Explanation of Significant Differences

Hopewell Precision Superfund Site

Hopewell Junction, Dutchess County, New York

EPA Region 2 October 2019

INTRODUCTION

Under Section 117 (c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund), as amended, the Environmental Protection Agency (EPA) is required to publish an Explanation of Significant Differences (ESD) if, after EPA selects a remedy, circumstances subsequent to that selection lead to significant, but not fundamental changes in that selected remedy. Criteria are set forth in Sections 300.435(c)(2)(i) and 300.825(a)(2) of the National Oil and Hazardous Substances Contingency Plan (NCP) 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 initially selected remedy.

This ESD presents the details of significant differences to the remedy selected and set forth in the 2008 Operable Unit (OU) 2 Record of Decision (ROD[1]) for the Hopewell Precision Superfund site (Site). The remedy selected in the 2008 OU 2 ROD provides for an alternate water supply to the area with private drinking water wells that have been or have the potential to be affected by the groundwater contaminant plume emanating from the Hopewell Precision facility. In the ROD, it was estimated that it would cost $18.9 million to construct a public water supply distribution system to service the impacted and threatened to be impacted properties within the Hopewell connection/hookup area. During the design of the remedy, significant cost-increases were identified that included, among other things, an interconnection fee for connection to the Town of East Fishkill's water supply source, costs associated with transmission and water mains, a pump station/water storage tank/meter vault, and a well tank assembly and pump. Because of these cost increases that were identified during the remedial design, the estimated capital cost of implementing the alternate water supply remedy has increased to $42 million. Therefore, this ESD is being issued since the remedy selected in the 2008 OU 2 ROD differs significantly in cost from the initially selected remedy.

In addition, in this ESD, EPA clarifies components of the two remedies that have been selected at the Site, one in the 2008 OU 2 ROD and the second in the 2009 OU 1 ROD. The clarification is with respect to operation and maintenance (O&M) of point-of-entry treatment (POET) and sub-slab ventilation (SSV) systems that have been installed at many of the impacted residences and thereafter maintained by EPA. POETS are to be maintained by EPA until the remedy to construct the public water supply distribution system is implemented. The SSV systems will be maintained in homes that exceed protective levels until EPA determines protective levels have been achieved. In the 2008 OU 2 ROD, EPA evaluated a remedial alternative that included the installation and operation of POET systems but did not explicitly identify in the description of the selected remedy the continued O&M of POET systems that had been installed. In the 2009 OU 1 ROD, EPA selected a remedy that included remediation and restoration of the contaminated groundwater aquifer to drinking water standards by using naturally-occurring micro-organisms, a process known as aerobic cometabolic bioremediation (ACB) that breaks contaminants down, making them harmless. The OU 1 selected remedy also included vapor monitoring of homes located above the groundwater plume to identify whether vapor intrusion was occurring and whether installation

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

of SSV systems in homes that exceed protective levels was necessary. This ESD documents the inclusion of continued O&M of POET and SSV systems at the Site, as well as installation of any necessary new POET and SSV systems in homes where there are exceedances of protective levels, as components of the 2008 OU 2 and 2009 OU 1 selected remedies.

Finally, the ESD documents the need for an institutional control (IC) to ensure that new construction in the future is not impacted by vapor intrusion.

The modifications set forth in this ESD are not considered by EPA or New York State Department of Environmental Conservation (NYSDEC) to be fundamental alterations of the remedies selected in the 2008 OU 2 and 2009 OU 1 remedies.

The following discussion includes a brief overview of the Site history, a description of the remedial actions selected for the Site, and a more detailed explanation of the significant differences from the remedies selected in the 2008 OU 2 and 2009 OU 1 remedies.

