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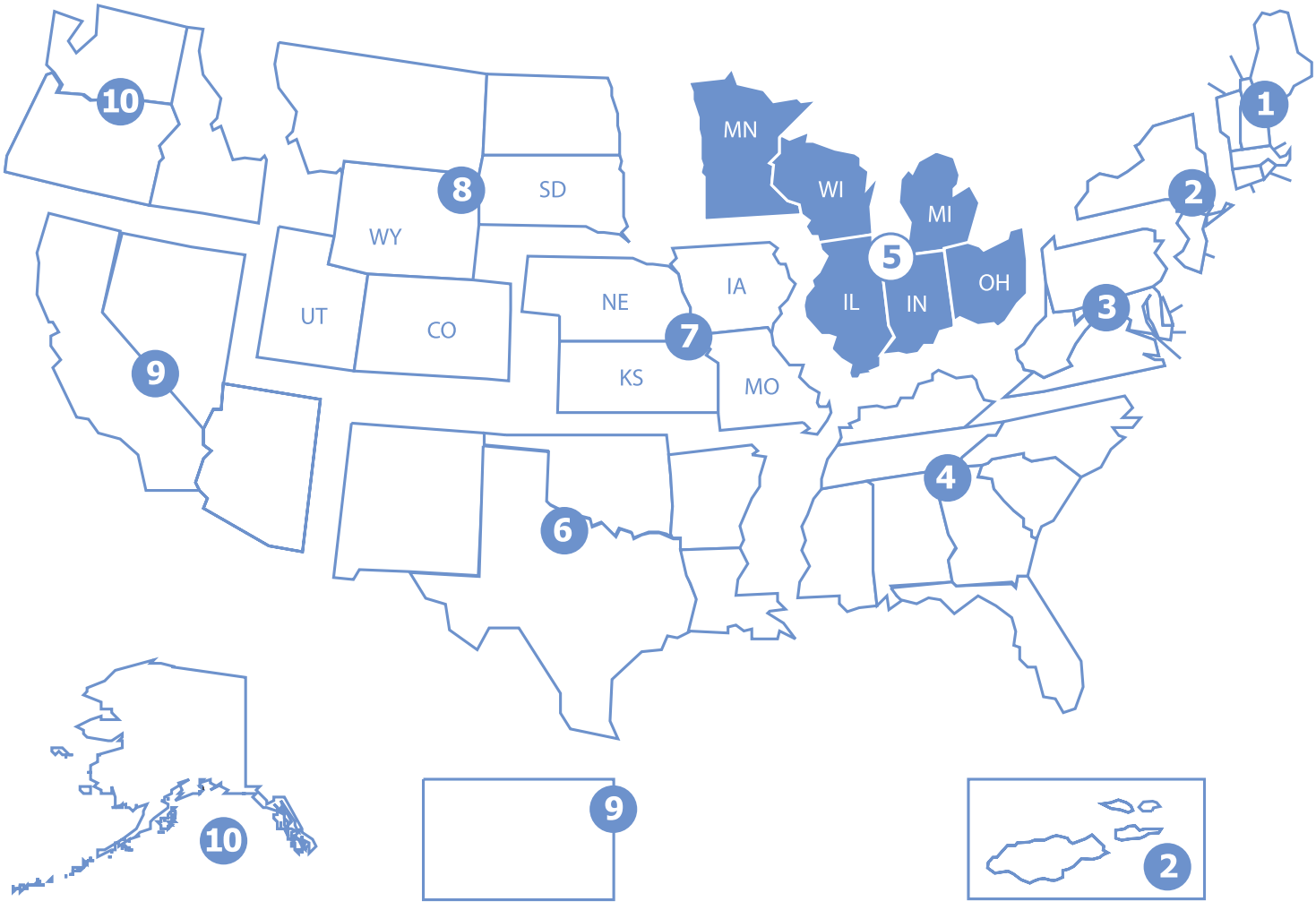
Office of Land and Emergency Management

Support Document for the Revised National Priorities List Final Rule – Highway 100 and County Road 3 Groundwater Plume



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Executive Summary

Section 105(a)(8)(B) of CERCLA, as amended by SARA, requires that the EPA prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. An original National Priorities List (NPL) was promulgated on September 8, 1983 (48 FR 40658). CERCLA requires that EPA update the list at least annually.

This document provides responses to public comments received on the Highway 100 and County Road 3 Groundwater Plume site, proposed on November 8, 2019 (84 FR 60357). This site is being added to the NPL based on an evaluation under EPA's Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in September 2020.

Introduction

This document explains the rationale for adding the Highway 100 and County Road 3 Groundwater Plume site in St. Louis Park and Edina, Minnesota to the National Priorities List (NPL) of uncontrolled hazardous waste sites and provides responses to public comments received on this site listing proposal. The EPA proposed this site to the NPL on November 8, 2019 (84 FR 60357). This site is being added to the NPL based on an evaluation under the Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in September 2020.

Background of the NPL

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Sections 9601 *et seq*. in response to the dangers of uncontrolled hazardous waste sites. CERCLA was amended on October 17, 1986, by the Superfund Amendments and Reauthorization Act (SARA), Public Law No. 99-499, stat., 1613 *et seq.* To implement CERCLA, EPA promulgated the revised National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, on July 16, 1982 (47 FR 31180), pursuant to CERCLA Section 105 and Executive Order 12316 (46 FR 42237, August 20, 1981). The NCP, further revised by EPA on September 16, 1985 (50 FR 37624) and November 20, 1985 (50 FR 47912), sets forth guidelines and procedures needed to respond under CERCLA to releases and threatened releases of hazardous substances, pollutants, or contaminants. On March 8, 1990 (55 FR 8666), EPA further revised the NCP in response to SARA.

Section 105(a)(8)(A) of CERCLA, as amended by SARA, requires that the NCP include

> criteria for determining priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action and, to the extent practicable, take into account the potential urgency of such action, for the purpose of taking removal action.

Removal action involves cleanup or other actions that are taken in response to emergency conditions or on a short-term or temporary basis (CERCLA Section 101). Remedial action is generally long-term in nature and involves response actions that are consistent with a permanent remedy for a release (CERCLA Section 101). Criteria for placing sites on the NPL, which makes them eligible for remedial actions financed by the Trust Fund established under CERCLA, were included in the HRS. EPA promulgated the HRS as Appendix A of the NCP (47 FR 31219, July 16, 1982). On December 14, 1990 (56 FR 51532), EPA promulgated revisions to the HRS in response to SARA, and established the effective date for the HRS revisions as March 15, 1991. On January 9, 2017, EPA promulgated a further revision to the HRS that added a component for evaluating the threats posed by the intrusion of subsurface contamination into regularly occupied structures. These changes are consistent with, and comply with, the statutory requirements of SARA.

Section 105(a)(8)(B) of CERCLA, as amended, requires that the statutory criteria provided by the HRS be used to prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. The list, which is Appendix B of the NCP, is the NPL.

An original NPL of 406 sites was promulgated on September 8, 1983 (48 FR 40658). At that time, an HRS score of 28.5 was established as the cutoff for listing because it yielded an initial NPL of at least 400 sites, as suggested by CERCLA. The NPL has been expanded several times since then, most recently on November 8, 2019 (84 FR 60339). The Agency also has published a number of proposed rulemakings to add sites to the NPL. The most recent proposal was on November 8, 2019 (84 FR 60357).

Development of the NPL

The primary purpose of the NPL is stated in the legislative history of CERCLA (Report of the Committee on Environment and Public Works, Senate Report No. 96-848, 96th Cong., 2d Sess. 60 [1980]).

> The priority list serves primarily informational purposes, identifying for the States and the public those facilities and sites or other releases which appear to warrant remedial actions. Inclusion of a facility or site on the list does not in itself reflect a judgment of the activities of its owner or operator, it does not require those persons to undertake any action, nor does it assign liability to any person. Subsequent government actions will be necessary in order to do so, and these actions will be attended by all appropriate procedural safeguards.

The NPL, therefore, is primarily an informational and management tool. The identification of a site for the NPL is intended primarily to guide EPA in determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with the site and to determine what CERCLA-financed remedial action(s), if any, may be appropriate. The NPL also serves to notify the public of sites EPA believes warrant further investigation. Finally, listing a site may, to the extent potentially responsible parties are identifiable at the time of listing, serve as notice to such parties that the Agency may initiate CERCLA-financed remedial action.

CERCLA Section 105(a)(8)(B) directs EPA to list priority sites among the known releases or threatened release of hazardous substances, pollutants, or contaminants, and Section 105(a)(8)(A) directs EPA to consider certain enumerated and other appropriate factors in doing so. Thus, as a matter of policy, EPA has the discretion not to use CERCLA to respond to certain types of releases. Where other authorities exist, placing sites on the NPL for possible remedial action under CERCLA may not be appropriate. Therefore, EPA has chosen not to place certain types of sites on the NPL even though CERCLA does not exclude such action. If, however, the Agency later determines that sites not listed as a matter of policy are not being properly responded to, the Agency may consider placing them on the NPL.

Hazard Ranking System

The HRS is the principle mechanism EPA uses to place uncontrolled waste sites on the NPL. It is a numerically based screening system that uses information from initial, limited investigations -- the preliminary assessment and site inspection -- to assess the relative potential of sites to pose a threat to human health or the environment. HRS scores, however, do not determine the sequence in which EPA funds remedial response actions, because the information collected to develop HRS scores is not sufficient in itself to determine either the extent of contamination or the appropriate response for a particular site. Moreover, the sites with the highest scores do not necessarily come to the Agency's attention first, so that addressing sites strictly on the basis of ranking would in some cases require stopping work at sites where it was already underway. Thus, EPA relies on further, more detailed studies in the remedial investigation/feasibility study that typically follows listing.

The HRS uses a structured value analysis approach to scoring sites. This approach assigns numerical values to factors that relate to or indicate risk, based on conditions at the site. The factors are grouped into three categories. Each category has a maximum value. The categories are:

- likelihood that a site has released or has the potential to release hazardous substances into the environment;
- characteristics of the waste (e.g., toxicity and waste quantity); and
- targets (e.g., people or sensitive environments) affected by the release.

Under the HRS, four pathways can be scored for one or more components and threats as identified below:

- Ground Water Migration (S_{gw})
  - population

- Surface Water Migration (S_{sw})
  The following threats are evaluated for two separate migration components, overland/flood migration and ground water to surface water.
  - drinking water
  - human food chain
  - sensitive environments

- Soil Exposure and Subsurface Intrusion (S_{sessi})
  - Soil Exposure Component:
    - resident population
    - nearby population
  - Subsurface Intrusion Component
    - population

- Air Migration (S_a)
  - population

After scores are calculated for one or more pathways according to prescribed guidelines, they are combined using the following root-mean-square equation to determine the overall site score (S), which ranges from 0 to 100**:**

$$S = \sqrt{\frac{S_{gw}^2 + S_{sw}^2 + S_{sessi}^2 + S_a^2}{4}}$$

If all pathway scores are low, the HRS score is low. However, the HRS score can be relatively high even if only one pathway score is high. This is an important requirement for HRS scoring because some extremely dangerous sites pose threats through only one pathway. For example, buried leaking drums of hazardous substances can contaminate drinking water wells, but -- if the drums are buried deep enough and the substances not very volatile -- not surface water or air.

Other Mechanisms for Listing

There are two mechanisms other than the HRS by which sites can be placed on the NPL. The first of these mechanisms, authorized by the NCP at 40 CFR 300.425(c)(2), allows each State and Territory to designate one site as its highest priority regardless of score. The last mechanism, authorized by the NCP at 40 CFR 300.425(c)(3), allows listing a site if it meets the following three requirements:

- Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Public Health Service has issued a health advisory that recommends dissociation of individuals from the release;
- EPA determines the site poses a significant threat to public health; and
- EPA anticipates it will be more cost-effective to use its remedial authority than to use its emergency removal authority to respond to the site.

Organization of this Document

The following section contains EPA responses to site-specific public comments received on the proposal of the Highway 100 and County Road 3 Groundwater Plume site on November 8, 2019 (84 FR 60357). The site discussion begins with a list of commenters, followed by a site description, a summary of comments, and Agency responses to each comment. A concluding statement indicates the effect of the comments on the HRS score for the site.

Glossary

The following acronyms and abbreviations are used throughout the text:

1,1-DCE	1,1-dichloroethene
1,1,1-TCA	1,1,1-trichloroethane
1,1,2-TCA	1,1,2-trichloroethane
1,1-DCA	1,1-dichloroethane
1,2-DCA	1,2-dichloroethane
µg/l	micrograms per liter
Agency	U.S. Environmental Protection Agency
amsl	above mean sea level
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Sections 9601 *et seq*., also known as Superfund
CFR	Code of Federal Regulations
cis-1,2-DCE	cis-1,2-dichloroethene
CLP	EPA Contract Laboratory Program
CRQL	Contract Required Quantitation Limit
CVOC	Chlorinated Volatile Organic Compounds
DCE	Dichloroethylene
DL	Detection Limit
DNAPL	Dense Non-aqueous Phase Liquid
EPA	U.S. Environmental Protection Agency
ESI	Expanded Site Inspection
FR	Federal Register
FS	Feasibility Study
HRL	MDH Health Risk Level
HRS	Hazard Ranking System
HRS score	Overall site score calculated using the Hazard Ranking System; ranges from 0 to 100
HRS	Hazard Ranking System, Appendix A of the NCP
MCL	Maximum Contaminant Level
MDH	Minnesota Department of Health
MPCA	Minnesota Pollution Control Agency
msl	mean sea level

NCP	National Contingency Plan
NPL	National Priorities List, Appendix B of the NCP
OLEM	EPA Office of Land and Emergency Management
OSWER	Office of Solid Waste and Emergency Response
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PCE	Tetrachloroethene
PLP	Minnesota Permanent List of Priorities
PRP	Potentially responsible party
RCRA	Resource Conservation and Recovery Act
RDL	Reporting detection limit
RI	Remedial investigation
RI/FS	Remedial investigation/feasibility study
SARA	Superfund Amendments and Reauthorization Act
SI	Site Investigation
SQL	Sample quantitation limit
SLP	St. Louis Park
STS	STS Consultants, Ltd.
TCA	Trichloroethane
TCE	Trichloroethylene
TDL	Target Distance Limit
trans-1,2-DCE	trans-1,2-dichloroethene
USGS	United States Geological Survey
VC	Vinyl Chloride
VOC	Volatile organic compounds

1. List of Commenters and Correspondence

EPA-HQ-OLEM-2019-0486-0004	Correspondence, dated August 21, 2019, submitted by Laura Bishop, Commissioner, Minnesota Pollution Control Agency, St. Paul, Minnesota.
EPA-HQ-OLEM-2019-0486-0005	Comment, dated November 21, 2019, submitted by an anonymous commenter.
EPA-HQ-OLEM-2019-0486-0006	Comment, dated December 3, 2019, submitted by Scott Lidstone.
EPA-HQ-OLEM-2019-0486-0007	Memorandum, submitted December 20, 2019, extending the comment period established by EPA-OLEM-2019-0486-0001.
EPA-HQ-OLEM-2019-0486-0008	Correspondence, dated December 20, 2019, submitted by Brigid Lowery, Director, Assessment and Remediation Division, Office of Superfund Remediation and Technology Innovation.
EPA-HQ-OLEM-2019-0486-0009	Comment, dated January 17, 2020, submitted by an anonymous commenter.
EPA-HQ-OLEM-2019-0486-0010	Comment, dated February 4, 2020, submitted by an anonymous commenter.
EPA-HQ-OLEM-2019-0486-0011	Comment, dated February 6, 2020, submitted by an anonymous commenter.
EPA-HQ-OLEM-2019-0486-0012	Comment, dated February 5, 2020, submitted by Jake Spano, Mayor, City of St. Louis Park, Minnesota.
EPA-HQ-OLEM-2019-0486-0013	Comment and attachments, dated February 18, 2020, submitted by Harvey M. Sheldon, Attorney, Hinshaw & Culbertson LLP.

2. Site Description

The Highway 100 and County Road 3 Groundwater Plume site (Site) for HRS purposes consists of a 1,1-dichloroethene (DCE), cis-1,2-DCE, trans-1,2-DCE, trichloroethene (TCE), and vinyl chloride contaminated groundwater plume with no identified source. The Site is located in St. Louis Park and Edina, Hennepin County, Minnesota.

The Site as scored in the HRS documentation record at proposal includes an observed release by chemical analysis of 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride to groundwater as documented by concentrations of these hazardous substances in municipal and monitoring wells significantly above applicable background levels. The groundwater plume that composes the Site is currently defined by documented observed releases in groundwater monitoring and municipal water wells in Edina and St. Louis Park that withdraw water from aquifers as follows: Quaternary Drift aquifer in wells P307, P309, P310 screened between 60 to 65 feet below ground surface (bgs); Platteville-Glenwood aquifer in wells W120, W143, W433, W434, W437, W438 (screened between 69.9 to 100 feet bgs); the St. Peter aquifer in wells W133, W24, W409, W410, W411, W414 screened between 83 and 260 feet bgs; and the Prairie du Chien-Jordan aquifer in wells E7, SLP4, SLP6, W23,

W48, and W119R screened between 255 and 410 feet bgs. The contamination scored as part of the observed release by chemical analysis likely originated from multiple comingled releases from multiple unknown sources. Possible contributors to the contamination in the comingled release include dry cleaners, print shops, metal fabricators, a radiator coil manufacturing facility, a heat treating facility, rubber manufacturer, computer components facility, and a distributor of dry cleaning fluid, among other commercial and industrial facilities.

In investigating the origin of the contamination at the Site, the Minnesota Pollution Control Agency (MPCA), the Minnesota Department of Health (MDH), and the cities of Edina and St. Louis Park completed numerous sampling events and conducted an extensive search of MPCA records. In particular, in 2018, the MPCA conducted an Expanded Site Inspection (ESI) to investigate the contamination at the Site and to determine the origin of the contamination. The ESI compiled and evaluated existing data to identify the sources of contamination at the Site. During the ESI, the MPCA identified 48 facilities that used or may have used tetrachloroethene (PCE) in their operations. Of the 48 facilities identified, 27 facilities were reviewed as possible sources of chlorinated volatile organic compounds (VOCs) based on proximity to W437 (due to high PCE concentrations detected in a 2006 investigation), type of historical commercial operations, record of PCE use, and sampling results. Of the 27 facilities, MPCA identified eight facilities with hazardous waste records that show PCE/TCE use and 18 facilities were identified as having PCE/TCE detected on their properties. Twelve properties subsequently were sampled, and significant VOC contamination was detected on most of the 12 properties. However, due to the likely comingling of releases that likely resulted from multiple sources, specific releases documented in monitoring and municipal wells cannot reasonably be attributed to a specific source or sources.

The geology beneath the Site is composed of a series of interconnected aquifer layers. The following aquifer layers underlie all or portions of the St. Louis Park area: Quaternary Drift aquifer, Platteville Aquifer and the underlying Glenwood confining unit, St. Peter aquifer, Prairie du Chien-Jordan aquifer, Tunnel City-Wonewoc bedrock aquifer, and the Mt. Simon-Hinckley bedrock aquifer. As a general illustration of the typical layers encountered in the vicinity of the site from shallowest to deepest, the following table provides an organized summary of information provided in the HRS documentation record at proposal:

Stratigraphic Unit/Formation (starting at surface then moving down)	Subunits or Members	Approximate Thickness (feet)	Approximate Total Thickness (feet)	Alternative Names Used in the HRS Documentation Record or Supporting Documentation	Contains Confining Units/ Lenses?	Confining Units/Lenses Continuously Present within 2-miles?
Quaternary Drift	Upper‡	87 max‡	125 max‡	N/A	Yes	No
	Middle‡	82 max‡		N/A	Yes	No
	Lower‡	70 max‡		N/A	Yes	No
Platteville	N/A	0-35	N/A	Platteville-Glenwood aquifer	No	N/A
Glenwood	N/A	0-24	N/A		Yes	No
St. Peter	Tonti†	89-162	154-167	St. Peter Tonti†	No	N/A
	Basal confining unit	5-65		St. Peter Pigs Eye†	Yes	No
Prairie du Chien-Jordan	Prairie du Chien	170 max‡	N/A	Prairie du Chien aquifer	No	N/A
	Jordan	130 max‡	N/A		No	N/A

Note: Information in this table is summarized from the pages 26 and 27 of the HRS documentation record at proposal. Where noted, additional reference citations are provided.
N/A = Not Applicable
† Information is summarized from Reference 7 pages 56-58 of the HRS documentation record at proposal.
‡ Information is summarized from Reference 27 pages 7-9 of the HRS documentation record at proposal. EPA notes that the thickness provided represents the maximum thickness for the aquifer or subunit.

The Quaternary Drift aquifer, Platteville Formation aquifer, Glenwood Formation, and the St. Peter Formation, including the basal confining unit, are documented to not be continuously present within the 2-mile radius of the Site (i.e., discontinuous). Well logs document that, at separate locations within 2-miles of the groundwater plume, these layers are sufficiently thin or absent at the Site which allows groundwater to flow between the layers. However, groundwater flow in the interconnected aquifers is complex. Ground water recharge at the site can occur through downward leakage from overlying aquifers; through fractures, open joints, and solution channels within and between aquifer layers; and also through multi-aquifer wells. Because of the discontinuous nature of the confining units at the Site, there is no HRS qualifying continuous boundary or aquifer discontinuity within the target distance limit (TDL). Further, groundwater contamination is documented in St. Louis Park and Edina municipal wells, as well as monitoring wells that withdraw water from Quaternary Drift, Platteville-Glenwood, St. Peter, and the Prairie du Chien-Jordan aquifers. As a result, the aquifer layers at the Site are considered interconnected for HRS scoring purposes and are appropriately evaluated as one hydrological unit.

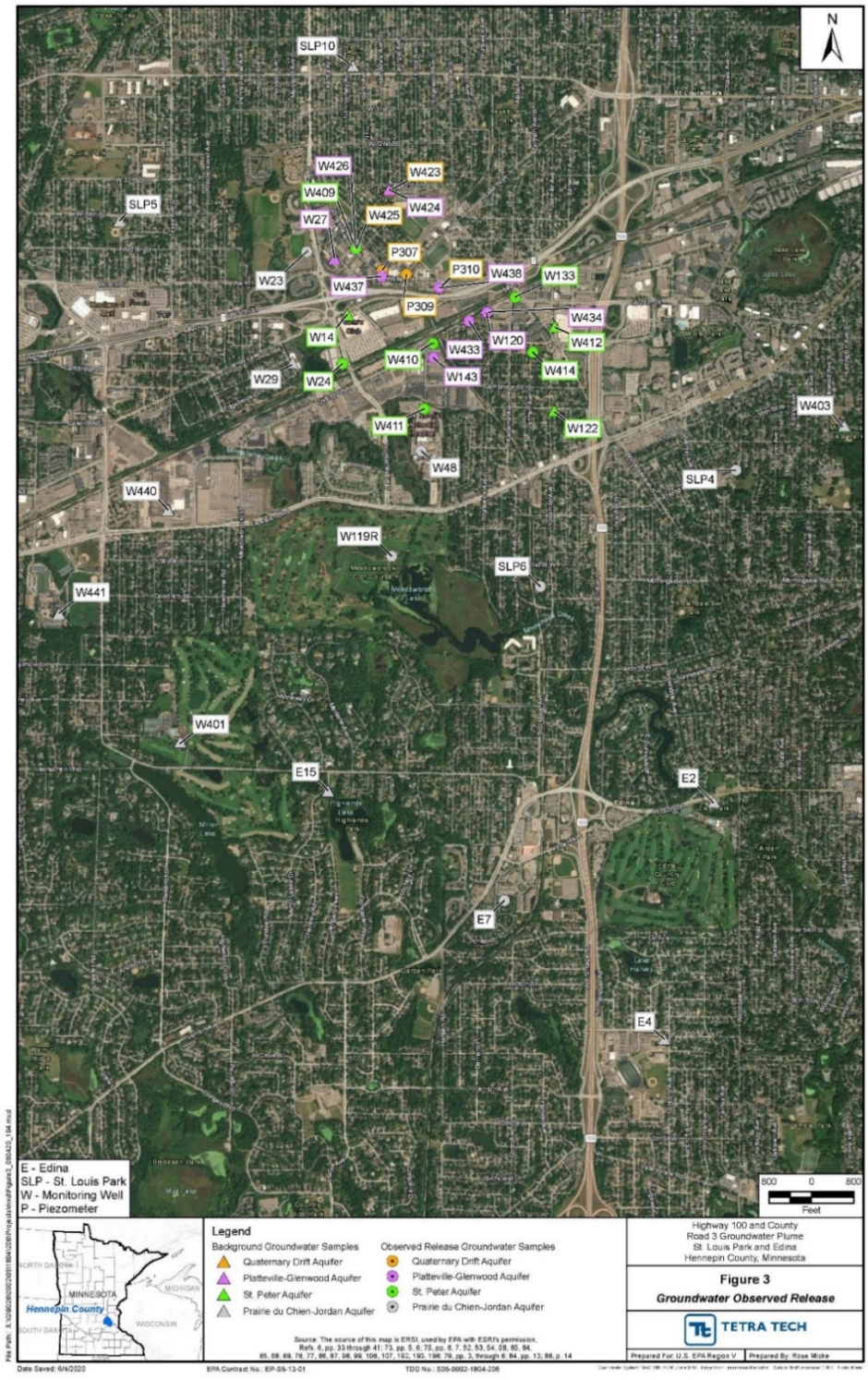

Figure 1 – The locations of wells used to establish an observed release by chemical analysis as shown on Figure 3 of the HRS documentation record at promulgation (including corrected well locations for wells W23, W29, W122, W412, W401, W411, and W133 as explained in section 3.18, Documentation Record Errors, of this support document)

3. Summary of Comments

The Site was proposed to be added to the NPL on November 08, 2019 (84 FR 60357). Five commenters supported the listing and one commenter, the Objectors, opposed the listing. The initial 60-day comment period following proposal of the Site was to close January 7, 2020. In comments on the proposal, the Objectors requested a 60-day extension to the comment period for the Site, and the EPA granted a 30-day extension of the comment period to February 6, 2020.

Ms. Laura Bishop, Commissioner of the Minnesota Pollution Control Agency (MPCA); Mr. Jake Spano, Mayor of St. Louis Park and the St. Louis Park City Council (collectively the City of St. Louis Park); and two anonymous citizens supported listing the site on the NPL. Supporters for the listing expressed the need for additional investigations to identify sources and protect human health and the environment, access to financial resources, and concerns about vapor intrusion. MPCA and the City of St. Louis requested continued state and community involvement and pledged continued cooperation with the EPA. MPCA stated it will work with the EPA to develop a Cooperative Agreement for site oversight.

The Objectors submitted comments related to changing the Site's name from "St. Louis Park Solvent Plume Site" to "Highway 100 and County Road 3 Groundwater Plume," and stated it was inappropriate, and it seemed like an effort to divert the focus from historical contamination and possible contributors to the groundwater contamination under evaluation.

Regarding the extent and definition of the site, the Objectors asserted that the Site was not properly defined, because it excluded data related to other possible contributors/sources and ignored additional groundwater pathways for contaminant migration. The Objectors also commented that the Site inappropriately focuses on PCE contamination, excluding other contaminants associated with the Site. They stated that the exclusion of vinyl chloride and its additional parent products in the identification of source areas results in an inadequate characterization of the vinyl chloride contamination in the aquifer. The Objectors submitted comments related to the adequacy of the public docket stating that the EPA omitted critical pieces of available information from the administrative record, in violation of EPA guidance and administrative law. The Objectors provided multiple comments indicating that the NPL listing docket failed to establish specific aspects of HRS scoring, and disregards evidence of the "real problem," area wide vinyl chloride contamination, possibly necessitating water supply treatment.

The Objectors submitted various comments related to the proposed addition of the Site on the NPL, claiming that is inconsistent with the HRS and the Interim Final *HRS Guidance Manual* (*HRS Guidance Manual*), because it contains errors, omissions, and misrepresentations. The Objectors further asserted the Site does not consider the widespread area of contamination and does not evaluate possible sources that may be contributors to the contamination of the groundwater as required by EPA guidance.

The Objectors submitted comments associated with remediation of the Site, stating it will be ineffective until the contaminant migration and flow pathways resulting from multi-aquifer wells are defined. On the consideration of removal actions, the Objectors commented that, as indicated in *HRS Guidance Manual*, identified releases to groundwater should be included in the evaluation of a site for HRS purposes, even if a qualifying removal action has been implemented. And, as an alternative to listing the Site on the NPL, the Objectors asserted that the EPA should have MPCA further investigate the possible sources of contamination and the impact from the active multi-aquifer wells on the contamination being evaluated.

The Objectors commented in regards to liability and asserted that they have a direct interest in the proposed listing of the Site on the NPL due to proximity of their property relative to the groundwater contamination.

Concerning the risk to human health and the environment, the Objectors stated that the risk from the Site would not be adequately characterized or remediated without consideration of vinyl chloride and its parent products in the listing of the Site on the NPL.

The Objectors submitted comments related to the accuracy of the Expanded Site Inspection, Site Inspection, and Preliminary Assessment reports prepared by the MPCA and included these comment as Attachments 1, 11, and 10, respectively, of their comments on the proposed listing of the Site. The Objectors also provided detailed comments on the ESI that included comments in connection with the HRS scoring of the Site in Attachment 1 of their comment document.

Regarding source identification, the Objectors asserted that despite the Site being scored as a groundwater plume with no identified source, the HRS documentation record at proposal clearly identifies an "alleged source" at the intersection of Lake and Walker Streets in St. Louis Park. It also stated that the contamination is more extensive than that identified and known areas of contamination were excluded. They further stated that the Site's boundaries are defined by naming "release" monitoring wells in four different aquifers but the HRS documentation record at proposal does not provide a visual presentation of the Site by aquifer. The Objectors stated that the MPCA identified in the ESI three facilities as possible sources within the "alleged Walker/Lake Street source area" and provided multiple comments to support their reasoning. The Objectors also submitted comments asserting multiple known sources of contamination were ignored in the HRS documentation record at proposal. They stated that EPA should insist that MPCA further investigate the numerous sources and active multi-aquifer wells discussed throughout their comments and their effects on the deep aquifer contamination this proposed listing is ostensibly intended to address.

The Objectors submitted comments stating that scoring the Site as a groundwater plume with no identified source is not appropriate in this case, because there are known sources and the pattern of contamination at the Site is not consistent with the conventional meaning of the term "plume."

The Objectors commented on aquifer interconnection and ground water flow. They asserted that the EPA relied upon an ESI report to evaluate contaminant migration at the Site, which contains natural migration routes of contamination to deeper aquifers that are unrealistic, and that EPA did not appropriately consider low permeability units in the area that would hamper this migration. The Objectors noted that two bedrock valley locations are identified where natural groundwater migration might occur to the Prairie du Chien-Jordan aquifer but stated that insufficient and inconclusive pump test data has been included to support this migration route. The Objectors instead pointed to multi-aquifer wells in the Site area as a more likely pathway for downward contaminant migration.

The Objectors stated that the HRS documentation record at proposal and administrative record fail to establish an observed release consistent with the NCP and guidance. On this subject, they submitted comments on the background levels, wells locations, release concentrations, and attribution of the release. These included that:

- The Objectors contended that the EPA has inappropriately selected background levels and this invalidates the observed release, since background locations "must be outside the area of influence of the release in order to establish valid background data for comparison to release data."
- The Objectors commented that background wells W122, W412, and W29 were incorrectly plotted on Figure 3 of the HRS documentation record at proposal.
- The Objectors called into question use of background wells W122 and W412 based on the pattern of detected results vs. clean results over time.
- The Objectors commented that the proposed listing's failure to consider a widespread area of contamination is contrary to EPA's own guidance, and that the HRS documentation record at proposal fails to establish an observed release of chlorinated solvents. The Objectors contend the HRS documentation record at proposal instead defines the background area for the groundwater plume to include contaminated areas, which eliminated several additional contaminated wells from consideration.
- The Objectors asserted that MPCA confused SLP1-SLP3 well locations with former City of St. Louis Park municipal wells SLP1 and SLP2, resulting in inaccuracies in EPA's characterization of St. Peter aquifer groundwater. The Objectors called into question the location of observed release well W414.

- The Objectors submitted comments on attribution, and stated that the "[a]ttribution (i.e., linkage) of the proposed source area is neither supported by the administrative record's evidence nor is it plausible, given geologic conditions in this area." The Objectors commented that it failed to demonstrate a plausible connection exists between a source and the groundwater contamination being evaluated.

The Objectors submitted comments related to the area of the plume identified in the HRS documentation record at proposal, specifically stating that the proposed listing "does not address documented, wide-spread historic groundwater contamination from a variety of sources" and it even fails to consider "evidence of the real problem". The Objectors further commented that the EPA relies heavily on the MPCA work, which acknowledges other facilities with known releases exist outside of this small area. The Objectors also commented that the ESI failed to show that a continuous plume resulting from a release of PCE to the Drift aquifer that enabled contamination to migrate to the Prairie du Chien-Jordan aquifer existed.

3.1 Support for Listing and Other Non-opposition Comments

3.1.1 General Support

Comment: The EPA received four pieces of correspondence from five commenters that expressed support for the proposed listing. Those commenters in support of listing included Laura Bishop, Commissioner of the Minnesota Pollution Control Agency; Jake Spano, Mayor of St. Louis Park and the St. Louis Park City Council (collectively the City of St. Louis Park); and two anonymous citizens.

Some commenters who supported the listing provided various specific reasons for their support as summarized below.

- MPCA, the City of St. Louis Park, and a citizen requested that this site be placed on the NPL because additional investigations are necessary to protect human health and the environment and/or to identify the source(s) and the potential responsible parties (PRPs). MPCA and the City of St. Louis Park stated that source(s) contributing to the contamination in the municipal wells have not been determined, and MPCA added that additional characterization of subsurface contamination, hydrogeology, and complex geology is necessary. They went on to explain, "[e]xtensive additional investigation and remediation is needed to identify and address the contaminant source(s) and the rest of the groundwater contamination plume." The City of St. Louis Park added that "[t]his is undoubtedly complex work."
- The City of St. Louis Park and a citizen requested that this site be placed on the NPL because it will provide access to additional financial and technical resources that are necessary to identify PRPs, to complete the investigations and to clean up contamination.
- In reference to their desire for this site to be placed on the NPL, MPCA and the city of St. Louis Park also indicated that the groundwater is a valuable resource that needs to be restored.
- Two citizens encouraged the listing of this site on the NPL because they are concerned about exposures to hazardous substances. One of these citizens discussed their health concerns via exposure to contaminated drinking water. The other citizen expressed concern with exposure to site related contamination via vapor intrusion.
- The City of St. Louis Park supported placing this site on the NPL because it will allow PRPs to be held accountable. An anonymous citizen stated that the polluters should be made to "pay for the clean-up."
- MPCA expressed support for the Superfund process because it "generally provides significant opportunity for community involvement."

Response: The Site has been added to the NPL. Listing makes a site eligible for remedial action funding under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the EPA will

examine the Site to determine what response, if any, is appropriate. Actual funding may not necessarily be undertaken in the precise order of HRS scores, however, and upon more detailed investigation may not be necessary at all in some cases. The EPA will determine the need for using Superfund monies for remedial activities on a site-by-site basis, taking into account the NPL ranking, State priorities, further site investigation, other response alternatives, and other factors as appropriate.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.1.2 Coordination with State/Community Involvement

Comment: MPCA and the City of St. Louis supported the listing but expressed various desires as to how future state and community involvement regarding this site should proceed.

MPCA stated it will work with the EPA to develop a cooperative agreement that will "outline roles and responsibilities for each of the two agencies for site oversight." MPCA encouraged the EPA to "continue coordinating with local officials, local and State health departments, and the MPCA to keep the community informed and to work with community leaders to coordinate the investigation and cleanup activities." MPCA also stated it will "continue to assist the EPA in making the necessary decisions to protect public health and the environment in [the] cities of Edina and St. Louis Park."

The City of St. Louis noted it "looks forward to continuing to work with the" EPA.

Response: The Superfund program offers numerous opportunities for public participation at NPL sites. The Superfund process encourages and relies on the participation of the public, including local and State officials, at several steps in the Superfund process, and the Superfund program offers numerous opportunities for public participation at NPL sites. For example, the public can comment during the comment period (typically 60 days) after a site is proposed for listing.

Additionally, the EPA Regional Office develops a Community Involvement Plan (CIP) before remedial investigation and feasibility study (RI/FS) field work begins. The CIP is the "work plan" for community relations activities that the EPA will conduct during the entire cleanup process. In developing a CIP, Regional staff interview State and local officials and interested citizens to learn about citizen concerns, site conditions, and local history. This information is used to formulate a schedule of activities designed to keep citizens apprised and to keep the EPA aware of community concerns. Typical community relations activities include:

- Public meetings at which the EPA presents a summary of technical information regarding the site and citizens can ask questions or comment.
- Small, informal public sessions at which EPA representatives are available to citizens.
- Development and distribution of fact sheets to keep citizens up-to-date on site activities.

For each site, an "information repository" is established, usually in a library or town hall and/or on an EPA website (e.g., see footnote 1 below), containing reports, studies, fact sheets, and other documents containing information about the site. The EPA Regional Office continually updates the repository and must ensure that the facility housing the repository has copying capabilities.

After the RI/FS is completed and the EPA has recommended a preferred cleanup alternative, the EPA Regional Office sends to all interested parties, including State and local officials if so requested, a Proposed Plan outlining the cleanup alternatives studied and explaining the process for selection of the preferred alternative. At this time, the EPA also begins a public comment period during which all are encouraged to submit comments regarding all alternatives. Once the public comment period ends, the EPA develops a Responsiveness Summary, which contains EPA responses to public comments. The Responsiveness Summary becomes part of the Record of Decision (ROD), which provides official documentation of the remedy chosen for the site. Further, if private

parties conduct remedial action under a consent decree between the EPA and the parties, the decree is also subject to public comment.

In addition to meeting these specific Federal requirements, the EPA makes every attempt to ensure that community relations is a continuing activity designed to meet the specific needs of the community. Anyone wanting information on a specific site should contact the Community Relations staff in the appropriate EPA Regional Office. The EPA believes that the above process offers the public sufficient opportunity to present facts and opinions germane to its decision-making. For the Highway 100 and County Road 3 Groundwater Plume site, separate repositories[1] will be designated in St. Louis Park, Minnesota, and Edina, Minnesota. The repository for St. Louis Park, Minnesota, is located at:

St. Louis Park Public Library
3240 Library Lane
Minneapolis, MN 55426-4102

The repository for Edina, Minnesota, will be located at:

Hennepin County Library - Edina
5280 Grandview Square
Edina, MN 55436

Regarding coordination with MPCA in future efforts related to the Site, EPA will continue to work with MPCA to identify coordination opportunities that may be available.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.2 Request for Extension of Comment Period

Comment: The Objectors requested an extension of the comment period, originally set to end on January 7, 2020, via email on December 19, 2019.

Response: The EPA granted a 30-day extension of the comment period to February 6, 2020, for all interested parties to submit comments on the proposal to add the Highway 100 and County Road 3 Groundwater Plume site to the NPL. The extension was documented in a memorandum to the docket from Jennifer Wendel, Site Assessment & Remedy Decisions Branch, dated December 20, 2019 (EPA-HQ-OLEM-2019-0486-0007).

3.3 Site Name

Comment: The Objectors commented that the change in Site name from "St. Louis Park Solvent Plume Site" to "Highway 100 and County Road 3 Groundwater Plume" months before the Site was proposed to the NPL was inappropriate. The Objectors commented that this name change is an effort to divert the focus from historical contamination and possible contributors to the groundwater contamination under evaluation, such as the nearby Reilly Tar & Chemical Corp. (St. Louis Park Plant) site (Reilly Tar) and to omit some historical documents from the administrative record.

Response: Naming the Site, Highway 100 and County Road 3 Groundwater Plume, is appropriate. While neither CERCLA nor the NCP establishes a required procedure for assigning a site name to a proposed listing, in this case it is reasonable to have named the site the Highway 100 and County Road 3 Groundwater Plume site. Since the primary purpose of an NPL listing is to inform the public that the EPA has determined that the site warrants further investigation, the attempt is made to select the name that most clearly informs the public as to the location

[1] Additional community involvement documents for the Site are available online and are located here: https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0506121.

of the site, what appears to be the primary source(s) of the problems at the site, and/or considers assigning a geographic name. The attempt is also made to select names that do not offend local sensitivities (see OSWER Directive 9345.1-08, Regional Quality Control Guidance for NPL Candidate Sites, 12/26/91).

Regarding the commenter's assertion that the change in Site name was an attempt to shift the focus from historical contamination and possible sources of the contamination, the name assigned to the Site reflects the specifics of the Site as scored in the HRS documentation record at proposal. For the limited purpose of the NPL, as stated in *RSR Corporation v. Environmental Protection Agency* No. 95-1559 (D.C. Cir. 1997), when naming a site, the "EPA prefers names that accurately reflect the location or nature of the problems at a site and that are readily and easily associated with the site by the general public." At this Site, the EPA chose to name the Site Highway 100 and County Road 3 Groundwater Plume to reflect the general location of the groundwater plume being evaluated (i.e., encompassing groundwater contamination including and in the vicinity of the intersection of Highway 100 and County Road 3 in St. Louis Park, Minnesota) and the type of site being evaluated (i.e., a groundwater plume with no identified source). As discussed in detail below in section 3.13, Source Identification, and its subsections, during the HRS evaluation of the Site, many possible sources of the contamination were identified but insufficient information was available to reasonably attribute the comingled contamination to one or more sources in the HRS evaluation of the Site. This inability to attribute the contamination to one or more sources further supports the use of a general location as the name of the Site. Thus, the Site name, Highway 100 and County Road 3 Groundwater Plume, appropriately informs the public of the release being evaluated in the HRS documentation record at proposal.

Additionally, the name of the Site was also changed following a request from the City. The former site name, "St. Louis Park Solvent Plume," identified only St. Louis Park, Minnesota. However, the groundwater plume evaluated in the HRS documentation record at proposal extends into Edina, Minnesota, and the HRS documentation record at proposal scored releases to wells in both Edina, Minnesota, and St. Louis Park, Minnesota. The current site name, "Highway 100 and County Road 3 Groundwater Plume," more accurately reflects the general location of the groundwater plume.

Importantly, the name of the site does not in any way restrict the evaluation of the site, its sources, its releases, or extent of contamination to only the contamination currently identified as part of the groundwater plume with no identified source in the HRS documentation record at proposal. As the Federal Register in which the Highway 100 and County Road 3 Groundwater Plume site was proposed to the NPL (84 FR 60357, Section F) states, "the precise nature and extent of the site are typically not known at the time of listing." Any and all areas of contamination associated with the site will be explored during further investigation activities.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.4 Site Definition/Extent of Site

Comment: The Objectors commented that the HRS documentation record at proposal failed to properly define the Site. The Objectors asserted that the Site was not properly defined, because the HRS documentation record at proposal excluded data related to possible sources and ignored additional groundwater migration pathways.

The Objectors asserted that the EPA's definition of the Site was improper because the EPA failed to consider other possible contributors to the contamination scored. They commented that the contamination in the area of the Site is not being appropriately identified and is only being linked to a small surficial site. The Objectors commented that the *HRS Guidance Manual* indicates that identified releases to groundwater are to be included in the evaluation of the Site[2]. They asserted that the extent of the groundwater plume in the Prairie du Chien aquifer, as presented in the HRS documentation record at proposal, is smaller than the extent in 3D groundwater data depictions (citing Attachment 6 and Attachment 7 to the Objectors' comment document). The Objectors asserted that the background area defined in the HRS documentation record at proposal included contaminated areas,

[2] The Objectors cited page 17 of the *HRS Guidance Manual.*

resulting in a failure to establish an observed release of chlorinated solvents and failure to consider widespread areas of contamination.

In questioning the extent of contamination at the Site, the Objectors commented that the HRS documentation record at proposal inappropriately focused on tetrachloroethene (PCE) contamination, excluding other contaminants associated with the Site. The Objectors asserted that the exclusion of vinyl chloride and its parent products (e.g., PCE, trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,1,2-trichloroethane (1,1,2-TCA), 1,2-dichloroethane (1,2-DCA), and 1,1-dichloroethane (1,1-DCA)) in the identification of source areas results in an inadequate characterization of the vinyl chloride contamination in the aquifer. They commented that 1,4-dioxane should also be included in the Site, because it was detected in the municipal water supply. The Objectors asserted that these contaminants "cannot be excluded from the determination of the observed release unless the EPA intends to assert either that CVOCs [chlorinated volatile organic compounds] are ubiquitous in the Drift aquifer or there are additional source(s) of CVOCs that should be included in the Alleged Plume Site definition."

Response: The Site was appropriately defined for HRS purposes as the groundwater plume with no identified source that originated from multiple comingled releases from currently unidentified sources. The extent of the groundwater plume with no identified source has been adequately determined to demonstrate that the HRS documentation record at proposal met the HRS requirements for scoring. A more complete evaluation of the extent of the contamination and associated contaminants at the Site will occur at a later stage in the Superfund process.

Placing a site on the NPL is based on an evaluation, in accordance with the HRS, of a release or threatened release of hazardous substances, pollutants, or contaminants. However, the fact that the EPA initially identifies and lists the release based on a review of contamination at a certain location—in this case a contaminated groundwater plume with no identified source—does not necessarily mean that the site boundaries are limited to that location.

CERCLA Section 105(a)(8)(A) requires the EPA to list national priorities among the known "releases or threatened releases" of hazardous substances; thus, the focus is on the release, not precisely delineated boundaries. Further, CERCLA Section 101(a) defines a "facility" as the "site" where a hazardous substance has been "deposited, stored, placed, or otherwise come to be located." The "come to be located" language gives the EPA broad authority to clean up contamination when it has spread from the original source. On March 31, 1989 (54 FR 13298), the EPA stated:

> HRS scoring and the subsequent listing of a release merely represent the initial [emphasis added] determination that a certain area may need to be addressed under CERCLA. Accordingly, EPA contemplates that the preliminary description of facility boundaries at the time of scoring will need to be refined and improved as more information is developed as to where the contamination has come to be located; this refining step generally comes during the RI/FS [remedial investigation/feasibility study] stage.

The revised HRS (55 FR 51587, December 14, 1990) defines a "site" as "area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources and may include the area between the sources."

Until the site investigation process has been completed and a remedial action (if any) selected, the EPA can neither estimate the extent of contamination at the NPL site, nor describe the ultimate dimensions of the Site. Even during a remedial action (e.g., the removal of buried waste) the EPA may find that the contamination has spread further than previously estimated, and the site definition may be correspondingly expanded.

