# FINAL

# FINDING OF SUITABILITY TO TRANSFER

# 105-ACRE PARCEL

at the former

## NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE, NASSAU COUNTY, NEW YORK

SEPTEMBER 2000

FEBRUARY 2002 (REVISION 1)

JANUARY 2003 (REVISION 2)

**DEPARTMENT OF THE NAVY**
ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Code EV21/JC

MEMORANDUM FOR THE RECORD

Subj: FINDING OF SUITABILITY TO TRANSFER (FOST) FOR THE MAIN 105-ACRE PARCEL AT THE NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

Ref: (a) Final Environmental Impact Statement (FEIS) for NWIRP Bethpage, NY of Apr 2000
(b) Final Phase I Environmental Baseline Survey (EBS), NWIRP Bethpage, NY of Jan 98
(c) Final Phase II EBS, NWIRP Bethpage, NY of Dec 99 with Revision 1 of May 02
(d) Navy's Final Asbestos Survey/Update of Apr 99
(e) Navy Record of Decision for Groundwater of Jan 03 (Revision 1 of Apr 03)
(f) New York State Department of Environmental Conservation (NYSDEC) Record of Decision for Operable Unit 2-Groundwater of 29 Mar 01

Encl: (1) Environmental Baseline Survey to Transfer (EBST) for the Main 105-Acre Parcel at NWIRP Bethpage, New York
(2) Environmental Convenants, Conditions, Reservations, and Restrictions for the 105-Acre Parcel at the former NWIRP Bethpage, NY
(3) Copies of Correspondence
(4) Responsiveness Summary

1. I have reviewed enclosure (1) for the property, known as "the 105-Acre" Parcel, located at the former Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, NY. The proposed property is to be transferred to the County of Nassau, New York under special legislation (PL 105-85 Sec 2852 FY-1998) that was issued as part of the National Defense Authorization Act of 1998. This legislation was issued subsequent to the Naval Air Systems Command's (NAVAIR) determination that this parcel was no longer needed to meet mission requirements.

2. This proposed transfer is consistent with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Section 120(h)(3) as amended by the National Defense Authorization act of Fiscal Year 1997, 42 U.S.C. Section 9620(h)(3). The proposed land reuse of the 105-Acre parcel, described in detail in reference (a) and summarized in Section 1.4 of enclosure (1), is for non-residential development and supports this Finding of Suitability to Transfer (FOST). References (b) and (c) as well as this FOST were prepared in accordance with established DoD and Navy Policies.

3. The property proposed for transfer is one parcel out of three that comprise the entire NWIRP Bethpage facility. Figure 1 of enclosure (1) shows that Plant 5 and Plant 20 are also considered part of the NWIRP. However, the FOSTs for Plants 5 and 20 were issued under separate correspondence and on December 10, 2002, these facilities were successfully conveyed to Nassau County. As a result, this FOST document will apply only to the main 105-Acre parcel.

The property proposed for transfer is defined as being all property contained within the main fenced boundary of the 105-Acres minus that area designated as Navy IR Site 1 (approximately 9 acres). A location map is provided as Figure 2 of enclosure (1) and shows the 105-Acres to contain the following:

- Plant 3 - The main aircraft manufacturing operations building that occupies approximately 707,000 square feet of space;
- Plant 10 - A 24,000 square-foot structure that served as the Quality Control laboratories for the entire Bethpage facility;
- Plant 17 North - One of two warehouse complexes that occupies roughly 193,000 square feet of space in 6 separate structures;
- Plant 17 South - The other warehouse complex that occupies roughly 223,000 square feet of space in 14 separate structures;
- Building 03-34 - A former 12,600 square-foot Industrial Wastewater Treatment Plant (IWTP) that is no longer operable
- IR Site 2 (Recharge Basin Area) - Three isolated manmade depressions that measured roughly 50 to 60 feet in depth. Immediately to the west of the recharge basins is an area that was formerly used as sludge-drying beds. Combined, these two areas total approximately 16 acres.
- IR Site 3 (Salvage Storage Area) - An area totaling approximately 9 acres that was used as a storage area for old aircraft fuselages and other aircraft parts and metal debris.

As mentioned above, Navy IR Site 1 will not be part of the initial conveyance to Nassau County. This 9-acre parcel will be retained by the Department of Navy in order to continue to address certain historic hazardous waste releases under the Navy's Installation Restoration (IR) Program.

4. NWIRP Bethpage was a Government-owned/Contractor-operated (GOCO) facility owned by NAVAIR and operated by the Northrop Grumman Corporation. When NWIRP Bethpage was operational, it was considered to be a large quantity generator of hazardous waste and was classified as a Treatment, Storage, and Disposal (TSD) facility. Due to this designation, NWIRP Bethpage was under a federal Hazardous and Solid Waste Amendment of 1984 (HSWA) Permit issued as part of the Resource Conservation and Recovery Act (EPA ID #NYD002047976). Due to it's TSD designation, NWIRP Bethpage was also subject to the contents of New York State Department of Environmental Conservation's (NYSDECs) Permit to Operate a Hazardous Waste Management Facility under their implementing regulations 6NYCRR Part 373. As such, NWIRP Bethpage is currently listed on NYSDEC's Registry of Inactive Hazardous Waste Disposal Sites (Registry # 1-30-003B). NWIRP Bethpage is not listed

on the National Priorities List (NPL) but there have been three sites investigated under the Department of Navy (DoN) IR Program.

5. All reasonably ascertainable information relating to the types of hazardous substances and the associated waste management practices exercised by Northrop Grumman on the 105-Acres have been included in Section 3.0 of reference (b). A review of this section and the EBST, will show that the following environmental factors have been determined to pose no unacceptable risk to human health and the environment under the non-residential land use planned and therefore require no specific restrictions in the proposed transfer: polychlorinated biphenyls, pesticides, radon, medical waste, ammunition and explosive wastes, and nuclear-biological-chemical (NBC) wastes. Table 1 of enclosure (1) lists the seven (7) tanks that remain on the 105-Acres. The remainder of tanks listed on Tables 3-4 and 3-5 of reference (b), have either been removed or abandoned-in-place in accordance with Article XI of the Nassau County Public Health Ordinance.

