RESPONSE TO STATE OF NEW YORK DEPARTMENT OF HEALTH COMMENTS DATED SEPTEMBER 27, 2002 RE: NORTHROP GRUMMAN SITE, NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, GRUMMAN STEEL LOS SITE, NASSAU COUNTY SITES NO. 130-003A, B&C

I have reviewed the documentation record of remedial/corrective action activities for the Navy Weapons Industrial Reserve Plant (NWIRP), Bethpage in conjunction with the U.S. Navy petition, dated May 31, 2002, to reclassify portions of the NWIRP. The Navy petition includes four supporting documents as enclosures. I offer the following comments on the petition and associated enclosures, with reference to other relevant documents as noted in my comments.

Petition

1. **Comment:** The Petition should reference the Air Sampling Results and Report, dated April 10, 2001, for the 105-acre parcel. Alternatively the Air Report could be included as, or within, a supporting document.

   Response: The April 10, 2001 was submitted as a draft. Since no comments were received, this report will be considered final and will be attached to the petition.

2a. **Comment:** Re: Air Sampling Results and Report, Indoor air sampling results indicate the presence of trichloroethene (TCE) at levels above typical background concentrations in most of Plant 3; in most cases (all but locations BP-P3-07 and BP-P3-09) the levels were only slightly elevated. These results indicate the presence of one or more TCE sources within or beneath Plant 3 and possibly in the vicinity of the 17-S warehouses. These results may be indicative of vapor intrusion from residual subsurface vapor contaminants and/or may represent residual TCE sources within the buildings (e.g., historic leaks into cracks or TCE sorbed onto construction materials).

   Response: TCE was used throughout the buildings for decades. During this period, minor quantities of TCE liquids and/or vapors would have likely absorbed into porous building materials including concrete, paint, insulation, and wood block flooring.

Over the past 10 years, several soil gas investigations have been conducted to specifically identify potential sources of solvent contamination underneath Plant 3. These investigations identified two areas where the concentrations of VOCs in soil vapors were thought to pose a potential for concern - facilities maintenance area and former honeycomb area pit. Subsequent testing of the soils beneath the former honeycomb area found that subsurface soils did not contain significant concentrations of VOCs to warrant a remedial action. However, soils beneath the former honeycomb area were later excavated by Northrop Grumman as part of their efforts to vacate the Navy's property due to elevated concentrations of chromium.. In addition, soils beneath the facilities maintenance area were also excavated by Northrop Grumman because of VOCs.

Although detectable levels of TCE were found in the ambient building air, (i.e. greater than background), the concentrations detected were much lower than applicable standards established by OSHA for an industrial setting.

2b. **Comment:** Previous soil gas testing beneath Plant 3 identified TCE and tetrachloroethene (PCE) at levels up to about 600,000 ug/m^3 and 5,000,000 ug/m^3, respectively. Remediation of volatile organic compound (VOC)-contaminated soil has since occurred as part of facility closure activities. However, no post-remediation soil vapor testing has been done. Soil gas must be re-tested beneath Plant 3, particularly the eastern portion of the building, to determine if the pre-remediation soil vapor contaminants have dissipated. Such testing will also aid in determining if the levels of TCE detected in indoor air in the building are from internal sources and whether any subsequent building reconstruction/reuse scenarios may result in indoor air quality impacts. The testing should include at least one point near E. Pit 23 in the Northeastern Machining Area. Soil vapor should also be tested between the southeast corner of Plant 3 and over to (and in the vicinity of) the 17-S warehouse (identified as "BLDG. 19" on the 105-acre property survey) that air sample BP-P3-11 was obtained from.

Response: Soil gas results do not necessarily confirm the presence of contaminant sources. Soil gas data is collected to quickly and efficiently locate potential areas and depths where contaminated soil and/or groundwater may be present. Based on soil gas

results, it is routine to collect soil and/or groundwater samples to determine if contaminated media is actually present.

Prior to the remediation of VOC-contaminated soils at IR Site 1, soil samples were also collected in the eastern portion of Plant 3, in accordance with the Navy's OU 1 Soils ROD. The results of these samples confirmed that despite detecting VOCs during the various soil gas surveys, contaminated soils were not present in this area. These results were published in a Report entitled "Remedial Design, Phase II Pre-Design Investigation Letter Report for Site 1, July 1995". The study findings are summarized as follows.

