
EXPLANATION OF SIGNIFICANT DIFFERENCES

KLIEGMAN BROTHERS SITE



Town of Glendale / Queens County / Registry No. 241031 / April 2013

Prepared by the New York State Department of Environmental Conservation
Division of Environmental Remediation

1.0 INTRODUCTION

The purpose of this notice is to describe the progress of the cleanup at the Kliegman Brothers Site and to inform you about a change in the site remedy for Operable Unit Number 2 (OU2) – off-site shallow groundwater. In March 2008, the New York State Department of Environmental Conservation (the “Department”) signed a Record of Decision (ROD) for OU2. The main elements of the selected remedy included in-situ chemical treatment of contaminated off-site shallow groundwater within the concentrated plume area along with continued soil vapor monitoring. The state funded RD was completed in November 2012 and included further investigations of off-site groundwater contaminant concentrations. The data generated and evaluated during the RD identified the need for this Explanation of Significant Difference (ESD), and justified changes in the remedy approach.

The latest groundwater sampling results confirm that the OU2 plume has attenuated as a result of the remediation activities associated with OU1 (on-site soils). The purpose of this ESD is to describe how the remedial approach originally presented in the OU2 ROD has been modified to address the remaining contaminant concentrations within and in close proximity to monitoring well MW-14DR, located along 76th Street. This ESD will become part of the Administrative Record for this site. The information here is a summary of what can be found in documents that have been placed in the following repositories:

<p>Queens Borough Public Library Glendale Branch 78-60 73rd Place Glendale, New York 11385 (718) 821-4980 http://www.queenslibrary.org/glendale Monday: 11:00 a.m. – 7:00 p.m. Tuesday: 2:00 p.m. - 7:00 p.m. Wednesday: 1:00 p.m. - 7:00 p.m. Thursday: 11:00 a.m. – 7:00 p.m. Friday: 11:00 a.m. - 7:00 p.m. Saturday and Sunday: Closed</p>	<p>NYSDEC Central Office Division of Environmental Remediation 625 Broadway, 12th Floor Albany, New York 12233-7017 Monday - Friday: 7:00 a.m. - 3:30 p.m. Contact: David Chiusano (518) 402-9814 djchiusa@gw.dec.state.ny.us By Appointment Only</p>
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Although this is not a request for comments, interested persons are invited to contact the Department’s Project Manager for this site to obtain more information or have questions answered.

2.0 Site Description

Location: The Kliegman Brothers Site is located at 76-01 77th Avenue in Queens County, New York (Figure 1).

Site Features: The site topography and surrounding area is relatively flat. The site is bordered to the north by the Long Island Railroad. Residences border the site to the east, west and south. This on-site property has an area of approximately 37,000 square feet, of which 26,000 is occupied by a building. The area around the on-site building is paved with asphalt, and surrounded by chain link and corrugated metal fencing.

Current Zoning/Use(s): The surrounding area is mixed commercial and residential.

Operable Units: The Kliegman Brothers site is divided into two operable units, OU1 (on-site soil and perched groundwater) and OU2 (off-site shallow groundwater). OU1 is currently being remediated by the Department using a Soil Vapor Extraction (SVE) System. This system was initially constructed as an interim remedial measure (IRM) by the Department in 2004 and expanded to a larger system by the Department in 2007. OU2 focuses on off-site shallow groundwater contaminated by tetrachloroethene (PCE) which has migrated from the site. Remediation of PCE in off-site groundwater is the focus of this Explanation of Significant Differences (ESD).

3.0 March 2008 ESD Remedy

Hazardous wastes including volatile organic compounds (VOCs) disposed of at the site have contaminated subsurface soils and groundwater. The March 2008 ROD presents the remedy selected by the Department, in consultation with the New York State Department of Health (NYSDOH), and documents the information and rationale used to arrive at the decision. Contained in the ROD is a summary of public participation activities, including the holding of a public meeting on February 26, 2008. The ROD was provided to the public with the issuance of a public mailing in April 2008. The March 2008 ROD can be reviewed at the document repositories listed on page 1.

