APPENDIX V

RESPONSIVENESS SUMMARY

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INTRODUCTION

A responsiveness summary is required by the regulations promulgated under the Superfund statute. It provides a summary of comments and concerns received during the public comment period, as well as the responses of EPA to those comments and concerns. All comments received were considered by EPA in its final decision regarding the selection of the remedy for OU1 at the Site.

SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

The Proposed Plan for operable unit 1 (OU1) was released to the public on July 26, 2013, along with the Supplemental Remedial Investigation (RI) Memorandum, the OU1 Supplemental Feasibility Study (FS) Memorandum, and Baseline Human Health Risk Assessment (HHRA) Report for OU1. EPA and New York State Department of Environmental Conservation's (NYSDEC) preferred remedy and the basis for that preference were identified in the Proposed Plan.

These documents, including the Proposed Plan, and others, were made available to the public in information repositories maintained at the EPA Superfund Records Center in the Region 2 offices at 290 Broadway, 18th Floor, New York, New York and the Westbury Public Library, 445 Jefferson Street, Westbury, New York.

A notice that announced the commencement of the public comment period, the public meeting date, a description of the preferred remedy, EPA contact information, and the availability of the above-referenced documents was published in *The Westbury Times*, a local newspaper, on July 31, 2013. A notice of an extension to the public comment period until September 24, 2013 was published in *The Westbury Times* on August 23, 2013.

EPA held a public meeting on August 15, 2013 at 7:00 P.M. at the "Yes We Can" Community Center to discuss the findings of the RI/FS and to answer questions from the public about the remedial alternatives and the proposed remedy. Responses to the comments and questions received at the public meeting, along with other written comments received during the public comment period, are included in this Responsiveness Summary.

SUMMARY OF COMMENTS AND EPA RESPONSES

Approximately seven comment letters were received via email and U.S. mail during the comment period from July 26, 2013 through September 24, 2013. Copies of the comment letters are provided in Attachment 6 of this Responsiveness Summary. A summary of significant comments contained in the letters, and the comments provided at the public meeting on August 15, 2013, as well as EPA's responses to those comments, are provided below. Comments received and EPA's responses have been categorized below by the following topics: Nature and Extent of Contamination, Human Health, Site Cleanup, and Other Comments/Questions.

The majority of comments received were submitted from potentially responsible parties at the Site. A limited number of questions related to vapor intrusion and the Superfund process were

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received during the public meeting. Questions regarding components of the preferred remedy and future OUs at the Site were received from the Hicksville Water District.

NATURE AND EXTENT OF CONTAMINATION

Comment # 1: EPA did not consider historical data, consisting of thousands of soil and groundwater samples, collected from within and surrounding the New Cassel Industrial Area (NCIA) when developing the Conceptual Site Model (CSM) for OU1. This data is crucial to accurately understanding the location and characteristics of the plumes that originate from the NCIA and upgradient parties, the chemical signature of plumes at the source areas, and the fate and transport characteristics of these plumes as they migrate into OU1.

Response Comment # 1: This OU addresses a discrete portion of the Site consisting of an area downgradient of the NCIA which has been designated as OU1. The EPA has coordinated with NYSDEC on the on-going remedial measures that are in place, or expected to be in place, to address source areas and contamination within the NCIA and it is the EPA's expectation that this contamination will continue to be addressed under the NYSDEC State cleanup program. The proposed plan anticipated and assumed the successful source control or cleanup of the source area(s) at those upgradient individual NCIA facilities under NYSDEC oversight in evaluating the potential for attainment of the objectives of this selected remedy. To ensure the effectiveness of the remedy at OU1, the EPA has outlined provisions whereby the EPA may elect to evaluate additional options in a future OU pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at individual sources if they are not successfully addressed.

Furthermore, the historical data had limited usefulness when conducting the RI/FS for this OU. For example, the HHRA only considered data collected from OU1 because the historical data collected from within the NCIA would not be reflective of current conditions and the remedial activities under NYSDEC authority are intended to mitigate the migration of contaminants to OU1. In addition, the purpose of the EPA's RI/FS for OU1 was not to attribute source contribution from the NCIA to contamination within OU1.

Comment # 2: EPA inaccurately relied on data collected by NYSDEC from seven temporary monitoring wells. NYSDEC installed these temporary monitoring wells inappropriately using a hollow stem auger, and they were sampled contrary to EPA recommended sampling protocols, resulting in the cross-contamination of the shallow groundwater with the deeper groundwater. At two locations where a mud rotary drill was utilized for installing monitoring wells, groundwater analytical results from hydropunch sampling did not indicate impacts to the top 150 feet (ft). below ground surface (bgs) and the top 250 ft. bgs. Groundwater quality results from these permanent monitoring wells, which were installed adjacent to temporary monitoring well locations, contained significantly lower concentrations of Site-related contaminants in the same depth intervals. Furthermore, data from these temporary monitoring wells is not reproducible.

Response Comment # 2: Sample results from the temporary monitoring wells were used in a qualitative capacity (*i.e.,* screening assessment). As qualified in EPA's Supplemental FS,

uncertainty associated with analytical data collected from the temporary monitoring wells was considered when developing OU1 contaminant plume maps. At locations where a permanent monitoring well was installed at a previous temporary monitoring well location, the data from the permanent monitoring well was used. Additionally, only data collected from permanent monitoring wells was used in the EPA's OU1 HHRA.

Comment # 3: EPA incorrectly depicts groundwater flow direction and the OU1 plumes as migrating primarily south. EPA's depiction is inconsistent with historical groundwater elevation data indicating groundwater flow direction to the southwest, as discussed in NYSDEC's 2000 RI/FS, 2003 Record of Decision (ROD), 2009 Pre-Design Investigation, and elevation data collected in 2011 under NYSDEC oversight. The conclusion regarding a southwest groundwater flow direction is further supported by OU1 groundwater quality data using the degradation of 1,1,1-trichloroethane (TCA) as a marker compound in the central plume. Based on the 2011 groundwater elevation data, a groundwater flow divide exists in the OU1 eastern plume areas because there is split with contaminant mass flowing both to the south and the southwest. Additionally, vertical gradients indicate that NCIA-related plumes migrate laterally, but also sink downward. The OU1 eastern plume descends more rapidly than the OU1 western plume due to the influence of the Bowling Green water supply wells. An accurate assessment of the spatial and vertical variability of the groundwater hydraulics is essential for properly designing any groundwater remediation system.

Response to Comment # 3: Based on the groundwater elevation data, groundwater flow is towards the south/southwest across the OU1 area. Regional groundwater flow correlates with a south/southwest groundwater flow direction. The isoconcentration maps were prepared using groundwater sample analytical results with consideration to the groundwater flow direction. The presence of TCA in the OU1 central plume in greater concentrations relative to the OU1 eastern and OU1 western plume supports the conclusion that there are three separate OU1 plumes. The lack of contamination detected in MW-15 also supports the conclusion that the OU1 eastern groundwater plume is separate from the OU1 central plume and that groundwater flow is towards the south/southwest across OU1.