SITE HISTORY, CONTAMINATION PROBLEMS AND SELECTED REMEDIES

The Hopewell Precision Area Groundwater Contamination Site is located in Hopewell Junction, Dutchess County, New York (**Figure 1**). The Site consists of the Hopewell Precision facility and the hydraulically downgradient area affected by the groundwater plume and its vapors (**Figure 2**). The Hopewell Precision facility has been located at either 15 Ryan Drive or 19 Ryan Drive since its inception in 1972. With the exception of a four-year period (1977 through 1980), it has operated at 19 Ryan Drive. Between 1977 and 1980, while Hopewell Precision was constructing a new facility building at 19 Ryan Drive, it operated at a leased space at 15 Ryan Drive. Operations were moved back to the property at 19 Ryan Drive in 1980 and they have continued at that location to this day. The combined size of the two properties is 5.7 acres.

The rest of the Site consists mostly of residential neighborhoods, all of which are served by private wells and septic systems. Almost 27,000 people live within 4 miles of the Hopewell Precision facility. Commercial development (e.g., strip malls, businesses, and gas stations) in the area is primarily along New York State Route 82, which traverses the area in a northeast-southwest direction. An area of farmland borders the eastern side of a section of Route 82. Whortlekill Creek flows in a southerly direction across the residential area and along the western border of the Site. Several ponds are present within the area, including two large former quarries (Redwing Lake and the gravel pit) that are partially fed by groundwater.

Hopewell Precision is a manufacturer of sheet metal parts that are assembled into furniture. Processes at Hopewell Precision include shearing, punching, bending, welding, and painting. The painting process includes degreasing prior to application of the wet spray paint application. Hopewell Precision currently uses a water-based degreaser, but the company used trichloroethene (TCE) and 1,1,1-trichloroethane (1,1,1-TCA) in a vapor degreasing machine until 1998.

EPA was made aware of Hopewell Precision in October 1979 through a letter from a former Hopewell Precision employee. During an on-Site inspection at the 15 Ryan Drive location in November 1979, EPA observed solvent odors coming from an open disposal area.

NYSDEC installed 3 monitoring wells at the 15 Ryan Drive facility in May 1985 and sampled the wells in March 1986. The analytical results for monitoring well B-3, located between the current and former facility buildings, indicated the presence of 1,1,1- TCA at 23 micrograms per liter (µg/L) and TCE at an estimated 4 µg/L. In 1985, the Dutchess County Department of Health (DCDOH) sampled four private drinking water wells near the Site, and no volatile organic compounds (VOCs) were detected in any of the samples.

In February 2003, as part of an effort to make decisions on historic sites, EPA's sampled 75 residential wells near the Hopewell Precision facility. Analysis of these samples revealed that five residential wells were contaminated with TCE ranging from 1.2 µg/L to 250 µg/L. At that time, NYSDEC, on behalf of NYSDOH, requested that EPA conduct a removal action at the Site, including installation of carbon filter systems on the residential wells.

From February to November 2003, EPA collected groundwater samples from hundreds of private drinking water wells in the vicinity of Hopewell Precision. TCE and 1,1,1-TCA were detected in numerous private well samples, at individual concentrations up to 250 µg/L for TCE and 11.7 µg/L for 1,1,1-TCA. EPA subsequently installed POET systems to remove VOCs at 42 homes where TCE exceeded or approached the maximum contaminant level (MCL). NYSDEC installed POET systems at 14 homes in the southern part of the groundwater plume to remove 1,1,1-TCA that exceeded its New York State drinking water standard but that fell below the Federal MCL.

The Site was listed on CERCLA's National Priorities List of significant releases in April 2005.

EPA has conducted indoor air testing for the presence of vapor intrusion at residences at the Site. Since February 2004, EPA has collected sub-slab and/or indoor air samples from approximately 263 homes in

the area above the groundwater plume. All sub-slab samples were collected at a depth of 6 - 12 inches beneath the concrete base (basement, crawl space, on-grade slab) of each home. Sub-slab sampling was not conducted under sidewalks, patios or similar concrete structures. Approximately five properties, where access to conduct air sampling was denied, have not been sampled for vapor intrusion. EPA has installed SSV systems at 54 homes where vapors were above the action level so as to reduce the residents' exposure to indoor air contaminants associated with the Site. In addition, EPA conducts annual vapor sampling during the winter heating season to monitor the migration of vapors into structures throughout the area of the groundwater plume.

