample Analytical Results for Toluene Area, Garlock BCP Site No. 3, Palmyra, New York.

Parameter (ug/L)	GW Std^ (ug/L)	IW-1		IW-2		IW-3		IW-4		IW-5		Duplicate	
		Oct-10	Sep-11	Oct-10	Sep-11	Oct-10	Sep-11	Oct-10	Sep-11	Oct-10	Sep-11	Oct-10 (IW-2)	Sep-11
VOCs by EPA Method 8260B													
Acetone	50(G)	610 J*	U	1,200 J* B	U	U	NS	U	NS	1 J* B	NS	1,200 J* B	NS
Benzene	1	U	U	260 J	89	33	NS	6.9	NS	3.6	NS	280 J	NS
Bromodichloromethane	50(G)	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Bromoform	50(G)	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Bromomethane	5	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Methyl Ethyl Ketone	50(G)	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Carbon disulfide	60	U	U	450 J	U	U	NS	U	NS	0.53	NS	450 J	NS
Carbon tetrachloride	5	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Chlorobenzene	5	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Chloroethane	5	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Chloroform	7	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Chloromethane		U	U	U	U	U	NS	U	NS	U	NS	U	NS
Dibromochloromethane	5	U	U	U	U	U	NS	U	NS	U	NS	U	NS
1,1-Dichloroethane	5	U	U	U	U	0.51	NS	U	NS	0.48 J	NS	U	NS
1,2-Dichloroethane	0.6	U	U	U	U	U	NS	U	NS	U	NS	U	NS
1,1-Dichloroethene	5	U	U	U	U	U	NS	U	NS	U	NS	U	NS
cis-1,2-Dichloroethene	5	U	U	U	U	1.5	NS	0.22 J	NS	11	NS	U	NS
trans-1,2-Dichloroethene	5	U	U	U	U	U	NS	U	NS	0.34 J	NS	U	NS
1,2-Dichloropropane	1	U	U	U	U	U	NS	U	NS	U	NS	U	NS
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	NS	U	NS	U	NS	U	NS
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Ethylbenzene	5	U	U	U	U	0.4 J	NS	U	NS	U	NS	U	NS
2-Hexanone	50(G)	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Methylene Chloride	5	U	U	1,200 J B	U	U	NS	U	NS	U	NS	1,100 J B	NS
methyl isobutyl ketone		U	U	U	U	U	NS	U	NS	U	NS	U	NS
Styrene	50	U	U	U	U	U	NS	U	NS	U	NS	U	NS
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Tetrachloroethene	5	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Toluene	5	36,000	2,900	77,000	1,300	0.21 J	NS	U	NS	U	NS	85,000	NS
1,1,1-Trichloroethane	5	U	U	U	U	U	NS	U	NS	U	NS	U	NS
1,1,2-Trichloroethane	1	U	U	U	U	U	NS	U	NS	U	NS	U	NS
Trichloroethene	5	U	U	U	U	U	NS	U	NS	0.11 J B	NS	U	NS
Vinyl chloride	2	U	U	U	U	0.35 J	NS	U	NS	9.8	NS	U	NS
Xylenes, Total	5	U	U	U	U	0.32 J B	NS	U	NS	U	NS	U	NS
1,4-Dioxane		U	U	U	U	U	NS	U	NS	U	NS	U	NS
Total VOCs		36,610	2,900	80,110	1,389	36.29	NS	7.12	NS	26.86	NS	88,030	NS

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

(G) Signifies a NYSDEC guidance value where a standard has not been established.

U - Analyzed for but not detected.

J - Estimated Value.

B - Compound detected in Laboratory Blank.

NS - not sampled

Bold Highlighted Cell signifies an exceedance of Class GA Standards

Oct-10 data represents Pre-IRM groundwater conditions (baseline sampling event)

Sep-11 onward represents Post-IRM effectiveness monitoring

APPENDICES

Appendix A
Survey Metes and Bounds and Legal Description and Environmental Easement

Do Not Detach

Wayne County Clerk's Office

Recording Page

Receipt Number: 11-1585-P

Easements
Instrument Number: R9133873

Date/Time: 11/28/2011 02:07 PM

First OR: GARLOCK SEALING TECHNOLOGIES LLC

First EE: PEOPLE OF THE STATE OF NEW YORK

Town: PALMYRA TOWN OF

Pages: 15
Employee Id: ct
Serial Number:

Transfer Tax Number: 0797

-FEES-	
Recording and Filing	$120.00
Transfer Tax	$0.00
Basic Tax	
Local Tax	
Additional Tax	
Special Tax	
Withheld	
Total	$120.00
-MORTGAGE TAX-	$0.00
Amount Taxed	
-TRANSFER TAX-	
Consideration Amount	$0.00

State of New York
County of Wayne

***** WARNING - This sheet constitutes the Clerks endorsement required by Section 319 of the Real Property Law of the State of New York.**

Wayne County Clerk

*****DO NOT DETACH*****
*****THIS IS NOT A BILL*****

(12)

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 18th day of November, 2011, between Owner(s) Garlock Sealing Technologies LLC, having an office at 1666 Division Street, Palmyra, New York 14522, (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233.

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

PAY $0.00

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property designated as designated as Lots 3W and 3E and located at the address of 1666 Division Street, Town of Palmyra, County of Wayne and State of New York, known and designated on the tax map of the County Clerk of Wayne as tax map parcel numbers: Section 064.111 Block 00 Lot 839.937, being the same as that property conveyed to Grantor by deed(s) dated April 19, 1918; January 18, 1910; June 29, 1912; July 27, 1920; August 29, 1925; August 26, 1960; November 18, 1947; August 25, 1983; January 17, 1961; July 14, 1964; September 30, 1965 and April 12, 1928 and recorded in the Wayne County Clerk's Office in Liber 246 page 428; Liber 216 page 376; Liber 226 page 299; Liber 253 page 561; Liber 275 page 77, Liber 485 page 576; Liber 373 page 74; Liber 780 page 823; Liber 492 page 594; Liber 534 page 305; Liber 560 page 93; and Liber 285 page 455 respectively. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 28.907 acres +/- acres, and is hereinafter more fully described in the Land Title Survey dated October 2011 prepared by Labella Associates P.C., which will be attached to the Site Management Plan. The Controlled Property description and survey is set forth in and attached hereto as Schedule A; and

6411-00-839937

County: Wayne Site No: C859028 BCA Index No.: B8-0690-05-04B

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: B8-0690-05-04B, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP.

(4) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(5) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(6) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(7) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.

(8) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

(9) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential, Restricted Residential or Commercial purposes as defined in 6NYCRR 375-1.8(g)(i), (ii) and (iii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right

to use the Controlled Property.

G. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a

defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:	Site Number: C859028 Office of General Counsel NYSDEC 625 Broadway Albany New York 12233-5500
With a copy to:	Site Control Section Division of Environmental Remediation NYSDEC 625 Broadway Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the

recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

GARLOCK SEALING TECHNOLOGIES LLC:

By: _____

Print Name: DALE HIRDS

Title: PRESIDENT Date: 11 10 11

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Monroe)

On the 10th day of November, in the year 2011, before me, the undersigned, personally appeared Dale Herold, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

JULIE E. FRANK
Notary Public in the State of New York
MONROE COUNTY
Commission Expires May 11, 2015

County: Wayne Site No: C859028 BCA Index No.: B8-0690-05-04B

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner.

By: _____
Dale A. Desnoyers, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 10th day of November in the year 2011, before me, the undersigned, personally appeared Dale A. Desnoyers, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2014

County: Wayne Site No: C859028 BCA Index No.: B8-0690-05-04B

SCHEDULE "A" PROPERTY DESCRIPTION

Address: 1666 Division Street [Lot 3E and Lot 3W], Palmyra, New York 14522
Tax Map: 064.111-00-839.937

LOT 3E
(PART OF DEED REFERENCE NO'S 1 AND 2)

Beginning at a point, said point being the most northeasterly property corner of the Gylon Building Environmental Easement as shown on a map entitled "Gylon Building Lot Creation ALTA Survey"by Labella Associates, P.C. dated November, 2008

1) thence S 45°53'05" E through the lands of tax account number 064.111-00-839.937 a distance of 185.12 feet to a point

2) thence S 40°52'41" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 21.21 feet to a point

3) thence S 84°09'27" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 51.99 feet to a point

4) thence N 62°44'31" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 76.35 feet to a point

5) thence N 24°16'39" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 123.31 feet to a point

6) thence S 56°11'52" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 184.45 feet to a point

7) thence S 68°04'34" E, continuing through the lands of tax account number 064.111-00-839.937 a distance of 201.16 feet to a point

8) thence S 24°04'55" W continuing through the lands of tax account number 064.111-00-839.937 a distance of 11.92 feet to a point

9) thence S 62°50'09" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 182.63 feet to a point

10) thence S 47°19'53" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 167.68 feet to a point

11) thence S 60°18'50" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 232.72 feet to a point

12) thence S 52°14'48" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 181.62 feet to a point

13) thence S 59°36'30" E continuing through the lands of tax account number 064.111-00-839.937

a distance of 116.15 feet to a point

14) thence S 12°43'16" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 217.07 feet to a point

15) thence S 65°55'05" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 131.16 feet to a point

16) thence S 9°13'09" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 40.11 feet to a point

17) thence S 74°33'34" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 160.23 feet to a point in the westerly right of way for New York State Rte 21

18) thence S 47°35'25" W along said right of way a distance of 266.24 feet to a point

19) thence S 36°59'47" W continuing along said right of way a distance of 86.33 feet to a point

20) thence N 78°31'45" W through the lands of tax account number 064.111-00-839.937 a distance of 1023.64 feet to a point in the northerly boundary of lands now or formerly of John S. Blazey, Inc

21) thence N 27°28'15" E along said northerly boundary a distance of 40.00 feet to a point

22) thence N 76°11'40" W continuing along said northerly boundary a distance of 169.38 feet to a point

23) thence S 74°54'15" W continuing along said northerly boundary a distance of 90.00 feet to a point

24) thence S 65°55'05" W continuing along said northerly boundary a distance of 171.52 feet to a point

25) thence N 80°04'45" W continuing along said northerly boundary a distance of 130.00 feet to a point in the easterly boundary of lands now or formerly of James E. and Anthony J. Santelli

26) thence N 11°28'15" E along said easterly boundary a distance of 375.75 feet to a angle point

27) thence N 78°31'45" W along said northerly boundary of Santelli a distance of 29.20 feet to a point, said point being the most southeasterly property corner of the Gylon Building Environmental Easement as shown on a map entitled "Gylon Building Lot Creation ALTA Survey" by Labella Associates, P.C. dated November, 2008, Thence along the easterly boundary of the said Gylon Environmental Easement the following courses and distances:

28) thence N 11°10'24" E a distance of 250.68 feet to a point

29) thence N 88°52'58" E a distance of 69.69 feet to a point

30) thence N 1°40'11" W a distance of 18.19 feet to a point

31) thence N 88°03'02" E a distance of 7.19 feet to a point

32) thence N 0°55'42" W a distance of 10.54 feet to a point

33) thence S 78°14'43" E a distance of 247.03 feet to a point

34) thence S 11°20'52" W, a distance of 0.80 feet to a point

35) thence S 78°35'05" E a distance of 2.10 feet to a point

36) thence N 11°14'57" E a distance of 137.32 feet to a point

37) thence N 77°49'47" W a distance of 116.93 feet to a point

38) thence N 12°16'51" E a distance of 38.40 feet to a point

39) thence S 81°45'01" E, a distance of 13.34 feet to a point

40) thence N 12°17'10" E a distance of 30.45 feet to a point

41) thence N 78°23'40" W a distance of 36.94 feet to a point

42) thence S 11°59'33" W a distance of 8.88 feet to a point

43) thence N 78°12'13" W a distance of 34.90 feet to a point

44) thence N 11°55'21" E a distance of 16.20 feet to a point

45) thence N 77°43'02" W a distance of 30.09 feet to a point

46) thence S 12°36'40" W a distance of 15.41 feet to a point

47) thence N 78°20'12" W a distance of 38.38 feet to a point

48) thence S 11°38'31" W a distance of 5.20 feet to a point

49) thence S 88°03'13" W a distance of 43.88 feet to a point

50) thence N 1°33'36" W a distance of 38.91 feet to a point

51) thence N 1°47'21" W a distance of 3.00 feet to a point

52) thence N 88°12'39" E a distance of 19.15 feet to a point

53) thence N 1°06'16" W a distance of 21.22 feet to a point

54) thence S 88°31'54" W a distance of 46.23 feet to a point

55) thence S 2°32'51" E a distance of 9.00 feet to a point

56) thence S 87°27'09" W a distance of 16.30 feet to a point

57) thence N 2°32'51" W a distance of 13.00 feet to a point

58) thence S 87°27'09" W a distance of, 14.54 feet to a point

59) thence S 1°34'32" E a distance of 3.86 feet to a point

60) thence S 87°57'57" W a distance of 13.49 feet to a point

61) thence S 1°34'45" E a distance of 8.94 feet to a point

62) thence S 88°04'56" W a distance of 72.23 feet to a point

63) thence N 10°08'51" E a distance of 176.82 feet to the POINT OF BEGINNING.

The above described parcel contains 26.913 acres (1172341 sq. ft.) more or less

LOT 3W
(PART OF DEED REFERENCE NO'S 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 AND 12)

Beginning at the northeasterly corner of Klozure Building Lot 1 as shown on a map entitled "Klozure Building Lot Creation"by Labella Associates, P.C. dated August 14, 2006,

1) thence S 11°29'58" W along the easterly boundary of said Lot 1 a distance of 386.30 feet to an angle point

2) thence S 78°30'02" E continuing along the easterly boundary of said Lot 1 a distance of 216.24 feet to a point in the westerly boundary of the Gylon Building Environmental Easement as shown on a map entitled "Gylon Building Lot Creation ALTA Survey" by Labella Associates, P.C. dated November, 2008

3) thence N 11°16'07" E along the westerly boundary of the said Gylon Environmental Easement a distance of 247.13 feet to a point

4) thence N 52°09'40" E along the westerly boundary of the said Gylon Environmental Easement a distance of 134.45 feet to a point

5) thence N 11°20'28" E continuing along the westerly boundary of the said Gylon Environmental Easement a distance of 42.50 feet to a point

6) thence N 68°59'04" W through the lands of tax account number 064.111-00-839.937 a distance of 73.03 feet to a point

7) thence S 65°20'38" W continuing through the lands of tax account number 064.111-00-839.937 a distance of 89.76 feet to a point

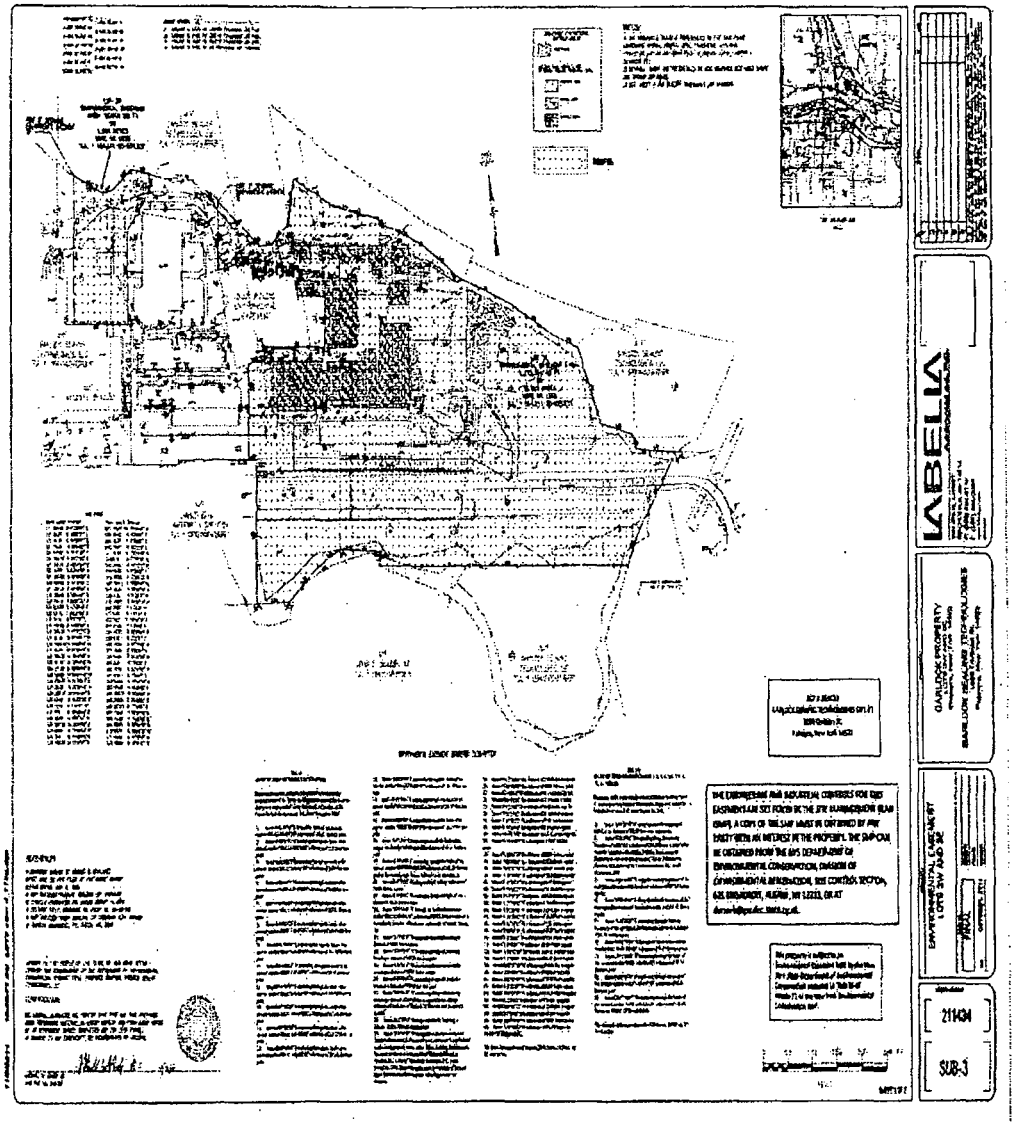
8) thence S 89°55'11" W continuing through the lands of tax account number 064.111-00-839.937 a distance of 44.90 feet to a point

9) thence N 57°11'17" W continuing through the lands of tax account number 064.111-00-839.937 a distance of 122.64 feet to the POINT OF BEGINNING.

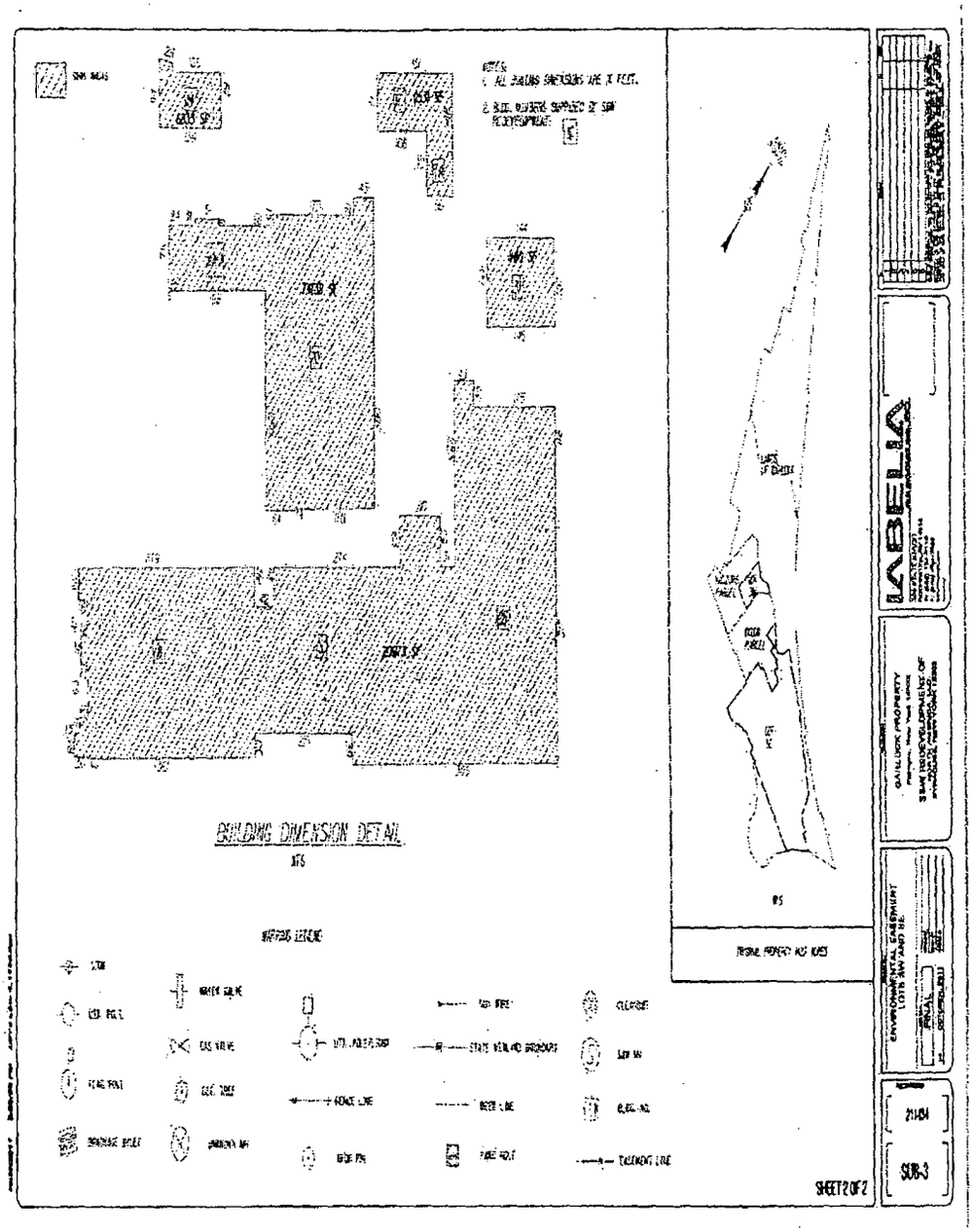
The above described parcel contains 1.994 acres (86844 sq. ft.) more or less

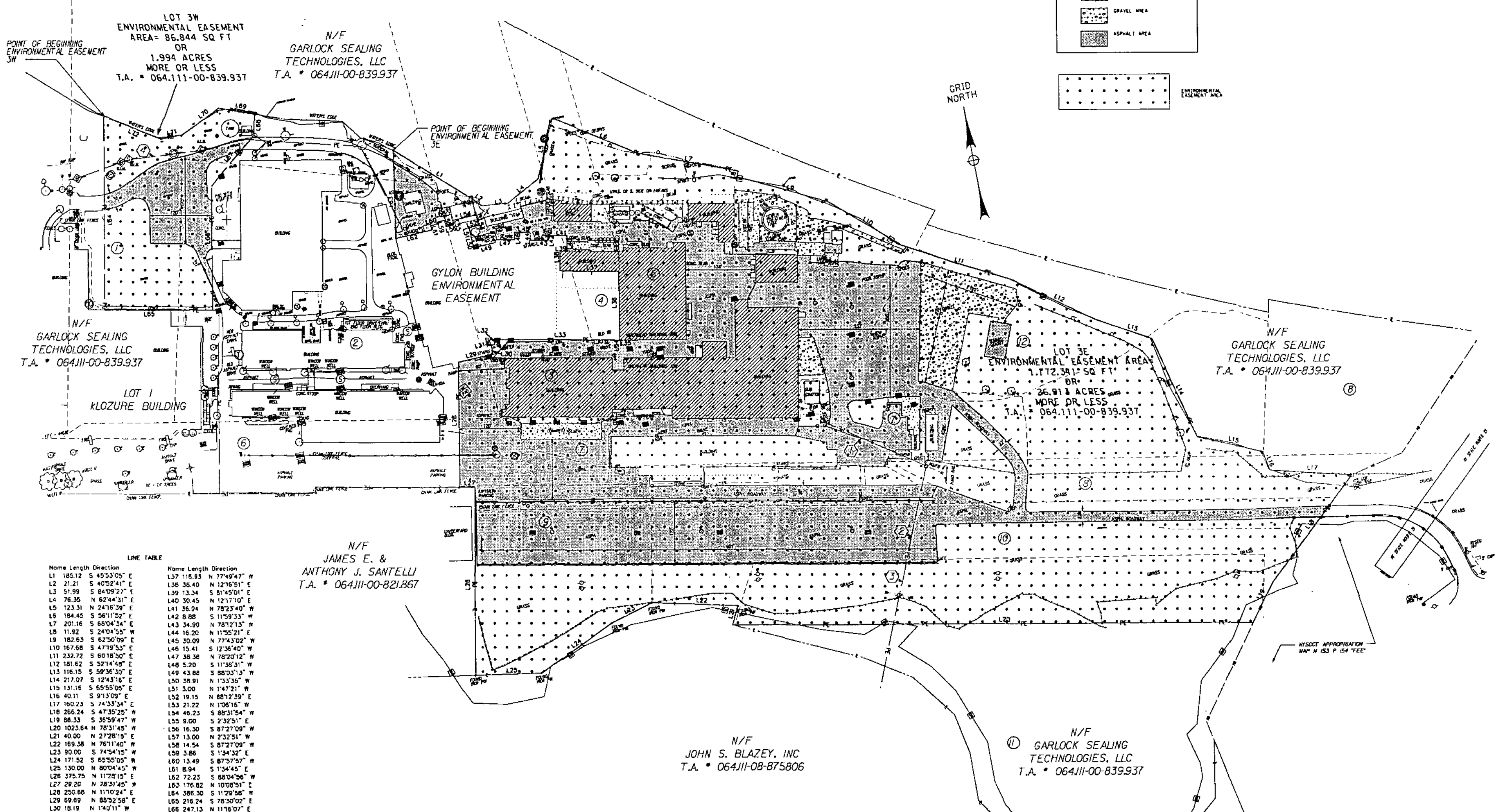
County: Wayne Site No: C859028 BCA Index No.: B8-0690-05-04B

SURVEY



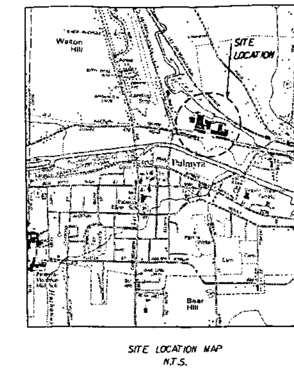
County: Wayne Site No: C859028 BCA Index No.: B8-0690-05-04B





NOTES:

1) THE HORIZONTAL DATUM IS REFERENCED TO THE N.Y.S. PLANE COORDINATE SYSTEM, CENTRAL ZONE, TRANSVERSE MERCATOR PROJECTION, NAD 83 (96) (CONVERTED TO ENGLISH UNITS 1 METER = 3.2808333 FT)
2) BEARINGS SHOWN ARE REFERENCED TO GRID BEARINGS. DISTANCES SHOWN ARE GROUND DISTANCES.
3) SEE SHEET 3 FOR BUILDING DIMENSIONS AND NUMBERS.



SITE LOCATION MAP
N.T.S.

LINE TABLE

Name	Length	Direction	Name	Length	Direction
L1	185.12	S 45°53'05" E	L37	116.93	N 77°49'47" W
L2	21.21	S 40°52'41" E	L38	38.40	N 12°16'51" E
L3	51.99	S 84°09'27" E	L39	13.34	S 81°45'01" E
L4	76.35	N 62°44'31" E	L40	30.45	N 12°17'10" E
L5	123.31	N 24°16'39" E	L41	36.94	N 78°23'40" W
L6	184.45	S 56°11'52" E	L42	8.88	S 11°59'33" W
L7	201.16	S 68°04'34" E	L43	34.90	N 78°12'13" W
L8	11.92	S 24°04'55" W	L44	16.20	N 11°55'21" E
L9	182.63	S 62°50'09" E	L45	30.09	N 77°43'02" W
L10	167.68	S 47°19'53" E	L46	15.41	S 12°36'40" W
L11	232.72	S 60°18'50" E	L47	38.38	N 78°20'12" W
L12	181.62	S 52°14'48" E	L48	5.20	S 11°38'31" W
L13	116.15	S 59°36'30" E	L49	43.88	S 88°03'13" W
L14	217.07	S 12°43'16" E	L50	38.91	N 1°33'36" W
L15	131.16	S 65°55'05" E	L51	3.00	N 1°47'21" W
L16	40.11	S 9°13'09" E	L52	19.15	N 88°12'39" E
L17	160.23	S 74°33'34" E	L53	21.22	N 1°06'16" W
L18	266.24	S 47°35'25" W	L54	46.23	S 88°31'54" W
L19	86.33	S 36°59'47" W	L55	9.00	S 2°32'51" E
L20	1023.64	N 78°31'45" W	L56	16.30	S 87°27'09" W
L21	40.00	N 27°28'15" E	L57	13.00	N 2°32'51" W
L22	169.38	N 76°11'40" W	L58	14.54	S 87°27'09" W
L23	90.00	S 74°54'15" W	L59	3.86	S 1°34'32" E
L24	171.52	S 65°55'05" W	L60	13.49	S 87°57'57" W
L25	130.00	N 80°04'45" W	L61	8.94	S 1°34'45" E
L26	375.75	N 11°28'15" E	L62	72.23	S 88°04'56" W
L27	29.20	N 78°31'45" W	L63	176.82	N 10°08'51" E
L28	250.68	N 11°10'24" E	L64	386.30	S 11°29'58" W
L29	69.69	N 88°52'58" E	L65	216.24	S 78°30'02" E
L30	18.19	N 1°40'11" W	L66	247.13	N 11°16'07" E
L31	7.19	N 88°03'02" E	L67	134.45	N 52°09'40" E
L32	10.54	N 0°55'42" W	L68	42.50	N 11°20'28" E
L33	247.03	S 78°14'43" E	L69	73.03	N 68°59'04" W
L34	0.80	S 11°20'52" W	L70	89.76	S 65°20'38" W
L35	2.10	S 78°35'05" E	L71	44.90	S 89°55'11" W
L36	137.32	N 11°14'57" E	L72	122.64	N 57°11'17" W

BCP # 859028
GARLOCK SEALING TECHNOLOGIES SITE #3
1666 Division St.
Palmyra, New York 14522

ENVIRONMENTAL EASEMENT BOUNDARY DESCRIPTION

LOT 3E
(PART OF DEED REFERENCE NO'S 1 AND 2)

Beginning at a point, said point being the most northeasterly property corner of the Gylon Building Environmental Easement as shown on a map entitled "Gylon Building Lot Creation ALTA Survey" by Labella Associates, P.C. dated November, 2008

1) thence S 45°53'05" E through the lands of tax account number 064.111-00-839.937 a distance of 185.12 feet to a point
2) thence S 40°52'41" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 21.21 feet to a point
3) thence S 84°09'27" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 51.99 feet to a point
4) thence N 62°44'31" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 76.35 feet to a point
5) thence N 24°16'39" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 123.31 feet to a point
6) thence S 56°11'52" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 184.45 feet to a point
7) thence S 68°04'34" E, continuing through the lands of tax account number 064.111-00-839.937 a distance of 201.16 feet to a point
8) thence S 24°04'55" W continuing through the lands of tax account number 064.111-00-839.937 a distance of 11.92 feet to a point
9) thence S 62°50'09" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 182.63 feet to a point
10) thence S 47°19'53" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 167.68 feet to a point
11) thence S 60°18'50" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 232.72 feet to a point
12) thence S 52°14'48" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 181.62 feet to a point
13) thence S 59°36'30" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 116.15 feet to a point
14) thence S 12°43'16" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 217.07 feet to a point
15) thence S 65°55'05" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 131.16 feet to a point
16) thence S 9°13'09" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 40.11 feet to a point
17) thence S 74°33'34" E continuing through the lands of tax account number 064.111-00-839.937 a distance of 160.23 feet to a point in the westerly right of way for New York State Rte 21
18) thence S 47°35'25" W along said right of way a distance of 266.24 feet to a point
19) thence S 36°59'47" W continuing along said right of way a distance of 86.33 feet to a point
20) thence N 78°31'45" W through the lands of tax account number 064.111-00-839.937 a distance of 1023.64 feet to a point in the northerly boundary of lands now or formerly of John S. Blazey, Inc
21) thence N 27°28'15" E along said northerly boundary a distance of 40.00 feet to a point
22) thence N 76°11'40" W continuing along said northerly boundary a distance of 169.38 feet to a point
23) thence S 74°54'15" W continuing along said northerly boundary a distance of 90.00 feet to a point
24) thence S 65°55'05" W continuing along said northerly boundary a distance of 171.52 feet to a point
25) thence N 80°04'45" W continuing along said northerly boundary a distance of 130.00 feet to a point in the easterly boundary of lands now or formerly of James E. and Anthony J. Santelli
26) thence N 11°28'15" E along said easterly boundary a distance of 375.75 feet to a angle point
27) thence N 78°31'45" W along said northerly boundary of Santelli a distance of 29.20 feet to a point, said point being the most southeasterly property corner of the Gylon Building Environmental Easement as shown on a map entitled "Gylon Building Lot Creation ALTA Survey" by Labella Associates, P.C. dated November, 2008. Thence along the easterly boundary of the said Gylon Environmental Easement the following courses and distances:
28) thence N 11°10'24" E a distance of 250.68 feet to a point
29) thence N 88°52'58" E a distance of 69.69 feet to a point
30) thence N 1°40'11" W a distance of 18.19 feet to a point
31) thence N 88°03'02" E a distance of 7.19 feet to a point
32) thence N 0°55'42" W a distance of 10.54 feet to a point
33) thence S 78°14'43" E a distance of 247.03 feet to a point
34) thence S 11°20'52" W, a distance of 0.80 feet to a point
35) thence S 78°35'05" E a distance of 2.10 feet to a point
36) thence N 11°14'57" E a distance of 137.32 feet to a point
37) thence N 77°49'47" W a distance of 116.93 feet to a point
38) thence N 12°16'51" E a distance of 38.40 feet to a point
39) thence S 81°45'01" E, a distance of 13.34 feet to a point
40) thence N 12°17'10" E a distance of 30.45 feet to a point
41) thence N 78°23'40" W a distance of 36.94 feet to a point
42) thence S 11°59'33" W a distance of 8.88 feet to a point
43) thence N 78°12'13" W a distance of 34.90 feet to a point
44) thence N 11°55'21" E a distance of 16.20 feet to a point
45) thence N 77°43'02" W a distance of 30.09 feet to a point
46) thence S 12°36'40" W a distance of 15.41 feet to a point
47) thence N 78°20'12" W a distance of 38.38 feet to a point
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49) thence S 88°03'13" W a distance of 43.88 feet to a point
50) thence N 1°33'36" W a distance of 38.91 feet to a point
51) thence N 1°47'21" W a distance of 3.00 feet to a point
52) thence N 88°12'39" E a distance of 19.15 feet to a point
53) thence N 1°06'16" W a distance of 21.22 feet to a point
54) thence S 88°31'54" W a distance of 46.23 feet to a point
55) thence S 2°32'51" E a distance of 9.00 feet to a point
56) thence S 87°27'09" W a distance of 16.30 feet to a point
57) thence N 2°32'51" W a distance of 13.00 feet to a point
58) thence S 87°27'09" W a distance of. 14.54 feet to a point
59) thence S 1°34'32" E a distance of 3.86 feet to a point
60) thence S 87°57'57" W a distance of 13.49 feet to a point
61) thence S 1°34'45" E a distance of 8.94 feet to a point
62) thence S 88°04'56" W a distance of 72.23 feet to a point
63) thence N 10°08'51" E a distance of 176.82 feet to the POINT OF BEGINNING.

The above described parcel contains 26.913 acres (1172341 sq. ft.) more or less

LOT 3W
(PART OF DEED REFERENCE NO'S 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 AND 12)

Beginning at the northeasterly corner of Klozure Building Lot 1 as shown on a map entitled "Klozure Building Lot Creation" by Labella Associates, P.C. dated August 14, 2006.

1) thence S 11°29'58" W along the easterly boundary of said Lot 1 a distance of 386.30 feet to an angle point
2) thence S 78°30'02" E continuing along the easterly boundary of said Lot 1 a distance of 216.24 feet to a point in the westerly boundary of the Gylon Building Environmental Easement as shown on a map entitled "Gylon Building Lot Creation ALTA Survey" by Labella Associates, P.C. dated November, 2008
3) thence N 11°16'07" E along the westerly boundary of the said Gylon Environmental Easement a distance of 247.13 feet to a point
4) thence N 52°09'40" E along the westerly boundary of the said Gylon Environmental Easement a distance of 134.45 feet to a point
5) thence N 11°20'28" E continuing along the westerly boundary of the said Gylon Environmental Easement a distance of 42.50 feet to a point
6) thence N 68°59'04" W through the lands of tax account number 064.111-00-839.937 a distance of 73.03 feet to a point
7) thence S 65°20'38" W continuing through the lands of tax account number 064.111-00-839.937 a distance of 89.76 feet to a point
8) thence S 89°55'11" W continuing through the lands of tax account number 064.111-00-839.937 a distance of 44.90 feet to a point
9) thence N 57°11'17" W continuing through the lands of tax account number 064.111-00-839.937 a distance of 122.64 feet to the POINT OF BEGINNING.

The above described parcel contains 1.994 acres (86844 sq. ft.) more or less

THE ENGINEERING AND INDUSTRIAL CONTROLS FOR THIS EASEMENT ARE SET FORTH IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP CAN BE OBTAINED FROM THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NY 12233, OR AT derweb@gw.dec.state.ny.us.

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law.

0 50 100 150 200 250 FT
SCALE

REFERENCES

1) BOUNDARY SURVEY BY DONALD B. SCHWARTZ DATED JUNE 28, 1985 FILED AT THE WAYNE COUNTY CLERKS OFFICE JULY 10, 1985
2) MAP ENTITLED "KLOZURE BUILDING LOT CREATION" BY LABELLA ASSOCIATES, P.C. DATED AUGUST 14, 2006
3) STEWART TITLE INSURANCE CO. POLICY NO. 201-592348
4) MAP ENTITLED "GYLON BUILDING LOT CREATION ALTA SURVEY" BY LABELLA ASSOCIATES, P.C. DATED NOV. 2008

CERTIFY TO: THE PEOPLE OF THE STATE OF NEW YORK, ACTING THROUGH THE COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, STEWART TITLE INSURANCE COMPANY, GARLOCK SEALING TECHNOLOGIES, LLC

CERTIFICATION:

WE, LABELLA ASSOCIATES P.C. CERTIFY THAT THIS MAP WAS PREPARED USING REFERENCE MATERIAL AS LISTED HEREON AND FROM FIELD NOTES OF AN INSTRUMENT SURVEY COMPLETED MAY 2011. THIS PARCEL IS SUBJECT TO ANY EASEMENTS OR ENCUMBRANCES OF RECORD.

STATE OF NEW YORK · MICHAEL W. HALEY · 049788 · LICENSED LAND SURVEYOR

MICHAEL W. HALEY LS
NYS PLS NO. 049788

11/9/2011 3:48:27 PM LOT3 s&w 4_112d.dgn

LABELLA Associates, P.C.
300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
www.labellapc.com

GARLOCK PROPERTY
LOTS 3W AND 3E
Palmyra, New York 14522

GARLOCK SEALING TECHNOLOGIES
1666 Division St.
Palmyra, New York 14522

ENVIRONMENTAL EASEMENT
LOTS 3W AND 3E

FINAL
OCTOBER 2011

211434
SUB-3

SHEET 1 OF 2

Appendix B
Excavation Work Plan

APPENDIX B – EXCAVATION WORK PLAN

B-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the Department. Currently, this notification will be made to:

Bart Putzig, P.E.
Regional Hazardous Waste Remediation Engineer
NYSDEC Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control,
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work,
- A summary of the applicable components of this EWP,
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120,
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix D of the SMP,
- Identification of disposal facilities for potential waste streams,

- Identification of sources of any anticipated backfill, along with all required chemical testing results.

B-2 SOIL SCREENING METHODS

Site soil that is excavated must be managed, characterized, and properly disposed of in accordance with NYSDEC regulations and directives. Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

For excavated soil with evidence of contamination (i.e., visual, olfactory, and/or PID indications), soil samples will be collected in accordance with Table 5.4 of NYSDEC's Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation* (June 2010 or latest revision), as indicated below:

Recommended Number of Soil Samples for Soil Imported To or Exported From a Site as set forth in DER-10 Paragraphs 5.4(e) & 5.4(f)								
Contaminant	Semivolatiles		Volatiles		Inorganics		Pesticides/PCBs	
Soil Quantity (yd3)	Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
0-50	1	1	1	NA	1	1	1	1
50-100	1	2	2	NA	1	2	1	2
100-200	1	3	3	NA	1	3	1	3
200-300	1	4	4	NA	1	4	1	4
300-400	2	4	4	NA	2	4	2	4
400-500	2	5	5	NA	2	5	2	5
500-800	2	6	6	NA	2	6	2	6
800-1,000	2	7	7	NA	2	7	2	7
> 1,000	Submit Proposed Sampling Plan							

NA = Not Applicable

For soil with no evidence of contamination (i.e., visual, olfactory, and/or PID indications), the number of required samples may be modified with NYSDEC concurrence, per DER-10 Section 5.4(f)2.

B-3 STOCKPILE METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

Stockpiled soil will not be transported off site until analytical results are received and evaluated.

B-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site. The locations and clearing of utilities will be the responsibility of the contractor performing the work.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash as needed before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

B-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

If analytical results indicate that concentrations exceed the standards for RCRA characteristics, or the soils are determined to be a listed hazardous waste per 6NYCRR Part 371, the material will be considered a hazardous waste and must be properly disposed offsite at a permitted facility within 90 days of excavations. If the analytical results indicate the soil is not a hazardous waste, the material will be properly disposed of offsite at an approved Part 360 permitted solid waste disposal facility, or at an off-site location as approved in writing by the Department.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

All trucks loaded with site materials will exit the vicinity of the site using the most appropriate route and take into account: (a) limiting transport through residential areas and other sensitive sites; (b) use of municipal mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport;

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

B-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, Construction/Demolition (C/D) recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

B-7 MATERIALS REUSE ON-SITE

Soil excavated at the site may be reused as backfill material on-site provided it contains no readily observable (visual, olfactory, or having PID readings of 10 ppm above background or greater) evidence of contamination. However any material excavated that will be placed in the top foot of soil in any location must be tested prior to such use. The number of samples to be taken will conform with DER-10 table 5.4 as shown in Section A-2 of this workplan.

Soil with readily observable evidence of contamination will be analyzed as specified in Section A-2. If analytical results verify that no contaminants are present above NYS industrial soil cleanup objectives (SCOs) per 6NYCRR Part 375-6.8(b), the soil may be used as backfill on site.

Chemical criteria for on-site reuse of soil material have been approved by NYSDEC and are listed in Table 1. The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

B-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

B-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored as necessary in a manner that complies with the RWP. The demarcation layer, where placed below a soil cover consisting of black geomembrane fabric or equivalent material, will be replaced to provide a visual reference to the top of the 'Remaining Contamination Zone', the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this Site Management Plan. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the 'Remaining Contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

B-10 BACKFILL FROM OFF-SITE SOURCES

Backfill from off site sources imported to the site must meet the requirements of 6 NYCRR Part 375-6.7(d) and as specified by DER-10 Section 5.4(e).

Soil imported to a site for use in a soil cap, soil cover or as backfill will be free of extraneous debris or solid waste; consist of soil or other unregulated material as set forth in 6 NYCRR Part 360; not exceed the allowable constituent levels for imported fill or soil for the use of the site. The applicable level for industrial use sites are the lower of the:

(1) protection of groundwater; or

(2) protection of public health soil cleanup objectives for the identified use of the site

as set forth in 6 NYCRR Part 375 Table 375-6.8(b).

Soil samples from off-site sources will be collected as indicated on the table presented in Section A-2 of this Excavation Plan (Table 5.4 of DER-10 Section 5.4(e)) to verify they are suitable for use on site.

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d) at a minimum imported soil must meet the commercial soil cleanup objectives.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

B-11 STORMWATER POLLUTION CONTROL

A Stormwater Pollution Control Plan for the site is already in place for the Garlock facility and will continue to be followed during any site excavation activities.

B-12 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment, and surrounding soils as necessary to determine the nature of the material and proper disposal method. Chemical

analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling. Based on the field observations and final results a remedial action plan will be prepared and submitted to NYSDEC for review and approval.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

B-13 COMMUNITY AIR MONITORING PLAN

Air monitoring will be conducted during site work, in accordance with a Community Air monitoring Plan (CAMP), as required by Appendix A-1 of NYSDEC's DER-10. The CAMP is included in the SMP as Appendix C. The objective of this CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that might arise as a result of work conducted on site. The CAMP will include monitoring for volatile organic compounds (VOCs) and particulate matter (e.g. airborne "dust").

The CAMP specifies methods that must be used to conduct air monitoring, and the specific instruments to be used. Action levels for VOCs and dust are provided.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

B-14 ODOR CONTROL PLAN

This odor control plan provides guidance for controlling emissions of nuisance odors off-site. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the

project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner's representative, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils; or other measures. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods, or other measures as necessary.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

B-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved though the use of an on-site water truck for road wetting.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel or equivalent surfaces will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

B-16 OTHER NUISANCES

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

Appendix C
Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

B.1 - INTRODUCTION

Garlock Sealing Technologies, LLC is a Participant in the New York State Brownfield Cleanup Program (BCP). As a BCP Participant, Garlock is required to address the nature and extent of contamination onsite and offsite, and prevent future migration of contamination offsite to the extent practicable. To that end, Garlock has submitted a Remedial Work Plan to the New York State Department of Environmental Conservation (NYSDEC) for review and acceptance.

