



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

FINAL DECISION AND RESPONSE TO COMMENTS

Hand Craft Cleaners & Launderers, Inc.
of
Richmond, Virginia
(VAD988169819)

I. FINAL DECISION

The Virginia Department of Environmental Quality (DEQ) is issuing this Final Decision and Response to Comments (Final Decision) under the authority of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901 and 6992k, regarding the remedy for the former Hand Craft Cleaners & Launderers, Inc. facility (Facility) located at 11401 Midlothian Turnpike, Richmond, Virginia.

On August 22, 2013, DEQ issued a Statement of Basis (SB) in which it described its proposed remedy for the Facility. The SB is hereby incorporated in this Final Decision by reference and made a part hereof as Attachment A. DEQ's proposed remedy for the Facility consists of the following three components: 1) perform in situ reductive dechlorination of contaminants in groundwater utilizing a closed-loop groundwater circulation system 2) maintain a groundwater monitoring program and 3) maintain compliance with a Consent Order issued by Virginia Department of Environmental Quality (DEQ) to meet clean closure performance standards.

II. PUBLIC COMMENT PERIOD

On August 23, 2013, DEQ placed the public notice and SB on its web page and on September 4, 2013, DEQ published the public notice for the SB in the Style Weekly newspaper and announced the commencement of a thirty (30)-day public comment period in which it requested comments from the public on the remedy proposed in the SB. The public comment period ended on October 4, 2013.

III. RESPONSE TO COMMENTS

DEQ received no comments on its proposed remedy for the Facility. Consequently, DEQ's Final Remedy did not change from the remedy it proposed in the SB.

IV. FINAL REMEDY

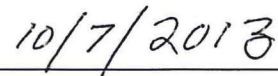
The Final Remedy, the components of which are explained in detail in the SB, requires the performance of in situ reductive dechlorination of contaminants in groundwater utilizing a closed-loop groundwater circulation system, continued monitoring of groundwater, and compliance with a Consent Order issued by the Virginia Waste Management Board under the authority of Va. Code § 10.1-1455.

V. DECLARATION

Based on the Administrative Record compiled for the Corrective Action at the Hand Craft & Launderers, Inc. facility, DEQ has determined that the Final Remedy selected in this Final Decision and Response to Comments is protective of human health and the environment.



Durwood Willis, Director
Office of Remediation Programs
Virginia Department of Environmental Quality



Date

Attachment A: Statement of Basis, dated August 22, 2013



STATEMENT OF BASIS

HAND CRAFT CLEANERS & LAUNDERERS, INC.

VAD988169819

August 2013

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I. Introduction

The Virginia Department of Environmental Quality (DEQ) has prepared this Statement of Basis (SB) to solicit public comment on its proposed decision for the Hand Craft Cleaners & Launderers, Inc. (Hand Craft Cleaners or Facility) site located at 11401 Midlothian Turnpike, Richmond, Virginia (Facility). DEQ's proposed decision consists of the following three components: 1) perform in situ reductive dechlorination of contaminants in groundwater utilizing a closed-loop groundwater circulation system 2) maintain a groundwater monitoring program and 3) maintain compliance with a Consent Order issued by Virginia Department of Environmental Quality (DEQ) to meet clean closure performance standards. This SB highlights key information relied upon by DEQ in making its proposed decision.

The Facility is subject to EPA's Corrective Action Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq. (Corrective Action Program). The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have investigated and cleaned up any releases of hazardous waste and hazardous constituents that have occurred at their property. For unpermitted facilities, EPA retains primary authority in Virginia for the Corrective Action Program.

The Administrative Record (AR) for the Facility contains all documents, including data and quality assurance information, on which EPA's proposed decision is based. See Section IX, Public Participation, for information on how you may review the AR.

II. Facility Background

The former Hand Craft Cleaners Facility is a 1-acre site located near the intersection of Midlothian Turnpike and Courthouse Road in Richmond, Virginia. The site is located in a commercially zoned area and Midlothian Turnpike marks the northern property boundary. A parking lot is located adjacent to the eastern and southern property boundaries and commercial businesses are located to the west of the site. The site is supplied potable water by a public water supply distribution system and discharges to the area's sanitary sewer system. There are no drinking water wells in the vicinity of the site and there are no known plans to construct any drinking water wells.

