Explanation of Significant Differences

Byron Barrel and Drum Superfund Site

Byron Township
Genesee County, New York

EPA Region 2 July 2015

INTRODUCTION

The purpose of this Explanation of Significant Differences (ESD) is to explain the changes made by the U.S. Environmental Protection Agency (EPA) to the remedy selected for the Byron Barrel and Drum Superfund site, located in Byron, New York.

Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund), as amended, the EPA is required to publish an ESD when, after issuance of a Record of Decision (ROD),[1] subsequent enforcement or remedial actions lead to significant, but not fundamental, changes in the selected site remedy. Sections 300.435(c)(2)(i) and 300.825(a)(2) of the National Oil and Hazardous Substances Contingency Plan (NCP) set forth the criteria for issuing an ESD and requiring that an ESD be published if the remedy is modified in a way that differs significantly in either scope, performance or cost from the remedy selected for the site.

This ESD presents the details of significant differences to the remedy selected in the 1989 ROD, as modified by a 2000 ESD, for the Byron Barrel and Drum site, provides a brief history of the site, describes the original remedy and explains how, subsequent to the finalization of the decision documents, issues concerning the scope of the selected remedy have been identified for the site.

The remedy selected in the ROD called for, among other things, the dismantling and decontamination, if necessary, of an on-property maintenance building because it was believed that contaminated soil located adjacent to the building extended beneath the building. The ROD also called for the contaminated soil to be treated by *in-situ* soil flushing (*i.e.,* extraction and treatment of the contaminated groundwater, followed by the discharge of the treated groundwater to the soil to flush the contaminants to the aquifer).

Sampling conducted during the remedial design indicated that the soil contamination did not extend beneath the maintenance building. Therefore, addressing the soils under the building targeted for remediation, as well as dismantling of the structure, were not required for protectiveness. Waste materials were removed from inside the building, and the building was decontaminated. The remedy addressing the building, as implemented, is protective of human health and the environment.

Furthermore, the concentration of volatile organic compounds (VOCs) in the shallow groundwater at the site remains elevated above drinking water standards. As a result, there is a potential for exposure to VOCs in the groundwater. VOCs in groundwater can also migrate through the soil and into buildings. This process is called vapor intrusion, and it can result in unacceptable human exposures to VOCs inside occupied buildings. At sites where vapor intrusion may be anticipated as a current or potential future human exposure, the EPA may select measures to address that route of exposure.

The EPA has determined that in addition to an institutional control (IC)[2] identified in the ROD to prevent excavation in areas of soil contamination, additional ICs are required for the protectiveness of the remedy. These additional ICs are to restrict the use of groundwater as a source of potable or process water (unless appropriately treated) until groundwater standards are achieved and prevent the potential for human exposure through vapor intrusion into any of the existing, on-property structures or any new construction that occurs on the site. Specifically, an environmental easement and declaration of restrictive

[1] A ROD documents the EPA's remedy decision.

[2] ICs are non-engineered controls, such as property or groundwater use restrictions imposed on a property by recorded instrument or by a governmental body by law or regulatory activity for the purpose of reducing or eliminating the potential for human exposure to contamination and/or protect the integrity of a remedy.

covenant is required that would: (a) restrict the use of groundwater as a source of potable or process water without prior approval by the New York State Department of Health (NYSDOH) or the Genesee County Department of Health (GCDOH) until groundwater standards are achieved[3] and (b) require the evaluation of the vapor intrusion pathway and mitigation, if necessary, for any of the existing, on-property structures intended for human occupancy or habitation or any new construction that occurs on the property.

This ESD serves to document the EPA's decision not to demolish the maintenance building to address the soil underneath and to require ICs to prevent exposure to contaminated groundwater and potential exposure through vapor intrusion.