Under the terms of the BCP, the selected remediation strategy must support the site's contemplated future use, which is industrial. S&W Redevelopment of North America, LLC (SWRNA) will complete the Remedial Action on behalf of the site owner. This Community Air Monitoring Plan (CAMP) describes the measures that will be undertaken during field work to monitor ambient air at the downwind site perimeter.

B.2 - OBJECTIVES

The objective of this CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that might arise as a result of the planned Remedial Action, which will include the installation of injection wells to inject a chemical oxidant into the groundwater and subsequent sampling and monitoring.

B.3 - METHODS

The CAMP will include monitoring for volatile organic compounds (VOCs) and particulate matter (e.g. airborne "dust"). Readings will be recorded and will be available for State (DEC and DOH) personnel to review, as requested. Site condition will be noted and recorded in a daily log. Temperature, weather, precipitation, wind direction, and surface moisture conditions will be noted.

A. VOC MONITORING

A MiniRAE photoionization detector (PID) will be used to measure volatile organic compounds (VOCs) in air. VOCs will be monitored at the downwind perimeter of the site, based on the prevailing wind direction as determined at the beginning of each workday. The site perimeter is defined as the existing BCA site boundary.

Upwind concentrations of VOCs will be measured at the beginning of every workday to establish background conditions. VOC concentrations will be measured continuously at the property boundary directly downwind of the work area. Downwind data will be checked as needed to provide a measure of assurance that contaminants are not being spread off site through the air. The PID will continuously record and store VOC measurements.

- If the ambient air concentration for total organic vapors at the downwind property boundary exceeds 5 parts per million (ppm) above background for a 15-minute average, work activity will be halted and monitoring will continue until levels decline to below 5 ppm over background. At this point, work will resume and monitoring will continue.

- If total organic vapor levels at the downwind property boundary persist at levels above 5 ppm over background but less than 25 ppm, work activities will be halted, the source of the vapors will be identified, and corrective actions will be taken to abate emissions. Work will resume after organic vapor levels fall to below 5 ppm over background at the downwind property boundary.

- If organic vapor levels exceed 25 ppm at the downwind property boundary activities will be shut down. An appropriate course of action to abate emissions in order to resume work will be discussed with NYSDEC personnel.

B. PARTICULATE MONITORING

Particulate (e.g. "dust") emissions will be measured continuously at the upwind and downwind property boundaries. Real time monitoring equipment (e.g. MiniRAM or equivalent), with audible alarms and capable of measuring particulate matter less than 10 micrometers in size, will be used.

- If the downwind particulate level is 100 micrograms per cubic meter (ug/m^3) greater than background (upwind) for a 15-minute period, then dust suppression techniques will be employed. Work will continue with dust suppression provided that downwind particulate levels do not exceed 150 ug/m^3 above upwind levels and provided that no visible dust is migrating from the work area.

- If, after dust suppression techniques, downwind particulate levels are greater than 150 ug/m^3 above upwind levels, work will be stopped and a re-evaluation of activities will be initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing downwind particulate concentrations to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

Appendix D
Example Health & Safety Plan

GARLOCK GYLON BCP SITE HEALTH AND SAFETY PLAN

A.1. SITE DESCRIPTION

Date ..... Date: Revised:
Location ..... 1666 Division Street
Palmyra, New York
Hazards ..... Volatile and semivolatile organic compounds, metals, in soil and groundwater. Potassium Permanganate used in remediation.
Area Affected ..... surface soil, subsurface soil, groundwater, and surface water
Surrounding Population ..... Mixed residential and commercial
Topography ..... flat at site, with flat to moderate slopes surrounding
Weather Conditions ..... Usually partly sunny to overcast, south winds

A.2 ENTRY OBJECTIVES: The objective of site entry is to conduct an in-situ chemical oxidation groundwater remediation in areas of concern under the Brownfield Cleanup Program, and to install a soil barrier in a discrete area northeast of Building No. 25.

A.3 ON-SITE ORGANIZATION AND COORDINATION. The following S&W Redevelopment personnel are designated to carry out the stated job functions on site. (Note: One person may carry out more than one job function.)

Project Manager:	Designee	(315) contact no.
Field Team Leader:	Designee	(315) contact no.
Field Sampling Team Member	Designee	(315) contact no.
Project Safety Officer	Designee	(315) contact no.

A.4 ON-SITE CONTROL. Garlock or its designated agent will coordinate access control and security for the work area for each day of on site work. No unauthorized personnel should be within the established work area. Potassium permanganate will be secured within the site perimeter in a locked storage container.

A.5 HAZARD EVALUATION.

A. Chemical Hazards. It is anticipated that a number of different chemical contaminants may be encountered during site activities. Previous investigations conducted at the Site have determined the Contaminants of Concern (COCs) to be benzene, toluene, tetrachloroethene (PCE), trichloroethene (TCE), cis and trans-1,2-dichloroethene (DCE), and vinyl chloride.

The maximum concentration found in the groundwater at the Site for each contaminant is as follows:

- benzene - 29 micrograms per liter (µg/L);
- toluene - 45 µg /L;
- PCE - 800 µg /L;
- TCE - 5,200 µg/L;
- 1-2 DCE - 5,400 µg /L; and

• vinyl chloride - 1,250 µg /L.

The locations with the highest concentration of these contaminants are PZ-12, PZ-10, and PZ-22.

The maximum concentration found in the soil at the Site for each contaminant is as follows:

- benzene - 130 µg/Kg
- toluene – 200 µg/Kg
- PCE – 33,300µg/Kg
- TCE – 526,000 µg/Kg
- 1-2 DCE – 40,000 µg/Kg

The locations with the highest concentration of these contaminants are PZ-12 and PZ-10. Additionally, PZ-12 was found to contain non-aqueous phase liquid (NAPL) with concentrations of each contaminant as follows:

- xylenes - 8,200 µg /L;
- PCE - 33,300 µg /L;
- TCE - 526,300 µg /L; and
- 1-2 DCE - 40,000 µg /L.

Asbestos contained in gaskets may also present a potential hazard, as it is believed to have been disposed of in some historical fill areas of the site. Personnel may come into contact with potential asbestos containing materials (ACM) during invasive activities at the site. If this occurs the, field personnel should contact Chris Rockwell 315-597-3101 for a determination of necessary actions.

Exposure to potassium permanganate that might occur while handling during completion of the pilot test and remedial action is another potential hazard at the site. The exposure risks and mitigative measures are included in the attached material safety data sheet (MSDS).

The primary hazards of each known or suspected chemical contaminant are identified below. The main potential exposure route is associated primarily with direct skin contact and inhalation.

SUBSTANCE	PRIMARY HAZARDS
Volatile Organics	
Trichloroethene	Eye & skin irritation, nausea, vomiting, headache
1,2 Dichloroethene	Eye irrit, respiratory irrit, central nervous system
Vinyl chloride	Eye irrit, soar throat, dizziness, headache, nausea
Tetrachloroethene	Irrit eyes, nore, throat, nausea, dizziness, vomiting
Benzene	Cough, wheezy, pulmonary function, dermatological irritation

SUBSTANCE	PRIMARY HAZARDS
Toluene	Eye, skin, nose irritation, drowsiness
Xylenes	Eye and skin irrit, headache, dermatitis
SUBSTANCE	**PRIMARY HAZARDS**
*Semi-Volatile Organics**	
Acenaphthene	Skin irritation, mucous membrane irritation, vomiting
Benzo(a)pyrene	Skin tumors, carcinogen
Chrysene	Carcinogen
Fluoranthene	Possible carcinogen
Naphthalene	Headache, nausea, sweating

*Compounds listed above are PAHs. A number of other PAHs have been tentatively identified which do not have reported short-term exposure effects, but which are suspected carcinogens. These other PAHs are not included in the above table.

Metals	
Chromium	Eye & skin irrit, lungs
Nickel	Dermatitis, allergic asthma
Beryllium	Cough, weakness, eye irrit
Zinc	Eye & skin irrit, nausea, muscle aches, chills, throat irrit

B. Physical Hazards. Physical hazards for this project relate to mechanical exposure associated with working around heavy equipment and vehicles, noise exposure, and heat or cold stress. Basic safety guidelines for the above noted main physical hazards are included below.

1. **Excavation and Backfilling.** Site activities will involve excavation and trenching of impacted material. The estimated location of all underground utilities must be determined before digging begins. Necessary clearances must be observed. Appropriate engineering controls will be implemented during excavation to maintain road stability and protect the public.

   The standard operating procedure (SOP) for excavation and construction work will follow New York State Department of Labor (NYSDOL), Division of Safety and Health, Industrial Code Rules (Part 23).

2. **Utility Clearances.** Prior to any intrusive activities (e.g. drilling, excavating, probing) New York State Dig Safe shall be contacted to mark underground lines before any work is started.

Personnel directly involved in intrusive work shall determine the minimum distance from marked utilities which work can be conducted with the assistance of the locator line service.

3. **Heavy Lifting Method.** Personnel conducting work that may require lifting of heavy objects should use the following proper lifting techniques:
    - Feet must be parted, with one foot alongside the object being lifted and one foot behind. When the feet are comfortably spread a more stable lift can occur and the rear foot is in a better position for the upward thrust of the lift.
    - Use the squat position and keep the back straight. A straight back means the spine, back muscles, and organs of the body in correct alignment.
    - To grip the item being lifted, the fingers and the hand are extended around the object being lifted, using the full palm. Fingers have very little power – use the strength of the entire hand.
    - The load must be drawn close, and the arms and elbows must be tucked into the side of the body. Holding the arms away from the body increases the strain on the arms and elbows. Keeping the arms tucked in helps keep the body weight centered.

    The body must be positioned so that the weight of the body is centered over the feet. This provides a more powerful line of thrust and also ensures better balance. Start the lift with a thrust of the rear foot. Do not twist.

4. **Slip/Trip/Hit/Fall.** These injuries are the most frequent of all injuries to workers. They occur for a wide variety of reasons, but can be minimized by the following practices:
    - Spot-check the work area to identify hazards;
    - Establish and utilize pathways that are most free of slip and trip hazards. Avoid pathways that are more hazardous;
    - Beware of trip hazards such as wet floors, slippery floors, and uneven terrain;
    - Carry only loads you can see over;
    - Keep work areas clean and free of clutter, especially in storage areas and walkways;
    - Communicate observed hazards to site personnel.

5. **Heat Stress.** All field personnel engaged in site work shall have completed training to recognize and avoid heat related illness. Proper training and preventive measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to

additional heat-related illness. To avoid heat stress, the following steps may be taken:

- Adjust work schedules.

  Modify work/rest schedules according to monitoring requirements.

  Mandate work slowdowns as needed.

  Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.

- Provide shelter (air conditioned, if possible) or shaded areas to protect personnel during rest periods.

- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, i.e., eight fluid ounces (0.23 liters) of water must be ingested for approximately every eight ounces (0.23 kg) of weight lost. The normal thirst mechanism is not sensitive enough to ensure that enough water will be drunk to replace lost sweat. When heavy sweating occurs, encourage the worker to drink more. The following strategies may be useful:

- Members of each Work Crew shall be properly trained by each Crew's respective employer to recognize the symptoms of heat-related illnesses.

6. **Adverse Weather Conditions.** The Field Leader for each Work Crew will be responsible for deciding on the continuation or discontinuation of work for his/her Crew based on current and pending weather conditions. Electrical storms, tornado warnings, and strong winds are examples of conditions that would call for the discontinuation of work and evacuation of the site. Site operations should not be permitted during an electrical storm.

7. **Vehicle Traffic.** As the scope of work includes the transport and disposal of material, there is a potential to encounter a temporarily high volume of vehicular traffic. Project Work Crews that have the potential to be exposed to vehicle traffic should wear a high visibility safety vest. The excavation Work Crew will provide proper signage, flagging, and barricades to maintain a safe flow of traffic.

POTENTIAL HAZARD	PREVENTATIVE MEASURES
Slip/Trip/Falls	Use three points of contact to mount and dismount equipment. Continuously inspect work areas for slip, trip, & fall hazards. Be aware of surroundings. Practice good housekeeping.
Noise	Wear appropriate hearing protection.
Pinch Points	Keep hands, feet, & clothing away from moving parts/devices.
Utilities	Maintain proper utility clearances. All utilities should be properly located and marked out prior to start of work.
Heavy Lifting	Follow safe lifting practices. Lift items within your capabilities and assigned project role. Ask for assistance if necessary.
Proximity to Heavy Equipment and Vehicles	Maintain adequate distance from trucks/equipment. Obey barriers and/or signage
Heat/Cold Stress	Dress appropriately and follow HASP guidelines
Dangerous Weather Conditions	Consult local weather reports daily, watch for signs of severe weather, etc. Suspend or reduce work during severe weather.
Chemical hazards	Use PID as indicated in HASP. Wear specified PPE. No smoking.
Biological Hazards – Insects, Snakes, Poison Plants, etc.	Wear appropriate PPE and keep necessary first aid supplies readily available. Use insect repellant and snake chaps as needed. Learn to identify poisonous plants.

C. Biological Hazards. Biological hazards may include contact with biting insects, reptiles, and poisonous plants.

1. Tick-Borne Diseases. Lyme disease is caused by a bacterial parasite called spirochete, and is spread by infected ticks that live in and near wooded areas, tall grass, and brush. Once the tick deposits the spirochete, it must feed on the host blood for 12 to 24 hours before it can transmit the disease. The ticks that cause the disease in the Northeast and Midwest are often no bigger than a poppy seed or a comma in a newsprint. The peak months for human infection are June through October. There are many other tick borne diseases such as Rocky Mountain Spotted Fever, which can be carried by a variety of ticks. The prevention and treatment of these diseases are similar to those of Lyme disease.

Ticks hang on blades of grass or shrub waiting for a host to come by. When a host brushes against the vegetation, the tick grabs on. They usually first climb onto a persons legs and then crawl up looking for a place to attach. Preventative measures include wearing light-colored clothing, keeping clothing buttoned, tucking pant legs

in socks, and keeping shirt tails tucked in. Periodic checks for ticks should be made during the day, and especially at night. Hair should also be checked by parting it and combing through it to make sure that no ticks have attached to the scalp. Also, check clothing when it is first removed, before ticks have a chance to crawl off.

The most common repellent recommended for ticks is n,n-dimethyl-m-toluamide, or DEET. It is important to follow the manufacturer's instructions found on the container. for use with all insecticides especially those containing DEET.

In general, DEET insect repellent should only be applied to clothing, not directly on the skin. Do not apply to sunburns, cuts or abrasions. Use soap and water to remove DEET once indoors.

The best way to remove a tick is removal by tweezers. If tweezers are not available, cover your fingers (tissue paper) while grasping the tick. It is important to grasp the tick as close as possible to the Site of attachment and use a firm steady pull to remove it. When removing the tick, be certain to remove all the mouth parts from your skin so as not to cause irritation or infection. Wash hands immediately after with soap and water, and apply antiseptic to the area where tick was removed.

A variety of tests exist for determining Lyme Disease infection. However, most of these tests are not exact. The first symptoms of Lyme Disease usually appear from 2 days to a few weeks after a person is bitten by an infected tick. Symptoms usually consist of a ring-like red rash on the skin where the tick attached. The rash is often bull's eye-like with red on the outside and clear in the center. The rash may be warm, itchy, tender, and/or "doughy." Unfortunately, this rash appears in only 60 to 80 percent of infected persons. An infected person also has flu-like symptoms of fever, fatigue, chills, headaches, a stiff neck, and muscle aches and pains (especially knees). Rashes may be found some distance away from original rash. These symptoms often disappear after a few weeks.

2. Mosquitos. Mosquitoes are known to carry diseases including encephalitis and West Nile virus, which can be passed on to humans through the bite of the mosquito. Mosquito bites can also cause itching and swelling. Prevention of mosquito bites is recommended to avoid these diseases. When possible, avoid activity near stagnant water bodies or in deep woods. Mosquitoes are most active later in the day. The most common repellent recommended for mosquitoes is n,n-dimethyl-m-toluamide, or DEET. It is important to follow the manufacturer's instructions found on the container for use with all insecticides especially those containing DEET.

In general, DEET insect repellent should only be applied to clothing, not directly on the skin. Do not apply to sunburns, cuts or abrasions. Use soap and water to remove DEET once indoors.

3. Bees and Wasps. The insects most likely to cause strong allergic reactions are wasps, honeybees, hornets, and yellow jackets. Although they differ in appearance and reside in different habitats, all stinging insects have one thing in common -- when upset, they will attack.

Yellow Jackets and honeybees make their nests in the ground, in old tree stumps, or in walls. Wasps nest in trees, in bushes, under the house, or on buildings. Hornets construct a gray or brown paper football shaped nest in trees and shrubs, 5 to 10 feet above the ground. All of the above may also be found in above ground protective well casings.

Insect sting reactions can be classified into three types -- a normal reaction, a toxic reaction, and an allergic reaction. A normal reaction usually lasts only a few hours.

If you have had an allergic reaction to an insect sting before, an allergist should be consulted. There is a treatment, venom immunotherapy, which is 97 percent effective in preventing future allergic reactions to insect stings.

If stung by a honeybee, the only bee to leave its stinger, instant removal of the stinger and sac usually reduces harmful effects. To remove the stinger, never try to use the thumb and forefinger or tweezers to pinch it out, instead with a fingernail or flat object, scrape it away with one quick scrape in a sideways movement. This method prevents more venom from being injected into the wound.

Other helpful tips would be to take a rapid acting antihistamine to reduce itching; apply ice or cold compresses to the area to reduce swelling; and rest, because physical activity hastens the absorption of the venom.

People with severe allergic reactions should be given a dose of epinephrine immediately following the insect sting. They should also be taken to the hospital for further evaluation. Severe or even life threatening reactions to insect stings, if treated properly usually clear up in one or two hours after treatment.

4. Poisonous Plants. Common Poison Ivy (Rhus radicans) grows as a small plant, a vine, and a shrub. Poison Ivy occurs in every state. The leaves always consist of three glossy leaflets. Poison Sumac (Rhus vernix) grows as a woody shrub or small tree 5 to 25 feet tall. It usually contains nine leaves, with eight paired leaves and one on top, and is common in swampy areas. The plants are potent sensitizes and can cause a mild to severe allergic reaction. This reaction is called contact dermatitis.

Dermatitis, in Rhus-sensitive persons, can result from contact with the milky sap found in the roots, stems, leaves, and fruit. The sap may retain its potency for

months or years in a dry atmosphere, and can occur during any time of the year. The sap may also be carried by animals, equipment, or apparel.

A.6 PERSONAL PROTECTIVE EQUIPMENT. Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

LOCATION	JOB FUNCTION	LEVEL OF PROTECTION
Work zone	Site investigation	A B C (D) Other

Specific protective equipment for each level of protection is as follows:

Level A	Fully-encapsulating suit SCBA (disposable coveralls)
Level B	Splash gear (saranax-coated Tyvek suit) SCBA or airline respirators
Level C	Splash gear (Tyvek suit) Half-face canister respirator Safety glasses Boots Gloves Hard hat
Level D	**Work boots** **Gloves (latex)** **Hard hat**

Action Levels. Action levels shall be determined by monitoring of work zone breathing space with a portable photoionization detector (PID) or comparable instrument. Measurement of a sustained concentration above ambient (background) conditions shall initiate action. The following criteria shall be used to determine appropriate action:

VOLATILE ORGANICS IN BREATHING ZONE (SUSTAINED AND ABOVE BACKGROUND)	LEVEL OF RESPIRATORY PROTECTION
0-5 ppm	Level D
5-200 ppm	Level C
200-1000 ppm	Level B - air line
1000+ ppm	Level B - SCBA

% LOWER EXPLOSIVE LIMIT (LEL)	ACTION
Above 10	Discontinue work and take remedial action

NO CHANGE TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER AND THE PROJECT TEAM LEADER.

If the above criteria indicate the need to increase from Level D to a higher level of personal protection, work will be immediately suspended in that particular site area until the required personal protective equipment is made available, or until Level D conditions return.

A.7 **ON-SITE WORK PLANS.** The following personnel or designated alternate(s) will perform the field investigation.

Field Team Leader: ..... Designee
Work Party ..... Designee

The work party was briefed on the contents of this plan prior to commencement of work.

A.8 **COMMUNICATION PROCEDURES.** The Project Manager should remain in communication with the Field Team Leader. A cellular phone will be used in the field.

Continuous horn blast is the emergency signal to indicate that all personnel should leave the Work Zone.

In the event that radio communications are used, the following standard hand signals will be used in case of failure of radio communications:

Hand gripping throat	Out of air; can't breathe
Grip partner's wrist or both hands around waist.....	Leave area immediately
Hands on top of head	Need assistance
Thumbs up	OK; I am all right; I understand
Thumbs down.....	No; negative

A.9 **SITE HEALTH AND SAFETY PLAN.**

A. The designated Site Safety Officer will have responsibility for safety recommendations on site. The Field Team Leader will be responsible for carrying out the Site Health and Safety Plan, and for enforcing it on all SWRNA employees engaged in site work.

B. **Emergency Medical Care.** The Newark Wayne Community Hospital is located at 111 Driving Park Avenue, in Newark, NY, approximately 10 miles from the site. A map of the route to this facility is available at the field vehicle (attached).

Leaving the main entrance of the plant go south on CR-210/MAPLE AVE E toward NY-31/W MAIN ST. Continue to follow CR-210. Turn LEFT onto NY-21/NY-31/E MAIN ST. Continue to follow NY-31 for approximately 9 miles. Turn LEFT onto NY-88. Continue approximately 0.2 mile. Turn left onto Stuerwald Ave. into hospital parking lot.

First aid equipment is available on site at the following locations:

First aid kit Field vehicle

List of emergency phone numbers:

AGENCY/FACILITY	PHONE NUMBER
Garlock Security	3333 from plant phone, or (315) 597-3333
Police – Palmyra Police Dept	911
Fire – Palmyra Fire Dept	911
Ambulance	911
Newark Wayne Community Hospital	315-332-2022

C. **Environmental Monitoring.** The following environmental monitoring instruments shall be used on site at the specified intervals:

- MiniRAE photoionization detector (PID). Continuous during installation of soil borings and soil gas monitoring probes.
- Dust (particulate) monitor. Continuous during installation of soil borings per Community Air Monitoring Plan (CAMP)

D. **Emergency Procedures.** The following standard procedures will be used by on-site personnel. The Site Safety Officer shall be notified of any on-site emergencies and be responsible for ensuring that the appropriate procedures are followed:

1. **Personnel Injury in the Work Zone.** Upon notification of an injury in the Work Zone, the designated emergency signal, a continuous horn blast, shall be sounded. A rescue team will enter the Work Zone (if required) to remove the injured person to safety. Appropriate first aid shall be initiated and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall re-enter the Work Zone until the cause of the injury or symptoms is determined.

2. **Fire/Explosion.** Upon notification of a fire or explosion on site, the designated emergency signal, a continuous horn blast, shall be sounded and all site personnel assembled at the decontamination line. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

3. **Personal Protective Equipment Failure.** If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Work Zone. Re-entry shall not be permitted until the equipment has been repaired or replaced.

4. **Other Equipment Failure.** If any other equipment on site fails to operate properly, the Project Team Leader and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Work Zone until the situation is evaluated and appropriate actions taken.

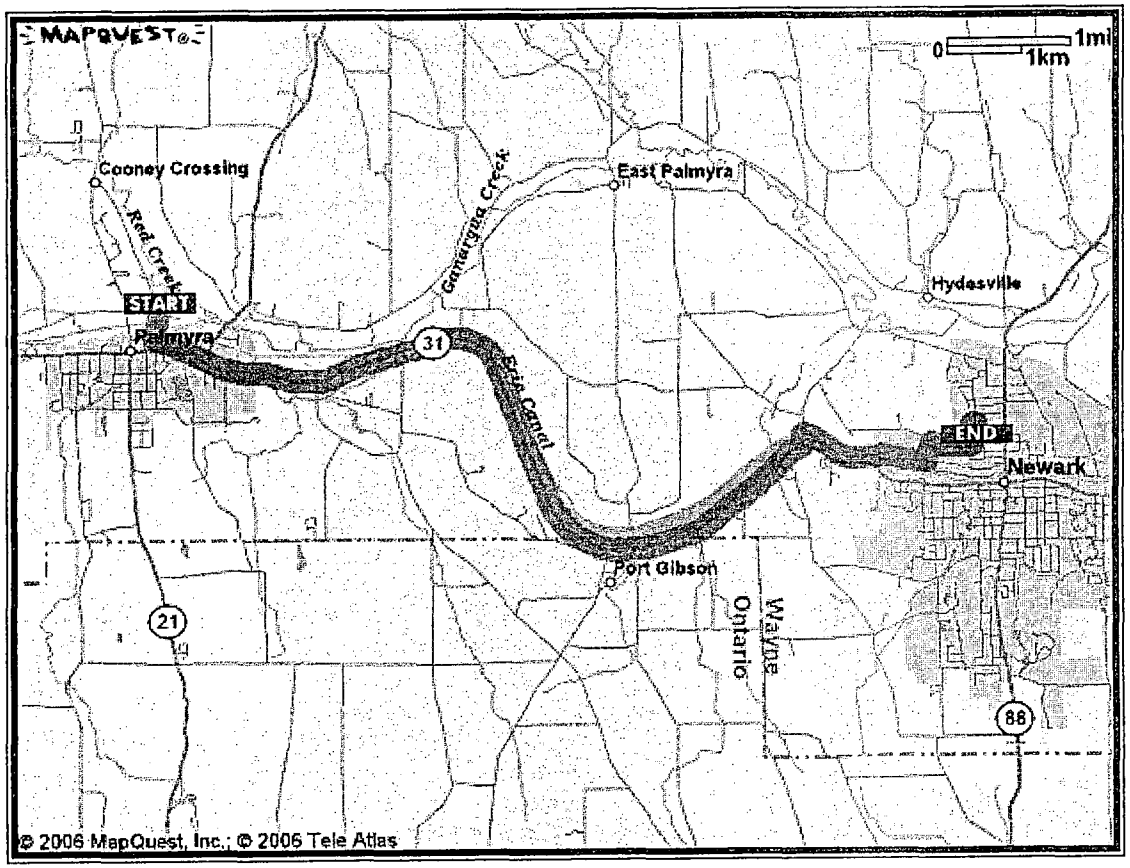
In all situations, when an on-site emergency results in evacuation of the Work Zone, personnel shall not re-enter until:

a. The conditions resulting in the emergency have been corrected.
b. The hazards have been reassessed.
c. The Site Health and Safety Plan has been reviewed.
d. Site personnel have been briefed on any changes in the Site Health and Safety Plan.

E. **Personal Monitoring.** The following personal monitoring will be in effect on site:

Personal exposure sampling: MiniRAE PID screening, sampling pumps/tubes , or organic vapor monitors.

Medical monitoring: The expected air temperature will be less than 70EF. If it is determined that heat stress monitoring is required (mandatory if over 70EF), the following procedures shall be followed: Monitoring body temperature, body weight, pulse weight.



The Newark Wayne Community Hospital is located at 111 Driving Park Avenue, in Newark, NY, approximately 10 miles from the site.

Leaving the main entrance of the plant go south on CR-210/MAPLE AVE E toward NY- 31/W MAIN ST.

Continue to follow CR-210.

Turn LEFT onto NY-21/NY-31/E MAIN ST.

Continue to follow NY-31 for approximately 9 miles.

Turn LEFT onto NY-88. Continue approximately 0.2 mile.

Turn left onto Stuerwald Ave. into hospital parking lot.

Appendix E
Monitoring Well Construction Logs

(Page 1 of 2). Groundwater Monitoring Well Elevation Data. Garlock Sealing Technologies.

Monitoring Well I.D.	Reference Point	Reference Elevation (ft.)	Top of Well Screen Elevation (ft)	Bottom of Well Screen Elevation (ft)	Well Depth (ft)	Measurement Date	Depth to Water (ft)	Water Elevation (ft.)
MW-1	Top of PVC	437.77	427.77	417.77	20.00	8/31/10	9.71	428.06
MW-2	Top of PVC	434.58	421.08	411.08	23.50	8/31/10	9.90	424.68
MW-3	Top of PVC	429.13	425.63	415.63	13.50	8/31/10	-	-
MW-3A	Top of PVC	429.38	401.38	391.38	38.00	8/31/10	0.40	428.98
MW-4	Top of PVC	430.22	425.72	415.72	14.50	8/31/10	6.78	423.44
MW-4A	Top of PVC	430.20	406.70	396.70	33.50	8/31/10	5.18	425.02
MW-5	Top of PVC	436.67	427.17	417.17	19.50	8/31/10	9.20	427.47
MW-6	Top of PVC	430.86	426.36	416.36	14.50	8/31/10	5.01	425.85
MW-7	Top of PVC	430.86	426.36	416.36	14.50	8/31/10	5.27	425.59
MW-8	Top of PVC	427.90	422.90	412.90	15.00	8/31/10	5.06	422.84
MW-9	Top of PVC	428.43	421.93	411.93	16.50	8/31/10	5.57	422.86
MW-10	Top of PVC	429.64	425.64	415.64	14.00	8/31/10	-	-
MW-11	Top of PVC	432.98	428.48	418.48	14.50	8/31/10	4.53	428.45
MW-12	Top of PVC	429.89	424.89	414.89	15.00	8/31/10	-	-
MW-13	Top of PVC	427.43	423.93	413.93	13.50	8/31/10	3.21	424.22
MW-14	Top of PVC	430.07	425.57	415.57	14.50	8/31/10	3.40	426.67
MW-15	Top of PVC	439.43	425.93	415.93	23.50	8/31/10	9.42	430.01
MW-16	Top of PVC	434.61	429.11	419.11	15.50	8/31/10	3.42	431.19
MW-17	Top of PVC	430.30	425.80	415.80	14.50	8/31/10	4.50	425.80
MW-18	Top of PVC	429.64	425.14	415.14	14.50	8/31/10	4.15	425.49
MW-19	Top of PVC	439.54	424.14	414.14	25.00	8/31/10	8.70	430.84
MW-20	Top of PVC	427.96	423.96	413.96	14.00	8/31/10	6.20	421.76
MW-21	Top of PVC	431.64	427.14	417.14	14.50	8/31/10	-	-
MW-21A	Top of PVC	431.76	423.76	413.76	40.00	8/31/10	8.82	422.82
MW-22	Top of PVC	428.69	423.69	413.69	15.00	8/31/10	-	-
MW-23	Top of PVC	428.73	422.73	412.73	16.00	8/31/10	5.61	423.12
MW-24	Top of PVC	426.58	420.83	410.83	15.50	8/31/10	7.04	419.54
MW-24A	Top of PVC	426.42	425.42	415.42	34.55	8/31/10	0.10	426.32
MW-25	Top of PVC	429.72	427.01	417.01	15.24	8/31/10	2.36	427.36
MW-26	Top of PVC	430.51	427.42	417.42	15.62	8/31/10	3.50	427.01
MW-27	Top of PVC	429.94	426.80	416.80	15.50	8/31/10	2.97	426.97
MW-28	Top of PVC	426.58	422.51	412.51	16.00	8/31/10	4.31	422.27
MW-28A	Top of PVC	426.64	396.83	391.83	34.60	8/31/10	2.23	424.41
MW-29	Top of PVC	430.81	425.26	415.26	15.41	8/31/10	5.21	425.60
MW-30	Top of PVC	431.29	425.11	415.11	15.00	8/31/10	5.93	425.36
MW-31	Top of PVC	426.62	421.89	411.89	17.71	8/31/10	3.54	423.08
MW-31A	Top of PVC	425.32	390.32	385.32	43.45	8/31/10	-	-
MW-32	Top of PVC	428.55	424.71	414.71	18.30	8/31/10	2.70	425.85
MW-32A	Top of PVC	428.49	393.49	388.49	42.00	8/31/10	-	-
MW-33	Top of PVC	432.09	425.09	415.09	18.00	8/31/10	-	-
MW-34	Top of PVC	434.06	427.06	417.06	18.00	8/31/10	-	-
MW-35	Top of PVC	430.68	425.68	415.68	16.00	8/31/10	5.00	425.68
MW-36	Top of PVC	430.20	426.04	416.04	15.16	8/31/10	4.66	425.54
MW-37	Top of PVC	432.71	427.71	417.71	16.00	8/31/10	10.00*	422.71
MW-37A	Top of PVC	432.30	407.29	397.29	34.00	8/31/10	10.19	422.11
MW-38	Top of PVC	433.54	428.54	418.54	16.00	8/31/10	7.87	425.67
MW-39	Top of PVC	430.30	425.30	415.30	16.00	8/31/10	-	-
MW-40	Top of PVC	433.01	428.01	418.01	16.00	8/31/10	7.87	425.14
MW-40A	Top of PVC	432.48	407.88	397.88	34.00	8/31/10	6.81	425.67
MW-41	Top of PVC	426.55	422.84	412.84	13.00	8/31/10	4.57	421.98
MW-42	Top of PVC	426.90	425.53	415.53	11.50	8/31/10	2.46	424.44
MW-43	Top of PVC	426.52	422.84	412.84	13.00	8/31/10	4.64	421.88
MW-44	Top of PVC	426.03	422.32	412.32	13.00	8/31/10	4.04	421.99
MW-45	Top of PVC	431.49	429.78	419.78	13.00	8/31/10	5.73	425.76
MW-46	Top of PVC	429.45	427.77	417.77	13.00	8/31/10	4.26	425.19
MW-47	Top of PVC	432.14	428.23	418.23	13.00	8/31/10	6.87	425.27
MW-48	Top of PVC	431.38	427.59	417.59	13.00	8/31/10	7.08	424.30
MW-49	Top of PVC	435.02	429.67	419.67	15.00	8/31/10	10.47	424.55
MW-50	Top of PVC	432.65	428.77	418.77	13.00	8/31/10	6.29	426.36
MW-51	Top of PVC	427.42	425.96	415.96	13.00	8/31/10	4.11	423.31
MW-52	Top of PVC	430.55	426.53	416.53	13.00	8/31/10	5.51	425.04
MW-53	Top of PVC	432.11	428.54	418.54	15.00	8/31/10	-	-
MW-54	Top of PVC	431.52	427.94	417.94	15.00	8/31/10	6.38	425.14
MW-55	Top of PVC	431.35	427.72	417.72	15.00	8/31/10	5.70	425.65
MW-56	Top of PVC	433.52	429.66	419.66	13.00	8/31/10	8.39	425.13
MW-57	Top of PVC	429.13	426.40	416.40	13.00	8/31/10	2.12	427.01
MW-58	Top of PVC	431.88	426.40	416.40	16.00	8/31/10	6.71	425.17
MW-59	Top of PVC	438.25	429.87	419.87	19.00	8/31/10	8.90	429.35
MW-60	Top of PVC	434.05	430.72	420.72	14.00	8/31/10	3.76	430.29
MW-61	Top of PVC	430.14	427.76	417.76	13.00	8/31/10	3.93	426.21
MW-62	Top of PVC	432.41	429.90	419.90	13.00	8/31/10	3.33	429.08
MW-63	Top of PVC	431.44	426.81	416.81	15.00	8/31/10	5.70	425.74
MW0610-1	Top of PVC	431.23	406.83	416.83	15.00	8/31/10	5.47	425.76
MW0610-2	Top of PVC	431.84	407.65	417.65	14.40	8/31/10	6.08	425.76
MW0610-3	Top of PVC	432.67	407.06	417.06	16.00	8/31/10	5.41	427.26
MW0610-4	Top of PVC	432.39	406.79	416.79	16.00	8/31/10	5.52	426.87
MW0610-5	Top of PVC	431.53	406.05	416.05	16.00	8/31/10	4.61	426.92

(-) - Water level could not be measured due to obstructions, not being able to locate, not being able to open well cover, etc.

* LNAPL was detected in MW-37, thickness is unknown since an interface probe was not present, water level might be inaccurate

Table 1: (Page 2 of 2). Groundwater Elevation Data. Garlock Sealing Technologies.

Monitoring Well I.D.	Reference Point	Reference Elevation (ft.)	Top of Well Screen Elevation (ft)	Bottom of Well Screen Elevation (ft)	Well Depth (ft)	Measurement Date	Depth to Water (ft)	Water Elevation (ft.)
IW1-1	Top of PVC	432.20	428.27	412.27	18.00	8/31/10	-	-
IW2-1	Top of PVC	426.97	423.12	413.12	12.00	8/31/10	4.40	422.57
IW3-1	Top of PVC	432.18	428.40	418.40	12.00	8/31/10	7.15	425.03
IW4-1	Top of PVC	432.04	428.11	418.11	12.00	8/31/10	6.92	425.12
OW1-1	Top of PVC	430.19	428.38	418.38	12.00	NA	NM	NA
OW1-2	Top of PVC	429.10	427.44	417.44	12.00	NA	NM	NA
OW1-3	Top of PVC	430.16	428.39	418.39	12.00	NA	NM	NA
OW1-4	Top of PVC	430.20	428.60	418.60	12.00	NA	NM	NA
OW2-1	Top of PVC	426.44	422.65	412.65	12.00	NA	NM	NA
OW2-2	Top of PVC	426.45	422.61	412.61	12.00	NA	NM	NA
OW2-3	Top of PVC	426.43	422.89	412.89	12.00	NA	NM	NA
OW2-4	Top of PVC	426.44	422.77	412.77	12.00	NA	NM	NA
OW3-1	Top of PVC	430.05	428.25	418.25	12.00	NA	NM	NA
OW3-2	Top of PVC	430.22	428.48	418.48	12.00	NA	NM	NA
OW3-3	Top of PVC	430.07	428.33	418.33	12.00	NA	NM	NA
OW3-4	Top of PVC	429.40	427.86	417.86	12.00	NA	NM	NA
OW4-1	Top of PVC	432.47	428.15	418.15	12.00	NA	NM	NA
OW4-2	Top of PVC	432.51	428.35	418.35	12.00	NA	NM	NA
OW4-3	Top of PVC	434.24	428.98	418.98	13.00	NA	NM	NA

(-) - Water level could not be measured due to obstructions, not being able to locate, not being able to open well cover, etc.

NM - Water level not measured during this event since well was not part of the scope

NA - Not applicable since water level was not measured

Stream Gauge I.D.	Reference Point	Northing	Easting	Measurement Date	Water Elevation (ft.)
RC-1	Top of Water	1118267.82	650605.07	9/1/10	420.12
RC-2	Top of Water	1119214.17	649160.53	9/1/10	420.99
RC-3	Top of Water	1119427.65	648289.08	9/1/10	426.25
MC-1	Top of Water	1118072.55	650556.75	9/1/10	420.59
MC-2	Top of Water	1118251.31	649221.26	9/1/10	426.51

Stream Gauges could not be located so surveyors took elevations of the water on 9-1-2010

BORING LOG MW-26

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008

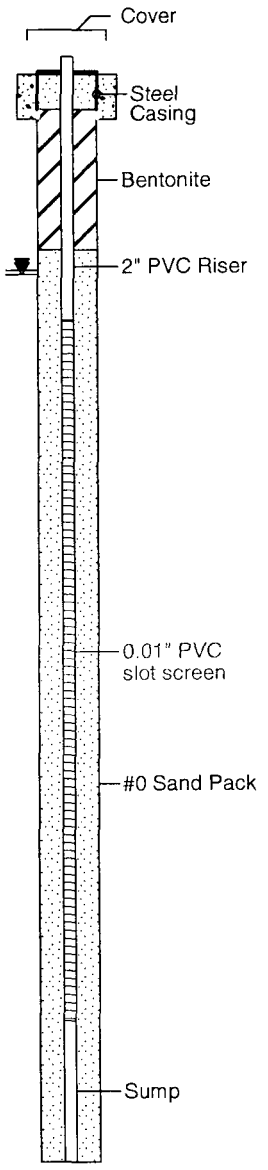
Date Started	: 8/21/07
Time	: 9:15amam
Date Completed	: 8/21/07
Time	: 10:00am
Drilling Contractor	: Parratt Wolff
Driller	: Jim Lansing

Total Boring Depth	: 16 ft bgs
Drilling Method	: Hollow Stem Auger
Drilling Equipment	: Ingersall Rand A 300
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: J.Kiggins
Survey	: N/A
Boring Location	: Garlock
	: NW Corner Gylon Site
	: Across road from creek

Sample Condition
- No Recovery
- Recovery
- *Refusal*
- No sample taken

Water Levels
- After Completion
- Prior to Developing

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0	430			
2	428			
4	426			
6	424			
8	422			
10	420			
12	418			
14	416			
16			End of Boring	



NOTES: Augered well to 16 feet, did not take samples.

BORING LOG MW-26

(Page 1 of 1)

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BORING LOG OW-2

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.69

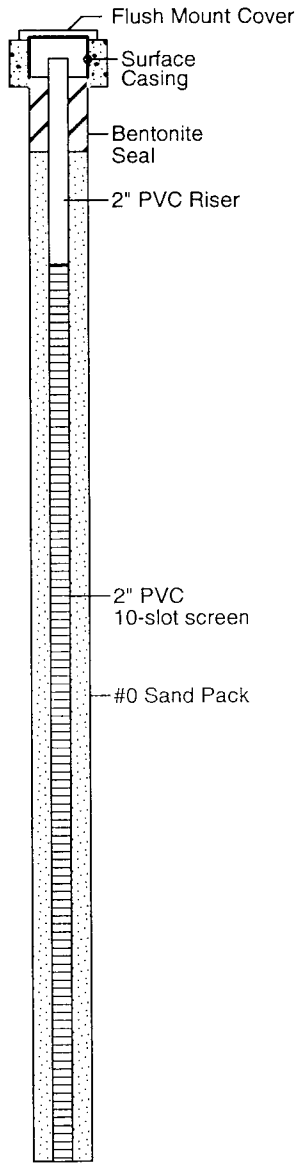
Date Started	: 11/5/08
Time	: 10:15am
Date Completed	: 11/5/08
TIme	: 12:00pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

Total Boring Depth	: 15-ft bgs
Drilling Method	: 4-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: West Toluene Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0			Samples not taken. See Boring Log MW-26.	
15			End of Boring	

OBSERVATION WELL: OW-2
Top PVC Elev:



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BORING LOG OW-2

(Page 1 of 1)

BORING LOG OW-3

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.69

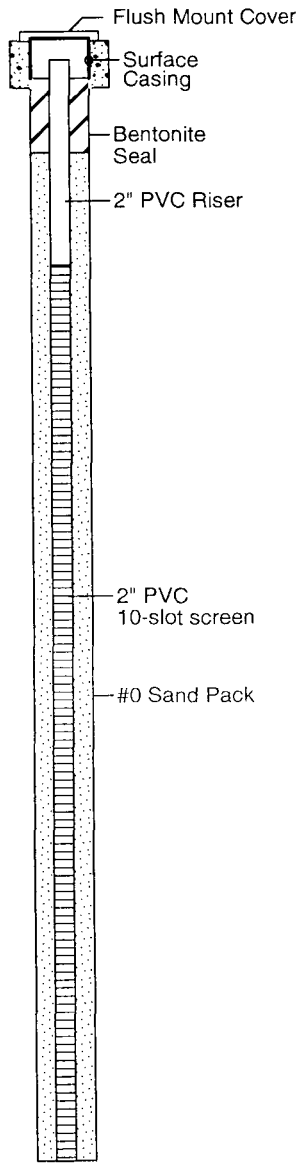
Date Started	: 11/5/08
Time	: 8:45am
Date Completed	: 11/5/08
TIme	: 10:00am
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

Total Boring Depth	: 15-ft bgs
Drilling Method	: 4-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: South Toluene Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0–15			Samples not taken. See Boring Log MW-26.	
			End of Boring	

OBSERVATION WELL: OW-3
Top PVC Elev:



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BORING LOG OW-3

(Page 1 of 1)

BORING LOG OW-4

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.69

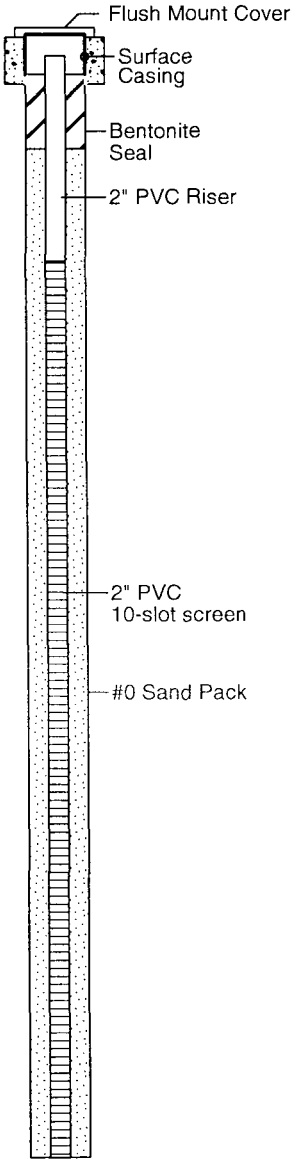
Date Started	: 11/4/08
Time	: 10:00am
Date Completed	: 11/4/08
TIme	: 11:00am
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

Total Boring Depth	: 15-ft bgs
Drilling Method	: 4-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: East Toluene Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0			Samples not taken. See Boring Log MW-26.	
15			End of Boring	

OBSERVATION WELL: OW-4
Top PVC Elev:



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BORING LOG OW-4

(Page 1 of 1)

BORING LOG MW-25

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008

Date Started	: 8/21/07
Time	: 11:00am
Date Completed	: 8/21/07
Time	: 1:30pm
Drilling Contractor	: Parratt Wolff
Driller	: Jim Lansing

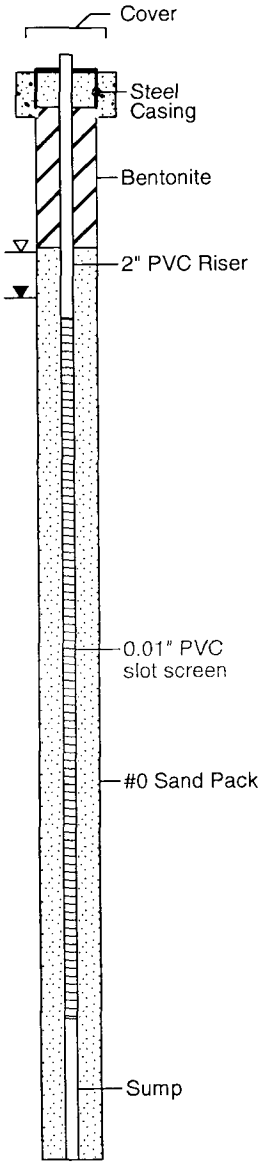
Total Boring Depth	: 16 ft bgs
Drilling Method	: Hollow Stem Auger
Drilling Equipment	: Ingersall Rand A 300
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: J.Kiggins
Survey	: N/A
Boring Location	: Garlock
	: NW Corner Gylon Site
	: Near Red Creek

Sample Condition
- No Recovery
- Recovery
- Refusal
- No sample taken

Water Levels
- After Completion
- Prior to Developing

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0	429			
2	427			
4	425			
6	423			
8	421			
10	419			
12	417			
14	415			
16			End of Boring	

MW-25
Top PVC Elev: 429.72



NOTES: Augered well to 16 feet, did not take samples.