Hand Craft Cleaners has not conducted dry cleaning operations at the property since 1996 and a retail store currently occupies the property. Prior to Hand Craft Cleaners, the site was originally constructed to serve as a Ponderosa Steak House restaurant. Hand Craft Cleaners purchased the property in 1987 and operated as a dry cleaning facility until 1996, at which time the dry cleaning activities were terminated and the facility was subsequently closed. In July 1998, Hand Craft Cleaners implemented an investigation and determined that chlorinated compounds had been release of chlorinated organic compounds to the environment. The Facility began cleanup activities for which the DEQ issued Hand Craft Cleaners an Order of Consent (Order) in 1999. The Order required closure of the excavation trench unit and associated soil waste pile in accordance with performance standards of the Virginia Hazardous Waste Management Regulations (VHWMR). In June 2002, Hand Craft Cleaners entered into a Facility Lead Agreement with EPA Region 3 to conduct Corrective Action. During this time, an initial site visit found that the excavation trench unit and associated soil pile including impacted groundwater were the only areas that required attention. In January 2003, the DEQ issued an

approval letter stating that the Facility achieved the “clean closure” standard for unsaturated soils. However, on-going remediation and monitoring of the groundwater was necessary. Therefore, the closure period has been extended until Hand Craft Cleaners meets performance standards for groundwater. Based on current information no other solid waste management units (SWMUs) or areas of concern (AOCs) have been identified at the site and groundwater closure is the only remaining item to be addressed.

III. Summary of Environmental Investigations

Based on files maintained by DEQ and EPA Region 3, environmental investigations and cleanup activities at the site focused on the excavation trench unit including the associated soil pile and contaminated groundwater. Environmental investigations and cleanup activities were performed in accordance with the requirements of the VHWMR, which requires the Facility to meet performance standards in order to achieve clean closure.

On July 17, 1998, Hand Craft Cleaners implemented an investigation to determine if chlorinated organic compounds had been released to the environment. Results of the investigation determined that chlorinated organic compounds had been released to the environment via a former underground grease trap located at the southwest corner of the building. These compounds included tetrachloroethene (PCE) and associated degradation compounds including trichloroethene (TCE), cis 1,2-dichloroethene (cis 1,2-DCE), and trans 1,2-dichloroethene (trans 1,2-DCE). Additional constituents detected during the investigation included 1,1-dichloroethene (1,1-DCE), 1,2-dichlorobenzene, methylene chloride, 1,1,1-trichloroethane, and 1,1,2-trichloroethane. In 1999, the Facility entered into a Consent Order with the DEQ to complete closure of the excavation trench unit and soil waste pile created during the investigation and to implement groundwater corrective action. Closure activities associated with unsaturated soils included soil excavation, off-site disposal, and confirmation soil sampling. Based on the results of the confirmation soil sampling and site specific risk assessment, the facility met the required risk based performance standards. The DEQ approved the certified clean closure of unsaturated soils in a letter dated January 6, 2003.

Concurrent with soil closure activities in 2001, Hand Craft Cleaners implemented groundwater monitoring and began groundwater corrective action to reduce contaminants in groundwater to below federal drinking water standards, namely Maximum Contaminant Levels (MCLs). Corrective action included in situ chemical oxidation via direct injections of sodium permanganate. In September 2001 after the initial application of permanganate, the Facility began quarterly groundwater monitoring to evaluate potential rebound of contaminant concentrations once the oxidant had been exhausted. In March 2003, groundwater monitoring indicated rebound of contaminant concentrations and by January 2004 PCE was detected in monitoring well MW-3 at a concentration of 3,500 ug/l. Subsequently, the facility performed another permanganate injection event in March 2004, after which quarterly groundwater monitoring was conducted. Concentration rebound was again observed in March 2006 and in August the facility performed another permanganate injection event. In April 2011, concentration rebound of contaminants was observed again. Based on this, the Facility began to evaluate an alternate remedy to achieve clean closure of groundwater. During this time, groundwater monitoring was continued by the Facility.