SITE HISTORY, CONTAMINATION PROBLEMS AND SELECTED REMEDY

The site, located on Transit Road in Byron Township in Genesee County, New York, was used as a salvage yard for heavy construction equipment. Beginning in approximately 1977 and continuing until at least 1980, drummed liquid and solid chemical wastes were sent to the site for disposal. In 1982, two drum disposal locations were discovered at the site. The results of a subsequent investigation of the site by the New York State Department of Environmental Conservation (NYSDEC) led to the site's inclusion on the Superfund National Priorities List in April 1984.

In August 1984, in response to a request from NYSDEC, the EPA removed 219 drums and approximately 40 cubic yards of contaminated soil and debris from the site for off-site disposal.

Beginning in June 1987, the EPA undertook a remedial investigation and feasibility study (RI/FS)[4] for the site. The RI identified three areas of concern at the site--Area 1, a former drum storage and waste disposal area; Area 2, a solvent disposal area located in the vicinity of a maintenance building, and Area 3, a shallow ravine containing construction debris and fill material (see Figure 1).

The RI detected VOCs, including trichloroethylene and trichloroethane, in the groundwater underlying Area 1 and Area 2, but hydrogeologic and groundwater quality investigations caused the EPA to determine that VOC-impacted groundwater had not migrated to or impacted area drinking water supply wells. Chromium and lead were detected in a few surface soil samples from Area 3 (organic contamination was not detected in this area) and no groundwater impacts were observed.

In 1989, based upon the results of the RI/FS, the EPA selected a remedy for the site, documented in a ROD which called for:

- Area 1 and Area 2: *in-situ* soil flushing (*i.e.,* extraction and treatment of the contaminated groundwater, followed by the discharge of the treated groundwater to the soil to flush the contaminants to the aquifer) and monitoring to ensure the effectiveness of the remedy;
- Area 2: Dismantling, and decontamination, if necessary, of the maintenance building, with the disposal of the debris off-site; and
- Area 3: Further evaluation of the elevated surface soil inorganic contaminant concentrations to determine the need for further soil action, and, if so, to determine the ultimate disposal of contaminated soils (*i.e.,* excavation and off-site disposal or placement on the soil to be flushed).
- Imposition of an IC to prevent excavation in areas of soil contamination.

In 1990, the EPA issued a Unilateral Administrative Order (UAO) to four potentially responsible parties (PRPs) for the performance of the design and construction of the selected remedy. The UAO was superseded, as to two of the PRPs, by a Consent Decree in 1996. In the Consent Decree, the PRPs agreed to implement ICs to protect the integrity of the remedy and to prevent the use of contaminated groundwater until cleanup levels have been met.[5]

Because the results of groundwater and soil investigations conducted from 1995-1996 indicated that the contaminant concentrations in the groundwater in Area 1 were only marginally above the cleanup levels specified in the ROD and that the levels of inorganic contaminants in the surface soil in Area 3 were consistent with background concentrations, it was concluded that further action in these two areas was not warranted. The contamination in Area 2, however, still required remediation. Based upon a pre-design investigation that evaluated the characteristics of the contaminated soil, it was determined that the treated water would not be able to percolate properly through the surface soil. Therefore, to enhance the ability of the treated groundwater to infiltrate and flush the contaminated soil, it was determined during the remedial design that the excavation of several feet of contaminated soil and the construction of an infiltration gallery, consisting of perforated pipe and gravel would be more effective. The determination that further action in Areas 1 and 3 was not

[3] Such approval would be contingent upon the appropriate treatment of the water.

[4] The purpose of an RI/FS is to determine the nature and extent of the contamination at a site, evaluate the risk to human health and the environment and identify and evaluate remedial alternatives.

[5] Because the ownership of the property was in question, attempts by the PRPs to effect the ICs were not successful. In 2013, a new party purchased the property. Implementation of the ICs is now being pursued.

warranted and the modification to the remedy for Area 2 were documented in an August 2000 ESD.

In 2001, following the excavation of approximately 500 cubic yards of soil for the construction of the infiltration gallery,[6] the infiltration gallery and groundwater management system were constructed in Area 2.

In 2002, soil samples collected from the area undergoing soil flushing indicated that the soil had achieved the cleanup objectives. At that time, soil flushing through the infiltration gallery was terminated and all of the treated groundwater was discharged to surface water.