To prioritize and accelerate the selection of a Site-wide comprehensive response, EPA divided the Site into two OUs, OU 1 and OU 2, as mentioned above. OU 2 addresses provision of an alternate water supply to the area where private drinking water wells have been impacted, or have the potential to be impacted, by the groundwater plume from the Hopewell Precision facility. OU 1 addresses other exposures to contaminated or potentially contaminated media such as the groundwater, soils, surface water, sediments, and vapors associated with the Site plume.

On September 30, 2008, EPA issued the OU 2 ROD selecting the alternate water supply remedy for the Site that called for the following:

- Provision of an alternate water supply to all properties within the Hopewell hook-up area. The water supply was expected to be drawn from new wells installed at the Little Switzerland water district property. In selecting the remedy EPA acknowledged that if, based upon design considerations or other factors, it were to be determined that another source of water was preferable or necessary (e.g., if testing reveals that the capacity of the aquifer in the vicinity of the Little Switzerland well field may not be adequate), another source of water supply (e.g., the Dutchess Central Utility Corridor Waterline or the Beekman/Legends system) may be selected or established to supply water to the Hopewell connection area.

- Performance of pumping tests of two existing Little Switzerland water supply wells to determine the capacity of the aquifer. If capacity testing indicated that the aquifer in the vicinity of the Little Switzerland wellfield could support the required volume of water necessary for the Hopewell connection area, and it could be determined that wells at this location would be the appropriate source of the water supply, two or more wells might be needed since a standby well would also be required. The final number of wells would be determined after the capacity testing was completed.

- Construction of a water storage tank either at the Little Switzerland wellfield or on nearby property.

- Construction of water mains to deliver water from the storage tank to the Hopewell connection area. A service connection from the mains will be extended to each house and/or commercial building.

- Disconnection of private well piping within the Hopewell connection area following connection to the public water supply.

The estimated cost of the OU 2 remedy identified in the ROD was $18.9 million. EPA worked with the Town of East Fishkill (Town) to identify the preferred source of water supply for the proposed water supply system. The evaluation of the three potential sources of water cited in the OU 2 ROD identified numerous issues that made these sources impracticable. However, in June 2012, the Town acquired a 152-acre land parcel, across from the Town Hall on Route 376, known as the Cannon Property, and requested that EPA consider the Cannon Property as a location to site a wellfield to provide an alternate water supply source for the area affected by the Hopewell groundwater contamination. In January 2013, the Town completed 72-hour pumping tests at the Cannon property, and it submitted a Pumping Test Report to EPA in March 2013. The Pumping Test Report confirmed the findings from the July 2012 Hydrogeologic Assessment Report that there is adequate aquifer yield for the Hopewell groundwater contamination-impacted area (and beyond).

On January 16, 2014, EPA held a public information session to solicit input on three options for supplying potable water: 1) the connection to a public water supply outlined in the OU 2 ROD; 2) installation and operation of POET systems remedial alternative (Alternative 2 in the OU 2 ROD); 3) a new option that would replace existing shallow residential wells with wells installed in the uncontaminated bedrock aquifer. The community overwhelmingly supported OU 2 ROD's alternate public water supply remedy in using Cannon Wellfield as source of drinking water for the area affected by the Hopewell groundwater contamination.

Based on these studies and investigations and community input at the January 16, 2014 public information session, EPA ultimately determined that it would construct a public water supply distribution system that will connect with the Town's to-be-developed Cannon Wellfield. The water supply system will service impacted and threatened properties within the Hopewell North Water District (HNWD) that was

adopted and created by the Town Board in March 2015.