In November 2011, a site visit was conducted by the DEQ to discuss current site conditions and potential alternate remedial technologies that could achieve groundwater

corrective action goals. In addition to alternate remedial technologies, evaluating the potential for vapor intrusion was discussed with the Facility. In response to the discussions, Hand Craft Cleaners provided the as-built construction diagrams to the DEQ for the building located on the property demonstrating that a vapor barrier had been installed during construction. In December 2012, Hand Craft Cleaners submitted a work plan to DEQ for implementation of an in situ delivery system (ISD system) to anaerobically dechlorinate PCE and associated degradation compounds in groundwater on-site. The ISD System is a closed-loop groundwater circulation system that consists of four injection wells, two extraction wells, an amendment holding tank, and necessary pumping equipment. The injection wells are located up gradient of the identified treatment zone and the extraction wells are located down gradient of the treatment zone near the site's property boundary. Groundwater down gradient is extracted and placed into a holding tank. The groundwater is amended with a nutrient carbohydrate and re-injected up gradient, creating a sulfate-reducing and/or methanogenic conditions throughout the treatment zone, which accelerates the dechlorination process. Based on this a Corrective Action Plan (CAP) that includes ISD system details, groundwater monitoring requirements, and corrective action cleanup targets for groundwater was developed in February 2013. ISD System installation began in April 2013 and system start up occurred in June 2013.

As a result of previous cleanup activities and based on quarterly groundwater monitoring that has occurred since September 2001, contaminants of concern (COCs) in groundwater are limited to PCE, TCE, cis 1,2-DCE, trans 1,2-DCE, 1,1-DCE, and vinyl chloride. PCE is the primary COC and in November 2012, the maximum concentration of PCE onsite was 5,140 ug/l. Although trans 1,2-DCE and 1,1-DCE have not exceeded MCLs in the past, these constituents are degradation compounds of PCE and groundwater results from August and November 2012 indicate increasing trends similar to PCE and TCE. Therefore they are considered in the groundwater monitoring program.

IV. Corrective Action Objectives

A. Soils

DEQ's Corrective Action Objectives for soil at the Facility have been met. In 2003, DEQ issued a letter of approval to the Facility stating that they had achieved certified clean closure for unsaturated soil at the excavation trench unit and associated soil waste pile in accordance with risk based performance standards of the VHWMR and RCRA Regulations. These performance standards are protective of human health and the environment and no additional SWMUs or AOCs have been identified at the site.

B. Groundwater

DEQ has determined that MCLs are protective of human health and the environment for individual contaminants at this Facility. DEQ's Corrective Action Objectives for Facility groundwater are to control exposure to hazardous constituents in groundwater, to reduce hazardous constituents in groundwater, and monitor remedial progress and hazardous constituents in groundwater by requiring that the Facility comply with an Order issued by DEQ. The Order requires remediation of groundwater, operation and maintenance (O&M) of the ISD system, and maintenance of a groundwater monitoring program until clean closure performance standards are met. The performance standards include the following cleanup targets:

Constituent	Cleanup Standard
PCE	MCL, as listed in 40 CFR Part 141, Subpart G
TCE	MCL, as listed in 40 CFR Part 141, Subpart G
Cis 1,2-DCE	MCL, as listed in 40 CFR Part 141, Subpart G
Trans 1,2-DCE	MCL, as listed in 40 CFR Part 141, Subpart G
1,1-DCE	MCL, as listed in 40 CFR Part 141, Subpart G
Vinyl Chloride	MCL, as listed in 40 CFR Part 141, Subpart G

V. Summary of Proposed Remedy

A. The proposed remedy for the Facility consists of requiring compliance with the Order issued by DEQ. The Order requires O&M of the ISD system to anaerobically dechlorinate PCE and associated degradation compounds in groundwater and continued implementation of the groundwater monitoring program until MCLs are met, which meets clean closure performance standards.

B. Implementation

DEQ proposes to implement the remedy through an Order issued by DEQ under the authority §10.1-1455 of the Code of Virginia between the Virginia Waste Management Board and Hand Craft Cleaners & Launderers, Inc., effective no later than September 30, 2013. Therefore, the EPA does not anticipate any regulatory constraints in the implementation of the proposed remedy.

C. Reporting Requirements

The proposed remedy, enforced by the DEQ Order, includes reporting requirements for the Hand Craft Cleaners site. Quarterly, the Facility shall evaluate compliance with and effectiveness of the proposed remedy at the site in reducing contaminant concentrations, restoring groundwater to MCLs, and achieving clean closure performance standards. Semi-annually, the Facility will provide DEQ with Groundwater Monitoring and Corrective Action Reports containing the results of the quarterly evaluations required by the Order and associated CAP.