Approximately 120 soil samples were collected from underneath and just outside of the eastern end of Plant 3 in 1995. A total of nine soil borings were advanced to a depth of 60 beet bgs and split spoons were taken every 5 feet and screened in the field using a photoionization detector (PID). PID readings ranged from none detected to as high as 50,000 ppb-v. Twenty-seven (27) of the samples with the highest PID readings were submitted to a fixed base laboratory for VOC analysis. Of these 27 samples, VOCs were only detected in 2 samples, and none of the results were in excess of the cleanup goals established in the Navy's OU 1 ROD. Based on these findings, as well as other pre-design field activities, it was concluded that extension of the AS/SVE system to address soils beneath Plant No. 3 was not required. The above conclusion was presented in a Report entitled "Design Analysis Report" that was submitted to the NYSDEC on September 25, 1997 to which a response was published in a letter dated October 23, 1997 that "the DEC concurs with the design parameters established in the report specifically the number of extraction, injection and monitoring wells and their spacing, and the sizing and specification for transmission piping and process equipment."

Also note that the referenced soil gas test results for TCE and tetrachloroethene (PCE) at levels of 600,000 ug/m^3 and 5,000,000 ug/m^3, respectively, were collected from an area that Northrop Grumman has since excavated.

2c. **Comment:** Freon 113 was detected in air sample BP-P3-07 at a level higher than typically found in indoor air samples. Freon 113 is commonly used as a refrigerant and its presence in the building may be related to air cooling units. The Navy may wish to

consult a ventilation contractor to evaluate the condition of cooling units in the building and to test for Freon leaks.

Response: The above comment is noted. The Navy would like to point out, however, that the detected concentrations do not exceed applicable standards for an industrial setting as established by OSHA.

3. **Comment:** Re: Effects of Installation Restoration (IR) Site 1 Soil Vapor Extraction (SVE) System on vadose zone vapors beneath Plant 3

The May 1995 Record of Decision (ROD) for the NWIRP Sites 1, 2, 3 makes reference to the presence of VOC "hot spots" in the vadose zone at Site 1 and beneath Plant 3 (see Page 27 of 41 in the ROD). The selected remedy in the 1995 ROD, Alternative 6, includes in-situ soil vapor extraction (SVE) for VOC-contaminated soil at Site 1 and underneath Plant No. 3 (see page ii and page 30 of 41, 1995 ROD). Consistent with this, the Major Modification of the Bethpage Facility Part 373 Permit – Removal of the 105-Acre GOCO Site Statement of Basis dated August 2002 notes that the ROD requirement for SVE includes removal of VOCs from the vadose zone soil below IR Site 1 and beneath Plant 3.

Information contained in the Close-Out Report for the Air-Sparging/Soil Vapor Extraction System, IR Site 1 NWIRP, dated March 30, 2001, indicates that contaminated vapors have been collected at depth east of Plant 3. However, the Close-Out Report provides no definitive information concerning the removal of contaminated soil vapors from beneath Plant 3. The most recent extraction well-specific data from the SVE points nearest the building indicate that between 6,000 to 45,000 ug/m^3 of PCE and up to about 5,000 ug/m^3 of TCE are SVE influent analyses, reported in the February 2002 Monthly Operations Summary for the VE/AS System, dated April 8, 2002, suggest that these concentrations may be somewhat lower at the present time. However, data presented in the Operations Summary (see the Concentrations vs. Time plot) also indicate that average vadose zone vapor concentrations for TCE and PCE in the vicinity of the VE/AS system continue to rebound to approximately 18,000 ug/m^3 and 50,000 ug/m^3, respectively, after each period of system shutdown.

Consistent with comment 2 above, soil vapor testing beneath and immediately east of Plant 3 will provide definitive information as to the effects of remedial activities on subsurface VOC vapors that were present prior to commencement of the activities.

Response: As stated above, the cleanup objectives and therefore the basis for selected areas for treatment, monitoring treatment performance, and shutdown criteria are based on the VOC concentration in soils, not soil vapor concentrations.

The referenced values of 18,000 and 50,000 ug/m^3 for TCE and PCE are less than potentially applicable standards of 270,000 and 170,000 ug/m^3 that assume plant workers directly breath only this soil gas on a continuous basis. In addition, because there is minimal mass of VOCs present in the soil gas, these measured soil gas values do not represent a threat to groundwater. For example, assuming that the soil is dry with a porosity of 25%, the referenced soil gas concentrations correspond to equivalent soil concentrations of 0.002 mg/kg to 0.006 mg/kg. The OU 1 ROD specified cleanup goals for TCE and PCE in site soils are 0.030 mg/kg and 0.081 mg/kg, respectively.