6. Testing has been performed to determine whether asbestos-containing materials (ACM) are associated with any of the buildings on the property proposed for transfer. Reference (d) was prepared to summarize the inventory of all ACM and the work to repair damaged ACM that was conducted by Northrop Grumman on the Navy's property, including the 105-Acres. The report documents that all ACM existing within the buildings located on the 105-Acre parcel is currently in good condition. In the future and as part of any building reuse, ACM should be managed as necessary to prevent the ACM from becoming friable, accessible, and damaged.

7. Many of the buildings and structures present on the 105-Acres were erected prior to 1978, at which time the use of lead-based paint (LBP) was common throughout the United States. Due to their age, it is likely that LBP may exist on the interior and exterior of many of the buildings and structures located on the 105-Acres. The majority of these painted surfaces are in good to fair condition. Based on observations of the current condition of the paint on the interior and exterior of existing buildings, neither the building nor soil adjacent to the buildings appears to present an unacceptable risk under a non-residential reuse scenario.

8. Based on numerous independent environmental site assessments conducted by the Northrop Grumman Corporation, there have been releases of hazardous substances or petroleum products on the 105-Acres which present unacceptable risk to human health and the environment. These Areas of Concern (AOCs) are discussed in detail in Section 6.0 of reference (b). CERCLA remedial actions were implemented and completed by the Northrop Grumman Corporation at the majority of these AOCs. In response, a number of regulatory approval letters were issued to Northrop Grumman from NYSDEC documenting their concurrence with the actions taken to remediate contamination at the AOCs on the 105-Acres. Section 9.0 of Reference (c) was prepared by the Navy to summarize the actions taken by Northrop Grumman and Section 10.0 of reference (c) documents the environmental condition of the 105-Acres as of the date of reference (c). Based on these sections, it has been concluded that some AOCs remain that are not

currently suitable for transfer. Due to these areas close proximity and nature of contaminants, the following areas, shown on Figure 4 of enclosure (1), have been incorporated as part of IR Site 1 and will, therefore, be retained by the Navy and not made part of the initial conveyance to Nassau County:

- AOC 22 - Former Underground Storage Tanks
- AOC 23 - Former Aboveground Storage Tanks
- AOC 30 - Various Storage Sheds
- AOC 35 - Sludge Drying Beds
- Drywell 34-07 (including AOC 34 - Former Autoclave Area)
- Drywell 20-08

9. Based on available information, hazardous substances in soils on the property proposed for transfer pose no unacceptable risk to human health and the environment for the intended non-residential reuses. However, residual compounds in excess of NYSDEC TAGM 4046 guidance criteria do remain at several Areas of Concern (AOCs) located throughout the 105-acre parcel. The depths of these residual compounds is no shallower than 6 inches with a barrier of soil, gravel, concrete or combination of same currently in place atop the AOCs. Therefore, the only specific restriction that will be included in the transfer will state that Nassau County can not excavate or otherwise disturb subsurface soils at designated AOC locations without submitting a written request to NYSDEC for review and approval. Tables 9-1 through 9-6 and Figures 10-3 and 10-4 of reference (c) describe and show the various AOCs where residual compounds remain.

At IR Site 2, a two-phase remedial investigation revealed the existence of subsurface soils contaminated with polychlorinated biphenyls (PCBs) at concentrations that exceeded New York State guidance values. As a result, a remedial action consisting of the excavation and off-site disposal of PCB-contaminated soils was completed in June 1996 in accordance with a Record of Decision (ROD) issued by the Navy in July 1995 for soils (Operable Unit 1). In addition, sampling conducted as part of the Navy's investigation also concluded that other residual chemicals would remain on surface soils even after implementation of the remedial action. Therefore, an institutional control was also included in the July 1995 ROD calling for the placement of a permeable soil or gravel cover over those areas where residual metal and/or organic compounds were expected to remain. This action, which was completed in December 2001, has insured that all direct contact pathways with residual chemicals have been eliminated.

At IR Site 3, a two-phase remedial investigation detected some sporadic, low-level concentrations of compounds in surface and subsurface soils, however, since a source area could not be identified, it was determined that removal of these sporadic compounds was not required. Again as part of the July 1995 ROD, an institutional control was to be implemented for those areas where residual metal and/or organic compounds were expected to remain to insure that all direct contact pathways with these residual

chemicals were eliminated. At this site, it was the Navy's intention, to resample surface soils to determine if any residual compounds remained. However, in the Spring of 1998, Northrop Grumman, as part of their deactivation requirements for the Navy's 105-acres, had removed all of the spare metal parts associated with the Salvage Storage Area and, at the direction of the Navy's Caretaker Support Office, also cleaned and raked the entire Salvage Storage Area in order to remove all remaining metal debris and rocks greater than 1" in diameter. The areas of the Salvage Storage Area that were not covered by asphalt were then covered with 2 inches of topsoil and revegetated. Therefore the Navy has concluded, as a result of this effort, that there are no residual chemicals that remain on surface soils. Also, the proposed reuse calls for this area to be used for parking and it is anticipated that this entire area is to be paved which will provide yet another layer of protection in the form of an asphalt cap.

10. Hazardous substances (as defined by CERCLA) have been released to groundwater from source areas located within the 105-acre Parcel. Based on available information, the levels of hazardous substances, mainly volatile organic compounds (VOCs), present in groundwater presents an unacceptable risk to potential users. In response, the Department of Navy, acting as the lead agency pursuant to Executive Order 12580, has issued, and is currently implementing, reference (e) to address contaminated groundwater located beneath NWIRP Bethpage as well as that portion of contaminated groundwater that has migrated off of NWIRP Bethpage property.

The Navy's ROD for Groundwater, discussed below, was based upon a Record of Decision for Regional Groundwater developed by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health, to address a commingled, regional groundwater contaminant plume located beneath property owned by the Navy as well as property owned by the Northrop Grumman and Occidental Chemical Corporations. NYSDEC's Operable Unit 2 ROD (reference f) described a remedial strategy that would address contaminated groundwater beneath both Navy and Northrop Grumman Corporation (NGC) property and also addresses that portion of contaminated groundwater that has migrated downgradient of both properties into the surrounding community. For information, the United States Environmental Protection Agency (USEPA) Region II previously issued a Record of Decision in September 2000 for that portion of the groundwater contaminant plume that lies beneath and downgradient of property owned by Occidental Chemical since this facility, shown in reference to the Navy's property on Figure 7 of enclosure (1), is presently designated as a National Priorities List (NPL) site.