In January 2014, EPA commenced OU 2 Alternate Water Supply remedial design activities. The engineering design work for the new water supply system was completed in July 2016. The U.S. Army Corps of Engineers, on behalf of EPA, awarded the construction contract in September 2017, and the construction of the water supply distribution system began in spring 2018 and is expected to be completed in 2020. The construction of the new water supply system is being sequentially phased by year into three segments that include, Phase 1 - water transmission mains; Phase 2 - pumping station, water storage tank and water system distribution mains; and Phase 3 - residential service line connections to approximately 320 properties and private well abandonment. During the design of the remedy, it became evident that the project cost estimate had increased significantly. The current cost estimate of the remedial action has increased from $18.9 million in OU 2 ROD to approximately $42 million, based on actual contract amounts awarded for the work.

Town Ordinance §186-21 under ARTICLE I Standards for Installation of Water Mains, Valves and Hydrants "[requires] that all connections between individual wells or other outside sources of water supply physically be disconnected from the consumer's plumbing fixtures, which are connected to the municipal potable water supply." At the completion of the construction of the water supply distribution system, all private wells and POET systems will be removed and decommissioned, and EPA will then convey it to the newly created HNWD, and the Water District will assume responsibility for future operation and maintenance of the system.

On September 28, 2009, EPA issued the OU 1 ROD in which EPA selected a groundwater remediation and restoration remedy for the Site that that called for the following:

- A pre-design investigation and pilot study of ACB to determine the rate and the parameters for full-scale enhancement of aerobic cometabolic degradation in the aquifer.

- Remedial design and implementation of full-scale enhancement of the ACB remedy to achieve restoration of the groundwater to drinking water standards within a reasonable period.

- Long-term groundwater monitoring to track the movement of and changes in the contaminated groundwater plume.

- Monitoring of vapor migration into homes located above the groundwater plume and implementation of vapor mitigation systems in homes that experience exceedances of protective levels.

The OU 1 remedial design has been postponed while additional studies on the groundwater are performed.

BASIS FOR THE DOCUMENT AND DESCRIPTION OF SIGNIFICANT DIFFERENCES

In the 2008 OU 2 ROD, EPA estimated that it would cost $18.9 million to construct a public water supply distribution system to service impacted and threatened properties within the Hopewell connection area. During the remedial design of the selected remedy, significant cost-increases were identified with regard to the following: bonding/insurance; general conditions and project-dedicated supervisory staff; project planning, management, and documents; best management practices; transmission and water mains; the pump station/water storage tank/meter vault; POET systems removal, well tank assembly and the pump; adjustments made for EPA operating the water distribution system until the water system is transferred to the Town; revised paving requirements; additional chlorination taps; and EPA oversight. Because of these cost increases that were identified during the remedial design, the estimated capital cost of the alternate water supply remedy has increased to $42 million and is the basis for issuance of this ESD.

Consideration was given to addressing the provision of an alternate water supply to the affected area by utilizing the other remedial alternative evaluated in the 2008 OU 2 ROD, which was through the installation and operation of the existing POET systems. The selected remedy of a public water supply distribution system would still be more effective and permanent because it involves permanent infrastructure to convey water from a reliably clean source, thereby permanently protecting human health by eliminating potential exposure to contaminated groundwater. The POET systems are only considered a temporary short-term solution because they would require significantly more maintenance over time to ensure long-term effectiveness and reliability. Monitoring and servicing over 300 POET systems to ensure against contaminant breakthrough, fouling, and breakdown, and implementing the periodic sampling program would be cumbersome and would require highly coordinated efforts. In addition, if filters are not properly maintained, they can serve as a source of microbial contamination in the water system. EPA believes that the cost of the selected remedy remains proportional to its overall effectiveness because it permanently eliminates exposure to contaminated water.