BORING LOG MW-25

(Page 1 of 1)

11-16-2011 J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\AOC-1\OW-5-MW-25.bor

BORING LOG: MW-3

Garlock Industries
Remedial Investigation
1666 Division Street
Palmyra, New York

Job No. N6008.11

Date Started	: 10/4/06
Time	: 3:10pm
Date Completed	: 10/4/06
Time	: 4:00pm
Drilling Contractor	: Parratt-Wolff
Driller	: Jim Lansing

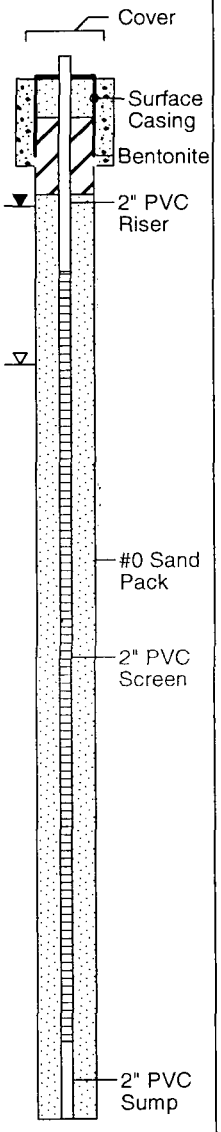
Total Boring Depth	: 14ft bgs
Drilling Method	: Hollow-stem augers
Drilling Equipment	: Ingersall Rand A 200
Hammer Wt./Drop	: N/A
Sampling Method	: Split spoon, 2"
Logged By	: AM
Survey	: N/A
Boring Location	: Garlock
	: western side of the site
	: adjacent to pond

Sample Condition: No Recovery; Recovery; Refusal

Water Levels: After Completion; During Drilling

Depth (bgs)	Surf. Elev.	Recovery (Inches)	Sample	PID (Vppm)	DESCRIPTION	REMARKS
0	429	16		0.0	moist, hard, greenish-brown, CLAY and Silt	
2	427	6		0.0	moist, stiff, dark brown/green, SILT, some coarse Sand and Gravel, trace Clay	
4	425	18		20.2	wet, soft, dark brown/gray, SILT, coarse Sand, and Gravel	
6	423	20		23.8	wet, soft, grayish green/brown, SILT, Clay, coarse Sand, and Gravel	
8	421	18		378	wet, soft, black/gray, SILT, fine Sand, and Gravel	
10	419	20		898	wet, soft, black/dark brown, SILT	
12	417	18		759	wet, soft, dark brown, SILT, organic material wet, soft, dark brown/gray, SILT, coarse Sand, organic material	
14					wet, stiff, dark brown, SILT, some Clay	Water encountered
					End of Boring	

MW - 3
TOC Elev.: 429.68



PID utilized: MiniRae 2000 calibrated to 100 Vppm isobutylene.

BORING LOG: MW-3

11-16-2011 J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\AOC-1\OW-6-MW-3.bor

BORING LOG MW-27

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008

Date Started	: 8/21/07
Time	: 1:45pm
Date Completed	: 8/21/07
Time	: 3:00pm
Drilling Contractor	: Parratt Wolff
Driller	: Jim Lansing

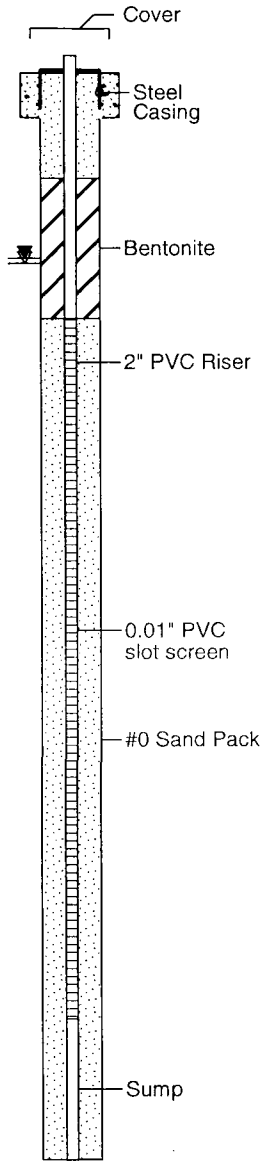
Total Boring Depth	: 16 ft bgs
Drilling Method	: Hollow Stem Auger
Drilling Equipment	: Ingersall Rand A 300
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: M. Gabriel
Survey	: N/A
Boring Location	: Garlock
	: NW Corner Gylon Site
	: Near Red Creek

Sample Condition: No Recovery; Recovery; Refusal; No sample taken

Water Levels: After Completion; Prior to Developing

Depth in Feet	Surf. Elev.	Recovery (inches)	Sample	PID Results (ppm)	DESCRIPTION	REMARKS
0	430				Dry, light brown, soft, SILT, some gravel	
2	428					
4	426			1.9	Moist, dark brown, stiff, SILT, some clay, little gravel	
6	424					
8	422				Wet, dark grey, mud, SILT, some gravel	
10	420			2.7		
12	418					
14	416			2.7	very wet, black SILT, some gravel, organic material	slight sheen, no odor
16					End of Boring	

MW-27
Top PVC Elev: 429.94



NOTES: Augered well to 16 feet, did not take samples. Descriptions are based on observation of cuttings. Refer to Boring D2.
PID utilized: MiniRae 2000 calibrated to 100 Vppm isobutylene

BORING LOG MW-27

(Page 1 of 1)

11-16-2011 J:\PROJECTS\N-xxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\AOC-1\OW-7-MW-27.bor

BORING LOG OW-8

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

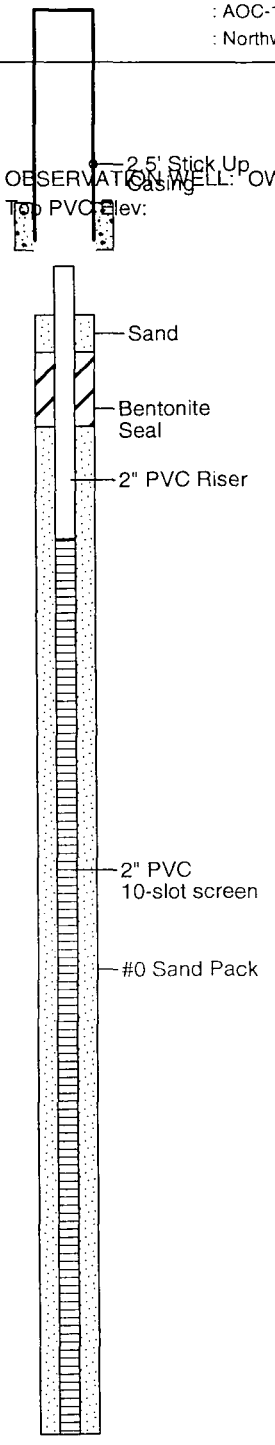
Job No. N6008.69

Date Started	: 10/30/08
Time	: 1:45pm
Date Completed	: 10/30/08
TIme	: 13:30pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

Total Boring Depth	: 15-ft bgs
Drilling Method	: 4-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: Northwest TCE Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0			Samples not taken. See Boring Log MW-25.	
14			Hard material encountered	
15			End of Boring	



11-16-2011 J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\AOC-1\OW-8.bor

BORING LOG OW-8

(Page 1 of 1)

BORING LOG OW-9

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

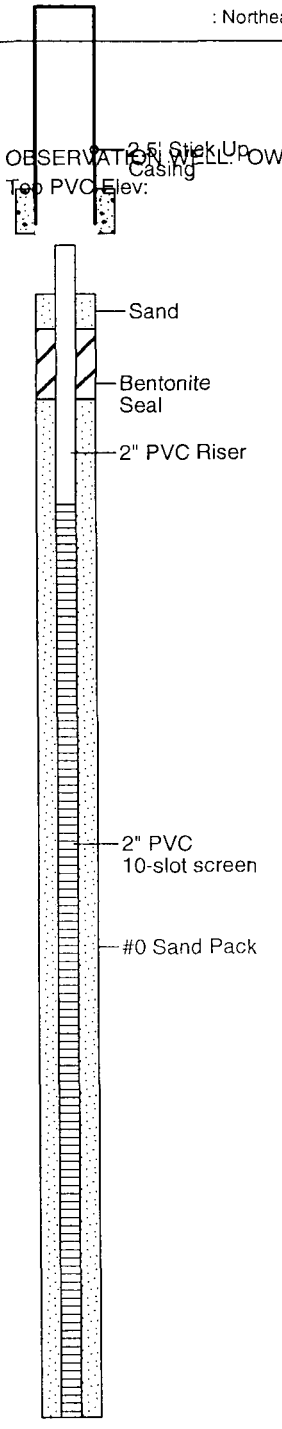
Job No. N6008.69

Date Started	: 10/31/08
Time	: 8:30am
Date Completed	: 10/31/08
TIme	: 10:30am
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

Total Boring Depth	: 16-ft bgs
Drilling Method	: 4-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: Northeast TCE Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0			Samples not taken. See Boring Log MW-27.	black cuttings with sheen and swampy odor.
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14			Hard material encountered	
15				
16			End of Boring	



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BORING LOG OW-9

(Page 1 of 1)

BORING LOG OW 1-1

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.61

Date Started	: 4/8/08
Time	: 3:15pm
Date Completed	: 4/8/08
TIme	: 3:25pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

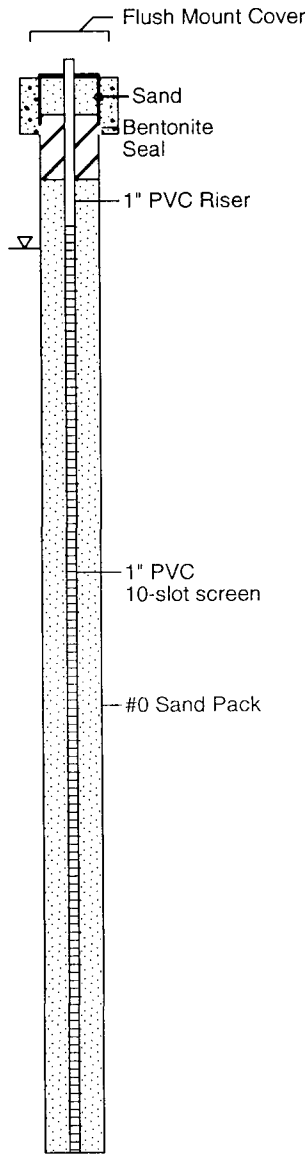
Total Boring Depth	: 12-ft bgs
Drilling Method	: Direct Push: 2" Geoprobe
Drilling Equipment	: Ingersall Rand A 300
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella 5/6/08
Boring Location	: Garlock
	: AOC-1
	: Between MW-3 and IW 1-1

Sample Condition
- No Recovery
- Recovery
- Refusal

Water Levels
- During Drilling
- After Completion (1st Sampling)

Depth in Feet	Surf. Elev.	DESCRIPTION	REMARKS
0	430	Not Sampled.	
1	429		
2	428		
3	427		
4	426		
5	425		
6	424		
7	423		
8	422		
9	421		
10	420		
11	419		
12		End of Boring	

OBSERVATION WELL: OW 1-1
Top PVC Elev: 430.19



NOTES: Thicknesses of Bentonite seal and Sand pack are estimated because annular space was too narrow to measure the exact depths. One "cupful" of bentonite was poured over the sand, and more sand poured over that to near the top of PVC. Diameter of bore-hole depicted in well construction diagram is not to scale.

BORING LOG OW 1-1

(Page 1 of 1)

11-16-2011 J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\AOC-1\PTOW1-1.bor

BORING LOG OW 1-4

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.61

Date Started	: 4/8/08
Time	: 3:40pm
Date Completed	: 4/8/08
TIme	: 3:50pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

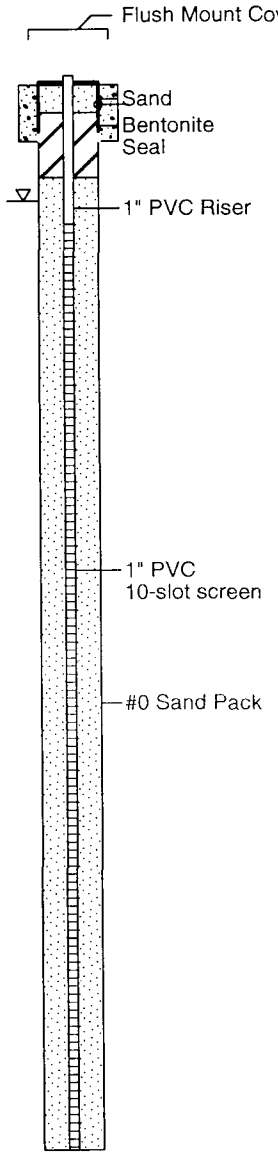
Total Boring Depth	: 12-ft bgs
Drilling Method	: Direct Push: 2" Geoprobe
Drilling Equipment	: Ingersall Rand A 300
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella 5/6/08
Boring Location	: Garlock
	: AOC-1
	: ~20' West of IW 1-1

Sample Condition
- No Recovery
- Recovery
- Refusal

Water Levels
- During Drilling
- After Completion (1st Sampling)

Depth in Feet	Surf. Elev.	DESCRIPTION	REMARKS
0	430	Not Sampled.	
1	429		
2	428		
3	427		
4	426		
5	425		
6	424		
7	423		
8	422		
9	421		
10	420		
11	419		
12		End of Boring	

OBSERVATION WELL: OW 1-4
Top PVC Elev: 430.20



NOTES: Thicknesses of Bentonite seal and Sand pack are estimated because annular space was too narrow to measure the exact depths. One "cupful" of bentonite was poured over the sand, and more sand poured over that to near the top of PVC. Diameter of bore-hole depicted in well construction diagram is not to scale.

BORING LOG OW 1-4

(Page 1 of 1)

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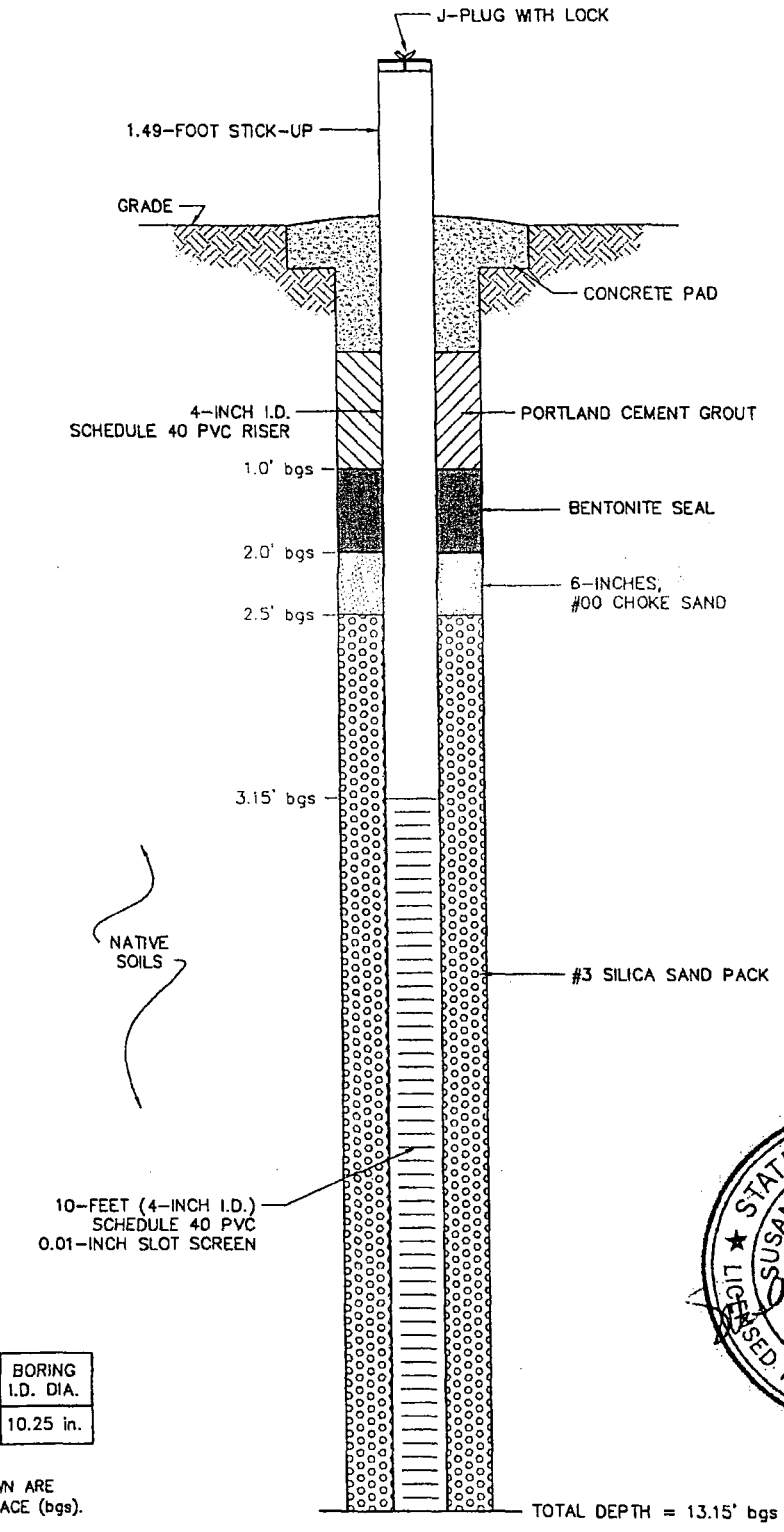

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

STATE OF NEW YORK
SUSAN ADELAIDE HEENAN
079942
LICENSED PROFESSIONAL ENGINEER

5/31/2011

IW-1 CONSTRUCTION DETAIL
NOT TO SCALE

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AOC-2 INJECTION WELL DIAGRAM IW-1
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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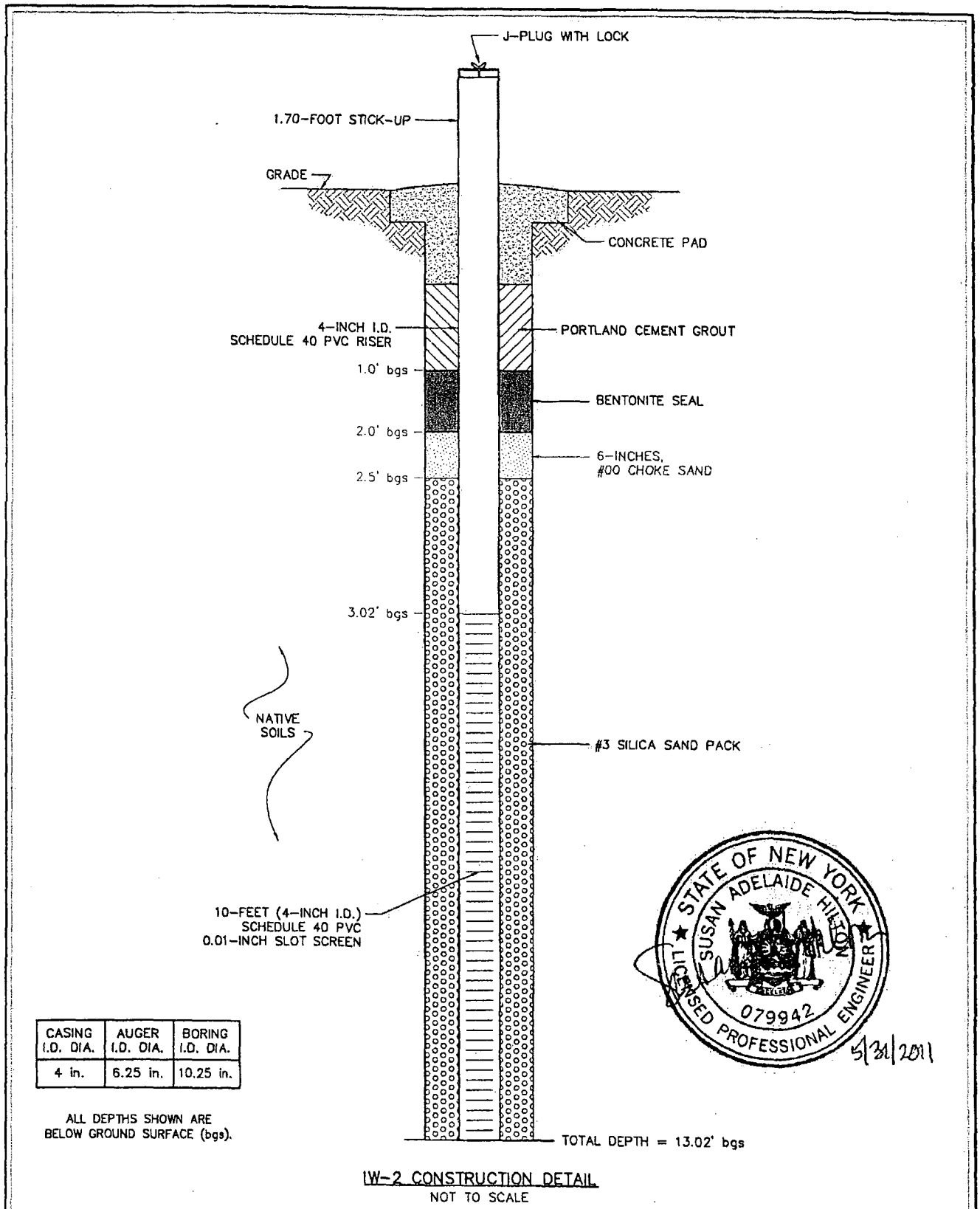

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

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LICENSED PROFESSIONAL ENGINEER

5/31/2011

IW-2 CONSTRUCTION DETAIL
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AOC-2 INJECTION WELL DIAGRAM IW-2
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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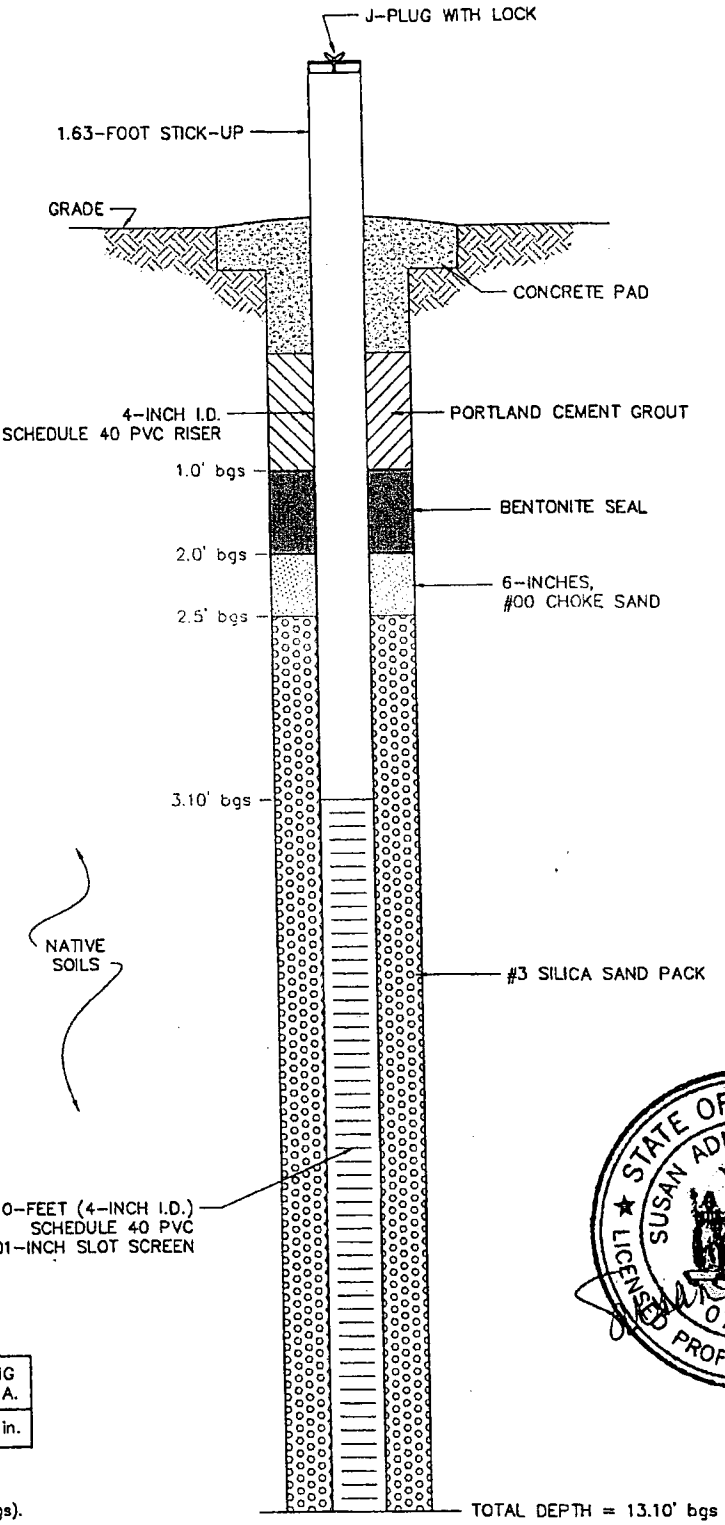

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

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IW-6 CONSTRUCTION DETAIL
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AOC-2 INJECTION WELL DIAGRAM IW-6
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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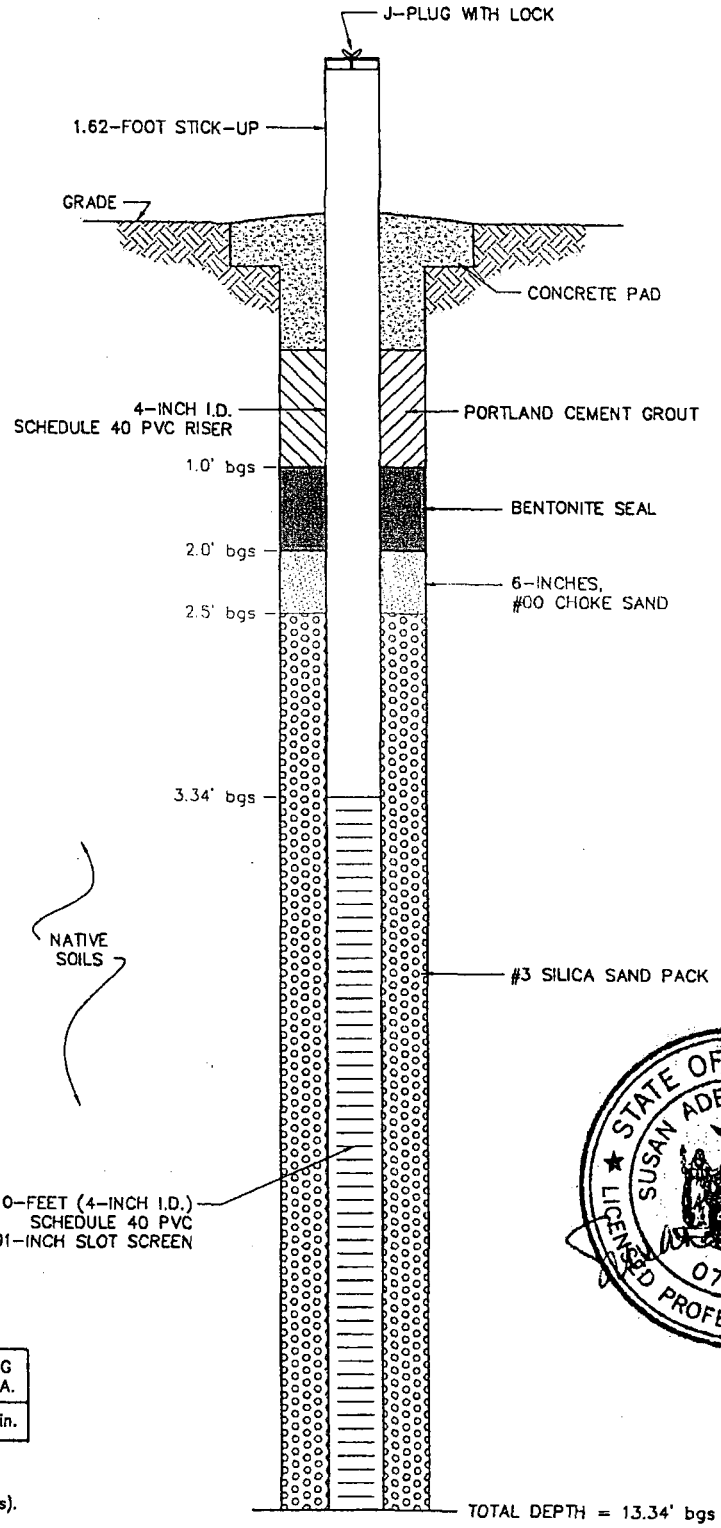

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

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IW-7 CONSTRUCTION DETAIL
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AOC-2 INJECTION WELL DIAGRAM IW-7
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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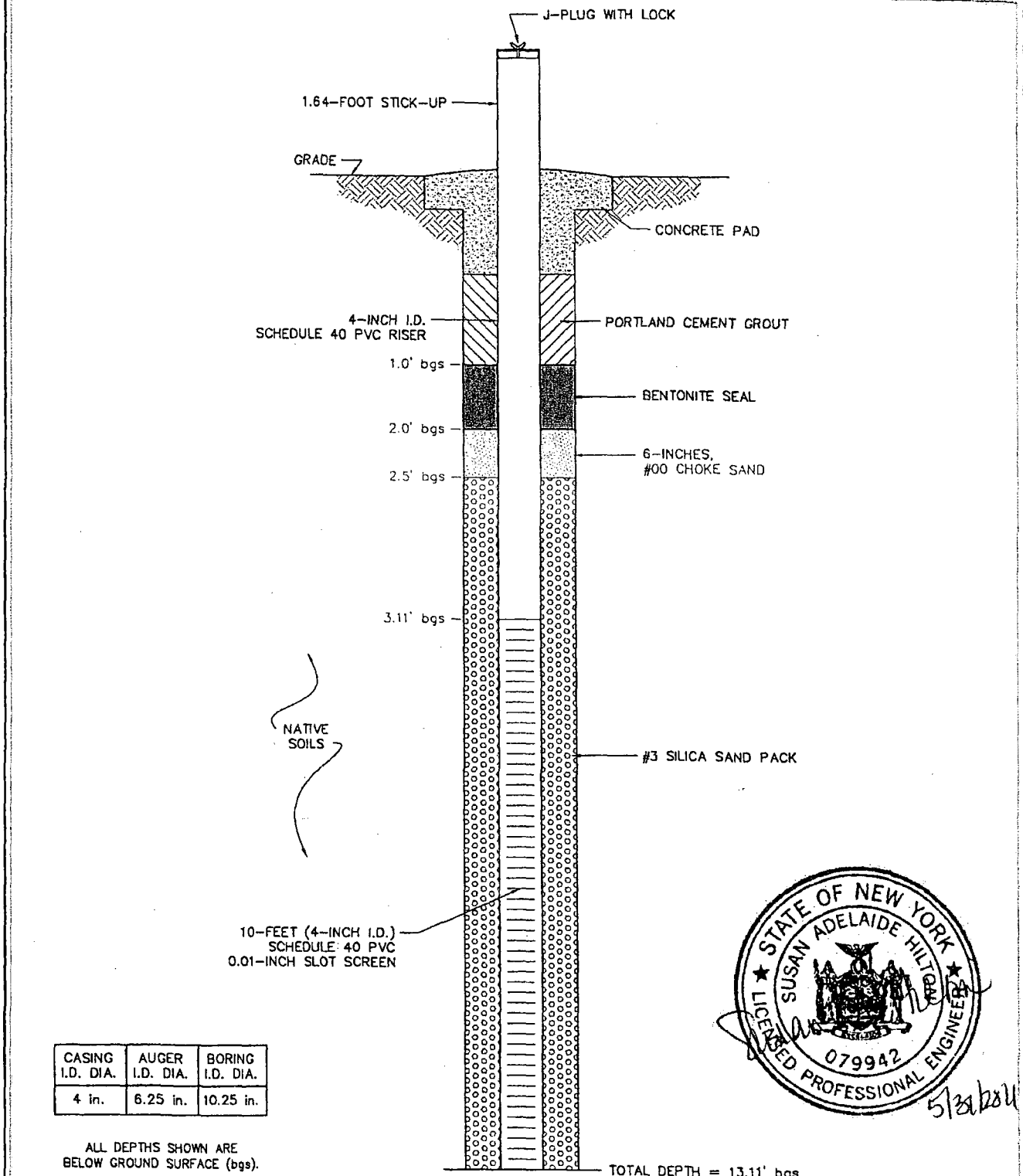

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

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5/31/2011

IW-8 CONSTRUCTION DETAIL
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AOC-2 INJECTION WELL DIAGRAM IW-8
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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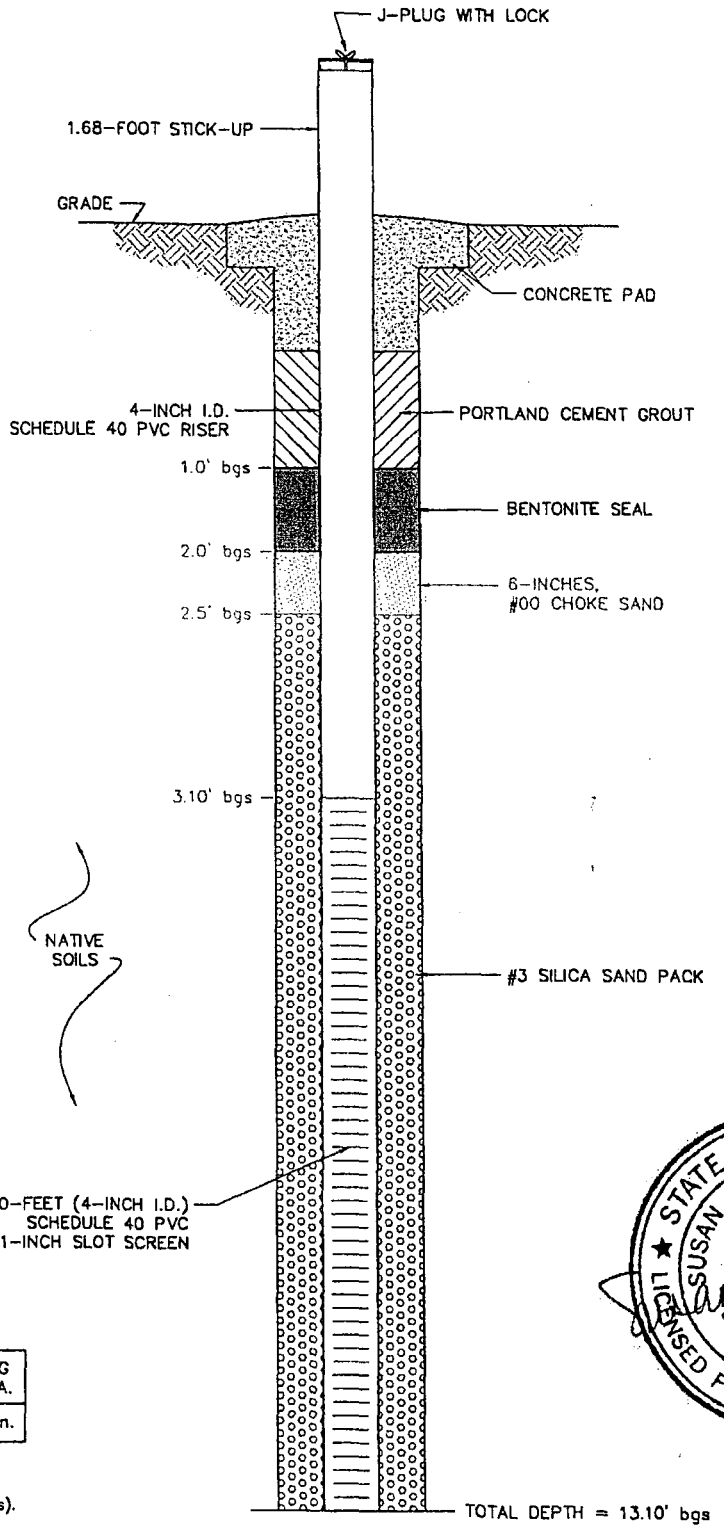

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

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5/31/2011

IW-9 CONSTRUCTION DETAIL
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AOC-2 INJECTION WELL DIAGRAM IW-9
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM
1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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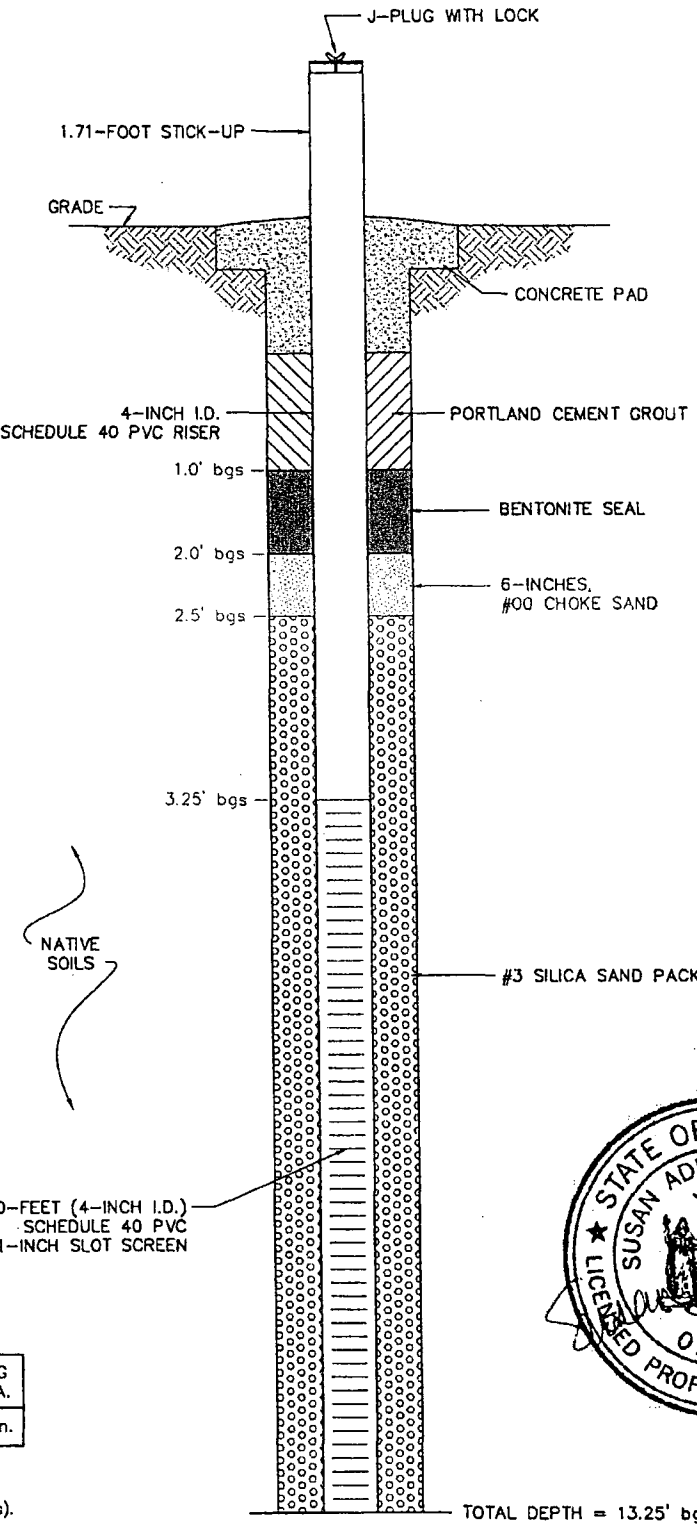

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

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5/31/2011

IW-10 CONSTRUCTION DETAIL
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AOC-2 INJECTION WELL DIAGRAM IW-10
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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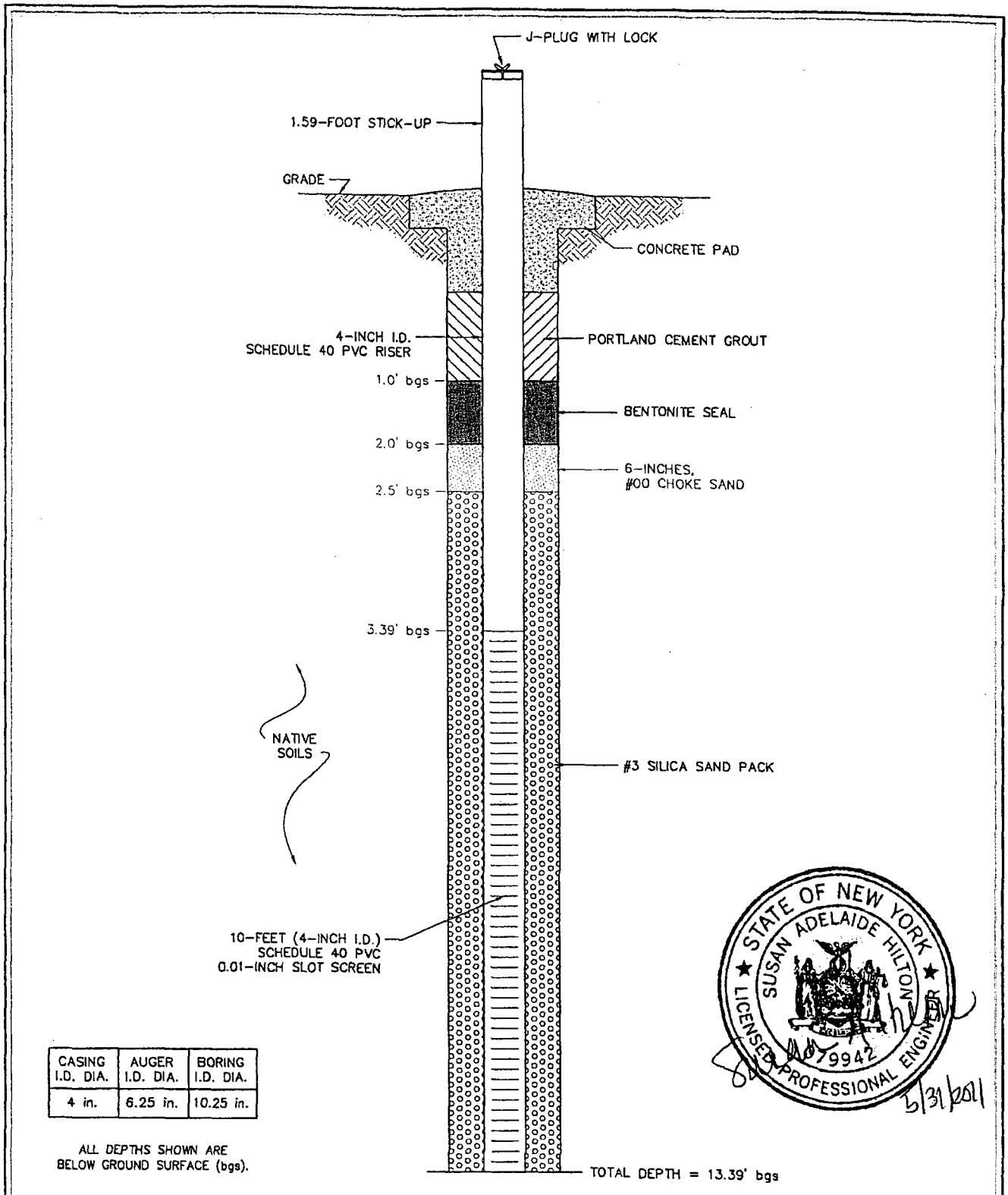

