Department of the Navy Comments on New York State Department of Environmental Conservation's Feasibility Study Report
Northrop Grumman Bethpage Facility (Operable Units 2 and 3) and Naval Weapons Industrial Reserve Plant (Operable Unit 2)
(NYSDEC Site #130003A and 130003B)

NYSDEC Alternative 5B Projected Impact to Department of the Navy Operable Unit 2 Record of Decision (ROD) Remedial Actions

1. Global. The Department of the Navy (DON) 2003 Comprehensive Environmental Response, Compensation & Liability Act (CERCLA) Operable Unit (OU) 2 Record of Decision (ROD) addresses groundwater remedial actions to be implemented by DON. Per the ROD, "...a *specific investigative task will be undertaken that includes, but is not necessarily limited to, installation of additional groundwater monitoring wells, vertical profile borings, and groundwater sampling to determine the extent of contamination in the vicinity of monitoring wells GM-75D2 or any other area where additional groundwater investigations have been determined to be required, and whether groundwater contamination represents a significant threat to downgradient public water supply wells. The trigger values used to determine if additional groundwater investigations are necessary is the detection of 1 part per million (1 ppm) of total VOCs in three consecutive sampling events in any one well. After the area is assessed, a determination will also be made regarding the necessity for implementation of a contaminant mass removal program, similar to the GM-38 Area program*."

   Subsequent investigations concluded that groundwater in the vicinity of GM-75D2 did not meet the definition of an area requiring a mass removal program. Later DON discovered that groundwater further south and deeper than GM-75D2 did meet the mass removal criteria. This new area is referred to as the RE108 Area Hotspot. In accordance with the ROD, the DON's RE108 Phase I and Phase II designs are based on the accumulated data from the DON's offsite groundwater investigation program performed to fulfill the ROD requirement stated above. The Phase I and Phase II designs require the placement of groundwater recovery wells. The DON's ROD in combination with Northrop Grumman (NG) actions is generally equivalent to Alternative 1 (No Further Action (existing and planned remedial systems)) as described in the April 2019 New York State Department of Environmental Conservation (NYSDEC) Feasibility Study (FS).

2. Global. The implementation of the remedial actions described in the 2001 NYSDEC and 2003 DON OU2 RODs (i.e., "Alternative 1: No Further Action" (existing and planned remedial systems)) is ongoing. Therefore, describing Alternative 1 with a title of "No Further Action" is factually incorrect and could mislead stakeholders.

   The April 2019 NYSDEC FS should be revised to title each alternative as "Alternative 1 and Alternative #X" to indicate that each FS alternative "#X" is dependent upon and additive to Alternative 1 to achieve protection of human health not possible by Alternatives 2 through 5 alone.[1]

3. Global FS comment. The DON prepared this evaluation of NYSDEC's preferred Alternative 5B (Hydraulic Containment of Site Contaminants above Standards, Criteria, and Guidance (SCGs) Combined with Mass Flux Remediation –Centralized Treatment Plants with a Centralized Recharge Basin) without sufficient time to fully evaluate the NYSDEC groundwater modeling efforts used to develop Alternative 5B. DON received draft information on the modeling on July 1, 2019. The FS description and United States Geological Survey (USGS) report detailing the flow model must be fully reviewed to validate the Alternative 5B design and conclusions. Due to model complexity, DON continues its evaluation.

[1] This comment is not intended as a concession that any of these alternatives need to be added to Alternative #1 to make the OU2 remedy protective of human health and the environment.

4. Global FS comment. Based on the information made available by NYSDEC, the DON has strong concerns that NYSDEC's implementation of its selected remedy, Alternative 5B, or other Alternatives presented in the FS, will negatively impact the ability of the DON to fulfill its currently planned and future OU 2 ROD requirements. These concerns are explained in the following comments.

5. Global FS comment. The DON has completed a preliminary evaluation of Alternative 5B impacts on the effectiveness of RE108 Phase I/II using the MODFLOW/MODPATH groundwater flow model, the same computer program used by USGS to model Alternative 5B. The DON's modeling indicates that operation of the DON's RE108 Phase I and II recovery wells will have a significant capture area extending north from their locations, toward and near the Onsite Containment (ONCT) System. The DON's modeling indicates that the operation of NYSDEC mass flux extraction wells in the area of RE108 Phase I and II recovery wells will adversely impact the DON's ability to effectively intercept and treat the full extent of the RE108 Area Hot Spot groundwater as required by the OU2 ROD.

6. Global FS comment. Alternative 5B requires 24 extraction wells (installation of 21 wells and use of 3 existing wells), with 16 of those designated for hydraulic containment and 8 for mass flux reduction as indicated in Figure 7-9 of the FS. The NYSDEC FS design positions mass flux extraction wells (DECEX-01, -02 and -03) to the immediate north of the DON's RE108 Phase II recovery wells (RW-5A/5B and RW-6A/6B) and extraction wells DECEX-04, and -05 to the immediate north of the DON's RE108 Phase I recovery well (RW-4).

   Based on the MODPATH particle tracking model, these five NYSDEC wells will adversely affect the RW-4, RW-5, and RW-6 capture areas. If the NYSDEC wells are installed, the DON's wells will be capturing portions of the plume with lower volatile organic compound (VOC) concentrations, resulting in decreased effectiveness and efficiency. The DON's modeling indicates that within five years of implementation of Alternative 5B, the RW-4 recovery well will begin to pull water from the shallow parts of the aquifer (300 feet or less), reducing the effectiveness of this well in removing the higher concentrations of VOCs that reside in the aquifer well below 300 feet. A clear negative impact to the groundwater capture areas of RW-5A/5B and RW-6A/6B is noted following 15 years of operation of Alternative 5B as the capture area of these two wells is bifurcated due to operation of the NYSDEC extraction wells. A distortion of the capture areas of the RW-5A/5B and RW-6A/6B wells will reduce their ability to capture and treat the elevated VOC concentrations of plume hotspot. The overlap of NYSDEC extraction wells and RE108 Phase I and II recovery well capture areas will reduce the effectiveness of all extractions wells.

   In summary, the placement of the NYSDEC extraction wells directly upgradient of the DON's recovery wells results in a detrimental distortion of capture areas, disrupting the north to south flow of groundwater to the DON's RE108 Phase I and II wells. The hydraulic response of the DON's wells to the flow distortion results in an expansion of the lateral and vertical dimensions of the capture zones, causing the capture of lower concentration areas of the RE108 Hot Spot, and lessens the overall efficiency and effectiveness of the DON remedial systems. NYSDEC must revise the FS and proposed AROD to prevent interference with the DON recovery wells' effectiveness in reducing VOC mass and concentrations in groundwater in the RE108 Hotpot Area.