In describing the Site and the extent of contamination, page 13 of the HRS documentation record at proposal states:

> The Highway 100 and County Road 3 Groundwater Plume (the Site) is a groundwater plume that is contaminated with 1,1-dichloroethene (DCE), cis-1,2-DCE, trans-1,2-DCE, trichloroethene (TCE), and vinyl chloride in monitoring and municipal water wells in Edina and St. Louis Park, Hennepin County, Minnesota. … The groundwater plume that comprises the Site likely originated from multiple unknown sources … in St. Louis Park … The groundwater plume that comprises the Site is currently defined by documented observed releases in groundwater monitoring and municipal water wells in Edina and St. Louis Park that withdraw water from aquifers…

The HRS documentation record at proposal preliminarily defined the Site for HRS scoring purposes based on observed releases in both monitoring and municipal wells that established where contamination had come to be located. Although boundaries of the groundwater plume were described, as explained above, these were preliminary boundaries of the contamination, and the Site is not restricted to these preliminary boundaries delineating the groundwater plume if further investigation shows a different extent of contamination.

Regarding the commenter's assertion that the HRS documentation record at proposal failed to define the Site by excluding certain contaminants from the groundwater plume, the EPA notes that the HRS scoring of a site based on a particular set of contaminants in the release does not prevent the EPA from responding to releases of other hazardous substances, pollutants, or contaminants present at the site in a later stage of the Superfund response. Section 104 of CERCLA, 42 U.S.C. § 9604, which authorizes EPA response actions, specifically authorizes such actions "relating to such hazardous substance, pollutant or contaminant at any time." The HRS is a screening model that uses limited resources to determine whether a site should be placed on the NPL for possible Superfund response. A subsequent stage of the Superfund process, the remedial investigation (RI), characterizes conditions and hazards at the site more comprehensively, which may include a more comprehensive characterization of the contamination within the release, as well as other constituents that may pose a risk to human health and the environment.

The EPA must balance the need to fully characterize a site with the limited resources available to collect and analyze site data. The HRS is intended to be a "rough list" of prioritized hazardous sites; a "first step in a process--nothing more, nothing less." *Eagle Picher Indus. v. EPA*, 759 F.2d 922, 932 (D.C. Cir. 1985) (Eagle Picher II). The EPA would like to investigate each possible site completely and thoroughly prior to evaluating them for proposal for the NPL, but it must reconcile the need for certainty before action with the need for inexpensive, expeditious procedures to identify potentially hazardous sites. The D.C. Circuit Court of Appeals has found the EPA's approach to solving this conundrum to be "reasonable and fully in accord with Congressional intent." *Eagle Picher Industries, Inc. v. EPA*, (759 F.2d 905 (D.C. Cir. 1985) Eagle Picher I)

As for the alleged failure to consider vinyl chloride and its parent products in the HRS documentation record at proposal, vinyl chloride is evaluated as a hazardous substance in the release. Page 55 of the HRS documentation record at proposal lists TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride as "Hazardous Substances in the Release." Thus, vinyl chloride was included in HRS evaluation of the Site and in the HRS documentation record at proposal, which is discussed in detail in section 3.16, Likelihood of Release, of this support document, and its subsections, and as discussed above, a more comprehensive characterization of the release occurs at a later stage in the Superfund process.

Finally, regarding the Objectors' comments that the lack of consideration of possible origins of the contamination resulted in an inadequately defined Site, as noted above, the HRS is a screening tool intended to use limited resources to determine whether a Site should be placed on the NPL. The HRS documentation record at proposal sufficiently documented the extensive effort and multiple investigations undertaken to attempt to identify a source or sources of the comingled groundwater contamination. After reviewing the multiple possible sources identified during the multiple investigations focusing on source investigation, the HRS documentation record at proposal documented the inability to reasonably attribute the comingled contamination to a particular source or sources. The inability to identify the origin of the contamination in the HRS evaluation and to attribute the contamination to a particular source is discussed in detail below in section 3.13, Source Identification, and its subsections,

section 3.14, Characterization of a Plume with No Identifiable Source, and in section 3.16.3, Attribution, of this support document. (This includes discussion regarding the multiple possible sources identified during the HRS evaluation of the site and the likely comingling of contamination resulting in the groundwater plume with no identified source.)

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.5 Adequacy of the Public Docket

Comment: The Objectors commented that the EPA omitted critical pieces of available information from the administrative record for the proposal to add the Site to the NPL. The Objectors asserted that these omissions are in violation of EPA guidance and administrative law. The Objectors asserted that the NPL listing docket for the Site selected only a portion of the available record, depriving the public of the full opportunity to review all of the relevant evidence. The Objectors stated that the NPL listing docket is being presented by the EPA as the administrative record for the Site. They commented that the NPL listing docket for the Site is incomplete and this impacts future litigants who will be limited to the administrative record during litigation. The Objectors also stated that by changing the Site name, the EPA was able "to leave some of the documents generated over many years by the MPCA for the St. Louis Park Solvent Plume site out of the administrative record."

The Objectors stated that the NPL listing docket inappropriately excluded the Objectors' prior comment submissions on previous stages of the evaluation of the contamination in the area, resulting in an administrative record that "inaccurately… implicates a small geographic area through the omission of evidence that runs counter to that narrative." The Objectors commented that the omission of their prior comment submissions from the NPL listing docket for the Site, despite their requests that these comment submissions be included in the administrative record, is inconsistent with CERCLA record keeping requirements, case law, and EPA's *Revised Guidance on Compiling Administrative Records for CERCLA Response Actions*. They pointed to the following prior comment submissions as omissions from the NPL listing docket: a May 24, 2017 submission of comments on the 2016 Preliminary Assessment Report titled Technical Review of the Preliminary Assessment Report for the St. Louis Park Solvent Plume; a July 12, 2018 submission of comments on the February 17, 2017 Site Inspection Report entitled Technical Review Site Inspection Report; the Objectors' November 29, 2018 presentation to EPA Region 5 representatives entitled Contaminant Source Tracking Edina and SLP Groundwater Contamination a Preliminary Report; and an August 2019 Upgradient Sources report titled Upgradient Sources of Groundwater Contamination in the Deep Drift and Platteville Aquifers.

In questioning the completeness of the administrative record provided, the Objectors stated that "principles of administrative law[3] require an agency to make a full and complete record of its decisions so the public and any court reviewing the agency's decision may be able to assess the validity and good faith of the agency's decision." The Objectors commented that for an administrative record to be complete, "[a]n agency cannot pick-and-choose what it places in its administrative records, ignoring evidence that contradicts its ultimate decision."

The Objectors stated that the supporting documentation for the proposal to add the Site to the NPL lacks sufficient data and appropriate reasoning to associate the contamination with an unidentified source. The Objectors also commented that the proposal to add the Site to the NPL hides and disregards evidence of the "real problem" possibly necessitating water supply treatment: area wide vinyl chloride contamination of the Prairie du Chien/Jordan aquifer, in addition to 1,4-dioxane contamination.

Additionally, the Objectors provided multiple comments asserting that the NPL listing docket failed to establish specific aspects of HRS scoring including:

[3] To support this assertion, the Objectors cite *Exxon Corp. v. Dep't of Energy*, 91 F.R.D. 26, 33 (N.D.Tex. 1981), *Envtl. Def. Fund, Inc. v. Blum*, 458 F. Supp. 650, 661 (D.D.C. 1978), and *Nat'l Wildlife Fed'n v. Burford*, 677 F. Supp. 1445, 1457 (D. Mont. 1985).

- A comment that attribution from the identified source was not appropriately established.
- An assertion that the approach to scoring the Site as a groundwater plume with no identified source has numerous errors.
- An assertion that the administrative record did not establish an observed release by chemical analysis consistent with the HRS and guidance.
- A comment that the administrative record did not consider known groundwater migration pathways to the Prairie du Chien/Jordan Aquifer.
- A comment that relevant available analytical and hydrogeological data from the Reilly Tar & Chemical Corp. (St. Louis Park Plant) site were not included in the conceptual site model or in the administrative record.

Response: The documents and information made available to the public in the docket for the Site at the time of proposal provided the EPA's rationale for adding the Site to the NPL, and the documents and information provided in the HRS package for the Site were sufficient for the purposes of conducting an HRS evaluation for the Site and met all CERCLA and HRS requirements. This information was made available to the public and provided citizens sufficient information to review the Site score and meaningfully comment on the proposed Site listing. The EPA did not rely on any information outside of the docket materials to support the HRS scoring of the Site.

The documents outlined by the commenter that were not included in the HRS documentation record at proposal or in the docket for the Site were provided in the commenter's submission and are included as part of the public docket for the Site because the commenter submitted them as attachments to its comments. These documents are in the online docket at Regulations.gov.

In addition, the EPA has determined that these additional documents are either not necessary to support the HRS documentation record scoring, not relevant to support the HRS site score, or fail to point to specific information that does not support or refutes the HRS scoring of the Site. As shown in the HRS documentation record at proposal and other sections of this support document, the additional information pointed to by the commenter does not invalidate the HRS scoring of the Site or the evaluation of the Site as a "groundwater plume with no identified source" for HRS purposes. As explained below in section 3.12, Accuracy of the Expanded Site Inspection, Site Inspection, and Preliminary Assessment, of this support document, documents and comment submissions that do not pertain to the HRS scoring of the Site or to the decision to the list the Site on the NPL are not addressed in this support document.

The commenters also cite to several cases, including *Exxon Corp. v. Dep't of Energy*, 91 F.R.D. 26, 33 (N.D.Tex. 1981), *Envtl. Def. Fund, Inc. v. Blum*, 458 F. Supp. 650, 661 (D.D.C. 1978), and *Nat'l Wildlife Fed'n v. Burford*, 677 F. Supp. 1445, 1457 (D. Mont. 1985), for the general proposition of administrative law that an Agency must include all pertinent information in the administrative record, both favorable and unfavorable to the Agency's final decision. As stated above, however, EPA has included all the relevant information it considered to support the HRS score in this case and all such information has been placed in the listing docket that makes up the administrative record for this Site. The documents submitted by the commenters do not automatically put EPA on notice of all the commenters' reasons for why the Site should not be on the NPL. As the court explained in *Northside Sanitary Landfill, Inc. v. Thomas*, 849 F.2d 1516, 1520 (D.C. Cir. 1988), the "dialogue between administrative agencies and the public is a two-way street." A commenter "cannot merely state that a particular mistake was made," rather "it must show why the mistake was of possible significance in the results the agency reaches." *Id.* at 1519. Here, the commenters have not explained how the submitted documents impact the HRS score and the decision to list the Site on the NPL, nor have the commenters explained how any alleged documents the Agency failed to consider would affect the HRS score and the decision to list the Site on the NPL. As stated by the court in the *Northside* case, "the mere submission of voluminous documentation to the EPA is not enough to put the EPA on notice of all possible reasons why a site should not have been included on the NPL." *Id.*

Regarding the commenter's assertion that the EPA has presented the listing docket as the administrative record for the Site, the documents and information provided in the docket for the Site at the time of proposal to the NPL reflected the Agency's rationale for the decision to add the Site to the NPL. The preamble to the proposed rule in which the Site was proposed for addition to the NPL (84 FR 60358, November 8, 2019) indicates that the "documents that form the basis for the EPA's evaluation and scoring of the sites in this proposed rule are contained in public dockets." Hence, as also noted above, the documents in the docket for the Site at the time of proposal reflected the information the Agency used to support the HRS scoring of the Site and the decision to add the Site to the NPL, and these documents were sufficient for the purposes of conducting an HRS evaluation.

Additionally, the *Revised Guidance on Compiling Administrative Records for CERCLA Response Actions*[4] referenced by the Objectors applies to a different part of the Superfund process as opposed to the listing of a Site on the NPL. As indicated on page 4 of this document, "[t]his guidance sets forth the recommended procedures for establishing and maintaining administrative records for removal and remedial actions conducted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq." In further describing the separate nature of the docket for listing a Site on the NPL, page 16 of this guidance document states:

> Generally, information included in the National Priorities List (NPL) rulemaking docket, such as the hazard ranking system (HRS) scoring package and comments received on the listing, need not be included in the administrative record for selection of a response action. The NPL docket contains information relevant to the decision to list a site, which is generally not relevant to the decision on the selection of the response action.

Thus, as the listing of a Site on the NPL is a separate action from removal and remedial actions, this guidance document provides recommended procedures for maintaining administrative records applicable to a different stage of the Superfund process than the listing stage.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.6 Consistency with the HRS and HRS Guidance

Comment: The Objectors commented that the proposed addition of the Site on the NPL is inconsistent with the HRS and the *HRS Guidance Manual*, because it contains errors, omissions, and misrepresentations.

The Objectors also provided comments claiming that the following aspects of the HRS scoring of the Site are inconsistent with HRS guidance:

- The *HRS Guidance Manual* requires the delineation of sources and areas of contamination prior to evaluating the site for HRS scoring purposes,[5] and releases to groundwater must be considered even if affected by later removal actions.
- The proposed listing of the Site on the NPL did not consider a widespread area of contamination and did not evaluate possible sources that may be contributors to the contamination in the area of the groundwater contamination as required by EPA guidance.[6]
- The errors in establishing an appropriate background and misrepresentations of the groundwater plume

[4] The EPA's *Revised Guidance on Compiling Administrative Records for CERCLA Response Actions* is included as Attachment 2 to this support document.
[5] The Objectors cited page 22 of the November 1992 *Hazard Ranking System Guidance Manual, Interim Final* (available at https://www.epa.gov/superfund/hrs-toolbox).
[6] The Objectors referred to page 22 of the *HRS Guidance Manual.*

area rendered the proposed listing of the Site on the NPL inconsistent with guidance.[7]

- The EPA's failure to use plausible migration pathways for contamination migration from the source area to the release area violates its attribution guidance.
- The lines of evidence presented in the *HRS Guidance Manual* for supporting an attribution rationale when multiple sources are present were not utilized.[8]

Response: The EPA followed the HRS regulation to place the Site on the NPL. Furthermore, unlike the HRS regulation itself, the *HRS Guidance Manual* is not a regulation and imposes no mandatory requirements on the Agency. Regardless, the Interim Final HRS Guidance Manual was also applied appropriately in the HRS evaluation based on the facts and circumstances known to be present for this site at proposal; any variation in applying the *HRS Guidance Manual* was carried out to reflect site-specific conditions. The *HRS Guidance Manual* states that:

> [t]he procedures set forth in this document are intended as guidance to employees of the U.S. Environmental Protection Agency (EPA), States, and other government agencies. EPA officials may decide to follow the guidance provided in this directive, or to act at variance with it, based on analysis of specific site circumstances.

In evaluating whether a site merits NPL listing, the EPA complies with the HRS and uses the *HRS Guidance Manual* as just that—guidance to determine how best to perform the HRS evaluation based on the facts or circumstances presented at each site. The *HRS Guidance Manual* is consistent with the HRS (this was not challenged by the Objectors) and the EPA has followed the HRS in scoring the Site and applied the *HRS Guidance Manual*, as appropriate, depending on the facts presented by this site.

Regarding the Objectors' assertions that the scoring factors identified above were inconsistent with guidance, the consistency of these scoring factors with guidance and the HRS is discussed in the following sections of this support document: 3.13.2, Known Sources of Contamination Excluded; 3.14, Characterization of a Plume with No Identifiable Source; and section 3.16, Likelihood of Release, and its subsections.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.7 Remediation

Comment: The Objectors asserted that many errors, omissions, and misrepresentations in the proposed listing of the Site will prevent an effective remedial response to the contamination at the Site. The Objectors commented that listing the Site on the NPL without consideration of vinyl chloride and its parent products in the investigation of sources would result in the failure to remediate the presence of vinyl chloride in the Prairie du Chien/Jordan aquifer.

The Objectors asserted that active multi-aquifer wells are present at the Site and should be included in future investigations at the site and in the response actions at the Site. The Objectors commented that remediation of the contamination in groundwater at the Site will be ineffective until the contaminant migration and flow pathways resulting from multi-aquifer wells are defined.

Response: Decisions regarding whether remedial actions will occur and which approach to remediation should be employed are not determined at the listing stage of the Superfund process but occur in the remedial stage of the Superfund process. Consistent with CERCLA, the EPA has in place a procedure for identifying sites where releases of substances addressed under CERCLA have occurred or may occur, placing such sites on the NPL, evaluating the nature and extent of the threats at such sites, responding to those threats, and deleting sites from the

[7] The Objectors cited Highlight 7-26 on page 156 of the *HRS Guidance Manual.*
[8] The Objectors cited page 59 of the *HRS Guidance Manual*.

NPL. The purpose of the initial two steps is to develop the NPL, which identifies for the States and the public those sites that appear to warrant remedial action. The evaluation or RI/FS phase involves on-site testing to define the nature and extent of the threat posed by the contamination and to identify alternatives for remedial action, if needed. As discussed above in section 3.4, Site Definition/Extent of Site, the RI/FS may also include a more complete characterization of the extent of the contamination in the groundwater plume during future investigations of the Site and may address additional contaminants in the release that pose a risk to human health or the environment.

The Objectors' comments, regarding the impact of multi-aquifer wells on the spread of contamination, necessitating the inclusion of these wells in the plan for remediation of the Site, point to a possible remedial response approach. As noted above, the selection of an approach to remediation is determined at a later stage of the Superfund process. However, the HRS documentation record at proposal considered multi-aquifer wells in the HRS evaluation of the Site. The consideration of multi-aquifer wells in the HRS evaluation of the Site and the impact of these wells on the HRS evaluation of the Site are discussed in detail below in sections 3.13.1, Limited Source Area Identified, 3.13.2, Known Sources of Contamination Excluded, 3.14, Characterization of a Plume with No Identifiable Source, 3.15, Aquifer Interconnection and Groundwater Flow, and 3.16.3, Attribution, of this support document.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.8 Consideration of Removal Actions

Comment: The Objectors commented that, as indicated in *HRS Guidance Manual*, identified releases to groundwater should be included in the evaluation of a site for HRS purposes, even if a qualifying removal action has been implemented.[9]

Response: The Site has been appropriately evaluated with respect to removal actions, and the evaluation of the Site for HRS purposes was based on the current conditions at Site. Previously, in 2008, a removal action was conducted at the Highway 7 and Wooddale Ave Vapor Intrusion Investigation site. Actions were performed to address the impacts resulting from vapor intrusion into residences, including the installation of vapor abatement systems at various residences;[10] these actions took place prior to the site inspection and expanded site inspection used in the HRS documentation record at proposal. Any removal actions carried out at upgradient areas did not stop the EPA from considering historical upgradient contamination in assessing the Site.

First, note that removal actions are generally considered during the scoring process when the EPA has documentation that clearly demonstrates there is no remaining release or potential for a release that could cause adverse environmental or human health impacts. At this Site, hazardous substances from the source that was evaluated have not been removed (in the case of this site, the source for HRS scoring purposes is the groundwater plume itself as scored based on observed releases established in the HRS documentation record at proposal). Therefore, the risk posed by the release of those hazardous substances to the groundwater pathway has not been eliminated.

Regarding the Objectors' comment that identified releases to groundwater should be considered in an evaluation of a site, even if a removal action has occurred, any actions taken at upgradient areas do not preclude the consideration of historical upgradient contamination in assessing the Site. The effort to identify the origin of the contamination identified in the groundwater plume is discussed in detail below in section 3.13, Source Identification, of this support document, and its subsections.

Furthermore, as discussed in detail above in section 3.4, Site Definition/Extent of Site, the EPA would like to

[9] The Objectors cited page 17 of the *HRS Guidance Manual.*

[10] A profile of the Highway 7 and Wooddale Avenue Vapor Instruction Investigation Site is available online at: https://response.epa.gov/site/site_profile.aspx?site_id=3683

investigate each possible site completely and thoroughly prior to evaluating them for proposal for the NPL, but it must reconcile the need for certainty before action with the need for inexpensive, expeditious procedures to identify potentially hazardous sites. The HRS is a screening model that uses limited resources to determine whether a site should be placed on the NPL for possible Superfund response. The full extent of contamination at the Site may not necessarily be determined until the RI, which characterizes conditions and hazards at the site more comprehensively. As a result, as explained above, the full extent of the Site may be refined as more information is made available about the contamination present at the Site during the site investigation process, which may include consideration of upgradient contamination.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.9 Alternatives to Listing

Comment: The Objectors commented that the EPA should have MPCA further investigate the many possible sources of contamination and the impact from the active multi-aquifer wells on the contamination being evaluated as an alternative to adding the Site to the NPL. The Objectors asserted that this alternative investigation should consider prior and current attempts to determine the extent of contamination, and it should include the Reilly Tar site.

Response: Adding the Site to the NPL is an appropriate next step in the Superfund process because the Site has achieved an HRS site score above the listing threshold of 28.50 and has support from the State of Minnesota for listing. The HRS site score of above 28.50 represents the EPA's assessment that the relative risk posed by the Site warrants further investigation under the Superfund program and placement on the NPL.

In addition, delaying the listing of the Site on the NPL to allow the MPCA to complete further investigation of the possible sources of the comingled contamination is not appropriate, because the State of Minnesota agrees with the decision to place the Site on the NPL. In a letter[11] dated August 21, 2019, the MPCA stated:

> The State of Minnesota **concurs** with the United States Environmental Protection Agency (EPA) that the Highway 100 and County Road 3 Groundwater Plume Site in the City of Edina and City of St. Louis Park, Hennepin County, Minnesota (SEMS ID: MNN000506121) should be proposed to the National Priorities List (NPL)
>
> …
>
> MPCA believes that the site is eligible for listing on the National Priorities List (NPL) due to the impact of the municipal water supplies. The MPCA believes it is essential to pursue cleanup of this contamination and restore this valuable groundwater resource.
>
> …
>
> Should the site be listed on the NPL, the MPCA will continue to assist the EPA in making the necessary decisions to protect public health and the environment in cities of Edina and St. Louis Park. [emphasis added]

Furthermore, prior to the proposed listing of the Site on the NPL, MPCA has used a variety of programs and authorities to attempt to investigate and address contamination in the vicinity of the Site (e.g., the Minnesota

[11] The State of Minnesota's concurrence letter, authored by the MPCA, was included in the docket for Site (EPA-HQ-OLEM-2019-0486-0004).

Permanent List of Priorities[12] and other State programs[13]). During MPCA's investigation of this Site, other facilities in the area were already in the process of being investigated or had been investigated. During the PA, SI, and ESI, for this Site, MPCA focused investigation activities on facilities that had not been previously investigated.

Due to the Site achieving an NPL eligible HRS site score and concurrence from the State of Minnesota, the EPA has determined that adding the Site to the NPL is appropriate.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.10 Liability

Comment: The Objectors asserted that they have a direct interest in the proposed listing of the Site on the NPL due to proximity of their property relative to the groundwater contamination evaluated in the HRS documentation record at proposal.

Response: In as much as this comment concerns liability for the contamination at the Site, liability is not considered in evaluating a site under the HRS. The NPL serves primarily as an informational tool for use by the EPA in identifying those sites that appear to present a significant risk to public health or the environment. Listing a site on the NPL does not reflect a judgment on the activities of the owner(s) or operator(s) of a site. It does not require those persons to undertake any action, nor does it assign any liability to any person. This position, stated in the legislative history of CERCLA, has been explained more fully in the Federal Register (48 FR 40674, September 8, 1983, and 53 FR 23988, June 24, 1988). See *Kent County v. EPA*, 963 F.2d 391 (D.C. Cir. 1992).

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.11 Risk to Human Health and the Environment

Comment: The Objectors commented that the EPA failed to account for the full extent of the risk to human health and the environment by inappropriately focusing on PCE contamination. The Objectors commented that the vinyl chloride contamination in the Prairie du Chien/Jordan aquifer is driving the risk to human health at the Site and stated that the risk from the Site would not be adequately characterized or remediated without consideration of vinyl chloride and its parent products (e.g., PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, 1,1,1-TCA, 1,1,2-TCA, 1,2-DCA and 1,1-DCA) in the listing of the Site on the NPL.

Response: The EPA considers that there is a threat to human health posed by the contamination in the groundwater and that this threat warrants further investigation before determining the site-specific risk. Consistent with CERCLA, this Site is being placed on the NPL based on an HRS evaluation of the risk **relative** to other sites being considered for the NPL resulting from the release of hazardous substances to a groundwater aquifer and the resulting threat the release poses to St. Louis Park and Edina's drinking water supply. Placing a site on the NPL is not based on a site-specific risk assessment, nor does listing require that a site-specific risk assessment be performed prior to the listing. A site-specific risk assessment is performed later in the Superfund process, following a comprehensive RI/FS conducted after listing and more extensive sampling.

[12] As indicated on page 31 of Reference 7 to the HRS documentation record at proposal, the Site was added to the Minnesota Permanent List of Priorities (PLP) in 2010 (https://webapp.pca.state.mn.us/wimn/site/189593). The Edina Well Field was added to the Minnesota PLP in 2006. A description of the Edina Well Field is available online at https://webapp.pca.state.mn.us/wimn/site/185901.

[13] Information on properties in the vicinity of the Site being addressed under State programs such as RCRA, State Superfund/PLP (fund financed, non-PLP, and PLP listed), and Brownfields (voluntary party) is available at https://www.pca.state.mn.us/data/whats-my-neighborhood.

The HRS site score for this site above 28.50 represents the EPA's determination that the Site poses a risk relative to other sites evaluated under the HRS and warrants further investigation. An HRS groundwater pathway score of 100, the maximum that can be assigned to that pathway, was achieved in the scoring of this Site, and the resulting overall site score of 50.00 is above the minimum score of 28.50 required for qualifying the Site for the NPL. As discussed in detail below in section 3.16, Likelihood of Release, and its subsections of this support document, the Site as scored in the HRS documentation record at proposal includes the scoring of municipal wells as subject to actual contamination and the target populations associated with wells. The HRS documentation record at proposal documented the presence of vinyl chloride in these wells, establishing that the HRS evaluation of the Site considered vinyl chloride[14] in its assessment of the Site.

Regarding the Objectors' comments about the site-specific risk and the consideration of the full extent of the contamination, including the risk associated with presence of vinyl chloride in groundwater, the EPA will determine this measure of risk during a different stage of the Superfund process. The EPA will collect sufficient information to completely evaluate the site-specific risk associated with the contaminated aquifer as part of this later stage of the process. The EPA will then perform a comprehensive risk assessment once sufficient information is gathered to do so. The results of risk assessment activities will be considered during the evaluation of the need for remedial actions at the Site. At this stage, the full extent of the contamination, including a more complete characterization of the contamination and the constituents that compose the contamination at the Site, will also be determined. As noted above in section 3.4, Extent of Site/Definition of Site, Section 104 of CERCLA, 42 U.S.C. § 9604, which authorizes EPA response actions, specifically authorizes such actions "relating to such hazardous substance, pollutant or contaminant **at any time**." [emphasis added] Accordingly, additional hazardous substances, pollutants or contaminants in the release may be addressed if found during the risk assessment that these additional substances in the release may be posing a risk to human health or the environment regardless of whether these substances are identified at the time of listing the Site on the NPL.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.12 Accuracy of Expanded Site Inspection, Site Inspection, and Preliminary Assessment

Comment: The Objectors submitted comments on the Expanded Site Inspection (ESI), Site Inspection (SI), and Preliminary Assessment (PA) reports prepared by the MCPA at the initial stages of the assessment of the Site. The Objectors' comments on these reports were included as attachments 1, 11, and 10 of their comments on the proposed listing of the Site on the NPL, respectively. The Objectors also provided detailed comments on the ESI that included comments in connection with the HRS scoring of the Site in Attachment 1 of their comment document.

Response: The comments[15] submitted by the Objectors pertaining to the accuracy of the ESI, SI, and the PA reports for the Site are comments on preliminary stages of the site evaluation process. While these reports were considered in evaluating the Site for HRS purposes (and included as references 6, 7, and 8), the Objectors have not identified any error in these reports that would directly impact the HRS scoring factors or HRS site score for the Site. The HRS documentation record at proposal reflect the Agency's rationale for adding the Site to the NPL, and the HRS documentation record at proposal and this support document clearly document that the EPA has complied with the HRS regulation. This support document addresses the comments received on the proposed listing of this Site, including those comments that challenge compliance with the HRS, and shows that HRS and regulatory requirements have been met in every aspect of the evaluation of this site.

[14] Table 10 on page 39 of the HRS documentation record at proposal presents the 2015 Release Well Results, documenting the presence of vinyl chloride in release wells completed in the St. Peter and Prairie du Chien – Jordan aquifers. The adequacy of the scoring of an observed release by chemical analysis in the HRS documentation record at proposal is discussed below in section 3.16, Likelihood of Release, and its subsections.

[15] As discussed in section 3.5, Adequacy of the Public Docket, as the Objectors' comments were submitted as attachments to their comments during the public comment period, these comment submissions are part of the docket for the Site.

The EPA and MPCA have been aware of and responsive to the Objectors' concerns. Following the submission of comments on the Preliminary Assessment report for the Site, which included correspondence submitted to both the EPA and MPCA on May 24, 2017, MPCA responded to the Objectors in a letter dated July 7, 2017 (included as Attachment 1 of this support document). The EPA acknowledged the Objectors' comments on the Site Inspection report for the Site and accompanying correspondence submitted to EPA on August 2, 2018 in a letter dated August 22, 2018 (included as Attachment 3 of this support document) and participated in a listening session with the Objectors on November 29, 2018. Prior to this listening session, the EPA received an agenda from the Objectors. The Objectors also submitted correspondence on December 13, 2018. The Objectors then provided an additional summary of concerns in correspondence and reports on September 24, 2019. In a letter dated November 4, 2019 (included as Attachment 4 of this support document), the EPA responded to that submission and noted the intended proposal of the Highway 100 and County Road 3 Groundwater Plume site to the NPL. Information provided by the Objectors prior to proposing the Site to the NPL was considered, and additional information provided by the Objectors was included in the evaluation of the Site[16]. As noted above in section 3.5, Adequacy of the Public Docket, the information and documents used by the EPA to support its evaluation of the Site were available in the docket for this Site.

Regarding the specific comments within these attachments (i.e., Attachments 10 and 11 of the Objectors' comment submission and portions of Attachment 1) submitted by the commenters, the Objectors failed to raise any specific issues in these documents regarding why the HRS scoring of the Site or the proposal to add the Site to the NPL were insufficient. Courts have held that the "dialogue between administrative agencies and the public is a two-way street." *Northside Sanitary Landfill, Inc. v. Thomas*, 849 F. 2d 1516, 1520 (D.C. Cir. 1988) (citing Home Box Office, Inc. v. FCC, 567 F. 2d 9 (D.C. Cir 1977)). The Objectors "cannot merely state that a particular mistake was made," rather it must show "why the mistake was of possible significance in the results the agency reaches." See *id.* at 1519. In their comment submission, the Objectors have not explained why the comments in these documents specifically demonstrate that the Agency's rationale for adding the Site to the NPL is insufficient.[17]

Additionally, the PA, SI, and ESI reports, on which the Objectors supplied comments, represent part of the preliminary evaluation of the Site, and these reports do not represent the Agency's final determination and rationale of whether the Site warrants inclusion on the NPL. As noted above, these reports were considered during

[16] Regarding the documents referenced by the Objectors in their November 29, 2018 listening session presentation, the EPA included several of the those documents or updated versions as references to the HRS documentation record: Fifth Five-Year Review Report for Reilly Tar & Chemical (St. Louis Plant) Superfund Site (Reference 43 to the HRS documentation record at proposal); St. Louis Park Solvent Plume and Vapor Intrusion Site web page (Reference 53 to the HRS documentation record at proposal); City of Edina Well No. 7 Study – Phase II Report, March 2005 to June 2005 (Reference 54 to the HRS documentation record at proposal); City of Edina Well No. 7 Study – Phase III Report, August 2005 to June 2006 (Reference 55 to the HRS documentation record at proposal); St. Louis Park W 437 Chlorinated Solvent Source Investigation (Reference 56 to the HRS documentation record at proposal); Reilly Tar Site/Meadowbrook Ground Water Model Update – Letter Report (Reference 57 to the HRS documentation record at proposal); Assessment of Ground-Water Contamination by Coal-Tar Derivatives, St. Louis Park Area, Minnesota (Reference 65 to the HRS documentation record at proposal); Second Five-Year Review Report for Reilly Tar & Chemical Company (Reference 66 to the HRS documentation record at proposal); Third Five-Year Review Report for Reilly Tar & Chemical Company (Reference 67 to the HRS documentation record at proposal); Fourth Five-Year Review Report for Reilly Tar & Chemical Company (Reference 68 of the HRS documentation record at proposal); Annual Report for 2015 (Reference 78 to the HRS documentation record at proposal); and Trichloroethylene Release Remedial Investigation and Corrective Action (Reference 81 to the HRS documentation record at proposal).

[17] Note that this is also generally explained in the Supplementary Information provided in the Federal Register in which the Site was proposed to the NPL (84 FR 60359, Section G), which states that the "Comments that include complex or voluminous reports, or materials prepared for purposes other than HRS scoring, should point out the specific information that the EPA should consider and how it affects individual HRS factor values or other listing criteria (*Northside Sanitary Landfill v. Thomas*, 849 F.2d 1516 (D.C. Cir. 1988)). The EPA will not address voluminous comments that are not referenced to the HRS or other listing criteria. The EPA will not address comments unless they indicate which component of the HRS documentation record or what particular point in the EPA's stated eligibility criteria is at issue."

the HRS evaluation of the Site and included as References 6, 7, and 8 to the HRS documentation record at proposal. For prospective sites under consideration for listing on the NPL, the EPA follows NCP procedures by conducting a preliminary assessment (PA) of the site. Depending on the results, the PA may be followed up by a site inspection report (SI), which may be followed by an expanded site inspection report (ESI), as appropriate. When a site is proposed to the NPL, the EPA provides its detailed rationale, including consideration of information gathered in the PA and SI, along with other site-related information in documents (i.e., the HRS documentation record and supporting materials), which are made publicly available. The preliminary nature of these reports is indicated in the MPCA's letter dated July 7, 2017 to the Objectors in response to their submission of comments on the Preliminary Assessment for the Site (included as Attachment 1 of this support document). It states:

> The Preliminary Assessment report is a ***preliminary*** document that follows prescribed Site Assessment methodology outlined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to determine if there is a potential for exposure to hazardous substances based on certain criteria established in law (i.e., whether there is a ***potential*** for exposure to hazardous substances; whether there are potential exposure pathways that could be affected) and whether there is a potential that the contamination at a site could be sufficiently substantial to require federal intervention by listing on the National Priorities List (NPL). [emphasis in original]

Finally, the comments submitted by the Objectors in Attachment 1 to their comment submission on the proposed listing of the Site on the NPL are addressed throughout this support document where these comments assert that there are issues in the Agency's rationale for adding the Site to the NPL. Specific comments referring to the ESI and source identification are addressed below in section 3.13.1, Limited Source Area Identified, of this support document.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.13 Source Identification

Comment: The Objectors submitted comments related to the identification of a source for the Site. The Objectors asserted that, despite the Site being scored as a groundwater plume with no identified source, the HRS documentation record at proposal clearly identifies an "alleged source" at the intersection of Lake and Walker Streets in St. Louis Park via the spatial definition of the plume site, but that the contamination is more extensive than that identified and known areas of contamination were excluded. The Objectors also commented that the HRS documentation record at proposal fails to properly define the site by omitting critical data related to additional sources.

Response: The Site has been proposed to the NPL as a groundwater plume with no identified source. The following subsections contain detailed responses with regard to the Objectors comments that a limited source area was identified and known areas of contamination were excluded:

- 3.13.1 Limited Source Area Identified
- 3.13.2 Known Sources of Contamination Excluded

3.13.1 Limited Source Area Identified

Comment: The Objectors asserted that, despite the Site being scored as a groundwater plume with no identified source, the HRS documentation record at proposal clearly identifies an "alleged source" at the intersection of Lake and Walker Streets in St. Louis Park.

The Objectors stated that the Site's boundaries are defined by naming "release" monitoring wells in four different aquifers but, because the HRS documentation record at proposal does not provide a visual presentation of the Site by aquifer, the Objectors provided Figures 1-4 of their comment document. According to the Objectors, there is a

very small area of groundwater contamination identified at Lake and Walker Streets in the uppermost Drift aquifer, and increasingly larger plumes in successive deeper aquifers are present. The Objectors added that the Drift aquifer is most likely to be impacted by a source near the surface and stated that the "Site 'definition' clearly identifies an alleged source of groundwater contamination in the Drift aquifer at Lake and Walker Streets, despite EPA's claims that it has scored the Alleged Plume Site without an identified source."

In support of their claim that the Site, as proposed, has identified a source, the Objectors stated that the MPCA identified in the ESI three facilities as possible sources within the "alleged Walker/Lake Street source area." The Objectors added that the MPCA acknowledges that other facilities with known releases exist outside of the small area identified on Figure 2 of the HRS documentation record at proposal (e.g., Schloff Chemical); however, the Objectors criticize that despite this, the MPCA stated in the ESI that the "MPCA is unable to reasonably attribute area groundwater contamination to these other sources."[18] According to the Objectors, statements like this imply that MPCA believes it has reasonably attributed the regional groundwater contamination to the Lake and Walker Street sources. The Objectors emphasized that they "strongly disagree" with this attribution as set forth in their comments. The Objectors noted that they have a direct interest in the proposed listing of the Site on the NPL because they are currently addressing a historical chlorinated solvent release to the surficial aquifer at a location on Walker Street in St. Louis Park near the alleged "source area."

The Objectors also stated that the "presence of many sources of CVOCs and many multi-aquifer wells over a broad geographic area is consistent with the widespread contamination observed in the Prairie du Chien/Jordan aquifer, rather than the narrowly defined alleged 'source' area at the Walker and Lake Streets migrating to a single bedrock valley conduit located on the downgradient eastern end of the Alleged Plume Site." They reasoned that "multiple sources over several square miles, coupled with numerous multi-aquifer wells, provides a reasonable and rational flow and migration pathway to explain the extent of widespread contamination of the deeper Prairie du Chien/Jordan aquifer." In support of their reasoning they stated:

- The St. Peter aquifer sits above the Prairie du Chien/Jordan, yet it is "cleaner" with respect to CVOCs (MPCA PAR, Table 4). A "plume" migrating vertically through the St. Peter to the Prairie du Chien would create higher CVOC concentrations in the St. Peter than in the Prairie du Chien/Jordan.
- 1,1,2-TCA was detected in the St. Peter aquifer at the eastern bedrock valley, in SLP1/W414 (MPCA ESI p. 3481). 1,1,2-TCA is not associated with the alleged "plume" and its presence suggests the alleged "plume" is not migrating through the St. Peter aquifer, and the 1,1,2-TCA contamination at that location originates from an unidentified source.
- The basal St. Peter aquitard (Pigs Eye Member) is present at the eastern bedrock valley location, which would dramatically inhibit vertical migration down to the Prairie du Chien. MDH estimated a 55 year travel time for groundwater flow through the bedrock valley (MDH Report 1981, Appendix F). EPA provides no data to show migration is actually occurring through this aquitard.
- Tritium data collected from Edina Well 7 and St. Peter well W14 showed the deep contaminated zone in the lower Prairie du Chien/Jordan is "younger" than the St. Peter and upper Prairie du Chien groundwater. Isotopic tritium data are an indication of the time that has lapsed since a groundwater was in contact with the atmosphere. A "young" groundwater has received infiltration from the surface recently, whereas an "old" groundwater has been protected from surface inputs for some time. Because the deeper contaminated zone at Edina Well 7 appears "younger" than the water that lies above it, the data indicate that rapid vertical

[18] The Objectors cited pages 33 and 34 of the following document in support of their comment: MPCA 2019. *Expanded Site Inspection Report for Highway 100 – County Road 3 Groundwater Plume Site Vol. 1 and 2*, July 2019 (Included as Reference 7 of the HRS documentation record at proposal).

flow through a conduit, such as a multi-aquifer well, caused the observed deeper contamination rather than natural vertical seepage (STS, 2006).

- EPA offers no groundwater flow model that can predict the alleged migration pathway. The crude ESI Report cross-section Figure 6 ignores and runs counter to actual groundwater flow directions in that it depicts contaminant transport from the alleged source area to the southeast in the Drift aquifer, downward through the basal St. Peter/Pigs Eye Member, then back to the northwest in horseshoe fashion in the Prairie du Chien aquifer to Reilly Tar well W23.
- The USGS has demonstrated the influence of multi-aquifer wells, particularly W23 at the Reilly Tar site, as both a conduit for vertical flow and as a cone of impression for radial groundwater flow (Hult and Schoenberg [USGS], 1984). The HRS Documents completely fail to acknowledge and consider the impact of multi-aquifer wells as the likely migration path for contaminants. This failure to properly define the likely flow path through multi-aquifer wells will result in incomplete or ineffective remedial action, should the Alleged Plume Site ever get listed on the NPL.
- The identified shallow PCE/TCE plume at Lake and Walker Streets appears to remain separated from the lower Drift and Platteville aquifers (and hence, deeper aquifers) by low permeability layer(s) of glacial till. Cross sections from AECOM's FY17 Report show that the shallow PCE and TCE groundwater contamination remains above the low permeability layer, displaying decreasing concentrations with depth, but that cDCE [cis-1,2-dichloroethylene] and VC [vinyl chloride] display increasing concentrations with depth by somehow penetrating the low permeability layer.
- Furthermore, if the Platteville well W433 data had been plotted, it would show continuity with the deep Drift results above it, and with the regional Platteville contamination observed as far west as W421 (AECOM FY17 Report, Figures 8a-8e). These figures are provided here as Comment Attachment 4.
- The observed cDCE and VC contamination in the lower Drift and Platteville is a regional issue and has been documented at significant concentrations directly south and southwest of the alleged source area at wells W421, W18, and W143 (AECOM, 2013, Table 2). As the primary contaminant of concern in the Prairie du Chien/Jordan aquifer is VC, detections of that compound and its immediate parent compound should not be ignored."

The Objectors also noted that the initial investigation to identify the origin of vinyl chloride at Edina 7 started in 2004 and included areas in Hopkins (to the northwest of Edina 7), Edina, and St. Louis Park, but the Objectors asserted that the focus of the investigation shifted in 2008 to south St. Louis Park and to the eastern bedrock valley "for reasons that have never been explained or justified."[19]

Response: The Site has been proposed and promulgated to the NPL as a groundwater plume with **no identified source** because the significant increase in the comingled groundwater contamination could not be attributed to a specific source. For HRS purposes, neither the facilities near the intersection of Walker and Lake Streets, nor the

[19] The Objectors cited to the following seven documents:
STS Consultants, Ltd. (2005). *City of Edina Well No. 7 Phase II Report*, March 2005 to June 2005, dated June 2005.
STS Consultants Ltd. (2006). *St. Louis Park W437 Chlorinated Solvent Source Investigation*, dated March 13, 2006.
STS Consultants, Ltd. (2006). *City of Edina Well No. 7 Study – Phase III Report*, August 2005 to June 2006, dated June 2006.
STS Consultants, Ltd. (2008). *City of Edina Well No. 7 Groundwater Contamination Report,* November 2008.
STS Consultants, Ltd. (2008). *St. Louis Park/Edina Groundwater VOC Contamination Study – Phase IV*, December 2008.
MPCA 2019. *Expanded Site Inspection Report for Highway 100 – County Road 3 Groundwater Plume Site Vol. 1 and 2*, July 2019. (Appendix 2, p. 154; Figure 5; page 169).
STS *Focused Feasibility Study*, 2008.

other industries discussed in the HRS documentation record at proposal as possible sources were scored as an HRS source. While there are several facilities with documented solvent use in the vicinity of the Site and some are suspected originators of the contamination, consistent with the HRS, the HRS evaluation of this Site evaluated the groundwater plume as the source for HRS scoring purposes. Although the Objectors point to information in other documents such as the ESI report implying a stronger link between the facilities at Walker and Lake Streets and groundwater contamination, that is not how the Site was scored in the HRS documentation record at proposal for HRS purposes and for the purpose of listing the Site on the NPL.

The HRS definition of a source includes a contaminated groundwater plume as a source and the origination of the contamination need not be evaluated. HRS Section 1.1, *Definitions*, defines a source as:

> Any area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance. Sources do not include those volumes of air, ground water, surface water, or surface water sediments that have become contaminated by migration, except: **in the case of either a ground water plume with no identified source or contaminated surface water sediments with no identified source, the plume or contaminated sediments may be considered a source.** [emphasis added]

The HRS documentation record at proposal explains that at this Site, the contaminated groundwater plume is the source. It does not identify a source at Lake and Walker Streets nor any other address in St. Louis Park. Page 19 of the HRS documentation record at proposal specifically names and describes the source:

> Name of source: Contaminated Groundwater Plume
>
> Source Type: Other – Groundwater Plume with No Identified Source
>
> Description and Location of Source (with reference to a map of site):
>
> The Site consists of a contaminated groundwater plume with **no identified source** in the interconnected Quaternary Drift, Platteville-Glenwood, St. Peter, and Prairie du Chien-Jordan aquifers underlying portions of Edina and St. Louis Park (Refs. 3; 5; 6, pp. 3, 5, 6, 10 to 13, 21, 22, 24, 25, 34, 37, 40; 75, pp. 6, 7, 52, 53, 54, 58, 65, 64, 65, 68, 69, 76, 77, 86, 87, 98, 99, 106, 107, 183, 184, 192, 193, 197; 84, p. 13) (see Figures 1 and 2 of this HRS documentation record). The groundwater plume that comprises the Site is currently defined by documented observed releases in groundwater monitoring and municipal water wells in Edina and St. Louis Park that are completed in the aquifers as follows: Quaternary Drift aquifer in wells P307, P309, P310; Platteville-Glenwood aquifer in wells W120, W143, W433, W434, W437, W438; the St. Peter aquifer in wells W133, W24, W409, W410, W411, W414; and the Prairie du Chien-Jordan aquifer in wells E7, SLP4, SLP6, W23, W48, and W119R (Refs. 6, pp. 4, 5, 12, 13, 21, 24, 25, 34, 37, 40; 28, pp. 9, 24, 42, 51, 56, 60, 65, 83, 87, 91, 100, 101, 161, 163, 171, 172, 173, 178, 186, 188, 196, 198, 200; 75, pp. 6, 7, 52, 53, 54, 58, 64, 65, 68, 69, 76, 77, 86, 87, 98, 99, 106, 107, 192, 193, 196; 84, p. 13; 86, p. 14) (see Figure 2 of this HRS documentation record). [emphasis added]

Similarly, other sections of the HRS documentation record at proposal were consistent on this point. For example, after giving a general description of the Site, including associated contaminants and possible origins of the contamination, page 14 of the HRS documentation record at proposal makes clear that "[a]s a result of the presence of multiple possible sources of the groundwater contamination and the likely comingling of releases over time, the site is being scored as a groundwater plume with **no identified source**." [emphasis added] The Attribution section of the HRS documentation record at proposal states on page 54 that:

> While several likely sources have been identified, specific releases documented in monitoring and municipal wells cannot reasonably be attributed to a specific source or sources due to the

> comingled nature of the releases that likely resulted from multiple sources, including dry cleaners, print shops, a radiator coil manufacturing facility, metals fabricators, a heat treating facility, rubber manufacturer, computer components facility, and a distributor of dry cleaning fluid, among other commercial and industrial facilities, over time (Refs. 6, pp. 4, 5, 6, 33 through 41; 7, pp. 5 to 11, 92, 93, 523, 524, 526, 901, 902, 1167 to 1169, 1978, 1982, 1983, 1984, 1989, 2006 through 2014, 3571; 56, pp. 10, 11, 12; 81, pp. 1-1, 2-1). As a result, the Site is being scored as a groundwater plume with **no identified source**. [emphasis added]

Page 55 of the HRS documentation record at proposal concludes the Attribution section with a similar discussion of possible sources and the conclusion that "the Site is being scored as a groundwater plume with **no identified source**." [emphasis added]

Although the Objectors point to information in other documents such as the ESI report (Reference 7 of the HRS documentation record at proposal) implying a stronger link between the facilities at Walker and Lake Streets and groundwater contamination, that is not how the Site was scored for HRS purposes and the purpose of listing the Site on the NPL. At this point in the Superfund process, as documented in the HRS documentation record at proposal, no definitive conclusions are drawn on the ultimate origins of the groundwater contamination scored, and the Site is instead evaluated as a groundwater plume with no identified source. Furthermore, the possible sources noted in the HRS documentation record at proposal were clearly not limited to facilities near the intersection of Walker and Lake Streets (e.g., see Figure 2 and discussion on pages 54-55 of the HRS documentation record at proposal).