Comment # 4: EPA relied on data collected from monitoring wells that are too shallow to delineate the extent of the OU1 eastern, central, and western plumes. MW-16 is located adjacent to TMW-8D and screened at a shallow depth of 215 to 225 ft. bgs and a deeper depth of 275 to 286 ft. bgs. Analytical results from TMW-8D indicated the plume was present from 292 to 372 ft. bgs, which means MW-16 was installed at depth intervals where the temporary monitoring well concentrations at the adjacent location were nondetect or well below New York State standards, criteria and guidance (SCG). EPA ignored the groundwater quality data at TMW-8D in the development of the CSM and delineation of the OU1 plumes. Also, MW-15 and GWHP-2 were also screened at depths too shallow to delineate the plume. As a result, EPA incorrectly dismissed the southwest flow component of the OU1 eastern plume.

Response Comment # 4: MW-17D is located almost directly west of MW-16D and essentially the equivalent groundwater elevation measurement was recorded from both monitoring wells indicating little or no western flow component. Similar elevation data was collected between MW-

15 and EX-1. The elevation data does not support a westerly flow direction in this area. In addition, TCA was not detected in EX-1 but was detected in MW-16D supporting the conclusion that MW-16D is not downgradient of EX-1 and that groundwater flows to the south/south west and not to the west.

Comment # 5: A commenter stated that EPA's CSM relied on an incorrect approach to performing the chlorinated ethenes molar ratio analysis. EPA mischaracterizes the breakdown pathway and does not allow for the differentiation between the degradation products in tetrachloroethene (PCE)/trichloroethene (TCE) and TCA plumes. The results of an alternative analysis performed by the commenter can be found in Appendix V, Attachment 6.

Response to Comment # 5: The molar fraction analysis conducted by EPA, as part of EPA's Supplemental RI Memorandum, was not intended to define solely the extent of individual plumes with OU1 or to define contributing source areas within the NCIA. The molar fraction analysis was done consistently for other areas of the Site, not only OU1. The intent of conducting a molar fraction analysis using ethenes was to provide a regional overview of the PCE/TCE degradation at portions Site, not just OU1. Based on commenter's alternative analysis, it appears that considering the TCA degradation pathway and eliminating 1,1-dichloroethene (1,1-DCE) from the PCE/TCE molar analysis are helpful for differentiating the OU1 central and OU1 eastern plume.

The commenter's analysis considers a portion of EPA's OU1 western plume to be an area downgradient of their alternatively delineated OU1 central plume. Wells in this area were described by the commenter as containing high TCE mole fractions. EPA's analysis indicated that the OU1 western plume has a TCE signature. The commenter's alternative delineation of the OU1 western plume identified PCE as the primary ethene.

Comment # 6: The CSM does not consider contamination that has originated from upgradient sites. The commenter identifies the Sylvania and General Instruments facilities as upgradient sources and states that the commingled chlorinated volatile organic compound (VOC) plumes have reached OU1.

Response to Comment # 6: The commenter indicates that 1,2-dichlorobenzene (1,2-DCB) is a contaminant marker of the Sylvania and General Instruments commingled plume. EPA has evaluated the presence of 1,2-DCB within OU1 and has determined that it has not been detected frequently within OU1. The groundwater data set, used in the HHRA, indicates that the frequency of 1,2-DCB in OU1 was detected in 2 out 38 sample locations. The maximum detected concentration of 1,2-DCB was 1.1 micrograms per Liter (μg/L), which is lower than the state standard of 3 μg/L for 1,2-DCB. Additionally, 1,2-DCB was not detected in the raw water (pre-treated) samples from Bowling Green Wells water supply wells 1 and 2, which were sampled by the EPA in August 2010 to evaluate eligibility of the Site for inclusion on the National Priorities List (NPL).

The commenter further states that groundwater data reveals a deeper upgradient plume with a distinctive contaminant ratio (low PCE to TCE molar ratio) from that of the shallow

contamination from the Frost Street sites located within in the eastern portion of the NCIA. Although the commenter proposes one potential explanation for this difference in contaminant ratios, other potential explanations may exist. Factors such as potential differences in hydrogeologic conditions in different areas of the aquifer or the potential influence of the Bowling Green water supply wells that could alter degradation processes should also be taken into consideration.

The purpose of the RI/FS for OU1 is not to attribute contribution. During the course of the remedial design for OU1 and remedial investigations for other OUs, EPA will continue to evaluate any potential contributing sources of contamination to OU1.

Comment # 7: The full extent of the upgradient plume has not been determined and the proposed plan for OU1 needs to address contributions from upgradient sources, including commingled plumes from the Sylvania and General Instruments facilities.

Response to Comment # 7: The EPA has sufficiently characterized the nature and extent of contamination for OU1. As indicated in the response to comment # 6 above, the EPA expects that additional data will be collected as part of the remedial design for OU1 and remedial investigations for other OUs. In addition, as indicated in the response to comment # 1 above, to ensure the effectiveness of the remedy at OU1, the EPA has outlined provisions whereby the EPA may elect to evaluate additional options in a future OU pursuant to CERCLA at individual sources if they are not successfully addressed.

Comment # 8: EPA's CSM fails to acknowledge that the Bowling Green water supply wells are contaminated and explain the sources responsible, including the central and eastern plumes in OU1.

Response to Comment # 8: The CSM was not intended to identify responsible sources for OU1. Although, the CSM does not include analytical results from the Bowling Green water supply wells, analytical results from the early warning-wells have been discussed and evaluated as part of the OU1 Supplemental FS.

Comment # 9: A commenter stated that the western plume within the NCIA is limited in spatial extent and has attenuated to concentrations below NYS water quality standards before reaching Old Country Road. The commenter refers to a statement in NYSDEC's 2003 remedy stating that the western plume (within the NCIA) is not contributing to the concentrations measured in the western plume (downgradient of Old Country Road).

Response to Comment # 9: As previously discussed, EPA evaluated current and available groundwater contamination within OU1 in the proposed plan and did not consider data from within the NCIA.

As seen in Figure 2 of the proposed plan, the OU1 western plume has contaminant concentrations greater than 100 μg/L and is therefore targeted for active remediation. Figure 2 depicts the current nature and extent of contamination and its intent was not to attribute source contribution of the contamination present within OU1.

Comment # 10: The Hicksville Water District claims that the proposed plan does not address whether OU1 groundwater was analyzed for 1,4-Dioxane and asks whether EPA sampled for 1,4-dioxane?

Response to Comment # 10: Sampling activities related to the OU1 groundwater investigation have not been analyzed for 1,4-dioxane. During the remedial design, EPA anticipates that 1,4-dioxane will be included in the sample analysis in order to properly design the treatment system.

HUMAN HEALTH

Comment # 11: The whole premise of the risk assessment for OU1, upon which EPA based its remedy, will almost certainly not occur.

Response to Comment # 11: In accordance with EPA guidance, the HHRA for OU1 was conducted to estimate current and future effects of contaminants on human health. The OU1 HHRA indicated that exposures to contaminated groundwater are currently incomplete because there is an engineering control at the Bowling Green water supply wells. Future effects were evaluated in the absence of any actions to control or mitigate exposures, (*i.e.,* no engineering control at Bowling Green water supply wells). The results of the HHRA indicated there is an unacceptable risk under the future exposure scenario due to exposure to contaminated groundwater at OU1. Therefore, remedial alternatives were evaluated to mitigate that risk.