VI. Evaluation of DEQ's Proposed Decision

This section provides a description of the criteria DEQ used to evaluate the proposed decision consistent with EPA guidance. The criteria are applied in two phases. In the first phase, DEQ evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, DEQ then evaluates seven balancing criteria to determine which proposed decision alternative provides the best relative combination of attributes.

A. Threshold Criteria

1. Protect Human Health and the Environment

This proposed remedy protects human health and the environment by reducing hazardous contaminants and restoring groundwater to MCLs, effectively eliminating potential exposure to

contamination. The Facility met clean closure performance standards in accordance with the VHWMR for unsaturated soil in 2003. Based on the results of previous investigations and cleanup activities all known sources of contamination have been characterized and no other SWMUs or AOCs have been identified at the site. The current use of the property is commercial and the reasonably anticipated future use of the property is commercial based on the area's current zoning status and property use. The property is currently occupied by a commercial retail store and is supplied potable water by the municipal water supply distribution system. Groundwater beneath the property is not used for any purpose other than environmental testing. There are no plans to use groundwater for any reason other than environmental testing due to Chesterfield County Code §18-61 that requires commercial and residential buildings and dwellings to be served by County water supply and the limited space available on the property. Therefore no land use restrictions are required at this time to protect human health and the environment. It is anticipated that the Facility's ISD system will reduce hazardous constituents in groundwater to meet cleanup standards. In addition, the Facility is required to continue the groundwater monitoring program to evaluate remedial progress and to ensure ongoing protection of human health and the environment.

2. Achieve Media Cleanup Objectives

EPA's proposed remedy meets the appropriate cleanup objectives based on current and reasonably anticipated future land and water resource use(s). The Facility achieved clean closure performance standards in accordance with the VHWMR and RCRA Regulations for unsaturated soil in 2003. Therefore, media cleanup objectives for soil have been met.

Media cleanup standards for hazardous constituents in groundwater are MCLs, which meet clean closure performance standards required by the DEQ Order. PCE, TCE, cis-1,2-DCE, and vinyl chloride are still above media cleanup standards (MCLs). Trans-1,2-DCE and 1,1-DCE are not above media cleanup standards, but are present in groundwater and are degradation compounds of PCE. Therefore, they have been included in the Facility's monitoring program and a cleanup standard has been provided. Active remediation of groundwater will continue until cleanup standards are met or to an extent practicable as determined by DEQ. Groundwater monitoring will continue until media cleanup standards for groundwater are met. The property is supplied potable water by the municipal water supply system and groundwater monitoring data will continue to be evaluated to ensure that contaminants continue to decline and that the remedy remains protective.

3. Remediating the Source of Releases

In all proposed decisions, EPA seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may pose a threat to human health and the environment. Past investigations and cleanup activities have identified no other SWMUs or AOCs at the Facility other than the excavation trench unit including its associated soil waste pile and groundwater that was impacted by the unit. The Facility achieved clean closure for unsaturated soil for the excavation unit and soil waste pile. Therefore, groundwater contamination is the only media left to be addressed. The property is currently occupied by a commercial retail store and hazardous wastes or hazardous constituents have not been managed at the property since clean closure for soil was achieved in 2003. No known sources or source areas remain at the property.

B. Balancing/Evaluation Criteria

1. Long-Term Effectiveness

The proposed remedy will maintain protection of human health and the environment over time by reducing hazardous contaminants in groundwater and restoring groundwater to MCLs. EPA's proposed decision requires the operation and maintenance of the ISD remediation system and ongoing groundwater monitoring at the Facility. The groundwater remediation and monitoring will be implemented on the property through an Order issued by DEQ. Groundwater at the Facility will be evaluated quarterly as part of the groundwater monitoring program to ensure that contaminant levels continue to decline and that the remedy remains protective.

2. Reduction of Toxicity, Mobility, or Volume of the Hazardous Constituents

The reduction of toxicity, mobility and volume of hazardous constituents at the Facility has already been achieved for soil during previous cleanup activities summarized above in accordance with the VHWMR and RCRA Regulations. The reduction of toxicity, mobility, and volume of hazardous constituents in groundwater will be achieved by the proposed remedy via operation and maintenance of the ISD system, which will anaerobically dechlorinate PCE and associated degradation compounds in groundwater. Once groundwater cleanup standards are met, then the reduction of toxicity, mobility, and volume of hazardous constituents will have been achieved. System startup occurred on June 15, 2013 and groundwater will be evaluated quarterly as part of the groundwater monitoring program to ensure that hazardous constituents continue to decline.

