Explanation of Significant Differences

COLESVILLE MUNICIPAL LANDFILL SUPERFUND SITE

Town of Colesville Broome County, New York

EPA Region 2 October 2016

INTRODUCTION

The purpose of this Explanation of Significant Differences (ESD) is to explain a change made by the U.S. Environmental Protection Agency (EPA) to the 1991 remedy selected for the Colesville Municipal Landfill Superfund site (Site), located in the Town of Colesville, Broome County, New York.

Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund), as amended, EPA is required to issue an ESD when, after issuance of a Record of Decision (ROD),[1] a significant, but not fundamental, change is made to a 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 issued 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 summarizes a significant difference to the remedy selected in the 1991 ROD for the Site, as modified by 2000 and 2004 ESDs, provides a brief history of the Site, describes the original remedy, as modified, and explains how, subsequent to the finalization of the ROD and the ESDs, an issue concerning the protectiveness of the selected remedy related to vapor intrusion, discussed below, has been identified for the Site.

Volatile organic compounds (VOCs) are present in the groundwater underlying the Site. VOCs in groundwater can migrate through the soil and into buildings. This process, which is called vapor intrusion, can result in actual or threatened unacceptable human exposures to VOCs inside occupied buildings. Although this pathway is currently incomplete at the Site because no buildings are currently occupied in the vicinity of the Site, based on soil gas sampling results, it was concluded that if structures are built in the vicinity of the Site or if the nearby vacant houses are occupied, vapor intrusion could be a concern.

EPA has determined that, to ensure the protectiveness of the remedy, an institutional control (IC)[2] that requires vapor intrusion sampling to determine whether this pathway is of concern if buildings are constructed in this area in the future or if the nearby vacant houses are occupied, is needed. To that end, letters were sent by EPA to the Broome County Department of Public Works and the Town of Coleville Office of Code Enforcement indicating that EPA and New York State Department of Environmental Conservation (NYSDEC) should be contacted prior to the approval of any building permits or Certificates of Occupancy for the residential properties in the vicinity of the Site that do not have environmental easements and restrictive covenants. Periodic reminders to these agencies will be issued. The initial notifications and the subsequent reminders constitute an IC.

This ESD serves to document EPA's determination to incorporate into the remedy an informational IC in the form of the above-noted letters. The IC will remain in place until vapor intrusion is no longer a viable exposure pathway.

The remedy as modified by this ESD remains protective of human health and the environment.

SITE HISTORY, CONTAMINATION PROBLEMS AND SELECTED REMEDY

The Colesville Landfill is an inactive landfill located in the Town of Colesville, Broome County, New York. This area

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

[2] ICs are non-engineered controls, such as property or groundwater use restrictions imposed by a property owner 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.

is characterized as extremely rural, and includes large tracts of undeveloped woodlands, as well as large-scale agricultural tracts and scattered residential parcels. Of the 113 acres on which the landfill is situated, only about 35 acres have been used for waste disposal. Surface water in the area drains to the Susquehanna River.

Waste disposal operations at the landfill commenced in 1969. The landfill was owned and operated by the Town of Colesville between 1969 and 1971. Broome County purchased the landfill in 1971, operating it until it closed in 1984.

The landfill was primarily used for the disposal of municipal solid waste, although drummed industrial wastes from various sources were also disposed of between 1973 and 1975. The drums were either buried intact or punctured and crushed prior to burial.

In 1983, samples collected by the Broome County Health Department from residential wells in the vicinity of the Site indicated that the landfill was contaminating the groundwater in the vicinity of the Site. The sample results prompted the Broome County Department of Public Works to install carbon filters on wells at the affected residences, to initiate a residential well monitoring program, and to perform further investigation of the landfill in 1983 and 1984. These investigations showed elevated levels of a number of VOCs in the groundwater.

The Site was proposed for inclusion on the Superfund National Priorities List (NPL) in October 1984 and was listed on the NPL in June 1986. NYSDEC was designated the lead agency for this Site.

The potentially responsible parties (PRPs) for the Site, Broome County and GAF Corporation, completed a remedial investigation and feasibility study (RI/FS)[3] in 1990, pursuant to an Order on Consent (Index No. T010687) issued by NYSDEC (State Order). The RI/FS showed elevated levels of VOCs in the groundwater and identified and evaluated various remedial alternatives to address the contamination problems at the Site.

In 1991, based upon the results of the RI/FS, EPA issued a ROD, selecting a remedy for the Site. The selected remedy included, among other things, the installation of a multimedia cap on the landfill, collection and treatment of contaminated groundwater at and downgradient of the landfill, and provision of new deep wells for six affected residences located in the vicinity of the Site.

Pursuant to the State Order, the PRPs performed the design of the selected remedy from 1991 to 1994 and completed the construction of the landfill cap in 1995.