Comment # 12: Commenters stated that Nassau County is fully developed, and there are no plans to add any new water districts or public water supplies. The commenter noted that if, under a highly unlikely scenario, a water district was formed south of the NCIA or if new water supply wells were developed, the VOC contamination, if present, could be addressed similarly with the same type of engineering controls currently used at the Bowling Green water supply wells.

Response to Comment # 12: In that scenario, if drinking water wells were developed within OU1, these wells would be addressed by the institutional controls component of the selected remedy. The purpose of institutional controls is to ensure the continued protection including the development of any new drinking water wells to limit exposure to contaminated groundwater.

SITE CLEANUP

Comment # 13: Several commenters stated that the preferred remedial alternative is unnecessary and/or inconsistent with CERCLA or the NCP because the current and potential future human exposures related to OU1 contaminated groundwater are already being addressed by the existing engineering control (granular activated carbon (GAC) and air stripper) at the Bowling Green water supply wells. Commenters stated that the suspected source areas of contamination within the NCIA have been remediated, thereby eliminating the potential for these source areas to contribute to additional OU1 groundwater contamination. Some of the commenters have proposed that, as a result of these conditions, EPA should have evaluated well head protection as a remedial alternative or as component of the monitored natural attenuation (MNA) remedial alternative described in the proposed plan.

Response to Comment # 13: New York State considers the aquifer to be a Class GA (fresh) groundwater and the best usage is as a source of potable water supply. . The NCP states that EPA must remediate all groundwater to its most beneficial use. Since the groundwater within OU1 is designated as a potable drinking water supply it was evaluated as such in the HHRA. In accordance with EPA guidance, the HHRA was conducted to estimate current and future effects of contaminants on human health in the absence of any actions to control or mitigate these exposures. Although exposures to OU1 contaminated groundwater are currently incomplete due to the engineering control at the Bowling Green water supply wells, consistent with EPA guidance, future exposure to OU1 groundwater in the absence of any treatment was also evaluated. The HHRA indicated there was unacceptable risk under the future exposure scenario due to exposure to contaminated groundwater at OU1. Therefore, remedial alternatives were evaluated to mitigate the risk identified in the HHRA.

The proposed plan addresses a discrete portion of the Site consisting of an area downgradient of the NCIA which has been designated as OU1. The EPA has coordinated with NYSDEC on the on-going remedial measures that are in place, or expected to be in place, to address source areas and contamination within the NCIA and it is the EPA's expectation that this contamination will continue to be addressed under the NYSDEC State cleanup program. The proposed plan anticipated and assumed the successful source control or cleanup of the source area(s) at those upgradient individual NCIA facilities under NYSDEC oversight in evaluating the potential for attainment of the objectives of this selected remedy. To ensure the effectiveness of the remedy at OU1, the EPA has outlined provisions whereby the EPA may elect to evaluate additional options in a future OU CERCLA at individual sources if they are not successfully addressed.

CERCLA establishes a preference for remedies which employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at sites. Section 104(c)(6) of the NCP defines "remedial" action measures necessary to restore ground or surface water. EPA recognizes that pumping via public supply well and treating groundwater at the well head to primarily provide drinking water may, over time, may result in some localized improvement in ground or surface water quality; however, the effect is at best tangential to, not necessary expressly designed or for, restoration. The selected remedy will result in a more aggressive effective approach to restoring the aquifer that is consistent with the NCP. As shown in Figure 3, the selected remedy targets active remediation where concentrations of total chlorinated VOCs exceed 100 μg/L. The Bowling Green water supply wells are outside the footprint of the sidegradient and downgradient total chlorinated VOC plumes.

Comment # 14: Several commenters expressed concerns about the cost of the preferred alternative, indicating that the preferred alternative is not a cost-effective remedy; because the fact that the treatment system at the Bowling Green water supply wells is effectively treating extracted groundwater; and therefore the preferred alternative is inconsistent with the NCP.

Response to Comment # 14: As outlined in the proposed plan, EPA has established one of the RAOs for OU1 to be the restoration of the impacted aquifer to its most beneficial use as source

of drinking water by reducing contaminant levels to the federal MCLs and state standards. Section 104(c)(6) of the NCP defines "remedial" action measures necessary to restore ground or surface water. While pumping via public supply well and treating groundwater at the well head primarily to provide drinking water may, over time, result in some localized improvement in ground or surface water quality, the effect is at best tangential to, not expressly designed or necessary for, restoration. Therefore, remedial alternatives to mitigate the unacceptable risk identified in the HHRA were evaluated for OU1.

Based on the comparison of overall effectiveness to cost, the preferred remedy outlined in the proposed plan meets the statutory requirement that Superfund remedies be cost-effective (NCP Section 300.430(f)(1)(ii)(D)). A cost-effective remedy is one in which costs are proportional to its overall effectiveness (NCP Section 300.430(f)(1)(ii)(D)). Overall, effectiveness is based on the evaluations of long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness. EPA evaluated the "overall effectiveness" of those alternatives that satisfied the threshold criteria (*i.e.,* those that were both protective of human health and the environment and ARAR-compliant). Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, and volume though treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost-effectiveness.

EPA's selected remedy will be designed to utilize the different technologies effectively to target groundwater contamination within OU1, based upon location-specific conditions (*i.e.*, depth to treatment and concentration levels). Utilizing both in-well vapor stripping and extraction and treatment is expected to provide cost-saving measures through a reduction in either the capital or O&M costs associated with installing and operating independent remedial systems. Each of the treatment components will be optimized during the remedial design to improve treatment effectiveness or decrease the remedial time frame.

Comment # 15: The GAC and air stripper tower are appropriate actions as CERCLA contemplates remedial actions that are designed only to "minimize" – not eliminate – "the release of hazardous substances." CERCLA provides examples of remedial actions that would not "remediate the underlying source," including "confinement," "clay cover," "diversion," and "provision of alternative water supplies." By removing VOCs from the groundwater that have been drawn into the Bowling Green water supply wells, the GAC and air stripper would do more than the preferred remedy to address the OU1 groundwater contamination. The GAC and air stripper do in fact "clean [] contaminated water," and "rid [] the environment of contamination," and thereby minimize the release of hazardous substance "to protect the public health and welfare."

Response to Comment # 15: Refer to the response to comment #14 above.

Comment # 16: All of the remedial alternatives considered by EPA were developed to mitigate future risks that are unsubstantiated, and as a result, other viable and practical technologies were excluded from consideration.

Response to Comment # 16: Consistent with the NCP, a remedial action under CERCLA should seek to restore the aquifer to beneficial use wherever practicable. The aquifer underlying OU1 has been designated a Class GA (fresh) groundwater by the NYSDEC and the best usage of Class GA waters is as a source of potable water supply. Since the groundwater beneath the site is a potable drinking water supply, it was evaluated as such in the HHRA.

The HHRA was conducted in accordance with EPA guidance to estimate the current and future effects of contaminants on human health in the absence of any actions to control or mitigate these exposures. Although exposures to contaminated groundwater are currently incomplete as a result of the engineering control at the Bowling Green water supply wells, future exposure to groundwater in the absence of any treatment was also evaluated. The results of the HHRA indicated there was unacceptable risk and hazards under the future exposure scenario from exposure to contaminated groundwater at OU1. Remedial alternatives were developed in the Supplemental FS to mitigate the unacceptable risk.