From 2001 to 2007, the groundwater extraction system pumped approximately 21 million gallons of contaminated groundwater, and the treatment system removed approximately 38 pounds of dissolved-phase VOCs. In 2007, after groundwater concentrations had reached asymptotic levels, the extraction and treatment system was shut down to allow the performance of a treatability study to assess the viability of using bioremediation to enhance the removal of the contaminants in the groundwater. The treatability study is ongoing, along with periodic groundwater monitoring. From 2007 through 2014, an enhanced bioremediation pilot study was conducted. During the pilot study, the VOC concentration was successfully lowered to less than 55 micrograms per liter (ug/L) and less than 51 ug/L total VOCs in the two most contaminated monitoring wells and the VOC concentrations were lowered to below the detection limits in three other monitoring wells. Based upon a statistical analysis of groundwater sample results collected through 2013, it was concluded that VOC levels are declining.

BASIS FOR THE DOCUMENT AND DESCRIPTION OF SIGNIFICANT DIFFERENCES

The ROD for the site, as modified by the 2000 ESD, called for, among other things, the dismantling and decontamination, if necessary, of the on-site maintenance building (because it was believed that contaminated soil located adjacent to the building extended beneath the building) and the disposal of the debris off-site, construction of an infiltration gallery, extraction and treatment of the contaminated groundwater, recharge of the treated groundwater to the infiltration gallery to flush the contamination in the soil into the groundwater and imposition of an IC to prevent future excavation in areas of soil contamination.

Subsequent samples collected during the remedial design have indicated that the soil contamination does not extend beneath the maintenance building. Therefore, the soils under the building targeted for remediation, as well as dismantling of the structure, are not required for protectiveness as called for in the ROD. The building was decontaminated by power washing and waste materials were removed from the building. The remedy addressing the building, as implemented, is protective of human health and the environment.

The ROD called for an IC to prevent excavation in areas of soil contamination. The ROD did not contemplate ICs for groundwater protection. In the Consent Decree, the PRPs agreed to implement ICs to protect the integrity of the remedy and to prevent the use of contaminated groundwater until cleanup levels have been met.

The concentration of VOCs in the shallow groundwater in Area 2 remains elevated above drinking water standards. In addition, there is a potential for the VOCs in the groundwater to migrate through the soil and into buildings (*i.e.,* vapor intrusion). In order to restrict the use of groundwater as a source of potable or process water (unless appropriately treated) until groundwater standards are achieved and to prevent the potential for human exposure through vapor intrusion into any of the existing, on-property structures or any new construction that occurs on the site, the EPA has determined that additional ICs are required for the protectiveness of the remedy. Specifically, an environmental easement and declaration of restrictive covenant is required that would: (a) restrict the use of groundwater as a source of potable or process water without prior approval by NYSDOH or GCDOH until groundwater standards are achieved[7] and (b) require the evaluation of the vapor intrusion pathway and mitigation, if necessary, for any of the existing, on-property structures intended for human occupancy or habitation[8] or any new construction that occurs on the property.

The EPA and New York State did not begin to identify vapor intrusion as a potential human health risk at Superfund sites until after 2000,[9] and the key site remedial and enforcement documents, the ROD, 1996 Consent Decree and 2000 ESD were all finalized prior to that time. It is now common practice for the EPA and the

[6] The excavated soil was stockpiled for testing, and the analysis of this soil indicated that it did not exceed New York State's soil cleanup objectives. Therefore, the soil was used as fill above the infiltration gallery.

[7] Such approval would be contingent upon the appropriate treatment of the water.

[8] The property was recently acquired by a new party. The previous owner's house, which has been abandoned for many years, is currently being refurbished for occupancy by the new owner.

[9] In 2002, the EPA issued draft guidance, *The Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)* November 2002 EPA530-D-02-004, that provided technical and policy recommendations on determining if the vapor intrusion pathway poses an unacceptable risk to human health at Superfund sites.