NYSDEC's Groundwater ROD discusses regional groundwater beneath the Navy and NGC properties plus the downgradient, commingled portion as a single entity or operable unit. The Navy's ROD, however, describes those components of NYSDEC's Groundwater ROD that will be implemented by the Department of Navy. For the purposes of the Navy's Groundwater ROD, groundwater has been divided into two subcomponents that describes the location of the groundwater contaminant plume. The two subcomponents include that portion of the groundwater contaminant plume that lies beneath the Navy's 105-acre parcel (on-site) and that

portion of the groundwater contaminant plume that has migrated away from and off of the Navy's 105-acre parcel (off-site).

The Navy's selected remedy for on-site groundwater includes the following:

> An **institutional control** consisting of the placement of a restriction in the deed of transfer to the County of Nassau, New York prohibiting extraction of groundwater from within the boundaries of the 105-acre or Plant 20 parcels located at the Navy's former Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage facility. In order to aid in the compliance with the deed restriction, the Navy has completed the abandonment of the seven (7) deep production wells formerly located on the 105-acre parcel. The production wells were used for the extraction of groundwater as non-contact cooling water to support operations conducted by NGC during a time when Northrop Grumman leased the 105-acres from the Navy. If a future occupant of the Navy's 105-acre parcel wishes to pursue groundwater extraction, language will be included in the appropriate deed(s) of transfer requiring prior notification to and securing written permission from the Nassau County Department of Health and/or NYSDEC.

Further, the selected remedy for on-site groundwater is also based on the recognition that an existing groundwater extraction and treatment system, known as the Onsite Containment (ONCT) System, continues to contain and remediate VOC-contaminated groundwater emanating from the Navy's property. The ONCT system was constructed, and is currently being operated on an annual basis, by the Northrop Grumman Corporation and was installed as a component of NYSDEC's Regional Groundwater ROD. The Navy recognizes that continued operation of the ONCT system is paramount to ensuring that the Navy's selected remedy for on-site groundwater remains protective of human health and the environment. In the event that the ONCT system fails to continue to operate, along with the corresponding long-term maintenance and monitoring program for the ONCT system, the Navy also recognizes that it's on-site groundwater remedy would no longer be protective of human health or the environment. In this case the Navy will re-evaluate the protectiveness of the selected remedy on-site groundwater and implement all requisite measures as determined by the Navy in consultation with NYSDEC, NYSDOH, and the Nassau County Department of Health to ensure the continued protection of human health and the environment.

As stated above, NYSDEC's selected remedy for groundwater included a number of response measures that were categorized into a Groundwater Remedial Program and a Public Water Supply Protection Program. The components of these two programs for which the Department of Navy has agreed to implement are all considered to be located off of Navy property and are, therefore, being considered as off-site groundwater issues. The Navy's selected remedy for off-site groundwater includes the following:

**Groundwater Remedial Program**

- contaminant mass removal through groundwater extraction and treatment in an offsite area near the GM 38 monitoring well cluster;
- pre-design investigation to determine the optimal groundwater extraction location(s) in the GM 38 offsite treatment area(s);
- long term operation and maintenance of the GM 38 area remedy;
- additional groundwater investigation in the vicinity of well GM-75D2, or any other area identified as requiring additional groundwater investigation, in order to determine whether groundwater contamination represents a significant threat to downgradient public water supply wells and to further determine if a contaminant mass removal program, similar to the GM-38 Area program, is necessary. These actions will be implemented if a determination has been made by the Navy and NYSDEC that a significant threat to a downgradient public water supply exists.
- continued participation on the Technical Advisory Committee (TAC) that was established by NYSDEC that is comprised, at a minimum, of the involved regulatory Agencies, participating local water districts, and the Northrop Grumman Corporation.

The remedy for the high concentration of VOC contamination in groundwater near the GM-38 Area is anticipated to also be a pump and treat system due to the location of this contamination deep within the aquifer. Development of a design for the GM-38 Area remedy is currently underway.

Although the remedy for the GM-38 Area has not yet been installed, it is the Navy's position that remediation of this off-site portion of groundwater contamination does not directly affect the remedy that is in place for the groundwater beneath the Navy's 105-Acres. That remedy being the institutional control previously described.

**Public Water Supply Protection Program**

The Navy recognizes the importance of continued provision of potable water to those communities/populations served by water supply wells that are, or that may become, impacted by site-related contamination. To this end, the NYSDEC Groundwater ROD required that a public water supply protection program be implemented. The components of this program which the Department of Navy will implement include:

- installation of Vertical Profile Borings (VPBs) to gather water quality and lithologic data that will be used in the regional groundwater computer model to aid in the placement of outpost monitoring wells;
- development of a Public Water Supply Well Contingency Plan that uses data gathered during the VPB installation program and the regional groundwater computer model to identify the locations of the outpost monitoring wells and to also assign "trigger values" to each outpost well in order to determine if treatment or other comparable alternative measure will be required for other public water supply wellfields located

downgradient of the VOC-contaminant plume. If triggered, this will alert the Navy to begin discussions with the appropriate water district regarding various treatment alternatives;

- installation of the outpost monitoring wells in areas upgradient of potentially affected water supply wellfields as outlined in the Public Water Supply Well Contingency Plan. To date, the regional groundwater computer model is predicting potential future impacts to the South Farmingdale Water District (SFWD) Wellfield that contains Well 4043 and a separate SFWD Wellfield containing Well 6150, as well as to the New York Water Service (NYWS) Wellfield containing Well 8480. If future modeling efforts suggest that a water supply well may be impacted within some reasonable timeframe and it has been further determined that the projected contaminant flow path will not intercept an existing outpost monitoring well, then additional outpost monitoring well(s) would be designed, installed, and monitored.
- public water supply wellhead treatment or comparable alternative measures, as necessary, for the wellfields that become affected in the future, including but not limited to the wells listed above, from site-related contaminants.
- The provision of public water to residential or commercial structures that have private drinking water wells determined to be affected or potentially affected by the offsite migration of the NWIRP groundwater plume.