Comment # 17: EPA's preferred Alternative 5 actually creates new exposure risks to human health and the environment compared to existing conditions.

Response to Comment # 17: As indicated in the short-term effectiveness section of the proposed plan, exposure of workers, the surrounding community, and the local environment to contaminants during the implementation of the preferred remedial alternatives would be minimal. However, measures will be implemented to mitigate potential exposure risks. In addition, the selected remedy will include monitoring that would provide the data needed for proper management of the remedial processes and a mechanism to address any potential impacts to the community, remediation workers, and the environment. Risk from exposure to groundwater during any excavation work would require management via occupational health and safety controls.

Comment # 18: Since the exact number/placement of in-well vapor stripping wells extraction wells, and the location of the centralized treatment plant were not identified in the proposed plan and will not be determined until the remedial design, the cost effectiveness outlined in the proposed plan is called into question.

Response to Comment # 18: The Supplemental FS includes a conceptual design with estimates for the elements identified in the comment. During the remedial design, the number and placement of in-well vapor stripping and extraction and the location of a centralized treatment plant will be determined. Consistent with EPA guidance, the Supplemental FS provided cost estimates for the conceptual design.

Comment # 19: The proposed remediation wells are not located in the appropriate locations since the EPA incorrectly depicted the groundwater and contaminant migration directions. EPA's design for the preferred remedy results in the proposed installation of remedial wells in areas that have relatively low levels of contamination and a sub-optimal orientation of wells.

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Response to Comment # 19: Figure 3 in the proposed plan depicts a conceptual design for Alternative 5, which is the preferred remedy. Placement of the remedial components of the preferred remedy in the conceptual design was based on estimated OU1 contaminant plumes that were developed based on the available groundwater samples and measurement results. Isoconcentration maps were prepared using measured groundwater elevations and regional groundwater flow. Groundwater sample results were used in conjunction with the groundwater flow direction across OU1 to develop the OU1 contaminant plume maps. The remedial systems including well locations were developed based on the estimated OU1 plume maps. Determinations, such as placement of extraction wells and/or in-well vapor stripping wells, will be finalized during the remedial design. As part of the remedial design, a pre-design investigation will be conducted and used to refine the layout of the remedial system.

Comment # 20: Due to low concentrations in the OU1 western plume, the combination of MNA and well head treatment at the Bowling Green water supply wells is a more appropriate and cost-effective remedy for the OU1 western and central plume**.**

Response to Comment # 20: The lack of daughter compounds present in the aquifer suggests that the degradation of chlorinated VOCs is not occurring at a significant rate. Additionally, groundwater sampling has confirmed that the presence of compounds related to biodegradation is limited within OU1 which indicates that physical processes such as dispersion and diffusion are the only means for degradation. Based on the comparison of overall effectiveness to cost, the preferred remedy outlined in the proposed plan meets the statutory requirement that Superfund remedies be cost-effective (NCP Section 300.430(f) (1) (ii)(D)). Refer to the previous response in comment #14 for a further discussion on the use of well head treatment as a component of a remedy at the Bowling Green water supply wells. .

Comment # 21: In scenarios with no human health exposure pathway, MNA is the appropriate remedy for the dilute portion of the plume. The commenter noted that although there is not a uniform standard for defining a "dilute" or "concentrated" plume, the commenter formulated an argument that the EPA has set precedent for distinguishing the two because the Picillo Pig Farm Superfund Site in Rhode Island has distinguished "dilute" and "concentrated plume areas" as those areas of the plume with total VOC concentrations greater than a 1,000 μg/L. Furthermore, EPA has set a precedent for the implementation of MNA in dilute, chlorinated VOC concentrations similar to those of the OU1 western plume, at other sites including: Peninsula Boulevard Groundwater Plume Superfund Site; Pohatcong Valley Groundwater Contamination Superfund Site; West Kingston Town Dump/University of Rhode Island Disposal Area Superfund Site; and the Dover Municipal Landfill Superfund Site.

Response to Comment # 21: The results of EPA's HHRA indicated there was unacceptable risk under the future exposure scenario due to exposure to contaminated groundwater at OU1 and hence a remedial action is necessary to mitigate that risk. EPA evaluated MNA as Alternative 2.

EPA evaluates remedial alternatives based on site-specific conditions. It should be noted that the overall approach of the selected remedy is consistent with the work as outlined in some of the

examples provided (*i.e.,* Peninsula Boulevard). For example, at the Peninsula Boulevard Groundwater Contamination site, which is also in Nassau County, the remedial approach is active remediation in areas with higher concentrations *(i.e.,* greater than 100 μg/L) and also natural processes to achieve the cleanup levels for areas not targeted for active remediation, consistent with the approach outlined for this OU1.

Comment # 22: EPA's rejection of Alternative 2 (MNA) is unfounded. Since EPA acknowledges that the timeframe to meet groundwater RAOs is difficult to predict and modeling has not been provided to estimate remediation time frames, EPA has no technical basis to conclude that RAOs would not be achieved in a reasonable time frame, and EPA was just speculating.

Response to Comment # 22: EPA determined that chemical-specific ARARs would not be achieved in a reasonable time frame under Alternative 2. Data collected to date has not demonstrated that complete biodegradation is occurring or has occurred. The lack of daughter compounds present in OU1 data suggests that the degradation of chlorinated VOCs is not occurring at a significant rate.

Additionally, groundwater sampling has confirmed that the presence of compounds related to biodegradation is limited which indicates that physical processes, such as dispersion and diffusion, are a means for degradation. As a result, and as indicated in the proposed plan, it is not anticipated the MNA would occur in a reasonable time frame.

As summarized in EPA's OU1 Supplemental FS, NYSDEC's 2009 MNA evaluation did not support the premise that significant biodegradation of chlorinated VOC plumes was occurring in the area downgradient of NCIA and Old Country Road. Furthermore, review of groundwater data quality collected subsequent to NYSDEC's 2009 investigation, further supports the EPA's conclusion about MNA.

Comment # 23: A sharp decline in groundwater concentrations observed at wells within the NCIA and OU1 at locations downgradient of remediated source areas indicates MNA is occurring at the Site. As such, EPA's statements regarding the uncertainty in the biodegradation rates and its effect on meeting RAOs in a reasonable time frame is misguided.

Response to Comment # 23: The lack of daughter compounds present in OU1 suggests that the degradation of chlorinated VOCs is not occurring at a significant rate. Additionally, groundwater sampling has confirmed that the presence of compounds related to biodegradation is limited, which indicates that physical processes such as dispersion and diffusion are a means for degradation.

As previously discussed and as summarized in EPA's OU1 Supplemental FS, NYSDEC's 2009 MNA evaluation did not support the premise that significant biodegradation of chlorinated VOC plumes was occurring in the area downgradient of NCIA and Old Country Road. The review of groundwater data quality collected subsequent to NYSDEC's 2009 investigation further supports the conclusion reached in the MNA evaluation.

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The proposed plan anticipated and assumed the successful source control or cleanup of the source area(s) at those upgradient individual NCIA facilities under NYSDEC oversight in evaluating the potential for attainment of the objectives of this selected remedy. It is anticipated that source control measures within the NCIA will result in a decline in groundwater contaminant concentrations within the NCIA.