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

STATE OF NEW YORK
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LICENSED PROFESSIONAL ENGINEER
5/31/2011

IW-12 CONSTRUCTION DETAIL
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AOC-2 INJECTION WELL DIAGRAM IW-12
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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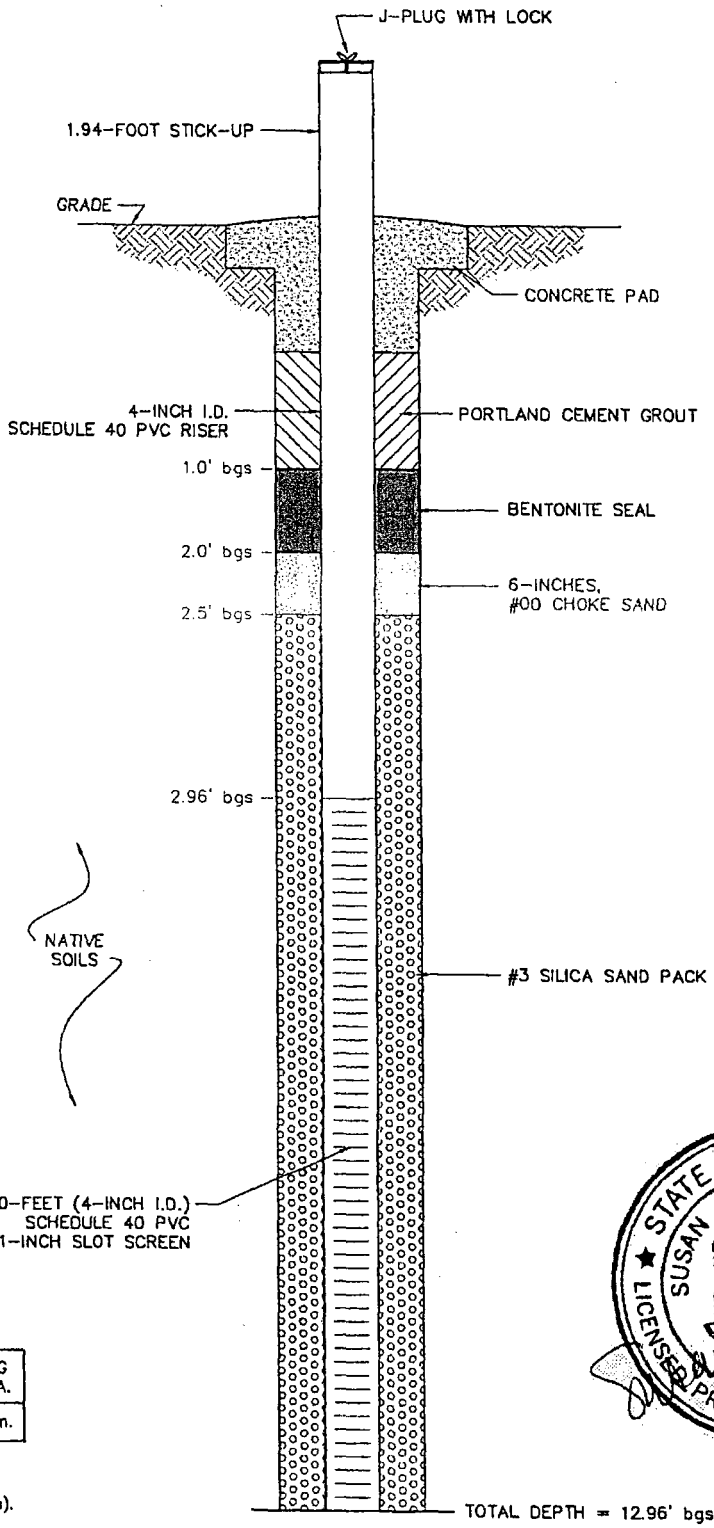

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

STATE OF NEW YORK
SUSAN ADELAIDE HILTON
079942
LICENSED PROFESSIONAL ENGINEER
5/31/2011

IW-13 CONSTRUCTION DETAIL
NOT TO SCALE

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AOC-2 INJECTION WELL DIAGRAM IW-13
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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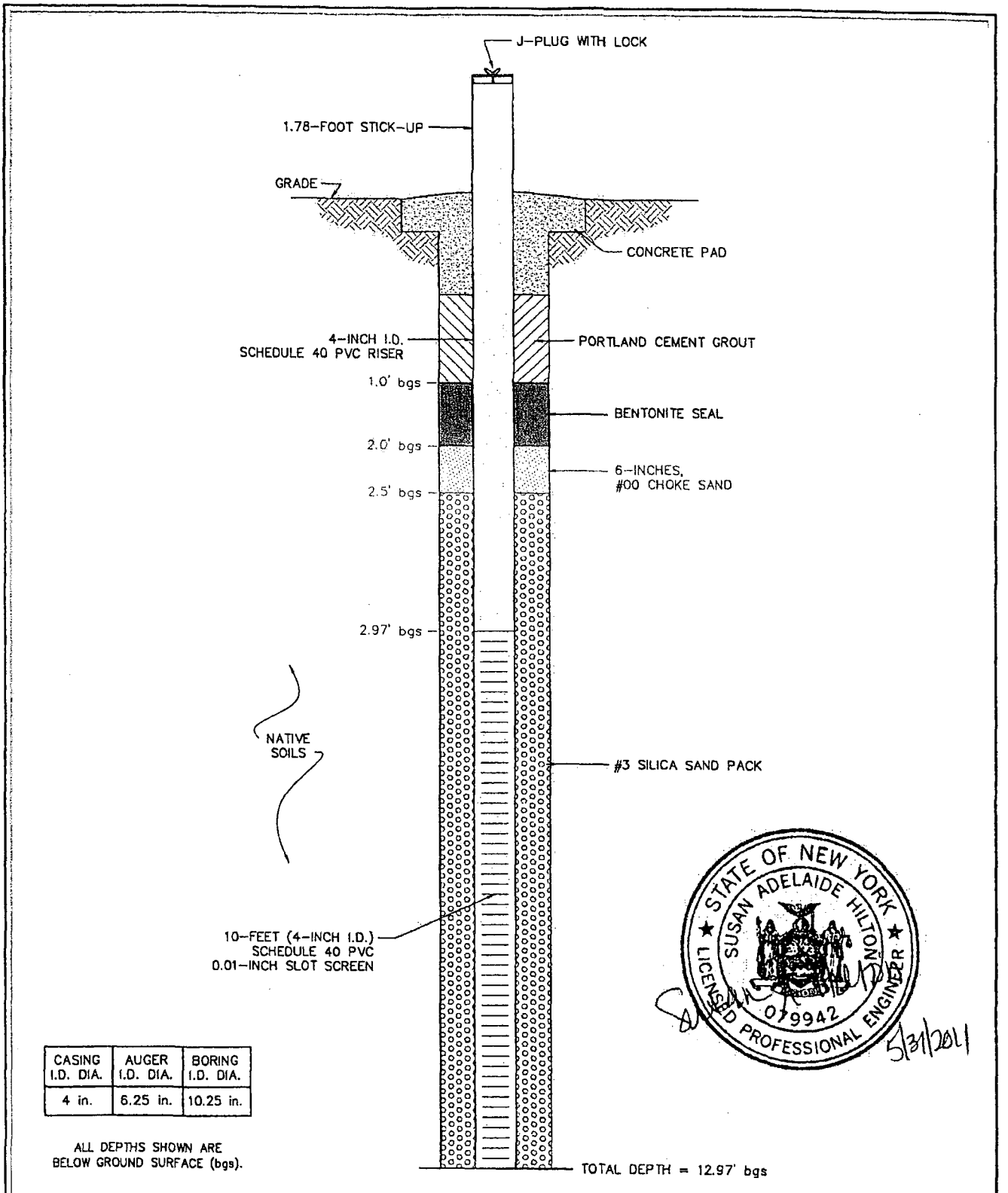

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

STATE OF NEW YORK
SUSAN ADELAIDE HILTON
079942
LICENSED PROFESSIONAL ENGINEER

5/31/2011

IW-14 CONSTRUCTION DETAIL
NOT TO SCALE

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

AOC-2 INJECTION WELL DIAGRAM IW-14
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1868 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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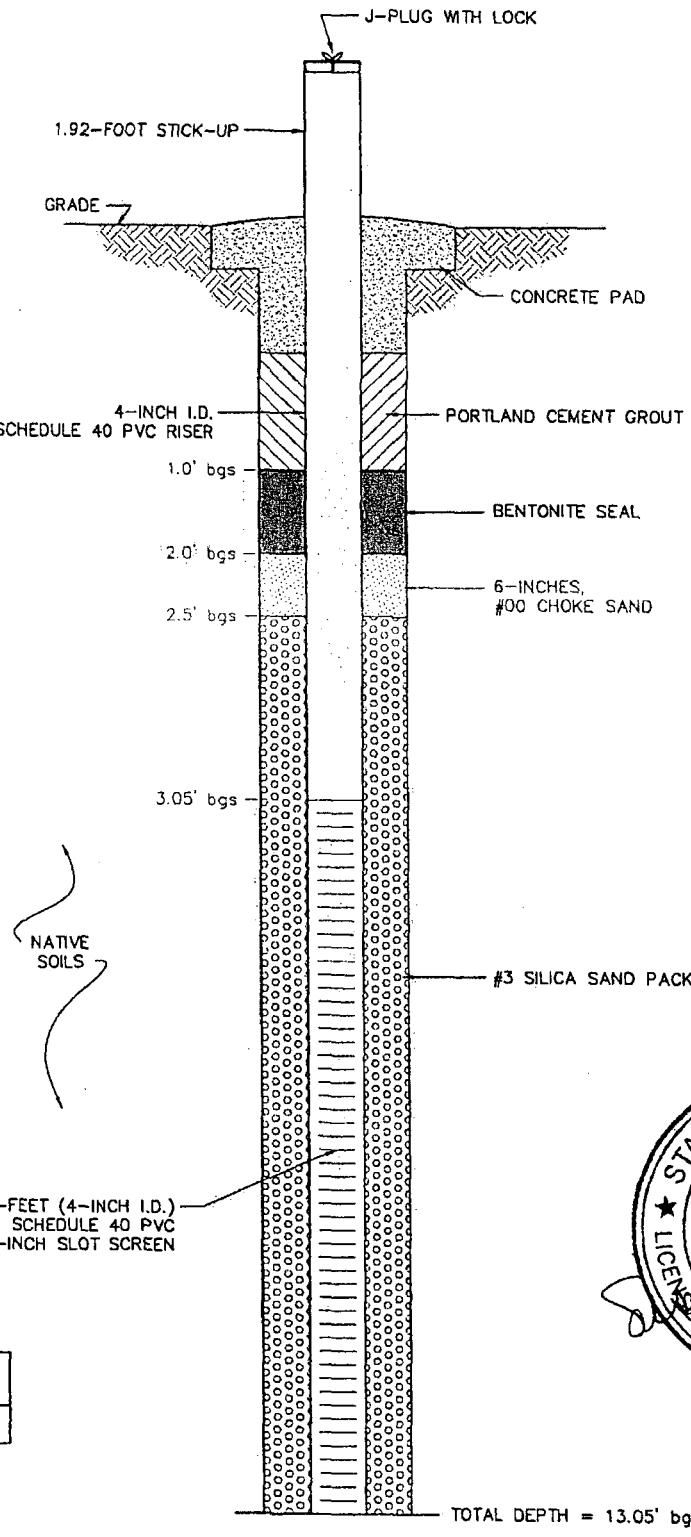

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

STATE OF NEW YORK
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LICENSED PROFESSIONAL ENGINEER

5/31/2011

IW-15 CONSTRUCTION DETAIL
NOT TO SCALE

Lu Engineers
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AOC-2 INJECTION WELL DIAGRAM IW-15
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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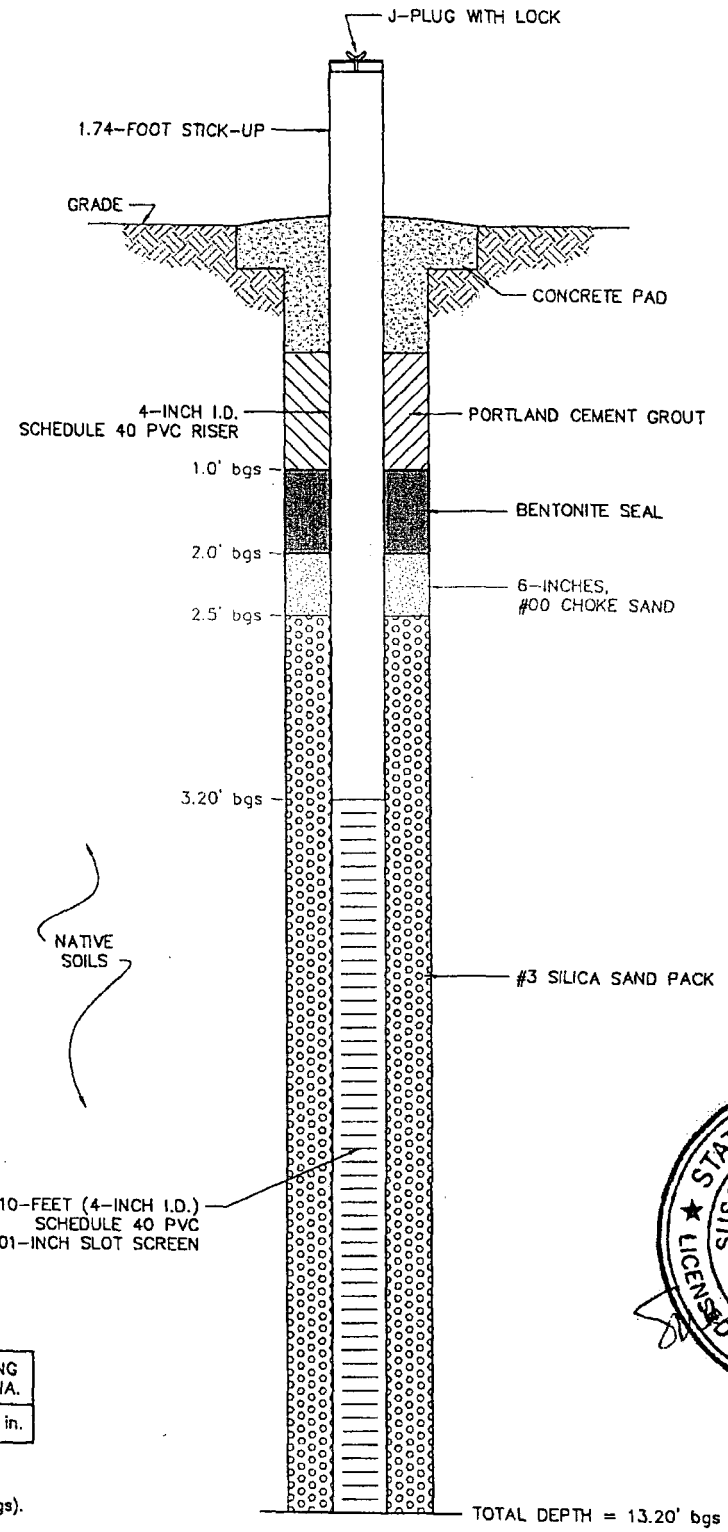

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

STATE OF NEW YORK
SUSAN ADELAIDE HILTON
079942
LICENSED PROFESSIONAL ENGINEER
5/31/2011

IW-16 CONSTRUCTION DETAIL
NOT TO SCALE

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

AOC-2 INJECTION WELL DIAGRAM IW-16
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1868 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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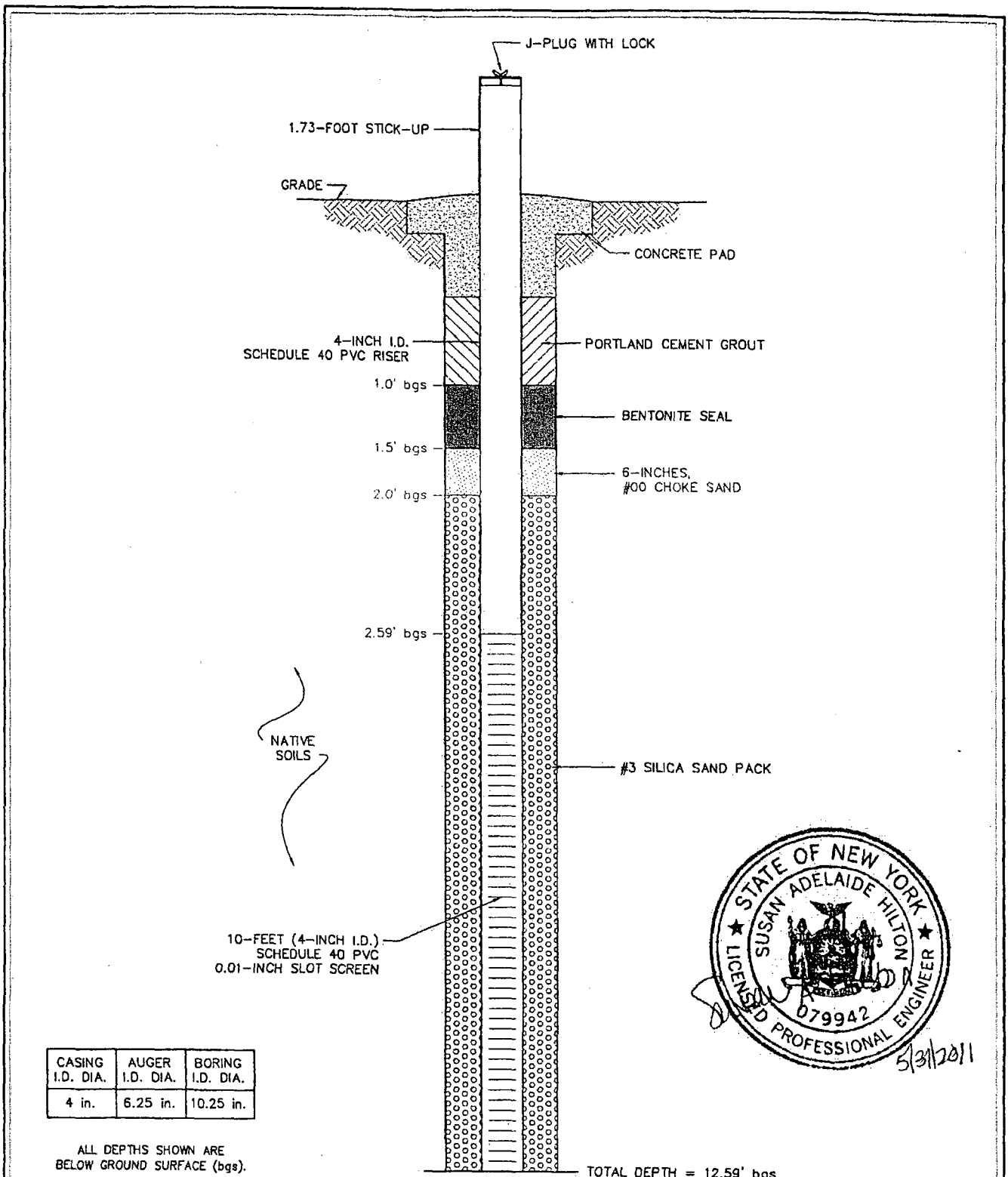

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

STATE OF NEW YORK
SUSAN ADELAIDE HILTON
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5/31/2011

IW-17 CONSTRUCTION DETAIL
NOT TO SCALE

Lu Engineers
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AOC-2 INJECTION WELL DIAGRAM IW-17
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

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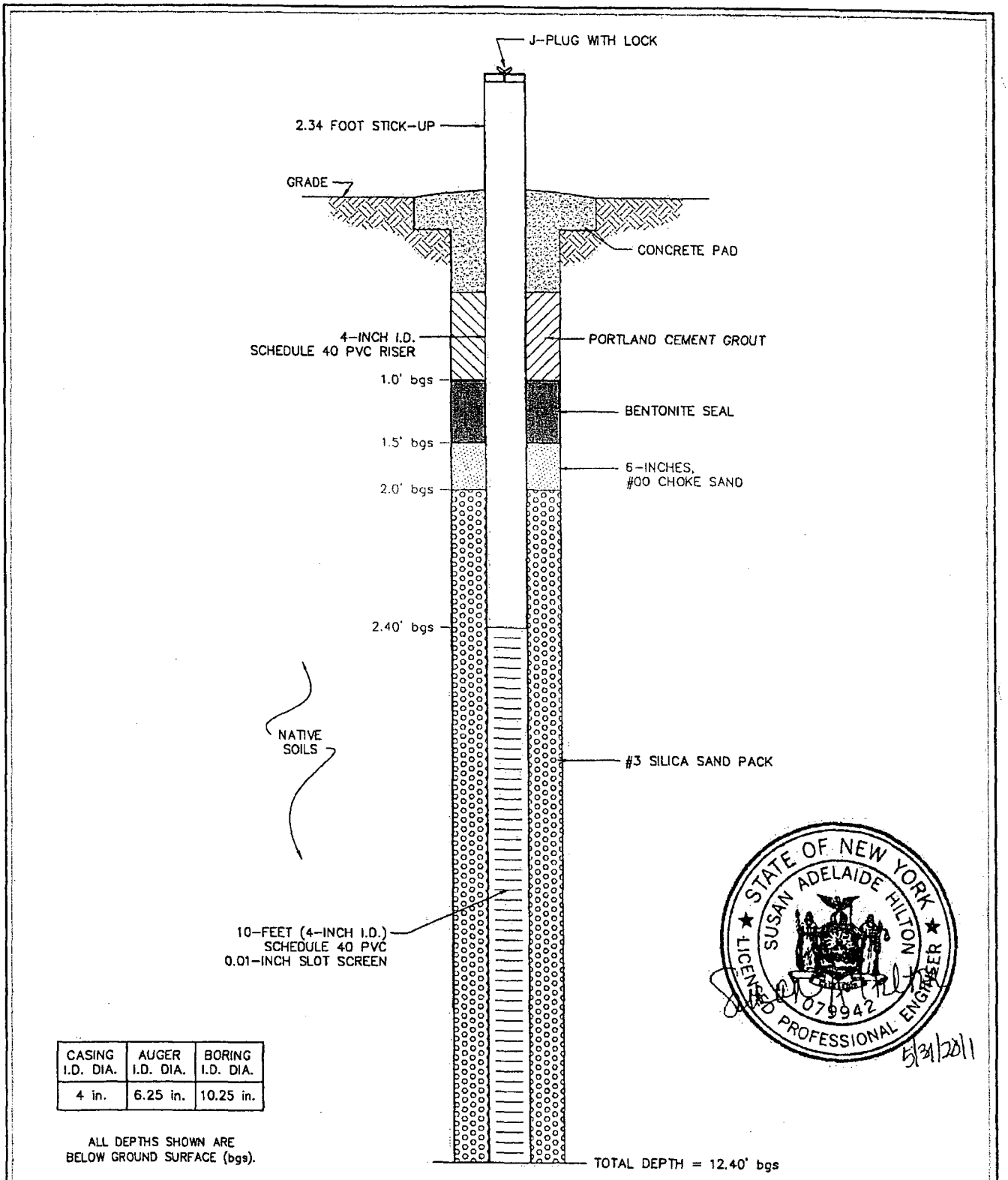

CASING I.D. DIA.	AUGER I.D. DIA.	BORING I.D. DIA.
4 in.	6.25 in.	10.25 in.

ALL DEPTHS SHOWN ARE
BELOW GROUND SURFACE (bgs).

STATE OF NEW YORK
SUSAN ADELAIDE HILTON
LICENSED PROFESSIONAL ENGINEER
079942
5/31/2011

IW-18 CONSTRUCTION DETAIL
NOT TO SCALE

Lu Engineers
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AOC-2 INJECTION WELL DIAGRAM IW-18
GARLOCK BCP SITE NO. 3
BROWNFIELD CLEANUP PROGRAM

1666 DIVISION STREET, PALMYRA
WAYNE COUNTY NEW YORK

DATE:	MAY 2011
SCALE:	NONE
DRAWN/CHECKED	DLS/LMS
P.N.	37311

J:\Projects\37300 Garlock\37311 Garlock BCP - AOC-2 Well Installations\cadd\Well Const. Diagrams.dwg, 5/27/2011 2:53:27 PM, diane, AC2008

S&W REDEVELOPMENT

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N8015

BORING LOG MW-63

(Page 1 of 1)

Date Started	: 9/17/08
Time	: 2:30pm
Date Completed	: 9/17/08
Time	: 4:30pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug Thoma

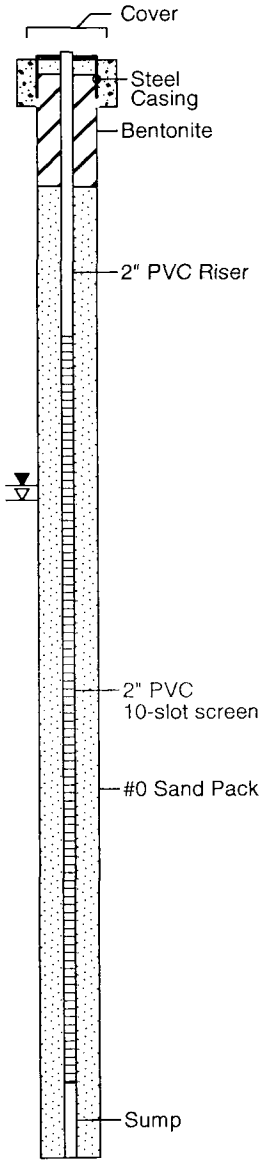
Total Boring Depth	: 15 ft bgs
Drilling Method	: 4-1/4" Hollow Stem Auger
Drilling Equipment	: Dietrich D50
Hammer Wt./Drop	: 140-lb
Sampling Method	: 2" split spoon
Logged By	: DJH
Survey	: LaBella 9/25/08
Boring Location	: Garlock AOC-5
	: East of MW-55

Sample Condition: No Recovery; Recovery; No sample taken

Water Levels: After Completion; During Drilling

Depth in Feet	Surf. Elev.	Blow Count	Recovery (inches)	Sample	PID Reading (Vppm)	DESCRIPTION	REMARKS
0						See MW-63A boring log.	
4		2 4	7		0.0	2" moist, soft, brown/orange SILT, trace sand 5" moist, m-stiff, green/brown SILT, some clay	
6		6 8 8					
7		11 16 19	20		0.7	4" wet, soft, orange SILT and fine sand, little coarse sand 16" moist, stiff/hard, green/gray CLAY, some silt, trace rock fragments	
8		18 19	7		0.0	moist/dry, hard, green/gray CLAY, some silt	
9		26 25					
10		18 24	13		0.0	moist/dry, hard, olive/light gray-brown CLAY, some silt	
11		32 19					
12		22 18	10		-	3" dry, hard, brown SILT, little clay 4" moist, m-stiff, dark brown, maleable SILT, trace clay. olive brown CLAY in nose.	Unable to screen 12-14' spoon because PID battery died. No visible contamination or odors.
13		15 20					
14							
15						End of Boring	

MW-63
Top PVC Elev:



PID utilized: MiniRae 2000 calibrated to 100 Vppm isobutylene

BORING LOG MW-63

(Page 1 of 1)

11-16-2011 J:\PROJECTS\N-xxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\AOC-5\MW-63.bor

S&W REDEVELOPMENT

Garlock Sealing Technologies, AOC-5
1666 Division Street
Palmyra, New York

Job No. N1011

BORING LOG MW-06-10-1

(Page 1 of 1)

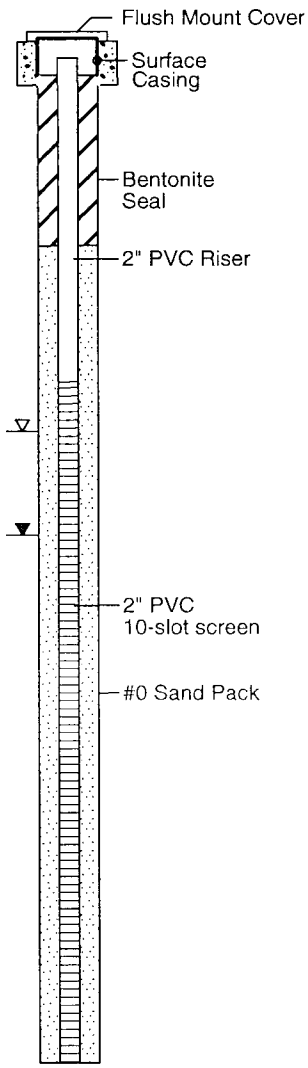
Date Started	: 6-15-10
Time	: 1:10 pm
Date Completed	: 6-15-10
Time	: 4:47 pm
Drilling Contractor	: Parratt Wolff
Driller	: Jim L.

Total Boring Depth	: 15-ft bgs
Drilling Method	: Direct Push/HSA
Drilling Equipment	: Geoprobe 7822 DT
Hammer Wt./Drop	: N/A
Sampling Method	: 4' Macrocore
Logged By	: IEM
Survey	: N/A
Boring Location	: Garlock
	: AOC-5
	: North Corner of Building 25

Water Levels
▼ During Drilling
▽ After Drilling

Depth in Feet	Surf. Elev.	Recovery (inches)	DESCRIPTION	PID Reading (ppm)
0	431.83		Asphalt, Concrete, and Gravel	
1	430.83			
2	429.83	48	Green CLAY with SILT, Trace SAND, Hard, Very Dry	0.2
3	428.83			
4	427.83			
5	426.83		White, Very soft, Slippery, Very wet	
			Green CLAY with SILT, Stiff, Moist	
6	425.83	36		0.3
7	424.83			
			Brown CLAY and SILT, Wet	
8	423.83		Green CLAY with SILT, Very wet	
9	422.83		Green SILT, some CLAY, Hard, Dry-Moist, Mottled Brown-Orange	
10	421.83	48		0.6
11	420.83			
12	419.83			
13	418.83			
14	417.83	46		17.9
15	416.83			
16	415.83		End of Boring	
17				

Monitoring Well: MW06-10-1
Top PVC Elev: 431.23'



Notes:
N/A - Not Applicable
HSA - Hollow Stem Auger

BORING LOG MW-06-10-1

(Page 1 of 1)

11-16-2011 J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\AOC-5\MW06-10-1.bor

S&W REDEVELOPMENT

Garlock Sealing Technologies, AOC-5
1666 Division Street
Palmyra, New York

Job No. N1011

BORING LOG MW0811-1

(Page 1 of 1)

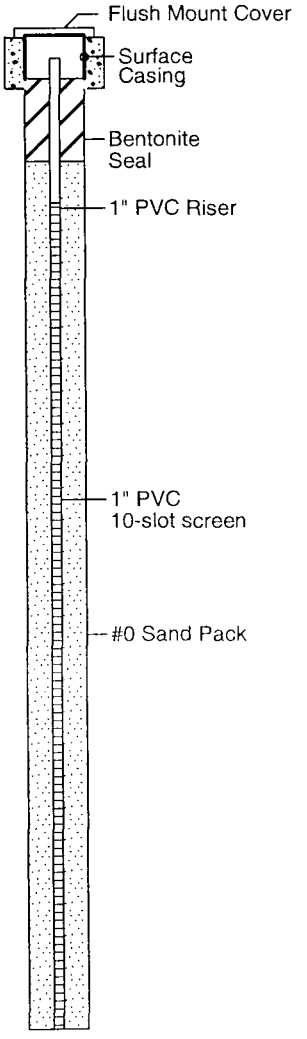
Date Started	: 8-2-2011
Time	: 8:30 am
Date Completed	: 8-2-2011
Time	: 10:40 am
Drilling Contractor	: Zebra Envir.
Driller	: Joe

Total Boring Depth	: 12-ft bgs
Drilling Method	: *Direct Push*
Drilling Equipment	: MiniTrack
Hammer Wt./Drop	: N/A
Sampling Method	: 4' Macrocore
Logged By	: IEM
Survey	: LaBella Assoc.
Boring Location	: Garlock
	: AOC-5
	: East Portion of Building 25

Depth in Feet	Surf. Elev.	Recovery (inches)	Water Levels ▼ During Drilling ▽ After Drilling	PID Reading (ppm)
0	429.53		Concrete slab	
1	428.53		Green CLAY with SILT, Trace SAND, Hard, Very Dry	
2	427.53			
3	426.53			
4	425.53			
5	424.53			
6	423.53			
7	422.53			
8	421.53			
9	420.53			
10	419.53			
11	418.53			
12	417.53		End of Boring	
13	416.53			
14				

DESCRIPTION

Monitoring Well: MW0811-1
Top PVC Elev: 429.36



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BORING LOG MW0811-1

(Page 1 of 1)

S&W REDEVELOPMENT

Garlock Sealing Technologies, AOC-5
1666 Division Street
Palmyra, New York

Job No. N1011

BORING LOG MW0811-3

(Page 1 of 1)

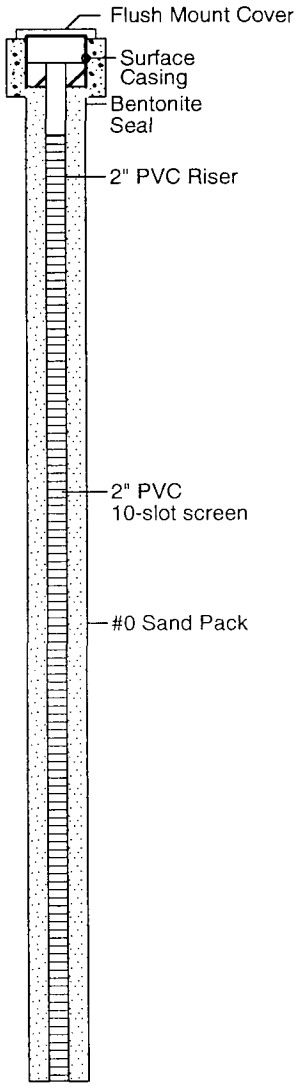
Date Started	:
Time	:
Date Completed	:
Time	:
Drilling Contractor	: Zebra Envir.
Driller	: Joe

Total Boring Depth	: 10.81-ft bgs
Drilling Method	: Direct Push
Drilling Equipment	: MiniTrack
Hammer Wt./Drop	: N/A
Sampling Method	:
Logged By	:
Survey	: LaBella Assoc.
Boring Location	: Garlock
	: AOC-5
	: East Portion of Building 25

Water Levels
▼ During Drilling
▽ After Drilling

Depth in Feet	Surf. Elev.	Recovery (inches)	DESCRIPTION	PID Reading (ppm)
0	429.53		Concrete slab	
			Soil	
1	428.53			
2	427.53			
3	426.53			
4	425.53			
5	424.53			
6	423.53			
7	422.53			
8	421.53			
9	420.53			
10	419.53			
11	418.53		End of Boring	
12				

Monitoring Well: MW0811-3
Top PVC Elev: 429.35



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BORING LOG MW0811-3

(Page 1 of 1)

S&W REDEVELOPMENT

Garlock Sealing Technologies, AOC-5
1666 Division Street
Palmyra, New York

Job No. N1011

BORING LOG MW0811-4

(Page 1 of 1)

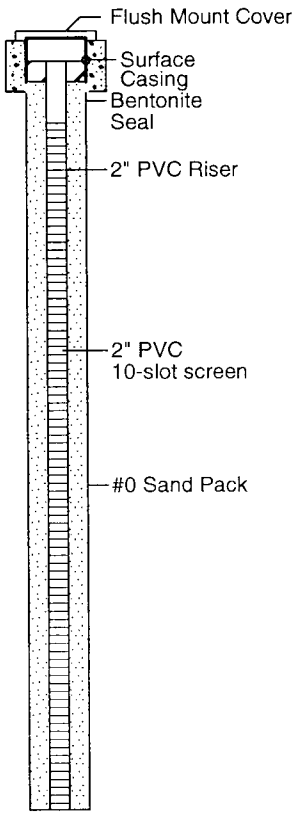
Date Started	:
Time	:
Date Completed	:
Time	:
Drilling Contractor	: Zebra Envir.
Driller	: Joe

Total Boring Depth	: 9.31-ft bgs
Drilling Method	: Direct Push
Drilling Equipment	: MiniTrack
Hammer Wt./Drop	: N/A
Sampling Method	:
Logged By	:
Survey	: LaBella Assoc.
Boring Location	: Garlock
	: AOC-5
	: South of Building 25

Water Levels
▼ During Drilling
▽ After Drilling

Depth in Feet	Surf. Elev.	Recovery (inches)	DESCRIPTION	PID Reading (ppm)
0	436.6		Asphalt Pavement	
1	435.6			
2	434.6			
3	433.6			
4	432.6			
5	431.6			
6	430.6			
7	429.6			
8	428.6			
9	427.6		End of Boring	
10	426.6			
11	425.6			
12	424.6			
13	423.6			
14				

Monitoring Well: MW0811-4
Top PVC Elev: 436.38



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BORING LOG MW0811-4

(Page 1 of 1)

S&W REDEVELOPMENT

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008

BORING LOG MW-60

(Page 1 of 1)

Date Started	: 9/16/08
Time	: 11:00am
Date Completed	: 9/16/08
Time	: 3:30pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug Thoma

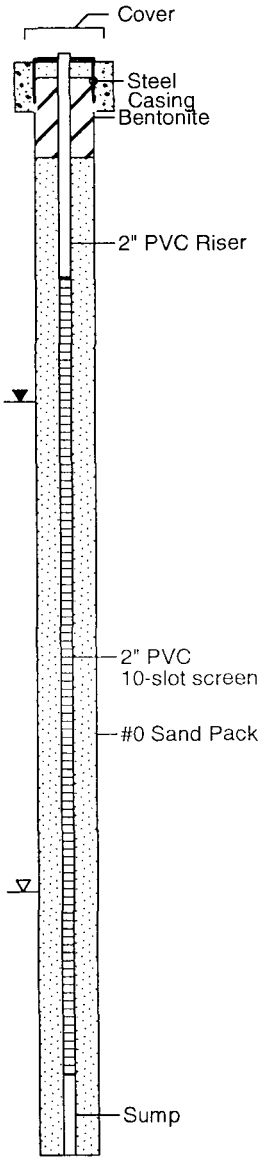
Total Boring Depth	: 14 ft bgs
Drilling Method	: 4-1/4" Hollow Stem Auger
Drilling Equipment	: Dietrich D50
Hammer Wt./Drop	: 140-lb
Sampling Method	: 2" split spoon
Logged By	: DJH
Survey	: LaBella 9/25/08
Boring Location	: Garlock AOC-1
	: Southeast Corner of
	: Toluene tank farm

Sample Condition: No Recovery; Recovery; No sample taken

Water Levels: After Completion; During Drilling

Depth in Feet	Surf. Elev.	Blow Count	Recovery (inches)	Sample	PID Reading (Vppm)	DESCRIPTION	REMARKS
0		-					
		15	6		0.0	4" Sand and Asphalt FILL 2" moist, m-stiff, green-tan mottled CLAY	
		9					
		4					
2		4				moist, m-stiff, green CLAY, some silt	
		5	12		12.0	PID hit at 3' bgs	
		5					
		6					
4		4				moist, stiff, green CLAY, little silt. Thinly	
		12	11		3.8	bedded with gray clay at 5.5' bgs (weathered shale?)	
		16					
		18					
6		25				dry, hard, light brown-olive SILT, trace fine	
		37	12		42.6	sand and clay. PID hit at 6.5' bgs.	odor
		26					
		28					
8		10				PID hit at 8' bgs	slight odor
		24	14		15.1	moist, m-stiff/soft, maleable, dark brown SILT, some clay	
		40				dry, hard, green-light brown SILT, some clay	
		51					
10		12				dry, hard, light gray SILT, little clay	
		31	14		59.6	moist, hard, light brown-olive,SILT, some clay, trace fine gravel-sized shale fragments. PID hit at 10.5' bgs.	slight odor
		57					
		-					
12		22					
		28	20		7.1		slight odor throughout both units
		24				moist, m-stiff, gray SILT, little clay PID hit at 12' bgs	
		13					
14						*End of Boring*	

MW-60
Top PVC Elev:



PID utilized: MiniRae 2000 calibrated to 100 Vppm isobutylene

BORING LOG MW-60

(Page 1 of 1)

11-16-2011 J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\Carbon Tet Area\MW-60.bor

S&W REDEVELOPMENT

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N1011

BORING LOG MW0610-3

(Page 1 of 1)

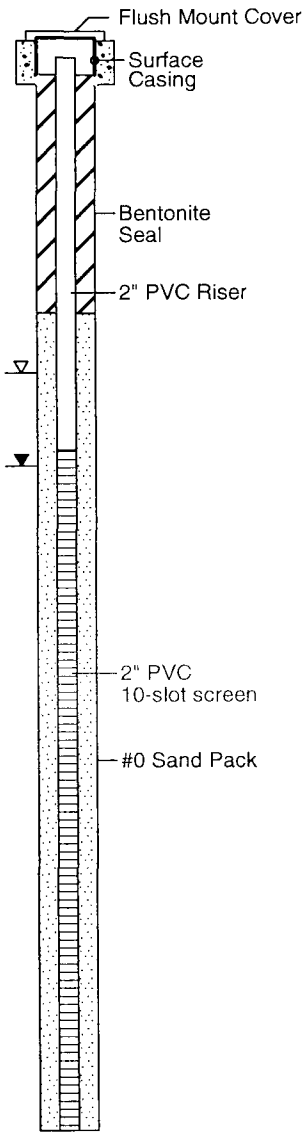
Date Started	: 6-17-10
Time	: 9:10 am
Date Completed	: 6-17-10
Time	: 12:20 pm
Drilling Contractor	: Parratt Wolff
Driller	: Jim L.

Total Boring Depth	: 16-ft bgs
Drilling Method	: Direct Push/HSA
Drilling Equipment	: Geoprobe 7822 DT
Hammer Wt./Drop	: N/A
Sampling Method	: 4' Macrocore
Logged By	: IEM
Survey	: N/A
Boring Location	: Garlock
	: AOC-1
	: North Corner of Raised Slab

Water Levels
▼ During Drilling
▽ After Drilling

Depth in Feet	Surf. Elev.	Recovery (inches)	DESCRIPTION	PID Reading (ppm)
0	433.06		Black organic soil, Grass, Roots	
1	432.06		Black FILL, Sand, Gravel, Brick, Concrete, Loose, Moist	
2	431.06	36		254
3	430.06		Green SILT, some CLAY, Stiff, Moist	
4	429.06			
5	428.06			
6	427.06	36	SAA, Med-Stiff, Wet, Odor, Mottled Orange-Brown	1,640
7	426.06			
8	425.06			
9	424.06			
10	423.06	48	Brown SILT, Trace CLAY, Stiff, Moist	2,047
11	422.06			
12	421.06		Green SILT, Saturated, Loose	
13	420.06			
14	419.06	48	SAA, Hard, Mottled Orange-Brown	94.7
15	418.06			
			Gray SILT, Stiff, Moist	
16	417.06		End of Boring	
17				

Monitoring Well: MW0610-3
Top PVC Elev: 432.67



Notes:
N/A - Not Applicable
HSA - Hollow Stem Auger
SAA - Same As Above
A PID with an 11.7 eV Lamp was used to screen soils

BORING LOG MW0610-3

(Page 1 of 1)

11-16-2011 J:\PROJECTS\N-xxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\Carbon Tet Area\MW06-10-3.bor

S&W REDEVELOPMENT

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N1011

BORING LOG MW0610-4

(Page 1 of 1)

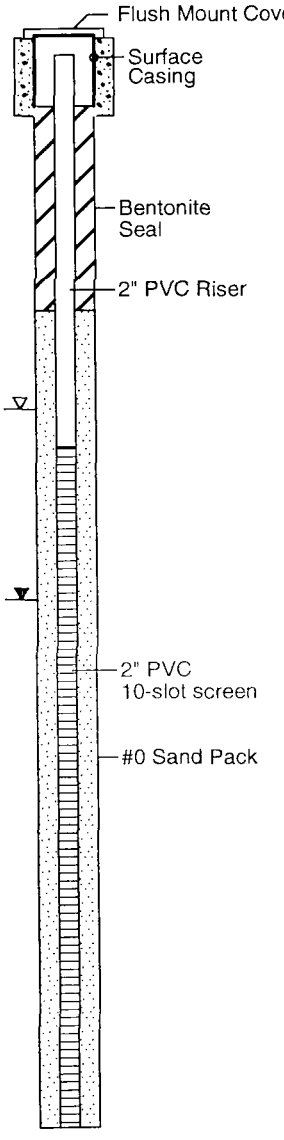
Date Started	: 6-30-2010
Time	: 9:11 am
Date Completed	: 6-30-2010
TIme	: 10:50 am
Drilling Contractor	: Parratt Wolff
Driller	: Jim L.

Total Boring Depth	: 16-ft bgs
Drilling Method	: *Direct Push/HSA*
Drilling Equipment	: IR A-200
Hammer Wt./Drop	: N/A
Sampling Method	: 4' Macrocore
Logged By	: IEM
Survey	: N/A
Boring Location	: Garlock
	: Carbon Tet. Area
	: West of Gylon Building

Water Levels
▼ During Drilling
▽ After Drilling

Depth in Feet	Surf. Elev.	Recovery (inches)	DESCRIPTION	PID Reading (ppm)
0	432.79		Organic soil, Grass, Roots, Black	
1	431.79		Gravel FILL, Sand, Coarse Gravel, Concrete, Loose, Moist	
2	430.79	24		0.0
3	429.79			
4	428.79		SAA, Large rock fragment stuck in tip of macrocore, Slight odor, Moist	
5	427.79			
6	426.79	8		1,708
7	425.79			
8	424.79		SAND and Fine GRAVEL, Loose, Saturated, Strong odor	
9	423.79			
10	422.79	48	Green SILT, some CLAY, Med-stiff, Very wet, Odor	3,715
11	421.79			
12	420.79		Gray-Green SILT, little CLAY, Stiff, Dry, No odors	
13	419.79			
14	418.79	9		18.5
15	417.79			
16	416.79		End of Boring	
17				

Monitoring Well: MW0610-4
Top PVC Elev: 432.39



Notes:
N/A - Not Applicable
HSA - Hollow Stem Auger
SAA - Same as Above
A PID with an 11.7 eV Lamp was used to screen soils

BORING LOG MW0610-4

(Page 1 of 1)

11-16-2011 J:\PROJECTS\N-xxxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\Carbon Tet Area\MW06-10-4.bor

S&W REDEVELOPMENT

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N1011

BORING LOG MW0610-5

(Page 1 of 1)

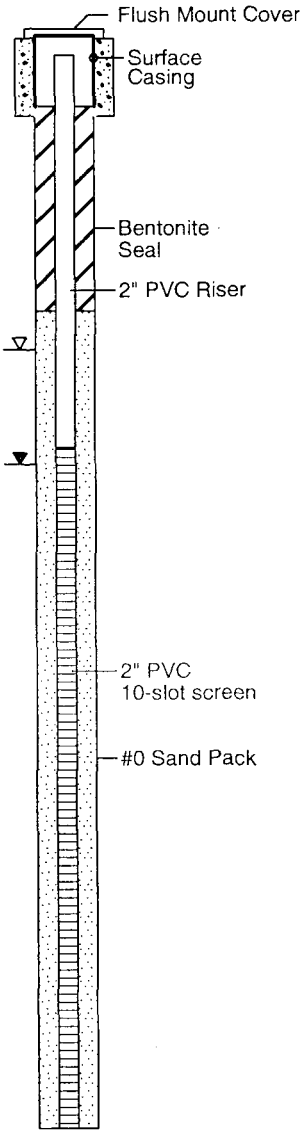
Date Started	: 6-30-2010
Time	: 11:28 am
Date Completed	: 6-30-2010
TIme	: 1:50 pm
Drilling Contractor	: Parratt Wolff
Driller	: Jim L.