The major elements of the March 2008 ROD remedy consisted of:

1. A remedial design program would be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. During this design, the feasibility of constructing an extraction well and water treatment plant (items 3 and 4, below) would be determined.
2. Approximately 60 oxidant injection locations would be installed within the concentrated plume area. Several modified Fenton's reagent or permanganate In-Situ Chemical Oxidation injection events would occur, each expected to last a few weeks to one month. Performance monitoring events would be performed four to eight weeks after completion of injection activities to determine contaminant mass reduction in comparison to baseline groundwater concentrations and subsurface distribution of injection oxidant material.
3. A groundwater extraction well would be constructed on 76th Street. Groundwater would be extracted from this well to create a hydraulic gradient to increase the area reached by the injected oxidants. This system would not be constructed if it was determined to be not feasible during the remedial design process. In such a case, the number and density of oxidant injection locations would be increased.
4. A groundwater treatment system would be constructed on or near Edsall Avenue to treat extracted groundwater. The treatment system was anticipated to include at a minimum: an air stripper for the removal of VOCs and vapor phase carbon units to remove contaminants in off-gas from the air stripper. A force main would be constructed to carry water from the extraction well to the treatment plant. This system would not be constructed if it was determined to be not feasible during the remedial design process.
5. The ongoing vapor intrusion mitigation program would continue to monitor soil gas levels at adjacent residences and assess the need for additional sub-slab depressurization system installations. Additional system installations would be conducted as necessary in the future to provide mitigation.
6. Development of a site management plan which would include the following engineering controls: (a) continued evaluation of the potential for vapor intrusion in the area; (b) monitoring of groundwater and soil vapor; and (c) provisions for the continued proper operation and maintenance of the components of the remedy.
7. The institutional controls imposed by the OU1 ROD would remain in effect. These controls, in the form of an environmental easement: (a) require compliance with the approved site management plan; (b) limit the use and development of the property to commercial, industrial and/or restricted residential only; (c) restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH and/or the New York City Department of Environmental Protection; and (d) require the property owner to complete and submit to the Department a periodic certification.

8. The operation of the components of the remedy would continue until the remedial objectives have been achieved, or until the Department determined that further remediation was technically impracticable or not feasible.

4.0 Description of Significant Differences

4.1 New Information

Since the issuance of the ROD in March of 2008, the natural processes of diffusion and dispersion and the operation of the OU1 SVE system to treat the source area have reduced the concentrations of PCE in groundwater at and downgradient of the site (Figure 2). This conclusion is supported by the monitoring data collected from operation of the OU1 SVE treatment system and by additional groundwater sampling that was performed by the Department in 2009, 2010, 2011 and 2012. To date, approximately 54,000 pounds of VOCs have been removed from the on-site source area soil and treated. The recent groundwater samples show that operation of the on-site SVE system has significantly reduced PCE concentrations throughout the area of investigation. Although PCE concentrations have been greatly reduced in most of the wells, there is one well (MW-14DR) located along 76th Street where a significant concentration (greater than 1,000 ppb) of PCE was detected in the last sampling event in June 2012. The change to the March 2008 ROD remedy includes a reduced scope of remediation that will extend from just downgradient of MW-04D to just downgradient of MW-24D (Figure 3).

4.2 Comparison of Changes with March 2008 ROD Remedy

March 2008 ROD Remedy - The Department selected in-situ chemical treatment within the concentrated plume area, defined as an area approximately 1.5 acres in size downgradient of the site along with continued vapor monitoring, and installation of residential vapor mitigation systems as required.

PCE was to be oxidized by sequential oxidation using two oxidants. First, Fenton's reagent would be injected in multiple rounds to provide the strongest oxidation power and to promote desorption of adsorbed PCE so that it could be oxidized. This was to be followed by multiple rounds of permanganate injection. Post injection groundwater monitoring would evaluate the progress of remediation.

In order to create a larger hydraulic gradient and thus to increase the area reached by the injected oxidants to areas beyond the radius of influence of the injection wells, the ROD included the installation and operation of a groundwater extraction well and groundwater treatment facility. The feasibility of this option was to be examined during the RD.