Comment # 24: Based on the low concentrations present at the downgradient OU1 boundary and given that these concentrations are expected to decline with time, EPA has overstated the need for preventing contaminant migration.

Response to Comment # 24: As shown on Figure 2 of the proposed plan, in the eastern and western areas of OU1, the isoconcentration contours are in the downgradient boundaries of OU1. Therefore, those areas would require remediation. The isoconcentration contour depicts areas within OU1 greater than 100 μg/L of total chlorinated VOCs, as well as those areas where EPA seeks to prevent the migration of the OU1 plumes.

Comment # 25: EPA has failed to take into consideration the in-well vapor stripping literature guidance, the presence of high anisotropy rates and the presence of low permeability layers documented from prior investigations performed by NYSDEC, as well as performance issues encountered at the General Instruments/Vishay site.

Response to Comment # 25: As part of the Supplemental FS, EPA evaluated NYSDEC's 2009 investigation, which based on published data in literature for the Magothy in the vicinity of the area proposed for treatment, indicated that anisotropy ratios of approximately 100 are not uncommon. Vertical hydraulic conductivity sampling measurements based on discrete soil sampling of the Magothy revealed higher degrees of anisotropy with an average of 42,700.

EPA also evaluated the results from the 72-hour aquifer pump test conducted as part of NYSDEC's 2011 investigation. Data from the aquifer pump test was used to calculate aquifer characteristics, including anisotropic ratios, which were determined to be significantly lower (27 to 100) than the original estimate from NYSDEC's prior 2009 investigation. These calculated results for anisotropy were within the published ranges from several United States Geologic Survey studies on Long Island. Review of the data generated from NYSDEC's 2011 aquifer pump test, indicates that the aquifer characteristics within OU1 appear to be generally favorable for use of in-well vapor stripping. General Instrument's remedial activities, including the operation of an in-well vapor stripping system, were reviewed and summarized in EPA's Supplemental RI Memorandum. Lessons learned from General Instrument's use of the Unterdruck-Verdampfer-Brunnen (UVB) in-well vapor stripping system and operation and maintenance of the UVB system will be taken into consideration during the remedial design. EPA's Supplemental FS used the Accelerated Remediation Technologies (ART) in-well vapor stripping system for purposes of estimating costs. The Supplemental FS assumed ART would be implemented because of the thickness of the unsaturated zone within OU1 (38-50 ft.) and the spatial constraints of installing underground vaults in existing roadways, which would be necessary for other in-well vapor stripping systems such as the UVB.

As part of the remedial design, a pilot test will be conducted to verify the effectiveness of the in-well vapor stripping technology for OU1. In the event that data and evaluations conducted during the remedial design indicate that in-well vapor stripping is ineffective or cost prohibitive, the selected remedy allows for groundwater extraction and *ex-situ* treatment to alternatively be used in areas where the conceptual design had indicated use of in-well vapor stripping.

Comment # 26: Commenters raised a wide range of concerns regarding the application of in-well vapor stripping for OU1. Concerns included the appropriateness of its use in a densely populated setting, the depth of contamination, and the challenge of injecting compressed air into the aquifer thereby limiting the effectiveness of the in-well vapor stripping method to only a portion of the well, the ability to achieve state standards, the risk of upper aquifer contamination and the potential for the public to be impacted by air pollution from off-gas effluent.

Response to Comment # 26: The selected remedy provides for the use of in-well vapor stripping as a component of the remedy. If, during the remedial design investigation activities, it is determined that in-well vapor stripping will not be an effective technology for addressing contamination at OU1, then the remedy allows for the use of groundwater extraction and *ex-situ* treatment.

Comment # 27: In-well vapor stripping is a patented technology that is licensed to a limited number of vendors. A competitive bidding process will be compromised.

Response to Comment # 27: In-well vapor stripping is a component of the selected remedy, and the selected remedy envisions that other technologies will be employed in combination with in well vapor stripping. As a result, the bidding process would not have a limited number of contractors participating. As discussed in EPA's OU1 Supplemental FS, there are several types of in-well vapor stripping systems provided by different vendors further enabling a competitive bidding process.

Comment # 28: While the Supplemental FS for OU1 addresses the risk of chemical iron fouling (concluding that the risk is low due to iron concentrations in area groundwater of generally less than 1 milligram per liter), the Supplemental FS does not address the risk of iron-related biofouling, which was the cause of the fouling realized at the recirculation well system for the former General Instruments site.

Response to Comment # 28: Biofouling is a potential issue that can affect the performance of remedial systems. Preventative measures will be evaluated and considered during the remedial design and construction of the selected remedy to reduce operation and maintenance costs as much as possible. If during the pilot study it is determined that the operation and maintenance of the in-well vapor stripping wells is cost prohibitive then the technology could be replaced with groundwater extraction and *ex situ* treatment.

Comment # 29: The proposed plan significantly underestimated costs associated with maintenance of in-well vapor stripping systems (approximately $26,000 per well annually), as well as the logistics of maintaining numerous wells within residential areas.

Response to Comment # 29: The maintenance schedule would be dependent on the design and site specific subsurface conditions. Typical systems can run for 2-3 years before a well cleaning is needed, and many systems can run well beyond three years prior to needing well cleaning. It is expected that during the remedial design phase preventative measures would be evaluated and consideration given to ways in which operation and maintenance costs can be reduced. As part of the remedial design process, lessons learned from other nearby sites, such as General Instruments, which has implemented this technology and have experience with O&M of the systems would be taken into consideration. Based on the results of a pilot study, if it is determined that the operation and maintenance of the in-well vapor stripping wells is cost prohibitive, then, the technology could be replaced with groundwater extraction and *ex-situ* treatment.

Comment # 30: Commenters noted that obtaining the necessary access in a residential area to install the infrastructure and treatment components required for the preferred remedial alternative would be complicated. The presence of underground utilities within public-right-of-ways further complicates matters. Therefore, construction in non-residential areas should be considered.

Response to Comment # 30: During the remedial design, consideration will be given to potential access-related challenges identified in the comment. Consideration will be given to reconfiguring well locations; however, modifications to well location configurations will need to be balanced with considerations regarding any potential impacts, such as effectiveness.

Comment # 31: Commenters raised concerns that the construction of the preferred alternative in a largely residential area would result in a significant disruption, cause dust and noise, and would results in large areas that would be inaccessible. Additionally, areas where construction has taken place would require vigilant security measures to avoid becoming attractive locations for children, teenagers, and others.

Response to Comment # 31: The remedial design will take into consideration measures to minimize the short-term impacts identified in the comment. Additionally, measures to mitigate dust and noise, as well as other potential quality of life related concerns will be addressed during the remedial design. The remedial design will also provide a plan on how to restrict access and maintain security in construction areas.

Comment # 32: EPA's proposed remedial alternative is not environmentally sustainable for the community because an enormous amount of electricity will be required. The proposed remedial techniques are not being designed in accordance with EPA Region 2's Clean and Green Energy Policy.