Total Boring Depth	: 16-ft bgs
Drilling Method	: Direct Push/HSA
Drilling Equipment	: IR A-200
Hammer Wt./Drop	: N/A
Sampling Method	: 4' Macrocore
Logged By	: IEM
Survey	: N/A
Boring Location	: Garlock
	: Carbon Tet. Area
	: Northeast part of grass area

Water Levels
▼ During Drilling
▽ After Drilling

Depth in Feet	Surf. Elev.	Recovery (inches)	DESCRIPTION	PID Reading (ppm)
0	432.05		Organic SOIL, Grass, Roots, Black	
1	431.05		Red-Black FILL, Gravel, Sand, Brick, Concrete, Loose, Moist	
2	430.05	40		38.9
3	429.05		Black Fine-Medium SAND, Loose, Moist	
4	428.05			
5	427.05		Black SILT and CLAY, Med-Stiff, Saturated with a strong odor	
6	426.05	24		2,503
7	425.05			
8	424.05		SAA, Standing black liquid in the macrocore, Sample saturated, Sheen on liquid, Strong odor	
9	423.05			
10	422.05	40		367
11	421.05		Green SILT, Loose, Very wet, Sulfur odor	
12	420.05		Black SAND with SILT, Pieces of wood, Med-stiff, Saturated	
13	419.05		Green-Gray SILT, little CLAY, Stiff, Moist	
14	418.05	30		36.8
15	417.05			
16	416.05		End of Boring	
17				

Monitoring Well: MW0610-5
Top PVC Elev: 431.53



Notes:
N/A - Not Applicable
HSA - Hollow Stem Auger
SAA - Same as Above
A PID with an 11.7 eV Lamp was used to screen soils

BORING LOG MW0610-5

(Page 1 of 1)

11-16-2011 J:\PROJECTS\N-xxx\N1000\N1011 - Garlock Site No. 3\EQuIS Database\Carbon Tet Area\MW06-10-5.bor

S&W REDEVELOPMENT

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N1011

BORING LOG MW0811-02

(Page 1 of 1)

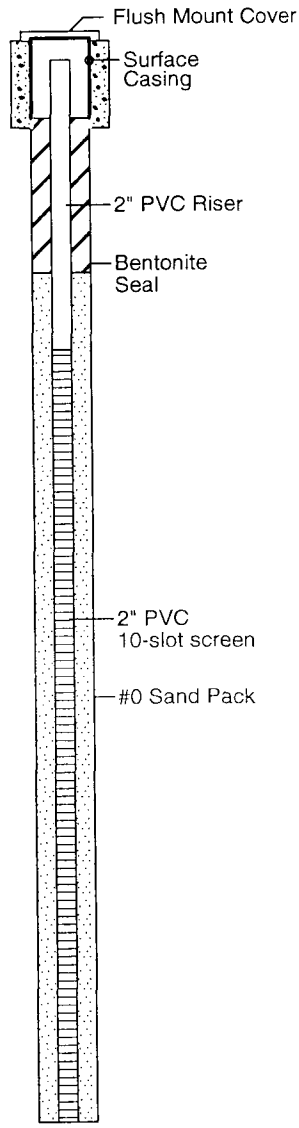
Date Started	: 8-2-2011
Time	: 12:40 pm
Date Completed	: 8-2-2011
TIme	: 2:30 pm
Drilling Contractor	: Zebra Envir.
Driller	: Joe

Total Boring Depth	: 14-ft bgs
Drilling Method	: Direct Push
Drilling Equipment	: Mini Track
Hammer Wt./Drop	: N/A
Sampling Method	: 4' Macrocore
Logged By	: IEM
Survey	: LaBella Assoc.
Boring Location	: Garlock
	: Carbon Tet. Area
	: Northeast part of grass area

Water Levels
▼ During Drilling
▽ After Drilling

Depth in Feet	Surf. Elev.	Recovery (inches)	DESCRIPTION	PID Reading (ppm)
0	435.77		Organic SOIL, Grass, Roots, Black	
1	434.77		Brown-Black FILL, Gravel, Sand, Brick, Concrete, Loose, Moist	
2	433.77	24		1.3
3	432.77			
4	431.77			
5	430.77			
6	429.77	24		1.2
7	428.77			
8	427.77		Black Fine-Medium SAND and GRAVEL, Loose, Saturated	
9	426.77			
10	425.77	24		498
11	424.77			
12	423.77			
13	422.77		SILT and CLAY, Med-Stiff, Saturated with a slight odor	
		24		409
14	421.77		End of Boring at Refusal	
15				

Monitoring Well: MW0811-02
Top PVC Elev: 435.55



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BORING LOG MW0811-02

(Page 1 of 1)

BORING LOG IW-1

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.69

Date Started	: 10/28/08
Time	: 1:00pm
Date Completed	: 10/28/08
TIme	: 3:45pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

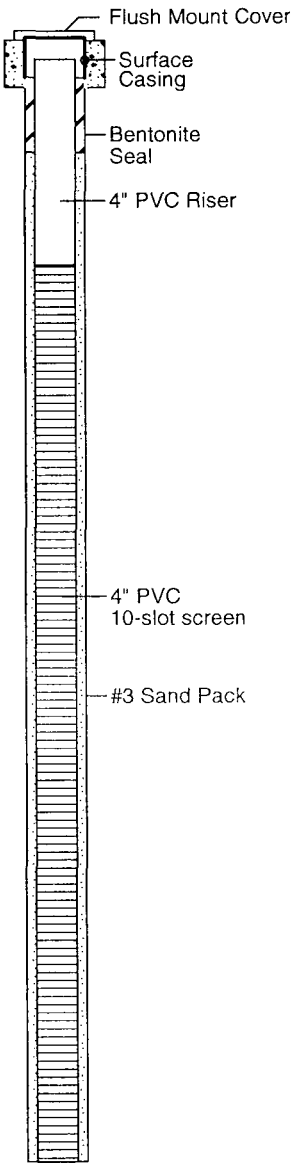
Total Boring Depth	: 15-ft bgs
Drilling Method	: 6-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: Southwest Toluene Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0–15			Samples not taken. See Boring Log MW-62. Hard material encountered	Petrol-like odor throughout

End of Boring

INJECTION WELL: IW-1
Top PVC Elev:



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BORING LOG IW-1

(Page 1 of 1)

BORING LOG IW-2

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.69

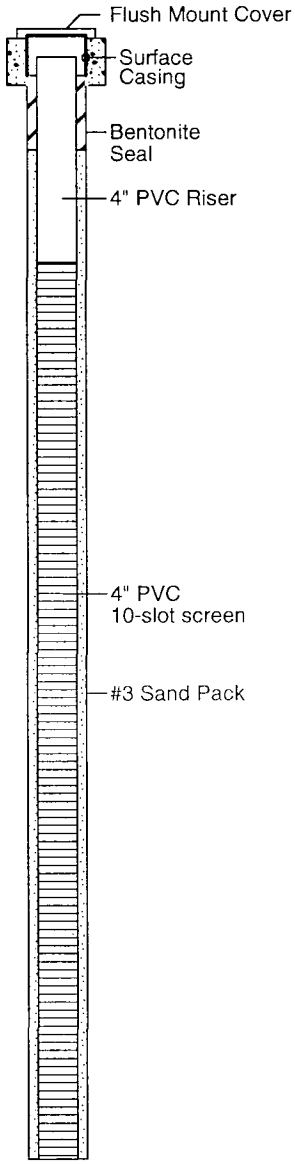
Date Started	: 10/28/08
Time	: 10:30am
Date Completed	: 10/28/08
TIme	: 12:00pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

Total Boring Depth	: 15-ft bgs
Drilling Method	: 6-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: Southwest Toluene Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0–15			Samples not taken. See Boring Log MW-26.	PID readings >10 ppm
14			Hard material encountered	
15			End of Boring	

INJECTION WELL: IW-2
Top PVC Elev:



NOTES: PID utilized: MiniRae 2000 calibrated to 100 Vppm isobutylene.

BORING LOG IW-2

(Page 1 of 1)

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BORING LOG IW-3

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.69

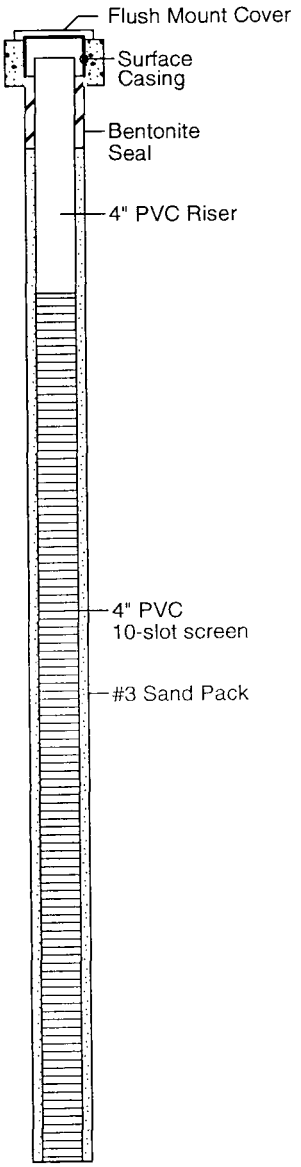
Date Started	: 10/28/08
Time	: 8:15am
Date Completed	: 10/28/08
TIme	: 10:00am
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

Total Boring Depth	: 15.5-ft bgs
Drilling Method	: 6-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: South-central Toluene Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0			Samples not taken. See Boring Log MW-26.	PID readings <0.5 ppm throughout cuttings
14			Hard material encountered.	
15				Drove spoon at 15', no recovery
16			End of Boring	

INJECTION WELL: IW-3
Top PVC Elev:



NOTES: PID utilized: MiniRae 2000 calibrated to 100 Vppm isobutylene.

BORING LOG IW-3

(Page 1 of 1)

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BORING LOG IW-4

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.69

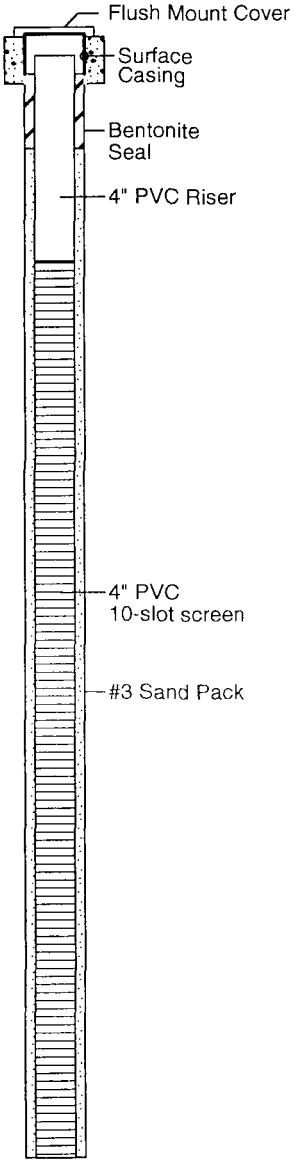
Date Started	: 10/27/08
Time	: 2:30pm
Date Completed	: 10/27/08
Time	: 4:00pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

Total Boring Depth	: 15-ft bgs
Drilling Method	: 6-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: Southeast Toluene Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0			Samples not taken. See Boring Log MW-61.	
14			Hard material encountered.	
15			End of Boring	

INJECTION WELL: IW-4
Top PVC Elev:



BORING LOG IW-4

(Page 1 of 1)

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BORING LOG IW-5

(Page 1 of 1)

Garlock Sealing Technologies, Gylon Site
1666 Division Street
Palmyra, New York

Job No. N6008.69

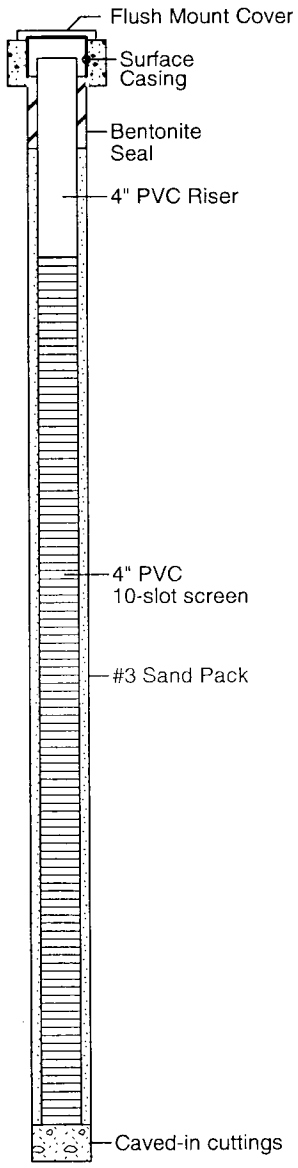
Date Started	: 10/27/08
Time	: 12:00pm
Date Completed	: 10/27/08
TIme	: 2:15pm
Drilling Contractor	: Parratt Wolff
Driller	: Doug T.

Total Boring Depth	: 15.5-ft bgs
Drilling Method	: 6-1/4" H.S. Auger
Drilling Equipment	: B57
Hammer Wt./Drop	: N/A
Sampling Method	: N/A
Logged By	: DJH
Survey	: LaBella
Boring Location	: Garlock
	: AOC-1
	: Southeast Toluene Area

Sample Condition
- No Recovery
- Recovery
- Not Sampled

Depth in Feet	Surf. Elev.	Sample	DESCRIPTION	REMARKS
0			Samples not taken. See Boring Log MW-61.	
1				
2				
3				
4				
5				
6				odor on cuttings beginning about 6-7'. Sheen on wet cuttings.
7				
8				
9				
10				
11				
12				
13				
14				
15				Hard material encountered at 15.5'
16			End of Boring	

INJECTION WELL: IW-5
Top PVC Elev:



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BORING LOG IW-5

(Page 1 of 1)

Appendix F
Groundwater Sampling Log

GROUNDWATER FIELD SAMPLING RECORD

S&W Redevelopment of NA, LLC

Site Identification: _____ **Date:** _____ **Job #** _____

Sampler(s): _____ **Sample ID:** _____

Well Information:

Depth of Well (Top of PVC): _____
Initial Static Water Level (Top of PVC): _____
Depth to LNAPL/DNAPL: _____
LNAPL/DNAPL *Thickness (inches)*: _____

Well Volume Calculation:

1 in. casing: _____ ft. of water X .041 = _____
2 in. casing: _____ ft. of water X .16 = _____

Evacuation Method:

Submersible: _____ Centrifugal: _____
Airlift _____ Pos. Displ.: _____
Bailer _____ Ded. *Pump* _____

Volume of Water Removed: _____ *gallons*
> 3 volumes: yes no
dry: yes no

Field Tests:

Sample Temp. _____ °C
pH: _____
Eh: _____ mV
Turbidity: _____ NTU
DO: _____ ml/L
Spec. Conductivity: _____ uS/cm

Sampling:

Time: _____

Sampling Method:

Stainless Bailer _____
Teflon Bailer _____
Pos. Disp. Pump _____
Dis. Bailer _____
Ded. Pump. _____
Other _____

Analyses:

Baseline _____
Routine _____
Other: _____

Observations:

Weather/Temperature: _____

Physical appearance and odor of Sample: _____

_____

_____

Comments: _____

_____

_____

Appendix G
Site Wide Inspection Form

APPENDIX H
GARLOCK SITE NO. 3 SITE INSPECTION FORM

Inspections should be done at a minimum of once a year.
More frequent inspections may be required in accordance with approved work plans in specific areas undergoing construction, and following any construction-related work that may expose site soils or affect the operation of the SSDS.
Inspections must be completed if an incident or accident occurs that may require corrective measures (i.e. damage to the SSDS or emergency actions that require soil removal).

Inspection Data Annually ☐ Construction ☐ Post-Construction ☐

Location:

Inspection Date:

Inspected By:

		Y or N	Comments or Problem Identified/Action Taken
1.	**Condition of pavement**: Are there areas of pavement where sub-soil is exposed?		
2.	**Conditions of concrete slab:** Is the concrete slab of the manufacturing facility intact? Are there cracks or gaps through which underlying soil is exposed?		
3.	**Sediment/Erosion Control**: Are erosion/storm water control devices in place in accordance with Stormwater Pollution Prevention Plan?		
4.	**Excavation/Backfill**: Has Excavation been completed in accordance with the site Excavation Work Plan?		
5.	**Stockpiled Materials**: Are temporary soil stockpiles or construction materials protected from erosion?		
6.	**Dust Control**: Have dust control measures been implemented as needed during the conduct of construction work?		
7.	**CAMP:** Has Community Air Monitoring been conducted in accordance with the CAMP?		
8.	**SSDS:** Has an inspection of the SSDS been completed?		

If current inspection is construction or post-construction, describe the nature of the construction project:
Has a Work Plan been prepared and approved by NYSDEC? Y____ N____

Attach photographs as appropriate

If the current inspection is due to an incident or accident, describe the nature of the incident/accident and the corrective measures being taken.
Note: A Corrective Measure Report will need to be submitted to the NYSDEC.

Attach photographs as appropriate

Appendix H
Quality Assurance Project Plan

[Sample Document]

Quality Assurance Project Plan (QAPP)
Brownfield Cleanup Program
Garlock Sealing Technologies
Site No. 3
Palmyra, New York

BCP Site # C859028

November 2011

S&W REDEVELOPMENT

Table of Contents

List of Tables

SECTION 1 - PROJECT DESCRIPTION

The Garlock Sealing Technologies (Garlock) Site No. 3 (the 'Site') is located at 1666 Division Street in the Town of Palmyra, County of Wayne, New York. The site occupies approximately 28 acres bounded by Red Creek to the north, Mud Creek to the south, a New York State DOT right-of-way to the east, and Garlock owned property to the west (BCP Site's No. 1 and No. 2). The site consists of several buildings, parking area, and grass covered surfaces. The site is owned by Garlock who uses the site to support its gasket manufacturing operations.

Garlock completed the investigation and remediation of the Site in the New York State Brownfield Cleanup Program (BCP) under agreement with the NYSDEC. Under the BCP, Site remedial activities must be completed in accordance with the NYSDEC's Department of Environmental Remediation (DER) DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC, May 2010). The NYSDEC has issued a Certificate of Completion which requires that a Site Management Plan (SMP) be developed and implemented for all future Site activities that may disturb Site soils and established media monitoring requirements. This Quality Assurance Project Plan (QAPP) describes quality assurance objectives and the methods that will be followed during the implementation of sample and data collection.

SECTION 2 - PROJECT ORGANIZATION

The organization of the project management team and areas of responsibility are presented below.

Project Principal	David Stoner.	Provide technical and administrative oversight and guidance throughout the project, assist in securing company resources, participate in technical review of deliverables, and attend key meetings as needed.
Principal Engineer	Brownfield Engineering Services, PLLC	Provide technical guidance and review of reports and analytical data. Will have key involvement in screening and development of remedial alternatives.
Project Manager	Donald Sorbello	Responsible for maintaining the day-to-day schedule for completing the fieldwork and deliverables according to schedule and for using proper field procedures.
Field Team Leader		Responsible for coordinating and directing field efforts of SWRNA staff and subcontractors.

SECTION 3 - QA/QC OBJECTIVES FOR MEASUREMENT OF DATA

Where NYSDOH Environmental Laboratory Approval Program (ELAP) Certification exists for a specific group or category of parameters, the laboratories performing analyses in connection with this project will have appropriate NYSDOH ELAP Certification. For analyses of samples where NYSDEC Analytical Services Protocol (NYSDEC-ASP, June 2000) Category B deliverables are required, NYSDOH ELAP certification is required.

Detection limits set by NYSDEC-ASP will be used for all sample analyses unless otherwise noted. If ASP-dictated detection limits prove insufficient to assess project goals (i.e. comparison to drinking water standards or attainment of ARARs), then ASP Special Analytical Services (SAS) or other appropriate methods will be utilized.

The quality assurance/quality control objectives for all measurement data include completeness, representativeness, comparability, precision, and accuracy.

COMPLETENESS

The analyses performed must be appropriate and inclusive. The parameters selected for analysis are chosen to meet the objectives of this study.

Completeness of the analyses will be assessed by comparing the number of parameters intended to be analyzed with the number of parameters successfully determined and validated. Data must meet QC acceptance criteria for 100 percent or more of requested determinations.

REPRESENTATIVENESS

Samples must be taken of the population and, where appropriate, the population will be characterized statistically to express the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process, or environmental condition.

Non-dedicated sampling devices will be cleaned between sampling points by washing and rinsing with pesticide-grade methanol, followed by a thorough rinse with distilled water. Specific cleaning techniques are described in the Field Sampling Procedure. Two types of blank samples will accompany each sample set where Target Compound List (TCL) volatiles are to be analyzed (water matrix only). A trip blank, consisting of a 40 ml VOA vial of organic-free water

prepared by the laboratory, will accompany each set of sample bottles from the laboratory to the field and back. This bottle will remain sealed throughout the shipment and sampling process. This blank will be analyzed for TCL volatile organic compounds along with the groundwater samples to ensure that contamination with TCL volatile compounds has not occurred during the bottle preparation, shipment, or sampling phase of the project. In order to check for contaminant carryover when non-dedicated sampling equipment is used, a rinse-ate blank will be submitted to the laboratory. This blank will also be analyzed for TCL volatile organic compounds. The TCL compounds are identified in the United States Environmental Protection Agency (USEPA) Contract Laboratory Program dated 7/85 or as periodically updated. Field activities are audited by the designated Quality Assurance Officer.

The analytical results obtained from the determination of identical parameters in field duplicate samples can be used to further assess the representativeness of the sample data.

COMPARABILITY

Consistency in the acquisition, preparation, handling and analysis of samples is necessary in order for the results to be compared where appropriate. Additionally, the results obtained from analyses of the samples will be compared with the results obtained in previous studies, if available.

To ensure the comparability of analytical results with those obtained in previous or future testing, all samples will be analyzed by NYSDEC-approved methods. The NYSDEC-ASP mandated holding times for various analyses will be strictly adhered to.

PRECISION AND ACCURACY

The validity of the data produced will be assessed for precision and accuracy. Analytical methods which will be used include gas chromatography/mass spectrometry (GC/MS), gas chromatography (GC), colorimetry, atomic spectroscopy, gravimetric and titrametric techniques. The following outlines the procedures for evaluating precision and accuracy, routine monitoring procedures, and corrective actions to maintain analytical quality control. All data evaluations will be consistent with NYSDEC-ASP procedures. Data will be 100 percent compliant with NYSDEC-ASP requirements.

The requirements of QA/QC are both method specific and matrix dependent. The procedures to be used are described on this basis in Sections 6 and 9. The number of duplicate, spiked, and blank samples analyzed will be dependent upon the total number of samples of each matrix to be analyzed, but there will be at least one split per matrix. The inclusion and frequency of analysis of field blanks and trip blanks will be on the order of one per each site. Samples to be analyzed for volatile organic compounds will be accompanied by trip and field blanks (water matrix).

Quality assurance audit samples will be prepared and submitted by the laboratory QA manager for each analytical procedure used. The degree of accuracy and the recovery of analyte to be expected for the analysis of QA samples and spiked samples is dependent upon the matrix, method of analysis, and compound or element being determined. The concentration of the analyte relative to the detection limit is also a major factor in determining the accuracy of the measurement. The lower end of the analytical range for most analyses is generally accepted to be five times the detection limit. At or above this level, the determination and spike recoveries for metals in water samples will be expected to range from 75 to 125 percent. The recovery of organic surrogate compounds and matrix spiking compounds determined by GC/MS will be compared to the guidelines for recovery of individual compounds as established by the United States Environmental Protection Agency Contract Laboratory Program dated 7/85 or as periodically updated.

The quality of results obtained for inorganic ion and demand parameters will be assessed by comparison of QC data with laboratory control charts for each test.

SECTION 4 - SAMPLING PROCEDURES

SAMPLING PROGRAM

The sampling program may include the collection of surface soil samples from the upper 2 inches of soil, a shallow subsurface soil sample (1' depth), sediment samples, subsurface soil samples from soil borings, groundwater samples from monitoring wells, soil vapor samples from soil vapor wells and/or sub-slab penetrations, and indoor air samples. QAPP Table 4-1 presents a summary of the sample matrices, analytical methods, containers, preservation requirements, duplicates, MS/MSDs, and holding times for the sampling program.

All sampling will be done using appropriate tools and equipment for the respective environmental media based on industry standard, and constructed of stainless steel, Teflon, or other appropriate inert or approved material acceptable to NYSDEC.

A. Surface Soil. Surface soil samples will be collected along a grid system. Exact locations will be as close to the grid system as possible, but field conditions may warrant deviations from the grid. To collect a surface soil sample, a shovel blade will be used to lift the top 2" of soil out of the ground at the chosen location. A representative sample of the surface soil will be taken from the uplifted material and place in a labeled sample jar. The surface soil samples will be exclusive of any vegetative or other type of ground cover. The shovel blade will be cleaned and decontaminated between sample locations, as will all other non-dedicated hand-held sampling equipment for the project, by scrubbing with an Alconox solution followed by a thorough distilled water rinse. An alternate decontamination method will be used for drill rig equipment, as indicated in Section D below (*Drilling/Subsurface Soil Sampling Procedures*).

Representative samples of the contained decontamination water may be field screened to determine the appropriate disposal method. Every effort will be made to minimize the generation of contaminated water.

B. Shallow Subsurface Soil: Shallow subsurface soil samples will be obtained using hand tools such as a hand auger to auger to the 1' depth. Once the auger has reached the 1' depth, a sample will be collected from the 6 inch to 1 foot interval and placed in the appropriate sample

container. The sample will be free of extraneous vegetation. The auger will be decontaminated prior to sample collection. The decontamination method will follow the same protocol outlined for surface soils.

C. Sediments: Samples of sediments will be collected from the upper six inches of sediment, using a spoon, trowel, or hand auger, depending on the depth of the water. All sampling equipment will be constructed of either stainless steel or Teflon and will be decontaminated prior to and after each sample collection.

Once the soil and sediment samples have been collected, they will be immediately transferred to the appropriate containers. The containerized samples will be placed in a cooler with ice.

D. Drilling/Subsurface Soil Sampling Procedures. Test borings shall be completed using the hollow stem auger drilling method or rotary drilling method to a depth specified by the representative of the qualified environmental professional.

For all subsurface soil samples, samples shall be collected continuously with two-foot sample intervals. The sampling method employed shall be ASTM D-1586/Split Barrel Sampling using a standard 2-foot long, 2-inch outside diameter split-spoon sampler with a 140-pound hammer. Each split spoon soil sample will be tested for volatiles in the field using a PID prior to removing the samples from the opened split spoon, to minimize off-gassing of VOCs caused by sample handling. VOC levels will be measured within ¼ inch of the collected soil sample as it sits in the split spoon immediately after the split spoon is opened.

All of the soil samples collected from the soil boring down to the water table will be placed in glass jars and labeled, stored in a cooler, and transported to the appropriate testing laboratory or storage facility. For the other five soil borings, the sample with the highest PID reading per boring will be placed in glass jars and labeled, stored in a cooler, and transported to the appropriate testing laboratory or storage facility. Chain-of-custody procedures will be practiced following Section 15, EPA-600/4-82-029, Handbook for Sampling and Sample Preservation of Water and Waste Waters.

A geologist will be on site during the drilling operations to fully describe each soil sample, following the New York State DOT Soil Description Procedure, and to retain representative portions of each sample.

The drilling contractor will be responsible for obtaining accurate and representative samples, informing the geologist of changes in drilling pressure, keeping a separate general log of soils encountered including blow counts [i.e., the number of blows from a soil sampling drive weight (140 pounds)] required to drive the split-spoon sampler in 6-inch increments and installing monitoring wells to levels directed by the supervising geologist following specifications further outlined in this protocol.

All drilling equipment and associated drill rig tools including augers, drill rods, sampling equipment, wrenches and any other equipment or tools that have come in contact with contaminated materials will be decontaminated before any drilling on site begins, between each well, and prior to removing any equipment from the site. As opposed to the Alconox/distilled water method described previously for decontaminating hand-held sampling equipment, the preferred decontamination procedure for heavy drill rig equipment will be to use a high pressure steam cleaner to remove soils and volatile organics from the equipment. The water used for this procedure will be contained and shall come from a controlled source, preferably a municipal drinking supply. Representative samples of the contained decontamination water and well development water will be screened in the field to determine the proper method of disposal. Every effort will be made to minimize the generation of contaminated water.

E. Monitoring Well Completion. Monitoring wells will be constructed of 10 feet of .010-inch slot size PVC well screen and riser casing that will extend from the screened interval to 2-3' below existing grade. Other materials utilized for completion will be washed silica sand (Q-Rock No. 4 or approved equivalent) bentonite grout, Portland cement, and a protective steel locking well casing and cap with locks. If the water table is less than 10' below the surface, a screen of 5' will be used, if possible. If the water table is less than five feet below the surface, the field geologist and drillers will determine in the field the best procedure for completing the boring as a monitoring well.

The monitoring well installation method for wells installed within unconsolidated sediments shall be to place the screen and riser assembly into the casing once the screen interval has been selected. At that time, a washed silica sand pack will be placed around the well screen if required to prevent screen plugging. If a sand pack is not warranted, the auger string will be pulled back to allow the native aquifer material to collapse 2 to 3 feet above the top of the screen.

Bentonite pellets will then be added to the annulus between the casing and the inside auger to insure proper sealing. Cement/bentonite grout will continue to be added during the extraction of the augers until the entire aquifer thickness has been sufficiently sealed off from horizontal and/or vertical flow above the screened interval. During placement of sand and bentonite pellets, frequent measurements will be made to check the height of the sand pack and thickness of bentonite layers by a weighted drop tape measure.

Protective stick-up casing shall be placed around the PVC pipe and secured by a locking cap and a protective Portland cement seal. The cement seal shall extend laterally at least 1 foot in all directions from the protective casing and shall slope gently away to drain water away from the well. A locking cap will be also be placed on the PVC pipe and locked with a padlock.

F. Well Development. All monitoring wells will be developed or cleared of all fine-grained materials and sediments that have settled in or around the well during installation so that the screen is transmitting representative portions of the groundwater. The development will be by one of two methods, pumping or bailing groundwater from the well until it yields relatively sediment-free water.

A decontaminated pump or dedicated bailer will be used and subsequently decontaminated after each use following procedures outlined in the Decontamination Protocol. If a dedicated bailer is used, no decontamination of the bailer is necessary.

Pumping or bailing will cease when the turbidity falls below 50 NTUs or until specific conductivity, pH, and temperature are stable (i.e., consecutive readings are within 10 percent with no overall upward or downward trends in measurements). The decision to stop well development at a turbidity level above 50 NTUs will be made only after consultation with the NYSDEC. Well development water will be disposed of on the ground surface at each well location or contained in drums, as conditions warrant.

G. Groundwater Sampling Program.

a. **Well Evacuation.** Prior to sampling a monitoring well, the static water level in all wells will be recorded and the wells evacuated to assure that the water in the well is representative of the groundwater. All well data will be recorded on a field sampling record. For shallow wells or deep wells with a relatively low static water level, evacuation will be accomplished by using a

stainless steel or dedicated bailer with a ball check valve at its lower end. A bladder may be used to evacuate the deeper wells at a rate of approximately 1 gallon per minute (gpm). Water samples to be analyzed for volatile and/or semi-volatile organics must be sampled by bailer.

b. **Sampling Procedure.** Groundwater samples will be collected using disposable dedicated polyethylene bailers with a ball check valve at the lower end. Incorporation of a check valve onto the bailers assures that a sample is representative of the depth to which the bailer is lowered. The bailer will be lowered during sample collection to an adequate depth to fill it below the water table, with care taken not to lower it too deep to minimize water column agitation and turbidity. Because the disposable dedicated bailers for each well will never have been used before, and will not be used again, decontamination of the bailers is not necessary. Sampling procedures are summarized in QAPP Table 4.2.

In addition to water samples collected from the monitoring wells, two types of "blanks" will be collected and submitted to the chemical laboratory for analyses. The blanks will consist of 40 ml VOA vials, as follows:

i. **Trip Blank**. A trip blank will be prepared before the sample bottles are sent by the laboratory. It consists of a sample of distilled, de-ionized water which accompanies the other sample bottles into the field and back to the laboratory. A trip blank will be included with each shipment of samples where sampling and analysis for TCL volatiles is planned (water matrix only). The trip blank will be analyzed for TCL volatile organic compounds as a measure of the internal laboratory procedures and their effect on the results.

ii. **Field (Wash) Blanks.** Field wash blanks are analyzed to check the effectiveness of decontamination. Each sample consists of distilled de-ionized water (prepared by the laboratory) poured through a decontaminated bailer or other sampling apparatus. It is usually collected as a last step in the decontamination procedure prior to sampling of a monitoring well. The wash blank can be analyzed for all or some of the compounds which the subsequent monitoring well sample is scheduled for. If dedicated bailers are used, the field wash blank is not necessary.

H. Soil Vapor Sampling.

a. **Well Evacuation.** Prior to sampling a soil vapor well, the wells will be evacuated to assure that the soil vapor in the well is representative of the soil vapor and that no groundwater is

present in the soil vapor well tubing.

b. **Sampling Procedures.** Soil vapor sampling will be conducted in accordance with the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York." In general, soil vapor samples should be collected following these techniques:

- samples must be collected no sooner than 24 hours after the installation of permanent soil vapor wells;
- three volumes should be purged from the well tubing prior to sampling;
- flow rates for purging and sampling should not exceed 0.2 liters per minute;
- samples must be collected into certified clean containers that are appropriate for the required analysis; and
- a tracer gas should be used when collecting samples to ensure that samples are not diluted by outdoor air.

I. Indoor Air Sampling.

Indoor air samples should be collected in accordance with the most recent NYSDOH "Indoor Air Sampling & Analysis Guidance." In general, indoor air samples should be collected following these techniques:

- sampling duration should reflect the exposure scenario being evaluated (e.g. an 8 hour sample from a workplace with a single shift versus a 24 hour sample from a workplace with multiple shifts);
- samples should not be collected for a duration of less than 1 hour;
- sample flow rate must conform to the specifications of the sample collection method, and should match flow rates of concurrent outdoor and/or sub-slab samples; and
- samples must be collected into certified clean containers that are appropriate for the required analysis.

SAMPLE PRESERVATION AND SHIPMENT

Since all bottles will contain the necessary preservatives as shown in QAPP Table 4.1, they need only be filled. The 40 ml VOA vials must be filled brim full with no air bubbles. The other bottles should be filled to within about 1 inch from the top.

The bottles will be sent from the laboratory in coolers which will be organized on a per site basis. Following sample collection, the bottles should be placed on ice in the shipping cooler. The samples will be cooled to 39.4 °F (4°C), but not frozen. Unless the outside temperature is below 32°F (0°C), the coolers will be pre-cooled with ice by the field geologist prior to arrival onsite.

Final packing and shipment of coolers will be performed in accordance with guidelines outlined in the "User's Guide to the CLP".

SECTION 5 - SAMPLE CUSTODY

The program for sample custody and sample transfer is in compliance with the NYSDEC-ASP, as periodically updated. If samples may be needed for legal purposes, chain-of-custody procedures, as defined by *NEIC Policies and Procedures* (USEPA-330/9-78-001-R, Revised June 1988) will be used. Sample chain-of-custody is initiated by the laboratory with selection and preparation of the sample containers. To reduce the chance for error, the number of personnel handling the samples should be minimized.

FIELD SAMPLE CUSTODY

A chain-of-custody record accompanies the sample from initial sample container selection and preparation at the laboratory, shipment to the field for sample containment and preservation, and return to the laboratory. Two copies of this record follow the samples to the laboratory. The laboratory maintains one file copy and the completed original is returned to the site inspection team. Individual sample containers provided by the laboratory are used for shipping samples. The shipping containers are insulated and chemical or ice water is used to maintain samples at approximately 4°C (39.4° F) until samples are returned and in the custody of the laboratory. All sample bottles within each shipping container are individually labeled and controlled. Samples are to be shipped to the laboratory within 24-48 hours of the day of collection.

Each sample shipping container is closed and sealed. This seal must be broken to open the container. Tampering is possible if the seal is broken before receipt at the laboratory. The laboratory will contact the site investigation team leader and the sample will not be analyzed if tampering is apparent.

LABORATORY SAMPLE CUSTODY

The site investigation team leader or Project Quality Assurance Officer notifies the laboratory of upcoming field sampling activities and the subsequent transfer of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

The laboratory sample program meets the following criteria:

1. The laboratory has designated a sample custodian who is responsible for maintaining custody of the samples and for maintaining all associated records documenting that custody.

2. Upon receipt of the samples, the custodian will check the original chain-of-custody documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian signs the chain-of-custody record and records the date and time received.

3. Care is exercised to annotate any labeling or descriptive errors. In the event of a discrepancy in the documentation, the laboratory will immediately contact the site investigation team leader as part of the corrective action process. A qualitative assessment of each sample container is performed to note any anomalies, such as broken or leaking bottles. This assessment is recorded as part of the incoming chain-of-custody procedure.

4. The samples are stored in a secured area at a temperature of approximately 4°C (39.4° F) until analyses are to commence.

5. A laboratory chain-of-custody record accompanies the sample or sample fraction through final analysis for control.

6. A copy of the chain-of-custody form will accompany the laboratory report and will become a permanent part of the project records.

FINAL EVIDENCE FILES

Final evidence files include all originals of laboratory reports and are maintained under documented control in a secure area.

A sample or an evidence file is under custody if:

- It is in your possession; it is in your view, after being in your possession.
- It was in your possession and you placed it in a secure area.
- It is in a designated secure area.

SECTION 6 - CALIBRATION PROCEDURES

Instruments and equipment used to gather, generate or measure environmental data will be calibrated with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the appropriate manufacturer's specifications or project specific requirements. The procedures for instrument calibration, calibration verification, and the frequency of calibrations are described in the NYSDEC-CLP. The calibration of instruments used for the determination of metals will be as described in the appropriate CLP standard operating procedures.

Calibration of other instruments required for measurements associated with these analyses will be in accordance with the manufacturer's recommendations and the standard operating procedures of the laboratory.

SECTION 7 - ANALYTICAL PROCEDURES

Analytical procedures shall conform to the most recent revision of the NYSDEC-ASP and are summarized on Table 7.1. In the absence of USEPA or NYSDEC guidelines, appropriate procedures shall be submitted for approval by NYSDEC prior to use.

The procedures for the sample preparation and analysis for organic compounds are as specified in the NYSDEC-ASP. Analytical cleanups are mandatory where matrix interferences are noted. No sample shall be diluted any more than 1 to 5. The sample shall be either extracted again, sonicated again, stream distilled again, etc. or be subjected to any one analytical cleanup noted in SW846 or a combination thereof. The analytical laboratory shall expend such effort and discretion to demonstrate good laboratory practice and demonstrate an attempt to best achieve the method detection limit.

VOLATILE ORGANICS (VOA)

For the analysis of water samples for Target Compound List (TCL), volatile organic compounds (VOCs), no sample preparation is required. The analytical procedure for volatiles is detailed in NYSDEC-ASP (Volume I, Section D-I). A measured portion of the sample is placed in the purge and trap apparatus and the sample analysis is performed by gas chromatography/mass spectrometry for the first round. USEPA Methods 8010 or 8020 (gas chromatography with different detectors) will be used if subsequent rounds with lower limits of detection are warranted. Air analysis will be complete by EPA Method TO-15 (gas chromatography/mass spectrometry).

SEMI-VOLATILE ORGANIC COMPOUNDS

The extraction and analytical procedures used for preparation of water, soil and sediment samples for the analysis of the TCL semi-volatile organic compounds are described in NYSDEC-ASP Volume I, Section D-III.

Instrument calibration, compound identification, and quantitation are performed as described in Section 6 of this document and in the NYSDEC-ASP.

PESTICIDE AND PCB COMPOUNDS

The sample preservation procedures for gas chromatography for pesticides and PCBs will be as described in the NYSDEC-ASP methods (Section D-IV). The analysis of standard mixes, blanks and spiked samples will be performed at the prescribed frequency with adherence to the 72-hour requirement described in the method.

METALS

Water, soil and sediment samples will be analyzed for the metals listed in Table 7.2. The detection limits for these metals are as specified in the NYSDEC-ASP, Section D-V. The instrument detection limits will be determined using calibration standards and procedures specified in the NYSDEC-ASP. The detection limits for individual samples may be higher due to the sample matrix. The procedures for these analyses will be as described in the NYSDEC-ASP.

The digestion procedures for water samples are not recommended for samples requiring analysis for mercury, arsenic or selenium. The aliquot of sample analyzed for As and Se will be prepared using methods described in USEPA Methods 200.7. Analysis for mercury requires a separate digestion procedure (245.1 or 245.2).

The analyses for metals will be performed by atomic absorption spectroscopy (AAS), inductively coupled plasma emission spectroscopy (ICP-ES), or inductively coupled plasma mass spectrometry (ICP-MS), as specified in the ASP with regard to AAS flame, ICP-ES, or ICP-MS analysis.

SITE SPECIFICITY OF ANALYSES

Work plans prepared for remedial investigation waste sites contain recommendations for the chemical parameters to be determined for each site. Thus, some or all of the referenced methods will apply to the analysis of samples collected at the individual waste sites. Analyses of Target Compound List (TCL) analytes will be performed on all samples.

SECTION 8 - INTERNAL QUALITY CONTROL

QUALITY ASSURANCE BATCHING

Each set of samples will be analyzed concurrently with blanks, matrix spikes, surrogate spikes and replicate at the frequency described in the NYSDEC-ASP.

ORGANIC STANDARDS AND SURROGATES

All standard and surrogate compounds are checked by the method of mass spectrometry for correct identification and gas chromatography for degree of purity and concentration. When the compounds pass the identity and purity tests, they are certified for use in standard and surrogate solutions. Concentrations of the solutions are checked for accuracy before release for laboratory use. Standard solutions are replaced monthly or earlier based upon indications of deterioration.

ORGANIC BLANKS, SPIKED BLANK AND MATRIX SPIKE

Analysis of blank samples verifies that the analytical method does not introduce contaminants. The blank water can be generated by reverse osmosis and Super-Q filtration systems, or distillation of water containing $KMnO_4$. The spiked blank is generated by addition of standard solutions to the blank water. The matrix spike is generated by addition of standard solutions to the blank water. The matrix spike is generated by addition of surrogate standard to each sample.

TRIP AND FIELD BLANKS

Trip blanks and field blanks will be utilized in accordance with the specifications in Section 4 of this QA/QC Project Plan. These blanks will be analyzed to provide a check on sample bottle preparation and to evaluate the possibility of atmospheric or cross contamination of the samples.

TABLE 4.1
SAMPLE CONTAINERIZATION

Analysis	EPA Method	Bottle Type and Size	No. of containers	Preservative	Holding Time
Soil and Sediment					
TCL VOCs	8260	2 oz. glass soil jar	1	None	7 days until extraction 40 days after extraction
TCL SVOCs	8270	8 oz. glass soil jar	1	None	7 days until extraction 40 days after extraction
PCBs	8082	8 oz. glass soil jar	1	None	7 days until extraction 40 days after extraction
TAL Metals	6010 7471	8 oz. glass soil jar	1	None	6 months
Pesticides	8081A	8 oz. glass soil jar	1	None	7 days until extraction 40 days after extraction
Total Organic Carbon (Seds only)	8081A	8 oz. glass soil jar	1	None	7 days until extraction 40 days after extraction

All of the above except VOCs may be collected together in a single 8 oz. jar.
All containers must be labeled with the sample number, location, date, and time collected.
All samples must be chilled to 4°C (39.4°F).

Analysis	EPA Method	Bottle Type and Size	No. of containers	Preservative	Holding Time
Water					
TCL VOCs	8260	40 ml VOC vial	1	HCl	7 days until extraction 40 days after extraction
TCL SVOCs	8270	1-liter amber bottle	2	None	7 days until extraction 40 days after extraction
PCBs	8082	1-liter amber bottle	2	None	7 days until extraction 40 days after extraction
TAL Metals	6010 7470	500 ml plastic jar	1	HNO_3	6 months
Pesticides	8081A	1-liter amber bottle	2	None	7 days until extraction 40 days after extraction
Duplicate	One duplicate and one MS/MSD shall be collected for each parameter.				
MS/MSD	MS/MSD shall be labeled with the well number, location, date, and time of collection. Duplicate shall be identifed only as "Duplicate."				