It should be noted that another component of the Public Water Supply Protection Program was the treatment of wellfields 4, 5, and 6 associated with the Bethpage Water District (BWD). Wells at these Plants had either been, or were thought would be, adversely impacted by VOC-contaminated groundwater emanating from Navy and NGC properties prior to issuance of NYSDEC's Groundwater ROD in 2001. Due to the immediate threat to public health, the Navy, in June 1996, supplied funding to BWD for the construction and 30-year operation of an air stripping treatment system installed on the BWD Plant 5 facility. This action was considered to be an interim action that was part of the Navy's Operable Unit 1 Soils ROD issued by the Navy in July 1995. In the mid-1990's, NGC took similar action to protect the water supplies at BWD Plants 4 and 6. In the event that the treatment systems installed on BWD Plants 4 and 6 are no longer funded, the Navy recognizes that it's OFF-SITE GROUNDWATER remedy would no longer be protective of human health or the environment. In this case, the Navy will re-evaluate the protectiveness of the OFF-SITE GROUNDWATER remedy and implement all requisite measures as determined by the Navy in consultation with NYSDEC, NYSDOH, and the Nassau County Department of Health to ensure the continued protection of human health and the environment.

In addition to issuance of the Navy's Groundwater ROD, the Navy is also attempting to enter into a Federal Facilities Site Remediation Agreement (FFSRA) with New York State. The FFSRA outlines the Navy's willingness to implement those components of the groundwater remedy described above. To date, the FFSRA has not been formally accepted by either agency.

11. CERCLA 120(h) contains specific requirements relating to transfer of Federal property which must be satisfied before a deed can be executed. As a result, the deed entered into for the sale or transfer for the property shall meet the requirements of Section 120(h)(3)(A)(ii)(I) and (II) and thus contain a covenant warranting that all remedial action necessary to protect human health and the environment, with respect to hazardous substances, has been taken. Any response action or corrective action found to be necessary after the date of transfer shall be conducted by the United States and in accordance with Section 120(h)(3)(A)(iii). Enclosure (2) includes the environmental covenants and other clauses required for the deed transfer of this parcel. The deed shall contain use restrictions regarding non-industrial development, groundwater use, and subsurface soil excavation and/or disturbance as described in enclosure (2).

12. The New York State Departments of Environmental Conservation (NYSDEC) and Health (NYSDOH), the Region II offices of the U.S. Environmental Protection Agency Region II (USEPA), Nassau County Departments of Health and Public Works, and the community members of Bethpage's Restoration Advisory Board (RAB) have reviewed references (b) and (c). Their comments were reviewed and either incorporated into the final versions of those documents or addressed by separate correspondence.

13. A Notice of Availability for Public Review of the Draft FOST was published three consecutive weeks in the Bethpage Tribune on October 6, 13, and 20, 2000. A copy of the Draft FOST, including enclosures (1) and (2), were also placed in the Navy's Information Repository located at the Bethpage Public Library. There were no comments received from the general public.

In addition, the regulatory agencies listed above, and the Bethpage RAB, also reviewed several versions of this FOST. Enclosure (3) provides copies of all correspondence to and from the regulatory agencies that forwarded comments. Accompanying responses from the Navy (EFA Northeast) are included in enclosure (4).

The USEPA Region II submitted one comment in a letter dated May 17, 2002, stating that an Operating Properly and Successfully (OPS) determination is required for the off-site GM-38 Remedy as well as the Northrop Grumman ONCT system. The Navy does not agree with the USEPA's position for reasons outlined in enclosure (3).

14. In addition to this FOST, the Navy has also submitted a Petition to Modify the Boundaries of Inactive Hazardous Waste Site 1-30-003B as defined in the 6NYCRR Part 373 Permit. The current boundary consists of the entire 105-acre parcel as well as the Plant 20 Parcel. The petition, which was submitted to NYSDEC in a letter dated 31 May 2002, requested that the boundaries, for which the Part 373 Permit would be applicable, be modified to only include the 9-acre parcel that is to be retained by the Navy in order to complete remedial actions. With the exception of the Plant 20 Parcel, which was removed from NYSDEC's registry, the Navy's petition was declined for reasons specified in a letter to the Navy dated October 29, 2002. The Navy provided responses to all but one of NYSDEC's concerns in a letter dated 27 December 2002 and submitted this FOST (Revision 2), dated January 2003, for their

consideration. NYSDEC responded favorably to the Navy's FOST in a letter dated July 25, 2003, that stated that "based on the review of the January 2003 revised FOST, New York State has no further comments." However, in that same letter, NYSDEC also reiterated their sole concern regarding the potential vapor intrusion pathway for Plant 3. A Technical Memorandum has been prepared that the Navy feels addresses NYSDEC's vapor intrusion concerns within Plant 3 and will be submitting this document under separate correspondence. It should be noted that this issue is related to the Navy's request to modify the boundaries of the Inactive Hazardous Waste Site #1-30-003B and does not change the Navy's determination that this property is suitable for transfer.

15. The record of information before me was compiled after diligent inquiry. The subject property contains detectable concentrations of residual compounds, but can be used pursuant to the proposed non-residential reuse without unacceptable risk to human health or the environment or interference with the environmental restoration process with specified use restrictions which are attached. Therefore, I hereby find the 105-acre Parcel, inclusive of all buildings thereon, suitable for transfer under the terms and conditions of this FOST. The United States and the State of New York shall have access to the property in any case in which an investigative, response, or corrective action is found to be necessary at the property after the date of transfer by deed, or such access as is necessary to carry out a response action or corrective action on adjoining property.

16. References (a) through (f) shall be incorporated into the transfer documents by reference, and enclosures (1) through (3) and this FOST shall be included in and made part of the transfer documents.

20 OCT 03
Date

R. E. RAINES
Captain, CEC, U.S. Navy
Commanding Officer,
Engineering Field Activity, Northeast
Naval Facilities Engineering Command

# ENCLOSURE 1

# ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER

# FINAL

# ENVIRONMENTAL BASELINE SURVEY TO TRANSFER

# 105-ACRE PARCEL

at the former

## NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE, NASSAU COUNTY, NEW YORK

**SEPTEMBER 2000**

**REVISION 1 - FEBRUARY 2002**

**JANUARY 2003 (REVISION 2)**

# INTRODUCTION

This parcel-specific EBST was prepared by Engineering Field Activity, Northeast, Naval Facilities Engineering Command, Lester, PA and Tetra Tech NUS Environmental Corporation personnel. Point of contact for further information is Mr. James Colter, Remedial Project Manager, c/o Engineering Field Activity, Northeast, NAVFAC, 10 Industrial Highway, Mail Stop 82, Lester, PA 19113-2090.