Explanation of Significant Difference Remedy – Similar to the March 2008 ROD remedy this remedy includes in-situ oxidation along with continued vapor monitoring, and installation of residential vapor mitigation systems as required. Post injection groundwater monitoring will evaluate the progress of remediation.

However, due to the significant reduction in PCE concentrations and a smaller defined treatment area, including the absence of concentrations that indicate the presence of dense non-aqueous phase liquid, the strong oxidation power of Fenton's reagent will not be necessary. A two-phased approach is no longer required. Therefore, this remedy only requires multiple permanganate injections at 12 locations, over approximately 0.3 acres, instead of the 60 locations originally required by the OU2 ROD.

Moreover, the need for the extraction well and treatment facility have also been eliminated from this remedy. This determination is supported by the groundwater data collected since the ROD was released that indicates that the plume has attenuated in size and the extent of contamination requiring treatment is much smaller than originally delineated in the ROD. Further, soil vapor intrusion monitoring program has been implemented since release of the March 2008 ROD, the results of which have reduced concerns over potential migration of contamination under the residences and subsequent exposure by vapor intrusion.

The remedy, as modified by this ESD, is protective of human health and the environment and meets the goals originally included in the March 2008 ROD. The NYSDOH concurs with the modified remedy.

4.3 Summary of Major Elements of the April 2013 Remedy

The major elements of the remedy consist of:

1. Final elements of the RD program were implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the modified remedial program.
2. Injection well pairs will be installed at 12 locations and new monitoring wells will be installed at three locations within and downgradient of the remaining contaminant plume. The treatment area is generally defined as existing within the shallow groundwater zone (beginning at approximately 70 feet below ground surface (bgs)) along the north half of 76th Street. Twelve of the injection wells will each be drilled to a depth of 78 feet below ground surface (bgs) and 12 injection wells will each be drilled to a depth of 88 bgs. The three monitoring wells will each be drilled to a total depth of 80 feet bgs. (modified)
3. Several sodium permanganate in-situ chemical oxidation injection events will occur, each expected to last a few weeks to one month. Performance monitoring events will be performed four to eight weeks after completion of injection activities to determine contaminant mass reduction in comparison to baseline groundwater concentrations and subsurface distribution of injection oxidant material. (original)
4. The ongoing vapor intrusion mitigation program will continue to monitor soil gas levels at adjacent residences and assess the need for additional sub-slab depressurization system installations. Additional system installations will be conducted as necessary in the future to provide mitigation. (original)
5. Evaluation and modification, as necessary, of the June 2011 Site Management Plan which currently includes the following engineering controls which will be expanded to include the elements of this remedy: (a) continued evaluation of the potential for vapor intrusion in the area; (b) continued monitoring of groundwater and soil vapor; and (c) provisions for the continued proper operation and maintenance of the components of the remedy. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that further remediation is technically impracticable or not feasible. (original)
6. The institutional controls imposed by the OU1 ROD will remain in effect. These controls, in the form of an environmental easement, were recorded in the Queens County Clerk's Office on March 6, 2012 (Document Identification Number 2011122101242001): (a) require compliance with the approved site management plan; (b) limit the use and development of the property to commercial, industrial and/or restricted residential only; (c) restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH and/or the New York City Department of Environmental Protection; and (d) require the property owner to complete and submit to the Department a periodic certification. (original)

5.0 Project Schedule and More Information

Remedial construction activities have been tentatively scheduled to begin in the Spring of 2013.

For Technical Questions About the Explanation of Significant Differences, Contact:

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➤ For Site-Related Health Questions About the Explanation of Significant Differences, Contact:

Mrs. Stephanie Selmer, Bureau of Environmental Exposure Investigation
NYSDOH
Telephone: 518-402-7860
Email: BEEI@health.state.ny.us

6.0 April 2013 Kliegman Brothers Site OU2 ESD Remedy Signature Page

April 15, 2013

Date



Robert W. Schick, P.E.
Director
Division of Environmental Remediation