Effectiveness of Alternative 1

7. Global FS comment. As stated in FS Section 2.2.2, NYSDEC considers remedial actions undertaken by the DON as "critical to the overall strategy to contain and remediate the existing groundwater plume." However, the FS document does not include an evaluation of Alternative 1 effectiveness using the USGS model. A proper FS analysis requires a complete and quantifiable assessment of the effectiveness of Alternative 1 versus the remaining seven Alternatives.

   The FS should clearly explain and quantify the effects of Alternatives 2A through 5B upon existing Alternative 1 components, such as the GM-38, RE108 Phase I and Phase II, and Northrop Grumman's ONCT and planned RE-21 actions. In addition, NYSDEC must be clear in describing the distortions and movement of the NYSDEC-defined SCG plume toward the Bethpage Water District and other public water supply wells that would be caused by the pumping required by selected Alternative 5B.

   To understand the relative value of the NYSDEC selected Alternative, reviewers including the public must be able to compare all the Alternatives, including Alternative 1. The FS and proposed AROD should be revised and re-issued with a complete evaluation of Alternative 1 and the full impacts of Alternative 5B.

8. Global FS comment. The NYSDEC FS Alternative 5B provides minimal additional protectiveness, and given the high urban development density in the footprint of the plume, implementability of Alternative 5B will be limited. Based on the DON's prior drilling of numerous borings and installation of monitoring wells within the NYSDEC-defined SCG plume, an enhanced understanding of the complex subsurface geology has been gained. The revised conceptual model indicates that favorable subsurface conditions, such as depth of transmissive intervals and contaminant intervals, determine the best location for recovery wells, not simply open and available public land. The DON's RE108 Phase I and II recovery wells are specifically located based on this evaluation. A significant constraint to remedy effectiveness and success is acquiring the right location for groundwater recovery wells. The NYSDEC FS does not provide a description of how the complex subsurface geology was used in selection of recovery wells, how implementable the selected remedy will be given the density of development within the plume footprint, and how that implementation will require subsequent acquisition of land for recovery wells. These are significant constraints that will impact schedule, cost and remedy implementation, and requires a full evaluation in the FS.

9. FS Section 8.2.1, Page 76. The DON has significant reservations about the accuracy of the NYSDEC FS conclusions related to Alternative 1 (existing and planned remedial systems). DON disagrees with the statement in Section 8.2.1 that, "the alternative [Alternative 1, No Further Action] allows for the continued, uncontrolled migration of the groundwater contamination that has already impacted public water supplies." The combination of actions implemented by the DON and NG in Alternative 1 has eliminated the migration of VOC mass leaving the former Naval Weapons Industrial Reserve Plant (NWIRP) and NG properties, and is estimated by NYSDEC to remove approximately 90 percent of the mass of VOCs that are in the groundwater while capturing approximately 11 percent of the plume (reference FS Tables 3-6 and 3-7 for total volatile organic compounds [TVOCs] greater than 50 micrograms per liter). The average VOC concentration within the plume projected to be captured by NYSDEC Alternative 5B, but not being captured by Alternative 1, is approximately 8 micrograms per liter, compared to the New

York State Department of Health (NYSDOH) drinking water standard of 5 micrograms per liter. NYSDEC's Alternative 5B is proposing to extract an additional 192 billion gallons of water at an additional cost of $585 million over thirty years to extract and treat groundwater that marginally exceeds Federal and State drinking water standards of 5 micrograms per liter.

The actions implemented and planned by the DON and NG under Alternative 1 include the ONCT, the GM38 extraction and treatment system, the planned RE108 groundwater extraction and treatment system (Phase I and Phase II), the planned NG RW21 extraction and treatment system, and the wellhead treatment funded by the DON for BWD Plants 5 and 6 and South Farmingdale Water District (SFWD) Plants 1 and 3, as well as installation of treatment at the New York American Water Seaman Neck Road Plant. Past operations of the existing ONCT and GM38 extraction and treatment systems have already removed over 225,000 pounds of TVOCs. Continued operation of these systems will remove the vast majority of the NYSDEC-estimated remaining mass of 219,000 pounds. Alternative 1 achieves protectiveness of all of the human health and ecological receptors that Alternative 5B aims to achieve, while also achieving the mass removal that Alternative 5B seeks to remove.

10. FS Section 8.2.1 – Overall Protection of Human Health and the Environment, Page 76, states that: "Alternative 1 provides no further control of exposure to contaminated groundwater and no further reduction in risk to the environment posed by contaminated groundwater." The section states that the No Further Action alternative does not attain the groundwater remedial action objective (RAO) (e.g., restoration of the resource) and does not enhance the protection of human health. The evaluation also concludes: "This Alternative could result in impacts to wetlands, stream flow, and subsea discharge and to additional public water supply wells."

    This conclusion of potential impacts to wetlands, stream flow, and subsea discharge is not supported by Alternative 1 modeling results. As Alternative 1 returns treated water to the aquifer north of the Southern States Parkway, and the FS did not otherwise provide analysis for its unsupported conclusion of "impact" to wetlands, stream flow, and subsea discharge, the FS cannot conclude that there would be adverse impacts to these resources. Further, downgradient public water supply wells are protected from additional impacts through ongoing upgradient mass removal, outpost monitoring wells to provide timely detection of threats to the supply wells, and provision of wellhead treatment to ensure protection of human health. Contrary to NYSDEC's analysis, enhancement of protectiveness that has already been achieved is not a National Contingency Plan (NCP) (or Part 375) criterion. Although NYSDEC also concludes that Alternative 1 does not attain the RAO of "restoration of the resource [to pre-disposal conditions]," its selected alternative cannot achieve such restoration either. The existing remedy (Alternative 1) is protective of human health and ecological receptors. While the existing remedy does not completely halt migration, the planned addition of the RE-108 treatment system (along with RW-21 by NG for OU3) to NG's existing ONCT system, along with existing water district wellhead treatment systems, capture or will capture approximately 90 percent of NYSDEC's calculated VOC plume mass while intercepting 11 percent of the NYSDEC-calculated plume volume. As explained in more detail below, NYSDEC failed to conduct a cost-benefit analysis as required by the NCP in pursuing the "restoration" RAO.