3. Short-Term Effectiveness

The DEQ's proposed remedy involves the continued operation and maintenance of the ISD system and groundwater monitoring program and compliance with the Order issued by DEQ, effective no later than September 30, 2013. Therefore, the proposed remedy does not involve any activities, such as construction or excavation that would pose short-term risks to workers, residents, or the environment.

4. Implementability

DEQ's proposed decision is readily implementable. A work plan for the ISD system installation and groundwater monitoring was approved by DEQ on December 21, 2012. The ISD system has been installed by the Facility and startup will occur no later than August 15, 2013. An Order issued to Hand Craft Cleaners by DEQ requiring clean closure of groundwater will be finalized and become effective no later than September 30, 2013.

5. Cost

DEQ's proposed decision is cost effective. Given that all necessary components of the ISD system and groundwater monitoring program are in place and are currently operational, the only recurring costs are associated with operation and maintenance (O&M) and reporting costs. These costs are minimal.

6. Community Acceptance

DEQ and EPA will evaluate Community acceptance of the proposed decision during the public comment period and will be described in the Final Decision and Response to Comments.

7. State/Support Agency Acceptance

DEQ is issuing an Order requiring clean closure of groundwater by implementing the proposed remedy. However, DEQ will evaluate EPA acceptance of the proposed remedy during the public comment period and will describe the EPA's position in the Final Decision and Response to Comments.

VII. Environmental Indicators

EPA sets national goals to measure progress toward meeting the nation's major environmental goals. For Corrective Action, EPA evaluates two key environmental indicators for each facility: 1) current human exposures under control and 2) migration of contaminated groundwater under control. The Facility met these indicators on July 30, 2009 and September 8, 2008, respectively.

VIII. Financial Assurance

DEQ has evaluated whether financial assurance for corrective action is necessary to implement its proposed decision at the Facility. Given that the proposed remedy is being implemented through an Order issued by DEQ, which is consistent with the 1999 Order requiring closure, financial assurance requirements will remain the same. At this time, financial assurance is demonstrated by the facility to complete closure of the groundwater associated with the excavation trench unit and soil requirements. DEQ will evaluate compliance with financial assurance requirements annually until corrective action objectives have been met and certified clean closure of groundwater has been demonstrated and approved by DEQ.

IX. Public Participation

Before DEQ makes a final decision on its proposal for the Facility, the public may participate in the decision selection process by reviewing this SB and documents contained in the Administrative Record (AR) for the Facility. The AR contains all information considered by EPA in reaching this proposed decision. It is available for public review during normal business hours at:

Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219
Contact: Brett Fisher
Phone: (804) 698-4219
Fax: (804) 698-4234
Email: brett.fisher@deq.virginia.gov

Interested parties are encouraged to review the AR and comment on DEQ's proposed decision. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. You may submit comments by mail, fax, or e-mail to Brett

Fisher. DEQ will hold a public meeting to discuss this proposed decision upon request. Requests for a public meeting should be made to Brett Fisher.

DEQ will respond to all relevant comments received during the comment period. If DEQ determines that new information warrant a modification to the proposed decision, DEQ will modify the proposed decision or select other alternatives based on such new information and/or public comments. DEQ will announce its final decision and explain the rationale for any changes in a document entitled the Final Decision and Response to Comments (FDRTC). All persons who comment on this proposed decision will receive a copy of the FDRTC. Others may obtain a copy by contacting Brett Fisher at the address listed above.