Petition Enclosure 1: The Construction Completion Report for IR Sites 2 and 3

4. **Comment:** Appendix A of the Construction Completion Report contains surface soil sampling results from Sites 2 and 3. Delineation of PCB-contaminated soil around the perimeter of each Site must be done to levels of less than 1 milligram per kilogram (mg/kg or ppm). This level of delineation appears to be sufficiently achieved for Site 3 and for the eastern and western lot lines of Site 2. Additional surface soil sampling (0-2") should be done at the north fenceline of Site 2 and along the grassy strip immediately south of the access road at the southern part of Site 2. For consistency with the ongoing off-site PCB surface soil investigations along the access road, one surface soil sample should be collected in the grassy strip opposite each of the four residential properties.

Response: As requested, the Navy collected additional surface soil samples from the referenced areas. Please note that the soils were collected in the depth range of generally 0 to 4 inches, consistent with the normal definition of surface soils.

The results are attached, and are summarized as follows.

Grassy Strip along Fence South of Recharge Basins: PCBs were detected in four of four samples at concentrations ranging from 0.45 mg/kg to 1.60 mg/kg. The average PCB concentration of these four samples is 0.80 mg/kg, which is less than the industrial cleanup standard for the site of 10 mg/kg, as well as a residential cleanup standard of 1.0 mg/kg. Note that historically the Navy sampled three of the four residential properties south of the fence as part of a Site 1 investigation and did not find detectable concentrations of PCBs in these properties.

Wooded Area and Ditch North of Former Sludge Drying Beds: PCBs were detected in seven of seven samples at concentrations ranging from 0.132 mg/kg to 1.9 mg/kg. The average concentration of these seven samples is 1.0 mg/kg, which is less than the industrial cleanup standard for the site of 10 mg/kg, as well as a residential cleanup standard of 1.0 mg/kg.

Area North of Northeast Recharge Basin: PCBs were detected in three of three samples at concentrations ranging from 0.077 to 0.17 mg/kg. The average PCB concentration of these four samples is 0.11 mg/kg, which is less than the industrial cleanup standard for the site of 10 mg/kg, as well as a residential cleanup standard of 1.0 mg/kg.

5. **Comment:** The Navy proposes to rely on Grumman's remedial activities at Site 3 as an equivalent implementation of the ROD requirements. While this seems reasonable, DEC should confirm that a ROD amendment is not necessary.

Response: The Navy has determined that an amendment to the Navy's OU 1 ROD is not required.

6. **Comment:** Figure 2-1 of the Completion Report should specify the units for the [apparent] excavation depth values (i.e., clarify if the depths noted are inches or feet). Delineation and endpoint sample results associated with the soil removal should also be included in the Completion Report.

Response: The units on Figure 2-1 are in feet, (i.e. the excavation was conducted to a depth of up to 14 feet below ground surface.)

Delineation and endpoint samples associated with the soil removal have been previously submitted to the NYSDEC in a Report entitled Post-Remedial Action Letter Report for Site 2, Phase 1 dated June 1996. Attached are tables and figures that provide the information requested.

7. **Comment:** The Completion Report would be improved if previous soil testing results for Sites 2 and 3, particularly those from the remedial investigation, were included for reference.

Response: This data was provided to the state in previous submittals. However, the data presented in the Construction Completion Report is more current and extensive than that previous collected. Since 1991, debris in the salvage storage area has been removed and the surface soils scraped. Surface conditions at Site 2 have been reworked from road maintenance, removal of staged soils, and excavation of PCB-contaminated soils.

Petition Enclosure 2: Property Survey for 105-Acre Parcel

8. **Comment:** Information contained in the Environmental Baseline Survey to Transfer, Revison 1 – February 2002 (EBST), particularly on Page 8, suggests that AOC 34 – Former Autoclave Area will be included in the revised boundary definition for IR Site 1. However, the Former Autoclave Area does not appear to be the portion of the Plant 3 building included within the revised property line for the 105-Acre Parcel (compare with Features 35 and 36 on EBST Figure 8). Neither Figure 8 nor the property survey appears to agree with the building liens as depicted in Figure 10 of the EBST.