SVOCs, PCBs, and Pesticides may be collected together in 3 1-liter amber bottles.
Duplicate will require three (3) additional 1-liter amber bottles.
All samples must be chilled to 4°C (39.4°F).
All containers except the duplicate must be labeled with the sample number, location, date, and time of collection.

TABLE 4.2

SAMPLING PROCEDURE FOR MONITORING WELLS

1. Initial static water level recorded with an electric contact probe accurate to the nearest 0.1 foot.
2. Sampling device and electric contact probe decontaminated.
   - Sampling device and probe are rinsed with pesticide-grade methanol and distilled water.
   - Methanol is collected into a large funnel which empties into a five- gallon container.
3. Sampling device lowered into well.
   - Bailer lowered by dedicated PVC or polypropylene line.
4. Sample taken.
   - Sample is poured slowly from the open end of the bailer and the sample bottle tilted so that aeration and turbulence are minimized.
   - Duplicate sample is collected when appropriate.
5. Samples are capped, labeled and placed in laboratory coolers with ice packs or bagged ice.
6. All equipment is cleaned with successive rinses of pesticide-grade methanol and distilled water.
   - Dedicated line is disposed of or left at well site.
7. Equipment/wash blanks are collected when non-dedicated sampling equipment is used.
8. Chain-of-custody forms are completed in triplicate.
   - The original and one carbon copy are put into a zip-lock bag and placed into the cooler. The original will be returned following sample analysis.
   - A second carbon copy is kept on file.
9. Cooler is sealed with strapping tape and chain-of-custody seals to assure integrity and to prevent tampering of sample.

TABLE 7.1

PROPOSED METHOD DETECTION LIMITS AND
ANALYTICAL METHODS
ASP IN-ORGANICS, ASP VOLATILES, ASP SEMI-VOLATILES.
ASP PESTICIDES, AND PCBS

Superfund Target Compound List (TCL) and Contract-Required Quantitation Limit

SECTION 1 - ASP IN-ORGANICS
Method: NYSDEC-ASP, June 2000

PARAMETER		CONTRACT-REQUIRED DETECTION LEVEL* (µg/l)
1.	Aluminum	200
2.	Antimony	60
3.	Arsenic	10
4.	Barium	200
5.	Beryllium	5
6.	Cadmium	5
7.	Calcium	5000
8.	Chromium	10
9.	Cobalt	50
10.	Copper	25
11.	Iron	100
12.	Lead	3
13.	Magnesium	5000
14.	Manganese	15
15.	Mercury	0.2
16.	Nickel	40
17.	Potassium	5000
18.	Selenium	5
19.	Silver	10
20.	Sodium	5000
21.	Thallium	10
22.	Vanadium	50
23.	Zinc	20
24.	Cyanide	10

*Matrix: groundwater. For soil matrix, multiply CRDL by 100.

TABLE 7.1 (continued)

SECTION I - ASP ORGANICS
Method: NYSDEC-ASP, June 2000

	VOLATILE	PROPOSED METHOD DETECTION LIMITS (µg/l)*
1.	Chloromethane	1
2.	Bromomethane	1
3.	Vinyl chloride	1
4.	Chloroethane	1
5.	Methylene chloride	1
6.	Acetone	1
7.	Carbon disulfide	1
8.	1,1-Dichloroethylene	1
9.	1,1-Dichloroethane	1
10.	1,2-Dichloroethylene (total)	1
11.	Chloroform	1
12.	1,2-Dichloroethane	1
13.	2-Butanone	1
14.	1,1,1-Trichloroethane	1
15.	Carbon tetrachloride	1
16.	Bromodichloromethane	1
17.	1,1,2,2-Tetrachloroethane	1
18.	1,2-Dichloropropane	1
19.	cis-1,3-Dichloropropene	1
20.	Trichloroethene	1
21.	Dibromochloromethane	1
22.	1,1,2-Trichloroethane	1
23.	Benzene	1
24.	Trans-1,3-Dichloropropene	1
25.	Bromoform	1
26.	2-Hexanone	1
27.	4-Methyl-2-pentanone	1
28.	Tetrachloroethylene	1
29.	Toluene	1
30.	Chlorobenzene	1
31.	Ethylbenzene	1
32.	Styrene	1
33.	Total xylenes	1

*Quantitation limit for medium-level soil is 1200 µg/kg (wet weight basis).

TABLE 7.1 (continued)

SECTION I - ASP ORGANICS
Method: NYSDEC-ASP, June 2000

	SEMI-VOLATILES	CONTRACT-REQUIRED QUANTITATION LIMIT (µg/l)
34.	Phenol	10
35.	Bis(2-chloroethyl) ether	10
36.	2-Chlorophenol	10
37.	1,3-Dichlorobenzene	10
38.	1,4-Dichlorobenzene	10
39.	1,2-Dichlorobenzene	10
40.	2-Methylphenol	10
41.	2,2' oxybis(1-Chloropropane)	10
42.	4-Methylphenol	10
43.	N-Nitroso-dipropylamine	10
44.	Hexachloroethane	10
45.	Nitrobenzene	10
46.	Isophorone	10
47.	2-Nitrophenol	10
48.	2,4-Dimethylphenol	10
49.	bis(2-Chloroethoxy) methane	10
50.	2,4-Dichlorophenol	10
51.	1,2,4-Trichlorobenzene	10
52.	Naphthalene	10
53.	4-Chloroaniline	10
54.	Hexachlorobutadiene	10
55.	4-Chloro-3-methylphenol	10
56.	2-Methylnaphthalene	10
57.	Hexachlorocyclopentadiene	10
58.	2,4,6-Trichlorophenol	10
59.	2,4,5-Trichlorophenol	25
60.	2-Chloronaphthalene	10
61.	2-Nitroaniline	25
62.	Dimethyl phthalate	10
63.	Acenaphthylene	10
64.	2,6-Dinitrotoluene	10
65.	3-Nitroaniline	25
66.	Acenaphthene	10
67.	2,4-Dinitrophenol	25

TABLE 7.1 (continued)

SECTION I - ASP ORGANICS
Method: NYSDEC-ASP, June 2000

	SEMI-VOLATILES	CONTRACT-REQUIRED QUANTITATION LIMIT (µg/l)
68.	4-Nitrophenol	25
69.	Dibenzofuran	10
70.	Dinitrotoluene	10
71.	Diethylphthalate	10
72.	4-Chlorophenyl phenyl ether	10
73.	Fluorene	10
74.	4-Nitroanile	25
75.	4,6-Dinitro-2-methylphenol	25
76.	N-nitrosodiphenylamine	10
77.	4-Bromophenyl phenyl ether	10
78.	Hexachlorobenzene	10
79.	Pentachlorophenol	25
80.	Phenanthrene	10
81.	Anthracene	10
82.	Carbazole	10
83.	Di-n-butyl phthalate	10
84.	Fluoranthene	10
85.	Pyrene	10
86.	Butyl benzyl phthalate	10
87.	3,3'-Dichlorobenzidine	10
88.	Benz(a) anthracene	10
89.	Chrysene	10
90.	bis(2-ethylhexyl)phthalate	10
91.	Di-n-octyl phthalate	10
92.	Benzo(b)fluoranthene	10
93.	Benzo(k)fluoranthene	10
94.	Benzo(a)pyrene	10
95.	Indeno(1,2,3-cd)pyrene	10
96.	Dibenz(a,h)anthracene	10
97.	Benzo(g,h,i)perylene	10

TABLE 7.1 (continued)

SECTION I - ASP ORGANICS
Method: NYSDEC-ASP, June 2000

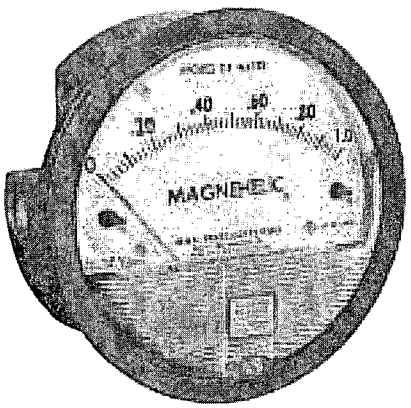
	PESTICIDES/PCBS	CONTRACT-REQUIRED QUANTITATION LIMIT (µg/l)
98.	alpha-BHC	0.05
99.	beta-BHC	0.05
100.	delta-BHC	0.05
101.	gamma-BHC (lindane)	0.05
102.	Heptachlor	0.05
103.	Aldrin	0.05
104.	Heptachlor epoxide	0.05
105.	Endosulfan I	0.05
106.	Dieldrin	0.10
107.	4,4'-DDE	0.10
108.	Endrin	0.10
109.	Endosulfan II	0.10
110.	4,4'-DDD	0.10
111.	Endosulfan sulfate	0.10
112.	4,4'-DDT	0.10
113.	Methoxychlor	0.5
114.	Endrin ketone	0.10
115.	Endrin aldehyde	0.10
116.	alpha-Chlordane	0.05
117.	gamma-Chlordane	0.05
118.	Toxaphene	5.0
119.	AROCLOR-1016	1.0
120.	AROCLOR-1221	1.0
121.	AROCLOR-1232	1.0
122.	AROCLOR-1242	1.0
123.	AROCLOR-1248	1.0
124.	AROCLOR-1254	1.0
125.	AROCLOR-1260	1.0

Appendix I
SSDS Manufacturers Information

BULLETIN NO. **A-27**

Magnehelic® Differential Pressure Gage

OPERATING INSTRUCTIONS



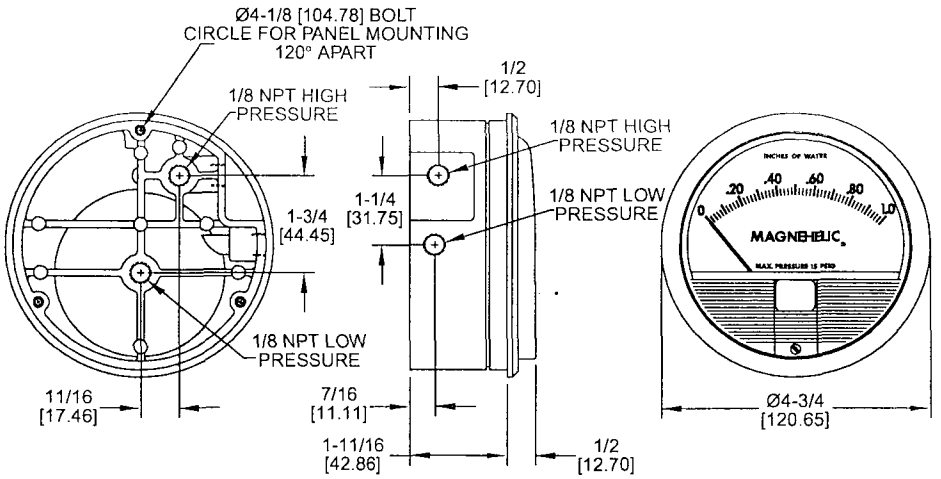
SPECIFICATIONS

Dimensions: 4-3/4" dia. x 2-3/16" deep.
Weight: 1 lb. 2 oz.
Finished: Baked dark gray enamel.
Connections: 1/8" NPT high and low pressure taps, duplicated, one pair side and one pair back.
Accuracy: Plus or minus 2% of full scale, at 70°F. (Model 2000-0, 3%; 2000-00, 4%).
Pressure Rating: 15 PSI (0,35 bar)
Ambient Temperature Range: 20° to 140°F (-7 to 60°C).
Standard gage accessories include two 1/8" NPT plugs for duplicate pressure taps, two 1/8" NPT pipe thread to rubber tubing adapters, and three flush mounting adapters with screws.

Caution: For use with air or compatible gases only.

For repeated over-ranging or high cycle rates, contact factory.

Not for use with Hydrogen gas. Dangerous reactions will occur.



DWYER INSTRUMENTS, INC.
P.O. BOX 373 • MICHIGAN CITY, INDIANA 46361 U.S.A.
Phone: 219/879-8000 www.dwyer-inst.com
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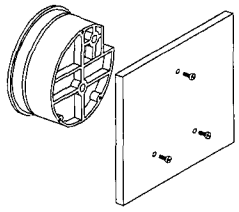
Lit-by-Fax: 888/891-4963

MAGNEHELIC® INSTALLATION

1. Select a location free from excessive vibration and where the ambient temperature will not exceed 140°F. Also, avoid direct sunlight which accelerates discoloration of the clear plastic cover. Sensing lines my be run any necessary distance. Long tubing lengths will not affect accuracy but will increase response time slightly. Do not restrict lines. If pulsating pressures or vibration cause excessive pointer oscillation, consult the factory for ways to provide additional damping.

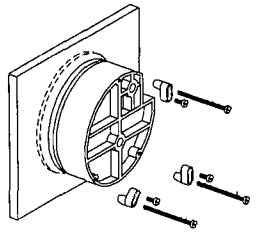
2. All standard Magnehelic gages are calibrated with the diaphragm vertical and should be used in that position for maximum accuracy. If gages are to be used in other than vertical position, this should be specified on the order. Many higher range gages will perform within tolerance in other positions with only rezeroing. Low range Model 2000-00 and metric equivalents must be used in the vertical position only.

3. Surface Mounting



Locate mounting holes, 120° apart on a 4-1/8" dia. circle. Use No. 6-32 machine screws of appropriate length.

4. Flush Mounting



Provide a 4-9/16" dia. opening in panel. Insert gage and secure in place with No. 6-32 machine screws of appropriate length, with adapters, firmly secured in place. To mount gage on 1-1/4"-2" pipe, order optional A-610 pipe mounting kit.

5. To zero the gage after installation

Set the indicating pointer exactly on the zero mark, using the external zero adjust screw on the cover at the bottom. Note that the zero check or adjustment can only be made with the high and low pressure taps both open to atmosphere.

Operation

Positive Pressure: Connect tubing from source of pressure to either of the two high pressure ports. Plug the port not used. Vent one or both low pressure ports to atmosphere.

Negative Pressure: Connect tubing from source of vacuum or negative pressure to either of the two low pressure ports. Plug the port not used. Vent one or both high pressure ports to atmosphere.

Differential Pressure: Connect tubing from the greater of two pressure sources to either high pressure port and the lower to either low pressure port. Plug both unused ports.

When one side of the gage is vented in dirty, dusty atmosphere, we suggest an A-331 Filter Vent Plug be installed in the open port to keep inside of gage clean.

A. For portable use of temporary installation use 1/8" pipe thread to rubber tubing adapter and connect to source of pressure with rubber or Tygon tubing.

B. For permanent installation, 1/4" O.D., or larger, copper or aluminum tubing is recommended. See accessory bulletin S-101 for fittings.

Ordering Instructions:

When corresponding with the factory regarding Magnehelic® gage problems, be sure to include model number, pressure range, and any special options. Field repair is not recommended; contact the factory for repair service.

MAINTENANCE

Maintenance: No lubrication or periodic servicing is required. Keep case exterior and cover clean. Occasionally disconnect pressure lines to vent both sides of gage to atmosphere and re-zero. Optional vent valves, (bulletin S-101), should be used in permanent installations.

Calibration Check: Select a second gage or manometer of known accuracy and in an appropriate range. Using short lengths of rubber or vinyl tubing, connect the high pressure side of the Magnehelic gage and the test gage to two legs of a tee. Very slowly apply pressure through the third leg. Allow a few seconds for pressure to equalize, fluid to drain, etc., and compare readings. If accuracy unacceptable, gage may be returned to factory for recalibration. To calibrate in the field, use the following procedure.

Calibration:

1. With gage case, held firmly, loosen bezel, by turning counterclockwise. To avoid damage, a canvas strap wrench or similar tool should be used.
2. Lift out plastic cover and "O" ring.
3. Remove scale screws and scale assembly. Be careful not to damage pointer.
4. The calibration is changed by moving the clamp. Loosen the clamp screw(s) and move slightly toward the helix if gage is reading high, and away if reading low. Tighten clamp screw and install scale assembly.
5. Place cover and O-ring in position. Make sure the hex shaft on inside of cover is properly engaged in zero adjust screw.
6. Secure cover in place by screwing bezel down snug. Note that the area under the cover is pressurized in operation and therefore gage will leak if not properly tightened.
7. Zero gage and compare to test instrument. Make further adjustments as necessary.

Caution: If bezel binds when installing, lubricate threads sparingly with light oil or molybdenum disulphide compound.

Warning: Attempted field repair may void your warrenty. Recalibration or repair by the user is not recommended. For best results, return gage to the factory. Ship prepaid to:

Dwyer Instruments, Inc.

Attn: Repair Dept.

102 Indiana Highway 212

Michigan City, IN 46360

Trouble Shooting Tips:

•*Gage won't indicate or is sluggish.*

1. Duplicate pressure port not plugged.
2. Diaphragm ruptured due to overpressure.
3. Fittings or sensing lines blocked, pinched, or leaking.
4. Cover loose or "O"ring damaged, missing.
5. Pressure sensor, (static tips, Pitot tube, etc.) improperly located.
6. Ambient temperature too low. For operation below 20°F, order gage with low temperature, (LT) option.

•Pointer stuck-gage can't be zeroed.

1. Scale touching pointer.
2. Spring/magnet assembly shifted and touching helix.
3. **Metallic particles clinging to magnet and interfering with helix movement.**
4. Cover zero adjust shaft broken or not properly engaged in adjusting screw.

We generally recommend that gages needing repair be returned to the factory. Parts used in various sub-assemblies vary from one range of gage to another, and use of incorrect components may cause improper operation. After receipt and inspection, we will be happy to quote repair costs before proceeding.

Consult factory for assistance on unusual applications or conditions.

Use with air or compatible gases only.

Printed in U.S.A. 4/01 FR# 12-440212-00 Rev. 3

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MAINTENANCE

Maintenance: No lubrication or periodic servicing is required. Keep case exterior and cover clean. Occasionally disconnect pressure lines to vent both sides of gage to atmosphere and re-zero. Optional vent valves, (bulletin S-101), should be used in permanent installations.

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4. The calibration is changed by moving the clamp. Loosen the clamp screw(s) and move slightly toward the helix if gage is reading high, and away if reading low. Tighten clamp screw and install scale assembly.
5. Place cover and O-ring in position. Make sure the hex shaft on inside of cover is properly engaged in zero adjust screw.
6. Secure cover in place by screwing bezel down snug. Note that the area under the cover is pressurized in operation and therefore gage will leak if not properly tightened.
7. Zero gage and compare to test instrument. Make further adjustments as necessary.

Caution: If bezel binds when installing, lubricate threads sparingly with light oil or molybdenum disulphide compound.

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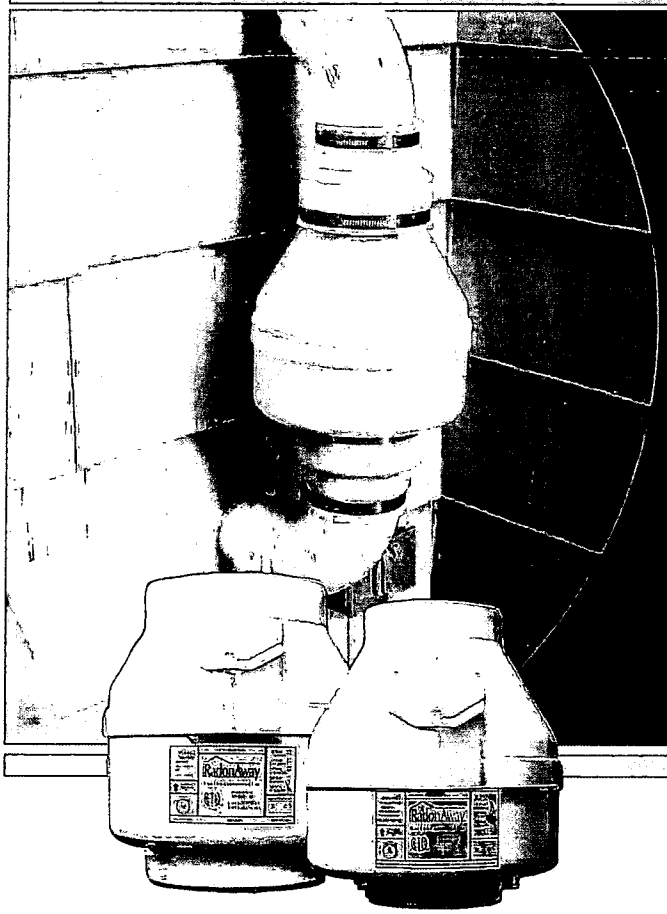
RadonAway™
The World's Leading Radon Fan Manufacturer

XP/XR Series

XP201
Bldg 17



Radon Mitigation Fans

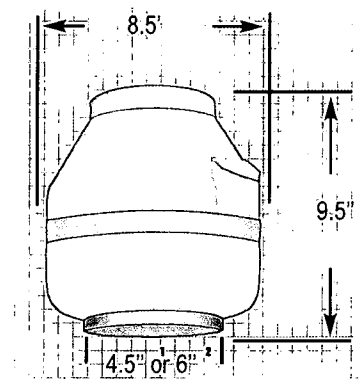
All RadonAway fans are specifically designed for radon mitigation. XP/XR Series Fans provide superb performance, run ultra-quiet and are attractive. They are ideal for most sub-slab radon mitigation systems.

Features:

- Five-year hassle-free warranty
- Quiet and attractive
- Thermally protected
- ETL Listed - for indoor or outdoor use
- Meets all electrical code requirements
- Rated for commercial and residential use

Model	Watts	Max. Pressure "WC	Typical CFM vs. Static Pressure WC			
			0"	.5"	1.0"	1.5"
XP151	45-60	1.6	180	140	80	10
XP201	45-66	1.9	150	110	74	38
XR261	65-105	1.8	250	185	115	50

Choice of model is dependent on building characteristics including sub-slab materials and should be made by a radon professional.



1 - XP151, XP201
2 - XR261

For Further Information Contact:

01/10
P/N 02003

XP 201
Bldg 17

RadonAway

RadonAway Ward Hill, MA IN014 Rev F

XP/GP/XR Series Fan Installation Instructions

Please Read And Save These Instructions.

DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED. MAKE SURE ELECTRICAL SERVICE TO FAN IS LOCKED IN "OFF" POSITION. DISCONNECT POWER BEFORE SERVICING FAN.

1. **WARNING!** Do not use fan in hazardous environments where fan electrical system could provide ignition to combustible of flammable materials.

2. **WARNING!** Do not use fan to pump explosive or corrosive gases.

3. **WARNING!** Check voltage at the fan to insure it corresponds with nameplate.

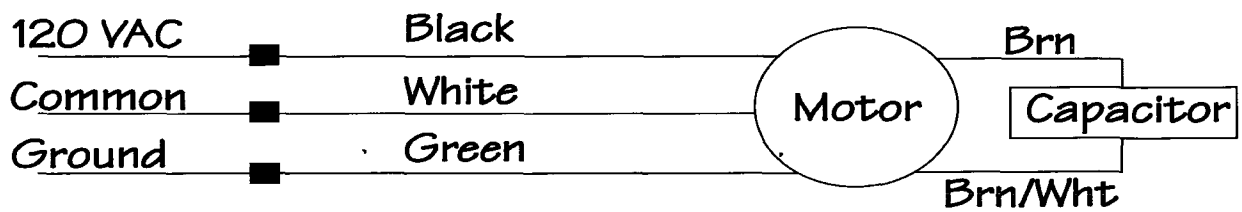
4. **WARNING!** Normal operation of this device may affect the combustion airflow needed for safe operation of fuel burning equipment. Check for possible backdraft conditions on all combustion devices after installation.

5. **NOTICE!** There are no user serviceable parts located inside the fan unit. **Do NOT attempt to open.** Return unit to the factory for service.

6. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician.

7. **WARNING!** Do not leave fan unit installed on system piping without electrical power for more than 48 hours. Fan failure could result from this non-operational storage.

DynaVac GP/XP/XR/RP Series Fan Wiring Diagram



RadonAway™

INSTALLATION INSTRUCTION IN014 Rev F

DynaVac - XP/XR Series		DynaVac - GP Series	
XP101	p/n 23008-1,-2	GP201	p/n 23007-1
XP151	p/n 23010-1,-2	GP301	p/n 23006-1,-2
XP201	p/n 23011-1,-2	GP401	p/n 23009-1
XR161	p/n 23018-1,-2	GP501	p/n 23005-1,-2
XR261	p/n 23019-1,-2		

1.0 SYSTEM DESIGN CONSIDERATIONS

1.1 INTRODUCTION

The DynaVac GP/XP/XR Series Radon Fans are intended for use by trained, professional Radon mitigators. The purpose of this instruction is to provide additional guidance for the most effective use of a DynaVac Fan. This instruction should be considered as a supplement to EPA standard practices, state and local building codes and state regulations. In the event of a conflict, those codes, practices and regulations take precedence over this instruction.

1.2 ENVIRONMENTALS

The GP/XP/XR Series Fans are designed to perform year-round in all but the harshest climates without additional concern for temperature or weather. For installations in an area of severe cold weather, please contact RadonAway for assistance. When not in operation, the fan should be stored in an area where the temperature is never less than 32 degrees F. or more than 100 degrees F.

1.3 ACOUSTICS

The GP/XP/XR Series Fan, when installed properly, operates with little or no noticeable noise to the building occupants. The velocity of the outgoing air should be considered in the overall system design. In some cases the "rushing" sound of the outlet air may be disturbing. In these instances, the use of a RadonAway Exhaust Muffler is recommended.

1.4 GROUND WATER

In the event that a temporary high water table results in water at or above slab level, water may be drawn into the riser pipes thus blocking air flow to the GP/XP/XR Series Fan. The lack of cooling air may result in the fan cycling on and off as the internal temperature rises above the thermal cutoff and falls upon shutoff. Should this condition arise, it is recommended that the fan be turned off until the water recedes allowing for return to normal operation.

1.5 SLAB COVERAGE

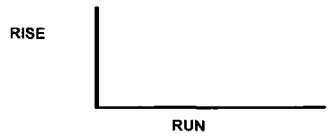
The GP/XP/XR Series Fan can provide coverage up to 2000+ sq. ft. per slab penetration. This will primarily depend on the sub-slab material in any particular installation. In general, the tighter the material, the smaller the area covered per penetration. Appropriate selection of the GP/XP/XR Series Fan best suited for the sub-slab material can improve the slab coverage. The GP & XP series have a wide range of models to choose from to cover a wide range of subslab material. The higher static suction fans are generally used for tighter subslab materials. The XR Series is specifically designed for high flow applications such as stone/gravel and drain tile. Additional suction points can be added as required. It is recommended that a small pit (5 to 10 gallons in size) be created below the slab at each suction hole.

1.6 CONDENSATION & DRAINAGE

Condensation is formed in the piping of a mitigation system when the air in the piping is chilled below its dew point. This can occur at points where the system piping goes through unheated space such as an attic, garage or outside. The system design must provide a means for water to drain back to a slab hole to remove the condensation. The GP/XP/XR Series Fan **MUST** be mounted vertically plumb and level, with the outlet pointing up for proper drainage through the fan. Avoid mounting the fan in any orientation that will allow water to accumulate inside the fan housing. The GP/XP/XR Series Fans are **NOT** suitable for underground burial.

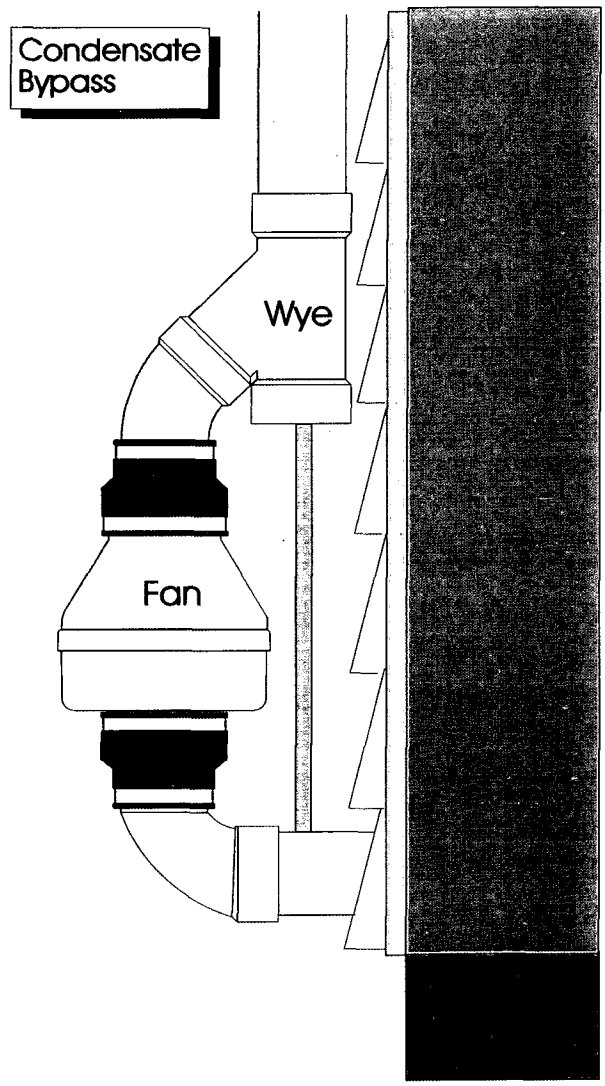
For GP/XP/XR Series Fan piping, the following table provides the minimum recommended pipe diameter and pitch under several system conditions.

Pipe Dia.	Minimum Rise per Foot of Run* @25 CFM	@50 CFM	@100 CFM
4"	1/8"	1/4"	3/8"
3"	1/4"	3/8"	1 1/2"



*Typical GP/XP/XR Series Fan operational flow rate is 25 - 90 CFM. (For more precision, determine flow rate by using the chart in the addendum.)

Under some circumstances in an outdoor installation a condensate bypass should be installed in the outlet ducting as shown. This may be particularly true in cold climate installations which require long lengths of outlet ducting or where the outlet ducting is likely to produce large amounts of condensation because of high soil moisture or outlet duct material. Schedule 20 piping and other thin-walled plastic ducting and Aluminum downspout will normally produce much more condensation than Schedule 40 piping.



The bypass is constructed with a 45 degree Wye fitting at the bottom of the outlet stack. The bottom of the Wye is capped and fitted with a tube that connects to the inlet piping or other drain. The condensation produced in the outlet stack is collected in the Wye fitting and drained through the bypass tube. The bypass tubing may be insulated to prevent freezing.

1.7 "SYSTEM ON" INDICATOR

A properly designed system should incorporate a "System On" Indicator for affirmation of system operation. A manometer, such as a U-Tube, or a vacuum alarm is recommended for this purpose.

1.8 ELECTRICAL WIRING

The GP/XP/XR Series Fans operate on standard 120V 60 Hz. AC. All wiring must be performed in accordance with the National Fire Protection

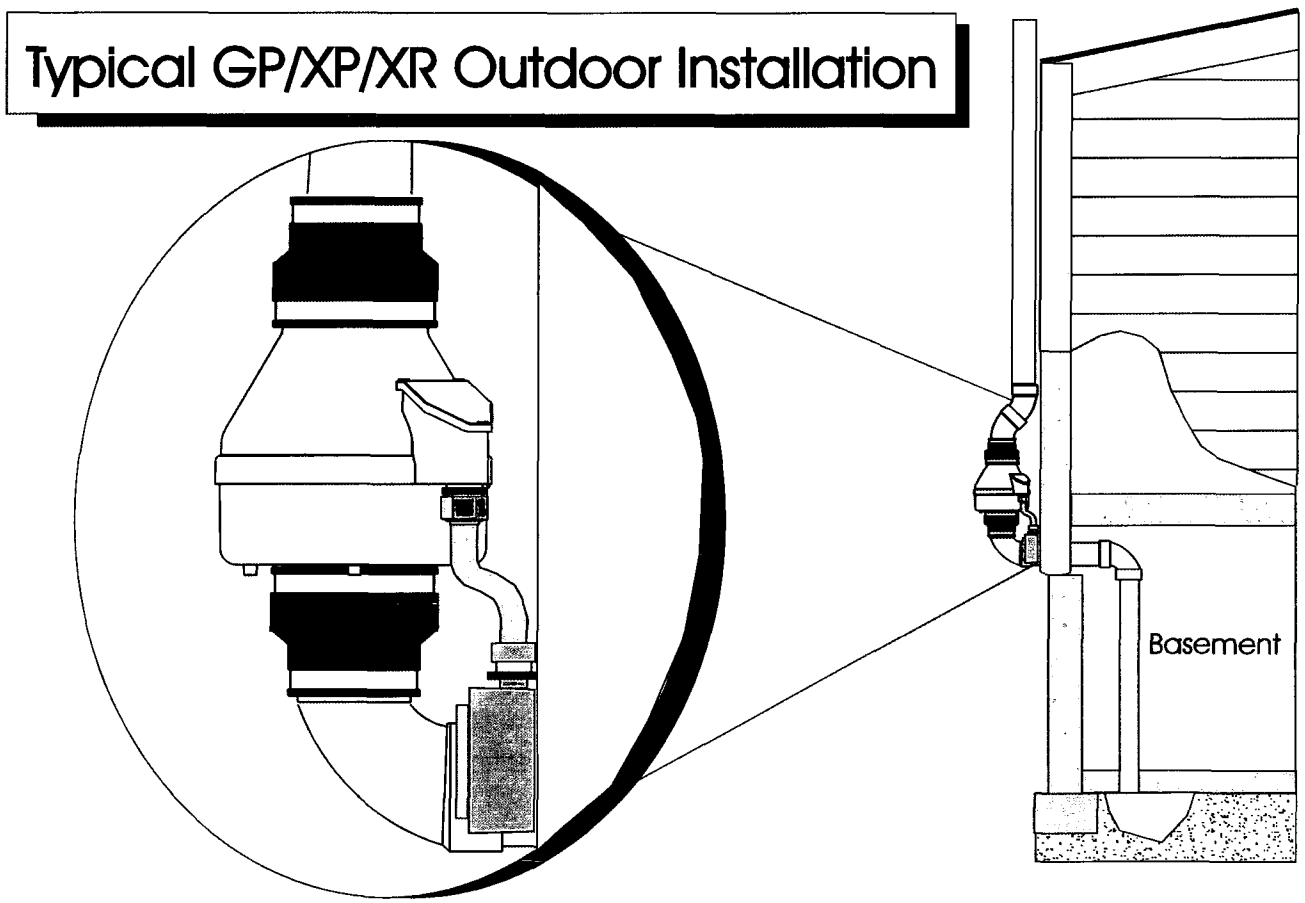
Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician. Outdoor installations require the use of a U.L. listed watertight conduit.

1.9 SPEED CONTROLS

The GP/XP/XR Series Fans are rated for use with electronic speed controls ,however, they are generally not recommended.

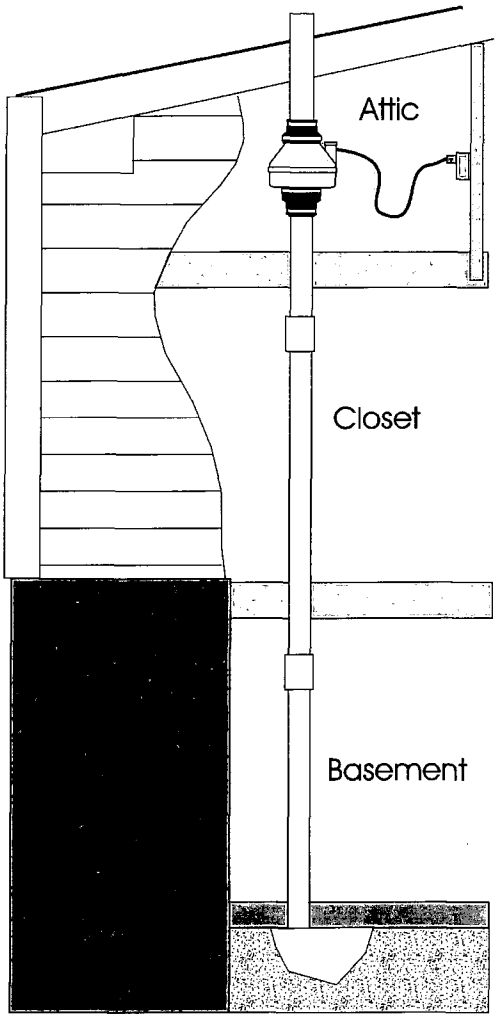
2.0 INSTALLATION

The GP/XP/XR Series Fan can be mounted indoors or outdoors. (It is suggested that EPA recommendations be followed in choosing the fan location.) The GP/XP/XR Series Fan may be mounted directly on the system piping or fastened to a supporting structure by means of optional mounting bracket.



2.1 MOUNTING

Mount the GP/XP/XR Series Fan vertically with outlet up. Insure the unit is plumb and level. When mounting directly on the system piping assure that the fan does not contact any building surface to avoid vibration noise.



2.2 MOUNTING BRACKET (optional)

The GP/XP/XR Series fan may be optionally secured with the integral mounting bracket on the GP Series fan or with RadonAway P/N 25007-2 mounting bracket for an XP/XR Series fan. Foam or rubber grommets may also be used between the bracket and mounting surface for vibration isolation.

2.3 SYSTEM PIPING

Complete piping run, using flexible couplings as means of disconnect for servicing the unit and vibration isolation.

2.4 ELECTRICAL CONNECTION

Connect wiring with wire nuts provided, observing proper connections:

Fan Wire	Connection
Green	Ground
Black	AC Hot
White	AC Common

2.5 VENT MUFFLER (optional)

Install the muffler assembly in the selected location in the outlet ducting. Solvent weld all connections. The muffler is normally installed at the end of the vent pipe.

2.6 OPERATION CHECKS

_____ **Verify** all connections are tight and **leak-free**.

_____ **Insure** the GP/XP/XR Series Fan and all ducting is secure and vibration-free.

_____ **Verify** system vacuum pressure with manometer. **Insure** vacuum pressure is **less than** maximum recommended operating pressure

(Based on sea-level operation, at higher altitudes reduce by about 4% per 1000 Feet.)
(Further reduce Maximum Operating Pressure by 10% for High Temperature environments)
See Product Specifications. If this is exceeded, increase the number of suction points.

_____ **Verify Radon levels by testing to EPA protocol.**

XP/XR SERIES PRODUCT SPECIFICATIONS

The following chart shows fan performance for the XP & XR Series Fan:

Typical CFM Vs Static Suction "WC									
	0"	.25"	.5"	.75"	1.0"	1.25"	1.5"	1.75"	2.0"
XP101	125	118	90	56	5	-	-	-	-
XP151	180	162	140	117	78	46	10	-	-
XP201	150	130	110	93	74	57	38	20	-
XR161	215	175	145	105	75	45	15	-	-
XR261	250	215	185	150	115	80	50	20	-

Maximum Recommended Operating Pressure*		
XP101	0.9" W.C.	(Sea Level Operation)**
XP151	1.3" W.C.	(Sea Level Operation)**
XP201	1.7" W.C.	(Sea Level Operation)**
XR161	1.3" W.C.	(Sea Level Operation)**
XR261	1.6" W.C.	(Sea Level Operation)**

**Reduce by 10% for High Temperature Operation*

***Reduce by 4% per 1000 feet of altitude*

Power Consumption @ 120 VAC	
XP101	40 - 49 watts
XP151	45 - 60 watts
XP201	45 - 66 watts
XR161	48 - 75 watts
XR261	65 - 105 watts

XP Series Inlet/Outlet: 4.5" OD (4.0" PVC Sched 40 size compatible)

XR Series Inlet/Outlet: 5.875" OD

Mounting: Mount on the duct pipe or with optional mounting bracket.

Recommended ducting: 3" or 4" Schedule 20/40 PVC Pipe

Storage temperature range: 32 - 100 degrees F.

Normal operating temperature range: -20 - 120 degrees F.

Maximum inlet air temperature: 80 degrees F.

Size: 9.5H" x 8.5" Dia. **Weight**: 6 lbs. (XR261 - 7 lbs)

Continuous Duty **Thermally protected**

Class B Insulation **3000 RPM**

Residential Use Only **Rated for Indoor or Outdoor use**

LISTED Electric Fan ETL® Tested to UL Std. 507

77728

GP SERIES PRODUCT SPECIFICATIONS

The following chart shows fan performance for the GPx01 Series Fan:

Typical CFM Vs Static Suction "WC							
	1.0"	1.5"	2.0"	2.5"	3.0"	3.5"	4.0"
GP501	95	87	80	70	57	30	5
GP401	93	82	60	38	12	-	-
GP301	92	77	45	10	-	-	-
GP201	82	58	5	-	-	-	-

Maximum Recommended Operating Pressure*		
GP501	3.8" W.C.	(Sea Level Operation)**
GP401	3.0" W.C.	(Sea Level Operation)**
GP301	2.4" W.C.	(Sea Level Operation)**
GP201	1.8" W.C.	(Sea Level Operation)**

**Reduce by 10% for High Temperature Operation*
***Reduce by 4% per 1000 feet of altitude*

Power Consumption @ 120 VAC	
GP501	70 - 140 watts
GP401	60 - 110 watts
GP301	55 - 90 watts
GP201	40 - 60 watts

Inlet/Outlet: 3.5" OD (3.0" PVC Sched 40 size compatible)

Mounting: Fan may be mounted on the duct pipe or with integral flanges.

Weight: 12 lbs.

Size: 13H" x 12.5" x 12.5"

Recommended ducting: 3" or 4" Schedule 20/40 PVC Pipe

Storage temperature range: 32 - 100 degrees F.

Normal operating temperature range: -20 - 120 degrees F.

Maximum inlet air temperature: 80 degrees F.

Continuous Duty

Class B Insulation

3000 RPM

Thermally protected

Rated for Indoor or Outdoor Use

GP301C / GP501C Rated for Commercial Use

LISTED Electric Fan ETL® Tested to UL Std. 507

77728

IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the GPx01/XP/XR Series Fan for shipping damage within 15 days of receipt. Notify RadonAway of any damages immediately. Radonaway is not responsible for damages incurred during shipping. However, for your benefit, Radonaway does insure shipments.

There are no user serviceable parts inside the fan. **Do not attempt to open.** Return unit to factory for service.

Install the GPx01/XP/XR Series Fan in accordance with all EPA standard practices, and state and local building codes and state regulations.

WARRANTY

Subject to any applicable consumer protection legislation, RadonAway warrants that the GPX01/XP/XR/RP Series Fan (the "Fan") will be free from defects in materials and workmanship for a period of *90 days from the date of purchase (the "Warranty Term").*

RadonAway will replace any Fan which fails due to defects in materials or workmanship. The Fan must be returned (at Owner's cost) to the RadonAway factory. Any Fan returned to the factory will be discarded unless the Owner provides specific instructions along with the Fan when it is returned regardless of whether or not the Fan is actually replaced under this warranty. Proof of purchase must be supplied upon request for service under this Warranty.

This Warranty is contingent on installation of the Fan in accordance with the instructions provided. This Warranty does not apply where any *repairs or alterations have been made or attempted* by others, or if the unit has been abused or misused. Warranty does not cover damage in shipment unless the damage is due to the negligence of RadonAway.

5 YEAR EXTENDED WARRANTY WITH PROFESSIONAL INSTALLATION.

RadonAway will extend the Warranty Term of the fan to 5 years from date of manufacture if the Fan is installed in a professionally designed and professionally installed radon system or installed as a replacement fan in a professionally designed and professionally installed radon system. Proof of purchase and/or proof of professional installation may be required for service under this warranty. Outside the Continental United States and Canada the extended Warranty Term is limited to one (1) year from the date of manufacture.

RadonAway is not responsible for installation, removal or delivery costs associated with this Warranty.

EXCEPT AS STATED ABOVE, THE GPx01/XP/XR/RP SERIES FANS ARE PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL RADONAWAY BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR RELATING TO, THE FAN OR THE PERFORMANCE THEREOF. RADONAWAY'S AGGREGATE LIABILITY HEREUNDER SHALL NOT IN ANY EVENT EXCEED THE AMOUNT OF THE PURCHASE PRICE OF SAID PRODUCT. THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT, TO THE EXTENT THE SAME DOES NOT MEET WITH RADONAWAY'S WARRANTY AS PROVIDED ABOVE.

For service under this Warranty, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. No returns can be accepted without an RMA. If factory return is required, the customer assumes all shipping cost to and from factory.

RadonAway
3 Saber Way
Ward Hill, MA 01835
TEL. (978) 521-3703
FAX (978) 521-3964

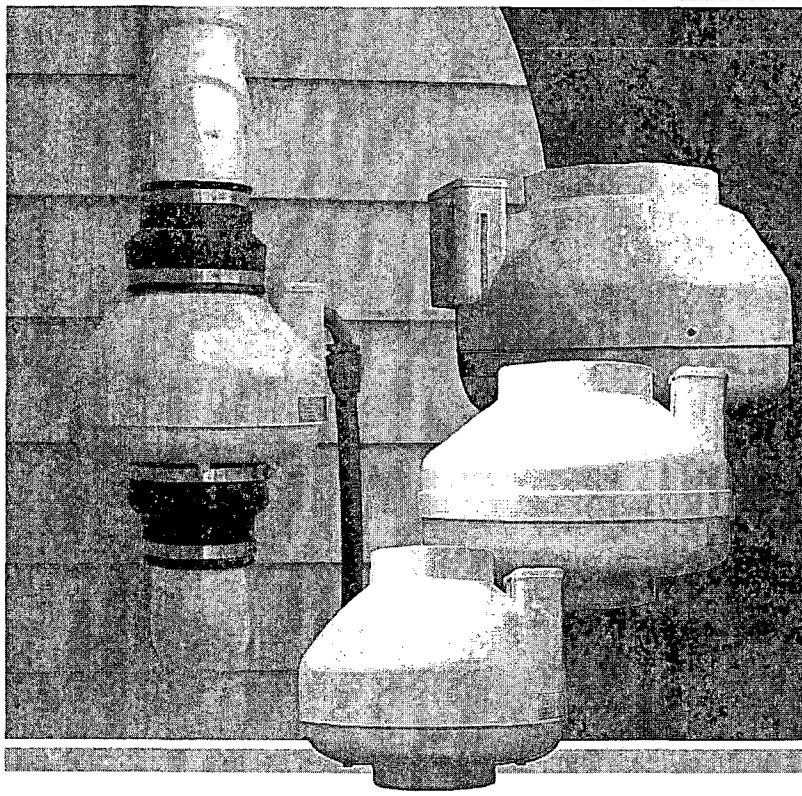
Record the following information for your records:

Serial No._____
Purchase Date_____

RP-260
Bldg 14 and 31

RadonAway™
The World's Leading Radon Fan Manufacturer

RP Series



Radon Mitigation Fans

All RadonAway fans are specifically designed for radon mitigation. RP Series Fans provide superb performance, run ultra-quiet and are attractive. They are ideal for most sub-slab radon mitigation systems.