Regarding the comment that the Site's boundaries are defined by naming "release" monitoring wells in four different aquifers, this is not exactly correct. The groundwater plume scored is based for HRS purposes on the observed releases in municipal and monitoring wells identified in section 3.1.1, Observed Release, of the HRS documentation record at proposal (pages 33-52). And, as further discussed in section 3.4, Site Definition/Extent of Site, of this support document, the full extent of the Site is not known at this stage in the Superfund process; although boundaries of the groundwater plume were defined for HRS purposes, these were preliminary boundaries of the contamination, and the Site is not restricted to these preliminary boundaries delineating the groundwater plume if further investigation shows a different extent of contamination.

Regarding other comments related to the attribution of the contamination, (e.g., patterns of contamination and isotope data, exact routes of migration of contamination and effects of geologic layers and multi-aquifer wells on migration) pointed to by the Objectors as reasons to cast doubt on the Walker and Lake intersection area as the origin of contamination, these do not affect the Site as scored for HRS purposes. As noted above, the Site is scored as a groundwater plume with no identified source due to the comingled nature of the releases that likely resulted from multiple sources (and therefore, though possible sources are identified, the HRS documentation record at proposal does not make any conclusion on the ultimate origin of contamination at this point). Such information will be considered in later stages of the Superfund process. For further related discussion, see also sections 3.14, Characterization of a Plume with No Identifiable Source, 3.15, Aquifer Interconnection and Groundwater Flow, and 3.16, Likelihood of Release, and its subsections (particularly the discussion of attribution of hazardous substances to the Site in section 3.16.3, Attribution), of this support document.

If the Objectors are concerned with liability for the contamination in the aquifers, liability is not assessed at this stage of the Superfund process, as discussed in section 3.10, Liability, of this support document.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.13.2 Known Sources of Contamination Excluded

Comment: The Objectors commented that the HRS documentation record at proposal and administrative record fail to properly define the groundwater plume site and sources that comprise it by arbitrarily excluding data that show upgradient sources are present and ignoring documented contaminant migration pathways.

According to the Objectors, "[a] 'site' is defined by the NCP as an area that includes sources of hazardous substances, areas of contamination, and the areas in between (40 CFR Part 300, Appendix A, Section 1.0)." The Objectors stated that the Site scored sufficiently high for the NPL because the Prairie du Chien/Jordan aquifer drinking water aquifer, which serves several communities, is impacted over many square miles, but that this deep aquifer is generally protected from vertical migration from surface releases by a number of low permeability aquitards. The Objectors asserted that the EPA has not been consistent with pages 17 and 22 of EPA's *HRS Guidance Manual*, which "requires the Alleged Plume Site definition and listing evaluate and address sources that may be contributing hazardous substances to the area of Prairie du Chien/Jordan CVOC contamination." The Objectors commented that the "very small area of Drift groundwater contamination" that makes up the groundwater plume boundaries in the Drift aquifer is surrounded by numerous known sources of CVOCs that were ignored in the HRS documentation record at proposal. The Objectors added that Figure 9 of their comment document shows investigation of possible sites where MPCA identified releases of CVOCs, and that many are associated with groundwater contamination. Specifically, the Objectors, stated that:

> Key CVOC sources to regional groundwater contamination that the EPA, the MPCA, or both are ignoring include:
>
> - Reilly Tar – The Reilly Tar Superfund Site addresses contamination from a former coal tar distillation and wood treating facility. Surface spills, surface water discharges and deep well disposal created a plume of polyaromatic hydrocarbons (PAHs) and phenols in the Prairie du Chien/Jordan aquifer for many square miles, as well as significant, but more localized contamination in the Drift, Platteville and St. Peter aquifers. Degreasing chemicals were included in the Reilly Tar Consent Decree (1986), and CVOCs are co-located with Reilly Tar PAHs and phenols in all of these aquifers. A 2014 Vapor Intrusion Investigation detected CVOCs in sub-slab and indoor air above health-based levels (CH2MHill, 2014). This indicates the presence of CVOCs in Reilly Tar soil or shallow groundwater. Objectors are not aware that any further action was taken regarding this finding.
> - Schloff Chemical – This solvent distribution facility released a significant amount of PCE, resulting in a groundwater plume in the Drift aquifer that was shown to be migrating downward (MPCA ESI, p. 921). The vertical extent of contamination was never defined. The MPCA claims to be unable to make a "reasonable attribution" determination for this source (MPCA ESI, p. 34) but has never explained why it cannot make this determination. [20]
> - Control Data Corporation – This printed circuit board manufacturer released 1,1,1-trichloroethane (111TCA) to the Drift aquifer (Braun Intertec Phase I Report, 2001). The vertical extent of contamination was never determined.
> - Lindberg Heat Treating – This facility released TCE to the uppermost aquifer. The highest concentration of TCE in groundwater was greater than 50,000 µg/L (Rust, 1984).
> - Thermotech – This facility in Hopkins released TCE to the uppermost aquifer. MPCA identified this facility as a potential source of CVOCs to Edina Well 7 because it lies upgradient (northwest) of the well (MPCA Meeting Notes, 2006). TCE was observed in groundwater at 19,000 µg/L at this site in 2007 (MPCA Internal email, 2007), but it was not carried forward in the Edina 7 investigation. The Objectors are not aware of the basis of the decision to drop this line of inquiry. [21]

[20] The Objectors cited page 921 of the following document in support of their comment: MPCA 2019. *Expanded Site Inspection Report for Highway 100 – County Road 3 Groundwater Plume Site Vol. 1 and 2*, July 2019.
[21] The Objectors cited the following document in support of their comment: MPCA Internal email, 2007.

- Hopkins Sanitary Landfill – This municipal landfill was found to be contaminating groundwater with CVOCs. cDCE was observed at 2,400 µg/L and VC at 200 µg/L (STS, 2006, Figure 1). [22]

Related to Reilly Tar, the Objectors also stated that:

> VOC (and hence CVOC) data and hydrogeological data have been collected for the Reilly Tar site since the 1980s, but EPA has not incorporated this information into its conceptual site model or included it in this proposal's Administrative Record/NPL Listing Docket. Reilly Tar site information is relevant to the Alleged Plume Site because Reilly Tar PAH contamination is co-located with CVOCs in the Prairie du Chien/Jordan aquifer. (MPCA PAR, City of St. Louis Park, 2016). Furthermore, chlorinated solvents are included as "chemical substances" to be addressed under the Reilly Tar Consent Decree (Reilly Tar Consent Decree, 1986).

The Objectors also commented that two more facilities, Flame Metals and Reynolds Welding, were not referenced in the HRS documentation record at proposal data. The Objectors characterized Flame Metals as:

> located at 7317 West Lake Street in St. Louis Park, was investigated (shallow and deep Drift groundwater samples were collected) by an MPCA contractor in 2014 and found to have no CVOC groundwater contamination (AECOM, Site Investigation Report for Former Flame Metals, 2014, p. 10). But upon closer inspection, one discovers that the investigation-derived purge water had to be disposed as a hazardous waste due to very high concentrations of TCE (AECOM Site Investigation Report for Former Flame Metals, 2014, Appendix E). This discrepancy appears to be due to the fact that the laboratory analyzed only the shallow samples and failed to analyze the deep Drift groundwater samples, leaving an obvious data gap that improperly suggested a lack of CVOC groundwater contamination. MPCA was aware of the purge water data—including its high TCE concentrations—but failed to collect additional data at the site. This release is clearly relevant because Flame Metals is located upgradient from key (ignored) contaminated wells W420, W421 and W18.

The Objectors discussed Reynolds Welding as:

> located at 7015 Walker St (upgradient of the critical well W437), was investigated in 2010 and found to have a release of PCE and TCE to soil and groundwater (MPCA No Association Determination Letter for the Saint Louis Park Economic Development Corporation, 2010). This information is clearly relevant to the Alleged Plume Site definition because it was known to MPCA, but was not included in this proposed listing's administrative record.

The Objectors stated that the "EPA's failure to consider—and in many cases even acknowledge—the existence of these other sources and their potential effects on the Alleged Plume Site's definition must invalidate that definition." The Objectors also commented that the ESI report states that the Edina drycleaners are not likely sources of the CVOCs but, because the environmental investigation likely only sampled the uppermost aquifer, the heavier CVOCs that lie deeper in the aquifer may have been missed. They also claimed that the ESI neglected to consider Control Data Corporation, Hallmark Cleaners, and drycleaners in Hopkins as well as contamination as far north as SLP10 and SLP14.

[22] The Objectors cited the following documents in support of their comment:
STS Consultants Ltd. (2006). *St. Louis Park W437 Chlorinated Solvent Source Investigation*, dated March 13, 2006. (Figure 1).
STS Consultants, Ltd. (2006). *City of Edina Well No. 7 Study – Phase III Report*, August 2005 to June 2006, dated June 2006. (Figure 1).

The Objectors stated that Figure 9 of their comment document identifies sites that lie over or upgradient of the contamination in the Prairie du Chien aquifer, sites on the western side of the figure that lie upgradient of active or historic multi-aquifer well, and the location of the western bedrock valley.

The Objectors asserted that the Site should not be added to the NPL. They stated, "[i]nstead, EPA should insist that MPCA further [investigate] … the numerous sources and active multi-aquifer wells discussed throughout these comments and their effects on the deep aquifer contamination this proposed listing is ostensibly intended to address. This should include, but certainly not be limited to, a full revisitation by both EPA and MPCA of previous and current efforts to define the full extent and effects of the already-existing Reilly Tar Superfund site, along with other sites known to MPCA but not properly delineated, whose impacts on this area's deep groundwater aquifers have been inexplicably ignored for decades."

Response: Consistent with the HRS definition of a source as explained above in section 3.13.1, Limited Source Area Identified, of this support document, the source at this Site for HRS scoring purposes is the groundwater plume with no identified source. While there are many suspected sources of contamination potentially contributing to the contamination identified in the groundwater plume, for HRS scoring at this Site there is no identifiable source of contamination causing a significant increase in contaminants for the entire comingled groundwater plume. The Site as scored did not attribute the release to any source or facility. In describing the groundwater plume source at this Site, the HRS documentation record at proposal summarized the investigations that were performed and provided the EPA conclusion that the release could not reasonably be attributed to a source or sources, and, therefore, the source at the Site for HRS soring is the groundwater plume with no identified source.

Pages 19-20 of the HRS documentation record at proposal explain why the source at this Site is a contaminated groundwater plume with no identified source:

> In 2018, MPCA conducted an ESI that compiled and evaluated existing data to identify potential sources of contamination (Ref. 7, pp. 5, 8 to 11). Soil, soil gas, and groundwater samples collected at and in the vicinity of numerous commercial/industrial properties in Edina and St. Louis Park areas contain chlorinated solvents (Ref. 7, pp. 1977, 1978, 1989, 2006 through 2014). **While several likely sources and/or potential contributors were identified, specific releases documented in monitoring and municipal wells cannot reasonably be attributed to one or more specific sources due to the comingled nature of the releases that likely resulted from multiple sources, including dry cleaners, print shops, metals fabricators, and heat treating operations, among other commercial and industrial facilities** (Refs. 6, pp. 4, 5, 6; 7, pp. 5 to 11, 92, 93, 1989, 3043; 58 p. 1; 59, p. 2; 81, pp. 5, 6). Chlorinated VOC contamination has been documented in Quaternary Drift, Platteville-Glenwood, St. Peter, and Prairie du Chien-Jordan aquifers in the Edina and St. Louis Park areas, indicating that contamination has migrated laterally and vertically (see Sections 3.0.1 and 3.1.1 of this HRS documentation record). Additionally, water level data collected from August 2005 to June 2006 indicates that during the summer months, heavy pumping of the municipal wells creates a hydraulic gradient that allows contamination to migrate from north to south (towards Edina), and contamination from the Quaternary Drift aquifer appears to be migrating laterally and vertically to the Prairie du Chien-Jordan aquifer (Ref. 7, pp. 1224, 1225). As a result of the presence of multiple possible sources of the groundwater contamination and the likely comingling of releases over time, **the Site is being scored as a groundwater plume with no identified source.** [emphasis added]

Figure 2 of the HRS documentation record at proposal identified several possible sources but they were not scored as sources at the Site. They include: a former print shop at 6518 Walker Street; a drycleaner at 6528 Lake Street; a former metal fabricator at 6512 Walker Street; a former metal fabricator at 6714 Walker Street; a former metal fabricator at 7317 West Lake Street; a heat transfer facility at 6981 Oxford Street; a dry cleaning fluid distributor at 3938 Meadowbrook Road; a computer components facility at 6831 Oxford Street; a dry cleaner at 8420 Excelsior Boulevard; and a dry cleaner at 5017 Vernon Avenue.

The MPCA, with the EPA's approval, performed an ESI to further characterize the Site and identify possible sources.

The Site Description section of the HRS documentation record at proposal discusses efforts to identify the source(s) of groundwater contamination:

> The Minnesota Pollution Control Agency (MPCA), the Minnesota Department of Health (MDH), and the cities of Edina and St. Louis Park have made significant efforts to identify specific sources of groundwater contamination through numerous sampling events and by conducting an extensive search of MPCA records. Also, MPCA conducted an expanded site inspection (ESI) that compiled and evaluated existing data to identify the sources of contamination at the Site (Ref. 7, p. 5-11). Soil, soil gas, and groundwater samples collected at and in the vicinity of commercial properties contain chlorinated solvents (Ref. 7, pp. 1977, 1978, 1989, 2006 through 2014). [page 13 of the HRS documentation record at proposal]

The Attribution section of the HRS documentation record at proposal also discusses some of the search for the origin of groundwater contamination leading up to and including ESI efforts:

> In April 2004, the City of Edina contacted the MPCA requesting assistance to find the source of vinyl chloride contamination that had been detected in two municipal wells (E2 and E7) (Ref. 6, p. 10). Beginning in 2004, MPCA began investigating the contamination in order to define the extent and magnitude, as well as to identify the source of the contamination in Edina's wells (Ref. 6, p. 10). During the investigation, MPCA sampled Prairie du Chien-Jordan aquifer wells throughout the cities of Edina, St. Louis Park, and Hopkins. The analytical results showed a pattern of increasing chlorinated solvent concentrations to the north, from Edina into St. Louis Park about 2.4 miles away (Ref. 6, p. 10). Between 2005 and 2014, MPCA conducted a land use and source characterization study; searched the MPCA "What's in My Backyard?" database and the Hennepin County Hazardous Waste Generator database; interviewed business owners, reviewed reverse telephone book records to identify potential sources that may have used chlorinated solvents prior to the promulgation of the Hazardous and Solid Waste amendments to the Resource Conservation and Recovery Act (RCRA); and conducted numerous sampling events, which included the collection of soil, groundwater and soil gas samples (Ref. 7, pp. 7 to 10, 92, 93, 513, 515 to 527, 901, 902, 1977). MPCA identified 48 facilities that used or may have used PCE in their operations (Ref. 7, p. 10). Of the 48 facilities identified, 27 facilities were reviewed as possible sources of chlorinated VOCs based on proximity to W437 (due to high PCE concentrations detected in a 2006 investigation), type of historical commercial operations, record of PCE use, and sampling results (Refs. 7, pp. 10, 92, 93; 61, p. 1). Of the 27 facilities, MPCA identified eight facilities with hazardous waste records that show PCE/TCE use and 18 facilities were identified as having PCE/TCE detected on their properties (Ref. 7, pp. 92, 93). Twelve properties subsequently were sampled, and significant VOC contamination was detected on most of the 12 properties (Ref. 7, p. 1984). Additional sampling investigations have been conducted at commercial and industrial facilities and sampling results indicate contamination of chlorinated solvents (Refs. 7, pp. 8 to 11, 513, 515 to 527, 901, 902; 56, pp. 10, 11, 12; 81, pp. 1-1, 2-1). [page 54 of the HRS documentation record at proposal]

Regarding whether contamination has been released from a particular facility or whether contamination from a particular facility has reached the aquifer scored, the Site as scored consists of a groundwater plume without an identified source; the facilities shown on Figure 2 of the HRS documentation record at proposal and those named in the HRS documentation record text (or ESI report) as possible contributors to contamination do not constitute scored HRS sources. The Site as scored did not attribute the release to any source or facility. See section 3.16.3, Attribution, of this support document for a discussion on the HRS criteria for attributing the release at this Site to the plume as scored.

Regarding CVOC contamination associated with other facilities such as the Reilly Tar and Chemical NPL site, Schloff Chemical, Control Data Corporation, Lindberg Heat Treating, Thermotech, Hopkins Sanitary Landfill, Flame Metals, Reynolds Welding Supply, Hallmark Cleaners, and Blake Cleaners [in Hopkins], additional characterization is necessary to delineate the plume and attribute the release to a facility. Moreover, this supports the evaluation of the site as a contaminated groundwater plume without an identified source because the significant increase in the plume could not be attributed to a specific source, and the fact that a well is contaminated at a facility location, does not necessarily mean that the contamination originated at that facility.

During MPCA's investigation of this Site, other facilities in the area were already in the process of being investigated or had been investigated. During the PA, SI and ESI, for this Site, MPCA focused investigation activities on facilities that had not been previously investigated.

Additionally, the EPA did not ignore these other facilities, the HRS documentation record at proposal and/or supporting references mention each:

- Reilly Tar is mentioned several times in the HRS documentation record at proposal, including on pages 17-18 noting that chlorinated solvents were generally not listed in five-year review documents as associated with the facility. This facility/site is plotted on Figure 2 of the HRS documentation record at proposal. Additionally, it should be noted that chlorinated solvents are typically used in degreasing electrical circuitry, fabric care (dry cleaning) and finished metals prior to painting. Reilly Tar processed wooden ties for the railroad industry. While it is likely that Reilly Tar may have used petroleum based solvents such as mineral spirits, it is unlikely chlorinated solvents would be used in wood treatment processes or for equipment maintenance. There is no known history of chlorinated solvent use at Reilly Tar and chlorinated solvents have not been detected at levels that would indicate a source in soil or groundwater samples collected in the unconsolidated glacial deposits on the Reilly Tar property. Further, the Reilly Tar 1986 consent decree did not mention chlorinated solvents, rather, it stated, "maintenance substances including but not limited to solvents and degreasers". (See https://semspub.epa.gov/src/document/05/234601). Regarding the Objectors' claim that sub-slab gas and indoor air samples indicate the presence of a CVOC soil source at Reilly Tar, the concentrations of CVOCs detected in vapor samples did not indicate that a significant source of chlorinated solvents exists on the Reilly Tar site; the 2014 *Vapor Intrusion Pathway Investigation Report Reilly Tar and Chemical Corporation Superfund Site St. Louis Park, Minnesota* report prepared by CH2MHill reported sub-slab gas and indoor air results for neighborhoods within and just southwest of the Reilly Tar site[23] and this report did not find concentrations of CVOCs that indicate a significant source of CVOCs (see Figure 1 and Tables 2 and 3 of *Vapor Intrusion Pathway Investigation Report Reilly Tar and Chemical Corporation Superfund Site St. Louis Park, Minnesota*, available at: https://semspub.epa.gov/src/document/05/910710.pdf)[24]. In contrast, although not a component of the HRS scoring, vapor intrusion assessment activities were historically conducted throughout the solvent plume and are discussed in the Preliminary Assessment, Site Inspection, and Expanded Site Inspection reports discussion. For example, page 30 of the Expanded Site Inspection report explains:

  > High concentrations of PCE detected in the Drift aquifer monitoring wells during the November 2006 sampling event raised concerns about potential vapor intrusion. The MPCA began a vapor intrusion assessment in the Lenox and Sorenson neighborhoods immediately north of Highway 7 and the Elmwood neighborhood south of Highway 7 (**Figure 37**). The

[23] Neighborhood sampled are the Oak Park Village apartments, Somerset Oaks apartments, and single-family residences located on Pennsylvania Avenue South and Walker Street.

[24] See also the 2014 EPA *Addendum to Reilly Tar & Chemical Corp. (St. Louis Park Plant) Fourth Five-Year Review Report Dated June 27, 2011* (available at https://semspub.epa.gov/src/document/HQ/180503.pdf) in which the EPA determined that vapor intrusion results do not indicate a problem with vapor intrusion from chemicals associated with the Reilly Tar site, and did not recommend further investigation regarding vapor intrusion (see pages 3, 4 and 11of that addendum).

> investigation results identified soil vapor concentrations that exceeded the vapor screening values set by the MPCA. TCE was detected at 900 micrograms per cubic meter ($\mu g/m^3$) and PCE was detected at 2,680 $\mu g/m^3$ in the soil gas at the intersection of Oxford Street and Colorado Avenue, roughly 50 feet from the nearest residence. Elevated PCE and TCE vapor concentrations were also detected north of Highway 7. Figures and additional data for the soil vapor assessment is available in "St. Louis Park Soil Vapor Survey Results Report" STS, February 16, 2007 (**Appendix 26).**
>
> MPCA estimated that responding to the vapor-intrusion issue could involve sampling hundreds of homes and commercial properties in early 2007. Because conducting this investigation would exceed its resources, the MPCA requested the assistance of the U.S. Environmental Protection Agency (EPA) in 2007 to conduct vapor testing in the Elmwood and Sorenson neighborhoods and in the commercial neighborhoods in between.
>
> Beginning in January of 2008, EPA Emergency Response Team (ERT) collected sub slab samples from 236 residential and commercial properties. Of the 236 properties sampled, 40 residential and commercial properties exceeded the VOC sub slab action level. Vapor mitigation systems were installed in the residential properties where VOC action levels were exceeded (**Appendix 27**). [emphasis in original]

- Schloff Chemical is noted in the ESI report (at page 8 of Reference 7 of the HRS documentation record at proposal, cited in the Attribution section of the HRS documentation record at proposal) as a possible source identified in database searches. It is also noted on page 34 of the ESI report, including that "A PCE release in southern St. Louis Park area has also been documented at the former Schloff Chemical distribution facility (SR175 and VP9660). While previous investigation activities indicate the scope of the release is limited to a relatively small area, additional site characterization may be necessary to document the nature and extent of the release." This is the Dry Cleaning Fluid Distributor facility plotted on Figure 2 of the HRS documentation record at proposal at 3938 Meadowbrook Rd. and discussed in the HRS documentation record at proposal as a distributor of dry cleaning fluid.
- Control Data Corporation is the Computer Components Facility discussed in the HRS documentation record at proposal on pages 14, 54, and 55 and plotted on Figure 2 of the HRS documentation record at proposal at 6831 Oxford St. Control Data Corporation is noted in the ESI report (at pages 519-526 and 1167 of Reference 7 of the HRS documentation record at proposal).
- Lindberg Heat Treating is noted in the ESI report (at page 8 of Reference 7 of the HRS documentation record at proposal, cited in the Attribution section of the HRS documentation record at proposal) as a possible source identified in database searches, as well as in Reference 81 of the HRS documentation record at proposal. (This is the Heat Transfer Facility plotted on Figure 2 of the HRS documentation record at 6981 Oxford St. and discussed in the HRS documentation record at proposal as a heat treating facility.)
- Thermotech is not noted in the HRS documentation record among the more likely possible sources. Its location in Hopkins is approximately 4.5 miles southwest from the plume. Thermotech is mentioned in References 7 (page 3477), 8[25] (pages 63 and 78), and 12[26] (pages 13 and 28) of the HRS documentation Record at proposal. Page 78 of Reference 8 (Preliminary Assessment Report for St. Louis Park Solvent Plume) shows that a Thermotech well in the Prairie du Chien-Jordan Aquifer was sampled in November 2005 and February 2006, and results indicated that PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride were not detected.

[25] MPCA. *Preliminary Assessment Report. St. Louis Park Solvent Plume. St. Louis Park, Hennepin County, Minnesota*. December 17, 2015. 100 Pages.
[26] AECOM. *VOC sampling of the Edina and St. Louis Park Wells in Fiscal Year 2013*. Prepared for MPCA. June 2013. 380 Pages.

- Hopkins Sanitary Landfill is noted in the ESI report (at page 8 of Reference 7 of the HRS documentation record at proposal, cited in the Attribution section of the HRS documentation record at proposal) as a possible source identified in database searches.
- Flame Metals is discussed in the ESI report (on page 11 of Reference 7 of the HRS documentation record at proposal, cited in the Attribution section of the HRS documentation record at proposal). It is also the subject of Reference 58 of the HRS documentation record at proposal. (This is the Former Metal Fabricator plotted on Figure 2 of the HRS documentation record at 7317 West Lake St. and discussed in the HRS documentation record at proposal as a metal fabricator.)
- Reynolds Welding Supply was not discussed in the HRS documentation record at proposal, but the EPA, MPCA, and the City of St. Louis Park are aware of the location of Reynolds Welding Supply at 7015 Walker Street, St. Louis Park. According to a Phase II environmental assessment conducted at 7015 Walker Street, this location functioned as several business over the years including a bakery, a machine shop, and Reynolds Welding Supply. Another adjacent address, thought to also be associated with the building, has historically housed a machine shop, medical supply company, and tavern supply company (see page ES-1 of P*hase II Environmental Site Assessment Report 7015 Walker Street, St. Louis Park, Minnesota* (2010) available at https://app.sharebase.com/#/folder/31026/share/185-EaMcwvfLDDtkSJW2PdGA-a2R-wk). This Phase II environmental assessment concluded that soils and groundwater at 7015 Walker Street were impacted with diesel range organics, polyaromatic hydrocarbons, and three VOCs, one of which is PCE, and soil vapors contained methylene chloride, PCE, and TCE (pages 8, 11 and 12). The EPA notes that this location is near well W437 and is inside the plume area. While the HRS documentation record at proposal did not mention Reynolds Welding Supply or machine shops, it did state the release "cannot reasonably be attributed to one or more specific sources due to the comingled nature of the releases that likely resulted from multiple sources, including dry cleaners, print shops, metals fabricators, and heat treating operations**, among other commercial and industrial facilities**" (page 19 of the HRS documentation record at proposal) (emphasis added). Reynolds Welding Supply and/or historical businesses at that location are mentioned in the ESI report (Reference 7) and References 44[27] and 56[28] of the HRS documentation record at proposal. Page 237 of Reference 44 lists 7015 Walker Street in St. Louis Park as a possible contaminant source with moderate vulnerability to the drinking water supply management area. Page 25 of Reference 56 provides a summary of an interview with a Reynolds Welding Supply employee who states the building was formerly a bakery and its use at the time of the interview in 2005 is storage and filling of welding bottles. Additionally, current information regarding Reynolds Welding Supply is available at the following link of the Minnesota Pollution Control Agency's "What's in My Neighborhood" website: https://webapp.pca.state.mn.us/wimn/site/201485.

Further, as stated in section 3.4, Site Definition/Extent of Site, of this support document, the EPA initially identifies and lists the release based on a review of contamination at certain wells to establish a groundwater plume; this does not necessarily mean that the Site boundaries are limited to those specific wells. At this stage of the listing, no facility has been evaluated as a known source or excluded as a contributing source. Whether contamination associated with a specific facility is definitively tied to the plume (or eventually subject to remedial actions) will be determined during later stages of the Superfund process, likely following additional (RI/FS) investigation. That is, when the extent of the contamination is fully characterized, identification of the origin of contamination at specific facilities and division of operable units will be determined. At this stage of the listing, the focus is on where the contamination has come to be located. See also section 3.14, Characterization of a Plume with No Identifiable Source, of this support document, for a discussion of the HRS criteria for evaluating a groundwater plume.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

[27] Sourcewater Solutions. *Wellhead Protection Plan Part II. St. Louis Park, Minnesota*. November 2016. 340 Pages.
[28] MPCA. *St. Louis Park W 437 Chlorinated Solvent Source Investigation*. Prepared by STS Consultants, LTD for MPCA. March 13, 2006. 54 Pages.

3.14 Characterization of a Plume with No Identifiable Source

Comment: The Objectors commented that the scoring of the Site as a groundwater plume with no identified source is not appropriate in this case, because there are known sources and the pattern of contamination at the Site is not consistent with the conventional meaning of the term "plume."

The Objectors conceded that, in some instances, despite a reasonable level of investigation, the source of groundwater contamination can be correctly assessed as unknown, and that such sites can be scored and listed as sites with no identified source (citing 40 CFR Part 300, Appendix A, Section 1.0). However, they objected to the evaluation of this Site as a groundwater plume with no identified source, noting that available information identifies releases from a multitude of possible sources in the St. Louis Park, Hopkins and Edina area. The Objectors found contradiction in the EPA's scoring approach, insisting that the EPA erroneously defines the Site as having no identified source "while both identifying one alleged source area that lacks a proper attribution demonstration *and* improperly excluding other known sources that have likely impacted the Prairie du Chien/Jordan aquifer." [emphasis in original]

The Objectors also stated that "[t]here is no 'plume' as that term is typically defined … A 'plume' is generally understood to be an area of groundwater contamination emanating from a source and moving in the direction of groundwater flow, with successively decreasing concentrations away from the source." The Objectors provided the following rationale for this assertion:

> In St. Louis Park, Hopkins and Edina, a large area of groundwater contamination exists in multiple aquifers resulting from the long industrial history of solvent use and release at dozens of commercial facilities, including dry cleaners, manufacturing facilities, metal-working shops, maintenance facilities, and an existing Superfund coal tar processing facility (the Reilly Tar site). The flow path of these releases in groundwater is complicated by vertical groundwater flow through multi-aquifer wells and by the influence of pumping at municipal water supply wells, commercial/industrial wells, and Reilly Tar gradient control wells. Thus, what the EPA alleges to be a "plume" is instead an area wide mass of contamination that is the product of decades of releases from scores of sources, which spread over a large area due to the influence of multiple pumping wells.

The Objectors provided further critique of the EPA's characterization of a groundwater plume, stating that "[i]n a complicated system, as exists in St. Louis Park and Edina, a 3D groundwater model could be used to predict migration pathways between surficial sources and the deep drinking water resource aquifer." The Objectors stated:

> The hand-drawn cross-sections in Figures 6 and 7 in the ESI Report fall short, but they are all the proposal can muster as to decreasing concentration gradient evidence along the path of the alleged plume. This is inadequate under EPA's own guidance. These figures omit key conflicting geologic data regarding the presence of a low permeability aquitard (i.e., Pigs Eye Member) and chemical data that fail to demonstrate a coherent, continuous plume. These figures suggest the 'plume' migrates in an upgradient direction to Reilly Tar well W23, which is simply not plausible because groundwater does not flow uphill.

Claiming that the proposed listing of the Site on the NPL identified a source, the Objectors added that Figures 5 and 6 and Attachment 1 of their comment document present the ESI cross-sections with additional information and the ESI figures with context added, including details identifying errors and mischaracterizations in the ESI report. The Objectors concluded that the "EPA fails in its attempt to connect what it alleges is a source area to its alleged 'plume' or any drinking water aquifer." They also claim that the proposal to list the Site on the NPL lacks the level of technical support that the EPA demands in its *HRS Guidance Manual* on page 59 for attributing a release to a source, quoting and describing the following points from that guidance:

- "Data on concentration gradients" (groundwater plumes show successively decreasing concentrations moving downgradient)
- "Data on flow gradients or other information on movements of contaminants in the medium of concern" (data identifying the direction of groundwater flow in relevant aquifers and preferential pathways for contaminant migration), and
- "Analytical 'fingerprinting' data that establish an association between the site and a unique form of the substance or unique ratios of different substances".

Response: Consistent with the HRS, this Site was evaluated as a groundwater plume because, although numerous facilities are identified in the ESI and the HRS documentation record at proposal as possible contributors to the plume of contamination, there is insufficient information to attribute the significant increase in contamination in the entire plume to any individual source. Consistent with the HRS definition of a source, the groundwater plume itself was evaluated as the source for HRS scoring. This HRS scoring mechanism does not preclude the knowledge of possible sources, it just acknowledges that an HRS source for the contamination cannot reasonably be identified given site-specific circumstances. Further, the HRS groundwater "plume" with no identified source is not the same as the common use of the term "plume."

HRS Section 1.1, *Definitions*, definition of a source includes contaminated groundwater plumes with no identified source. It states in that section a source is:

> Any area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance. Sources do not include those volumes of air, groundwater, surface water, or surface water sediments that have become contaminated by migration, except: **in the case of either a ground water plume with no identified source or contaminated surface water sediments with no identified source, the plume or contaminated sediments may be considered a source.** [emphasis added]

Direction on how to evaluate a groundwater plume is found in HRS Section 3.0.1, *General considerations*, and its subsection 3.0.1.1, *Ground water target distance limit.* HRS Section 3.0.1.1, *Ground water target distance limit*, states to determine the plume based on samples that meet observe release criteria, specifically:

> For sites that consist solely of a contaminated ground water plume with no identified source, … Determine the area of observed ground water contamination based on available samples that meet the criteria for an observed release.

In establishing an observed release for the ground water migration pathway, HRS Section 3.1.1, *Observed release,* states:

> Establish an observed release to an aquifer by demonstrating that the site has released a hazardous substance to the aquifer. Base this demonstration on either:
>
> • Direct observation—a material that contains one or more hazardous substances has been deposited into or has been observed entering the aquifer.
>
> • Chemical analysis—an analysis of ground water samples from the aquifer indicates that the concentration of hazardous substance(s) has increased significantly above the background concentration for the site (see section 2.3). Some portion of the significant increase must be attributable to the site to establish the observed release, except: when the source itself consists of a ground water plume with no identified source, no separate attribution is required.

Pages 19-21 of the HRS documentation record at proposal identify the groundwater plume as the source and state:

> **The Site consists of a contaminated groundwater plume with no identified source in the interconnected Quaternary Drift, Platteville-Glenwood, St. Peter, and Prairie du Chien-Jordan aquifers underlying portions of Edina and St. Louis Park** (Refs. 3; 5; 6, pp. 3, 5, 6, 10 to 13, 21, 22, 24, 25, 34, 37, 40; 75, pp. 6, 7, 52, 53, 54, 58, 65, 64, 65, 68, 69, 76, 77, 86, 87, 98, 99, 106, 107, 183, 184, 192, 193, 197; 84, p. 13) (see Figures 1 and 2 of this HRS documentation record). The groundwater plume that comprises the Site is currently defined by documented observed releases in groundwater monitoring and municipal water wells in Edina and St. Louis Park that are completed in the aquifers as follows: Quaternary Drift aquifer in wells P307, P309, P310; Platteville-Glenwood aquifer in wells W120, W143, W433, W434, W437, W438; the St. Peter aquifer in wells W133, W24, W409, W410, W411, W414; and the Prairie du Chien- Jordan aquifer in wells E7, SLP4, SLP6, W23, W48, and W119R (Refs. 6, pp. 4, 5, 12, 13, 21, 24, 25, 34, 37, 40; 28, pp. 9, 24, 42, 51, 56, 60, 65, 83, 87, 91, 100, 101, 161, 163, 171, 172, 173, 178, 186, 188, 196, 198, 200; 75, pp. 6, 7, 52, 53, 54, 58, 64, 65, 68, 69, 76, 77, 86, 87, 98, 99, 106, 107, 192, 193, 196; 84, p. 13; 86, p. 14) (see Figure 2 of this HRS documentation record). [emphasis added]
>
> Analytical results for samples collected from monitoring and municipal wells during the MPCA SI, annual groundwater monitoring events related to Reilly Tar & Chemical, and Edina and St. Louis Park municipal water monitoring programs showed contamination in the Quaternary Drift, Platteville- Glenwood, St. Peter, and Prairie du Chien-Jordan aquifers, indicating that contamination has moved from the Quaternary Drift aquifer to the Prairie du Chien-Jordan aquifer (Refs. 6, pp. 33 through 41; 7, pp. 28, 3619 through 4105; 73, pp. 5, 6; 75, pp. 6, 7, 52, 53, 54, 58, 65, 64, 65, 68, 69, 76, 77, 86, 87, 98, 99, 106, 107, 183, 184, 192, 193, 197; 84, p. 13).
> …
>
> …
>
> **2.2.2 HAZARDOUS SUBSTANCES ASSOCIATED WITH THE SOURCE**
>
> Groundwater samples were collected from monitoring and municipal water wells in 2015, 2016, 2018, and 2019. Table 2 presents samples collected during the 2016 MPCA SI from monitoring and municipal water wells and hazardous substances associated with Source No. 1, a groundwater plume with no identified source. **For more complete analytical results documenting the groundwater plume, see Section 3.1.1 of this HRS documentation record**. [emphasis added]

TABLE 2: Source No. 1 Groundwater Wells and Associated Hazardous Substances

Well No./CLP Sample No.	Hazardous Substances	References
P307/E5QX6	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	6, p. 232
P309/E5QX7	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	6, p. 234
P310/E5QX8	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	6, p. 236
W120/E5QY5	cis-1,2-DCE Trans-1,2-DCE	6, p. 238
W143/E5QY7	cis-1,2-DCE trans-1,2-DCE TCE	6, p. 244

TABLE 2: Source No. 1 Groundwater Wells and Associated Hazardous Substances		
Well No./CLP Sample No.	**Hazardous Substances**	**References**
	Vinyl chloride	
W433/E5QZ4	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	6, p. 246
W434/E5QZ5	cis-1,2-DCE Vinyl chloride	6, p. 248
W437/E5QZ6	Cis-1,2-DCE trans-1,2-DCE Vinyl chloride	6, p. 250
W438/E5QZ7	cis-1,2-DCE Vinyl chloride	6, p. 252
E7/E5QX1[1]	cis-1,2-DCE Vinyl chloride	6, pp. 29, 230; 75, pp. 192, 193; 84, p. 13
SLP4/E5QX9[2]	cis-1,2-DCE Vinyl chloride	6, pp. 29, 162; 73, pp. 5, 6; 75, pp. 98, 99; 86, pp. 7, 14
SLP6[2]	cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	6, p. 29; 75, pp. 106, 107
W133	cis-1,2-DCE Vinyl chloride	75, pp. 68, 69
W24	cis-1,2-DCE	75, p. 196
W409	trans-1,2-DCE	75, p. 58
W410 W410D	cis-1,2-DCE trans-1,2-DCE TCE	75, pp. 52, 53, 54, 55
W411	Vinyl chloride	75, p. 87
W414 W414D	1,1-DCE TCE Vinyl chloride	75, pp. 76, 77, 78, 79
W23	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	75, pp. 64, 65
W48	cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	75, pp. 6, 7
W119R	cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	75, pp. 134, 135

Notes:

[1] Sample E7 was collected from an Edina well, pubic water system identification (PWSID) 1270011, Edina (Refs. 6, p. 29; 84, p. 5)
[2] Samples SLP4 and SLP6 were collected from St. Louis Park wells (Ref. 6, p. 29).
DCE Dichloroethene
E Edina
No. Number
P Piezometer

SLP St. Louis Park
TCE Trichloroethene
W Monitoring

Analytical data documenting the observed release to the aquifers are discussed in section 3.16, Likelihood of Release, of this support document.

Listing this Site as consisting of a contaminated groundwater plume with no identified source(s) acknowledges that the original sources contributing to the groundwater plume are not identified. As explained in the HRS documentation record at proposal, the EPA has performed investigations in an attempt to identify the original source(s), but a normal HRS source(s) of the contamination could not be reasonably determined given the number of possible sources and commingled nature of the contamination. Pages 16-17 of the HRS documentation record at proposal list the following investigations performed at the Site:

> Table 1 lists sampling events conducted at the Site since 2010, including hazardous substances detected in samples collected.

TABLE 1: Summary of Previous Investigations

Company/ Agency	Investigation	Report Date	Samples Collected	Hazardous Substances Detected	References
MPCA	SI - St. Louis Park Plume	February 2017	Groundwater	cis-1,2-DCE trans-1,2-DCE PCE TCE Vinyl chloride	6, pp. 3 to 6, 12, 13
AECOM – Prepared for MPCA	St. Louis Park Investigation – FY16	July 2016	Soil, Groundwater, Air, Soil Vapor	PCE TCE cis-1,2-DCE trans-1,2-DCE Vinyl chloride	9, pp. 1, 10 to 29
St. Louis Park	Annual Monitoring – FY 2015	March 2016	Groundwater	1,1-DCE cis-1,2-DCE trans-1,2-DCE PCE TCE Vinyl chloride	75, pp. 6, 7, 52, 53, 54, 58, 65, 64, 65, 68, 69, 76, 77, 86, 87, 98, 99, 106, 107, 183, 184, 192, 193, 197; 78, pp. 4, 27, 28
AECOM – Prepared for MPCA	St. Louis Park Investigation	April 2015	Soil, Sub-Slab Soil, Soil Vapor, Air, Groundwater	DCE cis-1,2-DCE trans-1,2-DCE PCE TCE Vinyl chloride	14, pp. 6 to 8, 22 to 25, 28 to 61
MPCA	PA St. Louis Park	December 2015	Desktop Review	NA	8, pp. 1, 4, 5, 6, 8

TABLE 1: Summary of Previous Investigations

Company/ Agency	Investigation	Report Date	Samples Collected	Hazardous Substances Detected	References
AECOM – Prepared for MPCA	Site Investigation Report	July 2014	Soil, Sub-Slab Soil, Soil Vapor, Groundwater	DCE cis-1,2-DCE trans-1,2-DCE PCE TCE 1,1,2-TCA Vinyl chloride	13, pp. 7, 8, 9, 12 to 23, 42 to 55
AECOM – Prepared for MPCA	VOC Sampling of the Edina and St. Louis Park Wells in FY 2013	June 2013	Groundwater	1,1-DCA cis-1,2-DCE PCE TCE Vinyl chloride	12, pp. 1, 8 to 33
AECOM – Prepared for MPCA	Water Level Monitoring in Three OPCJ Wells, Edina - St. Louis Park Final Report	March 2010	NA	NA	33, pp. 1, 2
STS Consultants, LTD	Soil, Soil Vapor, and Groundwater Investigation	September 2007	Passive soil gas	PCE TCE	62, pp. 4, 5, 6

Notes:

DCA	Dichloroethane
DCE	Dichloroethene
FY	Fiscal year
MPCA	Minnesota Pollution Control Agency
NA	Not applicable
PA	Preliminary assessment
PCE	Tetrachloroethene
SI	Site investigation
TCA	Trichloroethane
TCE	Trichloroethene
VC	Vinyl Chloride
VOC	Volatile organic compound

While the *HRS Guidance Manual* does provide guidance on pages 59-62, the HRS was followed in scoring the Site and the EPA was also consistent with the guidance referred to by the Objectors as well as additional guidance not mentioned by the Objectors. Pages 59-62 of the *HRS Guidance Manual* discuss the attribution of an observed release to a site. The section of the *HRS Guidance Manual* cited by the Objectors is not relevant to this Site because original sources are not evaluated in the scoring of this Site, because this Site is a contaminated groundwater plume with no identified source. The *HRS Guidance Manual* states on pages 59 and 61:

> **When other sources are present in the vicinity of the site being evaluated and may have contributed to the significant increase** (e.g., in highly industrialized areas), it generally is necessary to obtain sufficient samples between the site being evaluated and other known potential sources (or between the site and adjacent sites) **in order to demonstrate an increase in concentration attributable to the site**. Additional information may be required if other sites are

known to release substances intermittently, such that "pulses" of hazardous substances are created in environmental media. Types of information that will strengthen such attribution include:

- Data on concentration gradients (e.g., established based on samples from multiple wells or a series of samples between the site and the alternative source);
- Data on flow gradients or other information about the movement of hazardous substances in the environmental medium of concern; or
- Analytical 'fingerprinting' data that establish an association between the site and a unique form of the substance or unique ratios of different substances.

The above general guidelines apply to all HRS pathways and threats. **Additional pathway-specific considerations are presented below**. [emphasis added]

On pages 61-62 where it provided pathway-specific considerations for the groundwater pathway, the *HRS Guidance Manual* states:

Ground Water Pathway

…

…

When evaluating a ground water plume with no identified source, background samples are required, but the release need not be attributed to a specific site. [emphasis added]

Discussion of the HRS requirement for attributing a release at this Site is provided in section 3.16.3, Attribution, of this support document.

Regarding the definition of a plume, as discussed above, for HRS sites when evaluating a *groundwater plume with no identified source for HRS purposes*, the plume is defined by groundwater samples at the Site meeting observed release criteria. This "plume" is a scoring mechanism of the HRS. It simply includes the area where HRS qualifying observed releases to groundwater are established, representing where some of the site contamination has come to be located; it is not the same as the common use of the term "plume" (e.g., a column of material/contamination expanding in dimensions as it moves away from a point source origin). See also section 3.16, Likelihood of Release, for a discussion of the observed release criteria and section 3.17, Validity of Plume Area, of this support document for a discussion of the HRS criteria for delineating the plume area.

Regarding the cross sections presented in Figures 6, 7 and 8 of the ESI, as discussed in section 3.16, Likelihood of Release, of this support document, an observed release at the site has been documented in the Drift, Platteville-Glenwood, St. Peter, and Prairie du Chien-Jordan aquifers and the data used to evaluate the release at this site for HRS and NPL listing purposes is presented in the HRS documentation record at proposal. Further, Figures 6, 7, and 8 of the ESI are hydrogeologic cross sections based on data from well logs for wells in the area (page 14 and Figures 6, 7, and 8 of the ESI included as Reference 7 of the HRS documentation record at proposal). The concentrations of PCE, TCE, cis-DCE, trans-DCE, and vinyl chloride shown for each well and their delineation in the aquifer formations are based on analytical results from 2007-2016 which show continuity of the CVOCs in each of the aquifers. Figures 6, 7, and 8 do depict the St. Peter Pigs Eye member which is discontinuous at the site, and contamination is shown to exist in the Prairie du Chien, below the Pigs Eye Member. As explained on page 14 of the HRS documentation record at proposal, "[g]roundwater flow in the interconnected aquifers is complex … in some aquifers, groundwater flows through fractures, open joints, and solution channels and is believed to be influenced by pumping of multi-aquifer wells." Further, at this stage of the listing, groundwater modeling, 3D or otherwise, to predict migration pathways are not required as part of an HRS evaluation.