Response to Comment # 32: The remedy will be designed consistent with the EPA Region 2 Clean and Green Energy Policy. Pursuant to the EPA Region 2's Clean and Green Energy Policy, EPA considers the factors set out in CERCLA Section 121, 42 U.S.C. Section 9621 in selecting a remedy, by conducting a detailed analysis of the viable remedial alternatives in accordance with the NCP, 40 CFR Section 300.430(e)(9)(iii) and the Office of Solid Waste and Emergency Response (OSWER) Directive 9355.3-01. The environmental benefits of the selected remedy

may be enhanced by giving consideration during the remedial design, to technologies and practices that are sustainable as discussed in EPA Region 2's Clean and Green Energy Policy.

Comment # 33: The theoretical benefit of the treatment component of the preferred remedial alternative is outweighed by the disruption and risks to the public. EPA must balance the factors of limited and uncertain value of reducing contaminant levels in the deeper groundwater against the factor that the contaminants have no exposure pathway to the public.

Response to Comment # 33: As previously discussed, the HHRA indicated an unacceptable risk based on the future exposure scenario. The HHRA, conducted in accordance with EPA guidance, evaluated future exposure assuming that the contaminated aquifer was used as a source of drinking water in the absence of treatment. As an unacceptable risk to human health was identified in the HHRA, remedial measures to mitigate such risk were evaluated. Based on the comparison of overall effectiveness to cost, the preferred remedy outlined in the proposed plan meets the statutory requirement that Superfund remedies be cost-effective (NCP Section 300.430(f) (1) (ii)(D)).

Comment # 34: A suitable location for the centralized treatment plant has not been identified and no compatible locations were identified within a quarter mile radius. Since vapors from the in-well vapor stripping process would need to be conveyed over a long distance to a centralized treatment plant, several large vacuum blowers would be necessary, which would result in a noise disturbance and increased costs.

Response to Comment # 34: During the remedial design, efforts would be employed to mitigate or eliminate such disturbances through sound deadening enclosures and mufflers, as appropriate.

Comment # 35: The groundwater extraction system component of the preferred remedial alternative requires groundwater to be transferred under pressure to the centralized treatment plant, which results in a risk if contaminated groundwater is released.

Response to Comment # 35: The remedial design would include the development of plans to ensure that Site-related activities associated with the construction and operation phase of the selected remedy are conducted in a manner that are protective of human health and the environment.

Comment # 36: Placing compressors at the central treatment location that could consistently deliver enough pressure to overcome the requisite hydraulic head across 5,000 ft. of linear piping to the furthest well may not be technically practical.

Response to Comment # 36: During the remedial design phase, options for providing the required pressure for operating the in-well vapor stripping systems and conveying contaminated vapors to the treatment building will be identified and evaluated. A suitable location and any associated land acquisition actions necessary for the construction of the treatment building will be included as part of the pre-design investigation. At that time, the EPA may opt to find more than one suitable location, thereby reducing the length of transmission piping required.

Comment # 37: The reinjection of treated water back into the subsurface would result in mounding which could impact the temperature and characteristics of the groundwater.

Response to Comment # 37: During the remedial design, a final determination will be made regarding the discharge location and methods. The final determination will, among other things, take into consideration potential impacts that treated water may have if reinjected back into the groundwater.

Comment # 38: Commenters raised concerns about the use of in-situ chemical oxidation (ISCO) as part of the preferred alternative resulting from perceived public hazards posed from the mixing and injection process and adverse impact to the drinking water supply at the Bowling Green water supply wells, without having conducted a fate and transport study.

Response to Comment # 38: During the remedial design, a treatability study would be performed to evaluate the use of in-situ chemical treatments, as an element of the selected remedy, in a manner that complements and improves the effectiveness of selected remedy. In-situ chemical would only be utilized if a determination is made during the remedial design that the application would not adversely affect the public supply wells. The treatability study will assess various in-situ chemical treatment products to determine which will be best suited for implementation based on site specific conditions. The EPA will coordinate with state and local officials prior to the commencement of any field studies. Any oxidizing compound precluded by the NYSDEC will not be used. The treatability study would include a health and safety plan to ensure the safety of workers and the community. Additionally, if application of in-situ chemical treatment were found to have no adverse impact upon the public supply wells, its use would have to comply with federal and state regulations (*See* Table 10 in the ROD).

Comment # 39: The Hicksville Water District raised several technical questions related to the in-situ chemical treatment (such as ISCO) component of the preferred remedial alternative outlined in the proposed plan: What chemicals will be used to oxidize the VOCs? Will the ISCO related chemicals introduce additional contamination into the aquifer (*i.e.,* heavy metal impurities in Potassium Permanganate)? What information does EPA have to demonstrate that no other water quality issues will develop as a result of injecting chemical oxidant into the aquifer? Can EPA confirm that the injection of chemical oxidants into the aquifer will not mobilize inorganic contamination into the aquifer? How will EPA determine complete mineralization of the VOC contamination since the by-products of the parent products TCE, PCE, and TCA are more difficult for water suppliers to treat with conventional technology as they move down their degradation pathways?

Response to Comment # 39: During the remedial design, a treatability study will be conducted to evaluate the use of such in-situ chemical treatments, such as ISCO. In-situ chemical treatment would only be utilized if it is determinate that application would not adversely affect the public supply wells. EPA expects to coordinate with potentially impacted water districts during the remedial design to ensure that the concerns raised by the commenter are adequately addressed.

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Comment # 40: The Hicksville Water District expressed its opinion that any remedial measures taken at the Site do not adversely impact the water quality near the capture zones of its wells or any land within its service area where future supply wells may be constructed. The Hicksville Water District asked the following questions about OU1's long-term monitoring program: How often will each treatment system be sampled to confirm it is meeting performance standards? How often will these results be published for public review? Does EPA have information that demonstrates the two existing monitoring well clusters are in the appropriate locations and depths to determine if the performance standards are being achieved? Will additional monitoring wells be installed to confirm that contamination is not migrating out of the remediation zone?

Response to Comment # 40: EPA acknowledges the concerns presented in the comment and will seek to coordinate with potentially impacted water districts on these types of matters. The evaluation of existing monitoring wells, including the two existing early warning monitoring wells for the Bowling Green Water District, and the development of work plans for the installation of additional monitoring wells to monitor the progress of the selected remedy in achieving performance standards will be determined during the remedial design. The remedial design will also include information regarding the frequency of the sampling program and the schedule for data validation, which EPA will take into consideration when developing a plan to disseminate information to the public. It is the EPA's intention to provide the public with information related to the Site in a timely manner.

Comment # 41: Commenter stated that the Proposed Plan is not cost-effective because it is not coordinated with proposed action by New York State. In addition, the proposed plan is inconsistent with and not effectively coordinated with remediation measures contemplated by NYSDEC.

Response to Comment # 41: The remedial work for OU1 would complement the work that has been conducted, and/or is being conducted under order with NYSDEC at facilities within the NCIA. Response actions which are addressing sources of contamination in the NCIA have not been designed to address the downgradient groundwater contamination within OU1. During the OU1 remedial design, EPA will continue to work with NYSDEC to ensure that any response actions taken within the NCIA do not impede the actions taken within OU1. Effort would be made to minimize any disruptions between the two. EPA expects that that those facilities within the NCIA that are under order or agreement with New York State will continue to meet their obligations under their orders or agreements. As discussed in the OU1 proposed plan, the on-going, State-authorized response actions to address source areas at the NCIA facilities are not the focus of OU1, although source control or cleanup of the source area(s) at the individual NCIA facilities, under NYSDEC oversight, are anticipated and was assumed in evaluating the potential for attaining the objectives of the selected remedy in the ROD.