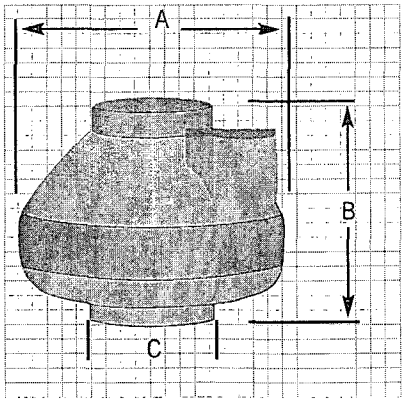
Features:

- Five-year hassle-free warranty
- Quiet and attractive
- Thermally protected
- Motorized impeller
- ETL Listed - for indoor or outdoor use
- Meets all electrical code requirements
- Rated for commercial and residential use

Model	Watts	Max. Pressure "WC	Typical CFM vs. Static Pressure WC 0"	.5"	1.0"	1.5"	2.0"	A"	B"	C"
RP140	14-20	0.8	134	68	-	-	-	9.7	7.9	4
RP145	37-71	2.1	173	132	94	55	11	9.7	7.9	4
RP260	52-72	1.8	275	180	105	20	-	11.8	9.9	6
RP265	86-140	2.5	327	260	207	139	57	11.8	9.9	6
RP380	103-156	2.3	510	393	268	165	35	13.41	10.53	8

Bldg 14 2x and 31

Choice of model is dependent on building characteristics including sub-slab materials and should be made by a radon professional.



Bldg 17 RP-501

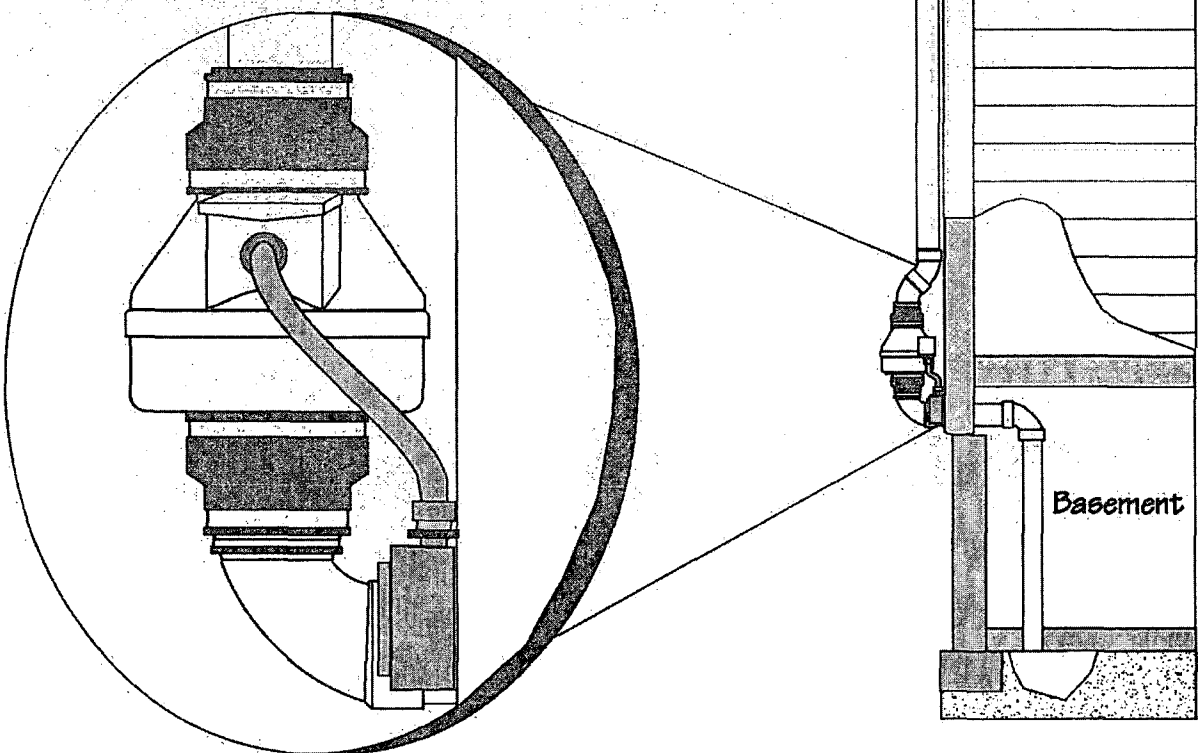
For Further Information Contact:

4/09
P/N 02008

RP-260
Bldg 14 and 31

RP Series Installation Instructions

By RadonAway™



Spruce Environmental Technologies, Inc.
Ward Hill, MA P/N IN020 Rev J

RadonAway™

Series Fan Installation Instructions

Please Read and Save These Instructions.

DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED. MAKE SURE ELECTRICAL SERVICE TO FAN IS LOCKED IN "OFF" POSITION. DISCONNECT POWER BEFORE SERVICING FAN.

1. **WARNING!** Do not use fan in hazardous environments where fan electrical system could provide ignition to combustible or flammable materials.

2. **WARNING!** Do not use fan to pump explosive or corrosive gases.

3. **WARNING!** Check voltage at the fan to insure it corresponds with nameplate.

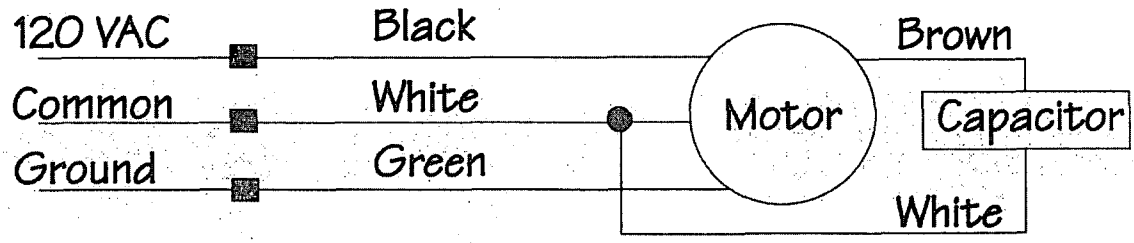
4. **WARNING!** Normal operation of this device may affect the combustion airflow needed for safe operation of fuel burning equipment. Check for possible backdraft conditions on all combustion devices after installation.

5. **NOTICE!** There are no user serviceable parts located inside the fan unit. **Do NOT attempt to open.** Return unit to the factory for service.

6. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician.

7. **WARNING!** Do not leave fan unit installed on system piping without electrical power for more than 48 hours. Fan failure could result from this non-operational storage.

DynaVac RP Series Fan Wiring Diagram



RadonAway™

INSTALLATION INSTRUCTIONS IN020 Rev I

DynaVac - RP Series
RP140 p/n 23029-1
RP145 p/n 23030-1
RP260 p/n 23032-1
RP265 p/n 23033-1
RP380 p/n 28208

1.0 SYSTEM DESIGN CONSIDERATIONS

1.1 INTRODUCTION

The DynaVac RP Series Radon Fans are intended for use by trained, professional Radon mitigators. The purpose of this instruction is to provide additional guidance for the most effective use of a DynaVac Fan. This instruction should be considered as a supplement to EPA standard practices, state and local building codes and state regulations. In the event of a conflict, those codes, practices and regulations take precedence over this instruction.

1.2 ENVIRONMENTALS

The RP Series Fans are designed to perform year-round in all but the harshest climates without additional concern for temperature or weather. For installations in an area of severe cold weather, please contact RadonAway for assistance. When not in operation, the fan should be stored in an area where the temperature is never less than 32 degrees F. or more than 100 degrees F.

1.3 ACOUSTICS

The RP Series Fan, when installed properly, operates with little or no noticeable noise to the building occupants. The velocity of the outgoing air should be considered in the overall system design. In some cases the "rushing" sound of the outlet air may be disturbing. In these instances, the use of a RadonAway Exhaust Muffler is recommended.

1.4 GROUND WATER

In the event that a temporary high water table results in water at or above slab level, water may be drawn into the riser pipes thus blocking air flow to the RP Series Fan. The lack of cooling air may result in the fan cycling on and off as the internal temperature rises above the thermal cutoff and falls upon shutoff. Should this condition arise, it is recommended that the fan be turned off until the water recedes allowing for return to normal operation.

1.5 SLAB COVERAGE

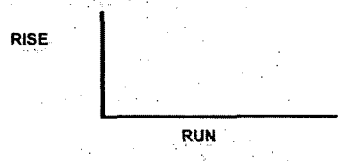
The RP Series Fan can provide coverage up to 2000+ sq. ft. per slab penetration. This will primarily depend on the sub-slab material in any particular installation. In general, the tighter the material, the smaller the area covered per penetration. Appropriate selection of the RP Series Fan best suited for the sub-slab material can improve the slab coverage. The RP140/145/155 are best suited for general purpose use. The RP260 can be used where additional airflow is required and the RP265/380 is best suited for large slab, high airflow applications. Additional suction points can be added as required. It is recommended that a small pit (5 to 10 gallons in size) be created below the slab at each suction hole.

1.6 CONDENSATION & DRAINAGE

Condensation is formed in the piping of a mitigation system when the air in the piping is chilled below its dew point. This can occur at points where the system piping goes through unheated space such as an attic, garage or outside. The system design must provide a means for water to drain back to a slab hole to remove the condensation. The RP Series Fan **MUST** be mounted vertically plumb and level, with the outlet pointing up for proper drainage through the fan. Avoid mounting the fan in any orientation that will allow water to accumulate inside the fan housing. The RP Series Fans are **NOT** suitable for underground burial.

For RP Series Fan piping, the following table provides the minimum recommended pipe diameter and pitch under several system conditions.

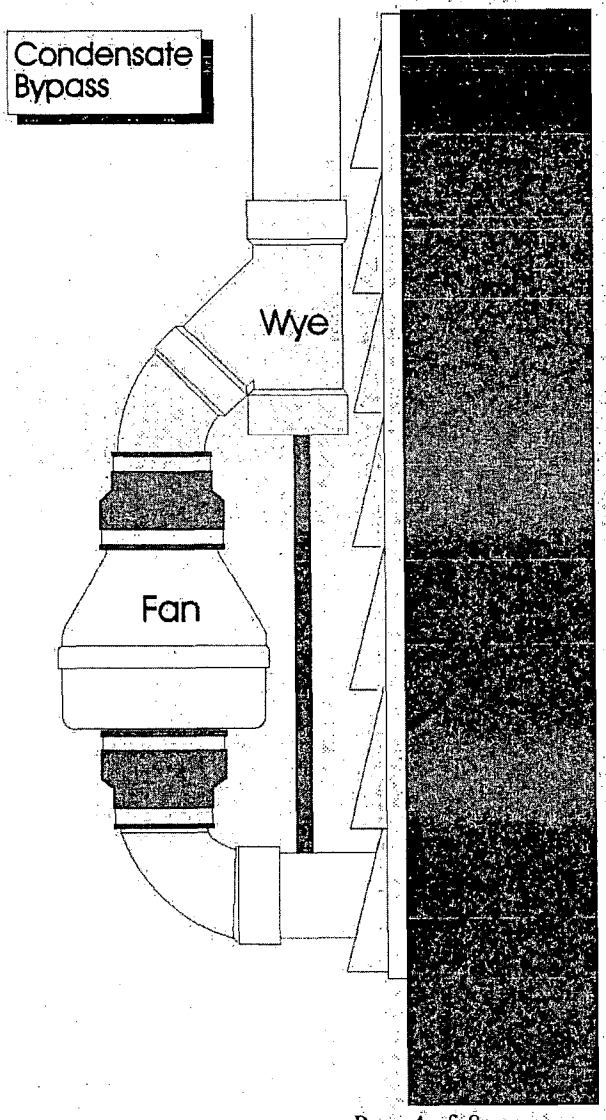
Pipe Dia.	Minimum Rise per Ft of Run*				
	@25 CFM	@50 CFM	@100 CFM	@200 CFM	@300 CFM
6"	-	3/16	1/4	3/8	3/4
4"	1/8	1/4	3/8	2 3/8	-
3"	1/4	3/8	1 1/2	-	-



*Typical RP1xx/2xx Series Fan operational flow rate is 25 - 90 CFM 0n 3" and 4" pipe. (For more precision, determine flow rate by measuring Static Pressure, in WC, and correlate pressure to flow in the performance chart in the addendum.)

Under some circumstances in an outdoor installation a condensate bypass should be installed in the outlet ducting as shown. This may be particularly true in cold climate installations which require long lengths of outlet ducting or where the outlet ducting is likely to produce large amounts of condensation because of high soil moisture or outlet duct material. Schedule 20 piping and other thin-walled plastic ducting and Aluminum downspout will normally produce much more condensation than Schedule 40 piping.

The bypass is constructed with a 45 degree Wye fitting at the bottom of the outlet stack. The bottom of the Wye is capped and fitted with a tube that connects to the inlet piping or other drain. The condensation produced in the outlet stack is collected in the Wye fitting and drained through the bypass tube. The bypass tubing may be insulated to prevent freezing.



1.7 "SYSTEM ON" INDICATOR

A properly designed system should incorporate a "System On" Indicator for affirmation of system operation. A manometer, such as a U-Tube, or a vacuum alarm is recommended for this purpose.

1.8 ELECTRICAL WIRING

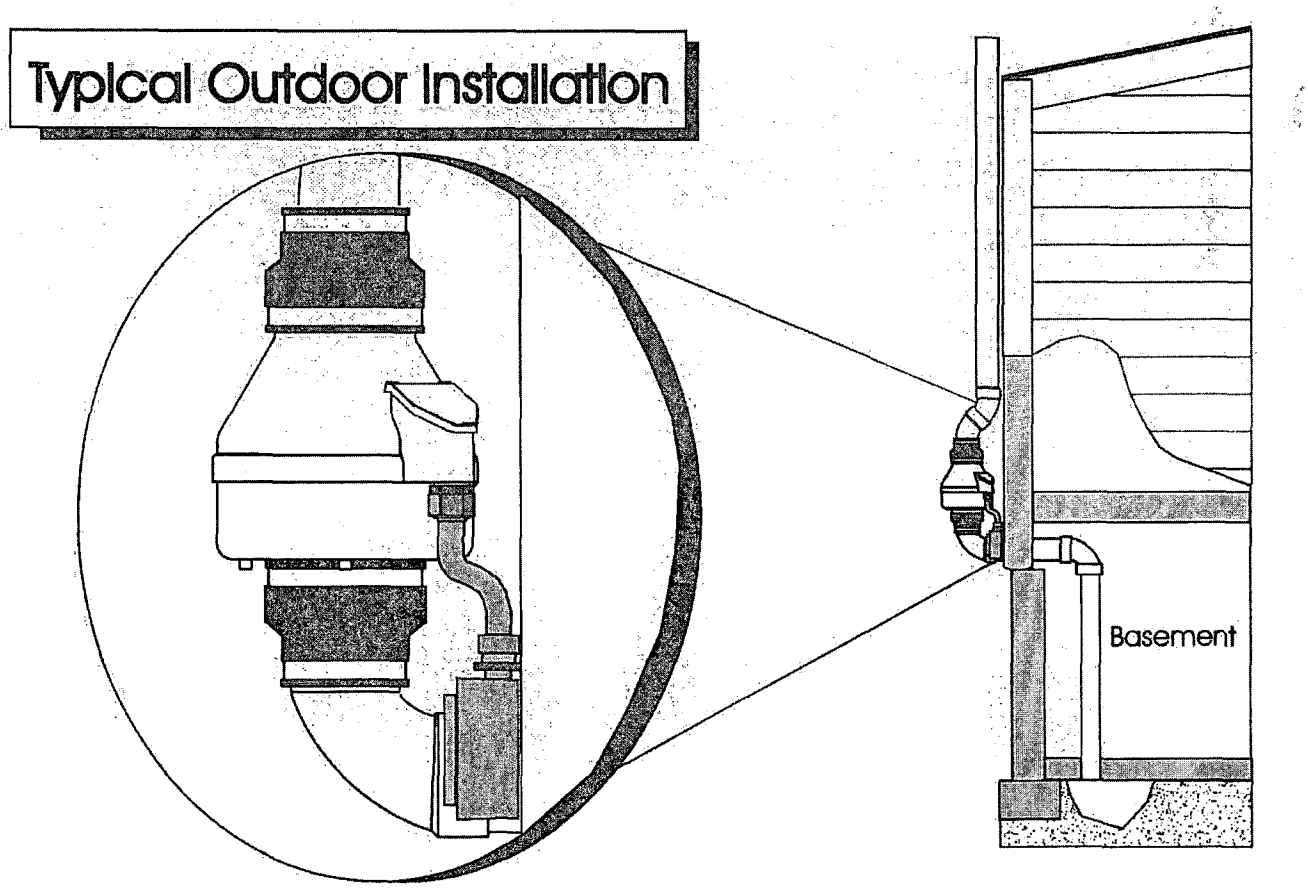
The RP Series Fans operate on standard 120V 60 Hz. AC. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician. Outdoor installations require the use of a U.L. listed watertight conduit. Ensure that all exterior electrical boxes are outdoor rated and properly sealed to prevent water penetration into the box. A means, such as a weep hole, is recommended to drain the box.

1.9 SPEED CONTROLS

The RP Series Fans are rated for use with electronic speed controls ,however , they are generally not recommended.

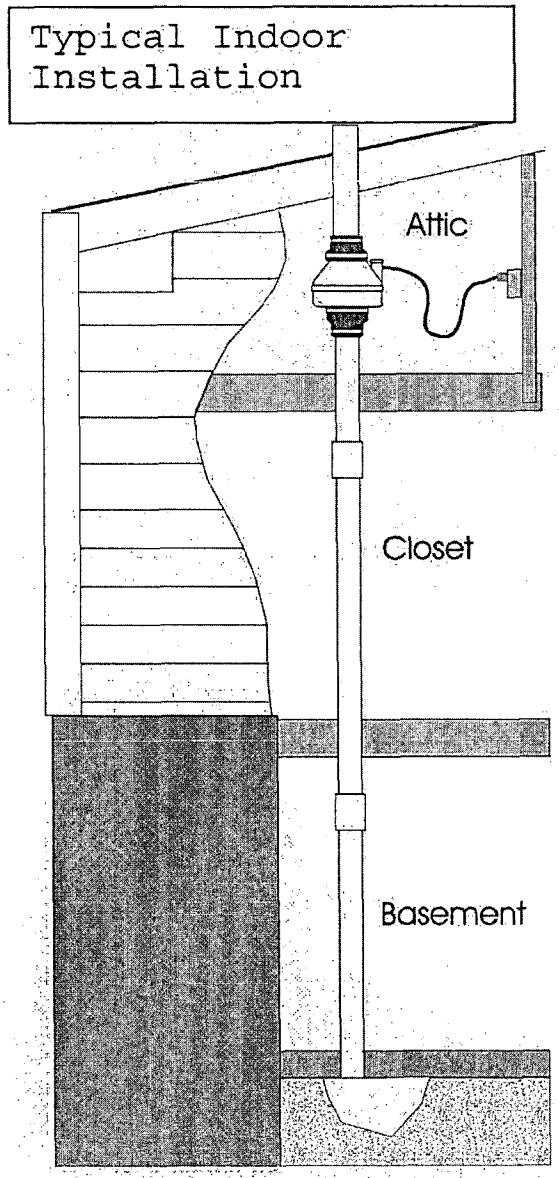
2.0 INSTALLATION

The RP Series Fan can be mounted indoors or outdoors. (It is suggested that EPA recommendations be followed in choosing the fan location.) The RP Series Fan may be mounted directly on the system piping or fastened to a supporting structure by means of optional mounting bracket.



2.1 MOUNTING

Mount the RP Series Fan vertically with outlet up. Insure the unit is plumb and level. When mounting directly on the system piping assure that the fan does not contact any building surface to avoid vibration noise.



2.2 MOUNTING BRACKET (optional)

The RP Series fan may be optionally secured with the RadonAway P/N 25007-2 (25033 for RP385) mounting bracket. Foam or rubber grommets may also be used between the bracket and mounting surface for vibration isolation.

2.3 SYSTEM PIPING

Complete piping run, using flexible couplings as means of disconnect for servicing the unit and vibration isolation.

2.4 ELECTRICAL CONNECTION

Connect wiring with wire nuts provided, observing proper connections(See Section 1.8):

Fan Wire	Connection
Green	Ground
Black	AC Hot
White	AC Common

2.5 VENT MUFFLER (optional)

Install the muffler assembly in the selected location in the outlet ducting. Solvent weld all connections. The muffler is normally installed at the end of the vent pipe.

2.6 OPERATION CHECKS

_____ **Verify** all connections are tight and **leak-free.**

_____ **Insure** the RP Series Fan and all ducting is secure and vibration-free.

_____ **Verify** system vacuum pressure with manometer. **Insure** vacuum pressure is **less than** maximum recommended operating pressure

(Based on sea-level operation, at higher altitudes reduce by about 4% per 1000 Feet.)

(Further reduce Maximum Operating Pressure by 10% for High Temperature environments)

See Product Specifications. If this is exceeded, increase the number of suction points.

_____ **Verify Radon levels by testing to EPA protocol.**

RP SERIES PRODUCT SPECIFICATIONS

The following chart shows fan performance for the RP Series Fan:

Typical CFM Vs Static Pressure "WC									
	0"	.25"	.5"	.75"	1.0"	1.25"	1.5"	1.75"	2.0"
RP140	135	103	70	14	-	-	-	-	-
RP145	166	146	126	104	82	61	41	21	3
RP260	272	220	176	138	103	57	13	-	-
RP265	334	291	247	210	176	142	116	87	52
RP380*	497	401	353	281	220	176	130	80	38

* Tested with 6" inlet and discharge pipe.

Power Consumption 120 VAC, 60Hz 1.5 Amp Maximum		Maximum Recommended Operating Pressure* (Sea Level Operation)**	
RP140	17 - 21 watts	RP140	0.8" W.C.
RP145	41 - 72 watts	RP145	1.7" W.C.
RP260	52 - 72 watts	RP260	1.5" W.C.
RP265	91 - 129 watts	RP265	2.2" W.C.
RP380	95 - 152 watts	RP380	2.0" W.C.

Reduce by 10% for High Temperature Operation

***Reduce by 4% per 1000 feet of altitude*

	Size	Weight	Inlet/Outlet
RP140	8.5H" x 9.7" Dia.	5.5 lbs.	4.5" OD (4.0" PVC Sched 40 size compatible)
RP145	8.5H" x 9.7" Dia.	5.5 lbs.	4.5" OD (4.0" PVC Sched 40 size compatible)
RP155	8.5H" x 9.7" Dia.	5.5 lbs.	5.0" OD
RP260	8.6H" x 11.75" Dia.	5.5 lbs.	6.0" OD
RP265	8.6H" x 11.75" Dia.	6.5 lbs.	6.0" OD
RP380	10.53H" x 13.41" Dia.	11.5 lbs.	8.0" OD

Recommended ducting: 3" or 4" RP1xx/2xx, 6" RP380, Schedule 20/40 PVC Pipe

Mounting: Mount on the duct pipe or with optional mounting bracket.

Storage temperature range: 32 - 100 degrees F.

Normal operating temperature range: -20 - 120 degrees F.

Maximum inlet air temperature: 80 degrees F.

Continuous Duty

Class B Insulation

Thermally protected

3000 RPM

Rated for Indoor or Outdoor Use

LISTED Electric Fan ETL® 77728 Tested to UL Std. 507 2100 HVI CERTIFIED

IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the GP/XP/XR/RP Series Fan for shipping damage within 15 days of receipt. Notify **RadonAway of any damages immediately**. Radonaway is not responsible for damages incurred during shipping. However, for your benefit, Radonaway does insure shipments.

There are no user serviceable parts inside the fan. **Do not attempt to open.** Return unit to factory for service.

Install the GP/XP/XR/RP Series Fan in accordance with all EPA standard practices, and state and local building codes and state regulations.

WARRANTY

Subject to any applicable consumer protection legislation, RadonAway warrants that the GPX01/XP/XR/RP Series Fan (the "Fan") will be free from defects in materials and workmanship for a period of 90 days from the date of purchase (the "Warranty Term").

RadonAway will replace any Fan which fails due to defects in materials or workmanship. The Fan must be returned (at Owner's cost) to the RadonAway factory. Any Fan returned to the factory will be discarded unless the Owner provides specific instructions along with the Fan when it is returned regardless of whether or not the Fan is actually replaced under this warranty. Proof of purchase must be supplied upon request for service under this Warranty.

This Warranty is contingent on installation of the Fan in accordance with the instructions provided. This Warranty does not apply where any repairs or alterations have been made or attempted by others, or if the unit has been abused or misused. Warranty does not cover damage in shipment unless the damage is due to the negligence of RadonAway.

5 YEAR EXTENDED WARRANTY WITH PROFESSIONAL INSTALLATION.

RadonAway will extend the Warranty Term of the fan to 5 years from date of manufacture if the Fan is installed in a professionally designed and professionally installed radon system or installed as a replacement fan in a professionally designed and professionally installed radon system. Proof of purchase and/or proof of professional installation may be required for service under this warranty. Outside the Continental United States and Canada the extended Warranty Term is limited to one (1) year from the date of manufacture.

RadonAway is not responsible for installation, removal or delivery costs associated with this Warranty.

EXCEPT AS STATED ABOVE, THE GPx01/XP/XR/RP SERIES FANS ARE PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL RADONAWAY BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR RELATING TO, THE FAN OR THE PERFORMANCE THEREOF. RADONAWAY'S AGGREGATE LIABILITY HEREUNDER SHALL NOT IN ANY EVENT EXCEED THE AMOUNT OF THE PURCHASE PRICE OF SAID PRODUCT. THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT, TO THE EXTENT THE SAME DOES NOT MEET WITH RADONAWAY'S WARRANTY AS PROVIDED ABOVE.

For service under this Warranty, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. No returns can be accepted without an RMA. If factory return is required, the customer assumes all shipping cost to and from factory.

RadonAway
3 Saber Way
Ward Hill, MA 01835
TEL. (978) 521-3703
FAX (978) 521-3964

Record the following information for your records:

Serial No:_____
Purchase Date:_____

cincinnati fan

Form: OMM-08-0509
Effective: 5/4/09
Supersedes: OMM-08-0207
Part No.: 01231

Installation, Safety, Operation & Maintenance Instructions And Parts List

For Models HP-Series I & II, RBE, HDBI, HDAF, SQBI and SQAF

Arrangement 4 Blowers

NOTE

READ ENTIRE MANUAL INCLUDING "SECTION IV. INITIAL UNIT STARTUP" BEFORE ATTEMPTING TO INSTALL AND OPERATE THIS EQUIPMENT.

BLOWER SPECIFICATIONS

BLOWER SERIAL NUMBER: 1112503 **MFG. DATE:** 10/14/11

NOTE: The serial number above is a required reference for any assistance. It is stamped on the blower nameplate.

BLOWER SPECIFICATIONS:

Model: HPD **Arrangement:** 4 **Rotation:** CW **Discharge:** UB

Wheel Size and Type: 17

BLOWER PERFORMANCE DATA: (If entered on order)

CFM: 800 **SP:** 10 (Inches of Water Gauge) **Motor BHP:** 4.1

Density: 0.077 **Altitude:** _____ (Ft. above S.L.) **Airstream Temperature:** 70 °F.

Fan RPM: 3500 **Maximum Safe Fan RPM:** 3790 @ 70°F **DO NOT EXCEED THIS RPM**

MOTOR DATA: (This section is completed only if the motor was supplied by Cincinnati Fan)

HP: 5 **RPM:** 3500 **Voltage:** 200/400/50 & 208-230/460/60 **Phase:** 3

Hz: 60 **Frame Size:** 184T **Enclosure:** TEFC **Efficiency:** Prem Eff

IF Motor is EXP, Class(es) & Group(s) are: _____

Manufacturers Model Number: 1LE21211CA314AA3 **CFV Part Number:** 374854S

ATTENTION: RECEIVING DEPARTMENT

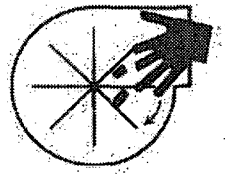
All Cincinnati Fan products are packaged to minimize any damage during shipment. The freight carrier is responsible for delivering all items in their original condition as received from Cincinnati Fan. The individual receiving this equipment is responsible for inspecting this unit for any obvious or concealed damage. If any damage is found, it should be noted on the bill of lading before the freight is accepted and the receiver must file a claim with the freight carrier.

LONG TERM STORAGE NOTICE

If this blower will NOT be installed and put into operation within 30 days, refer to the "Long Term Storage Instructions" on pages 12 and 13. Failure to follow all applicable long term storage instructions, will void your warranty. This blower should be stored indoors in a clean, dry location.

⚠ DANGER


Hazardous voltage can cause electrical shock and death.


High speed rotating equipment can cause severe personal injury.


Lock out/Tag out to prevent personal injury BEFORE starting ANY service or inspection.


Avoid injury. NEVER operate without ALL required safety guards in place.


Avoid injury. You MUST read and understand all instructions in this manual BEFORE installing.

TABLE OF CONTENTS

I. GENERAL

A. Unpacking:

Be careful not to damage or deform any parts of the blower when removing it from the packaging container. **All the packaging material should be kept in the event the blower needs to be returned.**

Handling:

Handling of the blower should be performed by trained personnel and be consistent with all safe handling practices. Verify that all lifting equipment is in good operating condition and has the proper lifting capacity. The blower should be lifted using well-padded chains, cables or lifting straps with spreader bars. Some blower models have lifting eye locations provided in the blower base. **NEVER lift the blower by an inlet or discharge flange, motor shaft, motor eye bolt, or any other part of the blower assembly that could cause distortion of the blower assembly.**

B. Safety Instructions & Accessories:

1. **Safety Instructions:**
   All installers, operators and maintenance personnel should read AMCA Publication 410-96, **"Recommended Safety Practices for Users and Installers of Industrial and Commercial Fans".** This manual is included with the blower. Additional copies can be requested by writing us at Cincinnati Fan, 7697 Snider Rd., Mason, OH 45040-9135
2. **Sound:**
   Some blowers can generate sound that could be hazardous to personnel. It is the responsibility of the user to measure the sound levels of the blower and/or system, determine the degree of personnel exposure, and comply with all applicable safety laws and requirements to protect personnel from excessive noise.

3. **Air Pressure and Suction:**
In addition to the normal dangers of rotating machinery, the blower can present additional hazards from the suction or pressure created at the blower inlet or discharge. Suction at the blower inlet can draw materials into the blower where they become high velocity projectiles at the discharge and cause severe personal injury or death. It can also be extremely dangerous to persons in close proximity to the inlet or discharge as the forces involved can overcome the strength of most individuals.

⚠ WARNING

NEVER OPERATE A BLOWER WITH A NON-DUCTED INLET AND/OR DISCHARGE. IF THE BLOWER INLET AND/OR DISCHARGE IS NON-DUCTED, IT IS THE USERS RESPONSIBILITY TO INSTALL AN INLET AND/OR DISCHARGE GUARD.

4. **Temperature:**
Many blowers, blower components and all motors operate at temperatures that could burn someone if they come in contact with them. If this potential hazard could exist in your installation, steps must be taken by the user to protect anyone from coming in contact with this equipment.

5. **Spark Resistance;** (Per AMCA Standard 99-0401-86 and ISO 13499)

⚠ DANGER

NO GUARANTEE OF ANY LEVEL OF SPARK RESISTANCE IS IMPLIED BY SPARK RESISTANT CONSTRUCTION. IT HAS BEEN DEMONSTRATED THAT ALUMINUM IMPELLERS RUBBING ON RUSTY STEEL CAN CAUSE HIGH INTENSITY SPARKS. AIR STREAM MATERIAL AND DEBRIS OR OTHER SYSTEM FACTORS CAN ALSO CAUSE SPARKS.

6. **Safety Accessories;**
Guards:
All moving parts must be guarded to protect personnel. Safety requirements can vary, so the number and types of guards required to meet company, local, state and OSHA regulations must be determined and specified by the actual user or operator of the equipment.

NEVER start any blower without having all required safety guards properly installed. All blowers should be checked on a regular schedule, for missing or damaged guards. If any required guards are found to be missing or defective, the power to the blower should be immediately turned off and locked out in accordance with OSHA regulations. Power to the blower should NOT be tuned back on until the required guards have been repaired or replaced.

This blower can become dangerous due to a potential "windmill" effect, even though all electrical power has been turned off or disconnected. The blower wheel should be **carefully** secured to prevent any rotational turning ***BEFORE*** working on any parts of the blower/motor assembly that could move.

7. **Access or Inspection Doors:**

⚠ DANGER

NEVER OPEN ANY ACCESS OR INSPECTION DOORS WHILE THE BLOWER IS OPERATING. SERIOUS INJURY OR DEATH COULD RESULT FROM THE AFFECTS OF AIR PRESSURE, AIR SUCTION OR MATERIAL THAT IS BEING CONVEYED. DISCONNECT OR LOCK OUT POWER TO THE BLOWER AND LET THE BLOWER WHEEL COME TO A COMPLETE STOP *BEFORE* OPENING ANY TYPE OF ACCESS OR INSPECTION DOOR.

II. INSTALLATION

A. Vibration:

Before any mounting method is selected, the user should be aware of the effects vibration will have on the blower, motor and other parts. Improper blower installation can cause excessive vibration causing premature wheel and/or motor bearing failure, that is not covered under warranty. Vibration eliminator pads, springs or bases should be properly installed to prevent any blower vibration from transmitting to the foundation, support structure or ducting.

⚠ WARNING

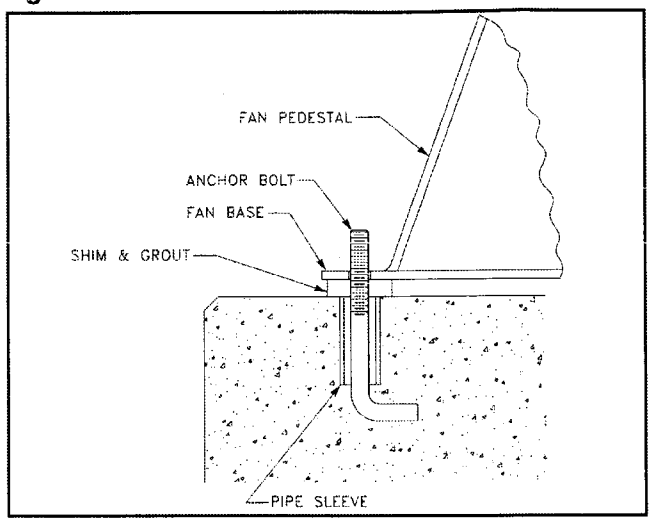
SHUT THE BLOWER DOWN IMMEDIATELY IF THERE IS ANY SUDDEN INCREASE IN VIBRATION.

B. Mounting Methods:

1. Floor Mounted Units;

Centrifugal blowers should be mounted on a flat, level, concrete foundation weighing 2-3 times the weight of the complete blower/motor assembly. It is recommended that the foundation be at least 6 inches larger than the base of the blower. The foundation should include anchor bolts such as shown in **Fig. 1** on page 4. Place the blower over the anchor bolts and shim under each bolt until the blower is level. After shimming, flat washers, lock washers and lock nuts should be tightened at each anchor bolt. Any gaps between the blower base and the foundation should be grouted. If the blower will be sitting on some type of vibration pads or mounts, follow the recommended mounting procedures supplied with the vibration elimination equipment.

Fig. 1



2. **Elevated Units;**

Improper mounting of elevated blowers can cause vibration problems. The structure that the blower/motor assembly will be mounted on must be strong enough to support at least 3 times the weight of the entire blower/motor assembly. **An insufficient support will cause excessive vibration and lead to premature wheel and/or motor bearing failure.** Bracing of the support structure must be sufficient enough to prevent any side sway. The entire structure should be welded at all connection joints to maintain constant alignment of the platform.

⚠ DANGER

THE IMPROPER DESIGN OF AN ELEVATED PLATFORM STRUCTURE COULD RESULT IN A RESONANT CONDITION, AND CONSEQUENTLY, CAUSE A LIFE THREATENING, CATASTROPHIC, STRUCTURAL FAILURE.

C. Duct Work Connections:

All duct connections to the blower should include flexible connectors between the ducting and the blower inlet and/or discharge. This will eliminate distortion, noise and vibration from transmitting to the duct and building. The connectors should be selected to handle the operating conditions for air volume and pressure that the blower will produce. **All ducting or accessories, added by the user, should be independently supported. DO NOT use the blower/motor assembly to support any additional weight.** Inlet and/or discharge duct elbows should be located a minimum of 2 blower wheel diameters from the blower. Any duct elbows located closer than 2 wheel diameters to the blower inlet or discharge **WILL** reduce the air performance and blower efficiency. Any duct elbows near the blower discharge should be in the **same rotational direction** as the **blower rotation.**

Non-Ducted Blower Inlet:

Any blower with no ducting on the inlet **must** have an inlet guard. The blower should be located so the blower inlet is, at least, 1 wheel diameter away from any wall or bulkhead to eliminate a reduction in air flow.

Non-Ducted Blower Discharge:

Any blower with no ducting on the discharge **must** have a discharge guard.

D. Safety Guards:

Cincinnati Fan offers guards, as optional, to keep your blower in compliance with OSHA safety regulations. These include inlet or discharge guards. Any blowers built with high temperature construction, a "heat slinger guard" is standard. It is the responsibility of the user to make sure this blower meets all local, state and OSHA safety regulations. If you have a specific guard requirement not covered by OSHA, please contact the local Cincinnati Fan sales office for assistance.

E. Dampers and Valves: (Airflow control devices)

If the blower is supplied with any type of air flow control device, it should be closed before initial start-up of the blower to minimize overloading of the motor. Any airflow control device, with bearings, should be maintained in accordance with the manufacturers instructions. Any air flow control device, with an automatic control mechanism, should be adjusted per the manufacturers recommendations.

F. Set Screw and Taper-lock Bushing Torque Values:

All blower wheel set screws are tightened to the proper torque prior to shipment. Some wheels may have taper-lock hubs and split, taper-lock bushings to secure the wheel to the motor shaft.

NOTE: Check all set screw or taper-lock bushing torques. Forces encountered during shipment, handling, rigging and temperature can affect factory settings. For correct torque values, see **Tables 1** and **2** below.

Table 1

SET SCREW TORQUE VALUES		
Diameter & Number of Treads/Inch	Hex Wrence Size (Across Flats)	Required Torque (Inch Pounds)
1/4-20	1/8"	65
5/16-18	5/32"	165
3/8-16	3/16"	228
7/16-14	7/32"	348
1/2-13	1/4"	504
5/8-11	5/16"	1104

Table 2

TORQUE VALUES FOR TAPER-LOCK BUSHINGS	
Taper-lock Bushing Size	Required Torque (Inch Pounds)
H	95
B	192
P	192
Q	350
R	350

⚠ CAUTION

Set screws should NEVER be used more than once. If the set screws are loosened, they MUST be replaced. Use only knurled, cup-point, set screws with a nylon locking patch.

III. ELECTRICAL

A. Disconnect Switches:

All blower motors should have an independent disconnect switch located in close visual proximity to turn off the electrical service to the blower motor. **Disconnects must be locked out in accordance with OSHA "lock out-tag out" procedures any time inspection or maintenance is being performed on the blower and/or motor assembly. The "lock out-tag out" procedure should be performed by a licensed electrician or authorized personnel.** All disconnects should be sized in accordance with the latest NEC codes (National Electric Codes) and any local codes and should be installed only by a licensed electrician. "Slow blow" or "time delay" fuses or breakers should be used since the initial start-up time for the blower motor, although rare, can be up to 10 seconds.

B. Motors:

⚠ DANGER

ALL WIRING CONNECTIONS, INSPECTION AND MAINTENANCE OF ANY MOTOR MUST BE PERFORMED BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH THE MOTOR MANUFACTURERS RECOMMENDATIONS, ALL ELECTRICAL CODES AND OSHA REGULATIONS. FAILURE TO PROPERLY INSTALL, MAKE WIRING CONNECTIONS, INSPECT OR PERFORM ANY MAINTENANCE TO A MOTOR CAN RESULT IN MOTOR FAILURE, PROPERTY DAMAGE, EXPLOSION, ELECTRICAL SHOCK AND DEATH.

1. **DO NOT connect or operate a motor without reading the motor manufacturers instructions supplied with the blower.** The basic principle of motor maintenance is: **KEEP THE MOTOR CLEAN AND DRY.** This requires periodic inspections of the motor. The frequency of the inspections depends on the type of motor, the service and environment it will be subjected to and the motor manufacturers instructions.
2. **Cleaning:** Cleaning should be limited to exterior surfaces only. **Follow motor manufacturers cleaning instructions.**
3. **Lubrication:** Most small motors have sealed bearings that are permanently lubricated for the life of the motor. Some larger motors have grease plugs that should be replaced with grease fittings to perform re-lubrication. These motors, or any motor with grease fittings, should be lubricated in accordance with the motor manufacturers recommendations. Lubrication frequency depends on the motor horsepower, speed and service. **BE SURE** you use compatible grease and **DO NOT** over grease.
4. **Location:** If the motor will be outside and subjected to the weather, it is recommended that a weather cover be installed to keep rain and snow off of the motor. No motors are guaranteed to be "watertight". Be careful to allow enough openings between the motor and the motor cover to let the motor "breath". If the back end of the motor is covered, the cover should be no closer than 3" to the back of the motor for proper ventilation.

5. **Wiring Connections:** All wiring connections should be made for the proper voltage and phase as shown on the motor nameplate. Connections should follow the motor manufacturers recommendations as shown on the wiring schematic. This wiring diagram will be located on the outside of the motor, inside of the motor conduit box or on the motor nameplate. **Reversing some wires might be necessary to get the correct blower rotation.**
6. **Motors with Thermal Overload Protection:** If a motor is equipped with thermal overloads, the thermal overload must be wired per the wiring schematic to be operable. ***There are 3 types of thermal overloads:***
   a. **Automatic:** These will automatically shut the motor down if the internal temperature exceeds the design limits.

⚠ DANGER

MAKE SURE YOU LOCK OUT THE POWER TO THE MOTOR BEFORE INSPECTING ANY MOTOR WITH AUTOMATIC THERMALS. WHEN THE THERMALS COOL DOWN, THEY WILL ALLOW THE MOTOR TO AUTOMATICALLY START UP AGAIN, UNLESS YOU HAVE LOCKED OUT THE POWER TO THE MOTOR.

   b. **Manual:** These motors will have a button on them. If the motor overheats, it will shut down. After you have inspected the motor and eliminated the over heating problem, you will need to "reset" it by pushing the button. **You should still lock out the power BEFORE inspecting the motor.**
   c. **Thermostats:** This type of thermal is a temperature sensing device **ONLY**. If the motor overheats, the thermostats will open or close (depending on the type) and send a **"signal"** to the electrical box. ***THEY WILL NOT TURN THE MOTOR OFF.*** **These are pilot circuit devices that must be connected to the magnetic starter circuit.**

7. **EXPLOSION PROOF Motors:** No motor is explosion proof. Explosion proof (EXP) motors are designed so if there is an explosion **WITHIN** the motor, the explosion will be **CONTAINED INSIDE** the motor and not allowed to get out to the atmosphere. All explosion proof motors must be selected based on the atmosphere and/or the environment the motor will be operating in. Explosion proof motors are designed, rated, and labeled for their operating conditions based on Classes, Groups and "T" Codes. **The Class, Group and "T" Code of an EXP motor MUST be selected based on the atmosphere and/or environmental conditions the motor will be operating in. Consult the NEC (National Electric Code) and the NFPA (National Fire Protection Association) for the proper EXP motor Class, Group and "T" Code required for your specific application and location.**

⚠ DANGER

IF AN EXPLOSION PROOF MOTOR IS USED IN AN AREA CONTAINING VOLITILE LIQUIDS, GASES, FUMES OR DUST FOR WHICH THE MOTOR WAS NOT DESIGNED TO OPERATE IN, AN EXPLOSION AND/OR FIRE CAN OCCUR.

NOTICE:

   a. **All EXP motors have some type of thermal overload as required by UL (Underwriters Laboratories). Refer to all of Section 6 above.**
   b. **All EXP motors are required to have the UL (Underwriters Laboratories) and CSA (Canadian Standards Association) listing numbers on the motor name plate or on a separate plate attached to the motor. The Class, Group and "T" Code the motor is designed for must also be listed.**

8. **Normal Motor Operating Temperatures:**
   Using your hand to test the normal running temperature of a motor can be a very painful experience;
   The normal operating temperature of a fully loaded, open type, electric motor operating in a 70°F. (21° C.) ambient temperature is 174°F. (79° C.)