Regarding additional investigations to determine definitive sources at a particular facility, additional investigation will be performed as necessary at the RI/FS stage of the Superfund process. See section 3.4, Site Definition/Extent of Site, of this support document.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.15 Aquifer Interconnection and Groundwater Flow

Comment: The Objectors commented that the HRS documentation record at proposal lacks sufficient information to support groundwater migration from a single source in the uppermost aquifer down to the deep Prairie du Chien/Jordan aquifer necessary to show aquifer interconnection. The Objectors stated that the EPA has not properly considered known low permeability units (i.e., aquitards; specifically: St. Peter basal confining unit/Pigs Eye Member[29]) in its migration description of groundwater flow at the Site. The Objectors stated that the St. Peter basal confining unit (Pigs Eye Member) is present at the eastern bedrock valley location, which would dramatically inhibit vertical migration down to the Prairie du Chien aquifer. The Objectors asserted that the EPA relied upon an ESI report to evaluate contaminant migration at the Site and that the ESI report contains natural migration routes of contamination that are unrealistic; the Objectors argued that available evidence indicates that vertical migration through the many multi-aquifer wells in the area is more likely.

Response: The hydrogeological conditions at the Site are appropriately evaluated in the HRS documentation record at proposal, and the aquifers underlying the site were appropriately determined to be one hydrologically interconnected unit for HRS purposes. The HRS documentation record at proposal identified multiple wells within two miles of the center of the groundwater plume that have well logs showing St. Peter and Glenwood layers not to be laterally continuous within 2-miles of the Site to create a boundary for groundwater migration; as such, these layers were not determined to hydrologically separate the aquifers at the site. Additionally, the EPA documented observed releases of contamination in the scored municipal wells (E7 and SLP4) at the Site, which are both located within 2-miles of the center of the groundwater plume[30], and thus documented that contamination has migrated through the aquifer layers beneath the Site to the scored target wells in the Prairie du Chien aquifer. Therefore, the HRS documentation record at proposal contained appropriate information to document aquifer interconnection in the aquifer layers underlying the Site and appropriately considered them as one hydrological unit for HRS purposes.

The HRS provides the general considerations to include when evaluating the ground water migration pathway. HRS Section 3.0.1.1, *Ground water target distance limit*, first directs that a target distance limit (TDL) be defined. It states:

> The target distance limit defines the maximum distance from the sources at the site over which targets are evaluated. Use a target distance limit of 4 miles for the ground water migration pathway, except when aquifer discontinuities apply (see section 3.0.1.2.2). Furthermore, consider any well with an observed release from a source at the site (see section 3.1.1) to lie within the target distance limit of the site, regardless of the well's distance from the sources at the site.
>
> For sites that consist solely of a contaminated ground water plume with no identified source, begin measuring the 4-mile target distance limit at the center of the area of observed ground water contamination.

[29] The EPA notes that the Objectors refer to the lower hydraulic conductivity portion of the St. Peter Formation as the "Pigs Eye Member," while the HRS documentation record refers to this same layer as the "basal confining unit" in the St. Peter Formation.

[30] See HRS documentation record Reference 3 for the location of wells E7 and SLP4 and their proximity to the center of the groundwater plume at the Site.

HRS Section 3.0.1.2, *Aquifer boundaries*, directs to "[c]ombine multiple aquifers into a single hydrologic unit for scoring purposes if aquifer interconnections can be established for these aquifers. In contrast, restrict aquifer boundaries if aquifer discontinuities can be established."

HRS Section 3.0.1.2.1, *Aquifer interconnections*, directs how aquifers should be evaluated for interconnections. It states:

> Evaluate whether aquifer interconnections occur within 2 miles of the sources at the site. If they occur within this 2-mile distance, combine the aquifers having interconnections in scoring the site. In addition, if observed ground water contamination attributable to the sources at the site extends beyond 2 miles from the sources, use any locations within the limits of this observed ground water contamination in evaluating aquifer interconnections. If data are not adequate to establish aquifer interconnections, evaluate the aquifers as separate aquifers.

HRS Section 3.0.1.2.2, *Aquifer discontinuities*, directs how to evaluate potential discontinuities at the site being evaluated. It states:

> Evaluate whether aquifer discontinuities occur within the 4-mile target distance limit. An aquifer discontinuity occurs for scoring purposes only when a geologic, topographic, or other structure or feature entirely transects an aquifer within the 4-mile target distance limit, thereby creating a continuous boundary to ground water flow within this limit. If two or more aquifers can be combined into a single hydrologic unit for scoring purposes, an aquifer discontinuity occurs only when the structure or feature entirely transects the boundaries of this single hydrologic unit.

In addition to these directions, Section L, *Ground Water Migration Pathway*, of the preamble to the 1990 HRS in the Federal Register[31] (55 FR 51551-51554) provides the following examples of information that can be used to identify aquifer interconnections for the purposes of scoring a site; page 51553 states:

> In practice, EPA has found that studies in the field to determine whether aquifers are interconnected in the vicinity of a site will generally require resources more consistent with remedial investigations than SIs, especially where installation of deep wells is necessary to conduct aquifer testing. Thus, EPA has in the past relied largely on existing information to make such determinations and the Agency finds it necessary to continue that approach. Examples of the types of information useful in identifying aquifer interconnections were given in the proposed rule. This information includes literature or well logs indicating that no lower relative hydraulic conductivity layer or confining layer separates the aquifers being assessed (e.g., presence of a layer with a hydraulic conductivity lower by two or more orders of magnitude); literature or well logs indicating that a lower relative hydraulic conductivity layer or confining layer separating the aquifers is not continuous through the two-mile radius (i.e., hydrogeologic interconnections between the aquifers are identified); evidence that withdrawals of water from one aquifer (e.g., pumping tests, aquifer tests, well tests) affect water levels in another aquifer; **and observed migration of any constituents from one aquifer to another within two miles. For this last type of information, the mechanism of vertical migration does not have to be defined, and the constituents do not have to be attributable to the site being evaluated.** Other mechanisms that can cause interconnection (e.g., boreholes, mining activities, faults, etc.) will also be considered. [emphasis added]

As general illustration of the typical layers encountered in the vicinity of the site from shallowest to deepest, the following table provides a tabulated summary of information provided in the HRS documentation record at proposal:

[31] 55 FR 51553. Accessed at https://semspub.epa.gov/src/document/HQ/174028.pdf

Stratigraphic Unit/Formation (starting at surface then moving down)	Subunits or Members	Approximate Thickness (feet)	Approximate Total Thickness (feet)	Alternative Names Used in the HRS Documentation Record or Supporting Documentation	Contains Confining Units/ Lenses?	Confining Units/Lenses Continuously Present within 2-miles?
Quaternary Drift	Upper‡	87 max‡	125 max‡	N/A	Yes	No
	Middle‡	82 max‡		N/A	Yes	No
	Lower‡	70 max‡		N/A	Yes	No
Platteville	N/A	0-35	N/A	Platteville-Glenwood aquifer	No	N/A
Glenwood	N/A	0-24	N/A		Yes	No
St. Peter	Tonti†	89-162	154-167	St. Peter Tonti†	No	N/A
	Basal confining unit	5-65		St. Peter Pigs Eye†	Yes	No
Prairie du Chien-Jordan	Prairie du Chien	170 max‡	N/A	Prairie du Chien aquifer	No	N/A
	Jordan	130 max‡	N/A		No	N/A

Note: Information in this table is summarized from the pages 26 and 27 of the HRS documentation record at proposal. Where noted, additional reference citations are provided.
N/A = Not Applicable
† Information is summarized from Reference 7 pages 56-58 of the HRS documentation record at proposal.
‡ Information is summarized from Reference 27 pages 7-9 of the HRS documentation record at proposal. EPA notes that the thickness provided represents the maximum thickness for the aquifer or subunit.

Pages 25-32 of the HRS documentation record at proposal describe the regional and local geological conditions and aquifer descriptions at the Site. This description includes specific evaluations of possible HRS discontinuities and the rationale for considering the underlying aquifer layers as one hydrological unit for HRS purposes. Pages 25 of the HRS documentation record at proposal provides the regional geological information on each of the aquifer layers at the site. It states:

> **Regional Geology**
>
> The Site is located in St. Louis Park and Edina, Hennepin County, Minnesota, which is situated about 3 miles west of Minneapolis (Ref. 3) (see Figure 1 of this HRS documentation record). The elevation of the Site, as determined by the City of St. Louis Park municipal well SLP4, is 900 feet above mean sea level (amsl) (Ref. 28, pp. 24, 25). The elevation of municipal well SLP4 is used throughout the geology section in relation to depths at which aquifers are encountered.
>
> Hennepin County is underlain in descending stratigraphic order by all or some of the following units: the Des Moines Lobe glacial outwash, Platteville Formation, Glenwood Formation, St. Peter Sandstone, Prairie Du Chien Group, Jordan Sandstone, St. Lawrence Formation, Franconia Formation, Ironton and Galesville Sandstones, Eau Clair Formation, and Mt. Simon Sandstone (Refs. 21; 22).
>
> The Des Moines Lobe glacial outwash consists of sand, loamy sand, and gravel that is overlain by less than four feet of loess (Ref. 21). The outwash ranges from 51 to 100 feet thick in the St. Louis Park area (Ref. 23).
>
> Underlying the glacial outwash is the Platteville and Glenwood Formations, together they can be up to 34 feet thick; however, their thickness is generally less due to erosion of the upper part of the Platteville Formation where it is the uppermost bedrock unit (Ref. 24). The Platteville

Formation is composed of yellowish-gray to light brown-gray, thick- to medium-bedded dolostone overlying yellowish-gray to light gray, thin-bedded limestone and is as much as 30 feet thick where uneroded. A thin bed of sandy, phosphatic dolostone lies at the bottom of the formation. The Glenwood Formation is grayish-green to brownish-gray, calcareous, sandy, phosphatic shale that is usually 3 to 5 feet thick (Ref. 24).

Underlying the Platteville and Glenwood Formations is the St. Peter Sandstone, which varies in thickness from 145 to 155 feet (Ref. 24). The upper part is characterized by thick beds of white to light gray, medium- to fine-grained quartzose sandstone. The basal part is light to medium gray, fine- to coarse-grained, and poorly sorted quartzose sandstone with interbedded shale and feldspathic siltstone of varied colors (Ref. 24). The basal St. Peter Sandstone is absent in some areas due to erosion and the Quaternary Drift is in direct contact with the Prairie du Chien Group (Refs. 54, pp. 12, 13; 80, p. 5).

The Prairie du Chien Group consists of grayish-orange to yellowish-gray, dolostone, sandy dolostone, and sandstone in the upper portion (referred to as the Shakopee Formation) and yellowish-gray to pale brown dolostone in the basal portion (referred to as the Oneota Formation). The Group is generally 125 to 140 feet thick where covered by St. Peter Sandstone (Ref. 24).

Pages 26 and 27 of the HRS documentation record at proposal discuss the regional aquifer attributes. It states:

Regional Aquifer Description

The following aquifers underlie all or portions of the St. Louis Park area: Quaternary Drift aquifer, Platteville aquifer, St. Peter aquifer, Prairie du Chien-Jordan aquifer, Tunnel City-Wonewoc bedrock aquifer, and the Mt. Simon-Hinckley bedrock aquifer (Refs. 25; 26; 27, pp. 3, 7 through 21). **It should be noted that the Quaternary Drift aquifer, Platteville aquifer, Glenwood confining unit, and the St. Peter Formation basal confining unit are not continuous at and within a 2-mile radius of the Site, as detailed below** (Refs. 17, pp. 1, 2; 18; 27, pp. 1, 8, 11, 12, 13, 14; 34, pp. 1 through 4; 54, pp. 12, 13). [emphasis added]

…

The Quaternary Drift aquifer is one aquifer consisting of geologic materials, such as till, outwash and valley train sand and gravel, lake deposits, and alluvium. The vertical and horizontal distribution of units is complex (Ref. 27, p. 7). In portions of St. Louis Park, the Quaternary Drift aquifer is stratified. **While local stratified areas contain thicker strata of clay, till, and sandy till that are local barriers to groundwater migration, these areas are not continuous and there is evidence of contaminant migration throughout this aquifer** (Ref. 27, pp. 7, 10 through 21) (see Table 5 in this HRS documentation record). Quaternary Drift aquifer is comprised of an upper, middle, and lower portions; however, these layers are **considered to be a combined aquifer because the confining beds between them are not continuous at or near the Site** (Ref. 27, p. 12). Well logs of municipal wells SLP4 and E2 show that the Quaternary Drift geologic materials are discontinuous. Municipal well E2 contains Quaternary Drift from 878 to 816 feet above msl (0 to 62 feet bgs). However, municipal well SLP4 is underlain by fill, sand, and gravel from 900 to 824 feet above msl (0 to 76 feet bgs) and only a thin layer of Quaternary Drift is present from 824 to 808 feet msl (16 feet) at this location (Ref. 28, pp. 2, 3, 25, 27). Municipal well SLP4 is evaluated as an observed release well in this HRS documentation record and municipal well E2 is used to establish background levels in this HRS documentation record (see Tables 7 through 14 of this HRS documentation record). [emphasis added]

The Platteville aquifer underlies the Quaternary Drift aquifer in portions of St. Louis Park and Edina. The Platteville Formation locally yields small to moderate supplies of water to wells and is classified as an aquifer in historical geology references (Ref. 27, p. 17). The Platteville aquifer is a gray to buff, thin-to-medium bedded dolomitic limestone and dolomite, with some shale parting. Groundwater flow in the Platteville aquifer primarily is through fractures, open joints, and solution channels (Ref. 27, p. 17). Where present, the Platteville aquifer is as much as 35 feet thick (Ref. 28, pp. 2, 20, 24, 35, 42, 61, 65, 67, 71, 77, 83, 91).

Underlying the Platteville aquifer is the Glenwood confining unit. The unit consists of a green to buff, plastic to slightly fissile shale and claystone, was dissected by erosion, **and is discontinuous throughout portions of St. Louis Park and Edina** (Refs. 27, pp. 11, 17; 28, pp. 2, 20, 24, 35, 37, 42, 44, 61, 68, 72, 78, 92). Where present, the Glenwood confining unit, is as much as 24 feet thick (Ref. 28, p. 67). [emphasis added]

The Platteville aquifer and Glenwood confining unit are not continuous at and within a 2-mile radius of the Site (Refs. 3; 27, pp. 11, 12, 13; 28, pp. 37, 44). The Platteville aquifer is absent at monitoring wells W48, W129, W133, W122, and W401 (Refs. 28, pp. 174 to 181, 200, 201; 79, pp. 3, 4) (see Figure 3 of this HRS documentation record). Monitoring wells W129 and W133 (evaluated as an observed release well) are located within the groundwater plume and monitoring wells W122 and W401 (both evaluated as background wells) are located about 1,000 feet from the groundwater plume (Ref. 79, pp. 3, 4) (see Tables 7 and 9 and Figure 3 of this HRS documentation record). The Platteville and Glenwood Formations behave as a single aquifer when saturated and the composite aquifer is referred to as the Platteville-Glenwood aquifer (Ref. 7, p. 13). Most of the leakage from the Quaternary Drift and Platteville aquifer to the underlying St. Peter aquifer occurs through areas where the Glenwood confining unit is absent or discontinuous (Ref. 27, p. 1). [emphasis added]

The St. Peter aquifer underlies the Glenwood confining unit and is a white to yellow fine-to-medium-grained, well-sorted, friable sandstone (Ref. 27, p. 8). In the St. Louis Park and Edina areas, the St. Peter aquifer ranges from 154 to 167 feet in thickness (Ref. 28, pp. 2, 3, 9, 20, 21, 24, 25, 42, 68). **A basal confining unit is present in the lower 5 to 65 feet of the St. Peter Formation and consists of siltstone and shale. The basal confining unit is present in most of the southern two thirds of Hennepin County, but it is locally absent due to erosion** (Ref. 27, p. 8). The St. Peter basal confining unit is present in observed release municipal well SLP4 and monitoring well W119R (Ref. 28, pp. 25, 27, 172, 173). However, it is absent in well HS-1 located near Lake Bde Maka Ska (formerly Lake Calhoun) about 1.55 miles east of municipal well SLP4 (Refs. 18; 34, pp. 1 through 4; 80, pp. 5, 6). **Therefore, the St. Peter basal confining unit is not continuous within a 2-mile radius of the groundwater plume** (Refs. 3; 17, pp. 1, 2; 18; 28, pp. 25, 27, 172, 173, 192; 34, pp. 1 through 4; 80, pp. 5, 6) (See Tables 7 and 9 and Figure 3 of this HRS Documentation Record). [emphasis added]

The Prairie Du Chien-Jordan aquifer consists of the Prairie du Chien Group and the Jordan Sandstone. The aquifer is primarily composed of dolomite and contains fractures, joints, and solution cavities that control the flow of water through it (Refs. 25; 57, p. 8). The Jordan Sandstone portion of the aquifer consists of fairly uniform quartzose sandstone and is highly permeable. Flow through it is primarily intergranular. The Prairie du Chien Group and the Jordan Sandstone function as a single aquifer because no regional confining bed separates them (Ref. 25). Groundwater flow in the Prairie du Chien-Jordan aquifer is to the southeast (Ref. 25). Because groundwater flows in the Prairie du Chien-Jordan through fractures, joints, solution enlarged openings/cavities, and conduits, the aquifer can be considered karst (Refs. 17; 25). The flow pattern may be altered by localized pumping, particularly during the summer months when there is heavy demand (Ref. 25). [emphasis added]

Pages 27 to 30 of the HRS documentation record at proposal contain a table summary of stratigraphy for several wells at the Site documenting the site specific geological data in the area of the groundwater plume. These wells, while they do not completely represent the local geological conditions underlying the Site, provide sufficient site specific information of the lateral extent and variability in the geological layers underlying the site for an HRS evaluation.

Following this site specific table of the geological stratigraphy the HRS documentation record at proposal discusses potential aquifer discontinuities. Page 30 of the HRS documentation record at proposal states:

> **Aquifer Discontinuity**
>
> Aquifer boundaries that completely transect the interconnected Quaternary Drift, Platteville-Glenwood, St. Peter, and Prairie du Chien-Jordan aquifers within 4 miles of the Site have not been identified (Ref. 27, pp. 11 to 16, 18, 19, 20). Confining units in the upper, middle, and lower portions of the Quaternary Drift aquifer and some areas of the Glenwood Formation and St. Peter basal confining unit are thin or absent (Refs. 3; 17, pp. 1, 2; 18; 27, pp. 1, 8, 12, 13, 14; 34, pp. 1 through 4; 80, pp. 5, 6**). However, these are not aquifer discontinuities for HRS scoring purposes as they do not create a continuous boundary to groundwater flow within 4 miles of the site.** In such areas, the Quaternary Drift is directly on top of the Prairie du Chien-Jordan aquifer and contaminants migrating within the shallow Quaternary Drift may enter directly into the Prairie du Chien-Jordan aquifer (Refs. 1, Section 3.0.1.2.2; 54, pp. 12, 13; 18; 34, pp. 1 through 4; 80, pp. 5, 6). [emphasis added]

Pages 30 to 32 of the HRS documentation record at proposal then discusses and presents data on the aquifer interconnections at the Site. It states:

> **Aquifer Interconnection**
>
> The Quaternary Drift and Platteville-Glenwood aquifers and associated confining units, as well as the St. Peter basal confining unit, are not continuous within 2 miles of the groundwater plume (Refs. 3; 17, pp. 1, 2; 27, pp. 1, 8, 12, 13, 14; 18; 34, pp. 1 through 4; 54, pp. 12, 13; 80, p. 6). Specific locations where these units are not encountered in well logs at and within a 2-mile radius of the groundwater plume are detailed below. The well logs are presented in Reference 28 and the locations of the wells are provided in Reference 79, pp. 3, 4, 5, 6 and Figure 3 of this HRS documentation record.
>
> <u>Quaternary Drift</u>
> - Present throughout the entire study area (Refs. 7, pp. 12, 13; 21; 28)
> - Specific examples include well logs for wells E2, E13, E15, SLP4, SLP5, SLP6, W143, W48 (Ref. 2, 22, 25, 26, 29, 37, 44, 65, 112, 200, 201).
>
> <u>Platteville Formation and Glenwood Confining Unit</u>
> - Present at observed release municipal well E7 (Ref. 28, pp. 9, 10, 12)
> - Absent at observed release monitoring well W133 (Ref. 28, pp. 178, 179)
> - Absent in monitoring wells W122 and W401 (both of which are evaluated as background wells) (Ref. 28, pp. 174, 175, 180, 181)
> - Absent at monitoring well W129 (within the Site boundary) (Ref. 28, p. 176, 177)
>
> <u>St. Peter Formation Basal Confining Unit</u>
> - Present in observed release municipal well SLP4 and monitoring well W119R (Ref. 28, pp. 25, 27, 173)
> - Absent in well HS-1 about 1.55 miles east of municipal well SLP4 near Lake Bde Maka Ska (Lake Calhoun) (Refs. 18; 34, pp. 1 through 4).

In addition to discontinuity in aquifers and confining units; horizontal communication across Prairie du Chien-Jordan aquifer has been documented. In 2014, a groundwater production test was completed by MDH to correlate groundwater elevations in between the newly installed Meadowbrook Golf Course well (W119R also known as Meadowbrook 2), Meadowbrook 1 (W119), and the Methodist Hospital well (W48) (Refs. 7, pp. 19, 63, 3372 to 3376; 17, pp. 1, 2). All three wells are installed in the Prairie du Chien-Jordan aquifer (Refs. 7, p. 19; 28, p. 171, 172, 173; 78, pp. 15, 27). The test indicated (1) well construction techniques and geological character of aquifer materials cause a large effective radius for the pumped well; (2) the connection between the pumped well and observation well was essentially identical, even though the distance between the two wells was 133 feet; (3) open conduits and/or bedding-plane fractures within the Prairie du Chien-Jordan aquifer (dolostone-sandstone aquifer) transmit pumping stresses very quickly over a wide area; and (4) other pumping wells influence water levels (Refs. 7, p. 3376; 17, pp. 1, 2).

In January 2017, MDH conducted an aquifer pump test on Edina municipal well E6 to evaluate the effect pumping had on water levels in monitoring well W403 in St. Louis Park (Ref. 7, pp. 66, 3400 to 3404). Both wells are installed in the Prairie du Chien-Jordan aquifer (Ref. 7, p. 3406; 28, p. 67). The effect of pumping Edina municipal well E6 and the related drawdown effects on W403 and other Edina municipal wells indicates hydraulic communication in the Prairie du Chien-Jordan aquifer between St. Louis Park and Edina (Ref. 7, pp. 19, 66 to 70). The hydraulic response of W403 is related to the pumping of Edina wells E6 and E2. However, the daily water level variation observed in well W403 cannot be attributed to only one well, but instead results from the additive effects of many high-capacity wells (Ref. 7, pp. 19, 4039).

Groundwater contamination has also been shown in monitoring wells that withdraw water from the Quaternary Drift, Platteville-Glenwood, St. Peter, and Prairie du Chien-Jordan aquifers as documented in Section 3.1.1 Observed Release (see Tables 10, 14, 16, and 18 of this HRS documentation record). Groundwater flow in the interconnected aquifers is complex, generally flows east-southeast; recharge occurs through downward leakage from overlying aquifers and in areas where confining units are thin or absent due to erosion; and in some aquifers, groundwater flows through fractures, open joints, and solution channels **and is believed to be influenced by pumping of multi-aquifer wells** (Refs. 25; 27, pp. 5, 8, 9, 17; 80, pp. 5, 8; 65, p. 11). [emphasis added]

Groundwater contamination has been shown in St. Louis Park municipal wells SLP4 and SLP6, as well as Edina municipal well E7 (see Tables 10, 14, 16, and 18 of this HRS documentation record). St. Louis Park municipal wells SLP4 and SLP6 and Edina municipal well E7 withdraw water from the Prairie du Chien-Jordan aquifer. Each of these wells is cased from the top of the well and is completed as an open hole within the Prairie du Chien-Jordan Sandstone aquifer (Refs. 28, pp. 9, 10, 11, 24, 25, 42 to 46; 30, pp. 1, 2).

The St. Louis Park and Edina municipal wells have been shown to be hydraulically connected. While partial discontinuities exist at and within a 2-mile radius of the groundwater plume as presented above, well logs (for wells E2, E4, E7, E15, W119R, W122, W129, W133, W401, W440, and SLP4) show the absence of some or all of the units including the Quaternary aquifer, Platteville aquifer, Glenwood Formation, and St. Peter basal confining unit at and within a 2-mile radius of the groundwater plume (Refs. 3; 17, pp. 1, 2; 27, pp. 1, 8, 12, 13, 14; 28, pp. 2, 9, 10, 12, 24, 106, 173 to 181, 192; 54, pp. 12, 13). Additionally, groundwater contamination has been shown in St. Louis Park and Edina municipal wells, as well as monitoring wells that withdraw water from Quaternary Drift, Platteville-Glenwood, St. Peter, and the Prairie du Chien-Jordan aquifers. Based on this information, the Quaternary Drift, Platteville-Glenwood, St. Peter, and the Prairie du Chien-Jordan aquifers are considered interconnected for HRS scoring purposes, and a

> strong hydraulic connection exists between St. Louis Park and Edina municipal wells (Refs. 7, pp. 19, 66 to 70, 3372 to 3376, 3400 to 3404, 4039; 27, pp, 11, 12, 13, 14; 54, pp. 12, 13) (also see Tables 10, 14, 16, and 18 in Section 3.1.1, Observed Release, of this HRS documentation record).

As described in the HRS documentation record at proposal, aquifers underlying the site were appropriately determined to be one hydrologically interconnected unit for HRS purposes.

First, as discussed in sections 3.13, Source Identification, and 3.14, Characterization of a Plume with No Identifiable Source, of this support document, the EPA appropriately evaluated the Site as a groundwater plume with no identified source of contamination. As such, the TDL for the Site was established consistently with the HRS as a four-mile radius from the center of the groundwater plume contamination and the associated evaluations of aquifer interconnections and discontinuities utilized these distance limits in their evaluations (See HRS Documentation Record Reference 3 for a map of the TDL).

Second, consistent with the HRS, the EPA evaluated the Site for aquifer interconnections within two miles of the center of the groundwater plume. As quoted above in this response, the HRS documentation record at proposal identified multiple lines of evidence documenting aquifer interconnections at the Site. Initially, in the Regional Aquifer Description section of the HRS documentation record at proposal, the EPA identified each aquifer layer, the layer's known hydrological conditions and, to the best extent possible with site specific well borehole data, the lateral continuity of each layer. Using this site specific borehole information, the EPA determined that all layers associated with being "confining units"[32] are documented to not be continuously present layers within two miles of the center of the groundwater plume (see page 30 of the HRS documentation record at proposal, also quoted above, for specific wells documenting the absence of confining layers). As quoted above, the preamble to the 1990 HRS provides examples of how aquifer interconnections can be documented at a site and states "literature or well logs indicating that a lower relative hydraulic conductivity layer or confining layer separating the aquifers is not continuous through the two-mile radius" can document aquifer interconnections. Thus, consistent with the HRS, the EPA documented that no continuously present confining units are present within two miles of the site and that the aquifer units are considered one hydrological unit.

In addition to this initial documentation that the aquifer layers do not contain a continuous confining unit within two miles of the Site, EPA also identified in the HRS documentation record at proposal that groundwater migration can be influenced by fractures, open joints, solution channels and through multi-aquifer well boreholes like the commenters suggest. Where confining units may be locally present beneath the site, these migration mechanisms allow for contamination to migrate through potential confining units and into deeper aquifers. All of these preferential paths for subsurface flow between the aquifer units provide additional mechanisms for surficial groundwater to migrate across/through the aquifer layers and into the Prairie du Chien aquifer.

Also in addition to the lack of a continuous confining unit, the EPA documented that observed releases of Site related contamination is documented in both scored municipal wells. In the same preamble to the 1990 HRS language quoted above that provides examples of how aquifer interconnections can be documented at a site, it also states "observed migration of any constituents from one aquifer to another within two miles" can document aquifer interconnections. Further, the above quoted preamble additionally states that for observed migration of contamination "the mechanism of vertical migration does not have to be defined, and the constituents do not have to be attributable to the site being evaluated." The EPA notes that both of the scored municipal wells are located within two miles of the center of the groundwater plume and observed contamination in the wells confirms that contamination has migrated through the aquifer layers into the Prairie du Chien aquifer. This documentation of contamination in the municipal wells definitively demonstrates migration of contamination at the Site and that the aquifers are interconnected as one hydrological unit for HRS purposes.

[32] As noted in the HRS documentation record at proposal, these layers include: Quaternary Drift aquifer (i.e., clay lenses within this aquifer), the Platteville and Glenwood Formation aquifers, and the St. Peter basal confining unit (Pigs Eye Member).

Finally, consistent with the HRS, the EPA evaluated the Site for any HRS qualifying aquifer discontinuities. An HRS qualifying aquifer discontinuity occurs when a geologic or other structure entirely transects an aquifer within the 4-mile TDL (or hydrological unit depending on established aquifer interconnections) and creates a continuous boundary to groundwater flow within the limit. As documented and quoted above in this response, the EPA determined that confining layers (in the Quaternary Drift aquifer, the Glenwood Formation, and the St. Peter formation) are thin or absent at many well locations within the TDL for the site. As these units are documented to either not be present at locations in the TDL or are documented to allow contamination to migrate through the units, the EPA appropriately determined that there were no HRS qualifying aquifer discontinuities present at the site. Therefore, the EPA appropriately evaluated the aquifer layers underlying the Site and properly considered the aquifers as one hydrological unit for HRS purposes.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

The following subsections address additional specific comments related to aquifer interconnection and groundwater flow.

- 3.15.1 Plausibility of Natural Groundwater Migration
- 3.15.2 Aquifer Pump Test
- 3.15.3 Impacts of Multi-Aquifer Wells
- 3.15.4 Evaluation of Groundwater Flow

3.15.1 Plausibility of Natural Groundwater Migration

Comment: The Objectors stated that the EPA has not properly considered known low permeability units (e.g., St. Peter basal confining unit/Pigs Eye Member) in its "natural migration" description of groundwater flow at the Site. The Objectors stated that the St. Peter basal confining unit is present at the eastern bedrock valley location, which would dramatically inhibit vertical migration down to the Prairie du Chien aquifer. The Objectors stated that "natural migration" of contamination at the source area to the Prairie du Chien/Jordan aquifer is not hydraulically plausible as, according to a report by the Minnesota Department of Health (MDH), natural vertical seepage would take 55 years to reach the Prairie du Chien/Jordan aquifer. Further, the Objectors stated that "hand-drawn cross-sections of Figures 6 and 7 of the ESI Report[33] fall short" of documenting natural migration from the source area to the Prairie du Chien/Jordan aquifer at the Site. The Objectors asserted that the ESI figures omit the presence of an aquitard (St. Peter basal confining unit/Pigs Eye Member) and that the figures suggest that groundwater must flow upgradient in a "horseshoe fashion" to connect the source area to the contamination found in Reilly Tar Prairie du Chien well W23.

Additionally, the Objectors evaluated contaminant concentrations in the aquifer layers and asserted that if natural migration were to occur at the site, then CVOC concentrations in the St. Peter aquifer would be higher than in the Prairie du Chien aquifer. The Objectors stated that shallow PCE and TCE contamination in groundwater near Lake and Walker Streets appears to remain above a separate low permeability layer of glacial till within the Drift aquifer, but that DCE and VC display increasing concentrations with depth by somehow penetrating the low permeability layer. The Objectors further commented that consideration of Platteville aquifer Well 433 concentrations shows that these concentrations are consistent with concentrations in the deep Drift aquifer above, and consistent with greater Platteville contamination as far as western well W421[34] (the Objectors point to Attachment 4 of their comment document for illustration).

Response: As explained above in the above section 3.15, Aquifer Interconnection and Groundwater Flow, of this support document, the EPA appropriately identified HRS-qualifying interconnections between the aquifer units at the Site. Regarding the Objectors' comments that the natural migration route is unrealistic, that EPA did not properly consider aquitards, or that EPA is not able to justify a connection from a single source area to the Prairie

[33] These figures submitted with Objectors annotated comments as Figures 5 and 6 in their submission.
[34] The Objectors cited Figures 8a-8e of AECOM 2017. *St. Louis Park Investigation – FY17. St. Paul, MN.*

du Chien aquifer, the EPA appropriately considered the aquifer layers for interconnections and discontinuities (including aquitards) and established aquifer interconnections consistent with the HRS. Section 3.13.1, Limited Source Area Identified, of this support document, highlights that the HRS documentation record at proposal was not pointing to a single source near Walker and Lake Streets (and therefore the HRS documentation record at proposal did not claim to document contaminant migration from that particular area as the commenters seem to suggest). As this site is evaluated as a groundwater plume with no identified source and has documented observed releases in scored municipal wells, there are no **additional** requirements in the HRS to interconnect the aquifer layers at this site into one hydrological unit. The HRS states that observed migration of contamination from one aquifer to another is appropriate to document interconnection at a site and that the mechanism of migration need not be defined. Tracking the migration of site contamination back to a single source is not reasonable for this site at this preliminary stage in the superfund process; EPA completed an ESI to attempt to locate the source of contamination, but the potential sources of contamination were too numerous to track or identify for the purposes of listing and thus, consistent with the HRS, evaluated the site as a groundwater plume with no identified source. Therefore, the EPA appropriately considered the hydrogeological data at the site to establish aquifer interconnections and documented that contaminated groundwater has migrated from the surficial quaternary aquifer into the Prairie du Chien aquifer at this Site.

Regarding the Objectors comments that question "natural" migration specifically through the eastern bedrock valley in determining the aquifer interconnections at the Site, the EPA did not rely on a single migration route or single mechanism to document that the aquifer layers are hydrologically interconnected[35]. While the HRS documentation record at proposal does provide geological data that suggests contaminant migration could occur in the eastern bedrock valley where some confining units are thin or absent, the EPA did not rely on this bedrock valley to justify aquifer interconnection from the surface down to the Prairie du Chien aquifer at this site. The HRS evaluation presented in the HRS documentation record at proposal does not identify specific migration paths through the aquifer layers as the commenter suggests, rather as discussed above, the EPA evaluated each aquifer layer and all plausible mechanisms and evidence (natural migration in some aquifers, joints, fractures, solution channels, multi-aquifer wells, and observed contamination migration) to determine that the aquifers are interconnected for HRS purposes. Although the St. Peter formation is present at locations in the eastern bedrock valley, the HRS documentation record at proposal identifies that this formation is not continuous throughout the two mile radius from the groundwater plume and documents evidence of vertical contaminant migration across this layer confirming that the formation does not act as an HRS discontinuity for the Site for HRS purposes.

Regarding the commenters' statements on the concentration of VOC's being higher in the Prairie du Chien aquifer than the St. Peter aquifer in the eastern bedrock valley indicating that natural migration is implausible; again, while the EPA does not solely rely on natural migration in this valley to interconnect the aquifers and agrees that contaminants can migrate through preferential pathways (including multi-aquifer wells), the EPA disagrees that this contaminant concentration implies natural migration is not occurring. Many of the VOC's being scored at this site (e.g., TCE, 1,1-DCE, cis-1.2-DCE, trans-1.2-DCE) and their possible parent substance PCE typically behave as dense non-aqueous phase liquids (DNAPL) that are heavier than water and can result in higher contaminant concentrations at depth. Thus, contrary to the commenters' assertions, it is not surprising that if VOCs are migrating through the aquifer over time the contaminant concentrations increase with depth and over time; this concentration gradient is consistent with DNAPL contaminant migration.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

[35] The EPA does not rely on any single migration route of contamination at the site, but EPA notes that HRS documentation record Reference 65 does provide information on some specific possible routes. One possible path outlined in this reference is included on its page 27. It states: "[n]ear and south of 36th and Wooddale Avenues, contaminants enter the St. Peter aquifer. East of 36th and Wooddale, ground-water flow[s] through multiaquifer wells and into the buried bedrock valley."

3.15.2 Aquifer Pump Test

Comment: The Objectors noted that two bedrock valley locations are identified at the Site where natural groundwater migration might occur to the Prairie du Chien/Jordan aquifer but stated that insufficient and inconclusive pump test data has been included to support this migration route. Additionally, the Objectors commented that, instead of providing evidence of vertical hydraulic interconnection between aquifer layers beneath the Site, the EPA relied on a pump test of wells within one aquifer (the Prairie du Chien aquifer) and horizontal hydraulic conductivities. The Objectors stated that this pump test in the ESI did not involve the overlying aquifers and therefore did not establish hydraulic connection between the different aquifers beneath the Site.

Response: The EPA did not rely on aquifer pump tests for interconnecting the aquifer units at the Site. As noted in section 3.15, Aquifer Interconnection and Groundwater Flow, of this support document, the aquifer units' hydrogeological properties were evaluated for HRS qualifying interconnection features (e.g., hydraulic conductivities, continuity of confining units) and an HRS qualifying observed release of site related contamination was documented to have migrated to the Prairie du Chien aquifer; thus, hydraulic interconnections were appropriately established for HRS purposes between the aquifer units at the Site. The EPA agrees that this pump test referred to by the Objectors is not designed to test the interconnections between aquifer layers at the Site. As described in the HRS documentation record at proposal and quoted above (pages 30-32), this pump test was performed on wells that were all screened in the Prairie du Chien aquifer and was included to show the intra-aquifer hydrological connections (i.e., how contaminants can migrate horizontally within the Prairie du Chien aquifer from one well to another). Therefore, this pump test was not relied upon as evidence to support interconnection between aquifer units at the Site as the Objectors assert.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.15.3 Impacts of Multi-Aquifer Wells

Comment: The Objectors stated that the HRS documentation record at proposal fails to identify, or ignores, well-documented and known groundwater flow pathways through multi-aquifer wells (MAWs) at the Site that aid in spreading contamination to the deep aquifer. The Objectors stated that available evidence indicates the Prairie du Chien/Jordan aquifer was contaminated by multi-aquifer wells, not by "natural migration." The Objectors stated that natural migration ignores the USGS and MDH established conclusions that multi-aquifer wells are responsible for most of the contamination in the Prairie du Chien/Jordan aquifer. The Objectors stated that the USGS has demonstrated the influence of multi-aquifer wells as a conduit for vertical groundwater flow and radial groundwater flow through "mounding" and the HRS documentation record at proposal fails to consider these wells as a likely groundwater migration path at the Site. Further, the Objectors cite a 1980 USGS[36] report, stating the mass of contaminants entering the Prairie du Chien aquifer through "natural migration" appears to be small compared to the mass entering through multi-aquifer wells.

The Objectors stated that there are 101 unsealed multi-aquifer wells at or near the Site, most of them "puncturing" the Glenwood Shale confining unit where it is present. The Objectors stated that these multi-aquifer wells provide pathways for the contamination to migrate to the St. Peter and possibly Prairie du Chien/Jordan aquifers. The Objectors stated that there are still active (and recently abandoned) multi-aquifer wells present at the Site that can pull groundwater from multiple layers in an aquifer system and spread contamination into the Prairie du Chien/Jordan aquifer.

Response: The HRS documentation record at proposal does acknowledge the presence of multi-aquifer wells and that contamination migration can be influenced by their presence. The EPA agrees that groundwater and

[36] The Objectors cited the following document in support of their comment: U. S. Geological Survey. 1980. *Transport of Coal Tar Derivatives in the Prairie du Chien –Jordan Aquifer, St. Louis Park, Minnesota, A Project Proposal to USEPA*, dated December 1980

contamination can migrate between aquifer units via well boreholes that are screened in multiple aquifer units. The EPA did not ignore groundwater flow paths through multi-aquifer wells. The HRS documentation record at proposal on page 31 (quoted above in this section) does acknowledge multi-aquifer wells as an influence on contaminant migration. It states that "recharge occurs through downward leakage from the overlying aquifers … through fractures open joints, and solution channels and is believed to be influenced by pumping of multi-aquifer wells." However, while EPA acknowledges that groundwater, and associated contamination in the groundwater, can flow through multi-aquifer wells from one aquifer to another aquifer and act as another mechanism of hydrological interconnection between the aquifer units, the aquifer layers at the site were also properly considered interconnected for HRS purposes based on the geological data and contaminant migration identified above in this response. Also as noted in section 3.15, Aquifer Interconnection and Groundwater Flow, of this support document, Section L, *Ground Water Migration Pathway*, of the preamble to the 1990 HRS states on page 51553 that "the mechanism of vertical migration does not have to be defined;" thus, as contamination has migrated to the Prairie du Chien aquifer, the multiple aquifer layers are appropriately evaluated as one hydrological unit regardless of the mechanism (joints, fractures, MAWs, natural seepage, etc.). The presence of multi-aquifer wells at this Site only provides additional documentation of hydrological interconnections between the aquifer layers at the Site and does not negate the hydrological interconnection established at this site.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.15.4 Evaluation of Groundwater Flow

Comment: The Objectors stated that the EPA has not offered a groundwater flow model for the alleged migration pathway from the source area and that the EPA has not provided data to show that migration is actually occurring through the St. Peter aquitard. The Objectors state that the ESI Report describes a groundwater flow model for flow in the Prairie du Chien aquifer showing how contamination may be pulled into well E7, but the Objectors criticize that no model has been presented to describe flow from the alleged source in the drift aquifer to the Prairie du Chien aquifer. The Objectors asserted that the ESI figures omit the presence of an aquitard (St. Peter basal confining unit/Pigs Eye Member) and that the figures suggest that groundwater must flow upgradient in a "horseshoe fashion" to connect the source area to the contamination found in Reilly Tar Prairie du Chien well W23.

Response: The HRS documentation record at proposal contained sufficient information to establish an observed release in the scored municipal wells and monitoring wells at the Site and, as shown in HRS language quoted in section 3.15, Aquifer Interconnection and Groundwater Flow, of this support document, the HRS does not contain any specific requirements for establishing the groundwater flow at a site, however, the preamble to the 1990 HRS[37] discusses the consideration of evaluating groundwater flow direction. The preamble to the 1990 HRS explains that accounting for groundwater flow direction is an increased level of complexity that is not required for a screening tool such as the HRS; therefore, determining a more accurate understanding of the groundwater flow at a site is appropriate during a remedial investigation that follows this step in the Superfund process. Thus, sufficient data are not available at this stage in the listing process to accurately assess the groundwater flow directions throughout the TDL or to present a complete groundwater flow model at the site, and such a process is not part of the HRS evaluation.

These comments results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.16 Likelihood of Release

Comment: The Objectors stated that the HRS documentation record at proposal and administrative record fail to establish an observed release consistent with the NCP and guidance. On this subject, they submitted comments on

[37] December 14, 1990, Federal Register Volume 55, Number 241, page 51553

the background levels, wells locations, release concentrations, and attribution of the release. Those comments are discussed below.

Response: The observed release by chemical analysis was established consistent with the HRS.

In establishing an observed release for the ground water migration pathway, HRS Section 3.1.1, *Observed release,* provides:

> Establish an observed release to an aquifer by demonstrating that the site has released a hazardous substance to the aquifer. Base this demonstration on either:
>
> • Direct observation—a material that contains one or more hazardous substances has been deposited into or has been observed entering the aquifer.
>
> • Chemical analysis—**an analysis of ground water samples from the aquifer indicates that the concentration of hazardous substance(s) has increased significantly above the background concentration f**or the site (see section 2.3). Some portion of the significant increase must be attributable to the site to establish the observed release, except: **when the source itself consists of a ground water plume with no identified source, no separate attribution is required**. [emphasis added]

HRS Section 3.1.1 quoted above refers to HRS Section 2.3, *Likelihood of release,* which further directs:

> Establish an observed release either by direct observation of the release of a hazardous substance into the media being evaluated (for example, surface water) **or by chemical analysis** of samples appropriate to the pathway being evaluated (see sections 3, 4, and 6). **The minimum standard to establish an observed release by chemical analysis is analytical evidence of a hazardous substance in the media significantly above the background level.** Further, some portion of the release must be attributable to the site. Use the criteria in Table 2–3 as the standard for determining analytical significance. [emphasis added]

The observed release criteria are explained in HRS Section 2.3, *Likelihood of release*, and HRS Table 2-3. HRS Table 2-3 explains:

TABLE 2-3.—OBSERVED RELEASE CRITERIA FOR CHEMICAL ANALYSIS

Sample Measurement < Sample Quantitation Limit[a] No observed release is established. **Sample Measurement ≥ Sample Quantitation Limit[a]** An observed release is established as follows: • If the background concentration is not detected (or is less than the detection limit), an observed release is established when the sample measurement equals or exceeds the sample quantitation limit.[a] • If the background concentration equals or exceeds the detection limit, an observed release is established when the sample measurement is 3 times or more above the background concentration.
[a]If the sample quantitation limit (SQL) cannot be established, determined [*sic*] if there is an observed release as follows: • If the sample analysis was performed under the EPA Contract Laboratory Program, use the EPA contract-required quantitation limit (CRQL) in place of the SQL.

- If the sample analysis is not performed under the EPA Contract Laboratory Program, use the detection limit (DL) in place of the SQL.

The observed release concentrations in each of the monitoring wells and public supply wells were significantly above their respective background levels and meet the HRS criteria described in HRS Sections 2.3, *Likelihood of release*, and 3.1.1, *Observed release*. Background levels and observed release concentrations characterizing the plume were established in the Drift, Platteville-Glenwood, St. Peter and Prairie du Chien-Jordan aquifers. Drift background wells were compared to release wells in the Drift aquifer. Platteville-Glenwood background wells were compared to release wells in the Platteville-Glenwood aquifer. St. Peter background wells were compared to release wells in the St. Peter aquifer. Prairie du Chien-Jordan background wells were compared to release wells in the Prairie du Chien-Jordan aquifer.

For the 2015 analytical data in Tables 8 and 10 of the HRS documentation record at proposal, the samples were analyzed for VOCs using EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Method 8260B. The samples reporting limits are listed on the analytical data sheets and are equivalent to sample quantitation limits (SQL).

For the 2016 analytical data in Tables 12 and 14 of the HRS documentation record at proposal, the samples were analyzed for VOCs under the EPA CLP in accordance with the CLP Statement of Work (SOW) for Organic Superfund Methods, SOM02.3). The sample adjusted contract-required quantitation limits (CRQL) are equivalent to SQLs.

For the 2018 analytical data in Table 16 of the HRS documentation record at proposal, the samples were analyzed for VOCs using EPA Method 524.2. The reporting limits (RL) are provided on the data sheets and are equivalent to SQLs.

For the 2019 analytical data in Table 18 of the HRS documentation record at proposal, the samples were analyzed for VOCs using EPA Methods 524.2 (June 2019) and 8260B (sample SLP4 in May 2019). The practical quantitation limits (PQL) (May 2019) and RLs (June 2019) are listed on the analytical data sheets and are equivalent to SQLs.

Consistent with HRS Table 2-3, if the background concentration is not detected, a significant increase is established when the release sample measurement equals or exceeds the sample quantitation limit (SQL). If the background concentration equals or exceeds the SQL, a significant increase is established when the release sample measurement is 3 times or more above the background concentration. Background levels and observed release concentrations that are presented in the HRS documentation record at proposal for each of the wells in the Drift, Platteville-Glenwood, St. Peter and Prairie du Chien-Jordan aquifers are presented below.