## PURPOSE

The EBST supports the FOST by documenting the environmental condition of the property to be transferred by providing the necessary information to determine the suitability to transfer the subject property, and by providing the appropriate notice required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where hazardous substances and petroleum products are known, or have been known, to exist.

This EBST was prepared to satisfy Section 120(h) of CERCLA and was developed using information contained in the Final Phase I and II EBSs for NWIRP Bethpage, dated January 1998 and September 2000, respectively. The EBS Reports were based on information obtained through record searches, the analysis of aerial photographs, employee interviews, and visual inspection of the property in accordance with procedures developed by the American Society for Testing and Materials in Provisional Standard 37-95 (ASTM PS 37-95). In addition, information included in the EBS Reports was also summarized from a series of Phase I and Phase II Environmental Site Assessments (ESAs) prepared on behalf of the Northrop Grumman Corporation by various environmental consultants.

This EBST and associated FOST will only address that parcel of land, known as the 105-Acres, which is to be initially conveyed to Nassau County. Property that is located within the boundary of the 105-Acres but is to be excluded from the initial conveyance to Nassau County includes approximately 9 acres that will be retained by the Navy in order to continue environmental investigations and remediations under NWIRP Bethpage's Installation Restoration (IR) Program. The IR Program is continuing for the 9 acres of land, as it was determined that this property is not suitable for transfer.

## OVERALL FACILITY DESCRIPTION OF NWIRP BETHPAGE

NWIRP Bethpage was a government-owned/contractor operated (GOCO) facility, owned by the Naval Air Systems Command. The most recent operator has been the Northrop Grumman Corporation. The main mission of the NWIRP facility was the research prototyping, testing, design engineering, fabrication, and primary assembly of military aircraft.

Figure 1 shows that NWIRP Bethpage is comprised of land and property included in three non-contiguous parcels; a main 105-acre parcel of land containing the main 707,000 SF aircraft manufacturing building (Plant 03); a separate 4.5 acre parcel of land that contains a 20,000 SF vehicle service garage (Plant 20); and a 660,000 SF research and engineering building (Plant 05) that is owned by the Navy but is located on top of land owned by Northrop Grumman in their former 605-acre campus that surrounds the Navy's 105-Acres. In September 1998, Northrop Grumman vacated the 105-Acre parcel covered by this EBST.

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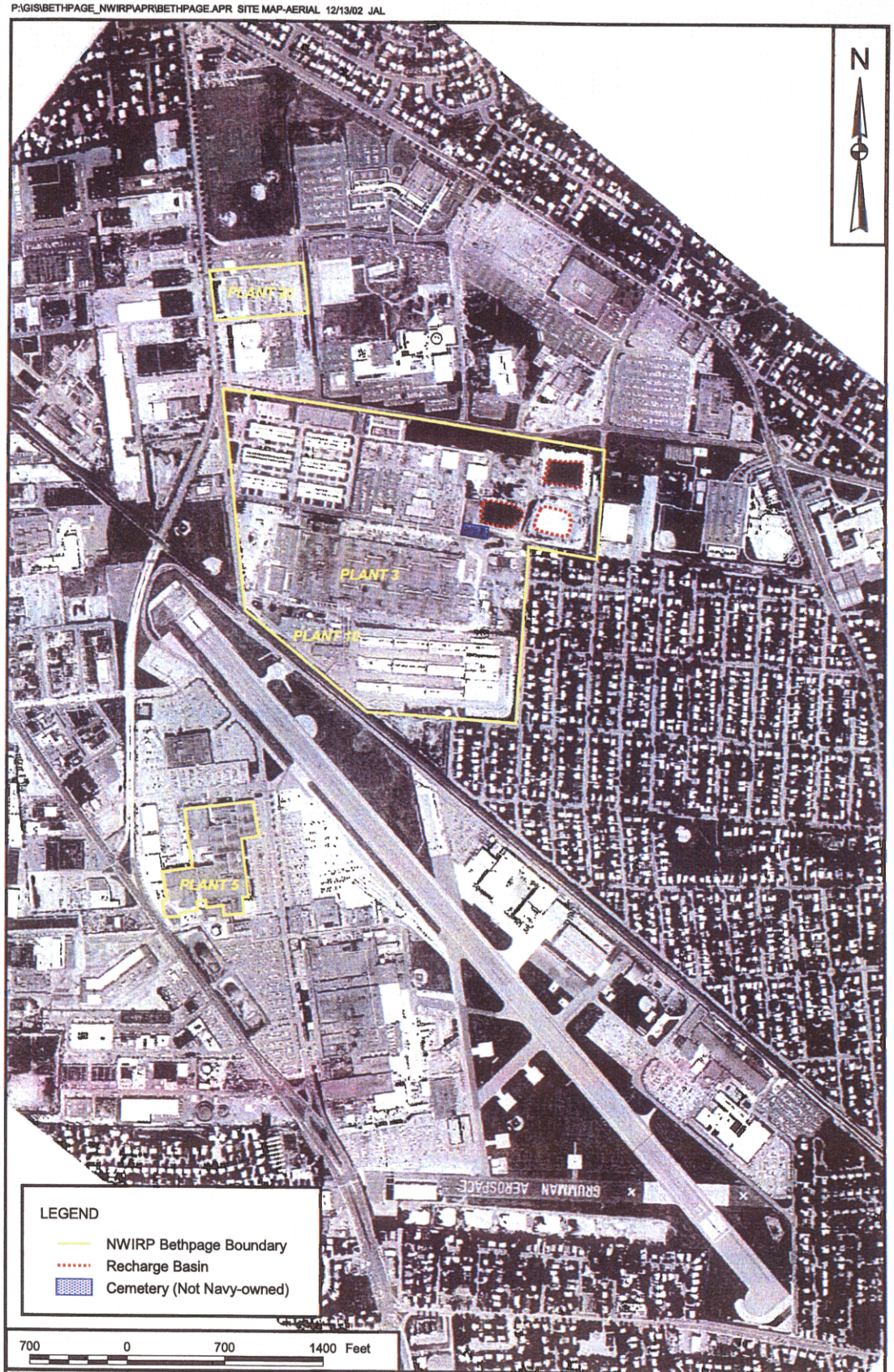