    NYSDEC concurred that Alternative 1 met this criterion in the 2013 Five Year Review. However, the FS text describes and objects to conditions that also existed at the time of the ROD and the more recent Five Year Review.

11. FS Section 8.2.2 – Compliance with SCGs. Page 76. This section states that Alternative 1 does not comply with SCGs. The text should be revised to specify that it pertains to "chemical-specific SCGs." Relative to the SCGs, (except for 1,4-dioxane and several chemicals of concern of non-NWIRP/NG origin, e.g., western Freon-113 plume), at the completion of both Alternative 1 and 5B remedies, the aquifer will be restored to achieve the SCGs, as practicable. There is no text in this section to support the non-compliance assertion, such as results of USGS modelling. The third RAO requires aquifer restoration to the extent practicable, which conflicts with the chemical-specific SCG requirement and similar NCP requirement. *See* 40 CFR Sec.300.400 (e)(2)(i)(B), generally requiring compliance with non-zero maximum contaminant levels goal (MCLGs); otherwise with maximum contaminant levels (MCLs).

12. FS Section 8.2.4 – Reduction of Toxicity, Mobility, and Volume, Page 76, (and Section 9.4 – Reduction of Toxicity, Mobility, and Volume, Pages 123 and 124), states Alternative 1 would not provide a reduction in toxicity, mobility, or volume for contaminants of concern (COCs) that occur at a concentration less than approximately 1,000 micrograms per liter to the SCGs, and these COCs would continue to migrate toward public water supplies, wetlands, stream flow, and subsea discharge. This statement is incorrect. The DON's modeling of RE108 Phase I and II capture areas for the RW-4, RW-5A/5B, and RW-6A/6B extraction wells indicates migration of groundwater with concentrations significantly less than 1,000 micrograms per liter. DON modeling indicates Alternative 1 will capture most of the groundwater with TVOCs greater than 50 micrograms per liter. As stated in prior comments, NYSDEC's April 2019 FS fails to provide modeling results for Alternative 1 and, therefore, statements written to assert ineffectiveness of Alternative 1 are scientifically unsupported.

    The NYSDEC should re-issue the FS with a complete and accurate evaluation of Alternative 1.

13. FS Section 8.2.7 – Cost Effectiveness, Page 77: NYSDEC's FS states: "Because this is a No Further Action alternative, the capital, O&M, and net present worth costs are estimated to be $0." NYSDEC's FS analysis ignores the past and estimated future costs of the existing remedy. The NCP requires that records of decision explain "how the remedy [or in this case amended remedy] provides overall effectiveness proportional to its costs" 40 CFR Sec. 300.400 (f)(5)(ii)(D). See also NYSDEC Division of Environmental Restoration-10 (DER-10) Technical Guidance for Site Investigation and Remediation, Sec. 4.2 (h). The United States Environmental Protection Agency (EPA) explained in its 1990 NCP Preamble: "In comparing alternatives to one another, the decision-maker should examine incremental cost differences in relation to incremental differences in effectiveness. Thus, for example, if the difference in effectiveness is small but the difference in cost is very large, a proportional relationship between the alternatives does not exist." 55 Fed. Reg. 8666 (Mar. 8, 1990). The deficiency in the FS cost effectiveness analysis raises serious questions about the proportionality of increased cost of the selected remedy over the existing remedy (Alternative 1), when considering the protectiveness of the existing remedy and relatively small incremental increase in mass capture by NYSDEC's selected remedy. There is no discussion of proportionality at all in the FS. This failure of analysis also undermines public awareness of the cost of the existing remedy and how the "cost-effectiveness" factor should be applied when arriving at remedial decisions.

14. FS Section 8.9.1 – Overall Protection of Human Health and the Environment, Page 112, second paragraph. The text of Section 8.9.1 discussing the protectiveness of the selected remedy (Alternative 5B) states, "Based on this evaluation and compared to the No Further Action

Alternative, it is expected that Alternative 5B would have little effect on the environment." As no evaluation of impacts is provided for Alternative 1, this comparison statement is unsupported.

Alternative 5B Will Not Achieve Stated Goals

15. FS, Executive Summary, Page III, paragraph 1. The Executive Summary states that Alternative 5B is the most protective and will "include additional extraction wells in the most concentrated areas of the plume to reduce risk to human health and the environment…." This statement is misleading. The protectiveness of human health and ecological receptors is already being achieved by the actions conducted under the existing DON and NYSDEC OU2 RODs. The sole potential benefit of Alternative 5B to the environment results from potential efforts to control the migration of relatively low concentrations of VOCs beyond that provided by Alternative 1, but at significant disruption to the community, modifications to existing surface water and groundwater flow, and high cost. The FS provides no assessment of human health or ecological risk or the reduction of potential risk that can be attributed to Alternative 5B. Alternative 1, the DON's and NG's response actions per the existing DON and NYSDEC OU2 RODs, are protective of human health by providing wellhead treatment on public water supply wells, protecting public supply wells from additional impacts through ongoing upgradient mass removal, and outpost monitoring wells to provide timely detection of threats to the supply wells. The text of the FS should be revised to clearly state that Alternative 1 is the only alternative to mitigate human health risk via the treatment at impacted water supply plants.

16. Global FS comment. NYSDEC's selected AROD alternative, FS Alternative 5B, does not credibly demonstrate that total plume capture can be either achieved or sustained. The FS fails to recognize that the large and deep NYSDEC-defined plume will continue to evolve, as it has in the past, presenting any "total plume capture" system with a moving target. The FS fails to recognize that matrix diffusion (slow back diffusion of sequestered VOCs from the numerous silt and clay layers in the Magothy aquifer) will prevent the active mass flux remediation component of Alternative 5B from realizing its goals of complete cleanup of the 50 micrograms per liter plume in 25 years and of the SCG plume in 110 years. These plumes are likely to persist decades longer despite the measures in Alternative 5B; see additional comments on this topic below.

17. Global FS comment. Groundwater flow modeling conducted by USGS as reported in the FS does not include consideration of matrix diffusion, and therefore draws inaccurate conclusions about the ability of additional extraction wells to expedite cleanup of the 50 micrograms per liter and SCG plumes. Substantial additional and redundant cost is incurred in Alternative 5B because it adds many new extraction wells to capture groundwater that is already targeted for capture by existing wells and treatment systems in Alternative 1.