In addition, in the 2008 OU 2 ROD, EPA evaluated the installation and operation of POET systems alternative but did not explicitly identify in its selected remedy the

continued O&M of POET systems that have been installed until the construction of the alternate water supply is completed. The 2009 OU 1 ROD included, as part of its selected ACB remedy, vapor monitoring of homes located above the groundwater plume for vapor intrusion and implementation of SSV systems in homes that exceed protective levels. This ESD therefore documents the need for continued O&M of POETs until the remedy to provide an alternative water supply is completed and SSV systems in homes that experience exceedances of protective levels, as components of the 2008 OU 2 and 2009 OU 1 remedies. As noted, however, the previously selected alternate water supply remedy remains the chosen remedy.

Because new homes that may be constructed within the area encompassed by the HNWD (**Figure 2**) have the potential to be affected by vapor intrusion, EPA will seek to establish a municipal requirement that new construction either 1) be evaluated for vapor intrusion or 2) be constructed with active vapor mitigation systems with a blower. EPA seeks to engage the Town to require that anyone building a new home within the HNWD do an investigation (the results of which will be evaluated by EPA, NYSDEC and NYSDOH) or install an active mitigation system as a conservative measure. EPA anticipates preparing a Site Management Plan (SMP) to provide for proper post construction management of the site remedies, including the institutional controls, as well as long-term monitoring and certifications. The POET systems will be decommissioned when the private wells and associated piping are disconnected for those homes within the Hopewell connection area following connection to the public water supply.

SUPPORT AGENCY COMMENTS

NYSDEC supports this ESD, as the modifications to the remedies significantly change but do not fundamentally alter the remedies selected in the 2008 OU 2 and 2009 OU 1 RODs.

FIVE-YEAR REVIEWS

This remedy will not leave hazardous substances, pollutants, or contaminants on site above levels that would otherwise allow for unlimited use and unrestricted exposure but will require more than five years to attain the remedial action objectives and cleanup levels. Therefore, a policy review will be conducted within five years of construction completion to ensure that the remedy is, or will be, protective of human health and the environment. These policy reviews will continue to be performed each five years until the levels that allow for unlimited use are attained.

AFFIRMATION OF STATUTORY DETERMINATIONS

The remedies selected and set forth in the 2008 OU 2 and 2009 OU 1 RODs remain fundamentally unaltered, and the statutory determinations made in those RODs still apply. The significant changes to the remedial actions include the following: an increase in the cost to implement the OU 2 remedy; continued O&M of POET and SSV systems and the installation of new POET and SSV systems in homes that experience exceedances of protective levels as components of the OU 2 and OU 1 remedies; and ICs for vapor intrusion.

The remedies will continue to be protective of human health and the environment, and they will comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial actions. The remedies remain technically feasible, cost-effective, and satisfy the statutory requirements of CERCLA by providing for remedial actions where treatment is preferred 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 this decision. The Administrative Record for this remedial decision related to the Site is available for public review at the following location:

Town of East Fishkill Community Library
348 Route 376
Hopewell Junction, NY 12533
Telephone: (845) 221-9943
Website: www.eastfishkilllibrary.org
Hours: Monday-Thursday: 10 am – 8 pm
Friday: 10 am – 6 pm
Saturday: 10 am – 5 pm

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:

USEPA-Region 2
Superfund Records Center
290 Broadway, 18th Floor
New York, NY 10007-1866
(212) 637-4308
Hours: Monday-Friday, 9:00 a.m. - 5:00 p.m.

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

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Eastern New York Remediation Section
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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.