State to identify vapor intrusion as a potential pathway of concern at sites like this one and to put in place measures, such as ICs, to assure current and future protectiveness of the remedy while VOC levels in groundwater remain at elevated levels.

This ESD serves to document the EPA's decision not to demolish the maintenance building to address the soil underneath and to require ICs to prevent exposure to contaminated groundwater and potential exposure through vapor intrusion.

The soils on the entire site meet the soil cleanup objectives called for in the ROD[10] (see *Byron Barrel & Drum Area 2 Remedial Action Completion Report, Final RA Report for Soils, Interim RA Report for Groundwater*, ECOR Solutions, Inc., September 2002).

The modified remedy remains protective of human health and the environment.

SUPPORT AGENCY COMMENTS

NYSDEC, after careful consideration of the modified remedy, supports this ESD, as the modified remedy significantly changes but does not fundamentally alter the remedy selected in the ROD, as modified by the 2000 ESD.

FIVE-YEAR REVIEWS

Upon completion of remedial activities at the site, hazardous substances will be reduced to levels which will permit unlimited use of, and unrestricted exposure to, soil and groundwater, under its current land use. It is the policy of the EPA to conduct five-year reviews when remedial activities, including monitoring, will continue for more than five years or if hazardous substances are to remain at a site. Because it will take more than five years to attain cleanup levels at the site, a review will be conducted no less often than once every five years until such time as the EPA determines unlimited sue and unrestricted exposure is acceptable. A five-year review that is required by policy is triggered by the date of the approval of the Preliminary Close-Out Report, which documents that the EPA has determined that construction at the site has been completed. For this site, the Preliminary Close-Out Report was approved on September 24, 2002. Five-year reviews were completed in September 2007 and 2012. A third five-year review will be conducted before September 2017.

[10] The soils also meet the more recent (December 14, 2006) 6 NYCRR 375, Soil Cleanup Objectives for residential use.

AFFIRMATION OF STATUTORY DETERMINATIONS

The EPA is issuing this ESD after consultation with the NYSDEC. NYSDEC concurs with the approach presented in this ESD. When implemented, the remedy, as modified by this ESD, will continue to be protective of human health and the environment, and will comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action. The modified remedy is technically feasible, cost-effective and satisfies the statutory requirements of CERCLA by providing for a remedial action that has a preference for treatment as a principal element and therefore permanently and significantly reduces the toxicity, mobility and volume of hazardous substances.

PUBLIC PARTICIPATION ACTIVITIES

Pursuant to NCP §300.825(a)(2), this ESD will become part of the Administrative Record file for the site. The Administrative Record for the remedial decisions related to the site is available for public review at the following locations:

Byron Town Hall
7028 Byron Holley Road
Byron, New York

Hours: Monday to Friday 9:00 a.m. to 5:00 p.m.

and

Gilliam Grant Library
6966 West Bergen Road
Bergen, New York
Hours: Tuesday and Thursday 11:00 a.m. to 4:00 p.m. and 6:00 p.m. to 9:00 p.m.; Friday 10:00 a.m. to 5:00 p.m.; and Saturday 9:00 a.m. to 1:00 p.m.

The Administrative Record file and other relevant reports and documents are also available for public review at the EPA Region 2 office at the following location:

U.S. Environmental Protection Agency
290 Broadway, 18th Floor
New York, New York
(212) 637-3263

Hours: Monday to Friday: 9:00 am – 5:00 pm

The EPA and NYSDEC are making this ESD available to the public to inform it of the change made to the remedy. Should there be any questions regarding this ESD, please contact:

George Jacob
Remedial Project Manager

Central New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 20th Floor
New York, New York 10007-1866

Telephone: (212) 637-4266
e-mail: jacob.george@epa.gov

or

Michael Basile
U.S. Environmental Protection Agency
Public Information Office
186 Exchange Street
Buffalo, New York 14204
Telephone: (716) 551-4410
e-mail: basile.michael@epa.gov

With the publication of this ESD, the public participation requirements set out in §300.435(c)(2)(i) of the NCP have been met.