Response: AOC 34 – Former Autoclave Area was divided into several sub areas. The former autoclave area located within Plant 3 (AOC 34) is not the same as the dry well referenced on Page 8. Only the dry well (AOC 34-07) located outside of Plant 3 has been identified as requiring additional remediation and is therefore being retained by the Navy. The reference to "(including AOC 34 – Former Autoclave Area)" will be deleted.

Petition Enclosure 3: Property Survey for Plant 20 Parcel

Comment: No comments.

Petition Enclosure 4: Final Phase II EBS (Revision I dated May 2002)

9. **Comment:** Inclusion of Tables 9-1 through 9-6, along with the Figures 8A and 9A, is an excellent feature of the EBS and EBST documents. Comparison of the residual contaminant concentrations tabulated in these tables with the pre-remedial concentrations demonstrates that substantial amounts of contaminated soil have been removed from various areas of concern (AOCs) across the site. Because some residual contaminants remain at concentrations in excess of NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives (RSCOs) that could present a potential exposure concern under certain scenarios, deed restrictions will be necessary at the site. These tables and the corresponding maps will provide a useful reference tool for evaluating future proposals for ground-intrusive activities at the site with respect to the need for investigation and/or protective measures.

   Response: Comment noted. The Navy would like to thank NYSDEC and NYSDOH for their appreciation of the time and effort that was required for the development of these tables and figures.

10. **Comment:** Figure 9A of the EBST should include hatching at the appropriate locations of IR Sites 2 and 3 (i.e., those locations with residual contaminant concentrations in excess of TAGM 4046 RSCOs). Figure 9A should also identify the "hatching" as is done in Figure 8A.

    Response: The Navy agrees. Cross- hatching will be added to Figure 9A and the legend revised, as presented in Figure 8A. A note will also be added to the figure that states that IR Sites 2 and 3 contain residual chemical concentrations in excess of TAGM 4046 criteria.

11. **Comment:** The Phase I EBS identified a ditch within the wooded area at the northeastern perimeter of the 105-acre parcel. This ditch apparently connected a landfill area north of the site to a landfill area east of the site. According to the Phase II EBS (Page 3-50), soil samples from the ditch were tested for metals. Given recent information about PCB-contamination of soil associated with former fill areas in the vicinity of Plant 3, surface soil samples should be collected from the ditch and tested for PCBs. This testing could be done in conjunction with that recommended in Comment 4 above.

Response: The Navy is not aware of a landfill area identified to the north of the site. Rather the ditch was investigated for metal contamination because of potential lead migration from a former skeet range that was historically located in the area.

However, the Navy did recognize a need to sample the ditch north of IR Site 2 for PCBs in order to ensure that the area within the fenced portion of Site 2 that was excavated for PCBs to a concetration of 10 mg/kg was completed. Therefore, as requested, the Navy collected several samples to the north of IR Site 2, including a sample from this ditch. PCBs were detected in the ditch at a concentration of 1.4 mg/kg which is below the industrial cleanup standard of 10 mg/kg specified in the Navy's OU 1 ROD. . Therefore, the Navy is satisfied that the remedial action to remove PCB-contaminated soils from IR Site 2 is complete as previously stated in the Navy's June 1996 Post Remedial Action Letter Report. Also, the concentration of PCBs detected within this ditch were similar to concentrations found in the surrounding upland soil samples (0.95 to 1.9 mg/kg), suggesting that the ditch does not represent a separate pathway for contaminant migration.

12. **Comment:** Re: Statements in the Phase II EBS and the October 2, 2002 Navy Response to NYSDEC Comments Regarding the Draft Phase II EBS Report for the NWIRP

TAGM 4046 does not include a RSCO of 10 ppm for carcinogenic PAHs (cPAHs). Other factors, such an benzo(a)pyrene equivalents and local background concentrations of cPAHs, must be considered when selecting appropriate cleanup objectives. For this

reason, and based upon a review of post-remedial analytical data, deed restrictions (as are proposed) will be necessary for several locations at the 105-acre parcel.