OTHER COMMENTS/QUESTIONS

Comment # 42: The preferred alternative will place an unnecessary burden on the local community, including businesses and property owners who have already been saddled with clean up costs resulting from the past actions of NYSDEC. The proposed plan did not take into

account remedial measures which have been paid for and performed by business and property owners. Property owners have already spent millions of dollars to satisfy the remedial measures and to start all over is counterproductive and unnecessary. Additionally, activities related to the construction of the preferred remedial alternative would undermine the designation of the NCIA as an Empire Zone and will disrupt the installation of any new infrastructure to support planned retail and commercial hubs. EPA has an obligation to consider the significant impacts that the preferred remedial alternative outlined in the proposed plan will have on the community and balance these impacts against what EPA feels are the perceived benefits of a remedial action at OU1.

Response to Comment # 42: EPA will endeavor to minimize any disruption to local community when undertaking activities related to the construction and implementation of the preferred remedial alternative.

The proposed plan addresses OU1 and outlines a preferred remedy for OU1. Response actions at NCIA facilities are not part of this OU1 remedy, although the successful source control or remediation at upgradient individual NCIA facilities, under NYSDEC oversight, is anticipated and was considered in evaluating the potential for attainment of the objectives of the selected remedy.

As previously discussed, EPA used the available and current OU1 groundwater data when performing the HHRA because source control measures within the NCIA are intended to prevent the migration of contaminants to OU1. EPA did not feel it was appropriate to use historic data from within the NCIA to evaluate the risks associated with contaminated groundwater in OU1. The data from within NCIA would then reflect contamination, but would not reflect current conditions (*i.e.,* source control measures) within OU1.

In accordance with EPA guidance, the HHRA was conducted to estimate current and future effects of contaminants on human health in the absence of any actions to control or mitigate these exposures. Although exposures to contaminated groundwater are currently incomplete due to the engineering control at the Bowling Green Well Field, future exposure to groundwater in the absence of any treatment was also evaluated. The results of the HHRA indicated there was unacceptable risk and hazards under the future exposure scenario due to exposure to contaminated groundwater at OU1 and hence a remedial action is necessary to protect human health.

Based on the comparison of overall effectiveness to cost, the preferred remedy outlined in the proposed plan meets the statutory requirement that Superfund remedies be cost-effective (NCP Section 300.430(f) (1) (ii)(D)).

Comment # 43: At the August 15th meeting, EPA only briefly discussed the Alternatives 1 through 4 that were not selected as the preferred remedial alternative.

Response to Comment # 43: The purpose of the August 15th 2013 public meeting was to present the conclusions of the documents supporting the proposed plan, to elaborate further on the reasons for recommending the preferred remedial alternative, and to receive public comments. EPA believes that the purpose of the meeting was achieved through the combination of the presentation provided by EPA, which included each of the alternatives evaluated in the proposed plan, and the questions received from those in attendance.

Comment # 44: The public comment period was not well-publicized, and EPA performed limited outreach. As a result, the public will not be able to fully express its sentiments until implementation of a remedy is underway.

Response to Comment # 44: On July 26th, 2013, EPA issued a press release titled "EPA Encourages Public Comment on Plan for Ground Water Cleanup Near New Cassel Industrial Area." Notice of the July 26, 2013 start of the public comment period and the availability of the above-referenced documents was published in *The Westbury Times* on July 31, 2013. Individual mailings went out to over 200 recipients, including residents who had requested to join EPA's Site mailing list, to announce the start of the public comment period and to provide details regarding the August 15th, 2013 public meeting. The proposed plan and information regarding the August 15th, 2013 was additionally posted on EPA's New Cassel/Hicksville Ground Water Contamination website:

(http://www.epa.gov/region2/superfund/npl/newcassel/).

Notice of an extension of time for the public comment period to September 24, 2013 was published in *The Westbury Times* on August 23, 2013. Notice on the extension to the public comment period was also provided on EPA's New Cassel/Hicksville Ground Water Contamination website.

Comment # 45: Commenters stated that EPA is barred from pursuing a CERCLA claim against parties who have prevailed in an action brought by the State under CERCLA for the same event.

Response to Comment # 45: This comment does not relate to the basis for the remedy decision that EPA made in the ROD or to any of the evaluation criteria for a Superfund remedial alternative. The commenters' legal argument for enforcement and cost recovery is not appropriately addressed in the Responsiveness Summary.

Comment # 46: What is the schedule for the other OUs?

Response to Comment # 46: EPA anticipates beginning RI/FS related activities associated with areas of groundwater contamination impacting the Hicksville public supply wells 5-2, 5-3, 4-2, 8-1, 8-3, 9-3 and Hempstead-Levittown 2A and the far-afield area further downgradient of OU1 in the 2014 calendar year. A schedule for additional activities related to any other additional OUs to complete the nature and extent of contamination for the Site has not been developed yet.

Comment # 47: The District stated that the Hicksville Wells Nos. 9-1 and 9-2 wells should be identified in the proposed plan as they have also been impacted by VOC contamination.

Response to Comment # 47: The proposed plan only addresses OU1 of the Site. EPA will address cleanup of this Site in discrete phases or components and anticipates that there will be multiple OUs for the Site. In the proposed plan, EPA discusses that additional OUs for the Site would include, but may not be limited to, areas of groundwater contamination impacting the Hicksville public supply wells 5-2, 5-3, 4-2, 8-1, 8-3, 9-3 and Hempstead-Levittown 2A**.** The aforementioned public supply wells were specifically referenced because EPA's Hazard Ranking System (HRS) sampling results indicated that VOCs in their raw (pre-treated) were present at observed level concentrations (*i.e.,* significantly above background).

In August 2010, EPA sampled raw water from Hicksville Wells 9-1 and 9-2 as part of the HRS sampling. 1,1-Dichloroethane (1,1-DCA) was observed in Hicksville Wells 9-1 and 9-2 during that sampling, but the results, which ranged from 1.2 to 1.4 μg/L, were below both the state standard of 5 μg/L and the maximum background level observed during the HRS sampling. EPA recognizes that Hicksville 9-3, which HRS sampling indicated had observed level concentrations, is in close proximity to 9-1 and 9-2. Therefore, EPA will continue to evaluate Hicksville Wells 9-1 and 9-2 when conducting investigations near 9-3. EPA will seek to coordinate with the water district regarding data they may have from the referenced wells.

Comment # 48: Several commenters asked if EPA considered the potential for a change in more stringent federal MCLs or state standards when developing the proposed plan.

Response to Comment # 48: In the Preamble to the NCP, EPA states its policy that it will not reopen remedy selection decisions contained in RODs (*i.e.,* ARARs are normally frozen at the time of ROD signature) unless a new or modified requirement calls into question the protectiveness of the selected remedy. The policy of freezing ARARs at the time of ROD signing will not sacrifice protection of human health and the environment because the remedy will be reviewed for protectiveness every five years, considering new or modified requirements at that point, or more frequently, if there is reason to believe that the remedy is no longer protective of health and environment.