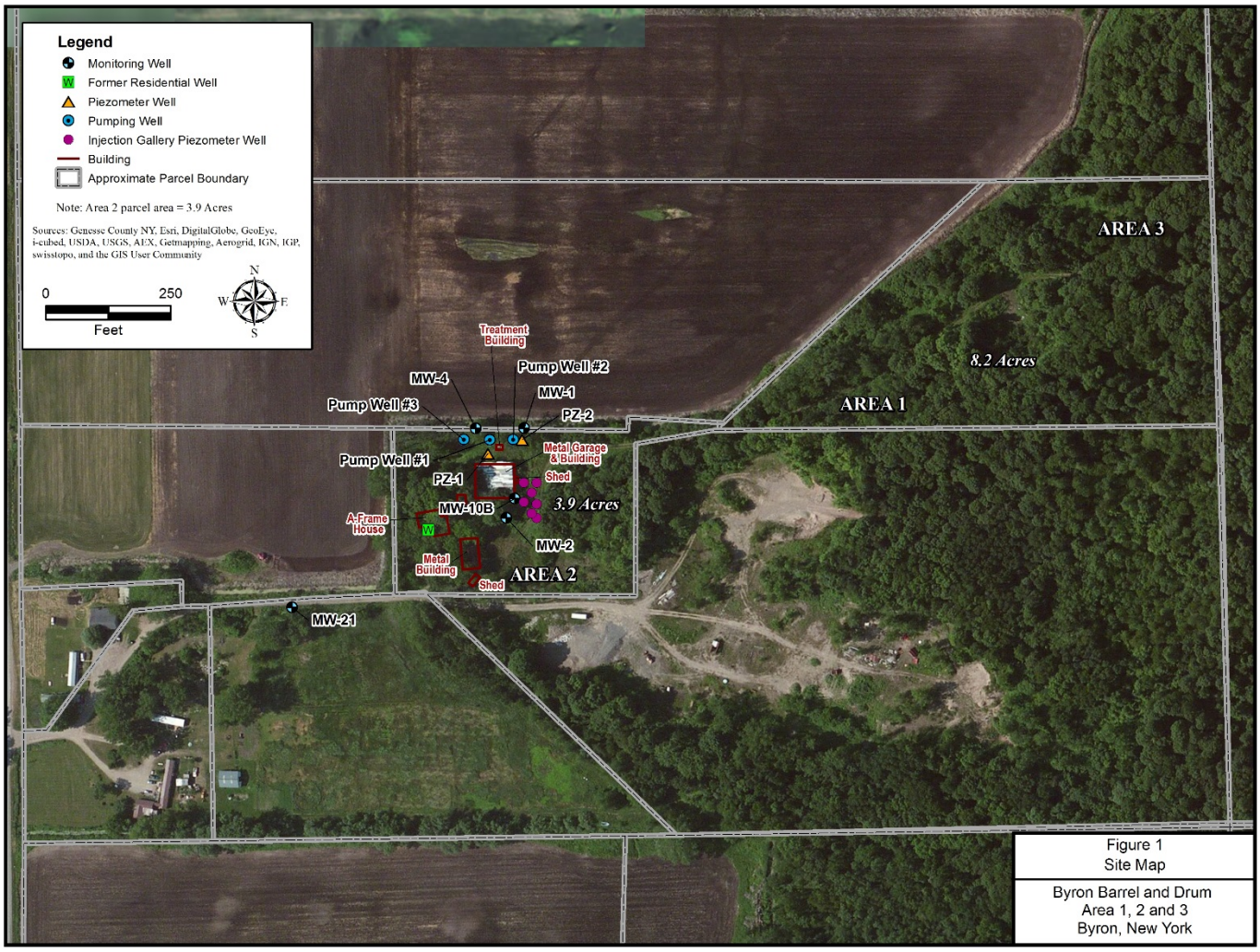

Figure 1
Site Map

Byron Barrel and Drum
Area 1, 2 and 3
Byron, New York