Table 8 on pages 35-36 of the HRS documentation record at proposal summarizes the **background levels** for **2015** analytical data:

TABLE 8: 2015 Background Well Results

Well No./ Unique Well No.	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Sample Reporting Limit (µg/L)	References
St. Peter Aquifer				
W122	1,1-DCE	1.0 U	1.0	75, pp. 66, 67
	cis-1,2-DCE	1.0 U	1.0	
	trans-1,2-DCE	1.0 U	1.0	
	TCE	0.40 U	0.40	
	Vinyl chloride	0.40 U	0.40	

TABLE 8: 2015 Background Well Results				
Well No./ Unique Well No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Sample Reporting Limit (µg/L)**	**References**
W14	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 0.40 U	1.0 1.0 1.0 0.40 0.40	75, pp. 84, 85
W412	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 0.40 U	1.0 1.0 1.0 0.40 0.40	75, pp. 74, 75
Prairie du Chien – Jordan Aquifer				
W29	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1 U 5.6 1 U 0.77 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 136, 137
W403	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 130, 131
E2	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 2.4 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 188, 189
E4	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 190, 191
E15	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 4.3 1.0 U 0.67 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 186, 187
SLP5	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 178, 179
W401	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 4.4 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.4 1.0	75, pp. 108, 109

TABLE 8: 2015 Background Well Results				
Well No./ Unique Well No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Sample Reporting Limit (µg/L)**	**References**
W440	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.4 1.0	75, pp. 146, 147
W441	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 2.3 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.4 1.0	75, pp. 126, 127

Notes:

DCE	Dichloroethene
E	Edina
No.	Number
µg/L	Microgram per liter
SLP	St. Louis Park
TCE	Trichloroethene
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit (Ref. 75, p. 51).
W	Monitoring well

Table 10 on pages 39-40 of the HRS documentation record at proposal summarizes the **observed release concentrations** for **2015** analytical data:

TABLE 10: 2015 Release Well Results				
Well No./ Unique Well No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Reporting Limit (µg/L)**	**References**
St. Peter Aquifer				
W133	cis-1,2-DCE vinyl chloride	2.3 2.5	1.0 0.40	75, pp. 68, 69
W24	cis-1,2-DCE	2.2	1.0	75, p. 196
W409	trans-1,2-DCE	1.8	1.0	75, p. 58
W410	cis-1,2-DCE trans-1,2-DCE TCE	5.2 3.6 0.51	1.0 1.0 0.40	75, pp. 52, 53
W410D	cis-1,2-DCE trans-1,2-DCE TCE	5.5 3.8 0.63	1.0 1.0 0.40	75, pp. 54, 55
W411	vinyl chloride	2.3	1.0	75, p. 87
W414	1,1-DCE vinyl chloride	1.9 12.8	1.0 0.04	75, pp. 76, 77
W414D	1,1-DCE TCE vinyl chloride	2.3 0.52 14.1	1.0 0.40 0.40	75, pp. 78, 79

TABLE 10: 2015 Release Well Results				
Well No./ Unique Well No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Reporting Limit (µg/L)**	**References**
Prairie du Chien – Jordan Aquifer				
SLP4	cis-1,2-DCE vinyl chloride	17.9 1.8	1.0 1.0	75, pp. 98, 99
SLP6	cis-1,2-DCE trans-1,2-DCE TCE vinyl chloride	66 3.4 5.0 5.6	1.0 1.0 0.40 1.0	75, pp. 106, 107
E7	cis-1,2-DCE trans-1,2-DCE vinyl chloride	31.1 1.4 2.0	1.0 1.0 1.0	75, pp. 192, 193
W23	cis-1,2-DCE trans-1,2-DCE vinyl chloride	57.9 3.0 3.3	1.0 1.0 0.40	75, pp. 64, 65
W48[a]	1,1-DCE cis-1,2-DCE trans-1,2-DCE vinyl chloride	1.2 182 8.7 11.9	1.0 1.0 1.0 0.40	75, pp. 10, 11
W119R	cis-1,2-DCE trans-1,2-DCE vinyl chloride	91.6 4.5 6.7	1.0 1.0 1.0	75, pp. 134, 135

Notes:

[a]	Sample collected during Quarter 1
D	Duplicate sample
DCE	Dichloroethene
E	Edina
No.	Number
µg/L	Microgram per liter
SLP	St. Louis Park
TCE	Trichloroethene
W	Monitoring well

Table 12 on pages 43-44 of the HRS documentation record at proposal summarizes the **background levels** for **2016** analytical data:

TABLE 12: Analytical Results for Background Samples – 2016				
Well No/ CLP Sample No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Sample-Adjusted CRQL (µg/L)**	**References**
Quaternary Drift Samples				
W423/E5QZ0	cis-1,2-DCE trans-1,2-DCE vinyl chloride	0.50 U 0.50 U 0.50 U	0.50 0.50 0.50	6, p. 176; 10, pp. 13, 14
W425/E5QZ2	vinyl chloride	0.50 U	0.50	6, pp. 135, 180; 10, p. 15

TABLE 12: Analytical Results for Background Samples – 2016				
Well No/ CLP Sample No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Sample-Adjusted CRQL (µg/L)**	**References**
Platteville-Glenwood Aquifer				
W27/E5QY8	cis-1,2-DCE trans-1,2-DCE TCE vinyl chloride	0.50 U 0.50 U 0.50 U 0.50 U	0.50 0.50 0.50 0.50	6, p. 172; 10, p. 12
W424/E5QZ1	TCE vinyl chloride	0.50 U 0.50 U	0.50 0.50	6, pp. 135, 178; 10, pp. 14, 15
W426/E5QZ3	cis-1,2-DCE trans-1,2-DCE TCE vinyl chloride	0.50 U 0.50 U 0.50 U 0.50 U	0.50 0.50 0.50 0.50	6, p. 182; 10, p. 16
Prairie du Chien – Jordan Sandstone Aquifer				
E2/E5QX0	cis-1,2-DCE	3.3J (3.3)	5.0	6, pp. 219, 223, 228; 10, p. 24; 31, p. 8
E15/E5QW9	cis-1,2-DCE	2.8	0.50	6, p. 148; 10, pp. 8, 9
SLP5/E5QY0	cis-1,2-DCE	4.2	0.50	6, p. 164; 10, p. 10
W403/E5QY9	cis-1,2-DCE	0.50 U	0.50	6, p. 174; 10, p. 13

Notes:

CLP	Contract Laboratory Program
CRQL	Contract-required quantitation limit
DCE	Dichloroethene
E	Edina
J	The result is qualified as estimated due to detection greater than or equal to the detection limit and below the quantitation limit. The associated numerical value is the approximate concentration of the analyte in the sample. A bias is not associated with this sample concentration, therefore no adjustment is necessary per the EPA fact sheet Using Qualified Data to Document an Observed Release and Observed Contamination (Refs. 6, pp, 219, 223; 31, p. 8).
µg/L	Micrograms per liter
No.	Number
SLP	St. Louis Park
TCE	Trichloroethene
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit (Ref. 6, p. 141).
W	Monitoring well

Table 14 on pages 47-48 of the HRS documentation record at proposal summarizes the **observed release concentrations** for **2016** analytical data:

TABLE 14: Analytical Results for Release Samples – 2016				
Well No./ CLP Sample No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Sample-Adjusted CRQL* (µg/L)**	**References**
Quaternary Drift Aquifer				
P307/E5QX6	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	5,000 120 460	200 5.0 200	6, p. 232; 10, p. 26

TABLE 14: Analytical Results for Release Samples – 2016				
Well No./ CLP Sample No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Sample-Adjusted CRQL* (µg/L)**	**References**
P309/E5QX7	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	990 43 390	50 5.0 50	6, p. 234; 10, p. 27
P310/E5QX8	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	2,300 36 91	130 10.0 10.0	6, p. 236; 10, p. 28
Platteville-Glenwood Aquifer				
W120/E5QY5	cis-1,2-DCE trans-1,2-DCE	33 11	5.0 5.0	6, p. 238; 10, p. 29
W143/E5QY7	cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	6,500 320 8.5 760	200 200 5.0 200	6, p. 244; 10, pp. 29, 30
W433/E5QZ4	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	640 45 320	50 10.0 10.0	6, p. 246; 10, p. 30
W434/E5QZ5	cis-1,2-DCE Vinyl chloride	320 59	25 5.0	6, p. 248; 10, p. 31
W437/E5QZ6	cis-1,2-DCE Trans-1,2-DCE Vinyl chloride	3,100 48 450	400 25.0 25.0	6, p. 250; 10, p. 32
W438/E5QZ7	cis-1,2-DCE Vinyl chloride	370 59	25.0 10.0	6, p. 252; 10, p. 33
Prairie du Chien – Jordan Aquifer				
E7/E5QX1	cis-1,2-DCE	26	5.0	6, p. 230; 10, p. 25
SLP4/E5QX9	cis-1,2-DCE	37	2.0	6, p. 162; 10, p. 9

Notes:

*	The sample-adjusted CRQLs are adjusted for dilution and are provided in Reference 10.
CLP	Contract Laboratory Program
CRQL	Contract-required quantitation limit
DCE	Dichloroethene
E	Edina
No.	Number
µg/L	Micrograms per liter
P	Piezometer
SLP	St. Louis Park
TCE	Trichloroethene
W	Monitoring well

Table 16 on page 50 of the HRS documentation record at proposal summarizes the **background levels** and the **observed release concentrations** for **2018** analytical data for the Edina public water supply wells that withdraw from the **Prairie du Chien-Jordan** aquifer:

TABLE 16: MDH Results for Samples from City of Edina Wells				
Well No./ Sample No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Reporting Limit (µg/L)**	**References**
Background Samples				
E2/18C0571-01	cis-1,2-DCE	3.2	0.20	84, pp. 6, 7
E2/18C0571-01	Vinyl chloride	0.42	0.20	84, pp. 6, 7
E4/18C0571-02	cis-1,2-DCE	0.25	0.20	84, p. 10
E4/18C0571-02	Vinyl chloride	0.20U	0.20	84, p. 10
E15/18F1381-01	cis-1,2-DCE	12	0.20	84, p. 22
E15/18F1381-01	Vinyl chloride	1.2	0.20	84, p. 23
Release Sample				
E7/18C0571-03	cis-1,2-DCE	47	0.20	84, p. 13
E7/18C0571-03	Vinyl chloride	5.2	0.20	84, p. 13

Notes:

U The analyte was analyzed for, but was not detected above the reported sample quantitation (Ref. 84, p. 4)
DCE Dichloroethene
E Edina
No. Number
µg/L Micrograms per liter

Table 18 on page 52 of the HRS documentation record at proposal summarizes the **background levels** and the **observed release concentrations** for **2019** analytical data for the St. Louis Park public water supply wells that withdraw from the **Prairie du Chien-Jordan aquifer**:

TABLE 18: St. Louis Park 2019 Results				
Well No./ Sample No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**PQL/RL[1] (µg/L)**	**References**
Background Samples				
SLP5/10475840001	TCE	0.40 U	0.40	86, p. 11
SLP5/10475840001	Vinyl chloride	0.35	0.20	86, p. 11
SLP10/10475840005	TCE	0.40 U	0.40	86, p. 23
SLP10/10475840005	Vinyl chloride	0.20 U	0.20	86, p. 23
SLP10D/10475840006	TCE	0.40 U	0.40	86, p. 26
SLP10D/10475840006	Vinyl chloride	0.20 U	0.20	86, p. 26
Release Sample				
SLP4/10475840002	TCE	0.56	0.40	86, p. 14
SLP4/10475840002	Vinyl chloride	1.5	0.20	86, p. 14
SLP4/10478002001	TCE	0.44	0.40	73, p. 6
SLP4/10478002001	Vinyl chloride	2.2	0.20	73, p. 6

Notes

[1] The limit for May 2019 data is the practical quantitation limit (PQL); the limit for June 2019 data is the reporting limit (RL) (Refs. 72, p. 13; 86, p. 42).
D Duplicate sample
µg/L Micrograms per liter
No. Number
PQL Practical quantitation limit

RL	Reporting limit
SLP	St. Louis Park
TCE	Trichloroethene
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit, the PQL for May 2019 data) (Ref. 86, p. 4)

Further, historical analytical results indicate that CVOCs including 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, TCE, and vinyl chloride have been documented in City of Edina wells since 1993 and in City of St. Louis Park wells since 1994. Beginning in 2003, samples collected by MDH from Edina well E7 showed detections of vinyl chloride above the EPA Maximum Contaminant Level (MCL). Water treatment systems have been installed to reduce contaminants in drinking water (pages 14 and 53 of the HRS documentation record at proposal). As documented in the HRS documentation record at proposal, untreated water in Edina well E7 (in 2018) and St. Louis Park well SLP4 (in 2019) are above the vinyl chloride MCL (page 53 of the HRS documentation record at proposal).

In addition to the above explanations, the following subsections address specific comments related to establishing background levels, well locations, well concentrations, observed release criteria and attribution:

- 3.16.1 Background
  - 3.16.1.1 Establishing Background Levels
  - 3.16.1.2 Well W122 Location and Concentration
  - 3.16.1.3 Well W412 Location and Concentration
  - 3.16.1.4 Well W29 Location
- 3.16.2 Observed Release by Chemical Analysis
  - 3.16.2.1 Observed Release Criteria
  - 3.16.2.2 Well W414 Location and Concentration
- 3.16.3 Attribution

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.16.1 Background

3.16.1.1 Establishing Background Levels

Comment: The Objectors contended that the EPA has inappropriately selected background levels and this invalidates the observed release.

The Objectors stated that background locations must be outside the area of influence of the release in order to establish valid background data for comparison to release data. They asserted that, for groundwater, this generally involves using background samples collected upgradient of release locations. The Objectors stated that the EPA's use of Platteville wells W27, W424 and W426 as background wells is "arbitrary and neither justified nor justifiable in the record" because they are not upgradient of release wells.

The Objectors further stated that "[u]nless the hazardous substance is naturally occurring, ubiquitous, or from another source, the 'background' concentration must be zero or less than the EPA contract required quantitation limit (CRQL)." The Objectors cited Highlight 7-26 of the *HRS Guidance Manual* to support their claim. According to the Objectors, because "CVOCs are not naturally occurring, the CRQL of 0.5 micrograms per liter (µg/L) is the criterion for background." The Objectors argued that this criterion was applied for other recent NPL sites.[38] The Objectors contended that, at this Site, the EPA "ignored significant CVOC concentrations in

[38] The Objectors cited the following NPL sites in their reference list in support of this comment: Kokomo Contaminated Ground Water Plume (2014); Spring Park Municipal Well Field (2018); Donnelsville Contaminated Aquifer (2018); Franklin Street Groundwater Contamination (2018). The HRS documentation records for these sites are available at

groundwater outside the defined 'release' area(s) that are associated with sources other than the one identified in the listing," and, the EPA incorrectly chose to use detectable levels above the CRQL of CVOCs in determining background levels.

The Objectors also commented that the HRS documentation record at proposal identifies background wells W29, E2, E15, SLP5, and W401 in the Prairie du Chien/Jordan aquifer but that all of these wells have documented histories of CVOC detections.[39] Again, the Objectors asserted that these well locations cannot be appropriately used as background wells "unless the EPA is asserting either that CVOC contamination is ubiquitous or that other sources of CVOCs exist outside of the release area." The Objectors also cited Highlight 7-26 of the *HRS Guidance Manual* to support their claim. The Objectors made a similar comment regarding Edina well E13 data in Table 2 of the ESI, stating that "[o]nly one sampling event from 2004 is included for E13 (background well in the HRS Scoring Document) in this table. Subsequent events have shown higher CVOC concentrations, particularly for [cis-1,2-DCE] (up to 5.4 ug/L in 2008) [citing Table 4 of the Preliminary Assessment report]."

Response: The background levels identified in the HRS documentation record at proposal are sufficient to identify an observed release in the aquifers for HRS purposes. The background samples used to establish background levels are sufficiently similar in well characteristics and from similar relative portions in various formations of the aquifer and around the plume to document that the significant increase in contamination was due to a release from the Site and not differences in sample characteristics. For HRS evaluation purposes, the background sample locations are only used as a reference point to establish that a significant increase in contaminant levels in the release samples has occurred. Consideration of detected levels of hazardous substances in a background well sample when selecting background levels is consistent with the HRS and the EPA's *HRS Guidance Manual* (EPA/540-R-92-026, November 1992).

The HRS does not identify requirements or define conditions for establishing background levels. The HRS addresses background only in the context of identifying an observed release of a hazardous substance to the environment by chemical analysis.

HRS Section 3.1.1, *Observed release*, explains how to establish an observed release to an aquifer:

> Establish an observed release to an aquifer by demonstrating that the site has released a hazardous substance to the aquifer. Base this demonstration on either:
>
> - Direct observation-a material that contains one or more hazardous substances has been deposited into or has been observed entering the aquifer.
> - Chemical analysis-**an analysis of ground water samples from the aquifer** indicates that the concentration of hazardous substance(s) **has increased significantly above the background concentration** for the site (see section 2.3). Some portion of the significant increase must be attributable to the site to establish the observed release, except: when the source itself consists of a ground water plume with no identified source, no separate attribution is required. [emphasis added]

HRS Section 2.3, *Likelihood of release*, states in relevant part:

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www.regulations.gov under docket IDs EPA-HQ-SFUND-2014-0624-0004, EPA-HQ-OLEM-2017-0607-0002, and EPA-HQ-OLEM-2017-0606-0009, respectively.

[39] The Objectors cited the following three documents in support of this comment:
AECOM. 2013. *VOC Sampling of the Edina and St. Louis Park Wells in 2013,* (Table 3), June 30, 2013.
Pace Analytical Services, Inc. *Lab Report dated September 17, 2015 to Summit Envirosolutions*; (NPL Docket No. R05-951577.
Minnesota Department of Health. 2018. *City of Edina Historical Municipal Water Well Samples*; NPL Docket No. R0-951511.

> Establish an observed release either by direct observation of the release of a hazardous substance into the media being evaluated (for example, surface water) or by chemical analysis of samples appropriate to the pathway being evaluated (see sections 3, 4, and 6). The minimum standard to establish an observed release by chemical analysis is analytical **evidence of a hazardous substance in the media significantly above the background level**. Further, some portion of the release must be attributable to the-site. Use the criteria in Table 2-3 as the standard for determining analytical significance. [emphasis added]

HRS Table 2-3 establishes the criteria for establishing an observed release when the background has non-detected concentrations and detected concentrations. HRS Table 2-3 states:

TABLE 2-3. —OBSERVED RELEASE CRITERIA FOR CHEMICAL ANALYSIS

Sample Measurement < Sample Quantitation Limit[a] No observed release is established. **Sample Measurement ≥ Sample Quantitation Limit[a]** An observed release is established as follows: • **If the background concentration is not detected** (or is less than the detection limit), an observed release is established when the sample measurement equals or **exceeds the sample quantitation limit.[a]** [emphasis added] • **If the background concentration equals or exceeds the detection limit, an observed release is established when the sample measurement is 3 times or more above the background concentration**. [emphasis added]
[a]**If the sample quantitation limit (SQL) cannot be established**, determined [*sic*] if there is an observed release as follows: [emphasis added] • **If the sample analysis was performed under the EPA Contract Laboratory Program**, use the EPA contract-required quantitation limit (CRQL) in place of the SQL. [emphasis added] • If the sample analysis is not performed under the EPA Contract Laboratory Program, use the detection limit (DL) in place of the SQL.

Thus, background levels are used for the purpose of identifying a significant increase in hazardous substances.

Page 33 of the HRS documentation record at proposal explains the observed release and use of the background concentrations:

> An observed release by chemical analysis is established by showing that the hazardous substance in release samples is significantly greater in concentration than in the background samples and by documenting that at least part of the significant increase is attributed to a release from the site being evaluated. The significant increase can be documented in one of two ways for HRS purposes. **If the background concentration is not detected (or is less than the detection limit), an observed release is established when the sample measurement equals or exceeds the appropriate quantitation or detection limit. If the background sample concentration equals or exceeds the quantitation or detection limit, an observed release is established when the sample measurement is three times or more above the background concentration and above the appropriate quantitation or detection limit** (Ref. 1, Table 2-3). [emphasis added]

The HRS documentation record at proposal established that background and release samples were collected from comparable zones in the same aquifer, collected during the same sampling event, collected using the same sampling procedures, and analyzed by similar methods. Page 34 of the HRS documentation record at proposal explains the background and observed release wells similarity for the 2015 data:

> Background and release monitoring and municipal water **samples were collected from wells of similar depths and screened intervals, selected to establish releases by aquifer, and were selected to encapsulate the approximate extent of the Site**. The background and release **samples were collected during the same time period, following the same sampling procedures, and analyzed for the same analytical parameters using the same analytical methods** (Refs. 6, pp. 28, 28; 75, pp. 1, 2, 12, 48, 70, 90, 122, 126, 152; 78, pp. 9, 10, 27; 79, pp. 3, 4). [emphasis added]

Page 41 of the HRS documentation record at proposal explains the background and observed release wells similarity for the 2016 data:

> The background and release monitoring and municipal water well **samples were collected from wells of similar depths and screened intervals, selected to establish releases by** aquifer, and were selected to encapsulate the approximate extent of the Site (Refs. 6, pp. 4, 5, 27 to 32; 28, pp. 2, 9, 10, 20, 21, 24, 25, 26, 35, 38, 39, 42, 43, 51, 52, 56, 57, 60, 61, 65 to 68, 71, 72, 74, 75, 77, 78, 83, 84, 87, 88, 91, 92, 94, 95, 100, 101, 102, 104) (see Tables 11 and 13, and Figure 3 of this HRS documentation record). The background and release **samples were collected during the same time period, by similar sampling techniques, and were analyzed using similar methods**. Tables 12 and 14 of this HRS documentation record present releases by aquifer (Refs. 6, p. 10; 15, p. 8; 50, pp. 72 through 89). [emphasis added]

Page 49 of the HRS documentation record at proposal explains the background and observed release wells similarity for the 2018 data:

> The background and release **samples were collected from municipal wells that have similar depths and screened intervals and the samples were collected during the same time fram**e (Refs. 28, pp. 9, 20, 105; 84, pp. 10, 13, 22). [emphasis added]

Page 52 of the HRS documentation record at proposal explains the background and observed release wells similarity for the 2018 data

> The **samples collected from wells SLP5 and SLP10 are presented to represent background levels for comparison to results for the samples collected from well SLP4, the release well. The background and release groundwater samples listed in Table 18 of this HRS documentation record were analyzed for VOCs using EPA Methods 524.2 (June 2019) and 8260B (sample SLP4 in May 2019**) (Refs. 73, pp. 1, 6; 86, pp. 7, 8, 44). [emphasis added]

At this Site, site-specific background levels were established for each of the aquifers and years of sampling evidence to document an observed release. Background and release wells were of similar depth and screened intervals, sampling period, sampling procedures, and analytical methods. As noted above, Drift background wells were compared to Drift release wells sampled in that year, and a similar approach was applied for the Platteville-Glenwood, St. Peter and Prairie du Chien-Jordan aquifers. Background wells W27, W424 and W426 pointed to by the Objectors are screened in the Platteville-Glenwood aquifer. Background wells W29, E2, E15, SLP5, and W401 pointed to by the Objectors are screened in the Prairie du Chien-Jordan aquifer (other Prairie du Chien-Jordan background wells were also used in the HRS documentation record at proposal). Well depth and screened intervals are provided in the HRS documentation record at proposal:

- For the 2015 analytical data this is presented in Tables 7 and 9 of the HRS documentation record at proposal for the background wells and observed release wells, respectively (pages 34, 37 and 38 of the HRS documentation record at proposal).

- For the 2016 analytical data this is presented in Tables 11 and 13 of the HRS documentation record at proposal for the background wells and observed release wells, respectively (pages 41, 45 and 46 of the HRS documentation record at proposal).
- For the 2018 analytical data this is presented in Table 15 of the HRS documentation record at proposal for the background wells and observed release wells (page 49 of the HRS documentation record at proposal).
- For the 2019 analytical data this is presented in Table 17 of the HRS documentation record at proposal for the background wells and observed release wells (page 51 of the HRS documentation record at proposal).

Thus, background and release samples were sufficiently similar to document that the release to the aquifer was not due to differences in sampling.

Background well locations were selected from different directions around the groundwater plume to identify the approximate extent of the release to help differentiate the area of higher concentrations from what background levels would be in the absence of the influence of the Site. These well locations are shown on Figure 3 of the HRS documentation record at proposal (and revised to correct plotting errors as shown on Figure 3 of the HRS documentation record at promulgation, as explained in section 3.18, Documentation Record Errors, of this support document). For HRS evaluation purposes, the background sample locations are used as a reference point to establish that a significant increase in contaminant levels in the release samples has occurred. The significant increase is clearly documented in the observed releases established in the HRS documentation record at proposal, which meet observed release criteria despite the fact that some background wells may be affected by Site contamination. That is, even though some background sample locations are not completely removed from the effects of Site contamination, resulting in slightly higher observed release criteria than if 100% outside the reach of Site contaminants, release samples still exhibited significant increases above these levels and concretely establish an observed release for HRS purposes.

Regarding the Objectors statement that background wells W27, W424 and W426 in the Platteville-Glenwood aquifer are not upgradient of release wells in the Platteville aquifer, while it is a general practice that background wells be upgradient of release well to remove to the extent possible the influences of a site, it is not required for HRS scoring. As noted above, in spite of some influence of the Site contaminants on background well samples, release samples still document a significant increase and exceed observed release criteria. Additionally, as discussed in section 3.15, Aquifer Interconnection and Groundwater Flow, of this support document, because the Site is scored as a groundwater plume with no identified source, groundwater flow direction does not have an effect on the HRS scoring. Further as explained on pages 14 and 31 of the HRS documentation record at proposal, groundwater flow in the interconnected aquifers is complex, generally flows east-southeast; recharge occurs through downward leakage from overlying aquifers and in areas where confining units are thin or absent due to erosion; and in some aquifers, groundwater flows through fractures, open joints, and solution channels and is believed to be influenced by pumping of multi-aquifer wells. Hence, the complexity of the groundwater flow at this Site makes determination of upgradient locations more complex. However, when groundwater is flowing from the west towards the southeast, Platteville-Glenwood background wells W27, W424, and W426 are upgradient of Platteville-Glenwood observed release wells W120, W143, W433, W434, W437 and W438 because they are located north or northwest of those release wells in the Platteville-Glenwood aquifer (See Tables 11, 12, 13, 14 of the HRS documentation record at proposal and Figure 3 of the HRS documentation record at promulgation).

Regarding the Objectors statement that the background concentration must be zero or less than the EPA contract required quantitation limit (CRQL), there is no requirement that a background level must be the CRQL or zero. As noted in HRS Table 2-3 above, in determining the background level for setting observed release criteria, HRS Table 2-3 allows for the use of the CRQL (when the SQL cannot be determined) for background samples with non-detect results, but HRS Table 2-3 specifies criteria for detected background levels as well. That is, if the hazardous substance is not detected in the background sample, the limit applicable to the data—SQL, CRQL, DL, as appropriate—is used to set criterion for establishing significance above background when determining if an observed release is documented. On the other hand, if a hazardous substance is present in a background sample,

the concentration of that hazardous substance becomes the background level (and the criterion used to establish significance above background becomes three times that level).

Regarding the presence of CVOCs in the background wells, site-specific background levels were established for this Site in the aquifers. While the EPA agrees that, in some instances a background level can be zero, at this Site, site-specific background levels were established and the levels selected to evaluate an observed release at this Site were consistent with EPA guidance. First, as further discussed in section 3.6, Consistency with the HRS and HRS Guidance, of this support document, the *HRS Guidance Manual* is not a regulation and imposes no mandatory requirements on the Agency. Regardless, the *HRS Guidance Manual* was also applied appropriately in the HRS evaluation based on the facts and circumstances known to be present for this site at proposal. Further, while the Objectors noted that at times background level can be zero and cited to Highlight 7-26 on page 156 of the *HRS Guidance Manual*, the Objectors failed to note that background levels need not necessarily represent pre-release conditions. Hence, even if background wells W29, E2, E15, SLP5, and W401 in the Prairie du Chien-Jordan have documented levels of VOCs, they can still serve as background wells for the observed release wells in the Prairie du Chen-Jordan aquifer. Page 67 of the *HRS Guidance Manual* describes a background level as:

> The concentration of a hazardous substance that provides a defensible reference point that can be used to evaluate whether or not a release from the site has occurred. The background level should reflect the concentration of the hazardous substance in the medium of concern for the environmental setting on or near a site. **Background level does not necessarily represent pre-release conditions, nor conditions in the absence of influence from source(s) at the site**. A background level may or may not be less than the DL, but if it is greater than the DL, it should account for variability in local concentrations. A background level need not be established by chemical analysis. [emphasis added]

Similarly, page 58 of the *HRS Guidance Manual* explains that background analytical data should reflect site-specific conditions and may contain measurable levels of contamination. It states:

> General guidance for establishing an observed release by chemical analysis is presented below. An observed release is established at most sites by comparing **analytical data derived from samples reflective of site-specific background with analytical data derived from site-related samples**. Sample data used to establish an observed release should be of known and documented quality.
>
> …
>
> Background and release samples must be from the same medium (e.g., soil, water, tissue) and should be as similar as possible. Similar sampling methods should be used to obtain background and release samples. **Ideally, background samples also should be outside the influence of contamination from the site, but background levels may be determined from samples which contain measurable levels of contamination**.
>
> Many hazardous substances may be widespread in the environment in the vicinity of a site. Widespread substances may originate naturally, from non-point sources, or from large point sources. **The background level for widespread substances should account for local variability. Several background samples may be required to establish variability in background concentrations** (see Section 5.2). [emphasis added]

Regarding the background levels established at the other sites pointed to by the Objectors, site-specific background wells for those sites do not invalidate those for this Site. For the three sites referenced, a reasonable set of background wells data were selected that, for those sites, included available sampling data in wells with non-detected results (though it is worth noting that the background data for the Franklin Street Groundwater

Contamination site included some detected results as well). However, as shown here, background levels used in HRS scoring were sufficient to clearly establish an observed release for this site, consistent with the HRS.

Regarding the assertion that the EPA "ignored significant CVOC concentrations in groundwater outside the defined 'release' area(s) that are associated with sources other than the one identified in the listing," and, the claim that EPA incorrectly chose to use detectable levels above the CRQL of CVOCs in determining background levels, these arguments are incorrect. The EPA selected a reasonable subset of available well data to approximate background levels in demonstrating that observed releases are clearly established for the Site for the purpose of the HRS evaluation. As explained in 3.13.1, Limited Source Area Identified, of this support document, the possible sources near Walker and Lake Streets were not scored as sources for HRS purposes—i.e., the source identified at this stage in the Superfund process is the groundwater plume with no identified source. And as explained in section 3.4, Site Definition/Extent of Site, of this support document, the extent of the groundwater plume with no identified source has been adequately determined to demonstrate that the HRS documentation record at proposal met the HRS requirements for scoring. A more complete evaluation of the extent of the contamination and associated contaminants at the Site will occur at a later stage in the Superfund process; additional contamination that may exist outside the groundwater plume delineated with observed release samples for HRS purposes may be considered in this future refinement of the extent of the Site.

Regarding well E13, first, to clarify, this well is not used as background well in the HRS documentation record at proposal. Well E13 was used as a background well in the ESI report in the evaluation of the Edina well field in that report. Second, inasmuch as the Objectors are questioning the use of E13 as a background well in the ESI report based on later higher concentrations, the fluctuation of concentrations over time is expected. That is, migration of the groundwater plume contaminants over time means that contaminant concentrations at a specific well location can fluctuate depending on well type, location, pumping in the well's vicinity, and other complexities of groundwater flow, and depending on the manner in which particular contaminants migrate given characteristics of the chemical, characteristics of the subsurface, and the pattern in which contaminants were originally released (e.g., contaminants do not necessarily migrate in the subsurface plume as a continuous and smooth concentration gradient). Therefore, wells may very reasonably exhibit contamination at one time and non-detected results at another; either of the two scenarios does not negate the validity of the other.

Regarding the location of specific background wells, W122, W412, W29, and W401, the locations of these wells are discussed in sections 3.16.1.2, Well W122 Location and Concentration, 3.16.1.3, Well W412 Location and Concentration, 3.16.1.4, Well W29 Location, and 3.18, Documentation Record Errors, of this support document.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.16.1.2 Well W122 Location and Concentration

Comment: The Objectors commented that the EPA misstated the location of background well W122 on Figure 3 of the HRS documentation record at proposal. The Objectors also disagreed with the ESI report's use of a single sampling event when CVOCs were detected in W122, noting other sampling events of that well yielded clean results.

The Objectors commented that the EPA misstated the location of background well W122, "placing it outside of the defined 'site', when its correct location is inside the contaminated area." The Objectors added this misstated location and other errors invalidate the observed release to the St. Peter aquifer. According to the Objectors, well W122 is a St. Peter aquifer well in the eastern bedrock valley near the intersection of Highway 100 and Excelsior Blvd, but it has been incorrectly plotted at the Reilly Tar site near well W23 in the HRS documentation record at proposal (approximately one mile northwest of its correct location). The Objectors stated that the correct location of well W122 is at 39th Street and Yosemite. The Objectors added that an affidavit from B. Sandberg was provided in Attachment 5 of their comment document to establish the correct well location and noted that Attachment 3 of their comment document shows this location.

The Objectors stated that, in the ESI report, MPCA depicts well W122 as containing CVOCs based on a 2009 detection; however, the Objectors argued that, of the six times the well was sampled, only this one sampling event found CVOCs above detectable levels. The Objectors stated that "[m]ost engineers and geologists would consider one anomalous sampling event out of six to be simply untrustworthy, rather than credible support for an attribution argument." The Objectors commented that it is an "inappropriate use of one single event when CVOCs were detected at St. Peter well W122 at the well's correct eastern bedrock valley location to suggest the existence of the alleged migration pathway through that bedrock valley, while, at the same time, using a different sampling event **for the same well** with non-detect results for CVOCs while mislocating its presence to a very wrong location one mile away at the Reilly Tar site in order to claim clean 'background' conditions." [emphasis in original] The Objectors referred to Figure 3 and Tables 7 and 8 of the HRS documentation record at proposal and Figure 35 of the ESI Report. Both figures were provided as Attachment 3 to their comment document.

Response: Well W122 is appropriately selected to establish background levels for the St. Peter aquifer using sample results collected in 2015. However, the EPA concedes that the location of well W122 is incorrectly placed on Figure 3 of the HRS documentation record at proposal, and its location as well as the description of its location have been corrected on Figure 3, pages 26 and 27, and Table 7 of the HRS documentation record at promulgation. Although the correct placement of well W122 is downgradient of release wells in the St. Peter aquifer, the background samples from well W122 are still adequate to provide evidence that the contaminated release wells exhibit a significant increase in hazardous substances in the St. Peter aquifer in the 2015 sampling event. Finally, fluctuations in well concentrations are not unexpected given the complexities of contaminant migration through the subsurface; different concentrations detected in a given well over time do not invalidate each other. At this site, the background samples used to document background levels were collected contemporaneously with the observed release samples and from the same formation in the aquifer as the observed release samples as explained in section 3.16, Likelihood of Release, of this support document and shown on pages 33-52 of the HRS documentation record at proposal.

The concentrations of 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride were non-detect in a 2015 sampling event of well W122. Well W122 is screened in the St. Peter aquifer and two additional wells, W14 and W412, also screened in the St. Peter aquifer were used to establish background levels for the 2015 sampling event for release wells in the St. Peter aquifer. All three background wells showed non-detected concentrations of 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride in 2015. Their results are shown in Table 8 of the HRS documentation record at proposal as cited above in section 3.16, Likelihood of Release, of this support document, and these wells are sufficiently similar to the release wells to establish a significant increase in contaminants is due to a release from the Site and not due to sample characteristics.

Page 35 of the HRS documentation record at proposal presents analytical data for a 2015 sampling event of three background wells, W122, W14, and W412, screened in the St. Peter aquifer. An excerpt of Table 8 of the HRS documentation record at proposal is as follows:

TABLE 8: 2015 Background Well Results

Well No./ Unique Well No.	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Sample Reporting Limit (µg/L)	References
St. Peter Aquifer				
W122	1,1-DCE	1.0 U	1.0	75, pp. 66, 67
	cis-1,2-DCE	1.0 U	1.0	
	trans-1,2-DCE	1.0 U	1.0	
	TCE	0.40 U	0.40	
	Vinyl chloride	0.40 U	0.40	

TABLE 8: 2015 Background Well Results				
Well No./ Unique Well No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Sample Reporting Limit (µg/L)**	**References**
W14	1,1-DCE	1.0 U	1.0	75, pp. 84, 85
	cis-1,2-DCE	1.0 U	1.0	
	trans-1,2-DCE	1.0 U	1.0	
	TCE	0.40 U	0.40	
	Vinyl chloride	0.40 U	0.40	
W412	1,1-DCE	1.0 U	1.0	75, pp. 74, 75
	cis-1,2-DCE	1.0 U	1.0	
	trans-1,2-DCE	1.0 U	1.0	
	TCE	0.40 U	0.40	
	Vinyl chloride	0.40 U	0.40	

…

The EPA agrees that the correct location of well W122 is at Yosemite Avenue South and 39th Street West in St. Louis Park. This location is 0.473 mile southeast of well W143. The HRS documentation record at promulgation has been revised to reflect the correct location of well W122. Although the corrected location of well W122 would place it generally downgradient of contaminated St. Peter wells, well W122 can still serve as an indicator of what the CVOC levels would likely be in the St. Peter aquifer in the absence of the effects from the Site. Background levels are used in the identification of a significant increase in contaminant concentrations due to the release from the site, and therefore ideally approximate the concentrations of the released substances in the absence of the release. Generally, although background locations are ideally chosen upgradient of the observed release samples when the source of contamination is known, the well W122 location downgradient from St. Peter release wells, W133, W24, W409, W410, W411 and W414, still provides adequate evidence (in addition to other St. Peter aquifer background wells) that the contaminated groundwater at the site exhibits a significant increase in hazardous substances in that it reflects what contamination levels would be at the site if it were not for the site-related release. As explained above in section 3.16.1.1, Establishing Background Levels, of this support document, the background sample locations are only used as a reference point in the HRS evaluation to establish that a significant increase in contaminant levels in the release samples has occurred. Background well W122 is still similar in physical characteristics to the release wells in the St. Peter aquifer, and sufficient for the purpose of establishing an observed release in the St. Peter aquifer (see sections 3.16, Likelihood of Release, and 3.16.1.1, Establishing Background Levels, of this support document).

Regarding the Objectors statement that the one sampling event used in the ESI where hazardous substances were detected in well W122 is an anomaly, first, well W122 was not used to establish the presence of contamination in the HRS documentation record at proposal; non-detected sample data from this well was used to establish the background level (therefore the Objectors complaint about the use of a contaminated sample from this well to establish contamination in the ESI report does not affect its use in the evaluation of observed releases in the St. Peter aquifer for HRS purposes). And, as the Objectors note, the well has exhibited non-detected concentrations in multiple sampling events. Second, the fluctuation of concentrations over time is expected. That is, migration of the groundwater plume contaminants over time means that contaminant concentrations at a specific well location can fluctuate depending on well type, location, pumping in the well's vicinity, and other complexities of groundwater flow, and depending on the manner in which particular contaminants migrate given characteristics of the chemical, characteristics of the subsurface, and the pattern in which contaminants were originally released (e.g., contaminants do not necessarily migrate in the subsurface plume as a continuous and smooth concentration gradient). Therefore, wells may very reasonably exhibit contamination at one time and non-detected results at another; either of the two scenarios does not negate the validity of the other.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.16.1.3 Well W412 Location and Concentration

Comment: The Objectors commented that the EPA misrepresented the location of background well W412 on Figure 3 of the HRS documentation record at proposal, and criticized that TCE and vinyl chloride were detected only once in this well despite its use to show contamination in the St. Peter aquifer in the ESI report.

The Objectors commented that the EPA mistakenly depicted well W412 "as a clean 'background' well outside of the eastern bedrock valley using a non-detect event, when it is actually inside the valley." The Objectors cited Figure 35 of the ESI Report in support of their comment. The Objectors commented that this error and others invalidate the observed release to the St. Peter aquifer.

The Objectors commented that W412 has been sampled seven times between 2005 and 2015 and, of those seven events, vinyl chloride was only detected once in 2009 and TCE was detected above the laboratory reporting (0.1 µg/L) limit only once.[40] The Objectors noted EPA "using a 'non-detect' event," then, pointing to use of W412 in the ESI report (in which a detection in W412 was used to identify contamination in the St. Peter aquifer), they asserted, "to ignore several rounds of non-detect data is inconsistent with standard practice in environmental site investigation."

Response: Well W412 is appropriately selected to establish background levels for the St. Peter aquifer using sample results collected in 2015. However, the EPA concedes that the location of well W412 is incorrectly placed on Figure 3 of the HRS documentation record at proposal, and its location as well as the description of its location have been corrected on Figure 3 and Table 7 of the HRS documentation record at promulgation. Although the correct placement of well W412 is downgradient of release wells in the St. Peter aquifer, the background samples from well W412 are still adequate to provide evidence that the contaminated release wells exhibit a significant increase in hazardous substances in the St. Peter aquifer in the 2015 sampling event. Finally, fluctuations in well concentrations are not unexpected given the complexities of contaminant migration through the subsurface; different concentrations detected in a given well over time do not invalidate each other.

The concentrations of 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride were non-detect in a 2015 sampling event of well W412. Well W412 is screened in the St. Peter aquifer and two additional wells, W14 and W122, also screened in the St. Peter aquifer were used to established background level for the 2015 sampling event of the St. Peter aquifer. All three wells showed non-detected concentrations of 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride in 2015. Their results are shown in Table 8 of the HRS documentation record at proposal as cited above in sections 3.16, Likelihood of Release, and 3.16.1.2, Well W122 Location and Concentration, of this support document. Hence, even if the EPA were to consider the location of only background well W14 to establish background levels, an observed release to the St. Peter aquifer would still be documented in 2015 in St. Peter observed release wells W133, W24, W409, W410, W411, and W414 (see section 3.16, Likelihood of Release, of this support document and pages 35 and 39 of the HRS documentation record at proposal).

The EPA agrees that the correct location of well W412 is at Wooddale Avenue South and 37th Street West in St. Louis Park. This location is 0.45 mile northeast of well W143 and 0.14 mile southeast of well W133. The HRS documentation record at promulgation has been revised to reflect the correct location of well W412. Although the corrected location of well W412 would place it downgradient and side gradient of contaminated well W133 in St. Peter aquifer, well W412 can still serve as an indicator of what the CVOC levels would likely be in absence of the effects from the Site. Background levels are used in the identification of a significant increase in contaminant concentrations due to the release from the site, and therefore ideally approximate the concentrations of the

[40] The Objectors cited the following two documents in support of this comment:
AECOM. 2013. *VOC Sampling of the Edina and St. Louis Park Wells in 2013,* (Table 3), June 30, 2013.
Pace Analytical Services, Inc. *Lab Report dated September 17, 2015 to Summit Envirosolutions*; (NPL Docket No. R05-951577.

released substances in the absence of the release. Although background locations are ideally chosen upgradient of the observed release samples, the well W412 location downgradient and sidegradient of St. Peter release wells W133, W409 and W411, still provides adequate evidence (in addition to other St. Peter aquifer background wells) that the contaminated groundwater at the site exhibits a significant increase in hazardous substances in that it reflects what contamination levels would be at the site if it were not for the site-related release. As explained above in section 3.16.1.1, Establishing Background Levels, of this support document, the background sample locations are only used as a reference point in the HRS evaluation to establish that a significant increase in contaminant levels in the release samples has occurred. Background well W412 downgradient and side gradient of release wells is still similar in physical characteristics to the release wells in the St. Peter aquifer to establish an observed release in the St. Peter aquifer. Further, background well W412 is still upgradient/sidegradient of additional release wells, W410 and W414 in the St. Peter aquifer. See also sections 3.16, Likelihood of Release, and 3.16.1.1, Establishing Background Levels, of this support document.

Regarding the Objectors disagreement with the ESI use of the one sampling event where hazardous substances were detected in well W412 to show contamination, first, similar to the situation with well W122, well W412 was not used to establish the presence of contamination in the HRS documentation record at proposal; non-detected sample data from this well was used to establish the background level (therefore the Objectors complaint about the use of a contaminated sample from this well to establish contamination in the ESI report does not affect its use in the evaluation of observed releases in the St. Peter aquifer for HRS purposes). And, as the Objectors note, the well has exhibited non-detected concentrations in multiple sampling events. Second, the fluctuation of concentrations over time is expected. That is, migration of the groundwater plume contaminants over time means that contaminant concentrations at a specific well location can fluctuate depending on well type, location, pumping in the well's vicinity, and other complexities of groundwater flow, and depending on the manner in which particular contaminants migrate given characteristics of the chemical, characteristics of the subsurface, and the pattern in which contaminants were originally released (e.g., contaminants do not necessarily migrate in the subsurface plume as a continuous and smooth concentration gradient). Therefore, wells may very reasonably exhibit contamination at one time and non-detected results at another; either of the two scenarios does not negate the validity of the other.

3.16.1.4 Well W29 Location

Comment: The Objectors commented that well W29 in the Prairie du Chien aquifer is incorrectly plotted on Figure 3 of the HRS documentation record at proposal. The Objectors referenced Figure 24 of the ESI Report in support of their comment. The Objectors added that this error and others invalidate the release to the St. Peters aquifer.

Response: Well W29 is appropriately selected to establish background levels for the Prairie du Chien-Jordan aquifer using sample results collected in 2015. However, the EPA concedes that the location of well W29 is incorrectly placed on Figure 3 of the HRS documentation record at proposal, and its location as well as the description of its location have been corrected on Figure 3 and Table 7 of the HRS documentation record at promulgation. Well W29 and eight other wells sampled in 2015 were used to establish background levels for the Prairie du Chien-Jordan aquifer in 2015, not the St. Peter aquifer.

Pages 35-36 of the HRS documentation at proposal present analytical data for a 2015 sampling event of nine background wells, W29, W403, E2, E4, E15, SLP5, W401, W440 and W441 screened in the Prairie du Chien-Jordan aquifer. An excerpt of Table 8 of the HRS documentation record at proposal is as follows:

TABLE 8: 2015 Background Well Results				
Well No./ Unique Well No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Sample Reporting Limit (µg/L)**	**References**
St. Peter Aquifer				
W122	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 0.40 U	1.0 1.0 1.0 0.40 0.40	75, pp. 66, 67
W14	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 0.40 U	1.0 1.0 1.0 0.40 0.40	75, pp. 84, 85
W412	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 0.40 U	1.0 1.0 1.0 0.40 0.40	75, pp. 74, 75
Prairie du Chien – Jordan Aquifer				
W29	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1 U 5.6 1 U 0.77 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 136, 137
W403	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 130, 131
E2	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 2.4 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 188, 189
E4	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 190, 191
E15	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 4.3 1.0 U 0.67 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 186, 187
SLP5	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.40 1.0	75, pp. 178, 179

TABLE 8: 2015 Background Well Results				
Well No./ Unique Well No.	**Hazardous Substance**	**Hazardous Substance Concentration (µg/L)**	**Sample Reporting Limit (µg/L)**	**References**
W401	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 4.4 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.4 1.0	75, pp. 108, 109
W440	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 1.0 U 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.4 1.0	75, pp. 146, 147
W441	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 2.3 1.0 U 0.40 U 1.0 U	1.0 1.0 1.0 0.4 1.0	75, pp. 126, 127

…

The EPA agrees that the correct location of well W29 is at the intersection of Taft Avenue South and North Street in St. Louis Park. This location is 0.504 mile west of well W143. The HRS documentation record at promulgation has been revised to reflect the correct location of well W29. Although the corrected location of well W29 would place it closer to the contamination in the Prairie-du Chien-Jordan aquifer, it is side gradient of contaminated wells in the Prairie du Chien-Jordan aquifer. Well W29 is still an indicator (in addition to other Prairie du Chien-Jordan background wells) of what the CVOC levels would likely be in absence of the effects from the Site. As explained above in section 3.16.1.1, Establishing Background Levels, of this support document, the background sample locations are used as a reference point in the HRS evaluation to establish that a significant increase in contaminant levels in the release samples has occurred. Background well W29 is similar in physical characteristics to the release wells in the Prairie du Chien-Jordan aquifer to establish an observed release in the Prairie du Chien-Jordan aquifer (see sections 3.16, Likelihood of Release, and 3.16.1.1, Establishing Background Levels, of this support document).