If residual contaminant levels exceed RSCOs, the inability to leach (e.g. no TCLP failures) to groundwater does not mean deed restrictions can be waived. Potential exposure routes other than using contaminated groundwater may be present now or in the future, thereby requiring implementation of appropriate deed restrictions (similar to that proposed). In the case of VOCs, elevated levels of subsurface contaminants could also lead to exposure via subsurface vapor migration into overlying or nearby structures. This latter issue should be addressed pursuant to comments 2 and 3 above.

Response: The Navy agrees. All areas on the NWIRP that have been identified as having contaminant levels in excess of RSCOs have been indicated as such.

Re: Finding of Suitability to Transfer (FOST) – 105-Acre Parcel, Revision dated February 2002

13. **Comment:** Paragraph 3 of the Environmental Covenants, Conditions, Reservations and Restrictions (ECCRRs, also commonly referred to as "deep restrictions"), Enclosure 2 of the FOST, should have a statement, second to last sentence, similar to the following:

"Said activities shall also be performed with necessary precautions, including appropriate monitoring and controls, to ensure that these are done in a manner protective of public health and environment."

Response: The Navy agrees. The requested language will be added to the FOST.

14. **Comment:** The reference to NYSDEC TAGM 4046 levels should describe these as Recommended Soil Cleanup Objectives. Paragraph 7 of the ECCRRs should clarify which party prepares the written permission for excavation. Paragraph 7 should also clarify if only contaminated soil that is excavated must be disposed of off-site, or all soil (contaminated and non-contaminated alike) that is excavated.

Response: The text will be revised from "NYSDEC TAGM 4046 State Cleanup Guidance Standards" to "NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives".

The text will be clarified as follows.

"In addition, the GRANTEE must prepare and submit a request that is to be reviewed and approved by the NYSDEC and NYSDOH before excavating or otherwise disturbing subsurface soils. "

"Any contaminated soils that are excavated from the 105-Acre Parcel must be properly disposed at appropriate off-site locations.

15. **Comment:** The ECCRRs must require future owners to annually certify to NYSDEC that:

Protective covers and any other engineering controls associated with site remedies and correction actions have been maintained; and

The conditions at the site are fully protective of public health and the environment in accordance with specifications of the 1995 ROD, the FOST, the EBST, SEQRA Findings, and any other remedial decision documents, as appropriate.

Response: The cover atop IR Site 2 was only added as an additional factor of safety over residual chemicals that were to remain on-site. Just as the floor of Plant 3 acts as an additional safety barrier to residual chemicals that remain beneath Plant 3. For Plant 3, as well as Site 2, it is not the Navy's intention to preclude future occupants from re-working these areas as part of beneficial re-development. Rather, it was the Navy's intention to alert future occupants who may want to disturb soils in these areas to the presence of residual compounds, their location, and their concentrations and to also remind them to take the necessary precautions when working with these soils and to inform the NYSDEC of their plans prior to disturbing soils in these areas.

Therefore, the Navy will not mandate that future occupants must maintain the various barriers that exist over areas where residual compounds remain.

Further, if a remedial action taken by the Navy would result in the restricted use of an area, it would be the Navy, and not the future property owner, who would have to make the above certifications to the NYSDEC.

16. **Comment:** The ECCRRs should include a clause that allows the owner, with agency approval, to remove certain conditions and restrictions in the event that additional remediation done in the future renders the restrictions no longer necessary.

Response: Future occupants of former Navy property can always petition the Navy to remove a land use restriction in the event that additional remediation is completed that renders the restriction no longer necessary. Language to this effect is not normally included in the Navy's deeds of transfer but can be added as requested.

Please note that the Department of Navy is the real estate agent for conveyance of former Navy property, therefore, it must be the Department of Navy that grants final approval regarding any petition to modify the deed of transfer. Please be assured that the Navy's approval will not be granted without consultation with NYSDEC and NYSDOH to insure that any proposed actions conducted by future occupants remains protective of human health and the environment.

Re: Finding of Suitability to Transfer (FOST) – Plant 20, June 2002

Comment: Nassau County Department of Health should be consulted to determine if the revised FOST – Plant 20 satisfactorily addresses the concerns raised in their letter dated March 20, 2002.

Response: No additional comments were submitted to the Navy from Nassau County Department of Health regarding the latest version of the Plant 20 FOST. However, in a recent meeting of the Nassau County's legislative body, the Nassau County legislators voted unanimously to accept the Navy's Plant 20 Parcel and the Navy's Plant 5 building. Accordingly, the Navy has turned over the quickclaim deeds for these two areas to Nassau County.