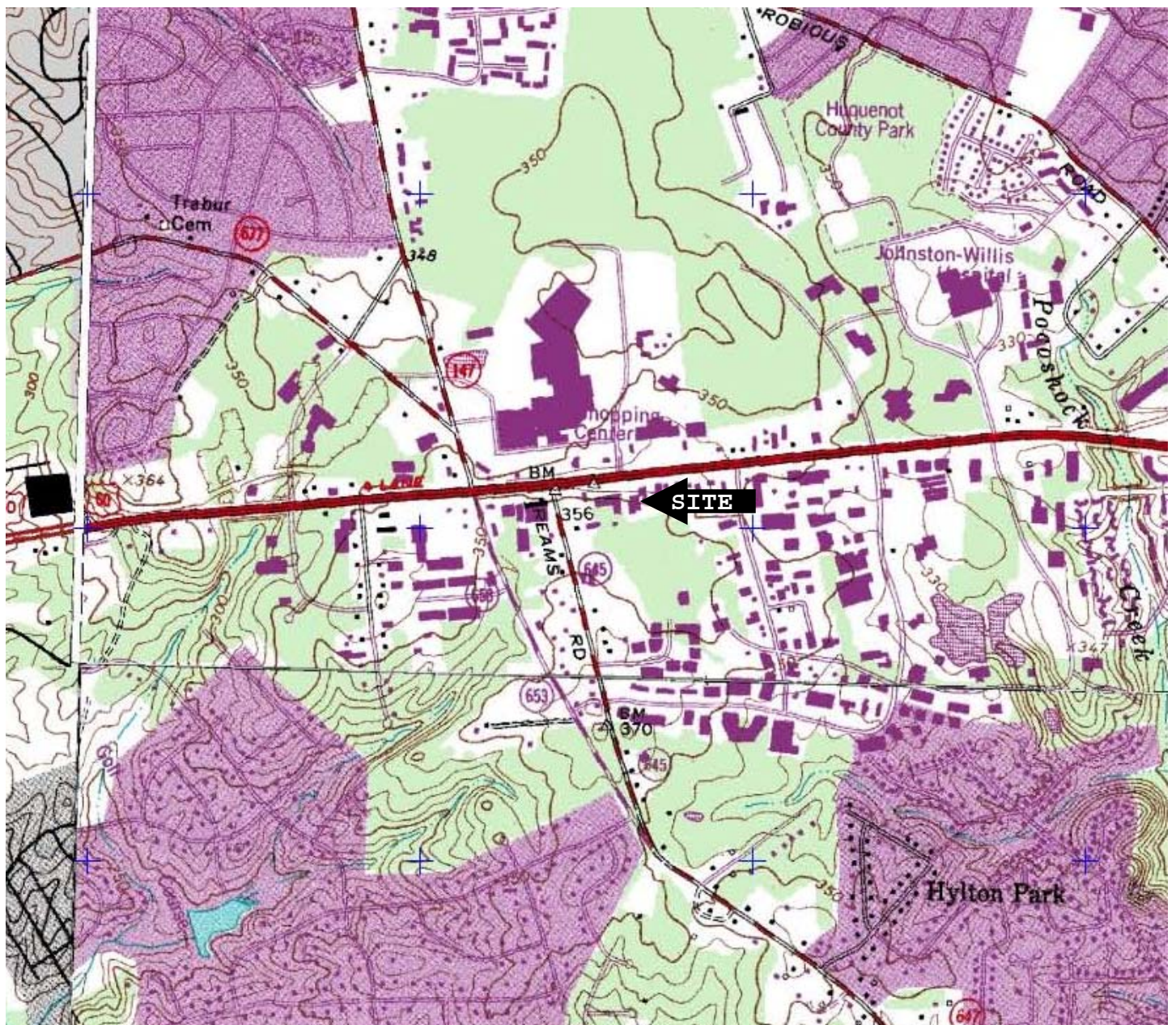
Date: August 22, 2013



Durwood Willis, Director
Office of Remediation Programs

**Figure 1
Site Location Map**

**Former Hand Craft Cleaners
11401 Midlothian Turnpike
Midlothian, Virginia**



Yellow Tavern, Virginia



APEX COMPANIES, LLC.
203 WYLDEROSE COURT
MIDLOTHIAN, VIRGINIA 23113
(804) 897-2718

United States Department of the Interior
Geological Survey
7.5 Minute Series Topographic Map
Contour Interval: 10 feet
Scale: 1 inch = 2000 feet
Created: 1994