Because under each of the alternatives evaluated, MCLs will take longer than five years to achieve at the Site, a policy review of conditions at the Site will be conducted no less often than once every five years until performance standards are achieved. As part of the five-year review, EPA will determine the effect of a newly promulgated or modified standard on the protectiveness of the remedy originally selected in the ROD. Newly promulgated or modified requirements will be evaluated to determine if the cleanup levels established in the ROD remain protective. In the event that the evaluation indicates a change of a standard that was identified as an ARAR in the ROD establishes that the new requirement indicates that the remedy is no longer protective, the five-year review would recommend a follow-up action. However, a change in a standard may not necessarily result in a change in the resulting risk and therefore may not always impact protectiveness.

Comment # 49: What were the levels of site related indoor air contaminants detected during the vapor intrusion sampling at the residential properties during NYSDEC's investigation.

Response to Comment # 49: In 2009, NYSDEC conducted sampling at seven residential properties in an area downgradient of the NCIA. For COCs, indoor air concentrations ranged from nondetect to a maximum concentration of 1.1 micrograms per cubic meter ($\mu g/m^3$), 2.1 $\mu g/m^3$ and 16 $\mu g/m^3$ for PCE, TCE and TCA, respectively. None of these concentrations exceeded New York State Department of Health (NYSDOH) or EPA guidance values except for TCE which was equal to EPA's guidance value. Sub-slab concentrations ranged from nondetect to a maximum concentration of 15 $\mu g/m^3$, 14 $\mu g/m^3$ and 2 $\mu g/m^3$ for PCE, TCE and TCA, respectively.

The results of NYSDEC's soil vapor sampling are provided on Figure 4-1 in Appendix C of EPA's Baseline Human Health Risk Assessment for OU1 and NYSDEC's Site Characterization Report Operable Unit 4 Phase 3 Off-Site Vapor Intrusion Evaluation, dated September 2009.

Comment # 50: A commenter asked when EPA would consider evaluating the vapor intrusion pathway?

Response to Comment # 50: As part of the pre-remedial design investigation for OU1, EPA anticipates collecting additional data that would be used to assess the soil vapor intrusion pathway. EPA would evaluate the results of this effort and develop a schedule to perform any additional work, as appropriate.

Comment # 51: What are the names of the streets in New Cassel where the residental properties were sampled during NYSDEC's vapor intrusion investigation?

Response to Comment # 51: Figure 4-1 in Appendix C from EPA's OU1 HHRA presents the approximate soil vapor sampling locations. As a matter of privacy, the residential addreses are not included in the figure. Of the residential properties sampled, one was located in New Cassel south of the NCIA and Grand Boulevard and the remaining properties were located in Salisbury.

Comment # 52: A commenter asked for the location of the highest indoor air concentration detected during NYSDEC's vapor intrusion investigation of residential properties.

Response to Comment # 52: The maximum indoor air concentration observed for an NCIA related contaminant of concern was TCE at a concentration of 2.1 $\mu g/m^3$. The maximum observed indoor air concentration is below NYSDOH guidance values and is equal to EPA's guidance value for indoor air concentrations for TCE. The location of this sample was located south of Grand Boulevard in New Cassel. Please refer to Figure 4-1 in Appendix C of EPA's OU1 HHRA for map with the location of NYSDEC's vapor intrusion investigation of remedial properties.

Comment # 53: A commenter asked how the OU1 groundwater become contaminated, and additionally, how OU1 became part of the Superfund site.

Response to Comment # 53: In 1986, Nassau County Department of Health identified groundwater contamination throughout the NCIA. Thereafter, in the 1990s NYSDEC assessed individual facilities within the NCIA to identify the sources of groundwater contamination. NYSDEC investigated the groundwater downgradient of the NCIA and determined that a variety

of disposal activities within the NCIA had resulted in the disposal of hazardous wastes including chlorinated VOCs. NYSDEC concluded that some of those wastes were released or have migrated from the NCIA to surrounding areas. In 2003, NYSDEC selected a remedy for the groundwater south of the NCIA and conducted pre-remedial activities until 2011.

In 2010, the area downgradient of the NCIA and other areas of nearby groundwater contamination were referred to EPA by NYSDEC for nomination onto the NPL. EPA's OU1, the subject of this ROD, was among the areas referred to EPA by NYSDEC.

In 2010, to assess eligibility for NPL nomination, EPA conducted an investigation which included the collection of water samples from pre-treated groundwater from the Bowling Green, Hicksville, and other nearby public supply wells. The analytical sample results indicated that chlorinated VOCs in groundwater were present at concentrations significantly above background concentrations in some of the pre-treated groundwater samples collected. By March 2011, EPA prepared a HRS package for the Site. The HRS package outlined the eligibility of the Site for proposed inclusion on the NPL based on a number of factors including, but not limited to observation of contaminant release based on EPA's 2010 investigation, the toxicity and mobility of contaminants, and the potential for a population to be exposed to the contamination. In September 2011, EPA listed the Site final on the NPL thus becoming a Superfund site.

Comment # 54: Are there any other areas in Nassau Country that may be desginated as a Superfund site?

Response to Comment # 54: There are currently 15 Superfund sites in Nassau County included on the NPL. No other sites in Nassau County are currently proposed for inclusion on the NPL. EPA, in conjunction with the State of New York, will continue to evaluate whether there exist additional sites that should be evaluated for inclusion on the NPL.

Comment # 55: Is the New Cassel/Hicksville Ground Water Contamination Superfund Site the same site as the U.S. Army Corps of Engineers (USACE) Sylvania site? If it is not the same, what coordination has Region 2 and the USACE are done for the two sites?

Response to Comment # 55: The New Cassel/Hicksville Ground Water Contamination Superfund Site is a widespread area of groundwater contamination within the Towns of North Hempstead, Hempstead and Oyster Bay. As a widespread area of groundwater contamination, the Site has multiple sources to the groundwater contamination. The Sylvania facility is believed to be among the sources that have contributed to the groundwater contamination at the Site.

Remediation of the Sylvania facility is managed under the Army Corps of Engineers Formerly Utilized Sites Remedial Program out of the New York District Office. EPA is coordinating with the USACE New York District and information related to the contamination at the facility has been summarized and evaluated in EPA's Supplemental RI Memorandum for the Site.

Unrelated to the Sylvania facility and in support of the RI/FS for OU1, EPA entered into an Interagency Agreement with the USACE Kansas City District to conduct certain RI/FS activities. As part of this effort, the USACE contracted with Henningson, Durham & Richardson, Inc. The

work included development of the OU1 Supplemental FS, HHRA for OU1, and the Stage 1A Cultural Resource Report.

Comment # 56: A commenter asked where the repository for documents is located.

Response to Comment # 56: The local information repository, which contains documents related to the development of the remedy for OU1, can be found at the Westbury Public Library, 445 Jefferson Street, Westbury, NY. EPA additionally maintains an information repository at the EPA Region 2 Records Center located on the 18th floor of 290 Broadway New York, NY.

The proposed plan and ROD are available online at:
http://www.epa.gov/region02/superfund/npl/newcassel/docs.html

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