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| DRAWN BY J. LAMEY | DATE 12/13/02 | Tetra Tech NUS, Inc. | CONTRACT NUMBER N4037 / OWNER NUMBER — |
| CHECKED BY — | DATE — | SITE MAP<br>NAVAL WEAPONS RESERVE PLANT<br>BETHPAGE, NEW YORK | APPROVED BY — / DATE — |
| COST/SCHEDULE-AREA | | | APPROVED BY — / DATE — |
| SCALE AS NOTED | | | DRAWING NO. FIGURE 1 / REV 0 |

## DESCRIPTION OF THE 105-ACRES

The following major buildings and land areas, shown on Figure 2, make up the 105-Acres:

Plant 03 - A steel column and masonry wall structure that was constructed in 1942. This facility, located in the central portion of the 105-acres, encompasses approximately 707,000 square feet of space that was mainly dedicated to aircraft manufacturing operations. The majority of the building is an open floor plan with a 22-foot high ceiling and concrete or wood-block flooring. Numerous process lines once were located within Plant 03 while several smaller buildings located around the exterior of Plant 03 also supported facility operations.

Plant 10 - A 24,000 square-foot structure that was constructed in 1943. This facility, located to the south of Plant 03 along the central, southern portion of the 105-acres, served as the Quality Control laboratories for the entire Bethpage facility. Plant 10 originally functioned as the Central Inspection and Receiving Warehouse until the early 1960s. Recently, Plant 10 was utilized as the nationwide materials and environmental sample testing facility for Northrop Grumman Corporation. The building housed 25 individual laboratories and associated support areas.

Plant 17 North - This area, which includes six (6) individual warehouses, comprises over 193,000 square feet. These warehouses, located to the north of Plant 03 in the northwestern portion of the 105-acres, were constructed in 1943. These single-story, concrete block and steel-frame structures were utilized for the storage of various parts, components, supplies, chemicals and equipment to support the aircraft manufacturing efforts conducting in Plant 03.

Plant 17 South - This area, which includes fourteen (14) individual warehouses, comprises over 223,000 square feet. These warehouses were also constructed in 1943 and are located to the south of Plant 03, adjacent to Plant 10 in the southeastern corner of the 105-acres. These single-story, concrete block and wood-frame structures were utilized for the storage of various parts and supplies to support the aircraft manufacturing efforts conducting in Plant 03.

Industrial Wastewater Treatment Plant (IWTP) - A 12,600 square-foot facility that was constructed in 1984. This facility located to the north of Plant 03 and to the west of IR Site 2, was designed to process 250,000 gallons of wastewater per day from Plant 03. The IWTP consisted of various holding and process tanks as well as filters, pumps, and presses. Outside and to the north of the building were six chemical storage tanks constructed with secondary containment. A clarifier, equalization basin, reduction basin, holding tank, screen house, two gravity filters, pump house and flash mix tank were all located to the south of the building. All of these features have either been removed or abandoned-in-place and the IWTP is no longer operable.

IR Site 1: Former Drum Marshaling Area - This site is located to the east of Plant 03 and was used from the early 1950's to about 1978 to store drums of wastes containing halogenated and non-halogenated solvents as well as inorganic material prior to shipment offsite for disposal. The southern portion of this site was also used as an industrial wastewater cesspool/leachfield. After 1978, drum-marshaling operations were moved a few yards south of the original unpaved site to an area covered by a concrete pad. This pad had no cover nor did it contain any berms for the containment of spills. Drum marshaling activities at this site were discontinued in 1982. The area was then utilized for the storage of various types of heavy equipment including transformers until 1998 when Northrop Grumman cleared the site of all equipment as part of their efforts to vacate the Navy's property.

IR Site 2: Recharge Basin Area - The recharge basins, located on the northeast corner of the 105-acres, are isolated manmade depressions totaling approximately 9 acres and measuring roughly 50 to 60 feet in depth with no surface outlets. Two of the basins were constructed around 1950, and the third was constructed in 1966. The basins were designed to receive stormwater runoff from storm drains throughout much of Plant 03 and other developed areas on the 105-acre parcel. In addition, these basins were also used to discharge industrial wastewater from Plant 03. The water used for the Plant 03 operations was groundwater extracted by several deep production wells located throughout the Navy's property. The use of these basins were routinely rotated so that several inches of sediment from the bottom of each basin could be scraped and disposed.

Immediately to the west of the recharge basins was a 7-acre area that was formerly used as sludge-drying beds. Sludge from an older IWTP located on Northrop Grumman property, was applied to bare soil. After the construction of the new Industrial Wastewater Treatment Plant on Navy property in 1984, this practice was abandoned and the sludge-drying beds were subsequently closed and backfilled to match the surrounding grade.

IR Site 3: Salvage Storage Area - This site, located to the north of Plant 03 and to the west of IR Site 2, was used as a storage area for old aircraft fuselages and other aircraft parts and metal debris. The concern at this site was from metal shavings and lubricants coming into contact with bare ground as visually confirmed during the IAS. Around 1960 and again in 1970, the Salvage Storage Area was reduced in size to accommodate additional parking requirements.

As part of Northrop Grumman's efforts to vacate the Bethpage property in 1998, all aircraft parts and metal debris were removed from this site and transported offsite for disposal.