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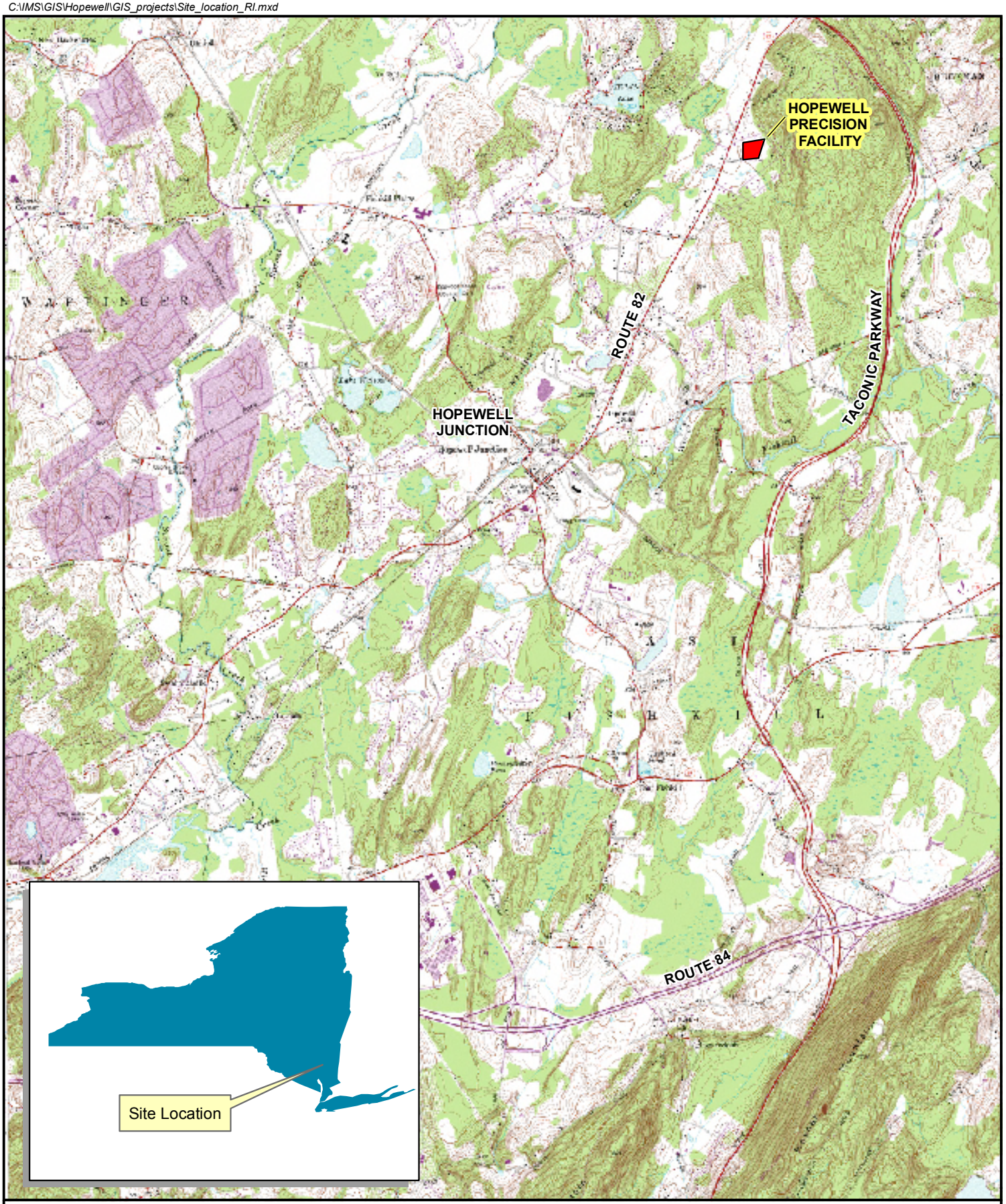