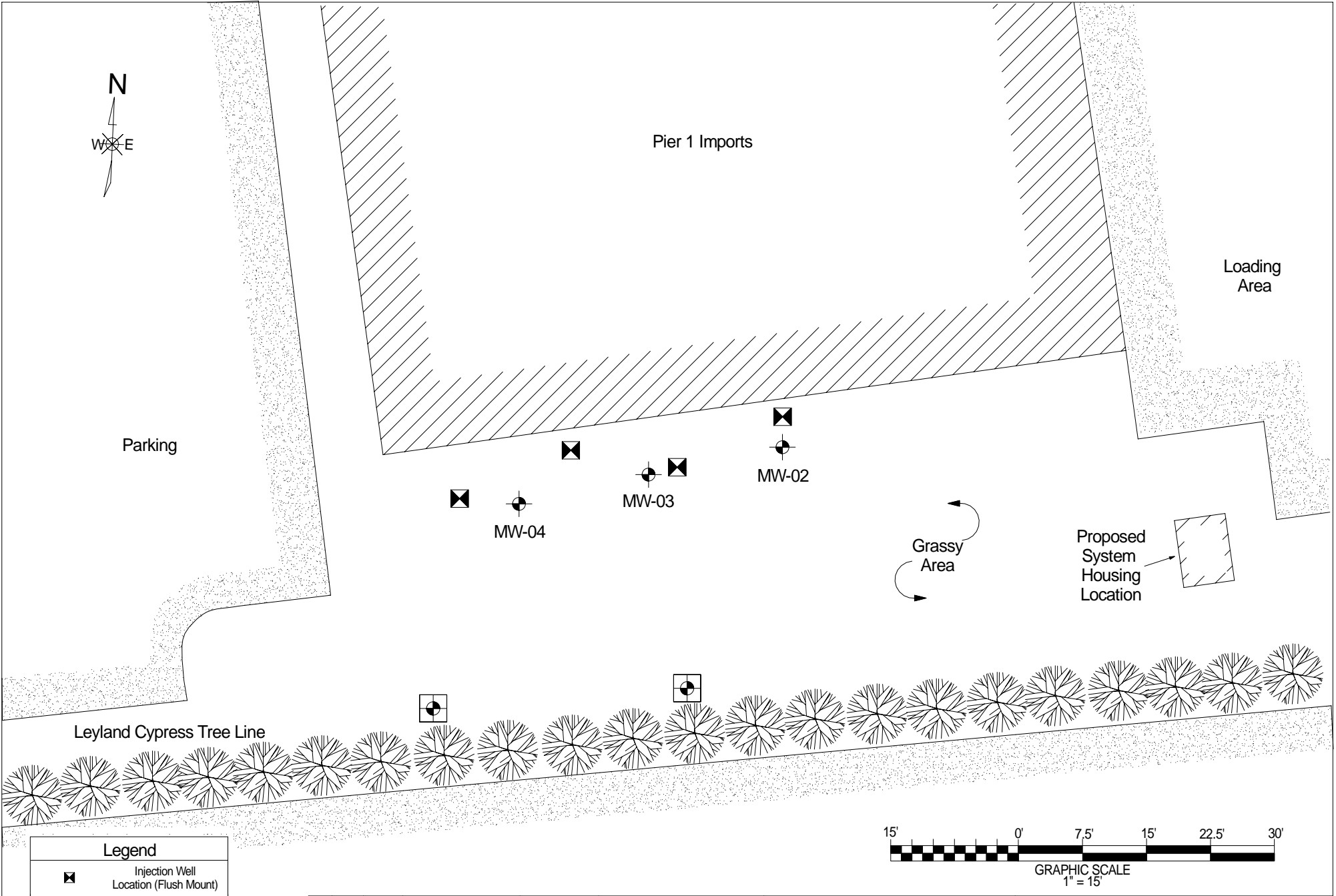
Project: Remediation Work Plan

Client: Hand Craft Cleaners

Apex Job #: 762212.002

Date: November 2012





Legend	
	Injection Well Location (Flush Mount)
	Extraction Well Location (Flush Mount)
	Monitoring Well Location (Flush Mount)

DR.:	MM	Nov 2012
CK.:		
APPD.:		
SCALE:	1" = 15'	
APEX PROJ. NO.:	762212.002	
www.apexenv.com		
REV	BY	DATE

Remediation Work Plan



APEX COMPANIES, LLC.
233 WYLDEROSE COURT
MIDLOTHIAN, VIRGINIA 23113
(804) 897-2718

DRAWING TITLE	
Proposed Remediation System Layout Former Hand Craft Cleaners 11401 Midlothian Turnpike Midlothian, VA 23113	
DRAWING NUMBER	REV
FIGURE No. 2	0