    The current modeling assumes that groundwater exchange (via pumping) will remove all contamination; this is a flawed assumption. The FS should be revised and re-issued to correctly model changes in plume chemistry and concentration. The FS revisions should include accurate estimates of mass removed and mass remaining for the duration of Alternative 5B.

18. FS Section 3.5 – Groundwater Flow Modeling, Page 20. The hydrogeology discussion acknowledges the presence of considerable silts and clays in the aquifer. Such lithologies are capable of retaining VOC contaminants in their matrix and releasing this mass after the main plume has passed through the area. The FS does not account for VOC release over time from matrix diffusion effects. The release of VOCs into groundwater from the silt and clay intervals

will limit the ability of any groundwater extraction system to allow the aquifer to reach SCGs in the foreseeable future, and considerably impede the ability and effectiveness of the groundwater extraction. While pump and treat remains a viable option for removing mass, it primarily targets high flow sand and gravel zones within the aquifer and is much less efficient at removing VOCs from low flow silt and clay zones. Subsequent sustained aqueous phase concentrations would signify the presence of contaminants in any phase in low-permeability zones, and vapor, dense non-aqueous phase liquid (DNAPL) and sorbed phases in transmissive zones (Farhat, et al., 2012). Depleting aqueous phase contaminants from transmissive zones simply results in further releases of constituents from low-permeability zones. This back diffusion would result in a rebound following any meaningful reduction in concentration, and extend the time to meet clean-up goals. Conditions at Bethpage suggest a high likelihood for back diffusion. As the areal extents of the plume have increased, so too has the likelihood for contact with low-permeability candidate intervals for back diffusion. Additionally, the variability in the hydraulic conductivity in the Magothy aquifer (depending on location and depth) plays a role in increasing contaminant storage capacity of the matrix in locales where conductivity is low and contaminant mass can accumulate.

The data necessary to fully evaluate the role of matrix diffusion should be collected by NYSDEC. The USGS should then re-run a fate and transport model to account for this critical constraint on all the Alternatives' effectives and duration. The findings of this evaluation should be incorporated into a revised FS. Analysis of alternatives for groundwater pump-and-treat remedy selection without contaminant fate and transport modeling is a fundamental shortcoming in the FS.

19. FS Section 8.0 – Detailed Evaluation of Alternatives, Page 73 to 117. Alternative 5B will be considerably limited in its implementability due to the unavailability of desirable locations for new extraction wells in the high-density urban setting atop the plume. The placement of extraction wells where convenient (i.e., publicly available land) versus where the plume exists in the subsurface will limit their effectiveness.

    The DON's experience to date indicates that executing agreements with landowners for recovery well locations, pipeline routes, and treatment plants is a lengthy process and not always successful. Experience also indicates first and second choice locations for wells, pipelines, or plant locations may not be available, or a landowner may be unwilling to grant an easement to an alternate location even when offered fair compensation.

    NYSDEC should not defer addressing this important element to the remedial design phase. As a critical aspect of a "feasibility" analysis, the FS must contain a plan for acquisition of land for each Alternative's required wells, pipelines and facilities. Currently, the FS analysis blanketly assumes maximization of public rights-of-way, but does not reveal to the public the possibility that the State may need to exercise eminent domain authority to take private land to install the large number of proposed extraction wells. Providing a plan in the FS will inform the public and municipalities the impact of each Alternative's implementation, and how land acquisition will require legal agreements and possible legal action by NYSDEC.

Groundwater Model Evaluation Incomplete/Insufficient

20. FS Section 3.5 – Groundwater Flow Modeling, Page 20. The USGS flow model does not have the capability to assess Alternative effectiveness over the period of implementation. As described in Section 3.5, the USGS used MODFLOW to simulate groundwater flow. MODPATH is a post-

processing particle tracking tool. Neither MODFLOW nor MODPATH include the evaluation of contaminant fate over time (i.e., dissolution, degradation, dispersion, etc.). The USGS model should be re-run using the MT3D package that incorporates the change in contaminant chemistry over the implementation period. This evaluation will result in revised projections of alternative effectiveness, duration, and cost.

The findings of this evaluation should be incorporated into a revised version of the FS. The current FS should be revised and re-issued with a complete evaluation of contaminant fate over the implementation period.

21. FS Section 3.5 – Groundwater Flow Modeling, Page 20. The FS does not describe the use of the USGS groundwater model to predict and quantify Alternative 5B effectiveness in terms of plume extent reduction, plume concentration change, and prevention of plume migration. NYSDEC used the groundwater flow model for Alternative configuration, indicating that simulations and therefore predictions of groundwater movement, mass flux change and hydraulic containment were completed. The USGS model may have the capability to predict change in the conditions from a baseline state to a post-ROD implementation state.

    NYSDEC should revise the FS to describe and depict reductions in plume shape, plume concentration, and the limit of plume migration downgradient over the implementation period. The analysis should provide COC concentration decline and costs expended vs. time curves for extraction and containment wells. This information will allow stakeholders to evaluate the feasibility and practicability of restoration of the aquifer over time by assessing the efficiency, effectiveness, and mass removed per volume of aquifer water removed. In addition, the predicted cost per volume rate removed will be used to assess the return on investment by the taxpayers.

22. FS Section 8.9.1 – Overall Protection of Human Health and the Environment, Pages 112 to 113. Of particular concern is the distortion of the respective Water District well field capture areas as groundwater is drawn to the NYSDEC mass flux extraction and containment wells. As stated in Section 8.9.1 for Alternative 5B, "The groundwater model predicts (Table 8-3) that in six of the 13 public water supply wells, the water level will decrease from 1.8 to 4.0 feet; in the remaining seven public water supply wells groundwater levels will decrease from 5.2 to 7.3 feet. These potential changes to the water levels are not expected to affect the yield of the wells given the well depths, specific capacity, and well efficiency of these public water supply wells." This simple explanation fails to provide an adequate description of the distortion of the capture area of the supply wells (vertical and horizontal extent) to overcome groundwater drawn to the NYSDEC wells and how the distortion of the capture area may pull contaminated groundwater from the plume.

    NYSDEC should revise the FS to describe and depict distortion of the Water District wellfield capture areas to allow the Water Districts to fully understand the impact of NYSDEC operating 24 mass removal and containment wells. The supporting figures from the USGS modeling report should be revised (and provided in a revised FS) to show particle tracks beyond the SCG plume boundary, because not depicting these tracks beyond this boundary is an incomplete illustration of predicted groundwater flow.