105-Acre Parcel

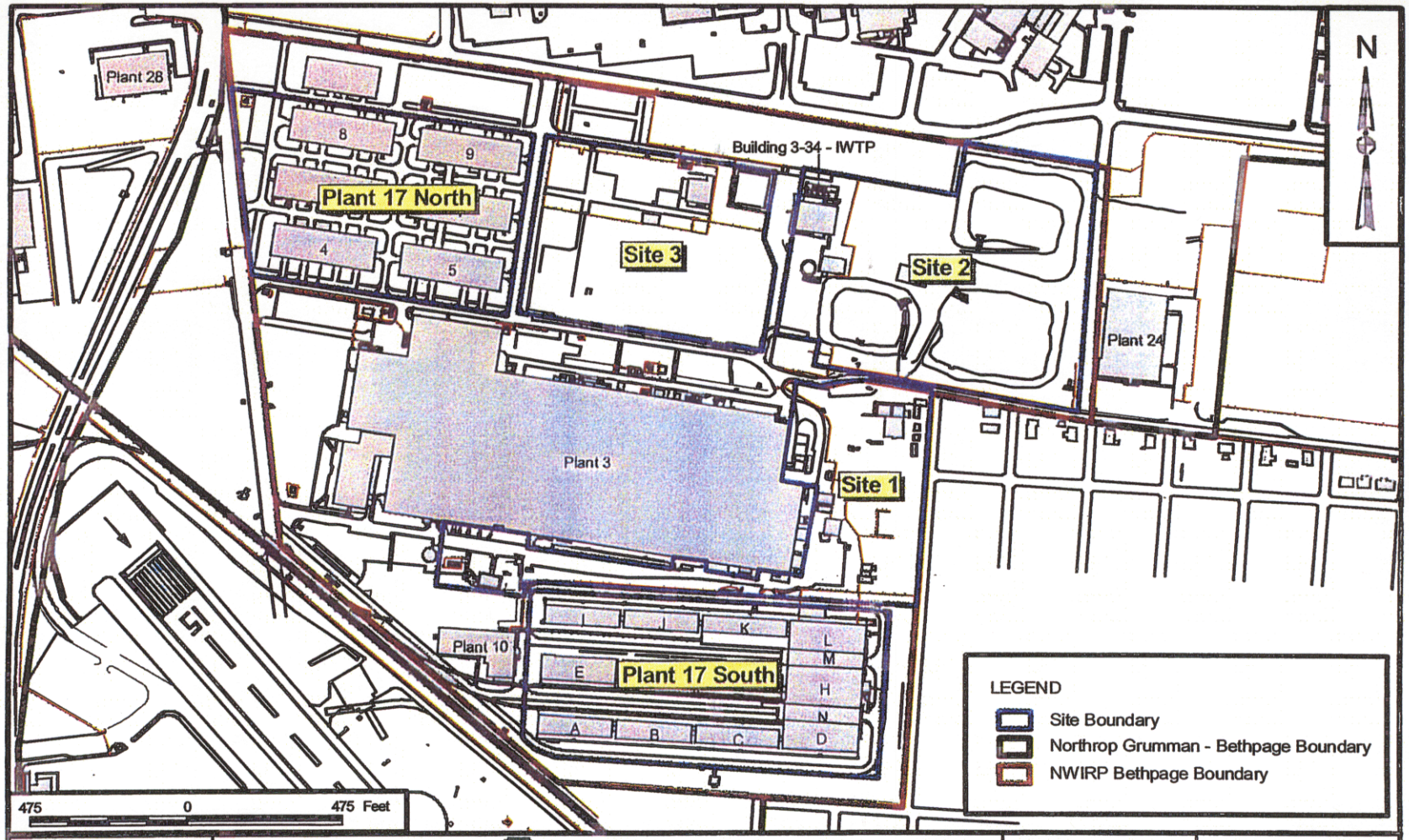



FIGURE 2
105-ACRE PARCEL MAP

| | | | |
|---|---|---|---|
| DRAWN BY: J. LAMEY | DATE: 9/21/00 | Tetra Tech NUS, Inc. | CONTRACT NUMBER: — / OWNER NUMBER: — |
| CHECKED BY: — | DATE: — | 105 ACRE PARCEL MAP<br>NWIRP BETHPAGE<br>BETHPAGE, NEW YORK | APPROVED BY: — / DATE: — |
| COST/SCHEDULE-AREA | | | APPROVED BY: — / DATE: — |
| SCALE: AS NOTED | | | DRAWING NO.: FIGURE 2 / REV: 0 |

P:\GIS\NWIRP_BETHPAGE\APR\BETHPAGE_RAB_21700.APR 105 ACRE PARCEL MAP 9/21/00 JAL

EBST

**PROPOSED PROPERTY REUSE**

This section will describe Nassau County's preferred reuse plan for the main 105-Acres, shown on Figure 3. Additional details regarding the reuse plan can be found by referring to the Navy's Final Environmental Impact Statement (FEIS) dated April 2000. (TAMS Consultants). Reuse plans for Plants 5 and 20 were also developed by Nassau County and summarized in the FEIS but conveyance of these Plants and implementation of the reuse plans will be delayed pending the termination of use of these buildings by Northrop Grumman.

Under the preferred reuse plan, Plant 3 would be reused for light industrial and warehousing uses. It is estimated that about 600,000 square feet in Plant 3 would be used for light industry, while about 100,000 square feet would be used for warehousing. Specific uses suggested in the *Alternatives Report* (Nassau County, 1999) include film production studios and athletic facilities that would be open to the public. The Portable Relocatable Office Module (PROM) building that was built in 1985 and attached to the west end of Plant 3, would be used for office and/or research and development (R&D) space.

The north and south warehouses and other ancillary buildings on the 105-acre parcel would be demolished to allow for new construction. In the area of the north warehouses, two new buildings would be constructed for use as office and R&D space, comprising a total of 480,000 square feet. The south warehouses would be demolished to allow for the construction of a new 1,231-space parking lot. An additional 1,089-space parking lot would also be provided in an area to the north of Plant 3 as well as other satellite locations throughout the property.

IR Site 2 would continue to be used as a recharge basin area for stormwater runoff and would be owned and maintained by Nassau County. Other land in and around the recharge basins, including the site of the former sludge drying beds, will be left undeveloped.