An alternate water supply well design (deep wells), which was prepared by Wehran-New York, Inc., was approved by NYSDEC in 1995. The implementation of the design was delayed, however, while Broome County attempted to purchase the five affected properties and to place deed restrictions preventing the installation and use of groundwater wells on the properties so that there would be no drinking water receptors. All but two of the properties have environmental easements and restrictive covenants preventing the installation or use of groundwater wells; the two remaining properties have double-cased deep wells.

Based upon design-related aquifer tests conducted at the Site in 1998, it was determined that extracting contaminated groundwater at the landfill, as called for in the ROD, would not likely be an effective means of remediating the groundwater at the source in a reasonable time frame. Specifically, the aquifer tests determined that the aquifer near the landfill has a low permeability, which would severely limit the area of influence of the extraction wells and would allow the groundwater to be pumped at only a very low rate (0.25 to 0.5 gallon per minute). Such conditions would necessitate the installation of an inordinate number of extraction wells. This conclusion led to an evaluation of alternative groundwater technologies and the performance of a pilot-scale study to evaluate the effectiveness of one of the more promising technologies, enhanced reductive dechlorination. This process involves injecting an easily degradable carbohydrate solution (in this case molasses was the organic substrate used) into the contaminated groundwater, which provides excess organic carbon that promotes microbial activity in the aquifer, enhancing the breakdown of chlorinated VOCs. Based upon the results of the pilot study, which showed a significant decline in VOC concentrations, it was concluded that this technology, in combination with the installation of downgradient extraction wells (as called for in the ROD), offered the most technically feasible approach to controlling the migration of contaminated groundwater to ensure that groundwater beyond the Site boundary meets groundwater standards. The change to the remedy was documented in a September 2000 ESD.

The groundwater management system as modified by the 2000 ESD became operational in 2002. It consists of 17 automated reagent injection wells, three groundwater recovery wells, and an on-site groundwater treatment system. Molasses was injected via 17 automated reagent injection wells every three months until October 2012. The groundwater extraction and treatment and the injections of molasses were stopped at that time to allow the performance of a natural attenuation study. A pilot study is underway to evaluate the effects of terminating the operation of the groundwater extraction and treatment and molasses injections.

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

In April 2000, during an inspection of the Site performed as part of the five-year review process, EPA determined that contaminated water from a spring and low-lying wet area in the vicinity of the landfill were discharging to nearby streams. *In-situ* treatment measures were subsequently implemented to prevent the migration of contaminated water from the spring and low-lying wet area. The implemented actions were documented in a July 2004 ESD.

BASIS FOR THE DOCUMENT AND DESCRIPTION OF SIGNIFICANT DIFFERENCES

VOCs are present in the groundwater underlying the Site. VOCs in groundwater can migrate through the soil and into buildings. This process, which is called vapor intrusion, can result in unacceptable human exposures to VOCs inside occupied buildings.

Although soil vapor intrusion into indoor air was not evaluated during the risk assessment performed as part of the 1990 RI/FS, such an evaluation was conducted in 2008 based on recommendations from prior five-year reviews.[4] Because no houses in the immediate vicinity of the landfill were appropriate for subslab soil gas sampling (the only house directly downgradient of the landfill is unoccupied, dilapidated, and the safety of the basement is questionable), the County's contractor, Arcadis, collected six soil gas samples from immediately above the water table along East Windsor Road, toward the south side of the landfill in 2008. Based on these sample results, the 2010 and 2015 five-year reviews concluded that if structures were to be built downgradient of the landfill, vapor intrusion could be a concern, primarily based on the trichloroethylene concentration of 550 micrograms per cubic meter detected in one location (SV-2 located approximately 190 feet from East Windsor Road, on the east side of North Stream) out of the six locations sampled. However, because no buildings are currently occupied in the immediate area of this sample location, this pathway of exposure remains incomplete.

EPA has concluded that, if buildings are constructed in the vicinity of the Site in the future, or if the nearby vacant houses are occupied, additional vapor intrusion sampling would be necessary to determine whether this pathway is of concern. Therefore, this ESD documents EPA's determination that to ensure the protectiveness of the remedy, an IC requiring vapor intrusion sampling to determine whether vapor intrusion is a pathway of concern if buildings are constructed in the vicinity of the Site in the future or if the nearby vacant houses are reoccupied, is needed. To that end, letters were sent by EPA on May 7, 2015 to the Broome County Department of Public Works and the Town of Coleville Office of Code Enforcement indicating that EPA and the NYSDEC should be contacted prior to the approval of any building permits or Certificates of Occupancy for the residential properties in the vicinity of the Site that are not included in the environmental easements and restrictive covenants. Periodic reminders to these agencies will be issued. The initial notifications and the subsequent reminders constitute an IC.

The noted IC will remain in place until vapor intrusion is no longer a viable exposure pathway.

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

Since hazardous substances, pollutants or contaminants remain at the Site which do not allow for unlimited use or unrestricted exposure, in accordance with 40 CFR 300.430 (f) (4) (ii), the remedy for the Site must be reviewed no less often than every five years.

Four five-year reviews have been conducted at the Site. The most recent review, completed in May 2015, concluded that the remedy is functioning as intended by the decision documents and is protecting human health and the environment. It is anticipated that the next five-year review will be completed by May 2020.