23. FS Section 3.5 – Groundwater Flow Modeling, Pages 20 to 21. In the realm of groundwater flow modeling, model layer construction and assignment of hydraulic conductivity (K) values is critical to create a model representative of groundwater flow. A key factor in K prediction is the accurate

assignment of layer properties, including type of sediment (e.g., clay, silt, sand, gravel, etc.), sediment thickness, and vertical/horizontal distribution. The FS states that a gravel zone exists in the lower portion of the Magothy aquifer that would be expected to have a relatively high K and to significantly impact groundwater flow in the overlying aquifer. A previous investigation is also referenced in Section 2.5.3 regarding the presence of a basal gravel zone; however, the previous study (Isbister, 1966) was conducted in an area mostly north of the off-property groundwater plumes. The environmental sequence stratigraphy analysis (ESS) conducted by the DON and correlation of gamma logs in the area of the NYSDEC-defined plume indicates that pockets of gravel exist, but that a laterally continuous deposit of gravel (e.g., channel deposits) is probably not present at or near the bottom of the Magothy aquifer as described in the FS. The DON's ESS work has interpreted this depth interval of the Magothy to contain predominantly finer grained sediments with a relatively lower K than the overlying Magothy deposits. The misattribution of a high conductivity interval at the base of the Magothy would result in incorrect predictions of groundwater flow at this depth.

24. FS Section 3.4 – Groundwater Visualization, Page 19. The DON has reviewed the groundwater chemistry data and concluded that the data and USGS modeling was used incorrectly to identify areas of groundwater contamination in the NYSDEC SCG plume that are erroneously associated with the NG and NWIRP facilities. Specifically, the DON has reviewed the NYSDEC plume boundary in detail and determined the basis for the boundary is not supported by data or well information. In several areas, the plume boundary is positioned by use of a single value of a contaminant not associated with NWIRP. Areas of particular concern that are continuing to be evaluated by the DON are the portions of the shallow groundwater, which include NYSDEC-regulated dry cleaner and gasoline spills, and the northern, western, and southern sections of the NYSDEC-identified plume where the source(s) are not well defined other than that they are not associated with the NG and NWIRP facilities (e.g., a Freon-113 plume of non-NWIRP/NG property origin). The erroneous placement of the SCG plume boundary has resulted in the design of Alternatives to treat groundwater contamination not associated with NWIRP, and to include contamination beyond the upgradient and western boundaries of OU2.

25. FS Section 8.9.1 – Overall Protection of Human Health and Environment, Page 112, first paragraph. The text describing Alternative 5B states that "this alternative would prevent impacts to currently un-impacted water supply wells" and "unrestricted use of the groundwater resources." However, regardless of how aggressive a pumping plan is implemented, it is likely that due to the dense residential and commercial development, chemicals such as chlorinated solvents (from dry cleaners and maintenance shops), petroleum compounds (from gas stations and residual use), and even commercial additives to residential products (e.g., 1,4-dioxane to soaps), these well fields will be impacted and require treatment in the future.

    In addition, although aggressive pumping within the plume footprint may reduce migration of impacted groundwater from the NWIRP and NG facilities, this pumping would also result in other groundwater plumes in the surrounding areas being pulled into these same well fields, including a benzene plume north of SFWD Plant 3, a Freon plume to the west of the NG and NWIRP OU2 Plume, a tetrachloroethene (PCE) plume north of NYAW, a mixed trichloroethene (TCE), PCE, and Freon plume north and west of the NG and NWIRP OU2 Plume, and another VOC plume east of the NG OU3 Plume.

The FS should be revised with a detailed analysis of the consequences to the public water supply wells to allow stakeholders to understand the limitations and impacts of Alternative 5B.

Inconsistency with State Regulation

26. FS Section 8.0 – Detailed Analysis of Alternatives, Page 73. In the Detailed Analysis of Alternatives (Section 8), NYSDEC does not follow its own guidance as presented in Section 4.2 of DER-10. The FS Evaluation Criterion of "Overall protection of human health and the environment" states, "...evaluation of the alternative's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced, or controlled through removal, treatment, engineering controls, or ICs." In addition, the criteria of Long-term effectiveness and permanence require an assessment of the magnitude of remaining risk.

    The FS document does not discuss a risk assessment quantifying how existing or potential pathways of exposure are eliminated, reduced, or controlled; the FS is not compliant with DER-10. The absence of a risk assessment prevents the FS from providing a complete evaluation of each Alternative in terms of risk elimination, reduction or control, and developing clear site-specific RAOs against which the Alternatives can be evaluated, including against the Alternative 1 baseline.

27. Section 8.0 – Detailed Analysis of Alternatives, Pages 73 to 117. The FS does not properly analyze for the following DER-10 criteria:

    a. How each alternative would eliminate, reduce or control through removal, treatment, containment, engineering controls or institutional controls any existing or potential human exposures or environmental impacts identified by the Remedial Investigation (RI).

    b. The ability of each alternative to achieve each of the RAOs.

    For example, Section 8.9.1 states "Alternative 5B would protect human health and the environment by hydraulically containing groundwater with COCs above the SCGs with a series of wells along the western and southern edges of the SCG plume." This statement omits the baseline of the existing OU2 remedy. Alternative 5B (and Alternatives 1 through 5A) should state that the protection of existing or potential human exposures and ecological receptors (RAOs 1, 2, 3, 5, and 6) is already achieved through public water supply well head treatment and existing and planned groundwater containment and hotspot treatment being taken under the existing OU2 remedy and identified under Alternative 1, as well as through monitoring of the system of outpost wells.

    The primary objective of Alternative 5B relative to Alternative 1 is to provide hydraulic containment of the groundwater with COCs above the SCGs (NYSDEC-defined plume)(RAO 4). The FS should specifically state how the Alternative will address each of the seven RAOs presented in Section 4.2. Most of Section 8.9.1 discusses short-term effects (e.g., surface water flow, water levels in wetlands, water levels in public water supply wells, and subsea discharge) and these would be better addressed under Section 8.9.5.

    NYSDEC should revise the FS to fully evaluate each of the DER-10 criteria with text specifically detailing how the criteria's components will be achieved.