C. Maximum Blower Speed and Motor Speed Controllers:

If you will be using any type of motor speed controller with this blower, **DO NOT** exceed the **maximum safe blower speed**. Installing and using a speed control device requires special training and certification as required by the speed control manufacturer. See the manufacturers instructions for proper use, installation and wiring connections for the maximum speed settings. It may also be necessary to "block out" some speeds to eliminate a resonant vibration problem. The maximum safe blower speed is shown on the data sheet shipped with the blower. If you have lost the data sheet, contact Cincinnati Fan or our sales office for your area. You must have the serial number from the **blower** name plate for us to determine the maximum safe blower speed. Cincinnati Fan will only extend the motor manufacturers warranty, when used with a speed controlling device, if the motor has the words **"Inverter Duty"** marked on the motor name plate. If the motor does not have **"Inverter Duty"** marked on the motor name plate, and you have a motor failure, you will be required to contact the motor manufacturer for any service or warranty claims.

IV. INITIAL UNIT STARTUP

NOTICE: Failure to complete and document all the following pre-startup and both post-startup checks, listed in sections A (below) and B on page 8, could void all warranties.

A. Pre-Startup & Post-Startup Checks: (Check blocks as each step is completed. Retain this for your records.)

A1. Pre-Startup Checks Completed By: _____ **DATE:** _____

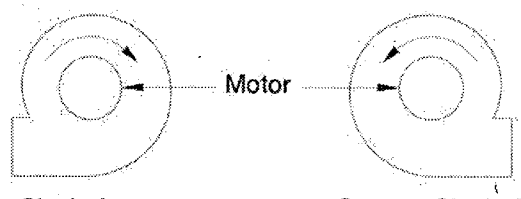
A2. 8 Hour, Post-Startup Checks Completed By: _____ **DATE:** _____

A3. 3 Day, Post-Startup Checks Completed By: _____ **DATE:** _____

MAKE SURE POWER TO THE MOTOR IS LOCKED OUT BEFORE STARTING PRE-STARTUP OR POST-STARTUP CHECKS.

1. ☐☐☐ If possible, *CAREFULLY* spin the blower wheel by hand to ensure it rotates freely and no rubbing or clicking noise is heard.
2. ☐☐☐ Check all blower, foundation and duct work hardware to make sure it is tight.
3. ☐☐☐ Check all blower wheel set screws to make sure they are tight per **Table 1** on page 5.
4. ☐☐☐ If the wheel has a taper-lock bushing, make sure the bolts are tightened per **Table 2** on page 5.
5. ☐☐☐ Make certain there is no foreign material in the blower or duct work that can become a projectile.
6. ☐☐☐ Make sure any inspection doors in the duct work are securely bolted or locked.
7. ☐☐☐ Ensure all electrical power components are properly sized and matched for your electrical system.
8. ☐☐☐ Check that all required guards are properly secured.
9. ☐☐☐ Any dampers should be fully opened and closed to make sure there is no binding or interference.
10. ☐☐☐ If your blower is mounted on an elevated support structure, make sure the structure is welded at all the joint connections and the structure is properly braced to prevent "side sway".
11. ☐☐☐ Close any dampers to minimize load on motor. Especially on blowers with high temperature construction. **Never** subject a "cold" blower to a "hot" gas stream. If the blower will be handling "hot gases" greater than 150°F (65°C) it is imperative that the blower be subjected to a gradual rate of temperature increase, not to exceed 15°F/minute (8°C/minute). The same temperature limits are also important when the blower is experiencing a drop in temperature until the temperature drops down to 150°F (65°C). Only, when the <u>entire</u> blower has reached an equilibrium temperature of 150°F (65°C), or less, should the power be turned off.
12. ☐☐☐ Make sure the power source connections to the blower motor are per the motor manufacturers instructions.
13. ☐☐☐ Make sure the blower wheel is stationary prior to startup. **Starting a blower with a wheel that is rotating backwards can cause wheel damage.**
14. ☐☐☐ Apply power to the blower motor momentarily (i.e. "bump start") to check for proper blower wheel rotation. If the blower is rotating in the wrong direction, reconnect the motor leads per the motor manufacturers wiring schematic. **Blower rotation is determined by viewing the blower from the <u>motor side</u> of the blower, NOT from the inlet side**. After reconnecting the leads, repeat this step. **See Fig. 2 below.**

Fig. 2



Clockwise (CW) Rotation **Counter-Clockwise (CCW) Rotation**

15. ☐☐☐ Apply power to the blower motor and let it come up to full speed. **Turn off the power.** Look and listen for any unusual noise or mechanical abnormality while the blower wheel is still spinning. If any are noticed, lock out the power, wait for the blower wheel to come to a complete stop, locate the cause and correct it.
16. ☐☐☐ Unlock power and start the blower.
17. ☐☐☐ Measure, record and keep the following motor data for future reference and comparison:
(Single phase motors will only have L1 and L2 leads)

Amperage draw on each motor lead: L1 _____ **L2** _____ **L3** _____
(<u>Running</u> amps **SHOULD NOT** exceed the motor nameplate amps for the voltage being operated on)

Voltage coming to motor leads: L1_____ **L2**_____ **L3**_____
(Should be <u>about</u> the same input voltage on <u>all</u> leads)

B. Vibration:

The blower was balanced at the factory to comply with ANSI/AMCA Standard 204-05, Category BV-3. However, rough handling in shipment and/or erection, weak and/or non-rigid foundations, and misalignment may cause a vibration problem after installation. After installation, the vibration levels should be checked by personnel experienced with vibration analysis and vibration analysis equipment.

NOTE:

The blower SHOULD NOT be operated if the vibration velocity of the fan exceeds 0.40 inches per second, filter out, if the blower is rigidly mounted. If the blower is mounted on isolators or on an isolator base, it SHOULD NOT be operated if the vibration velocity of the blower exceeds 0.65 inches per second, filter out.

Vibration readings for direct driven blowers should be taken on the motor at the top, sides and end as per **Fig. 3** below. After you have taken your vibration readings, write them down in the spaces below and keep for future comparison.

⚠ DANGER

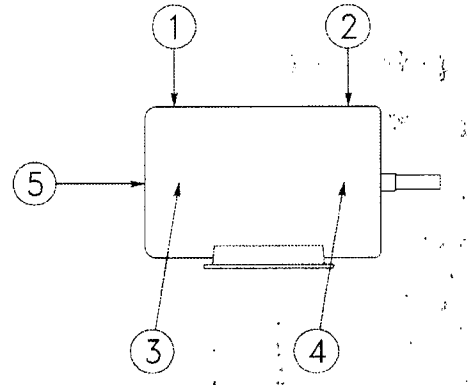
If the blower is going to be conveying material, it is the users responsibility to periodically turn the blower off and lock out the power. The blower wheel should then be checked for material build-up and/or erosion. If material has built up on any parts of the wheel, it MUST be removed and cleaned before it is put back into service. If any parts of the wheel have been eroded, the wheel MUST be replaced. Failure to perform this inspection can cause excessive vibration that will damage the blower and/or motor bearings. When vibration becomes excessive, it will lead to complete blower failure that could cause property damage, severe personal injury and death. The user must determine the frequency of this inspection based on the actual circumstances of their operation, BUT checking the vibration readings should NEVER exceed a 12 month period. For the AMCA/ANSI standard for vibration limits, see Fig. 4 on page 9.

Fig. 3

VIBRATION METER PROBE POSITIONS

For Arrangement 4 Blowers

	1	2	3	4	5
A					
B					
C					

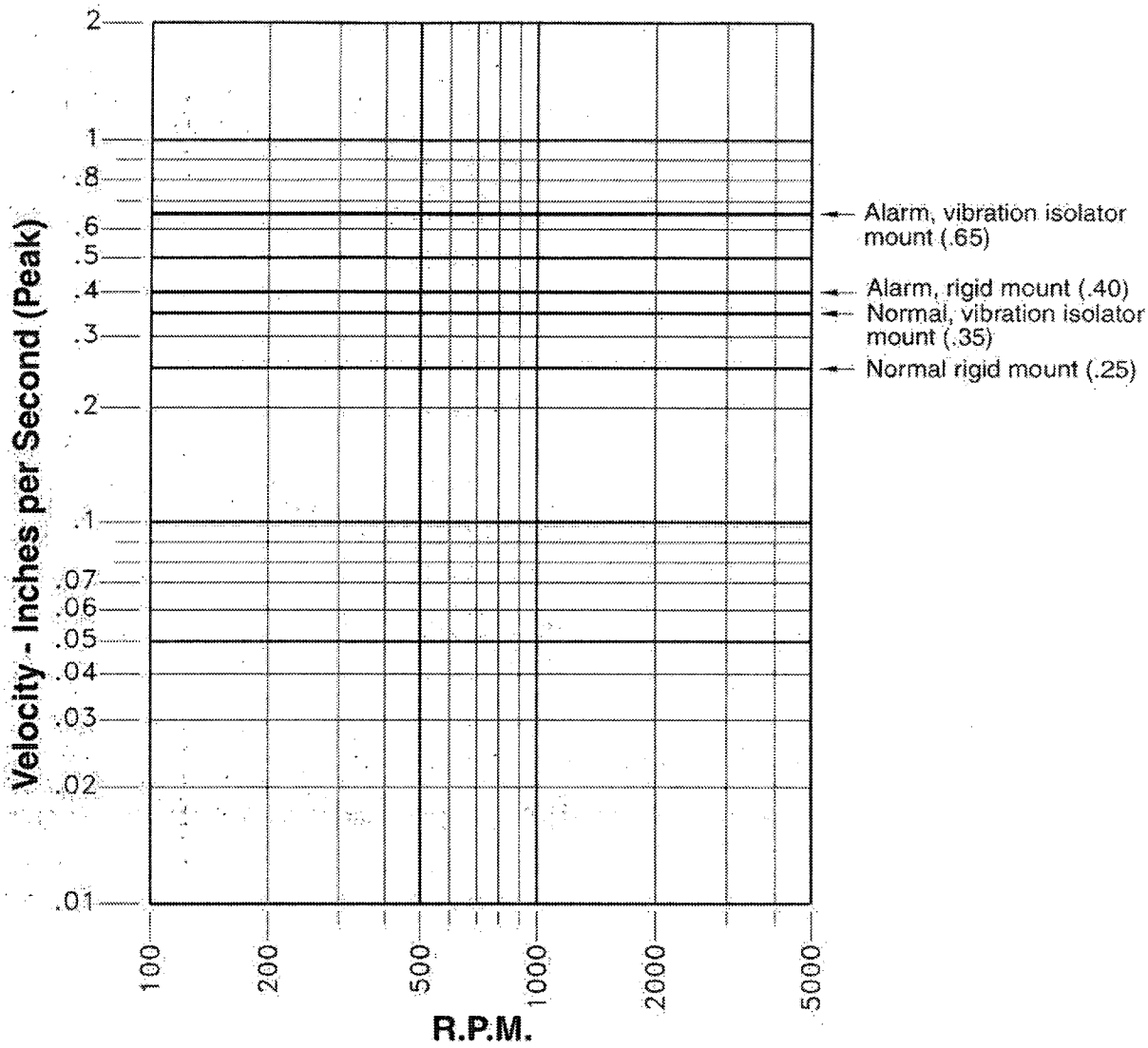


A Pre-Startup ..... Readings taken by: _____ Date: _____

B 8 Hour Post-Startup ..... Readings taken by: _____ Date: _____

C 3 Day Post-Startup ..... Readings taken by: _____ Date: _____

Fig. 4 Vibration Severity Chart



V. ROUTINE INSPECTION & MAINTENANCE

Periodic inspection of all the blower parts is the key to good maintenance and trouble-free operation. The frequency of inspections must be determined by the user and is dependent upon the severity of the application. **BUT**, it should **NEVER** exceed a 12 month period. The user should prepare an inspection and maintenance schedule and make sure it is adhered to.

⚠ WARNING

BEFORE STARTING ANY INSPECTION OR MAINTENANCE, BE SURE BLOWER IS TURNED OFF, POWER IS LOCKED OUT AND THE BLOWER WHEEL HAS BEEN CAREFULLY SECURED TO PREVENT WIND MILLING. IF THE OPERATING CONDITIONS OF THE BLOWER ARE TO BE CHANGED (SPEED, PRESSURE, TEMPERATURE, ETC.) CONSULT CINCINNATI FAN, OR OUR SALES OFFICE FOR YOUR TERRITORY, TO DETERMINE IF THE UNIT WILL OPERATE SAFELY AT THE NEW CONDITIONS.

A. Hardware:

All blower and foundation hardware should be checked to make sure it is tight. Wheel set screws or taper-lock bushings should be tightened to the torque values shown in **Tables 1 and 2** on page 5.

NOTE: If any set screws have come loose, they must be thrown away and replaced. **NEVER** use set screws more than once. **Replace with knurled, cup-point set screws with a nylon locking patch.**

B. Motor Bearing Lubrication:

Most smaller motors have sealed bearings that never require re-lubrication for the life of the motor. For any motors with grease fittings, consult the motor manufacturers recommendations with reference to the lubrication frequency and the type of grease that should be used.

DO NOT over grease the motor bearings. Generally, 1-2 shots should be enough. Use a hand operated grease gun at no more than 40 PSI. ***IF POSSIBLE, CAREFULLY*** **lubricate the motor bearings while the motor is running.**

C. Wheel Balance:

All blower wheels are balanced at the factory. It is not uncommon that additional "trim balancing" is required after the blower is assembled. Trim balancing of the blower assembly, in the field, is typically always necessary for all replacement wheels. **After any wheel is installed, the final balance of the entire blower assembly should be checked.** Refer to **Section B** on page 8 and **Fig. 4** on page 9. Air stream material or chemicals can cause abrasion or corrosion of the blower parts. This wear is generally uneven and, over time, will lead to the wheel becoming unbalanced, causing excessive vibration. When that happens, the wheel must be rebalanced or replaced. The other air stream components should also be inspected for wear or structural damage and cleaned or replaced if necessary. **After cleaning any blower wheel, it should be balanced and then "trim balanced" on the motor shaft.**

There are two ways to balance a blower wheel:

1. **Add balancing weights for fabricated aluminum, steel or stainless steel wheels:**
   Balance weights should be rigidly attached to the wheel at a location that will not interfere with the blower housing nor disrupt air flow. They should (if at all possible) be welded to the wheel. When trim balancing the wheel, **on the blower,** be sure to ground the welder **directly** to the blower wheel. Otherwise, the welding current will likely pass through the motor and damage the motor bearings.
2. **Grinding off material for cast aluminum wheels: (on some models only)**
   If you are grinding on the wheel to remove material, be very careful not to grind too much in one area. That could affect the structural integrity of the wheel.

   NOTE:
   Removing any Backward Inclined or Airfoil wheel from the blower to clean it, requires special attention when reinstalling the wheel back into the blower housing. Make sure you reinstall the wheel so the proper wheel-to-inlet clearance is maintained. Failure to do this will affect the blowers airflow (CFM), static pressure (SP) capabilities and efficiency. Consult Cincinnati Fan or our local sales office for your area for assistance if necessary.

D. Vibration:

As mentioned previously in this manual, excessive vibration can cause premature motor bearing failure that could lead to catastrophic failure of the blower. After performing any routine maintenance, the vibration readings should be taken again. New readings should be taken (maximum every 12 months) and compared to the readings you recorded in **Figure 3**, on page 8, during the initial startup. **If any major differences are present, the cause should be determined and corrected before the blower is put back into operation.**

The most common causes of vibration problems are:

1. Wheel unbalance.
2. Mechanical looseness.
3. Poor blower inlet and/or discharge conditions.
4. Foundation stiffness.

E. Dampers and Valves: (Airflow control devices)

Turn off and lock out power to the blower motor. Any dampers or valves should be periodically inspected to make sure all parts are still operable within their full range and there is no interference with any other damper or blower components. Any bearings or seals should be checked for their proper function. The manufacturers maintenance instructions should be followed.

F. Safety Equipment & Accessories:

It is the users responsibility to make sure that all safety guards required by the company, local, state and OSHA regulations are properly attached and fully functional at all times. If any guards become defective or non-functional at any time, **the power to the blower MUST be turned off and locked out** until complete repairs and/or replacements have been made, installed and inspected by authorized personnel.

Any accessories used in conjunction with the blower should also be inspected to make sure they are functioning within their intended limits and design specifications. The manufacturers maintenance manuals should be referred to for correct maintenance procedures. These accessories include, but are not limited to, the following:

Shaft seals, inspection doors, vibration isolators or vibration bases, air flow or pressure measuring equipment, hoods, controls, special coatings, silencers, expansion joints, valves, flexible connectors and filters.

VI. ORDERING REPLACEMENT PARTS:

Under normal conditions, you should not need any spare or replacement parts for at least 24 months after shipment from Cincinnati Fan. That does not include any wear due to abrasion, corrosion, excessive temperatures, abuse, misuse, accident or any severe conditions the fan was not designed for.

NOTICE:

1. **If this blower is vital to any process that could cost you lost revenue, we strongly recommend that you keep a replacement blower wheel and motor at your location.**

2. **If this blower is vital for the safety of any people and/or animals, we strongly recommend that you keep a complete blower/motor assembly, as originally ordered, at your location.**

To order any parts or complete units, contact us for the name of our sales office for your area. Or you can find them on our website at: **www.cincinnatifan.com**

WE MUST HAVE THE BLOWER SERIAL NUMBER FROM THE BLOWER NAME PLATE TO IDENTIFY PARTS CORRECTLY.

VII. TROUBLESHOOTING

⚠ DANGER

Troubleshooting should only be performed by trained personnel. Any potential electrical problems should only be checked by a licensed electrician. All safety rules, regulations and procedures MUST be followed. Failure to follow proper procedures can cause property damage, severe bodily injury and death.

Potential problems and causes listed below are in no order of importance or priority. The causes are only a list of the most common items to check to correct a problem. If you find the cause of a problem, **DO NOT** assume it is the **ONLY** cause of that problem. Different problems can have the same causes.

PROBLEM	CAUSE
Excessive Vibration	1. Loose mounting bolts, wheel set screws, taper-lock hubs. 2. Worn or corroded blower wheel. 3. Accumulation of foreign material on blower wheel. 4. Bent motor shaft. 5. Worn motor bearings. 6. Motor out of balance. 7. Inadequate structural support. 8. Support structure not sufficiently cross braced. 9. Weak or resonant foundation. 10. Foundation not flat and level.
Airflow (CFM) Too Low	1. Blower wheel turning in wrong direction (**rotation**). 2. Actual system static pressure (**SP**) is higher than expected. 3. Motor speed (**RPM**) too low. 4. Dampers or valves not adjusted properly. 5. Leaks or obstructions in duct work. 6. Filters dirty. 7. Inlet and/or discharge guards are clogged. 8. Duct elbow too close to blower inlet and/or discharge. 9. Improperly designed duct work 10. Blower wheel not properly located relative to the inlet bell (Models **HDBI, HDAF, SQBI** and **SQAF** only).
Airflow (CFM) Too High	1. Actual system static pressure (**SP**) is lower than expected. 2. Motor speed (**RPM**) too high. 3. Filter not in place. 4. Dampers or valves not adjusted properly.

PROBLEM	CAUSE
Motor Overheating	**NOTE: A normal motor will operate at 174°F. See B-8 on page 6.** 1. Actual system static pressure **(SP)** is lower than expected. 2. Voltage supplied to motor is too high or too low. 3. Motor speed (**RPM**) too high or defective motor. 4. Air density higher than expected. 5. Motor wired incorrectly or loose wiring connections. 6. Cooling fan cover on back of motor is clogged. (Fan cooled motors only.)
Excessive Noise	1. Wheel rubbing inside of housing. 2. Worn or corroded blower wheel. 3. Accumulation of foreign material on blower wheel. 4. Loose mounting bolts, wheel set screws, or taper-lock hubs. 5. Bent motor shaft. 6. Worn motor bearings. 7. Motor out of balance. 8. Motor bearings need lubrication. 9. Vibration originating elsewhere in system. 10. System resonance or pulsation. 11. Inadequate or faulty design of blower support structure. 12. Blower operating near "stall" condition due to incorrect system design or installation.
Fan Doesn't Operate	1. Motor wired incorrectly. 2. Incorrect voltage supply. 3. Defective fuses or circuit breakers. 4. Power turned off elsewhere. 5. Motor wired incorrectly or loose wiring connections. 6. Defective motor.

VIII. LONG TERM STORAGE INSTRUCTIONS: (Storage exceeding 30 days after receipt of equipment)

NOTE: Failure to adhere to these instructions voids all warranties in their entirety.

1. Storage site selection:
   a. Level, well-drained, firm surface, in clean, dry and warm location. Minimum temperature of 50°F (10°C).
   b. Isolated from possibility of physical damage from construction vehicles, erection equipment, etc.
   c. Accessible for periodical inspection and maintenance.
2. The blower should be supported under each corner of its base to allow it to "breath". Supports (2 x 4's, timbers, or railroad ties) should be placed diagonally under each corner.
3. If the equipment is to be stored for more than three (3) months, the entire blower assembly must be loosely covered with plastic, **but not tightly wrapped**.
4. Storage Maintenance:

   A periodic inspection and maintenance log, by date and action taken, must be developed and maintained for each blower. See example below. Each item must be checked monthly.

EXAMPLE:

Storage / Maintenance Schedule Log

ITEM	ACTION	DATES CHECKED
1	Re-inspect units to insure any protective devices used are functioning properly. Check for scratches in the finish which will allow corrosion or rust to form.	
2	Rotate wheel a minimum of 10 full revolutions to keep the motor bearing grease from separating and drying out. ***This is a critical step.***	

Long Term Storage instructions continued on page 13.

5. General Motor Procedure:

   If the motor is not put into service immediately, the motor must be stored in a clean, dry, warm location. Minimum temperature of 50°F. (10°C,). Several precautionary steps must be performed to avoid motor damage during storage.

   a. Use a "Megger" each month to ensure that integrity of the winding insulation has been maintained. Record the Megger readings. Immediately investigate any significant drop in insulation resistance.
   b. **DO NOT** lubricate the motor bearings during storage. Motor bearings are packed with grease at the factory.
   c. If the storage location is damp or humid, the motor windings **must** be protected from moisture. This can be done by applying power to the motor's space heaters, (IF AVAILABLE) while the motor is in storage. If the motor does not have space heaters, storing it in a damp or humid location will, very quickly, cause internal corrosion and motor failure which is not warranted.

***NOTE*:**
For specific storage instructions, for the actual motor and any accessory parts that were supplied, refer to the manufacturer's instructions.

IX. LIMITED WARRANTY:

Cincinnati Fan & Ventilator Company (Seller) warrants products of its own manufacture, against defects of material and workmanship under normal use and service for a period of eighteen (18) months from date of shipment or twelve (12) months from date of installation, whichever occurs first. This warranty does not apply to any of Seller's products or any part thereof which has been subject to extraordinary wear and tear, improper installation, accident, abuse, misuse, overloading, negligence or alteration. This warranty does not cover systems or materials not of Seller's manufacture. On products furnished by Seller, but manufactured by others, such as motors, Seller extends the same warranty as Seller received from the manufacturer thereof. Expenses incurred by Purchaser's in repairing or replacing any defective product will not be allowed except where authorized in writing and signed by an officer of the Seller.

The obligation of the Seller under this warranty shall be limited to repairing or replacing F.O.B. the Seller's plant, or allowing credit at Seller's option. **THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND OF ALL OTHER OBLIGATIONS AND LIABILITIES OF THE SELLER. THE PURCHASER ACKNOWLEDGES THAT NO OTHER REPRESENTATIONS WERE MADE TO PURCHASER OR RELIED UPON BY PURCHASER WITH RESPECT TO THE QUALITY OR FUNCTION OF THE PRODUCTS HEREIN SOLD.**

Removal of the Sellers nameplate or any generic fan nameplate containing the fan serial number voids all warranties, either written or implied. Failure to complete and document all the pre-startup and post startup checks and perform the suggested routine maintenance checks voids all warranties, either written or implied.

LIMITATION OF LIABILITY:

Notice of any claim, including a claim for defect in material or workmanship, must be given to Seller in writing within 30 days after receipt of the equipment or other products. Seller reserves the right to inspect any alleged defect at Purchaser's facility before any claim can be allowed and before adjustment, credit, allowance replacement or return will be authorized. See **RETURNS** below. Seller's liability with respect to such defects will be limited to the replacement, free of charge, of parts returned at Purchaser's expense F.O.B. Seller's plant and found to be defective by the Seller.

IN NO EVENT WILL SELLER BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER IN CONTACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, INCLUDING WITHOUT LIMITATION DAMAGES FOR INJURY TO PERSONS OR PROPERTY, LOST PROFITS OR REVENUE, LOST SALES OR LOSS OF USE OF ANY PRODUCT SOLD HEREUNDER. PURCHASER'S SOLE AND EXCLUSIVE REMEDY AGAINST SELLER WILL BE THE REPLACEMENT OF DEFECTIVE PARTS AS PROVIDED HEREIN OR REFUND OF THE PURCHASE PRICE FOR DEFECTIVE PRODUCTS, AT SELLER'S SOLE OPTION. SELLER'S LIABILITY ON ANY CLAIM, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, FOR ANY LOSS OR DAMAGE ARISING OUT OF OR IN CONNECTION WITH PURCHASER'S ORDER OR THE PRODUCTS OR EQUIPMENT PURCHASED HEREUNDER, SHALL IN NO CASE EXCEED THE PURCHASE PRICE OF THE EQUIPMENT GIVING RISE TO THE CLAIM.

RESPONSIBILITY:

It is the understanding of the Seller that Purchaser and/or User will use this equipment in conjunction with additional equipment or accessories to comply with all Federal, State and local regulations. The Seller assumes no responsibility for the Purchaser's or Users compliance with any Federal, State and local regulations.

RETURNS:

Cincinnati Fan & Ventilator Company assumes no responsibility for any material returned to our plant without our permission. An **RMA** (Return Material Authorization) number must be obtained and clearly shown on the outside of the carton or crate and on a packing slip. Any items returned must be shipped freight prepaid. Failure to comply will result in refusal of the shipment at our receiving department.

DISCLAIMER

This manual, and all its content herein, is based on all applicable known material at the time this manual was created. **Any parts of this manual are subject to change at any time and without notice.**

If any statements, diagrams and/or instructions contained herein, **for components not manufactured by the Seller,** conflict with instructions in the manufacturer's manual (i.e.: motors, dampers, etc.), the instructions in the manufacturer's manual, for that component take precedent.

Should you want the latest version of this manual, please contact us or our sales office for your area. Or, you can print a current version by going to our website at: **www.cincinnatifan.com**

cincinnati fan

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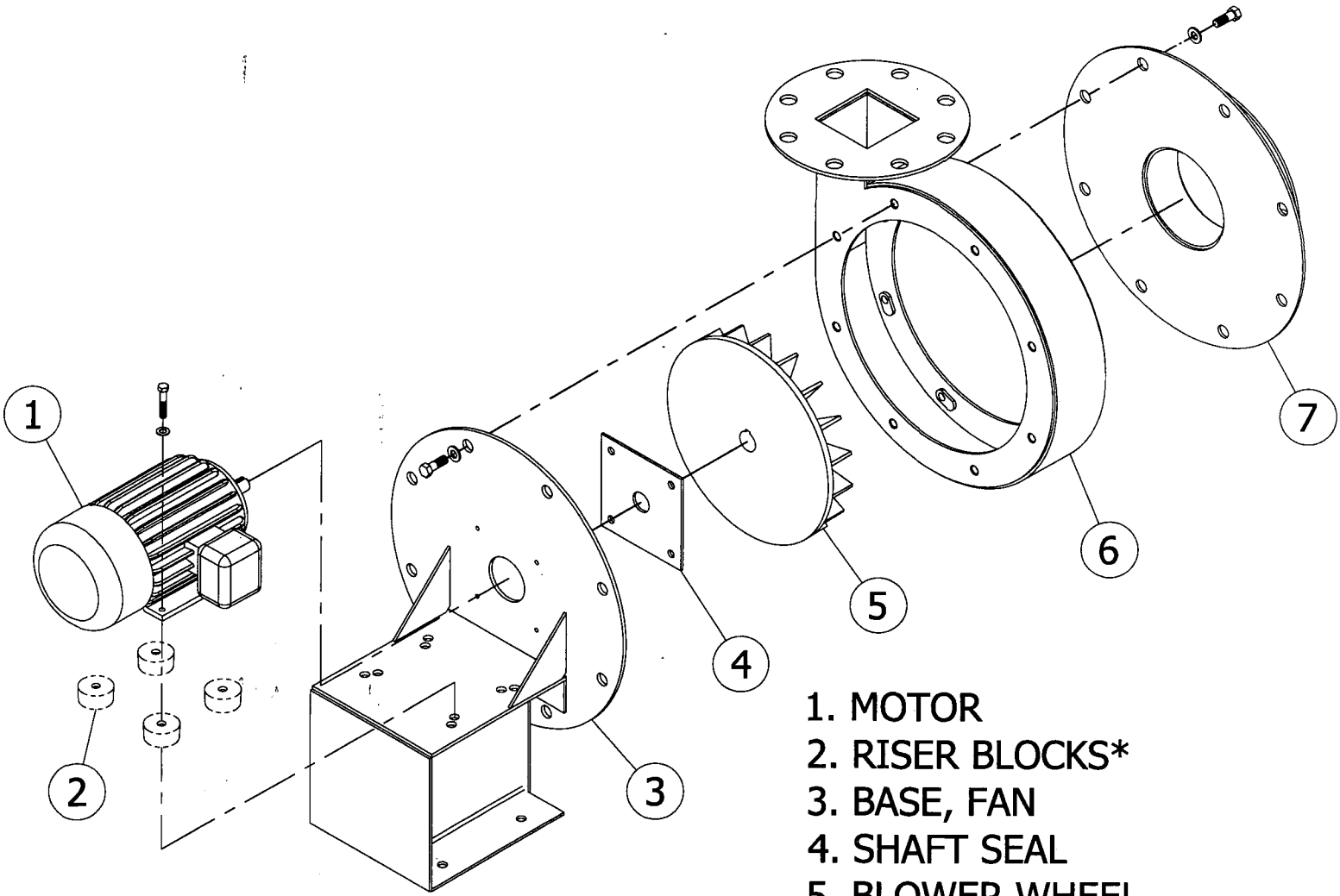

1. MOTOR
2. RISER BLOCKS*
3. BASE, FAN
4. SHAFT SEAL
5. BLOWER WHEEL
6. HOUSING
7. INLET SIDE PLATE

* IF REQUIRED

HPI ARRANGEMENT 4

The drawing shown above is a representation of the basic model blower or fan purchased on the serial number shown on page 1. It does not include any optional or accessory parts or any special construction features that might have been supplied with the original order.

Appendix J
SSDS Inspection Checklists

Sub-Slab Depressurization System

Inspection Checklist

Building 20

Date: _____

Insepctors Name: _____

Company: _____

Inspector Initials: _____

I. Pressure Readings

Suction Riser Identification	Pressure Reading (inWC)	Initial Pressure Reading (inWC)
20-1	_____	0.75
20-2	_____	0.75
20-3	_____	0.75
20-4	_____	1
20-5	_____	0.75
20-6	_____	
20-7	_____	0.75
20-8	_____	0.45
20-9	_____	0.5
20-10		0.5

Notes:

Locations of suction risers can be found on attached Figure.

System details are included in Appendix B.

II. Fan Inspection

1. Operational? Y ____ N ____
2. Fan/Controls Clear of obstructions? Y ____ N ____
3. Rapair needs? Y ____ N ____

A. Observations/comments:

Attach photographs as appropriate

III. Piping/Penetrations

1. Is piping intact? (Y or N)
2. Are floor/wall penetrations sealed? (Y or N)

If 'No' to either of the above, provide observations and describe corrective actions taken

B. Actions taken:

C. Recommended Maintenance/Repairs:

Do any of the pressure gages require repair or replacement? Y ____ N ____

If so, indicate locations, and actions taken:

_____

_____

IV. Building Modifications: Have building modifications been made that could affect the operation of the SSD System? (Describe)

Additional Comments:

Report all maintenance/repair needs immediately to building facility manager

Sub-Slab Depressurization System

Inspection Checklist

Building 31

Date: _____

Insepctors Name: _____

Company: _____

Inspector Initials: _____

I. Pressure Readings

Suction Riser Identification	Pressure Reading (inWC)	Initial Pressure Reading (inWC)
31-1	_____	1.5
31-2	_____	1.5
31-3	_____	1.5

II. Fan Inspection

1. Operational? Y ____ N ____
2. Fan/Controls Clear of obstructions? Y ____ N ____
3. Rapair needs? Y ____ N ____

A. Observations/comments:

Attach photographs as appropriate

Notes:

Locations of suction risers can be found on attached Figure.

System details are included in Appendix B.

III. Piping/Penetrations

1. Is piping intact? (Y or N)
2. Are floor/wall penetrations sealed? (Y or N)

If 'No' to either of the above, provide observations and describe corrective actions taken

B. Actions taken:

C. Recommended Maintenance/Repairs:

Do any of the pressure gages require repair or replacement? Y ____ N ____

If so, indicate locations, and actions taken:

_____

_____

IV. Building Modifications: Have building modifications been made that could affect the operation of the SSD System? (Describe)

Additional Comments:

Report all maintenance/repair needs immediately to building facility manager

Sub-Slab Depressurization System

Inspection Checklist

Building 14

Date: _____

Insepctors Name: _____

Company: _____

Inspector Initials: _____

I. Pressure Readings

Suction Riser Identification	Pressure Reading (inWC)	Initial Pressure Reading (inWC)
14-1	_____	1.25
14-2	_____	1.25

II. Fan Inspection

1. Operational? Y ____ N ____
2. Fan/Controls Clear of obstructions? Y ____ N ____
3. Rapair needs? Y ____ N ____

A. Observations/comments:

Attach photographs as appropriate

Notes:

Locations of suction risers can be found on attached Figure.

System details are included in Appendix B.

III. Piping/Penetrations

1. Is piping intact? (Y or N)
2. Are floor/wall penetrations sealed? (Y or N)

If 'No' to either of the above, provide observations and describe corrective actions taken

B. Actions taken:

C. Recommended Maintenance/Repairs:

Do any of the pressure gages require repair or replacement? Y ____ N ____

If so, indicate locations, and actions taken:

_____

_____

IV. Building Modifications: Have building modifications been made that could affect the operation of the SSD System? (Describe)

Additional Comments:

Report all maintenance/repair needs immediately to building facility manager

Sub-Slab Depressurization System

Inspection Checklist

Building 15

Date: _____

Insepctors Name: _____

Company: _____

Inspector Initials: _____

I. Pressure Readings

Suction Riser Identification	Pressure Reading (inWC)	Initial Pressure Reading (inWC)
15-1	_____	3.5
15-2	_____	3.75
15-3	_____	3.5
15-4	_____	3.5

II. Fan Inspection

1. Operational?	Y	____	N	____
2. Fan/Controls Clear of obstructions?	Y	____	N	____
3. Rapair needs?	Y	____	N	____

A. Observations/comments:

Attach photographs as appropriate

Notes:

Locations of suction risers can be found on attached Figure.

System details are included in Appendix B.

III. Piping/Penetrations

1. Is piping intact? (Y or N)
2. Are floor/wall penetrations sealed? (Y or N)

If 'No' to either of the above, provide observations and describe corrective actions taken

B. Actions taken:

C. Recommended Maintenance/Repairs:

Do any of the pressure gages require repair or replacement? Y ____ N ____

If so, indicate locations, and actions taken:

_____

_____

IV. Building Modifications: Have building modifications been made that could affect the operation of the SSD System? (Describe)

Additional Comments:

Report all maintenance/repair needs immediately to building facility manager

Sub-Slab Depressurization System

Inspection Checklist

Building 8

Date: _____

Insepctors Name: _____

Company: _____

Inspector Initials: _____

I. Pressure Readings

Suction Riser Identification	Pressure Reading (inWC)	Initial Pressure Reading (inWC)
S-1	_____	7
S-2	_____	7
S-3	_____	7
S-4	_____	7.5
S-5	_____	7
S-6	_____	7.25
S-7	_____	10
S-8	_____	7.25
S-9	_____	7.25
S-10	_____	5.5

Notes:

Locations of suction risers can be found on attached Figure.

System details are included in Appendix B.

II. Fan Inspection

1. Operational? Y ____ N ____
2. Fan/Controls Clear of obstructions? Y ____ N ____
3. Rapair needs? Y ____ N ____

A. Observations/comments:

Attach photographs as appropriate

III. Piping/Penetrations

1. Is piping intact? (Y or N)
2. Are floor/wall penetrations sealed? (Y or N)

If 'No' to either of the above, provide observations and describe corrective actions taken

B. Actions taken:

C. Recommended Maintenance/Repairs:

Do any of the pressure gages require repair or replacement? Y ____ N ____

If so, indicate locations, and actions taken:

_____

_____

IV. Building Modifications: Have building modifications been made that could affect the operation of the SSD System? (Describe)

Additional Comments:

Report all maintenance/repair needs immediately to building facility manager

Sub-Slab Depressurization System

Inspection Checklist

Building 25

Date: _____

Insepctors Name: _____

Company: _____

Inspector Initials: _____

I. Pressure Readings

Suction Riser Identification	Pressure Reading (inWC)	Initial Pressure Reading (inWC)
25-1	_____	10.75
25-2	_____	10.5
25-3	_____	13
25-4	_____	14.25
25-5	_____	13

II. Fan Inspection

1. Operational? Y ____ N ____
2. Fan/Controls Clear of obstructions? Y ____ N ____
3. Rapair needs? Y ____ N ____

A. Observations/comments:

Attach photographs as appropriate

Notes:

Locations of suction risers can be found on attached Figure.

System details are included in Appendix B.

III. Piping/Penetrations

1. Is piping intact? (Y or N)
2. Are floor/wall penetrations sealed? (Y or N)

If 'No' to either of the above, provide observations and describe corrective actions taken

B. Actions taken:

C. Recommended Maintenance/Repairs:

Do any of the pressure gages require repair or replacement? Y ____ N ____

If so, indicate locations, and actions taken:

_____

_____

IV. Building Modifications: Have building modifications been made that could affect the operation of the SSD System? (Describe)

Additional Comments:

Report all maintenance/repair needs immediately to building facility manager

Sub-Slab Depressurization System

Inspection Checklist

Building 17/17A

Date: _____

Insepctors Name: _____

Company: _____

Inspector Initials: _____

I. Pressure Readings

Suction Riser Identification	Pressure Reading (inWC)	Initial Pressure Reading (inWC)
17-1	_____	0
17-2	_____	0
17-3	_____	0.25
17-4		2
17-5	_____	2
17A-1	_____	0
17A-2	_____	0

Is Building Pressurized? Y, N

What is Presure Reading?

Notes:

Locations of suction risers can be found on attached Figure.

System details are included in Appendix B.

II. Fan Inspection

1. Operational? Y ____ N ____
2. Fan/Controls Clear of obstructions? Y ____ N ____
3. Rapair needs? Y ____ N ____

A. Observations/comments:

Attach photographs as appropriate

III. Piping/Penetrations

1. Is piping intact? (Y or N)
2. Are floor/wall penetrations sealed? (Y or N)

If 'No' to *either of the above, provide observations* and describe corrective actions taken

B. Actions taken:

C. Recommended Maintenance/Repairs:

Do any of the pressure gages require repair or replacement? Y ____ N ____

If so, indicate locations, and actions taken:

_____

_____

IV. Building Modifications: Have building modifications been made that could affect the operation of the SSD System? (Describe)

Additional Comments:

Report all maintenance/repair needs immediately to building facility manager

Appendix K
Part 375 Restricted SCOs

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives							
Contaminant	**CAS Number**	**Protection of Public Health**				**Protection of Ecological Resources**	**Protection of Groundwater**
		Residential	**Restricted-Residential**	**Commercial**	**Industrial**		
Metals							
Arsenic	7440-38-2	16[f]	16[f]	16[f]	16[f]	13[f]	16[f]
Barium	7440-39-3	350[f]	400	400	10,000 [d]	433	820
Beryllium	7440-41-7	14	72	590	2,700	10	47
Cadmium	7440-43-9	2.5[f]	4.3	9.3	60	4	7.5
Chromium, hexavalent [h]	18540-29-9	22	110	400	800	1[e]	19
Chromium, trivalent[h]	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50-8	270	270	270	10,000 [d]	50	1,720
Total Cyanide [h]		27	27	27	10,000 [d]	NS	40
Lead	7439-92-1	400	400	1,000	3,900	63[f]	450
Manganese	7439-96-5	2,000[f]	2,000[f]	10,000 [d]	10,000 [d]	1600[f]	2,000[f]
Total Mercury		0.81[j]	0.81[j]	2.8[j]	5.7[j]	0.18[f]	0.73
Nickel	7440-02-0	140	310	310	10,000 [d]	30	130
Selenium	7782-49-2	36	180	1,500	6,800	3.9[f]	4[f]
Silver	7440-22-4	36	180	1,500	6,800	2	8.3
Zinc	7440-66-6	2200	10,000 [d]	10,000 [d]	10,000 [d]	109[f]	2,480
PCBs/Pesticides							
2,4,5-TP Acid (Silvex)	93-72-1	58	100[a]	500[b]	1,000[c]	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 [e]	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 [e]	136
4,4'-DDD	72-54-8	2.6	13	92	180	0.0033 [e]	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04[g]	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09
Chlordane (alpha)	5103-71-9	0.91	4.2	24	47	1.3	2.9
delta-BHC	319-86-8	100[a]	100[a]	500[b]	1,000[c]	0.04[g]	0.25
Dibenzofuran	132-64-9	14	59	350	1,000[c]	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan II	33213-65-9	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan sulfate	1031-07-8	4.8[i]	24[i]	200[i]	920[i]	NS	1,000[c]
Endrin	72-20-8	2.2	11	89	410	0.014	0.06
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1
Polychlorinated biphenyls	1336-36-3	1	1	1	25	1	3.2

Semivolatiles							
Acenaphthene	83-32-9	100[a]	100[a]	500[b]	1,000[c]	20	98
Acenapthylene	208-96-8	100[a]	100[a]	500[b]	1,000[c]	NS	107
Anthracene	120-12-7	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benz(a)anthracene	56-55-3	1[f]	1[f]	5.6	11	NS	1[f]
Benzo(a)pyrene	50-32-8	1[f]	1[f]	1[f]	1.1	2.6	22
Benzo(b)fluoranthene	205-99-2	1[f]	1[f]	5.6	11	NS	1.7
Benzo(g,h,i)perylene	191-24-2	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benzo(k)fluoranthene	207-08-9	1	3.9	56	110	NS	1.7
Chrysene	218-01-9	1[f]	3.9	56	110	NS	1[f]
Dibenz(a,h)anthracene	53-70-3	0.33[e]	0.33[e]	0.56	1.1	NS	1,000[c]
Fluoranthene	206-44-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Fluorene	86-73-7	100[a]	100[a]	500[b]	1,000[c]	30	386
Indeno(1,2,3-cd)pyrene	193-39-5	0.5[f]	0.5[f]	5.6	11	NS	8.2
m-Cresol	108-39-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
Naphthalene	91-20-3	100[a]	100[a]	500[b]	1,000[c]	NS	12
o-Cresol	95-48-7	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
p-Cresol	106-44-5	34	100[a]	500[b]	1,000[c]	NS	0.33[e]
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8[e]	0.8[e]
Phenanthrene	85-01-8	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Phenol	108-95-2	100[a]	100[a]	500[b]	1,000[c]	30	0.33[e]
Pyrene	129-00-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Volatiles							
1,1,1-Trichloroethane	71-55-6	100[a]	100[a]	500[b]	1,000[c]	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27
1,1-Dichloroethene	75-35-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33
1,2-Dichlorobenzene	95-50-1	100[a]	100[a]	500[b]	1,000[c]	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	0.02[f]
cis-1,2-Dichloroethene	156-59-2	59	100[a]	500[b]	1,000[c]	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100[a]	100[a]	500[b]	1,000[c]	NS	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1[e]	0.1[e]
Acetone	67-64-1	100[a]	100[b]	500[b]	1,000[c]	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06
Butylbenzene	104-51-8	100[a]	100[a]	500[b]	1,000[c]	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100[a]	100[a]	500[b]	1,000[c]	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33[e]	1.2	6	12	NS	3.2

Volatiles							
Methyl ethyl ketone	78-93-3	100[a]	100[a]	500[b]	1,000[c]	100[a]	0.12
Methyl tert-butyl ether	1634-04-4	62	100[a]	500[b]	1,000[c]	NS	0.93
Methylene chloride	75-09-2	51	100[a]	500[b]	1,000[c]	12	0.05
n-Propylbenzene	103-65-1	100[a]	100[a]	500[b]	1,000[c]	NS	3.9
sec-Butylbenzene	135-98-8	100[a]	100[a]	500[b]	1,000[c]	NS	11
tert-Butylbenzene	98-06-6	100[a]	100[a]	500[b]	1,000[c]	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100[a]	100[a]	500[b]	1,000[c]	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5- Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02
Xylene (mixed)	1330-20-7	100[a]	100[a]	500[b]	1,000[c]	0.26	1.6

All soil cleanup objectives (SCOs) are in parts per million (ppm). NS=Not specified. See Technical Support Document (TSD).
Footnotes

[a] The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

[c] The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

[d] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

[e] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

[f] For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

[g] This SCO is derived from data on mixed isomers of BHC.

[h] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[i] This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

[j] This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.