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.16.2 Observed Release by Chemical Analysis

3.16.2.1 Observed Release Criteria

Comment: The Objectors commented that the proposed listing's failure to consider a widespread area of contamination is contrary to EPA's own guidance, and that the HRS documentation record at proposal fails to establish an observed release of chlorinated solvents. The Objectors contend the HRS documentation record at proposal instead defines the background area for the groundwater plume to include contaminated areas, which eliminated several additional contaminated wells from consideration.

The Objectors stated that the "arbitrary selection of 'release' wells to define the Alleged Plume Site purposely ignores nearby contaminated wells." They stated that Figure 3 and Table 13 of the HRS documentation record at proposal use three release wells, P307, P309, and P310, grouped in a small area near Lake and Walker Streets to

identify the plume in the Drift aquifer, but excluded upgradient and side-gradient contaminated wells, including wells[41]:

- W2 (31 µg/L of PCE in 2015)
- B26 (790 µg/L of trans-1,2-dichloroethene (tDCE) and 34 µg/L of VC in 2016)
- B27 (960 µg/L of TCE, 3,300 µg/L of combined cDCE and tDCE, and 140 µg/L VC in 2016)
- B17 (4.7 µg/L of 1,2-dichoroethane (1,2-DCA) and 14 µg/L of VC in 2014)
- W420 (8.6 µg/L TCE, 150 µg/L of cDCE and 50 µg/L of VC in various sampling events)
- GP-28 (90 µg/L of PCE)
- Family Digest wells (up to 100 µg/L of TCE and 200 µg/L of tDCE)
- Pampered Pooch wells (68 µg/L of TCE)

The Objectors added that these well locations and the extent of the plume in the Drift aquifer are shown on Figure 7 of the Objectors' comment document.

The Objectors commented that the observed release to the Platteville aquifer was not properly established because background and release wells were inappropriately selected. They asserted that, in the HRS documentation record at proposal, "CVOC-contaminated well W421 (Reilly Tar remediation well) and monitoring well W18 are not included in the 'release' area, despite evidence suggesting these wells lie hydraulically upgradient of the defined 'release' area" in the Platteville aquifer. According to the Objectors, available USGS data indicate that, near the Reilly Tar site, groundwater flows to the northwest[42]. The Objectors commented that CVOCs were detected at "exceeding 1,000 µg/L[43]" in wells W421 and W18, which are located west of the Reilly Tar site.[44] The Objectors asserted that well "W18 is especially important" because "[i]t was sampled twice (2005 and 2013) (MPCA PAR, Table 4)" with "[t]he 2013 sample represented the highest concentration of vinyl chloride detected *in any aquifer* in the area (1,100 µg/L)." [emphasis in original] The Objectors commented that well W18, which had detections of vinyl chloride, was abandoned in June 2018, preventing further sampling, even though vinyl chloride was detected above its MCL in municipal wells and is the contaminant driving the need for remediation.

The Objectors commented that it is arbitrary and inappropriate to exclude known areas of contamination but acknowledged that the boundaries of an NPL site can change over time as remediation and continued investigation occur and alter the boundaries. They then asserted that, "[f]ailure to recognize the spatial extent of contamination contributing to vinyl chloride in the Prairie du Chien/Jordan aquifer disserves the citizens of these communities because it clearly prevents an effective remedial response."

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[41] The Objectors cited the following six documents in support of their comment:
St. Louis Park. *Annual Monitoring Report for 2015 – Reilly Tar & Chemical Corporation*, dated March 15, 2016.
AECOM 2016. *St. Louis Park Investigation – FY16. St. Paul, MN*.
AECOM 2015. *St. Louis Park Investigation*, April 2015.
MPCA. 2015. *Preliminary Assessment Report for St. Louis Park Solvent Plume St. Louis Park, Hennepin County, Minnesota*. December 2015. (Table 4).
SEH 2012. *Phase II Investigation Report, Trunk Highway 7 and Louisiana Avenue Interchange*, January 2012.
AECOM 2009. *Investigation of the Potential Sources of Chlorinated VOCs, St. Louis Park, Minnesota*, AECOM Project 04660-024.

[42] The Objectors cited Figure 13 the following document in support of their comment: Lindgren, R. J. *Hydrogeology and Ground-Water Flow of the Drift and Platteville Aquifer System, St. Louis Park, Minnesota*; U. S. Geol. Survey Water-Resources Investigations Report 94-4204, 84 pgs.

[43] The Objectors cited Table 4 of the following document in support of their comment: MPCA. 2015. *Preliminary Assessment Report for St. Louis Park Solvent Plume St. Louis Park, Hennepin County, Minnesota*. December 2015.

[44] The Objectors cited Figure 8 of the following document in support of their comment: Lindgren, R. J. *Hydrogeology and Ground-Water Flow of the Drift and Platteville Aquifer System, St. Louis Park, Minnesota*; U. S. Geol. Survey Water-Resources Investigations Report 94-4204.

The Objectors further claimed that the observed release in the St. Peter was not properly established, because it compared release wells with background wells with misrepresented locations. According to the Objectors, the misrepresentation of well W122 in the HRS documentation record at proposal "gives the erroneous impression of 'clean' deep groundwater at a location where CVOC contamination in the Prairie du Chien (W23) and Wonewoc (W105) aquifers is known to exist and no St. Peter well is present." The Objectors further contended that, at the correct location of well W122, the ESI is using one sampling event in 2009 with detected levels of CVOCs out of six known events between 2005 through 2009 and 2015 to support CVOC migration through the eastern bedrock valley. The Objectors contended that the sampling result in 2009 is an anomaly.

Response: Consistent with the HRS, sufficient information is provided in the HRS documentation record at proposal to establish an observed release of CVOCs to the aquifers. The HRS documentation record at proposal presented multiple background locations. Despite the mislocation of four background wells (W122, W412, W29, and W401) and three observed release wells (W23, W133 and W411) on Figure 3 of the HRS documentation record at proposal, the background levels for the aquifers remain supported. The criteria specified in HRS Sections 2.3, *Likelihood of release*, and 3.1.1, *Observed release*, in the ground water migration pathway, and HRS Table 2-3 for establishing an observed release were followed in documenting an observed release to the aquifers as discussed above in section 3.16, Likelihood of Release, of this support document.

See section 3.16, Likelihood of Release*,* of this support document for citation and quotation of HRS Sections 2.3, *Likelihood of release*, and 3.1.1, *Observed release*, and HRS Table 2-3 for the criteria for establishing an observed release by chemical analysis.

Page 33 of the HRS documentation record at proposal explains the observed release and use of the background concentrations:

> An observed release by chemical analysis is established by showing that the hazardous substance in release samples is significantly greater in concentration than in the background samples and by documenting that at least part of the significant increase is attributed to a release from the site being evaluated. The significant increase can be documented in one of two ways for HRS purposes. **If the background concentration is not detected (or is less than the detection limit), an observed release is established when the sample measurement equals or exceeds the appropriate quantitation or detection limit. If the background sample concentration equals or exceeds the quantitation or detection limit, an observed release is established when the sample measurement is three times or more above the background concentration and above the appropriate quantitation or detection limit** (Ref. 1, Table 2-3). [emphasis added]

The background levels and observed release by year and aquifer are presented in Tables 8, 10, 12, 14, 16, and 18 of the HRS documentation record at proposal. These tables are quoted above in section 3.16, Likelihood of Release, of this support document. Multiple background samples were presented to document background concentrations. The selected background level by year and by aquifer are presented below. The resulting observed release wells are also presented below. All observed release concentrations presented in the HRS documentation record at proposal were significantly above the background levels and met observed release criteria.

2015 Analytical Data							
Background				**Observed Release**			
Well Nos. Repre-sented	Hazardous Substance	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)	Well No.	Hazardous Substances	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)
St. Peter Aquifer							
W122	1,1-DCE cis-1,2-DCE	1.0 U 1.0 U	1.0 1.0	W133	cis-1,2-DCE vinyl chloride	2.3 2.5	1.0 0.40

2015 Analytical Data							
Background				**Observed Release**			
Well Nos. Repre-sented	Hazardous Substance	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)	Well No.	Hazardous Substances	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)
W14 W412	trans-1,2-DCE TCE Vinyl chloride	1.0 U 0.4 U 0.4 U	1.0 0.4 0.4	W24	cis-1,2-DCE	2.2	1.0
				W409	trans-1,2-DCE	1.8	1.0
				W410	cis-1,2-DCE trans-1,2-DCE TCE	5.2 3.6 0.51	1.0 1.0 0.40
				W410D	cis-1,2-DCE trans-1,2-DCE TCE	5.5 3.8 0.63	1.0 1.0 0.40
				W411	vinyl chloride	2.3	1.0
				W414	1,1-DCE vinyl chloride	1.9 12.8	1.0 0.04
				W414D	1,1-DCE TCE vinyl chloride	2.3 0.2 14.1	1.0 0.40 0.40
Prairie du Chien Aquifer							
W29 W403 E2 E4 E15 SLP5 W401 W440 W441	1,1-DCE cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	1.0 U 5.6 1.0 U 0.77 1.0 U	1.0 1.0 1.0 0.4 1.0	SLP4	cis-1,2-DCE vinyl chloride	17.9 1.8	1.0 1.0
				SLP6	cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	66 3.4 5.0 5.6	1.0 1.0 0.40 1.0
				E7	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	31.1 1.4 2.0	1.0 1.0 1.0
				W23	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	57.9 3.0 3.3	1.0 1.0 0.40
				W48	1,1-DCE cis-1,2-DCE trans-1,2-DCE Vinyl chloride	1.2 182 8.7 11.9	1.0 1.0 1.0 0.40
				W119R	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	91.6 4.5 6.7	1.0 1.0 1.0

2016 Analytical Data							
Background				**Observed Release**			
Well Nos. Repre-sented	Hazardous Substance	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)	Well No.	Hazardous Substances	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)
Quaternary Drift Aquifer							
W423 W425	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	0.5 U 0.5 U 0.5 U	0.5 0.5 0.5	P307	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	5,000 120 460	200 5.0 200
				P309	cis-1,2-DCE	990	50

2016 Analytical Data							
Background				**Observed Release**			
Well Nos. Repre-sented	Hazardous Substance	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)	Well No.	Hazardous Substances	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)
					trans-1,2-DCE Vinyl chloride	43 390	5.0 50
				P310	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	2,300 36 91	130 10.0 10.0
Platteville-Glenwood Aquifer							
W27 W424 W426	cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	0.5 U 0.5 U 0.5 U 0.5 U	0.5 0.5 0.5	W120	cis-1,2-DCE trans-1,2-DCE	33 11	5.0 5.0
				W143	cis-1,2-DCE trans-1,2-DCE TCE Vinyl chloride	6,500 320 8.5 760	200 200 5.0 200
				W433	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	640 45 320	50 10.0 10.0
				W434	cis-1,2-DCE Vinyl chloride	320 59	25 5.0
				W437	cis-1,2-DCE trans-1,2-DCE Vinyl chloride	3,100 48 450	400 25.0 25.0
				W438	cis-1,2-DCE Vinyl chloride	370 59	25.0 10.0
Prairie du Chien-Jordan Sandstone Aquifer							
E2 E15 SLP5 W403	cis-1,2-DCE	4.2	0.5	E7	cis-1,2-DCE	26	5.0
				SLP4	cis-1,2-DCE	37	2.0

2018 Analytical Data of Edina Public Supply Wells							
Background				**Observed Release**			
Well Nos. Repre-sented	Hazardous Substance	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)	Well No.	Hazardous Substances	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)
Prairie du Chien Aquifer							
E2 E4 E15	cis-1,2-DCE Vinyl chloride	12 1.2	0.20 0.20	E7	cis-1,2-DCE Vinyl chloride	47 5.2	0.20 0.20

2019 Analytical Data of St. Louis Park Public Supply Wells							
Background				**Observed Release**			
Well Nos. Repre-sented	Hazardous Substance	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)	Well No.	Hazardous Substances	Hazardous Substance Concentra-tion (µg/L)	Sample Reporting Limit (µg/L)
Prairie du Chien Aquifer							
SLP5 SLP10	TCE Vinyl chloride	0.40 U 0.35	0.40 0.20	SLP4	TCE Vinyl chloride	0.56 1.5	0.40 0.20
				SLP4	TCE Vinyl chloride	0.44 2.2	0.40 0.20

Regarding the locations of background wells W122, W412, and W29, the locations of these wells are corrected on Figure 3 of the HRS documentation record at promulgation but this does not impact their use to establish background levels. See sections 3.16.1.1, Establishing Background Levels, 3.16.1.2, Well W122 Location and Concentration, 3.16.1.3, Well W412 Location and Concentration, 3.16.1.4, Well W29 Location, and 3.18, Documentation Record Errors, of this support document.

Regarding contamination at the locations of W2, B26, B27, B17, W420, GP28, Family Digest, and Pampered Pooch, the majority of these location are within the approximate boundary of the plume, as shown in Figures 7 and 9a of the Objectors comments (compared to release well locations in Figure 3 of the HRS documentation record at proposal), with the exception of W2 which is slightly to the north of the Reilly Tar site. Addition of these wells to the pool of release wells used to establish an observed release in the HRS documentation record at proposal would have no substantial effect on the approximate plume boundaries, and would have no effect on the HRS score. Inasmuch as the Objectors point to these contaminated wells to argue against attribution of contaminants to the Walker and Lake Streets area, as discussed in section 3.13.1, Limited Source Area Identified, of this support document, the Site has been proposed and promulgated to the NPL as a groundwater plume with no identified source because the significant increase in the comingled groundwater contamination could not be attributed to a specific source. For HRS purposes, neither the facilities near the intersection of Walker and Lake Streets, nor the other industries discussed in the HRS documentation record at proposal as possible sources were scored as an HRS source. And as discussed in section 3.16.3, Attribution, of this support document, the Site as scored did not attribute the release to a specific source or sources in the HRS documentation record at proposal. Consistent with the HRS, no separate attribution is necessary when the source at the site is a groundwater plume. Additionally, as explained in section 3.4, Site Definition/Extent of Site, of this document, the full extent of the Site is not determined at listing. Further, the HRS does not require that all releases at a site be evaluated for scoring. As necessary, additional investigations to determine the full extent of contamination are performed at the RI/FS stage of the Superfund process at which time the site conditions and hazards are characterized more comprehensively.

Regarding contamination migration in wells W18 and W421, Platteville wells, as explained previously, groundwater flow at the site is complex, and the preamble to the 1990 HRS explains that accounting for groundwater flow direction is an increased level of complexity that is not required for a screening tool such as the HRS. (For further discussion, see section 3.15, Aquifer Interconnection and Groundwater Flow, of this support document.) The EPA agrees that Table 4 of the Preliminary Assessment report identified vinyl chloride in well W18 at 1,100 µg/L in a May 2013 sample and also in well W421 at 310 µg/L in a June 2013 sample (see Table 4 of the Preliminary Assessment report included as Reference 8 of the HRS documentation record at proposal). However the HRS documentation at proposal focused on releases to the aquifer in 2015-2019. Further, wells W18 and W421 are located south of Hwy 7 and east of Louisiana Ave; they are not upgradient of the defined plume area (see Figures 22 and 23 of the ESI included as Reference 7 of the HRS documentation record at proposal, as well as Figures 7 and 8 of the Objectors' comment document). Rather, these wells are roughly side gradient of well W437 which is evaluated as an observed release well in the Platteville aquifer (see Figure 3 and Tables 13 and 14 of the HRS documentation record at proposal). Again, addition of these wells to the pool of release wells

would not change the HRS score, nor affect attribution for the site (as the site is scored as a groundwater plume with no identified source).

Regarding the abandonment of well W18 in 2018, this well was completed near grade and was badly damaged. The well was abandoned and replaced at another location where it could be completed above grade as required by code.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.16.2.2 Well W414 Location and Concentration

Comment: The Objectors commented that, "MPCA appears to have confused the SLP1-SLP3 well locations with the former City of St. Louis Park municipal wells, SLP1 and SLP2, which *were* St. Peter aquifer wells but were abandoned in 1978." [emphasis in original] The Objectors referred to a MDH Minnesota County Well Index in support of their comment. The Objectors commented that the SLP wells in Figure 24 of the ESI were installed by the EPA in 2008 and only SLP1 (W414) is located in the St. Peter aquifer.

According to the Objectors, Figure 24 of the ESI "is important to EPA's argument, as it purports to show the character of the groundwater in the St. Peter aquifer in the eastern bedrock valley (the location of the alleged vertical migration of the shallow plume)." They commented that, while Figure 24 presents wells SLP1, SLP2, and SLP3 north of Minnetonka Boulevard, the location of these wells is approximately 4,000 feet away near well W412 and in the eastern bedrock valley. The Objectors also commented that wells SLP2 and SLP3 are not monitoring wells in the St. Peter aquifer and pointed to differences between ESI Figure 24 and Figure 8A of the 2014 Site Investigation Report for St. Louis Park Solvent Plume – Former Flame Metals,[45] both provided in Attachment 2 of the Objectors' comment document.

The Objectors stated that, the "misplacement of St. Peter well SLP1 (W414) out of the eastern bedrock valley is important because its 2014 sample had predominantly 1,1,2-TCA above its MCL, a chlorinated ethane, distinct from the chlorinated ethene 'plume' that MPCA claims to have traced between Walker and Lake and the Prairie du Chien."[46] The Objectors contended that, due to the presence of 1,1,2-TCA, 1,2-DCA, and vinyl chloride in the 2014 sample from well W414, chlorinated ethanes are likely the parent products of the observed release of vinyl chloride.

Response: An observed release was documented consistent with the HRS in well W414 which is screened in the St. Peter aquifer. Well W414 is correctly plotted on Figure 3 of the HRS documentation record at proposal. The well labelled as SLP1 on Figure 24 of the ESI is not correct and the correct location of well W414 is depicted on Figure 3 of the HRS documentation record at proposal. The concentrations of 1,1-DCE and vinyl chloride in well W414 met observed release criteria as shown in Table 10 of the HRS documentation record at proposal and cited above in section 3.16, Likelihood of Release, of this support document. The Objectors have not shown the concentrations to be invalid. That other hazardous substances are present in this well do not obviate the observed release documented in the HRS documentation record at proposal.

Well W414 is shown on Figure 3 of the HRS documentation record at proposal, Figures 6, 7, and 8 of the ESI, and Figure 3 in Reference 79, and its location is depicted as near Oxford Street and Zarthan Avenue South in St. Louis, consistent with the location plotted for this well on Figure 3 of the HRS documentation record. In contrast, well **SLP1**, which is depicted on Figure 24 of the ESI report (on page 74 of Reference 7 of the HRS documentation record at proposal), is located north of Minnetonka Boulevard, approximately 6,000 feet northwest

[45] The Objectors cited the following document in support of their comment: AECOM. 2014. *Site Investigation Report for St. Louis Park Solvent Plume – Former Flame Metals, Minnesota*, dated June 19, 2014, 264 pgs. (NPL Docket No. R05-951558).

[46] The Objectors cited page 3481 of the following document in support of their comment: MPCA 2019. *Expanded Site Inspection Report for Highway 100 – County Road 3 Groundwater Plume Site Vol. 1 and 2,* July 2019.

of the location of well W414. The EPA is aware that at the time of installation, monitoring well W414 was referred to as **SLP01**. In order to prevent confusion with City of St. Louis Park municipal well number 1 (**SLP1** or Well 1), monitoring well **SLP01** was subsequently renamed well W414. The EPA notes that Figure 24 of the ESI report included as Reference 7 of the HRS documentation record has been revised to correctly rename wells SLP1, SLP2, and SLP3 as wells W414, W415, and W416, respectively, and to correct the location of these wells shown on the figure (see pages 4569-4570 of Reference 7 of the HRS documentation record at promulgation). Similarly, Figure 8A of the Site Investigation Report included as Reference 13 of the HRS documentation record has been revised to rename wells SLP-01, SLP-02 and SLP-03 as wells W414, W415, and W416, respectively (see pages 1663-1664 of Reference 13 of the HRS documentation record at promulgation). The well log for well W414 has been revised to correctly state its name as W414. The revised well log is included as Reference 87 of the HRS documentation record at promulgation and is also available at https://mnwellindex.web.health.state.mn.us/mwi/index.xhtml?wellId=763378.

Regarding the concentration of 1,1,2-TCA and 1,2-DCA in well W414, the 2015 analytical data results for this well are on pages 76 to 79 of Reference 75 of the HRS documentation record at proposal and the data for this well do contain both of these substances as commented by the Objectors. The observed release substances scored for well W414 in the HRS documentation record at proposal were 1,1-DCE, vinyl chloride, and TCE (TCE was only in the W414D duplicate sample above the reporting limit). These substances were sufficient to evaluate an observed release in this well. The presence of additional hazardous substances, such as 1,1,2-TCA and 1,2-DCA, does not negate the observed release of 1,1-DCE, vinyl chloride, and TCE in this well. As explained in section 3.4, Site Definition/Extent of Site, of this support document, the HRS is a screening model that uses limited resources to determine whether a site should be placed on the NPL for possible Superfund response. A subsequent stage of the Superfund process, the RI, characterizes conditions and hazards at the site more comprehensively. See section 3.16.3, Attribution, of this support document for discussion regarding the attribution of the release in the plume evaluated at this Site.

Regarding wells SLP1, SLP2, and SLP3, located north of Minnetonka Boulevard which is north of all the wells evaluated in the HRS documentation record at proposal for this Site, these three wells were not evaluated in the HRS documentation record at proposal.

Regarding well W412, this well is a background well in the St. Peter aquifer and it is discussed above in section 3.16.1.3, Well W412 Location and Concentration, of this support document.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.16.3 Attribution

Comment: The Objectors stated that HRS Sections 2.3, *Likelihood of release*, and 3.1.1, *Observed release*, "requires EPA to demonstrate attribution, i.e., a plausible migration pathway, from the alleged source area to the 'release area', in this case, the contaminated drinking water resource." The Objectors commented that the "[a]ttribution (i.e., linkage) of the proposed source area near Walker and Lake Streets to the described Prairie du Chien/Jordan aquifer pollution is neither supported by the administrative record's evidence nor is it plausible, given geologic conditions in this area."

According to the Objectors, the HRS documentation record at proposal "does not address documented, wide-spread historic groundwater contamination from a variety of sources" and there is insufficient data to attribute the contamination in groundwater to an unidentified surficial source. They also contended that the groundwater plume with no identified source approach in the HRS documentation record at proposal has numerous problems.

The Objectors contended that "the groundwater conditions in the St. Louis Park/Hopkins/Edina area cannot be described as a 'plume' in the common meaning of the word" because a "'plume' is generally understood to be an area of groundwater contamination emanating from a source and moving in the direction of groundwater flow, with successively decreasing concentrations away from the source." In further describing the groundwater

contamination in the vicinity of the Site, the Objectors stated:

> In St. Louis Park, Hopkins and Edina, a large area of groundwater contamination exists in multiple aquifers resulting from the long industrial history of solvent use and release at dozens of commercial facilities, including dry cleaners, manufacturing facilities, metal-working shops, maintenance facilities, and an existing Superfund coal tar processing facility (the Reilly Tar site). The flow path of these releases in groundwater is complicated by vertical groundwater flow through multi-aquifer wells and by the influence of pumping at municipal water supply wells, commercial/industrial wells, and Reilly Tar gradient control wells. Thus, what the EPA alleges to be a "plume" is instead an area wide mass of contamination that is the product of decades of releases from scores of sources, which spread over a large area due to the influence of multiple pumping wells.

The Objectors stated that they have an interest in the proposed listing of the Site on the NPL, because they are currently addressing chlorinated solvent contamination in the surficial aquifer at a Walker Street location near the Site. The Objectors commented that the EPA has relied on MPCA's work and that the "MPCA acknowledges other facilities with known releases exist outside of this small area" identified on Figure 2 of the HRS documentation record at proposal, such as Schloff Chemical, but the MPCA states that the "MPCA is unable to reasonably attribute area groundwater contamination to these other sources."[47] According to the Objectors, "[t]he implication of such statements is that MPCA believes it *has* reasonably attributed the regional groundwater contamination to the Lake and Walker Street sources." [emphasis in original] The Objectors emphasized that they "strongly disagree," as set forth in their comments.

The Objectors commented that the HRS documentation record at proposal failed to demonstrate a plausible connection exists between a source and the groundwater contamination being evaluated. The Objectors pointed to EPA guidance, stating:

> The HRS Ranking System Guidance describes typical lines of evidence that can be drawn to support attribution arguments where multiple sources exist (EPA HRS Guidance, p. 59). These include:
>
> - "Data on concentration gradients" (groundwater plumes show successively decreasing concentrations moving downgradient)
> - "Data on flow gradients or other information on movements of contaminants in the medium of concern" (data identifying the direction of groundwater flow in relevant aquifers and preferential pathways for contaminant migration), and
> - "Analytical "fingerprinting" data that establish an association between the site and a unique form of the substance or unique ratios of different substances".
>
> In a complicated system, as exists in St. Louis Park and Edina, a 3D groundwater model could be used to predict migration pathways between surficial sources and the deep drinking water resource aquifer. None of these demonstrations can be, or have been, made to support the alleged migration pathway at the Alleged Plume Site.

According to the Objectors, Figures 6 and 7 in the ESI are all the proposed listing present to support a decreasing concentration gradient evidence along the path of the alleged groundwater plume and these figures are inadequate. They stated:

> These figures omit key conflicting geologic data regarding the presence of a low permeability

[47] The Objectors cited page 34 of the following document in support of their comment: MPCA 2019. *Expanded Site Inspection Report for Highway 100 – County Road 3 Groundwater Plume Site Vol. 1 and 2,* July 2019.

> aquitard (i.e., Pigs Eye Member) and chemical data that fail to demonstrate a coherent, continuous plume. These figures suggest the "plume" migrates in an upgradient direction to Reilly Tar well W23, which is simply not plausible because groundwater does not flow uphill. Figures 5 and 6 of these Comments present these ESI cross-sections with critical additional information and context superimposed on the ESIR figures.

They then added that Figures 22 to 25 of the ESI show chemical speciation but contain errors and do not support a migration pathway and that Attachment 1 of their comment document contains additional mischaracterizations in the ESI. The Objectors summarized that the EPA fails to connect what the EPA alleges "is a source area to its alleged 'plume' or any drinking water aquifer."

The Objectors further contended that, "[t]he presence of 1,1,2-TCA was confirmed in SLP1/W414 in a subsequent 2015 Reilly Tar sampling event"[48] and its presence "in SLP1 cannot be attributed to any release of chlorinated ethenes near Lake and Walker Streets because it was not detected in the Drift aquifer at this location." According to the Objectors, 1,1,2-TCA's "presence in the St. Peter aquifer at the eastern bedrock valley location is inconsistent with a coherent and continuous 'plume', and it does not support MPCA's claim of source attribution." The Objectors referred to Attachment 1 of their comment document stating there are "[a]dditional issues with data selection and fingerprinting in Figures 22 – 25" of the ESI Report.

The Objectors further commented that detections of CVOCs at levels exceeding MCLs and MDH Health Risk Limits (HRLs) were documented in the two deep multi-aquifer wells (MAWs), W23 (Prairie du Chien-Jordan) and W105 (Wonewoc), which are part of the Reilly Tar site.[49] The Objectors stated that, "degreasing solvents were identified as a potential contributor to groundwater impacts at the Reilly Tar site" and that "despite this history and the Consent Decree's acknowledgement of historical degreasing activity, CVOCs were never part of the Reilly Tar remedial investigation." They also commented that, "[b]ased on the cone of impression at W23, described in the water level map for the Prairie du Chien/Jordan aquifer from 2010 provided in the Fourth Five-Year Review for Reilly Tar, a MAW appears to be still active near W23 on the Reilly Tar site"[50] and that a previous consultant had recommended that MAWs be located and sealed.[51]

In discussing the impact of multi-aquifer wells, the Objectors stated:

> As of 2020 and according to the MDH MWI website (https://mnwellindex.web.health.state.mn.us), additional MAWs still exist, including wells downgradient of the Reilly Tar site and within the Alleged Plume Site, near well W143, which is an identified Platteville monitoring well that has reported total CVOCs as high as 8,500 µg/L as recently as 2013.[52] These wells include:
>
> - **Echo Plastics** (MDH Unique No. 218162), located at 6514 Cambridge Street, open to both the Platteville and St. Peter aquifers; and

[48] The Objectors cited the following document in support of their comment: NPL Docket data RO5-951577, pp. 106-109.
[49] The Objectors cited the following two documents in support of their comment:
AECOM. 2013. *VOC Sampling of the Edina and St. Louis Park Wells in 2013*, (Table 3), June 30, 2013.
United States Environmental Protection Agency (USEPA). 1986. *Consent Decree for Reilly Tar Superfund Site*.
[50] The Objectors cited Figure 4 of the following document in support of their comment: MPCA, 2011.
[51] The Objectors cited the following four documents in support of their comment:
STS, 2007, page 7.
Sunde, 1974.
Reilly Tar Record of Decision, 1984.
United States Environmental Protection Agency (USEPA) 1986. *Consent Decree for Reilly Tar Superfund Site.*
[52] The Objectors cited Table 7, page 105 of the following document in support of their comment: MPCA 2019. *Expanded Site Inspection Report for Highway 100 – County Road 3 Groundwater Plume Site Vol. 1 and 2,* July 2019.

- **Paul Strom Block Company** (Minnesota Unique ID No. 206450, a.k.a. W49), located at 6425 Goodrich Street, open to the St. Peter and Prairie du Chien aquifers. [emphasis in original]

The Objectors added that these two MAWs are shown on Figures 11 and 12 of their comment document. They stated that both of the Echo Plastics and Paul Strom Block Company wells "have cross-connecting open boreholes that are within 600 feet or less of W143 and both provide a direct connection between the Platteville and the Prairie du Chien aquifers." The Objectors referred to Attachment 9 of their comment document which they state "includes well logs for the Echo Plastics and Strom wells, and also includes the well log for another MAW called Prestolite that was abandoned in 1979." The Objectors asserted that "[t]he Prestolite well was noted as an important MAW for cross contamination to the Prairie du Chien and a distinct chemical odor was noted during sampling."[53]

Response: The Site as scored did not attribute the release to a specific source or sources in the HRS documentation record at proposal. The Site has been proposed as a groundwater plume with no identified source. Consistent with the HRS, no separate attribution is necessary when the source at the site is a groundwater plume. See Section 3.13, Source Identification, and its subsections and Section 3.14, Characterization of a Plume with No Identifiable Source, of this support document for discussion of the plume as the source at this Site. See section 3.15, Aquifer Interconnection and Groundwater Flow, and its subsections, of this support document for a discussion on aquifer interconnection, groundwater migration, multi-aquifer wells, and groundwater flow as they pertain to the HRS and the evaluation of this site. Finally, the *HRS Guidance Manual* information on attribution applies to sites scored with known sources, not sites scored as a groundwater plume with no identified source.

HRS Section 3.1.1, *Observed release,* in the groundwater migration pathway explains the criteria for documenting an observed release to the aquifer and has specific directions for evaluating an observed release by chemicals analysis, including when determining attribution is not applicable:

> Establish an observed release to an aquifer by demonstrating that the site has released a hazardous substance to the aquifer. Base this demonstration on either:
>
> - Direct observation-a material that contains one or more hazardous substances has been deposited into or has been observed entering the aquifer.
> - Chemical analysis-an analysis of ground water samples from the aquifer indicates that the concentration of hazardous substance(s) has increased significantly above the background concentration for the site (see section 2.3). Some portion of the significant increase must be attributable to the site to establish the observed release, except: **when the source itself consists of a ground water plume with no identified source, no separate attribution is required.** [emphasis added]

Pages 54-55 of the HRS documentation record at proposal summarizes the CVOCs detected at observed release concentrations in monitoring and municipal wells in the Drift, Platteville-Glenwood, St. Peter and Prairie du Chien-Jordan aquifers and concludes on page 55:

> **While several likely sources have been identified, specific releases documented in monitoring and municipal wells cannot reasonably be attributed to a specific source or sources** due to the comingled nature of the releases that likely resulted from multiple sources, including dry cleaners, print shops, a radiator coil manufacturing facility, metals fabricators, a heat treating facility, rubber manufacturer, computer components facility, and a distributor of dry

[53] The Objectors cited page 25 of the following document in support of their comment: (Hult, M. F. and M. E. Schoenberg. 1984. *Preliminary Evaluation of Ground-Water Contamination by Coal Tar Derivatives, St. Lois Park Area, Minnesota*. U. S. Geol. Survey Water Supply Paper 2211.

> cleaning fluid, among other commercial and industrial facilities (Refs. 6, pp. 4, 5, 6; 7, pp. 5 to 11, 92, 93, 523, 524, 526, 901, 902, 1167 to 1169, 1978, 1982, 1983, 1984, 1989, 2006 through 2014, 3571; 56, pp. 10, 11, 12; 81, pp. 1-1, 2-1). As a result, the Site is being scored as a groundwater plume with no identified source.

Page 55 of the HRS documentation record at proposal also explains the cohesiveness of the plume:

> The St. Louis Park and Edina municipal wells have been shown to be hydraulically connected; pump tests of wells installed in the Quaternary Drift, Platteville-Glenwood, St. Peter, Prairie Du Chien-Jordan, and Jordan aquifers show no significant difference in hydraulic conductivity; well logs of the municipal wells indicate the same stratigraphic units; and groundwater contamination has been shown in St. Louis Park and Edina municipal wells, as well as monitoring wells that withdraw water from Quaternary Drift, Platteville-Glenwood, St. Peter, Prairie Du Chien-Jordan, and Jordan aquifers (Ref. 7, pp. 23 to 28, 3620, 3863, 3914, 3972) (see Tables 10, 14, 16, 17 and 18 of this HRS documentation record). Based on this information, the Quaternary Drift, Platteville-Glenwood, St. Peter, and Prairie Du Chien-Jordan aquifers are interconnected, and a strong hydraulic connection exists between St. Louis Park and Edina municipal wells (Refs. 7, pp. 23 to 28, 3620 to 4106; 17, pp. 1, 2). In response to address the chlorinated VOCs in their drinking water supplies, St. Louis Park and Edina have constructed new water treatment plants. During the construction phase, the affected wells were taken offline. When SLP4 was taken offline in 2016, within a year an increase in the concentrations of cis-1,2-DCE and other chlorinated solvents was evident in the Edina well E7 (Ref. 17, pp. 3, 4). Although it is notable that each of these wells would qualify independently for the NPL, this increase in chlorinated solvents further supports the presence of one groundwater plume likely consisting of multiple comingled releases stretching from St. Louis Park to Edina (Refs. 17, pp. 1 through 9; 35; 36)

Regarding the *HRS Guidance Manual* recommendations cited by the Objectors, as stated in HRS Section 3.1.1, *Observed release*, of the groundwater migration pathway, to establish an observed release by chemical analysis at a groundwater plume site, no separate attribution is required when the source itself consists of a groundwater plume with no identified source. The recommendations on pages 59-61 of the *HRS Guidance Manual* as cited by the Objectors are applicable when attributing the release to an original source(s), not to a groundwater plume site with no identified source. The *HRS Guidance Manual* makes that distinction on page 62 where it states, "[w]hen evaluating a ground water plume with no identified source, background samples are required, but the release need not be attributed to a specific site."

Regarding the Objectors claim that MPCA identified known sources such as Schloff Chemical, outside of the alleged source area in the Drift aquifer, the HRS documentation record at proposal did not make claim to a defined source in the Drift aquifer for the site as scored. First, see sections 3.14, Characterization of a Plume with No Identifiable Source, and 3.13.1, Limited Source Area Identified, of this support document for a discussion of the source for HRS purposes at this Site. Second, in fact, page 34 of the ESI report, included as Reference 7 of the HRS documentation record at proposal, presents among its other discussions, the following statement regarding Schloff Chemical and the site as a groundwater plume:

> A PCE release in southern St. Louis Park area has also been documented at the former Schloff Chemical distribution facility (SR175 and VP9660). While previous investigation activities indicate the scope of the release is limited to a relatively small area, additional site characterization may be necessary to document the nature and extent of the release.
>
> Multiple PCE release sources have been identified. However, other potential release sources have been evaluated but MPCA is unable to reasonably attribute area groundwater contamination to these other potential sources. Due to the complex hydrogeology and potential for other sources, the site is being presented as a groundwater plume rather than a source.

Regarding the ESI report Figures 6 and 7, these figures are not used in to support a groundwater water migration path at the Site. First, as discussed in Section 3.15, Aquifer Interconnection and Groundwater Flow, of this support document, groundwater flow direction is not used for HRS purposes in scoring this site. Second, Figures 6 and 7 are cross sections of the geology at the site and also show the concentration of PCE, TCE, cis-1,2-DCE, trans-DCE, and/or vinyl chloride presence in some wells. The concentrations presented are not used to establish a concentration gradient originating at a specific source for HRS purposes. Figure 6, *Cross Section A-A'*, of the ESI is a northwest to southeast geologic cross section starting at well SLP5 on the northwest to well SLP4 on the southeast. This cross section depicts the Drift, Platteville-Glenwood, St. Peter, and Prairie du Chien-Jordan aquifers. It also depicts the St. Peter Bedrock valley and the St. Peter Pigs Eye, contrary to the Objector's comment. It clearly shows wells, including SLP5, W23, and SLP4, withdrawing from the Prairie du Chien-Jordan aquifer and contaminated with CVOCs; wells W412 and W409 withdrawing from the St. Peter aquifer and also contaminated with CVOCs; and monitoring wells, including GHDMW1, B9, B31, B16, B25, B52 and B62 withdrawing from the Drift aquifer and also contaminated with CVOCs. Well W414 was not used in the construction of the cross section presented in Figure 6. Similarly, Figure 7, *Cross Section B-B'*, of the ESI report is a north to south geologic cross section starting at well W133 on the north to well E7 on the south. It too depicts the four aquifers, the presence of the St. Peter bedrock valley, St. Peters Pig Eye, and wells withdrawing from the St. Peter and Prairie du Chien-Jordan aquifers that are contaminated with CVOCs. Although the presence of the Platteville-Glenwood formation was inadvertently omitted from the cross section of well W414 in Figure 7 of the ESI report, the Platteville-Glenwood formation is identified in its stratigraphic well log included on pages 198 and 199 of Reference 28 of the HRS documentation record at proposal. See also Reference 87, Well W414 Log, of the HRS documentation record at promulgation. The Platteville-Glenwood formation is only 12 feet thick in well W414, and the scale of Figure 7 inadvertently depicts it as not present. The Platteville-Glenwood formation is absent in the well logs for well W133 and well W122 (page 30 of the HRS documentation record at proposal; pages 174, 175, 178, and 179 of Reference 28 of the HRS documentation record at proposal). It is also absent in well W38 as shown on Figure 7 of the ESI. Therefore, its omission in the depiction for well W414 does not significantly affect the interpretation that the Platteville-Glenwood formation is not continuous through the Site. The geologic information on Figures 6 and 7 supports contamination exists in the aquifers, consistent with the site as scored, and that the Platteville-Glenwood and the St. Peters Pigs Eye are not continuous geologic features at the site. With specific regard to well W23 at the Reilly Tar and Chemical NPL site, this well is included in the approximate extent of the CVOCs plume and no conclusion was presented in the HRS documentation record at proposal regarding attribution of the release in this well to a known original source. As explained in the HRS documentation record at proposal, the Drift, Platteville-Glenwood, St. Peter and Prairie du Chien-Jordan aquifers are interconnected, contaminant transport at the site is complex, and pumping of wells in St. Louis Park and Edina is impacting groundwater flow migration (See pages 14, 30, 31, and 55 of the HRS documentation record at proposal and section 3.15, Aquifer Interconnection and Groundwater Flow, of this support document).

Regarding Figures 22 to 25 of the ESI report, these figures present wells in the Drift, Platteville-Glenwood, St. Peter and Prairie du Chien-Jordan aquifers with CVOCs exceeding certain health-based limits such as the Maximum Contaminant Levels (MCLs), Minnesota Health Risk Limit (HRL) and the Minnesota Health-Based Values (HBV). The contaminants are color coded and presented in a pie chart format per well to show VOC exceedance ratios per well using analytical data from 2004- 2014. The pie chart diameter representation for each well was scaled according to the maximum exceedance ratio calculated at each well location. The figures are not used for HRS purposes to support contamination migration from original sources. Based on the characterization data currently available, the data did not identify a specific pathway to deeper aquifers. Additional characterization under the RI would need to be completed to determine which original sources are contributing to the release detected in Prairie du Chien-Jordan aquifer.

Regarding 1,1,2-TCA in well W414, the presence of additional hazardous substances such as 1,1,2-TCA in this well does not negate the hazardous substances evaluated as observed releases in this well in the HRS documentation record at proposal nor is any hazardous substance evaluated in scoring this site attributed to a source at a facility.

Regarding wells W105 and W23, both are monitoring wells located at the Reilly Tar and Chemical NPL site. Well W23, as explained previously, is part of the approximate extent of the plume evaluated in the scoring of this site. Well W105 withdraws from the Ironton-Galesville aquifer and had concentrations of 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene (DCE) , trans-1,2-dichloroethene, dichlorodifluoromethane, TCE, and/or vinyl chloride in 2006 - 2009 (page 30 of Reference 12 of the HRS documentation record at proposal; page 3459 and Figure 5 of Reference 7 of the HRS documentation record at proposal; page 21 of Reference 68 of the HRS documentation record at proposal). The Ironton-Galesville aquifer is not evaluated in the scoring of this site but is monitored for contamination by the City of St. Louis Park. Well W105 was initiated as a production well for the Minnesota Beet company and pumping was terminated in well W105 on December 31, 1991; since that time it has been used as a monitoring well (page 21 of Reference 68 of the HRS documentation record at proposal).

Regarding the Objector's interpretation that a "cone of impression" exists in the area around well W23, based on the available data, it is impossible to discern which wells were pumping and which wells were static at the time of groundwater elevation measurement. Although well W23 is a pumping well, the pumping rate is approximately 57 gallons per minute (gpm). It is not uncommon for municipal wells operating in the area to pump at a rate of 1000 gpm. Since wells W23 is surrounded by municipal supply wells, golf course irrigation wells, and industrial process wells, all operating at rates significantly higher than 57 gpm, the relative groundwater elevations may be perceived as "mounding" around well W23, but may actually be attributed to groundwater elevation depression in adjacent pumping wells. Additional, modeling data support that groundwater flow is variable and heavily influenced by pumping activities in the area. Any perceived "mounding" at well W23 is not a conclusion of attribution of the CVOC release to a source or a documented migration path.

Regarding well Echo Plastics well, MDH Unique No. 218162, withdrawing from Platteville-Glenwood and St. Peter aquifers and located near 6514 Cambridge Street, this location is near well W143 evaluated in the plume area. Similarly, Paul Strom Block well, MDH Unique No. 206450, withdrawing from the Prairie du Chien-Jordan aquifer and located near 6425 Goodrich Avenue, is also near well W143. MDH Unique No. 218162 at Echo Plastics has a depth of 190 feet and is not cased across the Glenwood shale and may be a conduit for transport into the St. Peter. MDH Unique No. 206450 at Paul Strom Block is constructed as a double cased well. The outer casing extends five feet into the top of the Platteville to reduce opportunity for contaminant transport from the Drift to the lower aquifers. The inner casing extends to 241' and through what may be considered the shale portion the Pigs Eye Member of the St. Peter to reduce opportunity for transport into the Prairie du Chien-Jordan aquifer. This well has a depth of 384 feet. Well W143, located near both the Echo Plastics and Paul Strom Block wells, is evaluated as an observed release well in the HRS documentation record at proposal and it withdraws from the Platteville-Glenwood aquifer. This well exhibited extremely high concentrations of cis-1,2-DCE (6,500 µg/L), trans-1,2-DCE (320 µg/L), TCE (8.5 µg/L), and vinyl chloride (760 µg/L) so it is not surprising wells near it may also be contaminated with CVOCs.

Further, concerns regarding the assignment of liability for the contamination in the aquifers are not taken into account by the HRS, and are therefore not relevant to the decision to place the Site on the NPL. The NPL serves primarily informational purposes, identifying for the States and the public those facilities and sites or other releases which appear to warrant remedial actions. Liability is not assigned at the listing stage of the Superfund process, as discussed in section 3.10, Liability, of this support document.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.17 Validity of Plume Area

Comment: The Objectors submitted comments related to the area of the plume, specifically stating that the proposed listing of the Site on the NPL "does not address documented, wide-spread historic groundwater contamination from a variety of sources." According to the Objectors, the HRS documentation record at proposal unreasonably asserts that the documented groundwater contamination in St. Louis Park and Edina is linked to a "single small source area in the uppermost aquifer," which "generated a plume that traveled laterally to a bedrock

valley and then vertically through a known aquitard to contaminate many square miles of groundwater in all directions in the Prairie du Chien/Jordan aquifer."

The Objectors stated that the proposal fails to consider "evidence of the real problem, which is … [area wide] vinyl chloride contamination of the Prairie du Chien/Jordan aquifer and specific instances of 1,4-dioxane contamination, unrelated to the alleged source area, which will require ongoing treatment of the water supply." They stated that CVOCs are present in the Prairie du Chien/Jordan aquifer, which St. Louis Park, Edina, and Hopkins use as their drinking water source, but that, "[i]n particular, vinyl chloride has been detected above its MCL in several municipal wells, including SLP4, SLP6, E2, and E7."[54] The Objectors then noted that vinyl chloride (and cis-1,2-DCE and trans-1,2-DCE) can be the degradation products of the common solvents, PCE and TCE, chlorinated ethenes; however, vinyl chloride is also a degradation product of other less common solvents, such as 1,1,1-TCA or 1,1,2-TCA, 1,1,-DCE, 1,2-DCA, 1,1-DCA, chlorinated ethanes.[55] The Objectors stated that vinyl chloride and cis-1,2-DCE "are the most commonly detected CVOCs in the Prairie du Chien/Jordan aquifer."[56] The Objectors commented that 1,4-dioxane, which has been detected near its applicable MDH Health Risk Limit (HRL) in municipal water, is added to solvents such as 1,1,1-TCA. They also stated that 1,4-dioxane is not associated with the alleged identified source area near Walker and Lake Streets. The Objectors alleged that, by focusing on PCE, the HRS documentation record at proposal disregarded other critical contaminants. The Objectors additionally asserted that the EPA has ignored several additional contaminated drift aquifer wells (such as W2, B26, B27, B17, W420, GP-28, Family Digest wells, and Pampered Pooch wells) located upgradient and side gradient wells of the three wells the EPA identified in the small area near Lake and Walker Streets. The Objectors commented that the EPA relies heavily on the MPCA work and that "[t]he MPCA acknowledges other facilities with known releases exist outside of this small area." The Objectors also commented that the ESI failed to show that a continuous plume resulting from a release of PCE to the Drift aquifer that enabled contamination to migrate to the Prairie du Chien-Jordan aquifer existed.