28. FS Section 8.0 – Detailed Analysis of Alternatives, Pages 73 to 117. The Implementability criteria identified in DER-10 criteria are not presented or evaluated for Alternative 1 in order to

create a proper baseline against which the other Alternatives can be measured. The missing criteria are as follows:

"1. Technical feasibility includes the difficulties associated with construction and the ability to monitor the effectiveness of an alternative or remedy.

2. Administrative feasibility is evaluated, which includes: i. the availability of the necessary personnel and material; and ii. potential difficulties in obtaining specific operating approvals, access for construction, etc.

3. The evaluation of the reliability and viability of implementation of the institutional or engineering controls necessary for a remedy…."

Moreover, with respect to all FS Alternatives, NYSDEC is aware of the difficulty of land acquisition and construction in the NYSDEC-defined plume area, yet has not provided details specific to the DER-10 criteria in the FS other than to state construction would be "challenging in densely populated areas." In addition to actual construction constraints of working in a densely populated area, seeking and obtaining the private/municipal/commercial approvals and permits for access can restrict, delay, prolong or prevent construction from occurring. A detailed assessment of implementation challenges (e.g., trenching and placement of 23.6 miles of conveyance piping) would reveal if a timeframe of five years is sufficient and realistic for construction of Alternative 5B. The availability of this information is also crucial to the "community acceptance" criterion which is not mentioned in the FS, and is inadequately addressed in the proposed AROD at p. 22 by merely noting that concerns of the community will be addressed in the responsiveness summary after the close of the public comment period. However, because NYSDEC does not provide information and analysis regarding how the real property of residents and commercial and other entities may be significantly impacted by the selected remedy, the faithful implementation of the NCP's and DER-10's "community acceptance" criterion is undermined.

Further, the lack of a complete Implementability analysis prevents accurate assessment of total resources necessary (costs/staffing/acquisition requirements) to begin and complete construction, and does not build in realistic corresponding timelines for the work. To comply with DER-10, Section 4.2, the FS should be revised and re-issued to address DER-10 Implementability criteria.

29. FS Section 8.0 – Detailed Analysis of Alternatives, Pages 73 to 117. The DER-10 short-term impact and effectiveness criteria are not presented or evaluated for Alternative 1 in order to create a proper baseline against which the other Alternatives can be measured under this criterion. In particular the estimated time to achieve the MCLs (or SCGs) is not presented. The missing criteria are as follows:

    1. Identify the potential human exposures, adverse environmental impacts and nuisance conditions, at the site resulting from the implementation of the remedy or alternative. Identify how they would be controlled and the effectiveness of the controls. The potential short-term impacts to be evaluated include, nuisance conditions or potential exposures resulting from increased traffic, including truck trips, detours or loss of the use of access to property; odors; vapors; dust; habitat disturbance; run off from the site and noise.

    2. A discussion of engineering controls that would be used to mitigate the short-term impacts (i.e. dust control measures) should be included.

    3. The length of time needed to implement the remedy or alternative including time to achieve the remedial objectives should be estimated.

4. While sustainability will be a consideration in remedy selection, as set forth in section 1.14, it will not change any existing statute, regulation or guidance.

NYSDEC should revise the FS to include this analysis to provide a comparison of Alternative 1 to the remaining Alternatives.

Incorrect Contaminant Mass-in-Place Estimate

30. Global FS comment. The discussion of the methodology of determination of volume and mass of contamination lacks information indicating if all phases of potential contaminant mass were considered. Contaminant mass is the amount of the COCs present in the subsurface in the source zone(s) and the entire groundwater plume. In the source zone and plume, contaminant mass is defined as the volume present in three media compartments; the free phase or residual non-aqueous phase liquid, mass sorbed to aquifer material (such as the silt and clay-dominated intervals), and mass dissolved in groundwater. In the descriptions provided in Section 3.4, it cannot be determined if NYSDEC considered the mass volume beyond the dissolved phase. If the remaining two phases were not included, the predicted effectiveness of Alternative 5B is incorrect. In addition, the time required to achieve the RAOs is underestimated.

    Alternative 5B effectiveness is predicated upon an assumption that removal of multiple aquifer volumes of contaminated groundwater will induce a flushing of contaminants from the open pore spaces of the aquifer and result in restoration of the aquifer to a clean state. This assumption is flawed as the role of matrix diffusion in contributing contamination during flushing is not addressed.

    The FS should be revised to include the total COC mass and the contribution of back diffusion from the matrix to the aqueous phase. When these factors are considered, a re-modeling of Alternative 5B will likely result in a significant reduction in effectiveness and a longer period of implementation than stated in the FS.

Identified COCs and Use of SCG for Combined OU2 and OU3 Plume Area

31. FS Global. – It is inappropriate to group COCs identified for the NG Bethpage Community Park site OU3 with those associated with OU2 without preparing a RI and associated risk assessment. The physical separation of the plumes between the OU2 and OU3 resulted in the designation of separate OUs, approval of separate RODs, and remedy designs specific to each plume. The depiction of the SCG plume should be revised to distinguish the OU2 COCs from those contributed by the OU3 plume, as well as contributions by other potentially responsible parties including Hooker Ruco, dry cleaners, and gasoline stations.

    NYSDEC should revise the Alternative 5B analysis using a SCG shell for each OU's plume.

32. FS Section 3.6 – Nature and Extent of Groundwater Contamination, Pages 25 to 28. The report identifies PCE as "detected the third most frequently in groundwater samples used to create the three dimensional visualizations." During the DON's groundwater investigations, PCE was identified in one area as a stand-alone plume and, based on the absence of TCE and its depth and location relative to other potential sources (e.g., dry cleaners), it was concluded that the VOCs associated with that plume were not OU2 related chemicals of concern. In addition, the DON identified several other suspect areas that are based on similar considerations (benzene or relatively pure Freon) and are not OU2 related.

The FS should be revised with a SCG plume depiction that does not include contaminants not sourced from the former NWIRP and NG properties. NYSDEC should recognize those responsible parties that contribute contaminants to the OU2 and OU3 plumes.

33. FS Section 2.4.1 – Chemical Specific SCGs, Page 9, first paragraph. The FS states that "where more than one requirement addressing a contaminant is determined to be an SCG, the most stringent requirement is applied." This approach is incorrect if it does not also address whether an SCG is "applicable" or "relevant and appropriate" and if it does not identify whether it is derived from non-enforceable criteria or guidance. DER-10, p. 16, Para. 71 and p. 132, Sec. 42.(c). To be "applicable" or "relevant and appropriate," the SCG should be applied to the proper receptors and pathways. For example, a SCG developed for protection of aquatic organisms should not be applied to potable water supplies, and drinking water standards should not be applied to ecological receptors and human consumption of aquatic organisms. For water that may flow and discharge to fresh or salt water, the SCG specific to the receiving body of water should be applied.