AFFIRMATION OF STATUTORY DETERMINATIONS

EPA is issuing this ESD after consultation with the NYSDEC. The 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 continue to comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action. The modified remedy is technically feasible and cost-effective. The remedy as set forth in the ROD and ESDs 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

[4] The purpose of a five-year review is to ensure that implemented remedies continue to protect public health and the environment and function as intended by the Site decision documents.

Administrative Record for the remedial decisions related to the Site is available for public review at the following locations:

Town of Colesville Town Hall
Harpursville, New York 13787

New York State Department of
Environmental Conservation
625 Broadway
Albany, New York 12233-7016

and

U.S. Environmental Protection Agency
290 Broadway, 18th floor
New York, New York 10007

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

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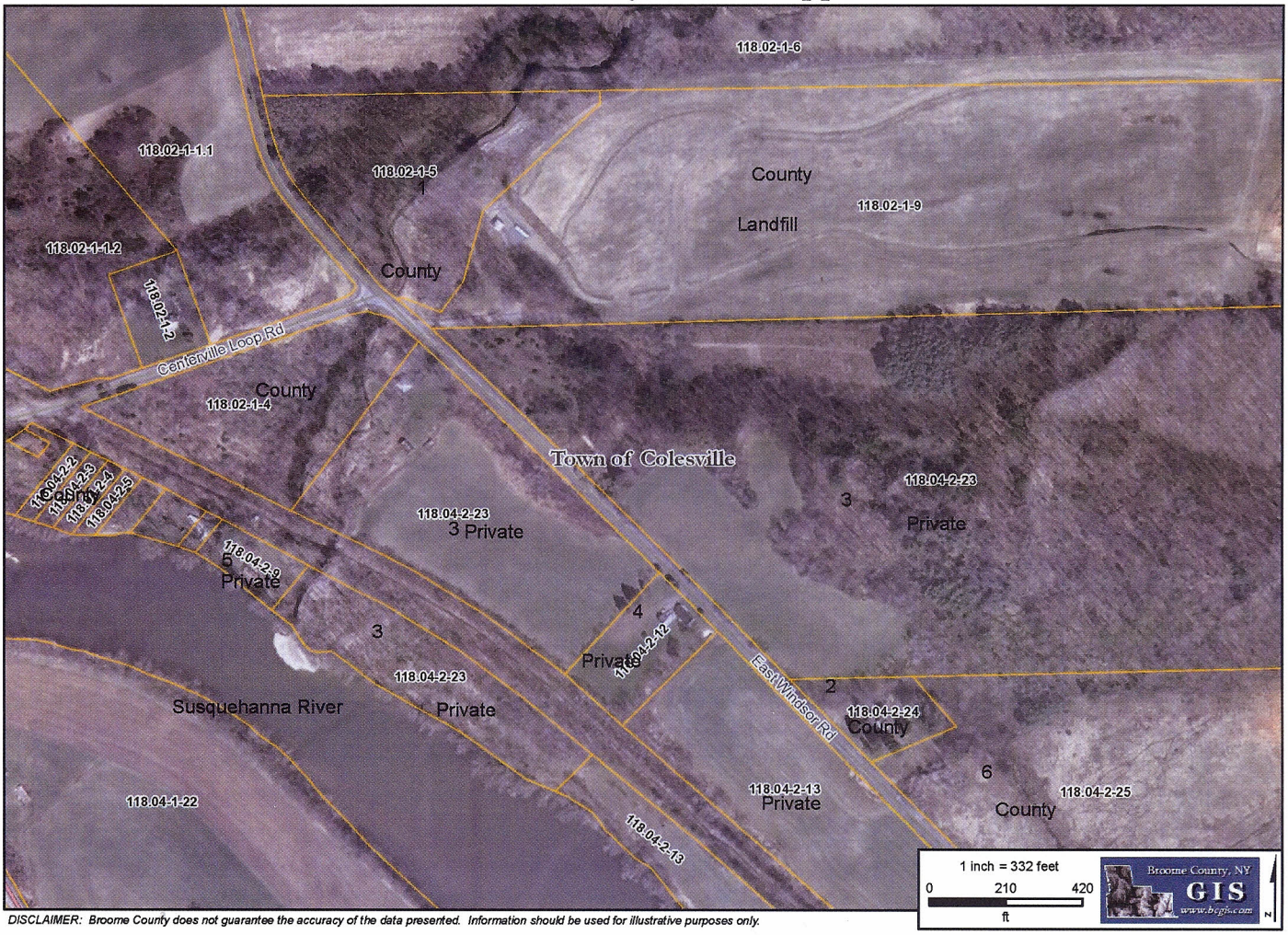
With the publication of this ESD, the public participation requirements set out in §300.435(c)(2)(i) of the NCP have been met.

Figure 1

Broome County Parcel Mapper



DISCLAIMER: Broome County does not guarantee the accuracy of the data presented. Information should be used for illustrative purposes only.