Response: The identification of the plume area is consistent with the directions of the HRS. Using HRS requirements as specified in HRS Section 3.0.1.1, *Ground water target distance limit,* the plume area was identified based on groundwater samples from the aquifers meeting observed release criteria and the samples delineating the plume area are shown on Figure 3 of the HRS documentation record at proposal and at promulgation. As explained in section 3.4, Site Definition/Extent of Site, of this support document, the full extent of the site is not determined at listing. The HRS is a screening model that uses limited resources to determine whether a site should be placed on the NPL for possible Superfund response. As necessary, additional investigations to determine definitive sources at a particular site are performed at the RI/FS stage of the Superfund process at which time site conditions and hazards are characterized more comprehensively. Further, the HRS evaluation of the Site did consider a variety of possible sources and hazardous substances (including vinyl chloride, which was scored in the HRS documentation record at proposal).

HRS Section 3.0.1.1, *Ground water target distance limit*, provides directions for determining the area of the groundwater plume:

> For sites that consist solely of a contaminated ground water plume with no identified source, begin measuring the 4-mile target distance limit at the center of the area of observed ground water contamination. **Determine the area of observed ground water contamination based on available samples that meet the criteria for an observed release**. [emphasis added]

[54] The Objectors cited Table 4 of the following document in support of their comment: MPCA. 2015. *Preliminary Assessment Report for St. Louis Park Solvent Plume St. Louis Park, Hennepin County, Minnesota*. December 2015.
[55] The Objectors cited the following document in support of their comment: Mattes, T. E., Alexander, A. K., & Coleman, N. V. (2010). *Aerobic biodegradation of the chloroethenes: pathways, enzymes, ecology, and evolution*. FEMS Microbiology Reviews, 34(4), 445–475. doi:10.1111/j.1574-6976.2010.00210.x.
[56] The Objectors cited Table 4 the following document in support of their comment: MPCA. 2015. *Preliminary Assessment Report for St. Louis Park Solvent Plume St. Louis Park, Hennepin County, Minnesota*. December 2015.

Page 19 of the HRS documentation record at proposal described the plume area:

> The groundwater plume that comprises the Site is currently defined by documented observed releases in groundwater monitoring and municipal water wells in Edina and St. Louis Park that are completed in the aquifers as follows: Quaternary Drift aquifer in wells P307, P309, P310; Platteville-Glenwood aquifer in wells W120, W143, W433, W434, W437, W438; the St. Peter aquifer in wells W133, W24, W409, W410, W411, W414; and the Prairie du Chien- Jordan aquifer in wells E7, SLP4, SLP6, W23, W48, and W119R (Refs. 6, pp. 4, 5, 12, 13, 21, 24, 25, 34, 37, 40; 28, pp. 9, 24, 42, 51, 56, 60, 65, 83, 87, 91, 100, 101, 161, 163, 171, 172, 173, 178, 186, 188, 196, 198, 200; 75, pp. 6, 7, 52, 53, 54, 58, 64, 65, 68, 69, 76, 77, 86, 87, 98, 99, 106, 107, 192, 193, 196; 84, p. 13; 86, p. 14) (see Figure 2 of this HRS documentation record).

Page 33 of the HRS documentation record at proposal explains the well types and hazardous substances documented in the plume:

> Groundwater samples collected from municipal and monitoring wells contain 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride at concentrations that establish observed releases (see Tables 8 through 16 of this HRS documentation record).

The HRS requires the area of the plume to be determined by groundwater samples meeting observed release criteria. As further shown in section 3.16, Likelihood of Release, of this support document, the observed releases identified in wells in the Drift, Platteville-Glenwood, St. Peter and Prairie du Chien-Jordan aquifers are established consistent with the HRS. The analytical data are shown in Tables 8, 10, 12, 14, and 16 of the HRS documentation record at proposal. Figure 3 of the HRS documentation record at proposal and at promulgation depicts the locations of the observed release wells used to identify the area of the plume consistent with the HRS.

Regarding the Objectors statements that the listing does not address documented, wide-spread historic groundwater contamination from a variety of sources, and that the HRS documentation record at proposal linked the groundwater contamination to a small source area in the uppermost aquifer, the HRS documentation record at proposal evaluated the site as groundwater plume with no identified source. A source or facility was not identified as being linked to the release being scored in the Drift, Platteville-Glenwood, St. Peter and Prairie du Chien-Jordan aquifers. Further, as explained in section 3.4, Site Definition/Extent of Site, the full extent of the site is not determined at listing. Until the site investigation process has been completed and a remedial action has been selected, the EPA can neither estimate the extent of contamination nor describe the ultimate dimensions of the Site.

Regarding the presence of vinyl chloride in SLP4, SLP6, E2 and E7, the HRS documentation record at proposal has documented the presence of vinyl chloride in wells SLP4, SLP6, E2 and E7 (in addition to other wells) and did not attribute the presence of vinyl chloride in these wells to a source or facility. See Tables 8, 10, 12 and 16 of the HRS documentation record at proposal and as cited above in Section 3.16, Likelihood of Release, of this support document. Further attribution of vinyl chloride to particular origins—specific facilities or parent compounds—is beyond the scope of the HRS evaluation for this Site, though such tracing may be considered in future investigation steps of the Superfund process.

Regarding the presence of 1,4-dioxane in municipal water, the EPA is aware that 1,4-dioxane (dioxane) has been identified in St. Louis Park Wells 4 and 6 (page 18 of ESI, Reference 7 of the HRS documentation record at proposal.) However, again, like the chlorinated ethanes above, using the presence of 1,4-dioxane to trace contamination back to a specific facility is outside the scope of the HRS evaluation for this Site, but may be considered as part of future investigation steps in the Superfund process.

Regarding contamination at the locations of W2, B26, B27, B17, W420, GP28, Family Digest, and Pampered Pooch, the majority of these locations are within the approximate boundary of the plume, as shown in Figures 7 and 9a of the Objectors comments (compared to release well locations in Figure 3 of the HRS documentation

record at proposal), with the exception of W2 which is slightly to the north of the Reilly Tar site. Addition of these wells to the pool of release wells used to establish an observed release in the HRS documentation record at proposal would have no substantial effect on the approximate plume boundaries, and would have no effect on the HRS score. That groundwater contamination may be identified at the locations of W2, B26, B27, B17, W420, GP-28, Family Digest wells, and Pampered Pooch wells, is not a judgement on or attribution of the release to these facilities. As explained above, the groundwater contamination at this Site was not attributed to an original source or facility in the HRS documentation record at proposal as scored. Additionally, as explained in section 3.4, Site Definition/Extent of Site, of this document, the full extent of the Site is not determined at listing. As necessary, additional investigations to determine the full extent of contamination are performed at the RI/FS stage of the Superfund process at which time the site conditions and hazards are characterized more comprehensively.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.18 Documentation Record Errors

Comment: The Objectors stated that the locations of wells W29, W122, and W412 are incorrectly placed on Figure 3 of the HRS documentation record at proposal. They also commented that on Figure 8A of the Site Investigation Report and Figure 24 of the ESI, the MPCA has confused wells SLP1-SLP3 and that SLP1 is well W414 which is a St. Peter well.

Response: The EPA concedes that the locations of wells W29, W122, and W412 are incorrectly placed on Figure 3 of the HRS documentation record at proposal. Additionally, in confirming well locations, EPA noted that wells W23, W133, W401, and W411 were also incorrectly placed. These seven well locations have been corrected on Figure 3 in the HRS documentation record at promulgation; this figure is also included in section 2, Site Description, of this support document. Well and sample locations corresponding to these seven wells have also been revised on Figures 1 and 2 of the HRS documentation record at promulgation, as necessary. Similarly, although not commented on by the Objectors, the location of well W410 is correct on Figure 3 of the HRS documentation record at proposal but the distance of well W410 from well W143 was incorrectly stated in the HRS documentation record at proposal and has been revised at promulgation. The location of well W414 is correctly placed at Oxford Street and Zarthan Avenue South in St. Louis Park on Figure 3 of the HRS documentation record at proposal. Well W414 is also named SLP01, not SLP1. Well W414 is not depicted on Figure 24 of the ESI. Well W414 is correctly depicted on Figures 6, 7, and 8 of the ESI and Figure 3 in Reference 79 of the HRS documentation record at proposal. The EPA acknowledges that Figure 24 of the ESI report included as Reference 7 of the HRS documentation record and Figure 8A of Site Investigation report included as Reference 13 of the HRS documentation record are revised to correctly label wells W414 and SLP1-SLP3; copies of these revised figures have been included in pages 4569-4570 of Reference 7 (ESI report) and pages 1663-1664 of Reference 13 (Site Investigation report) of the HRS documentation record at promulgation. The well log for well W414 has been revised to correctly state its name as W414. The revised well log is included as Reference 87 of the HRS documentation record at promulgation and is also available at https://mnwellindex.web.health.state.mn.us/mwi/index.xhtml?wellId=763378.

The well locations of wells W29, W122 and W412 have been revised on Figure 3 of the HRS documentation record at promulgation. The correct location of well W29 is at the intersection of Taft Avenue South and North Street in St. Louis Park. The correct location of well W122 is at Yosemite Avenue South and 39th Street West in St. Louis Park. The correct location of well W412 is at Wooddale Avenue South and 37th Street West in St. Louis Park. Additionally, the distances of wells W29, W122 and W412 from the site reference point (well W143) presented in Table 7 on page 26 and the distance of well W122 from the groundwater plume presented on page 27 of the HRS documentation record at proposal have been revised or deleted, as appropriate, in the HRS documentation record at promulgation.

The locations of wells W23, W133, W401 and W411 are revised in Figure 3 of the HRS documentation record at promulgation. While their locations were not commented on by the Objectors, Figure 3 of the HRS documentation record at proposal does not accurately depict their locations. Well W23 is 0.591 mile northwest

(not 0.3 mile as indicated at proposal) of well W143 in the HRS documentation record at promulgation. This well is an observed release well withdrawing from the Prairie du Chien aquifer and is located at the Reilly Tar site. Well W133 is 0.365 mile northeast (not 0.4 mile as indicated at proposal) of well W143. This well is an observed release well withdrawing from the St. Peter aquifer and is located just west of the intersection of West 36th Street and Wooddale Avenue South in St. Louis Park. Well W401 is located 1.646 miles southwest (not 0.6 mile northwest as indicated at proposal) of W143. This well is a background well withdrawing from the Prairie du Chien-Jordan aquifer and is located north of Interlachen Boulevard at the Interlachen Country Club in Edina. It is located west of background well E15 and southeast of background well W441. Well W411 is located 0.186 mile south (not 0.44 mile northwest as indicated at proposal) of W143. This well is an observed release well withdrawing from the St. Peter aquifer and is located north of the parking lot on the north side of Louisiana Circle near the Methodist Hospital in St. Louis Park. Additionally, the distances of wells W23, W133, W401, and W411 from the site reference point (well W143) presented in Tables 7 and 9 and on pages 26 and 27 and the distance of well W401 from the groundwater plume presented on page 27 of the HRS documentation record at proposal have been revised or deleted, as appropriate, in the HRS documentation record at promulgation.

Although well W410 is correctly depicted on Figure 3 of the HRS documentation record at proposal, the location of well W410 was incorrectly stated in Table 9 of the HRS documentation record at proposal as being 0.4 mile northwest of well W143. Well W410 is 0.05 mile north of well W143, and Table 9 of the HRS documentation record at promulgation has been revised accordingly.

These revisions do not impact the use of these wells in evaluating an observed release at this Site and do not impact the site score. See sections 3.16.1.1, Establishing Background Levels, 3.16.1.2, Well W122 Location and Concentration, 3.16.1.3, Well W412 Location and Concentration, 3.16.1.4, Well W29 Location, and 3.16.2.2, Well 414 Location and Concentration, of this support document.

Regarding the locations of wells SLP1-SLP-3 on Figure 24 of the ESI, these wells are incorrectly labelled and depicted north of Minnetonka Boulevard on Figure 24 of the ESI. The EPA acknowledges that Figure 8A of the Site Investigation report included as Reference 13 of the HRS should be revised to correctly label wells W414, W415, and W416. The EPA notes that Figure 24 of the ESI report included as Reference 7 of the HRS documentation record has been revised to correctly rename wells SLP1, SLP2, and SLP3 as wells W414, W415, and W416, respectively, and to correct the location of these wells shown on the figure (see pages 4569-4570 of Reference 7 of the HRS documentation record at promulgation). Similarly, Figure 8A of the Site Investigation report included as Reference 13 of the HRS documentation record has been revised to rename wells SLP-01, SLP-02, and SLP-03 as wells W414, W415, and W416, respectively (see pages 1663-1664 of Reference 13 of the HRS documentation record at promulgation). The site score did not rely on these figures in the Site Investigation and ESI reports, and the corrections do not impact the HRS evaluation of this site.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

4.0 Conclusion

The original HRS score for this site was 50.00. Based on the above responses to public comments, the score remains unchanged. The final scores for the Highway 100 and County Road 3 Groundwater Plume site are:

Ground Water:	100.00
Surface Water:	NS
Soil Exposure:	NS
Air Pathway:	NS
HRS Score:	50.00

Attachment 1

Minnesota Pollution Control Agency Response to Comments

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

July 7, 2017

Harvey Sheldon
222 North LaSalle Street, Suite 300
Chicago, IL 60601

William Hefner
2263 Waters Drive
Mendota Heights, MN 55120

RE: St. Louis Park Solvent Plume Preliminary Assessment

Dear Mr. Sheldon and Mr. Hefner:

The Minnesota Pollution Control Agency ("MPCA") received your letter, dated May 24, 2017, submitted on behalf of your clients, Daikin Applied Americas Inc. and Super Radiator Coils LP, regarding the site located at 6714 Walker Street in St. Louis Park. Thank you for your comments. The letter provides comments regarding the MPCA's 2015 Preliminary Assessment Report for the St. Louis Park Solvent Plume Site and indicates that the Preliminary Assessment Report should be withdrawn from USEPA consideration.

The Preliminary Assessment report is a ***preliminary*** document that follows prescribed Site Assessment methodology outlined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to determine if there is a ***potential*** for exposure to hazardous substances based on certain criteria established in law (i.e., whether there is a potential for exposure to hazardous substances; whether there are potential exposure pathways that could be affected) and whether there is a potential that the contamination at a site could be sufficiently substantial to require federal intervention by listing on the National Priorities List (NPL). The Preliminary Assessment guidance is EPA/540/G-91/013.

The *Preliminary* Assessment report is a screening level evaluation, and it is not intended to be a complete investigation report. It does not explain how chemicals of concern migrate, nor is it intended to be a thorough analysis of subsurface conditions with a comprehensive site conceptual model (including groundwater modeling noted in your May 24, 2017 letter). The scope of the Preliminary Assessment is defined in Section 420 of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300). The Preliminary Assessment does not, as indicated in your May 24, 2017 letter, "chase after specific sources" that are identified in the Site Assessment process. All of these items are beyond the scope and regulatory intent of the Preliminary Assessment and are addressed in later stages of the Superfund process (e.g., the Remedial Investigation).

While it is true that the Preliminary Assessment Report notes several *potential* source areas being investigated (including at least 15 different properties), it does not identify Responsible Parties, nor does it make allegations of misdeeds. That is beyond the scope of the EPA Preliminary Assessment process. As the first stage of investigation conducted for every site in the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS), the Preliminary Assessment is a relatively quick, low-cost compilation of existing information about the site and its surrounding area, with an emphasis on obtaining comprehensive information on people and resources that might be threatened by a release from the site. Consequently, the document simply identifies data collected that is relevant to the St. Louis Park solvent plume site and reports that data pursuant to CERCLA.

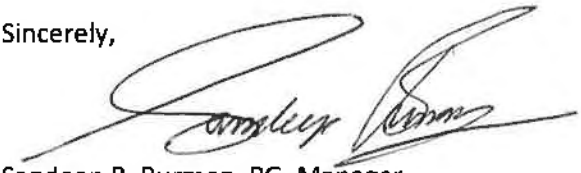
As noted in the Preliminary Assessment Report, hazardous substances (chlorinated volatile organic compounds [cVOCs]) have been detected in six municipal water supply wells from two different communities. Concentrations of the cVOCs are sufficiently high to require two of the St. Louis Park wells to be removed from production until a treatment facility can be constructed to remove these contaminants. Furthermore, cVOC concentrations in two of the Edina wells were high enough to require these wells to be off-line until a treatment facility was constructed in 2012. There is a clear primary exposure pathway via the groundwater-drinking water pathway.

The footprint of the groundwater plume covers several square miles, affecting at least two different communities' drinking water supplies. Without intervention, the groundwater contamination plume has the potential to expose over 100,000 citizens in those communities to potentially harmful levels of contaminants. Therefore, the municipal well impacts warrant further evaluation.

The Preliminary Assessment Report was prepared by MPCA under a Cooperative Agreement with the USEPA. The USEPA has finalized the Preliminary Assessment report and is currently using that information pursuant to its federal processes. As such, the MPCA is unable to honor your demand to immediately withdraw the Preliminary Assessment Report from USEPA's consideration. However, your comments on the Preliminary Assessment report will be placed in the site file.

Please contact me at 651-757-2256 or email at sandeep.burman@state.mn.us if you have further questions.

Sincerely,



Sandeep R. Burman, PG, Manager
Site Remediation & Redevelopment Section
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SB/JJ:bhj

ec: Gregory Small, PG, Site Assessment Program, MPCA
Jen Jevnisek, Project Manager, MPCA
Dave Scheer, PG, Hydrogeologist, MPCA
Crague Biglow, PG, Supervisor, MPCA
Carmen Netten, Staff Attorney, MPCA

cc: Denise Boone, Chief, Site Assessment and Grants Section, EPA Region 5

Attachment 2

EPA Revised Guidance on Compiling Administrative Records for CERCLA Response Actions

Editor's Note:
On March 18, 2013, EPA issued a final rule, effective April 17, 2013, to revise the National Contingency Plan (NCP), 40 CFR 300.805(c) regarding public availability of the administrative record file. Specifically, this revision added language to the NCP to broaden the technology to include computer telecommunications or other electronic means, that the lead agency is permitted to use to make the administrative record file available to the public regarding documents that form the basis for the selection of a response amendment. The rule is available at www.gpo.gov/fdsys/pkg/FR-2013-03-18/pdf/2013-06189.pdf. Readers should be aware of the amendment when reading this guidance.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 20 2010

MEMORANDUM

SUBJECT: Revised Guidance on Compiling Administrative Records for CERCLA Response Actions

FROM: Dana Tulis, Acting Director
Office of Emergency Management

Elliott Gilberg, Director
Office of Site Remediation Enforcement

James Woolford, Director
Office of Superfund Remediation and Technology Innovation

TO: Regional Counsel, Regions I-X
Waste Management Division Directors, Regions I-X

This memorandum transmits to you the "Revised Guidance on Compiling Administrative Records for CERCLA Response Actions." This guidance replaces the "Final Guidance on Administrative Records for Selecting CERCLA Response Actions," previously issued on December 3, 1990.

The guidance sets forth the policy and procedures for compiling and maintaining administrative records in connection with response actions conducted under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, and is consistent with Subpart I of the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300. Generally, this guidance does not change the policies and procedures first established in the 1990 guidance; rather, the guidance has been streamlined and updated to, for example, acknowledge advancements in the technologies used to manage and convey information, including the administrative record. The Regions, Headquarters, and the Department of Justice participated in developing this guidance.

As noted in the guidance, the administrative record for a response action serves an important purpose: it contains the information that explains why EPA conducted a particular response at a site. The administrative record helps inform the public of the Agency's actions, and also often

serves as a significant source of factual information. It is therefore important that the administrative record—and the underlying documents contained in the record—fully support a cleanup decision and explain, if necessary, how different aspects of a cleanup fit together (for example, what contaminants were found at a site and how each contaminant may or may not have influenced the ultimate cleanup decision). Regional staff responsible for compiling administrative records and developing the underlying documents, including remedial project managers, on-scene coordinators, records management staff, and site attorneys, should work together to ensure that records are complete.

If you have any questions on the attached guidance, please contact Erin Smith at (202) 564-2038 or Steve Wyman at (703) 603-8882.

Attachment

cc: Office of Regional Counsel Branch Chiefs
Community Involvement Managers
On-Scene Coordinators
NARPM Co-Chairs
Administrative Record Coordinators
Bruce Gelber, DOJ-EES

Revised Guidance on Compiling Administrative Records for CERCLA Response Actions

U.S. Environmental Protection Agency
Office of Site Remediation Enforcement
Office of Superfund Remediation and Technology Innovation
Office of Emergency Management

Table of Contents

I. INTRODUCTION

This guidance sets forth the recommended procedures for establishing and maintaining administrative records for removal and remedial actions conducted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq.[1] Section 113(k) of CERCLA requires the Environmental Protection Agency (EPA or the Agency)[2] to "establish an administrative record upon which the President shall base the selection of a response action." Basically, through a compilation of documents, the administrative record is designed to tell the story of a response action selection decision (*e.g.*, why EPA decided to conduct a cleanup in a particular manner) and provide documentation showing how the public was involved in selecting the cleanup. In addition, judicial review of a CERCLA cleanup generally will be limited to the administrative record, *see* CERCLA § 113(j), so development of an adequate administrative record documenting the selection of a response action is vital.

Generally, a team of Regional staff (often including a remedial project manager (RPM) or on-scene coordinator (OSC), a site attorney, and records management staff) compiles the administrative record, including identifying documents that should be included, maintains the record, and reviews the record file for legal considerations, such as confidential and privileged information. The team that compiles the administrative record for a site should also include community involvement staff. Regions should develop their own procedures consistent with this guidance for compiling and maintaining administrative records.

Section 120(a)(2) of CERCLA provides that all guidelines, rules, regulations, and criteria for preliminary assessments, site investigations, National Priorities List (NPL) listing, and remedial actions are applicable to federal facilities to the same extent as they are applicable to other facilities. Specific information on compiling the administrative record for federal facility response actions is found in Section IV.B.

Agency personnel involved in compiling an administrative record should consult with the Office of General Counsel when questions arise to ensure that the administrative record is properly compiled. In addition, EPA retains full discretion for choosing the appropriate means for compiling the administrative record in accordance with applicable law. In specific circumstances, it may be appropriate to deviate from this guidance.

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[1] This guidance does not address administrative records for enforcement actions, such as the issuance of unilateral administrative orders or administrative settlements. However, this guidance does address whether typical enforcement documents are included in an administrative record, and is also relevant to developing the administrative record for the response actions that are often associated with an enforcement action. This guidance also does not address administrative records for studies, such as preliminary assessment (PA), site investigation (SI), and remedial investigation/feasibility studies (RI/FS), that do not lead to removal or remedial actions under Section 104(a).

[2] Note that EPA is not always the lead agency for a response action, and therefore may not always be the agency primarily responsible for compiling and maintaining the administrative record. This guidance is intended for use by EPA staff where EPA is the lead agency, but it may also serve as a guide to other agencies acting as lead agency at a site.

A. Purpose and Scope of the Administrative Record for CERCLA Response Actions

For purposes of this guidance, the administrative record is the body of documents and information that "forms the basis" for the selection of a particular response action at a site.[3] It generally reflects the information EPA has considered in connection with cleanup decisions at a site and includes the ultimate decisions regarding the response(s). The documents that EPA places in the administrative record should fully explain and support this process, and should therefore include all nondeliberative documents/information that EPA considered or relied upon in selecting the response action, including information that was considered but ultimately not adopted by the Agency.[4] Because the administrative record consists of documents considered or relied upon in selecting a response action, the administrative record typically is complete once the Agency has selected a response action, and the Region has compiled the information considered or relied upon for the response action selection decision, including any documents that relate to public notice. *See* Section III.E.

To develop an administrative record that adequately supports a response action, Regions should be inclusive in placing information in the administrative record; ensure that the documents that make up the record explain, if necessary, how different information in the record fits together and why EPA rejected alternatives to the selected response; and write the documents in such a way as to be understandable to the public. Regions do not necessarily need to include all documents relating to a site in the record; rather, the administrative record is the subset of site documents that have been considered in selecting a particular response action at the site (*e.g.*, a removal). Thus, the record should include final documents generated by EPA (or another lead agency) and support agency or agencies, as well as technical and site-specific information. Information or comments submitted by the public (including potentially responsible parties (PRPs)) during a public comment period also should be included in the administrative record whether or not they support the selection decision. S*ee* Section II.A.

The Regions should consider the following principles when developing the administrative record for a response action at a site:

- Where possible, EPA staff (*i.e.*, the RPM or OSC for the site, working with the site attorney and the records coordinator) should compile the administrative record (in the form of an administrative record file) as documents relating to the selected response action are generated or received by EPA;
- The record should include documents that form the basis for the selection of the response action (*e.g.*, the record of decision);
- The record should include documents that provide information explaining the basis for the selection of a response action (*e.g.*, fact sheets);

[3] Typically, EPA refers to the administrative record as the "administrative record file" until EPA has selected a particular response action, to avoid creating the impression that the record is complete at any time prior to the final selection decision. *See* 55 Fed.Reg. 8666, 8804-5 (March 6, 1990) (National Oil and Hazardous Substances Pollution Contingency Plan Preamble).

[4] References in this guidance to documents and/or information that should be included in the administrative record do not include deliberative information except as otherwise provided in Section II.C. EPA staff should work with counsel to determine if materials are deliberative, or if they are otherwise subject to privilege. Information generally beyond the scope of an administrative record is discussed further in Section II.C.

- The record should contain all properly-submitted public comments—along with documents that show the public's opportunity for participation and comment—related to the selection of a response action and EPA responses to those comments.

CERCLA cleanups are often broken up into distinct response actions, each with its own decision document (*e.g.*, Record of Decision or Action Memorandum). At a given site this may include several removal actions and/or remedial actions, and there may be several operable units as well. For every removal action and every remedial action operable unit, EPA generally compiles a separate administrative record.[5] Information relevant to more than one response decision, such as a site inspection report or a preliminary assessment report, *may* be placed in the administrative record for an initial response action and incorporated by reference in subsequent administrative records for that site (*e.g.*, by listing the document title and indicating its location in the prior administrative record).

B. Judicial Review of the Administrative Record

CERCLA § 113(j)(1) provides that "judicial review of any issues concerning the adequacy of any response action . . . shall be limited to the administrative record." In reviewing a challenge to the response action decision, a court should apply the highly deferential "arbitrary and capricious" standard of review set forth in CERCLA § 113(j)(2). Under this standard, a reviewing court is not supposed to act as an independent decision maker (*i.e.*, the court should not substitute its judgment for that of the Agency), but rather act as a reviewing body that ensures that the Agency's actions were not arbitrary and capricious. Thus, the court should only overturn the response selection decision if a challenger can show <u>on the administrative record</u> that the decision was arbitrary and capricious or otherwise not in accordance with the law. CERCLA § 113(j)(2).

The judicial review provision can provide numerous benefits to EPA. As noted in the legislative history for the Superfund Amendments and Reauthorization Act (SARA), "[l]imiting judicial review of response actions to the administrative record expedites the process of review, avoids the need for time-consuming and burdensome discovery, reduces litigation costs, and ensures that the reviewing court's attention is focused on the criteria used in selecting the response." H.R. Rep. No. 253, 99th Cong., 1st Sess., pt. 1, at 81 (1985).

Record review is designed to save time by limiting the scope of trials, thereby preserving the government's resources. Courts generally should not allow a party challenging a decision to use discovery, hearings, or additional fact finding to look beyond EPA's administrative record. In particular, courts generally will not permit persons challenging a response action decision to depose, examine, or cross-examine EPA staff, state or other federal agency decision makers, or contractors concerning the selection of the response action—this means that by developing an adequate administrative record, Agency staff such as OSCs and RPMs generally will not need to be deposed or testify in court.

A person may challenge a response action decision long after officials responsible for the response decisions have moved into different positions or have left EPA or other involved

[5] Removal actions are generally not divided into operable units.

agencies. Thus, an adequate administrative record also can save EPA the time and effort involved in locating employees who may not remember the facts and circumstances underlying decisions made at a much earlier time.

Finally, an adequate administrative record can help defend Agency decisions against PRP reimbursement claims under CERCLA § 106(b)(2)(D). In such actions, the PRP must demonstrate "on the administrative record" that the Agency's decision in selecting a response action was "arbitrary and capricious or was otherwise not in accordance with law." Where the administrative record used for these actions is the record EPA certified for the site, and where that record is accurate and complete, there should be no reason for a court to consider documents outside the record.

Typically, a trial court should consider materials outside the administrative record only in limited circumstances. *See* CERCLA § 113(j)(1) ("Otherwise applicable principles of administrative law shall govern whether any supplemental materials may be considered by the court"). Generally, a court may consider supplemental materials not included in the administrative record if (1) judicial review is frustrated because the record fails to explain the agency's actions; (2) the record is incomplete; (3) the agency failed to consider all relevant factors; or (4) there is a strong showing that the agency engaged in improper behavior or acted in bad faith. *See U.S. v. Princeton Gamma-Tech, Inc.*, 817 F.Supp. 488, 493 (D.N.J. 1993).

Therefore, it is particularly important that Agency staff ensure that an administrative record is complete and that the included documents clearly explain why EPA made a particular response action selection decision at a site. The record should not only include data, but documents explaining the rationale supporting a particular decision. When the United States presents an administrative record to a court, it should be accurate and complete.

II. CONTENTS OF THE ADMINISTRATIVE RECORD

EPA generally should include the following in the administrative record for CERCLA remedial and removal actions:

- Public comments and documents that demonstrate the public's opportunity to participate in and comment on the selection of the response action.[6]
- Documents that form the basis for the selection of the response action (*i.e.*, documents that were considered or relied upon in selecting the response action). 40 C.F.R. § 300.800.

The specific documents that are generated for each administrative record may differ.[7] For a recommended checklist of documents typically included in an administrative record for removal and remedial actions, please see appendices A and B. Please note, however, that Regions should

[6] Public involvement requirements for removal and remedial actions may differ, and therefore, the public comment procedures discussed in this section may not always apply. For a discussion of the public notice requirements for removal and remedial actions, please refer to Section III.F.

[7] The format of documents may include hard copies, emails, computer disks, videos, photographs, microfiche, and/or other formats.

not rely exclusively on the checklists when compiling the records, but rather should consider the recommendations in this guidance when making decisions on a site-specific basis.

A. Documents Reflecting Public Participation in the Selection of a Response Action

One of the consistent themes in CERCLA is public participation in the cleanup process.[8] CERCLA § 113(k)(2)(A) requires that EPA establish "procedures for the appropriate participation of interested persons in the development of the administrative record . . ." for a removal action. For remedial actions, EPA "shall provide for the participation of interested persons, including potentially responsible parties, in the development of the administrative record…." CERCLA § 113(k)(2)(B). That is, EPA should provide the public with an opportunity to participate in the selection of a response action. In addition, CERCLA § 117 requires EPA to allow for public comment on certain aspects of a proposed remedial action. Participation by interested persons (including affected communities) ensures that EPA (or the lead agency, if not EPA) has considered the concerns of the public, including PRPs, in the selection of a response action.

Regions should make the information considered or relied upon in selecting a response action available to the public, provide an appropriate opportunity for public comment on this information, respond to public comments, and place the comments and information received from the public, along with the Agency responses, in the administrative record. Regions should include in the administrative record all documents related to the public's opportunity to participate (*e.g.*, notices, fact sheets, public meeting agendas and information, etc.), and relevant written comments and information submitted by the public (*e.g.*, reports and data). Regions generally should not include in the administrative record public requests for information, such as Freedom of Information Act (FOIA) requests.

Note that with respect to all public participation, the Regions should assess whether certain information regarding members of the public should remain confidential. This consideration applies to members of the public submitting comments, personal information relating to residential cleanups, and other situations where personal information about members of the public is collected.[9]

1. Public Comments

Regions generally should include public comments on a response action in the administrative record, and should request that substantive oral comments (either in person or over the phone) be put in writing by the commenter and submitted to the Region. Such comments should be included in the administrative record if related to the Agency's decision with respect to selection of a response action. Where a commenter only provides an oral comment, the Region should reduce it to writing itself if it relied on the comment in selecting the response action. The Region should consider confirming in writing with the commenter that it correctly interpreted the commenter's oral comment.

[8] Note that this section may not apply to emergency and time-critical removal actions.

[9] Note that privacy issues are complex and beyond the scope of this guidance. Regional staff should work with counsel and their community involvement staff to resolve specific site issues.

a. Comments Received Prior to the Public Comment Period

Regions may receive comments from the public that relate to the selection of a response action prior to an official public comment period on that action. The Agency is not required to respond to comments submitted prior to a public comment period. However, Regions are encouraged to consider and respond to early comments, and should include in the record file significant comments that were submitted before the public comment period if such comments were considered in the selection of the response action. Considering such early comments provides practical benefits both substantively and procedurally. Early comments may provide important information for the remedy selection process and allow the public (including PRPs, affected communities, and others) additional informal opportunities for participation in the decision-making process. *See*, *e.g.*, 40 C.F.R. §§ 300.815(b), 300.825(a)(2), 300.825(b)(2).

Regions may notify commenters that comments submitted prior to a formal public comment period must be resubmitted or specifically identified during the public comment period in order to receive a formal response. Alternatively, Regions may notify a commenter that it will respond to the comment in a responsiveness summary prepared at a later date. If a Region chooses to respond to comments received prior to a public comment period, its response should be in the form of a written response; it also may be reflected by documented actions taken after receiving the comments, including changes in subsequent versions of documents. If the Region prepares a written response to a comment, both the comment and response should be included in the administrative record.

b. Comments Received During the Public Comment Period

Generally, a Region should include in the administrative record all comments it receives during the formal public comment period in their original form; otherwise a Region should place an explanation in the administrative record explaining why such comments were not included in the format submitted. In addition, Regions should address comments received during the formal public comment period in the responsiveness summary included with the ROD for remedial actions. The responses may be combined by subject or other category in the administrative record.

c. Comments Received After the Public Comment Period

Comments that a Region receives after the formal comment period closes and *before* the decision document is signed should be included in the administrative record but labelled "late comment." Regions should handle such comments as they would post-decision information (*see* Section II.C.1.c), unless the Region elects to consider late-filed comments, in which case it should treat like-natured comments similarly. In such cases, the late-filed comments identified for consideration should be treated as comments submitted during the comment period and addressed accordingly.

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) sets forth the circumstances under which EPA may add documents to the administrative record file *after* the

decision document is signed. *See* 40 C.F.R. § 300.825. These circumstances are discussed in Section II.C.1.c. Comments EPA receives after the decision document is signed should be placed in a post-decision document file.

2. Other Documents Relating to Public Participation

In addition to public comments, EPA should include documents in the administrative record that are "received, published, or made available to the public" as part of the public participation process. 40 C.F.R. § 300.810(a)(3); *see also* 40 C.F.R. §§ 300.815 (remedial actions), 300.820 (removal actions). These include documents that show the public was notified of site activities and had an opportunity to participate in and comment on the selection of a response action. For remedial actions and under certain circumstances, for removal actions, these documents typically include:[10]

- Community involvement plan;
- Newspaper articles showing general community awareness;
- EPA's proposed plan;
- Documents sent to persons on the community involvement mailing list and the associated date when each document was sent;
- Public notices concerning response action selection, such as notices of availability of information, notices of meetings and notices of opportunities to comment;
- The community involvement mailing list (including all known PRPs);
- Documentation of informal public meetings, including information and summary memoranda or notes of information generated or received during the meetings;
- Transcripts of formal public meetings, including meetings held during the public comment period;
- As noted above, the complete text of all public comments that are submitted as part of the response action selection process and EPA's response to comments received from the public concerning the selection of the response action; and
- EPA's responses to comments from the state and other federal agencies (for privileged comments, see Section II.C.2).

B. Documents that Form the Basis for the Selection of a Response Action

The administrative record should include the documents and information that form the basis for a response action decision at a site. EPA and other parties (*e.g.*, states) usually produce certain documents for a CERCLA response action (including the information from the public discussed above) that should generally be part of the administrative record for a site.

[10] Many of the listed documents are not required by the NCP for removal actions. *See* 40 C.F.R. § 300.820. For further discussion of the public participation process as it relates to removal and remedial actions, *see* Section III.F of this guidance document.

1. Decision Documents

Generally, Regions should include the relevant decision documents, as appropriate, in the administrative record. 40 C.F.R. § 300.810(a)(4). These may include:

- Record of decision (ROD) (the remedial action decision document, including responsiveness summary) or the action memorandum for a removal action;
- An explanation of significant differences (ESD) (*see* CERCLA § 117(c)) and information on which it is based, if there is an ESD; and
- Amended ROD and information on which it is based for a remedial action or the amended action memorandum for a removal action, if these are created.

2. Factual Information/Data

Regions should include in the administrative record factual information that forms the basis for the selection of a response action, along with any data or analyses that support or explain the factual information. 40 C.F.R. § 300.810(a)(1). The following is a list of documents containing factual information and data that typically should be included in the administrative record for a response action:

Remedial Actions:

- Preliminary assessment/site inspection (PA/SI) report
- Remedial investigation/feasibility study (RI/FS) workplan (as available), and the final RI/FS
- Proposed plan
- Amendments to the final RI/FS workplan
- Sampling and analysis plan (SAP)
- Sampling data, chain of custody forms, data summary sheets[11]
- Inspection reports
- Quality Assurance Project Plans (QAPPs)
- Technical studies performed for the site (*e.g.*, groundwater studies)
- Risk evaluation/endangerment assessments and underlying documentation
- Pollution reports (POLREPs), if the remedial action follows a removal action
- Fact sheets or summary information generated regarding remedial action alternatives
- Data submitted by the public, including PRPs

Removal Actions:

- Action memorandum, including amended action memoranda and time and cost exemption memoranda (consistency and/or emergency)
- PA/SI report, including sampling data, chain of custody forms, inspection reports, data summary sheets, and closure memoranda
- Engineering evaluation/cost analysis (EE/CA) for non-time critical removal actions

[11] This includes verified data during the RI/FS, or any data collected for previous actions at the site, such as Resource Conservation and Recovery Act (RCRA) actions or removal actions that are considered or relied on in selecting the remedial action. In addition, please note that if sampling data is voluminous, it may be referenced in the index, noting that the information can be made available for review.

- SAP
- Technical studies performed for the site (*e.g.*, groundwater studies)
- Risk evaluation/endangerment assessments and underlying documentation
- Data submitted by the public, including PRPs

3. Policy and Guidance

The administrative record for a CERCLA response action should include all "[g]uidance documents, technical literature, and site- or issue-specific policy memoranda that may form a basis for the selection of the response action." 40 C.F.R. § 300.810(a)(2). Examples include memoranda on: off-site disposal availability (for remedial actions); special coordination needs (*e.g.*, dioxin); applicable or relevant and appropriate requirements (ARARs) (to the extent not in the RI/FS); cost effectiveness; and, the utilization of permanent solutions and alternative treatment technologies for remedial sites. For further information on the location of policy and guidance documents, please see Section III.B.2.

4. Enforcement Documents

Regions should use the same procedures for establishing an administrative record regardless of whether the response action decision is associated with an enforcement action. Regions should include certain enforcement documents in the administrative record only if they contain information that was considered or relied on in selecting the response action or demonstrate public participation, and such information is not contained elsewhere in the record.[12] For example, enforcement orders where the PRP has been ordered to or has agreed to perform part or all of the RI/FS or removal may be appropriate for the record. *See* 40 C.F.R. § 300.810(a)(5). However, EPA should generally not include enforcement documents solely pertaining to liability. *See* 40 C.F.R. § 300.810(a)(5). If a document (*i.e.*, an enforcement document), or a portion of that document is considered or relied on in selecting a response action and the information is not contained elsewhere in the administrative record, Regions should include the document. Enforcement documents that may contain such information and be appropriate for the administrative record include:

- Administrative orders or consent decrees that are relevant to the selection of the response action (if such information is not contained elsewhere in the file);
- Affidavits;
- Notice letters to PRPs;
- CERCLA § 104(e) information request letters and CERCLA § 122(e) subpoenas; and
- Responses or portions of responses to CERCLA § 104(e) information request letters.

The following information may assist EPA staff in developing an administrative record where there is also enforcement activity at a site:

[12] For more information on cleanup enforcement documents such as consent decrees and orders, please refer to http://cfpub.epa.gov/compliance/resources/policies/cleanup/superfund.

Negotiation Documents: During negotiations with EPA, a PRP may produce documents with information that it claims constitutes confidential business information (CBI) or offers of settlement subject to Rule 408 of the Federal Rules of Evidence.[13] Generally, those documents are not part of the administrative record for a response unless they are submitted by PRPs for consideration in selecting a response action and EPA actually considers or relies upon them. *See* also Section II.C.2.

PRP-Lead RI/FS: Where a PRP is conducting the RI/FS, technical documents generated by the PRP should be part of the administrative record if considered by EPA in the response selection decision. Thus, a PRP conducting a PRP-lead RI/FS must submit to EPA (or the lead agency, if not EPA) all technical information relating to the selection of the remedial action generated during the RI/FS. Technical information includes but is not limited to work plans, sampling data, reports, and memoranda. EPA, and not the PRP, must establish and maintain the administrative record (*see Revisions to the Interim Guidance on Potentially Responsible Party Participation in Remedial Investigations and Feasibility Studies* (May 16, 1988), www.epa.gov/compliance/resources/policies/cleanup/superfund/interim-prppart-mem.pdf). EPA may place responsibility for some administrative record maintenance activities on PRPs, such as housing the files at or near the site. To avoid the potential for a conflict of interest, however, PRPs may not be responsible for decisions on which documents comprise the administrative record.

Administrative Orders and Consent Decrees:[14] Generally, only final administrative orders and consent decrees (or information therein) that relate to the selection of a response action but that were issued prior to selection of the response action (*e.g.*, ordering a PRP to conduct the RI/FS), should be included in the administrative record. Administrative orders or consent decrees issued after the signing of the ROD or the action memorandum normally should not be included in the administrative record, unless the consent decree or administrative order meets the criteria for the inclusion of post-decision documents (*see* Section II.C.1.c). Drafts of administrative orders and consent decrees generally should not be included in the administrative record, except in the unlikely event that the document contains information that forms the basis for selection of the response action and the information is not included in any other document in the administrative record. 40 C.F.R. § 300.810(b). In such cases, the information should be included in the administrative record. If the draft document itself is included, it should be in the confidential file (s*ee* Sections II.C.2, III.H). Regions should work closely with the Department of Justice (DOJ) when including information from enforcement documents in the administrative record.

[13] A PRP may also produce CBI documents at other times, particularly in response to CERCLA § 104(e) requests.
[14] The issues relating to administrative records for administrative orders, reimbursement petitions, lien challenges, and de minimis settlements are not addressed by this guidance. However, the guidance does apply to developing the administrative record to support the underlying response action that may relate to these actions. Further, as noted in the guidance, certain information in an enforcement document may have been considered or relied upon in selecting a response action, and therefore may be appropriate to include in the administrative record.

5. Other Information

There may be other information not listed above that is appropriate for Regions to include in the administrative record, such as:

Imminent and Substantial Endangerment: The administrative record should include documents explaining a finding under CERCLA § 106 of imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance (*e.g.*, risk assessment and its supporting documentation). For additional discussion, see *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (July 1999) (www.epa.gov/superfund/policy/remedy/rods/index.htm). Proper documentation of the determination of an imminent and substantial endangerment in the administrative record can help limit judicial review of that determination in an action under CERCLA § 106.

Resource Conservation and Recovery Act (RCRA) Documents: If an action is taken under CERCLA at a site with a history of RCRA activities, much of the information relating to the RCRA activities (*e.g.*, information relating to waste management or corrective action at a site) may be considered or relied upon in making the CERCLA response action decision, and if so, should be included in the administrative record. Such information may include information on types of wastes, quantity of wastes, observations of potential threats gathered during RCRA investigations, and documents such as permit applications, inspection reports, RCRA Facility Investigation reports, and Corrective Measures Studies.

State Involvement: Documentation of state involvement may be appropriate for the administrative record, including documents identifying state ARARs, CERCLA § 121(f)(1)(G) notices (regarding an opportunity to comment on a proposed plan for a remedial action) and responses, a statement of the state's position on the proposed plan (concurrence, nonconcurrence, or no comment at the time of publication), and the state's opportunity to concur in the selected remedy and be a party to a settlement.

Health Information: Certain information issued by the Agency for Toxic Substances and Disease Registry (ATSDR) may be appropriate for inclusion in the administrative record, including health assessments, health studies, and public health advisories. *See* Section IV.C.

Natural Resource Damages: Information relating to natural resource damages may be appropriate for the administrative record, including Natural Resource Trustee notices and responses, findings of fact, final reports and natural resource damage assessments; information from Indian Tribes; and Historical Resource Trustees. *See* Section IV.D.

Index: Regions should include a copy of the certified index in the administrative record. *See* Section III.D.

C. Documents Generally Not Included in the Administrative Record

Certain documents generally should not be included in the administrative record. Specifically, Regions normally should not include in the administrative record documents that are predecisional and deliberative (which documents will often be privileged in one or more respects). In addition, Regions generally should not include in the administrative record documents that were not considered or relied upon in selecting the response action and do not reflect public involvement in the decision-making process. Regions typically do not need to include these documents in the administrative record, although some may be available to the public if requested under FOIA.

Regions should keep material that is beyond the scope of the administrative record in separate files maintained at the Regional office or other central location. Alternatively, if records for a site are maintained in electronic files, for example, in the Superfund Document Management System (SDMS), Regions should mark these documents (*e.g.*, with a document flag) to indicate that they do not belong in the administrative record, and should be kept in a separate file for the site.

1. Documents that Neither Form the Basis for the Selection of a Response Action Nor Demonstrate Public Participation

a. Deliberative Materials (Including Draft Documents and Internal Memoranda)

Under EPA's regulations, in general, only nondeliberative documents should be included in the administrative record. As a result, draft documents are generally not included. *See* 40 C.F.R. § 300.810(b). Drafts are often revised or superseded by subsequent drafts and final documents prior to the selection of a response action and may reflect the internal, predecisional deliberations within the Agency; thus, drafts are typically not included in administrative records.