    The FS should be revised to base the SCGs on the receptor and the pathway. The drinking water SCGs should address only those portions of the plume that may be intercepted by public water supplies. For other portions of the plume that will not be intercepted by the public water supplies, the SCGs for protection of aquatic receptor/human health in the bay/ocean should be developed that also consider natural degradation and other attenuation factors over the next 100 plus years as the impacted groundwater slowly migrates.

34. FS Section 3.2, 2017 – 18 – Supplemental Remedial Investigation Summary, Pages 15 to 17. Regarding DEC-Vertical Profile Boring (VPB)-1 data and Table 3-1. The report identifies two COCs as being detected in samples from this boring – toluene and carbon disulfide. The report fails to mention the detection of several other VOCs in samples from this boring, including benzene and methyl tert-butyl ether (MTBE), which provide strong evidence that the COCs identified are associated with a gasoline fuel spill and not the NG and NWIRP properties. In addition, the absence of TCE in the multiple samples from this boring is a clear indication that this location is not associated with the OU2 plume and, therefore, the depiction of the SCG plume is incorrect.

35. FS Section 3.2, 2017 – 18 – Supplemental Remedial Investigation Summary, Pages 15 to 17. Regarding DEC-VPB-2 data and Table 3-1. The report identifies two COCs as being detected in samples from this boring but not at concentrations greater than the SCGs. The text should be revised to specify the COCs and that their concentrations are below the SCG value in the VPB samples.

    The report identifies the detection of TCE in shallow groundwater as a COC. The report should also mention the detection of several other VOCs in this boring including MTBE, which provides strong evidence that the COCs identified are associated with a gasoline fuel spill and not the NG and NWIRP properties. The depiction of the NYSDEC SCG plume in the area of VPB samples should be corrected.

Achievement of Remedial Action Objectives

36. FS Global. The inclusion of hydraulic containment in large off-property plumes to fulfill RAOs appears to be without recent precedent in NYSDEC's Region 1 (Long Island). A review of 29 RODs specifically involving chlorinated solvent plumes and produced by NYSDEC in Region 1

(from March 2004 to 2019) indicated that full hydraulic containment was neither proposed nor selected as part of any remedy. For sites with a VOC plume, all included a groundwater RAO for environmental protection stating "Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable." Yet none of the RODs included a remediation objective referencing prevention of further expansion or migration of the plume. No ROD during this period included the requirement for hydraulic containment of off-property plumes, yet all Region 1 sites are within a similar geologic setting as NWIRP Bethpage.

Therefore, NYSDEC appears to be attempting to impose, upon the Bethpage OU2 remediation, a hydraulic containment requirement to meet an objective (i.e., prevent plume migration) it has not required in other RODs for remediation of VOC plumes. The apparent inconsistency in approach to VOC-impacted drinking water aquifers, combined with NYSDEC's failure to consider the cost-to-effectiveness proportionality of its proposed amended remedy for the Bethpage OU2 plume, is an important consideration in remedy selection.

37. FS Global. CERCLA guidance requires the evaluation of remedy performance to assess if RAOs and cleanup levels will be achieved in a reasonable timeframe. The assessment of a remedy's effectiveness and protectiveness is conducted through the CERCLA Five Year Review process. Since the issuance of the DON's OU2 ROD, the DON has undertaken an extensive drilling program of VPBs and installation of groundwater monitoring wells to collect in-situ hydrogeologic and water chemistry data to optimize the OU2 remediation. This optimization includes the design of the RE108 Phase I and II remedial actions. The DON will collect data following the implementation of RE108 Phase I and II, such as recovery well capture delineation, VOC recovery efficiency, etc. to assess remedy performance and adjust the design, if needed. The assessment of the DON remedy's effectiveness and protectiveness will also be conducted during subsequent CERCLA Five Year Reviews following implementation.

    NYSDEC FS does not provide a prediction of Alternative 1 effectiveness (e.g., via modeling or otherwise) to assess if the ROD-required actions will achieve the OU2 ROD goals.

38. FS Global. Contrary to the statement in the FS, the existing OU2 ROD provides for overall protection of human health and ecological receptors under CERCLA. The existing OU2 remedy accounts for plume migration and specifies programs to protect additional public water supplies. Regarding the wetlands, stream flow, and subsea discharges, the FS does not provide evidence that these media would be impacted or how they would be impacted by the DON's actions. It is the DON's conclusion that the existing OU2 remedy would not affect the existing wetlands or stream flow. While subsea discharges are possible in the distant future, the residual VOCs in groundwater, if any, would not be expected to have a significant impact on the sea.

39. FS Section 8.0 – Detailed Analysis of Alternatives, Pages 73 to 117. DER-10 requires that a FS assess impacts due to remaining contamination. DER-10 states, "If contamination will remain on- or off-site after the selected remedy has been implemented, an evaluation will be provided to assess the impact of the remaining contamination on any of the following: i. human exposure, ii. ecological receptors, or iii. impacts to the environment."

    The implementation period for Alternative 5B is stated as 110 years, a very long period to complete aquifer restoration, assuming success of the remedy is possible. The FS provides no description or quantification of rate of COC degradation, attenuation, or contribution of COCs to the aquifer from back diffusion as mechanisms affecting COC concentrations in the NYSDEC

SCG plume area. The consideration of these factors would support an analysis of and conclusions about remaining contamination concentrations.

The NYSDEC FS should be revised and an evaluation of remaining contamination should be presented to provide reviewers, including the public, the impact of the contamination residing in the aquifer water and matrix during and following the lengthy Alternative 5B implementation period.

40. FS Section 8.1 – Evaluation Criteria, Page 73, paragraph 1. As stated in Section 8.1, the evaluation of Alternatives is to be based on criteria established in DER-10. Specifically, for the criterion of "Overall protection of human health and the environment" it is stated, "This criterion is an evaluation of the alternative's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced, or controlled through removal, treatment, engineering controls, or ICs." In addition, the criteria of Long-term effectiveness and permanence require an assessment of the magnitude of remaining risk.