N

0 2,500 5,000 10,000 Feet

CDM

Figure 1
Site Location Map
Hopewell Precision Site
Hopewell Junction, New York

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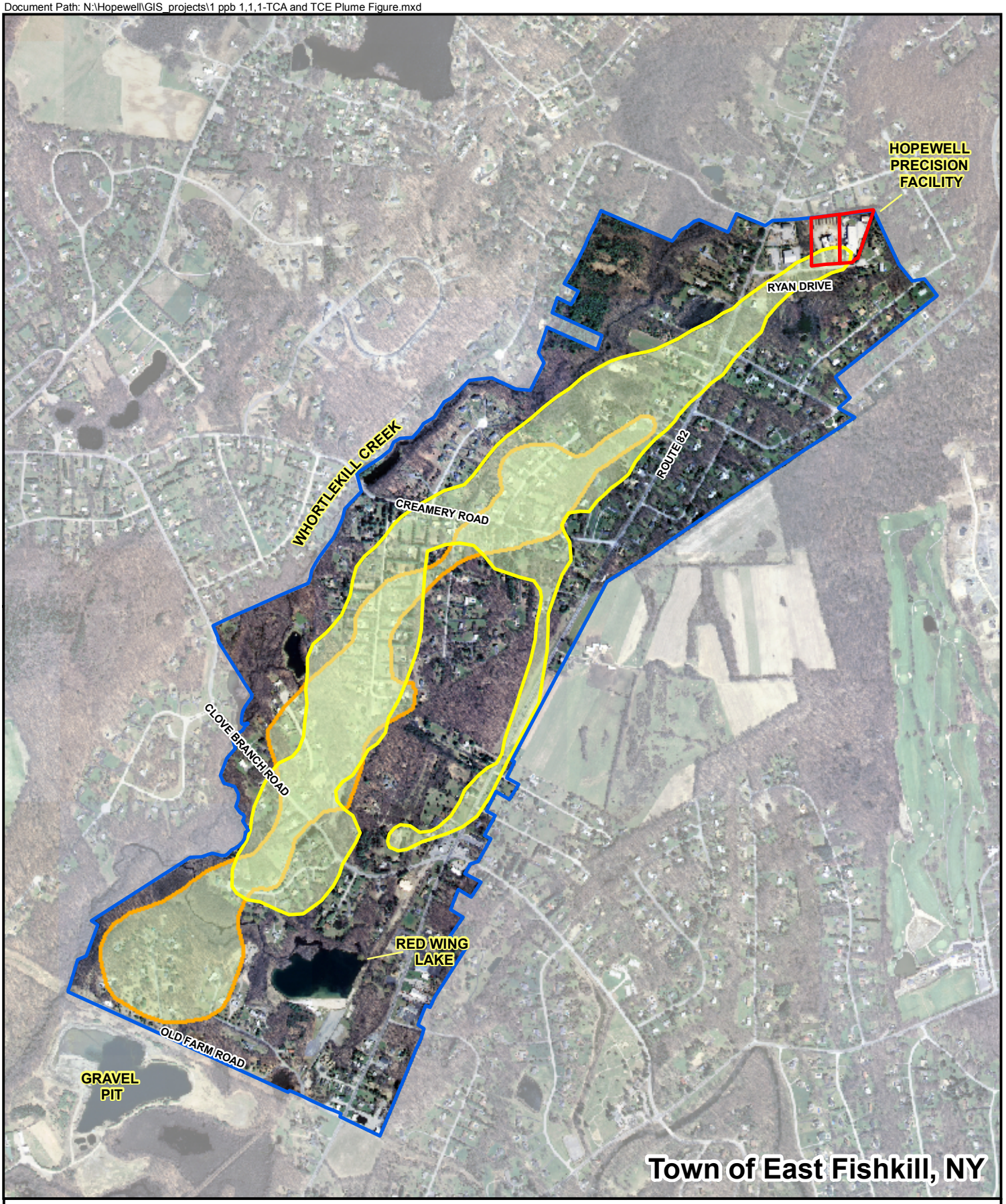

Legend

- 1 ug/L Contour for TCE
- 1 ug/L Contour for 1,1,1-TCA
- District Line
- Hopewell Precision Facility

N

0 500 1,000 2,000 Feet

Hopewell North Water District
District Boundary
Figure 2

CDM Smith