Where a draft contains unique factual information that is considered or relied upon in a response action decision, that information should be extracted and placed into a nondeliberative document. In rare cases, such a draft itself may need to be in the record. Regions should consider whether to include such drafts in the administrative record. The site attorneys should be consulted prior to including such draft documents in the record.

Similarly, internal memoranda, staff notes and communications are also typically not part of the administrative record. *See* 40 C.F.R. § 300.810(b). However, in unusual cases, such documents may contain information not available elsewhere in the record that explains the decision. Once again, the preferable course of action is to extract the necessary information and create a nondeliberative document that contains the information. In rare cases where creation of a new document is not possible, the site attorney should be consulted to determine, in light of the information contained in the document, whether to include these documents in the administrative record. If the team determines it necessary to place these documents in the administrative record, they should assess whether they should be placed in the confidential file or generally be treated as publicly-available documents. Finally, each Region should consult caselaw in its

jurisdiction to identify specific judicial interpretations of how Courts define and treat deliberative documents with respect to the administrative record.

b. NPL Rulemaking Docket Information

Generally, information included in the National Priorities List (NPL) rulemaking docket, such as the hazard ranking system (HRS) scoring package and comments received on the listing, need not be included in the administrative record for selection of a response action. The NPL docket contains information relevant to the decision to list a site, which is generally not relevant to the decision on the selection of the response action.

However, documents in the NPL docket that contain sampling data or other factual information that is considered or relied upon in selecting a response action should be included in the administrative record if the information is not found in other documents in the record. Such information may include early sampling data taken by parties other than EPA (*e.g.*, a state).

c. Post-Decision Information

In general, post-decision documents should not be included in the administrative record (except in certain circumstances, discussed below), but rather, should be placed in a post-decision document file or the general site file kept at the Region. Since the administrative record contains the information that was considered or relied upon in selecting the response action, documents generated or received after selecting the response action are generally not relevant to that response decision. Such documents may, however, be relevant to a later response selection decision and if so, should accordingly be included in that administrative record. *See* 40 C.F.R. § 300.825. Regions should establish procedures for compiling post-decision information.

The Regions may generally only add documents kept in the post-decision document file or site file to the administrative record in limited situations. For example, documents may be added where a decision document does not address a portion of the decision or reserves a portion of the decision for a later date (*e.g.*, a decision document that does not resolve the type of treatment technology). 40 C.F.R. § 300.825(a)(1). In such cases, EPA should continue to add documents to the administrative record file that form the basis for the unaddressed or reserved portion of the decision, until such decision is made.

In addition, documents may be added where there is an explanation of significant differences (ESD) pursuant to 40 C.F.R. § 300.435(c) or an amended decision document. 40 C.F.R. § 300.825(a)(2) (note that the Regions may also create a separate administrative record for each response decision). With respect to an ESD, the administrative record should include the explanation of significant differences, the underlying documentation for the response action changes, any significant comments from the public, and EPA's responses to any significant comments. For an amended decision document, EPA should include in the administrative record the amended document, the underlying documentation, any significant comments from the public, and EPA's responses to any significant comments. Note that ROD amendments involve a formal public comment period. 40 C.F.R. § 300.435(c)(2)(ii).

As a third example, the Region may consider and place in the administrative record all comments submitted by interested parties after the close of the public comment period if such comments (1) contain significant information not contained elsewhere in the administrative record and (2) where the information could not have been submitted during the public comment period and such information "substantially supports the need to significantly alter the response action." 40 C.F.R. § 300.825(c).

Furthermore, the Region may also hold additional public comment periods or extend the time for submission of public comments after a decision document has been signed. 40 C.F.R. § 300.825(b). Any such comments should be limited to the issues on which EPA requested comments. EPA generally places in the administrative record all comments received during additional comment periods that are responsive to its request for additional comments, any responses to submitted comments, and all documents that support the request for additional comments (*e.g.*, public notices and transcripts of public meetings) and the final decision with respect to the issue. 40 C.F.R. § 300.825(b).

2. Privileged and Confidential Information

Like the deliberative information discussed in section 1, documents that are privileged or confidential (*e.g.*, documents subject to the attorney-client or attorney work product privileges, or documents that are exempted from disclosure under the Freedom of Information Act (FOIA), such as documents that contain confidential business information)[15] generally are not included in the administrative record, except where "information which forms the basis for the selection of a response action is included only in a document containing confidential or privileged information and is not otherwise available to the public." 40 C.F.R. § 300.810(c), (d). In such cases, the confidential or privileged information, to the extent feasible, should be summarized in such a way as to make it disclosable and the summary should be placed in the publicly-available portion of the administrative record. 40 C.F.R. § 300.810(d). Alternatively, Regions may redact confidential portions of a document and place the redacted document in the administrative record, but in such cases, the Regions should include the original, unredacted version in the confidential file (*see* Section III.H for procedures concerning the confidential file). If the privileged or confidential information cannot be summarized or redacted in a disclosable manner, the information should be placed only in the confidential file. Note that all documents in the confidential file must be listed in the index to the file. Regions should develop a process (if not already in place) for conducting a review for privileged or other confidential information, and should ensure that documents are not released to the public prior to such review. Regions should perform these reviews as early as possible and they must include consultation with an EPA attorney. Finally, each Region should consult caselaw in its jurisdiction to identify specific judicial interpretations of how privileged and confidential documents are treated with respect to the administrative record.

Where EPA asserts that information considered or relied upon in the selection of a response action is privileged or confidential, the head of the Agency office responsible for developing the

[15] For more information on specific privileges and information exempted from disclosure, please refer to Agency guidance and the Department of Justice's 2009 Freedom of Information Act Manual, found at http://www.usdoj.gov/oip/foia_guide09.htm.

document in question normally should assert the privilege or exemption; for certain privileges or exemptions, additional approval may be required. The official asserting the privilege or exemption should consult with the site attorney. Note that public disclosure of a privileged or exempted document may result in waiver of the privilege or exemption, although the nature and extent of the waiver will depend upon the privilege or exemption asserted and the circumstances of the disclosure. If the privilege or exemption is waived and the document becomes a public document, it must be disclosed to any requester. In light of the potential for waiver, it is important that EPA not release potentially privileged or exempted documents to any party without consulting with the site attorney. After consulting with the site attorney, Regions may consider whether it is appropriate under the circumstances to include privileged information in the public portion of the administrative record (*e.g.*, the Region may decide that the significance of the information outweighs concerns regarding a privilege in that instance).

III. PROCEDURES FOR ESTABLISHING AND MAINTAINING THE ADMINISTRATIVE RECORD

A. General

The following is a discussion of the procedures Regions should consider when establishing and maintaining the administrative record. This section includes information on the location of the administrative record, the role of the Records Coordinator, compiling and maintaining the administrative record, how certain documents (*e.g.*, privileged documents) should be maintained, public availability of the administrative record, and coordination with other stakeholders such as states. Regions should use this guidance to develop their own procedures for compiling and maintaining administrative records.

B. Location of the Administrative Record

1. General

CERCLA § 113(k)(1) requires that the administrative record be available to the public "at or near the facility at issue." 40 C.F.R. § 300.805. In addition, a copy of the administrative record should be located at the Regional office or other central location.[16] 40 C.F.R. § 300.805(a). Both copies of the administrative record should be available for public inspection at reasonable times (*e.g.*, 9 a.m. – 4 p.m., Monday – Friday). In the case of an emergency removal, the administrative record need only be available for public inspection at the central location, unless otherwise requested (*e.g.*, by a member of the public). 40 C.F.R. §§ 300.805(a)(5), 300.805(b).

The administrative record located at or near the site should be placed in one of the information repositories that may already exist for community involvement purposes.[17] These

[16] The lead agency (if not EPA) may also keep duplicates of the record at any other location.

[17] An information repository contains documents that relate to a Superfund site and the Superfund program in general. EPA requires an information repository at all remedial action sites and any site where a removal action is likely to extend beyond 120 days. *See* 40 C.F.R. §§ 300.430(c)(2)(iii), 300.415(n)(3)(iii), 300.415(n)(4)(i). The information repository may contain information beyond the scope of the administrative record, since the documents in the administrative record relate to a particular response action selection decision at a site.

are typically located in a library, town hall, or other publicly-accessible place. If there is no existing information repository, or if the repository does not have sufficient space or adequate equipment for viewing the administrative record, EPA may choose any other publicly-accessible place near the site to house it.[18] When a Superfund site is located at or near an Indian reservation, the centrally-located copy of the administrative record may be located at the tribal headquarters.

Generally, it is recommended that Regions consult with their Community Involvement Coordinators (CICs) for the site on the location of the information repository and administrative record. Specifically, the CIC can make the initial contact with the community to establish the location for the local repository and request housing for the administrative record, and work with EPA to transmit the administrative record to the local repository. As part of the transmission package, the administrative record should include an introductory cover letter addressed to the librarian or repository manager, an index of the included documents, and an administrative record fact sheet to help answer questions from the public. The CIC should review the fact sheet before it is transmitted. In addition, Regions should include a transmittal acknowledgement form or mail the package with a "return receipt" to ensure that the repository received the administrative record. EPA should handle updates to the administrative record in a similar manner.

Regions should maintain a master administrative record at the Regional office (*e.g.*, in SDMS), and also maintain a separate publicly-available copy of the administrative record at the Regional office or other central location. To preserve the integrity of the master administrative record, it should not be accessible to the public. If it is not feasible for the Region to establish a separate public copy, it will need to establish an effective security system for the master administrative record. Disposition of the master copy of the administrative record must follow the schedule set forth by the National Archives and Records Administration (EPA Series 019R).

Regions may maintain and make a convenience copy of the administrative record available to the public in a manner other than hard copy (*e.g.*, on CD-ROM, microform, or a flash or thumb drive) in addition to a hard copy at the location at or near the site, so long as the appropriate viewing equipment is available. The Agency may also make the administrative record available on the internet, though this should not be the sole method by which the public can access the record. Use of these technologies can significantly reduce the space required to store the administrative record, and can simplify the task of reproducing copies. If using internet, CD-ROM, flash/thumb drives, or microform to maintain the public administrative record at the Regional office or other central location, the Region should provide a computer/micrograph reader and printer—or some other means for the public to obtain copies of documents—at the Regional office or other central location to ensure public access to the administrative record.

2. Special Documents

There are certain documents that are part of the administrative record because they were considered or relied upon in selecting a response action, but that do not need to be physically

[18] If the site is located at a facility that requires security clearance, the administrative record for that site must be located where security clearance is not required. The public must have free access to the administrative record.

located at certain locations where the record is housed. As discussed above, Regions should maintain the administrative record in two locations: (1) at the Agency or other central location, and (2) at a location at or near the site. Certain documents do not need to be in one of these locations, or at times, in either location, unless requested (*e.g.*, by a member of the public). These include (but are not limited to) verified sampling data, chain of custody forms, privileged/confidential documents, policy and guidance documents, technical literature, and certain legal sources. These documents, however, should be incorporated in the administrative record by reference (*e.g.*, referenced in the index but not physically in the record), and the index should indicate where the documents are publicly accessible. Note that if requested, EPA should include these documents in the administrative record at or near the site, unless they are more appropriately placed in the confidential part of the record. 40 C.F.R. § 300.805(b). Additionally, Regions should work with the CIC to the extent that they need to determine the public availability of the documents described below.

Unless requested, the following types of documents normally do not have to be located in multiple locations:

Verified Sampling Data:[19] Verified sampling data may not have to be located in either administrative record (*i.e.*, the record at or near the site or at the Regional office or other central location); the sampling data may be left in the original storage location (*e.g.*, Environmental Services Division or contract laboratory). 40 C.F.R. § 300.805(a)(1). Data summary sheets, however, should be physically located in the administrative record. The index should indicate the location and availability of the sampling data.

Chain of Custody Forms: As with verified sampling data, chain of custody forms do not have to be physically located in either the administrative record located at or near the site or the record at the central location, and may remain in their original location; in such cases, the index should reference them and provide their location. 40 C.F.R. § 300.805(a)(1).

Confidential and Privileged Documents: The confidential file should be kept in a locked cabinet at the Regional office or other central location, such as in a confidential file in SDMS; normally it is not kept at or near the site. The index should list any documents in the confidential file. See Section II.C.2 above.

Policy and Guidance Documents: Guidance documents generated for a particular site should be included in the administrative record located at or near the site and at a central location. However, guidance documents not generated for the particular site for which the administrative record is being compiled do not have to be physically placed in the administrative record at or near the site, so long as the guidance documents are available at a central location, the index to the administrative record indicates their location and availability, and there has not been a

[19] For purposes of this guidance, "verified sampling data" are data that have undergone the quality assurance and quality control process. "Invalidated sampling data" have been incorrectly gathered or analyzed and generally will not be part of the administrative record. "Unvalidated sampling data" are data which have not yet undergone the quality assurance and quality control process. Because they are normally superseded by verified data, the unvalidated data are not generally part of the administrative record. However, such data may in some cases be relied on in selecting a response action, such as an emergency removal where there is no time for verification. Unvalidated sampling data which are relied on in selecting a response action should be included in the record.

request to house the documents in the location at or near the site. 40 C.F.R. §§ 300.805(a)(2), (b). Regions could additionally reference guidance documents in bibliographies for administrative record documents. Regions may develop their own methods for providing information on the location and availability of non-site specific guidance documents. For example, Regions may state in the index that guidance documents listed in the index (and in bibliographies) that are not present in the administrative record will be provided upon request to the Regional contact (*e.g.*, RPM or OSC). To provide the Regional contact with appropriate guidance, each Region should consider maintaining a compendium of guidance documents. A compendium might include guidance documents that are frequently used in selecting response actions. The Regions may want to consider making the compendium available online.

If a guidance document is listed in the bibliography to a document included in the administrative record (*e.g.*, listed in the bibliography to the RI/FS), it need not be listed again in the index to the administrative record. In this case, however, the index should state that documents listed as bibliographic sources might not be listed separately in the index.

Technical Literature: Technical literature generated for the site at issue should be physically included in the administrative record for that site, even if it is publicly available. Similarly, technical literature not specifically generated for the site that is not publicly available should also be included in the site-specific administrative record. Such documents may include technical journals and unpublished documents that are not available online, through the Library of Congress, or not circulated to technical libraries.

Publicly-available technical literature not generated specifically for the site, however, need not be located at or near the site or at the Regional office or other central location if the documents are referenced in the index to the administrative record or cited in a document contained therein. *See* 40 C.F.R. § 300.805(a)(3). These documents do not have to be physically included in the administrative record, unless requested, because they are already available to the public, copying such documents creates a significant burden to EPA, and copyright laws may pose additional barriers to such copying. Examples of publicly available technical literature may include engineering manuals, groundwater monitoring or hydrogeology textbooks, ATSDR toxicological profiles, and articles from technical journals.

If technical literature is listed in a bibliography to a document included in the administrative record (*e.g.*, listed in the bibliography to the RI/FS), it need not be listed again in the index to the administrative record. In this case, however, the index should state that documents listed as bibliographic sources might not be listed separately in the index.

Computer models and technical databases need not be physically included in the administrative record but should be referenced in the index and made available upon request. Printouts or other documents produced from the models and databases should be physically included in the administrative record if such documents contain information that was considered or relied on in selecting the response action.

Certain Legal Sources: Copies of statutes and regulations cited in documents included in the administrative record need not be included in the administrative record if they are readily

available to the public. For example, the NCP and other regulations are easily accessible since they are published in the Federal Register and the Code of Federal Regulations, and are also available online. The Region should work with the CIC to determine the availability of any legal sources to the public.

Copies of the actual standards (statutes or regulations) comprising federal and state ARARs should be physically included in the administrative record if they are not easily accessible. Also, other federal and state criteria, advisories, and guidance documents pertinent to the site may not be easily accessible. If such documents are cited in an RI/FS, appendix to the RI/FS, EE/CA, or ROD, they should be included in the administrative record.

C. Managing the Administrative Record: The Administrative Record Coordinator

Each Region should have an Administrative Record Coordinator. The Record Coordinator generally has the duty of ensuring that administrative records are compiled and maintained according to Subpart I of the NCP and this guidance. The Record Coordinator normally will not be responsible for deciding which documents are included in an administrative record—those decisions should be made by the OSC or RPM, with appropriate consultation with the site attorney. However, Record Coordinators work closely with RPMs, OSCs, enforcement staff, records management staff, site attorneys, community involvement staff, and the DOJ (for cases in litigation) in compiling the administrative record. The Record Coordinator's duties ordinarily include:

- Developing procedures for creating administrative records in accordance with the statute and NCP;
- Coordinating with Regional staff to ensure that the public is notified that an administrative record is available for inspection (*see* CERCLA § 113(k)(2)(B), 40 C.F.R. § 300.815(a) (for remedial actions); CERCLA § 113(k)(2)(A), 40 C.F.R. § 300.820(a)(1) (for removal actions));
- Ensuring that administrative records are available at or near the applicable site (*see* CERCLA § 113(k)(1), 40 C.F.R. § 300.805(a));
- Ensuring that the administrative records are available at the Regional office or other central location (*see* 40 C.F.R. § 300.805(a)) ;
- Coordinating efforts with Regional staff to obtain the necessary documents;
- Indexing the administrative records (*see* 40 C.F.R. § 300.810(a)(6));
- Updating the administrative records and indices on a regular basis (*e.g.*, quarterly);[20]
- Ensuring that the administrative records are available to the public for copying;
- Ensuring that sampling and testing data, quality control and quality assurance documentation, and chain of custody forms are available for public inspection, possibly at a location other than that of the administrative record (*see* 40 C.F.R. § 300.805(a)(1));
- Coordinating with Regional staff on questions of relevance and confidentiality of documents submitted for an administrative record;

[20] Note that this depends on other Agency staff providing documents to the Record Coordinator to add to the record file as they are generated.

- Arranging for production and presentation of the administrative record to a court when necessary for judicial review;
- Maintaining the confidential portion of an administrative record, as appropriate, which includes working with other Agency staff to redact confidential information from a document, if necessary (*see* 40 C.F.R. § 300.810(d));
- Potentially maintaining a compendium of CERCLA guidance documents (*see* 40 C.F.R. § 300.805(a)(2));
- Coordinating with states and federal agencies on administrative records compiled by them (*see* 40 C.F.R. § 300.800(b), (c)); and
- Notifying appropriate personnel when an administrative record is being made available for review.

Note that if the manner in which EPA compiled and maintained the record is questioned in litigation, the Record Coordinator may be called upon to prepare an affidavit or testify about those procedures. Therefore, the Record Coordinator should be familiar with the procedures associated with compiling the administrative record and qualified to fulfill the responsibilities outlined in this section.

D. Compiling the Administrative Record: File and Index

Ideally, the site team, including the RPM or OSC, site attorney, and Record Coordinator, should compile the administrative record by placing documents that were considered or relied upon in selecting the response action in the administrative record file as they are generated or received (and determined to be appropriate for the administrative record) and making the documents available to the public. One way to accomplish this is for the RPM or OSC to create an electronic site file in SDMS and designate documents as they are generated in SDMS for inclusion in the administrative record file, and eventually, the administrative record. The site team also should maintain a hard-copy version of the administrative record. Regions may also scan documents into SDMS for the administrative record.[21]

EPA should continuously update the administrative record file until the remedy selection document is complete (at which time the administrative record should be complete. *See* Section III.E). Ultimately, all documents considered or relied upon in selecting the response action generally should be in the administrative record file by the time the decision document (*e.g.*, the record of decision) is signed.[22]

The site team should segregate any documents that relate to the site but that generally should not be included in the administrative record (*e.g.*, documents that may be privileged or draft) and the site attorney and other appropriate staff should periodically review them. EPA should

[21] Note that in certain circumstances fielded data or metadata from SDMS may appear on administrative record documents. Ideally, such data should be removed from the administrative record. However, if it is visible, Regions may want to consider including a disclaimer indicating that such data is not part of the administrative record.
[22] The Record Coordinator should place documents relevant to the response selection but generated or received after the decision document is signed in a post-decision document file. These documents may be added to the administrative record under certain circumstances, discussed in Section II.C.1.c.

resolve any questions regarding whether a particular document should be included in the administrative record prior to important events, such as the start of the public comment period.

Regions typically develop an index of the documents included in the administrative record for a site. *See* 40 C.F.R. § 300.810(a)(6). The index may play a key role in enabling both Agency staff and members of the public to locate and retrieve documents included in the administrative record. In addition, the index can serve as a reference to the public for documents located elsewhere, such as those included in the compendium of guidance documents, and serves as an overview of the history of the response action at the site.

The index can be organized either by subject or in chronological order. If documents are customarily grouped together, as with sampling data and chain of custody documents, they may be listed as a group in the index to the administrative record. 40 C.F.R. § 300.810(a)(6).

E. Finalizing the Administrative Record

All documents that are appropriate for the administrative record generally should be in the record by the date the Agency signs the decision document. An administrative record is complete once the Agency has selected a response action, and the Region has compiled all the information considered or relied upon for the response action selection decision.

EPA must certify the completeness of the administrative record when the record is filed in court (*see* Appendix C for a sample certification). When EPA is the lead agency, such certification should be signed by the Regional Administrator's designee, after consultation with the site attorney. Any certification of the administrative record should be made by program staff and not legal staff. The Region also may choose to have the Record Coordinator certify that the record was compiled and maintained in accordance with applicable Agency regulations and guidance. Such certification should attest that the administrative record was compiled in accordance with current Agency procedures and should not address the completeness of the administrative record.

If a state or other federal agency is the lead agency, that agency must certify that the record was compiled and maintained in accordance with applicable regulations and guidance. After the state or federal agency provides this certification, the Regional Administrator's designee should certify as to the completeness of the record.

If, after certification, the Region discovers that documents considered or relied upon in selecting the response action were accidentally omitted, the Region may add such documents to the record after notice to the public (and where appropriate, the court and opposing parties). The index for the record should include such notice.

F. Public Availability of the Administrative Record

1. General

CERCLA § 113(k) specifies that the administrative record "shall be available to the public." To satisfy this provision, EPA complies with the public participation procedures set forth in CERCLA § 113(k) and § 117. The NCP contains additional provisions with respect to public availability. *See also* "Superfund Community Involvement Handbook" (April 2005), EPA 540-K-05-003.

Although many of the provisions concerning the availability of the administrative record depend upon the nature of the response action (*i.e.*, whether the response is a remedial or removal action), certain provisions are important regardless of the type of response action. In coordination with its community involvement staff, Regions should publish a notice of availability in a major local newspaper of general circulation (in the vicinity of the site at issue) when the administrative record for the site is first made available for public inspection. *See* 40 C.F.R. §§ 300.815(a), 300.820(a)(1), 300.820(b). The notice should include general background about the site, identify the dates of the public comment period, explain the purpose of the administrative record, its location and availability, and how the public may participate in its development. Regions should ensure that public notices are clearly written and placed in well-read sections of the newspaper. Regions should also distribute the notice to persons on the community involvement mailing list. These notices should also be sent to all PRPs for the site, if they are not already included on the community involvement mailing list. As PRPs are issued notice letters, Regions should add their names to the community involvement mailing list and mail them all the notices sent to the other PRPs. Finally, a copy of the notice of availability and list of recipients should be included in the administrative record.

Regions may combine public notice with other notices for the same site, such as a notice of availability of the community involvement information repository, if they occur at the same time. In addition to the required newspaper notice, Regions may inform the public of the availability of the administrative record through existing mechanisms (*e.g.*, the community involvement mailing list). Regions, in coordination with community involvement staff, should consider the specific needs of the particular community when conducting community outreach (*e.g.*, language).

2. Remedial Actions

Regions should make the administrative record for a remedial action available for public inspection when the remedial investigation begins. 40 C.F.R. § 300.815(a). When the RI/FS workplan is approved, Regions should place documents relevant to the selection of the remedy generated up to that point in the administrative record. Documents generally available at that time include the PA/SI, the RI work plan, inspection reports, sampling data, and the community involvement plan. Regions should continue to add documents to the administrative record periodically after they are generated or received during the RI/FS process.

The administrative record should be publicly available both (1) at a Regional office or other central location; and (2) at or near the site. 40 C.F.R. § 300.805(a). Regions should work with public involvement staff to determine where to place the administrative record and send the notice of availability to persons on the community involvement mailing list, including PRPs.

3. Removal Actions

CERCLA § 113(k)(2)(A) requires that EPA establish procedures for the appropriate participation of interested persons in the development of the administrative record for the selection of a removal action. "Appropriate" participation depends on whether the removal is emergency, time critical or non-time critical.

a. Time Critical and Emergency Removal Actions

A time critical removal action is a removal action (including an emergency removal action) for which, based on the site evaluation, EPA determines that a period of less than six months exists before on-site removal activities must begin. 40 C.F.R. § 300.415(n)(2). For all time critical removal actions, EPA must make the administrative record available for public inspection no later than 60 days after the initiation of on-site activity and publish a notice of availability of the administrative record in a major local newspaper of general circulation. 40 C.F.R. §§ 300.415(n)(2)(i), 300.820(a)(1). Where possible, the administrative record should be made available earlier. As with remedial actions, newspaper notices should provide background on the site, include relevant deadlines, explain the purpose of the administrative record, its location and availability, and how the public may participate in its development. Notices should be clear and placed in well-read sections of the newspaper. Where on-site action is expected to extend beyond 120 days from the initiation of removal activities, EPA should by the end of the 120-day period establish an information repository at or near the site (as well as a repository at a central location). 40 C.F.R. § 300.415(n)(3)(iii).

For emergency removal actions, where the release or threat of release requires that on-site removal activities be initiated within hours of the determination that a removal is appropriate and on-site removal activities cease within 30 days of initiation, the administrative record only needs to be available for public inspection at the central location, unless someone requests that a copy be placed at or near the site. 40 C.F.R. § 300.805(a)(5), (b).

For time critical removal actions, EPA should hold a public comment period of not less than 30 days in appropriate situations. 40 C.F.R. §§ 300.415(n)(2)(ii), 300.820(a)(2). In general, a public comment period will be considered appropriate if cleanup activity has not been completed at the time the administrative record is made available to the public and if public comments might have an impact on future action at the site. If EPA considers a public comment period to be appropriate, it should begin at the time the administrative record is made available for public inspection. Note, however, that even if an action is completed before the administrative record is available, the record should be made available to the public. The notice for the public comment period may be combined with the notice of availability of the administrative record if they occur at the same time. The notice should be mailed to everyone on the community involvement

mailing list, and also sent to all PRPs if they are not already on the community involvement mailing list.

EPA should respond to all significant comments received during the public comment period and place the comments and the responses to them in the administrative record. 40 C.F.R. § 300.415(n)(2)(iii). Regardless of whether EPA holds a public comment period, comments that EPA receives prior to the date the decision document is signed and that relate to the selection of the removal action should be placed in the administrative record. Information, including comments, generated or received after the decision document is signed, is discussed further in Section II.C.1.c.

b. Non-Time Critical Removal Actions

A non-time critical removal action is a removal action for which, based on the site evaluation, EPA determines that a planning period of at least six months exists before on-site removal activities must begin. 40 C.F.R. § 300.415(b)(4). Regions should establish the administrative record for a non-time critical removal action no later than when the EE/CA approval memorandum is signed and make the administrative record available for public inspection when the EE/CA is made available for public comment. 40 C.F.R. §§ 400.415(n)(4), 300.820(a)(1). The administrative record should be available at the Regional office or other central location, and at or near the site. Regions should publish a notice of the availability of the administrative record in a major local newspaper of general circulation and include a copy of the notice in the record. 40 C.F.R. § 300.820(a)(1). The newspaper notice should be coordinated with the community involvement staff and distributed to persons on the community involvement mailing list and placed in the administrative record. These notices should also be sent to all PRPs if they are not already on the community involvement mailing list. As PRPs are discovered, Regions should add their names to the community involvement mailing list and mail them all the notices sent to the other PRPs.

G. Maintaining the Administrative Record

Regions should have in place document room procedures to ensure orderly public access to the administrative record, and to ensure the security and integrity of the administrative record to the extent possible. Each Regional office generally should have a reading area where visitors are able to review the administrative record, and the administrative record should be available during reasonable hours. The public reading area should generally include:

- Administrative record;
- Guidance compendium, if applicable;
- Access to appropriate equipment for viewing/printing copies of documents, such as a computer with a CD-ROM drive and printer, photocopier, and/or a microfilm reader/printer (for information on copying, please refer to Section III.I below); and
- Sign-in book to accomplish controlled access and minimize instances of lost or damaged documents. In addition, sign-in books provide documentation of EPA's efforts to provide public access to the administrative record. Pertinent information recorded in the book may include: name, affiliation, date of visit, address, phone number, and site documents viewed.

Note that Regions may choose not to use a sign-in book if it deters the public from reviewing the administrative record and/or if there are privacy concerns.

Because documents in the administrative record should be complete, properly organized and legible, Regions should maintain the integrity of the administrative record. If possible, storage and reading areas should be supervised to maintain proper security, and documents should not leave the document room or be left unattended. To the extent feasible, the Record Coordinator should check the order of the documents after being viewed by the public to ensure that all documents have been returned intact. The documents in the administrative record should be kept secure, either in a locked room or in locked cabinets.

The administrative record located at or near the site should be handled in a similar manner. If possible, the administrative record should be treated as a non-circulating reference; it should not leave the local repository except under supervision. In the event that a copy of the administrative record is contained on a CD-ROM, the Region may want to make multiple copies, so that one copy can be retained by the local repository as a "master" copy and the others available for circulation. When a Region provides the administrative record to the location at or near the site, it should include appropriate EPA phone numbers and/or contact information to the manager of the local repository in the event that problems or issues arise with respect to the record. This information can be included in an informational fact sheet accompanying the administrative record. In addition, the Record Coordinator should plan periodic reviews of the local copy of the administrative record.

Where the site is EPA-lead (whether Fund- or PRP-lead), Regions should retain (in addition to the publicly available administrative record) a master copy of the administrative record at the Regional office or other central location, if feasible. Where a state or other federal agency is the lead agency at a site, EPA should ensure that the state or other federal agency maintains (in addition to the publicly available administrative record) a master copy of the administrative record and where possible, supplies a copy of the index to EPA.

With respect to the public repository, it may be appropriate for Regions to maintain only key documents and a copy of the entire index at the local repository, especially if space is limited after initiation of the response action or after other key events, such as judicial review. Alternatively, a local repository may prefer to have the documents available via CD-ROM or internet, in light of potential space concerns. *See* CERCLA §§ 113(g), (h). The Region should work with the CIC to determine how best to present information to the community.

For general records maintenance, EPA should maintain the public record at least until all cleanup actions (as well as Five Year Review and long-term monitoring) and litigation concerning a site are complete and any statutes of limitation for cost recovery have passed. EPA also should maintain the administrative record in accordance with appropriate records schedules. *See* EPA Records Schedule 019 (http://www.epa.gov/records/policy/schedule/sched/019.htm).

H. Confidential File

When an administrative record has a confidential file (*see* Section II.C.2), EPA should list all documents in the confidential file in the index for the administrative record, identify them as "privileged" or "confidential," provide the title and location of the document, and the basis for the privilege or confidentiality. The Record Coordinator should store the confidential portion of the administrative record in files at the Regional office, in a confidential file in SDMS, or other central location and separate from the publicly-available file; the confidential portion of the record should not be located at or near the site. Each privileged document should be stamped "confidential" at the bottom of each page of the document or in a manner that clearly indicates that all or part of the document is confidential. Where the material is not a written document (such as a computer disk) the jacket should be stamped "confidential." The Record Coordinator should maintain a complete list of all materials contained in the confidential portion of the administrative record, along with a log that identifies persons on the access list (see below) for the confidential file that have checked out and returned the materials in the confidential file (including the time, date, and document name).

As soon as EPA establishes a new administrative record, the Record Coordinator should prepare a routine access list for the confidential file. When EPA is the lead agency, this routine access list must be approved by the appropriate designated person (*e.g.*, the Waste Management Division Director), and legal staff. Once these offices give approval, only persons on the list will be able to access the confidential files, and they must obtain access through the Record Coordinator. For state or other federal agency-lead sites, the Regions should take steps to ensure that the state or other federal agency develops routine confidential file access list procedures.

This policy and procedure for privileged materials does not supersede any policy and procedures established under FOIA, 5 U.S.C. § 552 or EPA regulations implementing FOIA at 40 C.F.R. Part 2. Decisions regarding disclosures of materials under FOIA should be coordinated among the various lead agency officials with access to such materials.

I. Copying

CERCLA § 117(d) requires that each document "developed, received, published, or made available to the public" under that section must be made available for public inspection and copying at or near the site. Under CERCLA § 113(k)(2)(B), these documents must also be included in the administrative record. Regions should ensure that documents in the administrative record are available for copying, but EPA does not bear responsibility for copying the documents itself. Therefore, the administrative record should ideally be available at a facility with a computer printer, microform printer, or copy machine (*e.g.*, a public library).

When the administrative record is available at a facility at or near the site and copying facilities are available there, Regions may encourage the requester to make use of the copying facilities at the location. If copying of the administrative record located at or near the site is difficult for a requesting party, EPA may arrange for copying on behalf of a requester at the Regional or other central location. Regions may ask that requesters arrange for copying by contractors or commercial copy centers that then bill the requester directly.

It is important that EPA follow the FOIA regulations at 40 C.F.R. Part 2, in determining the appropriate charge for copying. Copying fees should be waived for other federal agencies, EPA contractors or grantees, and members of Congress. EPA currently charges $.15 a page for paper copies, though the Agency does not charge for the first 100 copies or until total copying costs reach $15, as provided in 40 C.F.R. Part 2. Reproduction of photographs, microfilms or magnetic tapes, and computer printouts should be charged at the actual cost to EPA.

IV. INVOLVEMENT OF OTHER PARTIES

A. States

1. State Involvement in Federal-Lead Sites

The administrative record for a federal-lead site should reflect the state's opportunity to be involved in selecting the response action. However, the administrative record should only include final state comments, unless other comments explain or convey decisions on substantive aspects of a proposed or selected remedy (*e.g.*, the scope of a proposed action or the identification of potential ARARs). Any preliminary deliberations between the state and EPA relevant to the response selection need not be part of the administrative record if superseded by documentation of the state's final position. Regions should consult with the site attorney to determine if such deliberations are appropriate to include in the record. The record for a remedial action should include documents that reflect at least the following state participation or the opportunity for state participation (40 C.F.R. § 300.825(b)):

- Letter to the state requesting identification of ARARs and the final response from the state identifying ARARs (and certification from the state);
- Comments, or the opportunity to comment, on a proposed finding or decision to select a response action not attaining a level or standard of control at least equivalent to a state ARAR;
- Comments, or the opportunity to comment, on the final draft RI/FS or the proposed plan and EPA responses to the comments;
- Significant post-decision comments by the state and EPA responses to the comments (placed in the post-decision document file for possible inclusion in the administrative record, *see* Section II.C.1.c).

The administrative record for a removal action should reflect any state participation, especially any state comments and EPA responses to the comments.

The governing body of an Indian tribe should be afforded the same treatment as a state in accordance with CERCLA § 126.

2. Federal Involvement in State-Lead Sites

Where a state has been officially designated as lead agency for a CERCLA site, the state should compile and maintain the administrative record for that site in accordance with CERCLA § 113(k) and 40 C.F.R. § 300.800 et seq. of the NCP. Since EPA has ultimate responsibility for both the selection of a response action and the record on which that response action is based, EPA should participate in compiling and maintaining the record. In such cases, EPA should assure that the administrative record forms a complete basis for the selection of the response action.

The state as lead agency should maintain the administrative record at a state office (*e.g.*, the state's central environmental agency office) and at or near the site. At a minimum, the state as lead agency also should transmit to EPA a copy of "the index of documents included in the administrative record, the RI/FS work plan, the RI/FS released for public comment, the proposed plan, any public comments received on the RI/FS and proposed plan, and any other documents EPA may request on a case-by-case basis." *See* 40 C.F.R. § 300.800(c). These documents should be transmitted to EPA as they are generated or received (note that transmittal of the index is not sufficient). In addition, EPA may request other documents on a case-by-case basis.

The Superfund Memorandum of Agreement (SMOA) or Cooperative Agreement (CA) with the state, should address the administrative record requirements. The following language should be included in the SMOA or CA where the state has been officially designated the lead agency for a CERCLA site:

> The state must compile and maintain the administrative record upon which the selection of the [remedial, removal] action is based. The compilation and maintenance of the record must follow 40 C.F.R. Part 300, Subpart I and consider EPA guidance on the administrative record. The administrative record must be located at the state environmental agency office, and at or near the site. In addition, the state must submit copies of the index, the RI/FS workplan, the RI/FS released for public comment, the proposed plan, and any public comments received on the RI/FS and proposed plan to the EPA Regional office, as they are added to the administrative record file. In addition, the state must submit other documents that are requested by EPA. The state shall comply with Section 113 of CERCLA and any applicable regulations. EPA may require the retention of other documents for cost recovery purposes.

The administrative record compiled by the state should reflect EPA's participation, comments, concurrence, and disagreements at the same stages as are required for state involvement in a federal-lead site. The state should place in the administrative record any documents submitted by EPA for inclusion in the record.

B. Federal Facilities

Federal agencies have the responsibility, pursuant to Executive Order 12580, to establish the administrative record for federal facilities under their jurisdiction, custody, or control when using

CERCLA authority for a response action. The administrative record for a federal facility should include all information considered or relied on in selecting the response action at the facility, including documents submitted by EPA on the selection of the response action. The federal agency should comply with all NCP and CERCLA requirements in compiling and maintaining the administrative record, including the minimum public participation requirements in CERCLA §§ 113, 117. *See* 40 C.F.R. § 300.800(b).

The federal agency should maintain the administrative record at or near the site and ensure easy public access to the record. If, for example, a site is a Department of Defense facility, the administrative record should be housed in a location that does not require military clearance for access. The federal agency should keep a complete copy of the administrative record at a location within the federal agency office comparable to an EPA Regional office.

Where the Region is the lead regulatory agency at a federal facility, the Region shall compile and maintain the administrative record. In such cases, the Region should assure that the administrative record forms a complete basis for the selection of the response action. In addition, if the Region is involved in the selection of the response action at a federal facility on the NPL, the federal lead regulatory agency should transmit to the Region "a copy of the index of documents included in the administrative record file, the RI/FS workplan, the RI/FS released for public comment, the proposed plan, any public comments received on the RI/FS and proposed plan, and any other documents the Region may request on a case-by-case basis." 40 C.F.R. § 300.800(b)(3). These documents should be transmitted to the Region as they are generated. Transmittal of the index will not suffice. In addition, other documents may be requested by the Region on a case-by-case basis. Inter-Agency Agreements should delineate the procedures for compiling and maintaining the administrative record.

C. ATSDR

Participation in the selection of a response action by the Agency for Toxic Substances and Disease Registry (ATSDR) should be reflected in the administrative record. The administrative record should include the initial and subsequent health assessments and any other information EPA solicits and obtains from ATSDR which EPA considers or relies on in its selection of a response action.

Draft versions of the health assessment and other draft documents upon which ATSDR comments should not be included in the administrative record. If, however, EPA solicits comments from ATSDR on a draft document such as a draft work plan or RI report, and receives formal comments from ATSDR which EPA considers or relies on in selecting a response action, then the document and comments should be included in the administrative record.

In the event that the ATSDR health assessment and EPA's risk assessment appear inconsistent, a document explaining the difference should be generated and placed in the administrative record.

D. Natural Resource Trustees

CERCLA § 122(j)(1) requires that EPA give notice to the Natural Resources Trustee of a release or threatened release of any hazardous substance which may have resulted in damages to natural resources. The administrative record should include the notice to the Natural Resources Trustee, and any subsequent final communications (*e.g.*, a release of final report). In addition, any factual information provided by the Natural Resources Trustee which is considered or relied on in selecting a response action should be included in the administrative record.

V. CONCLUSION

The policies and procedures established in this document are intended solely for the guidance of employees of the U.S. Environmental Protection Agency. They are not intended and cannot be relied upon to create any rights, substantive or procedural, enforceable by any party in litigation with the United States. EPA reserves the right to act at variance with these policies and procedures and to change them at any time without public notice.

For further information concerning this memorandum, please contact Erin Smith, (202) 564-2038, or Steven Wyman, (703) 603-8882.

APPENDIX A

Documents Generally Included in the Administrative Record for a Removal Action

OSCs should identify documents to be included in the administrative record for a removal action that (1) were considered or relied on in selecting the particular action; and (2) show public involvement in the process as addressed by the NCP (recognizing that for some removal actions, pre-remedy public involvement is not required or practical). Taking the time to put together a complete and accurate administrative record will, among other things, protect OSCs and other Agency personnel from having to give testimony in litigation challenging an Agency action.

The following are documents that may be appropriate for a removal administrative record:

Document	Included	N/A
Index of documents included in the record		
Action memorandum		
Amended action memorandum (*i.e.*, exemption memorandum), such as emergency, cost, consistency, etc.		
Closure memorandum		
Engineering evaluation/cost analysis (EE/CA) for non-time-critical removal actions		
EE/CA approval memorandum		
Preliminary assessment (PA)		
Site inspection (SI) report		
Sampling and analysis plan		
Sampling data		
Chain of custody forms		
Memoranda on site-specific or issue-specific policy decisions		
Inspection reports		
Data summary sheets		
Technical studies performed for site (*e.g.*, groundwater studies)		
Risk evaluation/endangerment assessments and underlying documentation		
Correspondence with PRPs regarding any aspect of the removal action		
Data submitted by the public, including PRPs		
Guidance documents (site-specific should be in the record; general guidance documents may be included by reference)		
Documents showing public involvement: community involvement plan, newspaper and other public notices, documents sent to persons on the community involvement mailing list, community involvement mailing list, documentation of public meetings, public comments, responses to significant comments		
Information in administrative orders or consent decrees that are relevant to the selection of the response action		
Affidavits containing relevant factual information not contained		

elsewhere in the record file		
Notice letters to PRPs, if appropriate for inclusion		
CERCLA § 104(e) information request letters and CERCLA § 122(e) subpoenas and responses, including deposition transcripts, if appropriate for inclusion		
Responses to CERCLA § 104(e) information request letters, if appropriate for inclusion		
RCRA Documents, if applicable		
Documentation of state involvement		
ATSDR documents		
Documents supporting a finding under CERCLA § 106 of imminent and substantial endangerment		

APPENDIX B

Documents Generally Included in the Administrative Record for a Remedial Action

Document	Included	N/A
Index of documents included in the record		
Record of Decision (ROD)		
Amended ROD		
Remedial investigation/feasibility study (RI/FS) (workplan and final)		
Amendments to RI/FS workplan		
Proposed plan		
Explanation of significant differences (ESD)		
Preliminary assessment (PA)		
Site inspection (SI) Report		
Sampling and analysis plan		
Sampling data		
Chain of custody forms		
Pollution Reports (POLREPS), if appropriate for inclusion, such as when a remedial action follows a removal action		
Memoranda on site-specific or issue-specific policy decisions		
Inspection reports		
Data summary sheets		
Technical studies performed for site (*e.g.*, groundwater studies)		
Risk evaluation/endangerment assessments and underlying documentation		
Fact sheets or summary information regarding remedial action alternatives generated if special notice letters are issued to PRPs at an early stage of the RI/FS		
Correspondence with PRPs regarding any aspect of the remedial action		
Data submitted by the public, including PRPs		
Guidance documents (site-specific should be in the record; general guidance documents may be included by reference)		
Documents showing public involvement: community involvement plan, newspaper and other public notices, documents sent to persons on the community involvement mailing list, community involvement mailing list, documentation of public meetings, public comments, responses to significant comments		
Parts of administrative orders or consent decrees that are relevant to the selection of the response action		
Affidavits containing relevant factual information not contained elsewhere in the record file		
Notice letters to PRPs, if appropriate for inclusion		
CERCLA § 104(e) information request letters and CERCLA § 122(e) subpoenas and responses, including deposition transcripts, if		

appropriate for inclusion		
Responses to CERCLA § 104(e) information request letters, if appropriate for inclusion.		
RCRA Documents, if applicable		
Documentation of state involvement		
ATSDR documents		
Documents supporting a finding under CERCLA § 106 of imminent and substantial endangerment		

APPENDIX C

Sample Certification Language for Judicial Review

CERTIFICATION OF DOCUMENTS COMPRISING THE ADMINISTRATIVE RECORD

The United States Environmental Protection Agency (EPA) hereby certifies that the attached documents constitute the administrative record for selection of response actions under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, for the [name of site] site in [City or County], [State].

Attachment 3

EPA Response Letter to Hinshaw & Culbertson LLP

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 2 2 2018

REPLY TO THE ATTENTION OF:
SR-6J

Mr. Harvey M. Sheldon
Hinshaw & Culbertson LLP
151 North Franklin Street, Suite 2500
Chicago, Illinois 60606

Re: The Alleged St. Louis Park Solvent Plume Site in Minnesota

Dear Mr. Sheldon:

Thank you for your August 2, 2018, letter and accompanying Technical Review of the Site Inspection Report for the St. Louis Solvent Plume Site in St. Louis Park, Hennepin County, Minnesota. Your letter has been referred to me for a response. We welcome an opportunity to discuss the Technical Review and the concerns outlined in your letter with you and those you represent.

My staff will contact you soon with available dates for a discussion at EPA's Region 5 office in Chicago to include representatives from U.S. Environmental Protection Agency Superfund Remedial program and Minnesota Pollution Control Agency. I look forward to our upcoming discussion.

Sincerely,

Joan Tanaka

Joan Tanaka
Remedial Response Branch 1 Chief
Superfund Division

cc: Sandeep Burman, MPCA

Attachment 4

EPA Letter to The Environmental Law Group

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

NOV 04 2019

REPLY TO THE ATTENTION OF:

William P Heffner, Esq.
The Environmental Law Group, LTD
2263 Waters Drive
Mendota Heights, MN 55120

Re: Highway 100 and County Road 3 and Reilly Tar Sites

Dear Mr. Heffner,

Thank you for your letter of September 24, 2019, regarding the Highway 100 and County Road 3 Site and the Reilly Tar Site. Your correspondence and the reports that were enclosed therein have been included in the site files for both Sites.

The United States Environmental Protection Agency evaluated the Highway 100 and County Road 3 Site under the Superfund Site Assessment investigation process, in coordination with the Minnesota Pollution Control Agency. Site Assessment evaluations are screening tools rather than comprehensive investigations about nature and extent of a release of hazardous substances.

EPA issued a press release on October 30, 2019, announcing the proposal of the Highway 100 and County Road 3 Site to the National Priorities List. The proposal will be published in the Federal Register soon. The Documentation Record Package (which includes the administrative record) for the proposed listing will be available for public review and comment. You may want to submit your letter as a comment on the listing.

The proposed amended Reilly Tar Consent Decree has been signed by the parties and was lodged with the district court on October 31. Again, you may want to submit your letter as a formal comment on the proposed Consent Decree during the public comment period on the decree.

Sincerely,

Denise Boone

Denise Boone, Chief
Site Assessment and Grants Section
Superfund and Emergency Management Division (SEMD)

cc: Jamie Wallerstedt, MPCA
Susan Prout, ORC
Steve Kaiser, ORC
Patrick Hamblin, SEMD
Nabil Fayoumi, SEMD