    The absence of a risk assessment prevents the FS from providing a complete evaluation of each Alternative in terms of risk elimination, reduction, or control, and therefore developing clear RAOs to which the Alternatives can be evaluated. Ultimately, in the absence of the risk evaluation for each Alternative, including Alternative 1, reviewers of this FS cannot determine if a large increase in resources will be applied for relatively minor or even no reduction in human health risk. NYSDEC should revise the FS and complete a risk assessment.

41. FS Global. The first RAO uses the term "drinking water standards," which would seem to eliminate using 6 NYCRR Sec. 703.5 groundwater standards, TOGS, and risk-based levels in the development of cleanup goals. RAOs should be revised to accurately reflect the source of the cleanup goals for the various COCs.

Incomplete Cost Evaluation

42. FS Section 8.0 – Detailed Evaluation of Alternatives, Page 71 to 117 and Appendix A. The FS does not provide the necessary details for a valid, rigorous review of each Alternative's estimated cost. The content is not consistent with the intent of CERCLA to provide stakeholders sufficient information to make an informed understanding of restoration cost. Similar to concern about the lack of risk analysis, the lack of detailed cost information has the potential to result in the choice of an Alternative that provides little added value for costs incurred. NYSDEC should provide a narrative to document the basis of estimate, the basis for unit cost and quantities, and a total implementation costs for the duration of each Alternative.

43. FS Section 8.2.7 – Cost Effectiveness, Page 77. The text in Section 8.2.7 describing Alternative 1 states, "Because this is a No Further Action alternative, the capital, O&M, and net present worth costs are estimated to be $0;" this is incorrect. The DON's (and NG's) costs to date and future estimated costs associated with implementation of Alternative 1 are significant and should be presented to use as a baseline for comparison to the remaining Alternatives, and to inform reviewers of the cumulative costs. Specific to Alternative 5B, this information will provide the stakeholders a true comparison of the No Further Action alternative cost to the Alternative 5B cost.

As stated in Section 2.2., the success of Alternative 1 is "critical to the overall strategy to contain and remediate the existing groundwater plume implying Alternative 1 must be implemented." Therefore, the actual future cost of plume remediation will be the cost of Alternative 5B (i.e., $585 million) plus Alternative 1. For a 30-year period, the DON estimates the total cost for groundwater restoration with the implementation of Alternative 5B will approach $1 billion dollars. As detailed in the following comment, the total cost for the entire 110 year implementation period would exceed $2 billion dollars.

44. FS Section 8.0 – Detailed Evaluation of Alternatives, Page 71 to 117. Although net present value (NPV) over a 30-year period is generally used for comparing the costs of different alternatives in FSs, using a short period has an effect on the evaluation if one or more of the alternatives extend beyond the period (USACE/USEPA, 2000). In this case, the estimated periods of performance for Alternatives 3A, 3B, and 4 are within the 30-year evaluation period, whereas Alternatives 2A, 2B, 5A, and 5B continue to operate for many decades beyond the evaluation period. For example, Alternative 5B has a period of performance of 110 years, so there is an additional 80 years of operating costs beyond the estimated time period. On a non-discounted basis, these additional costs total over $1.4 billion.

    Because of the long periods of operation for several alternatives (2A, 2B, 5A, and 5B), the non-discounted total project costs should also be included to indicate the magnitude of the expenditures for the Alternatives and to enable an analysis of cost-effectiveness, proportionality, and practicability.

Errata/Incorrect Statements/Missing Evaluation

45. FS Executive Summary, Page I, third paragraph. The Executive Summary states "After a review of the historical data, the New York State Department of Environmental Conservation (NYSDEC) determined further action is warranted to protect public health and the environment." Neither the basis for this decision nor the review is discussed in the body of the FS or cited in the References. The FS should include the NYSDEC rationale and decision criteria for this determination.

46. FS Executive Summary, Page II, first paragraph. The report incorrectly states that the NWIRP site was active in the area in the 1930s. The property that would later become the NWIRP was not purchased until the 1940s.

47. FS Executive Summary, Page II, bullets. The 1st, 2nd, 3rd, and 5th RAOs in the Executive Summary do not match the corresponding RAOs in Section 4.2.

48. FS Section 2.2 – Operable Unit 2, Pages 4 and 5. Section 2.2 is missing a discussion of the DON's 2018 OU4 ROD.

49. FS Section 2.3 – Site Related Contaminants of Concern, Page 7, first paragraph. The text of Section 2.3 should be clarified that the April 2015 Order On Consent and Administrative Settlement (Index #W1-118-14-2) applies only to Northrop Grumman.

50. FS Section 2.4.1 – Chemical Specific SCGs, Page 9, second paragraph. The FS (Section 2.4.1) uses the incorrect EPA screening level of 0.35 micrograms per liter for 1,4-dioxane. The current

screening level is 0.46 micrograms per liter. This value is used in risk assessment as a starting point to screen sites out from further consideration and is not considered a "cleanup level."

51. FS Section 7.1.3 – Treated Water Management, Page 54, second bullet. Section 7.1.3 states that discussions with NYSDEC Division of Fish and Wildlife indicated that discharge to Massapequa Creek of the planned volume of treated water would not be detrimental to the Creek and may be a habitat enhancement. For the public record, a citation of the source of this communication and associated documentation should be added to allow verification of this conclusion.

52. FS Section 8.0 – Detailed Analysis of Alternatives, Page 73 to 117. The phrase "would allow unrestricted use" is used multiple times in Section 8. To correctly support this conclusion, text should be added to state the time period required to meet this goal. For Alternative 5B, the text of section 8.9.1 should be rephrased to "It is expected that the hydraulic containment of COCs to the SCGs and the treatment and recharge of groundwater meeting NYS groundwater effluent limitations would allow unrestricted use of the groundwater resources following a period of 110 years [or the properly estimated time period when all geochemical factors are considered]." Similar changes to this phrase in the discussions of the other Alternatives should be added. The lack of use of timeframe qualifier does not inform the public of the time needed to achieve unrestricted use of groundwater.

53. FS Section 8.8.8 – Compliance with SCGs, Page 76. The text of Section 8.2.2 states Alternative 1 will not comply with SCGs. The FS should specifically identify which SCGs Alternative 1 does not comply with. Under the existing OU2 ROD, at the completion of the remedy, the area groundwater will be compliant with all the SCGs for chemicals associated with NWIRP and NG properties.