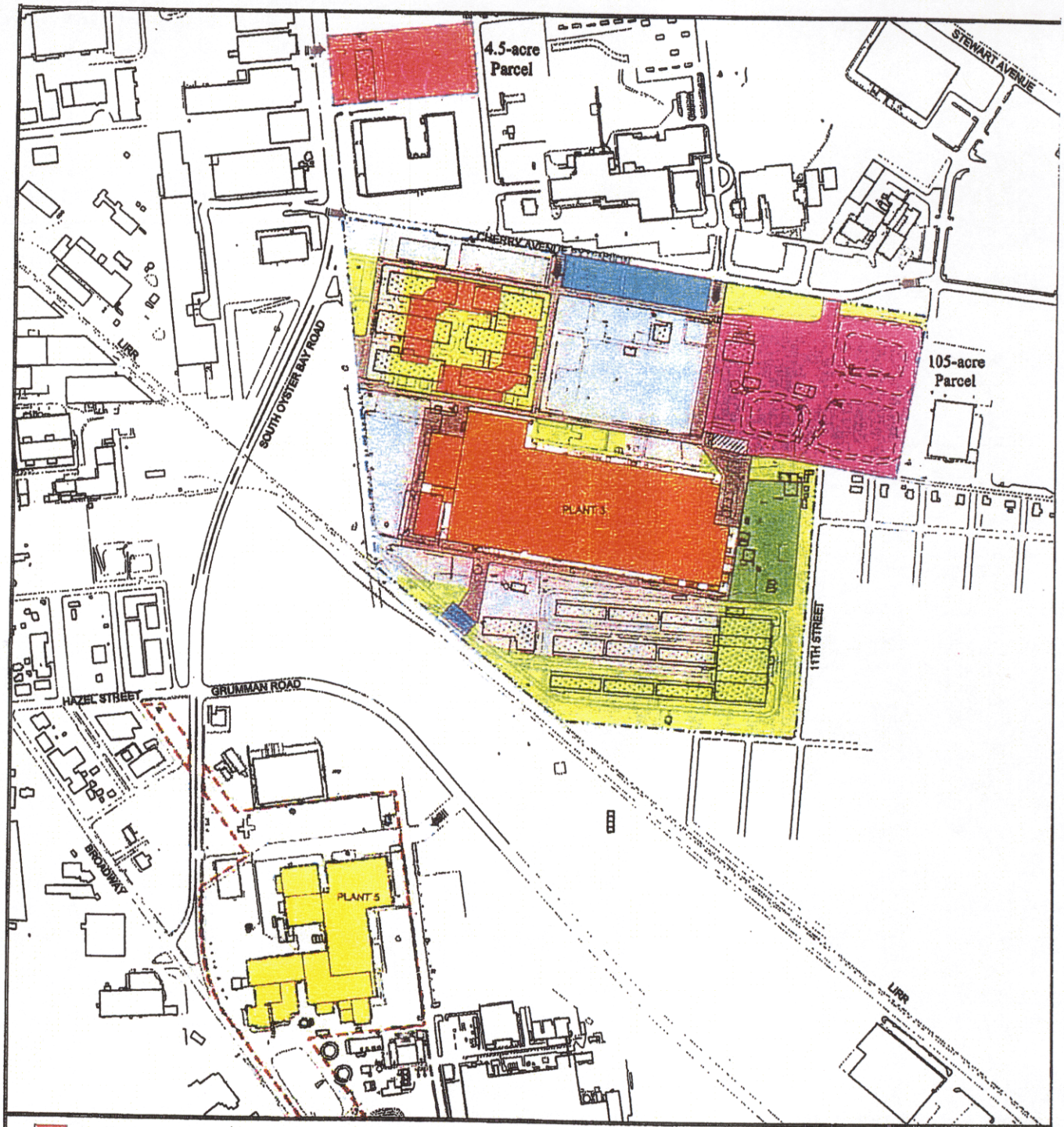
IR Site 3 would be used for additional parking.

A 3-acre portion of the existing wooded area on the site has been identified for the construction of a fire district training facility.

Open space areas would be provided throughout the site under the Preferred Reuse Plan buffering adjacent land uses where possible.

At this time, there are no proposed uses for the 3-acre area located to the east of Plant 3, known as IR Site 1 - Former Drum Marshaling Area, where the Navy is currently conducting environmental clean-up actions that are expected to continue through the year 2002. Upon completion the Navy's clean-up efforts, these acres will be conveyed to Nassau County.

# FIGURE 3
# PROPOSED PROPERTY REUSE PLAN




Source: Grumman Corporation, 1993, and Nassau County, 1999.

Figure 3

105-Acre Parcel



EBST

# HAZARDOUS SUBSTANCE AND WASTE MANAGEMENT OVERVIEW

Chapter 3 of the Final Phase I EBS Report for NWIRP Bethpage, dated January 1998, provides a detailed discussion of the hazardous substance and waste management practices conducted at the 105-Acres. The following sections were based on the information contained in that chapter.

## ENVIRONMENTAL AND WASTE MANAGEMENT PERMITS

### RCRA TSDF Facility Permits

When NWIRP Bethpage was operational, it was considered to be a large quantity generator of hazardous waste. The facility was classified as a Treatment, Storage, and Disposal (TSD) facility. Due to this designation, NWIRP Bethpage was under a federal Hazardous and Solid Waste Amendment of 1984 (HSWA) Permit issued as part of the Resource Conservation and Recovery Act (EPA ID #NYD002047976).

NWIRP Bethpage is also subject to the contents of New York State Department of Environmental Conservation's (NYSDECs) Permit to Operate a Hazardous Waste Management Facility under their implementing regulations 6NYCRR Part 373. NWIRP Bethpage is not listed on the National Priorities List but is listed on New York State's Registry of Inactive Hazardous Waste Disposal Sites (NYSDEC Registry # 1-30-003B).

Both permits contain a Corrective Action module which states that certain Solid Waste Management Units (SWMUs) must be remediated in order to remain in compliance with the permits. At this time, the following Areas of Concern, all of which are within the boundaries of IR Site 1, are the only remaining SWMUs located in the 105-acres (see Figure 4):

- AOC 22 - Former Underground Storage Tank Area
- AOC 23 - Former Aboveground Storage Tanks
- AOC 30 - Three Storage Sheds
- AOC 35 - Former Sludge Drying Beds
- Dry Well 34-07 (including AOC 34 - Former Autoclave Area)
- Dry Well 20-08

### SPDES Permit

Northrop Grumman currently holds a State Pollutant Discharge Elimination System (SPDES) Permit (Permit No. NY-009-6792) for 10 outfalls at its Bethpage facility. The permit was issued in compliance with Title 8 of Article 17 of the Comprehensive Law of New York State and in compliance with the Clean Water Act, as amended. Of the 10 outfalls governed by the SPDES Permit, only two discharge into the Navy's recharge basins located on the 105-acres (Outfall 004 and 010). These discharge non-contact cooling "blow-off" water from the operational wells located on the 105-Acres. To date, Outfalls 001, 002, 003, and 008 have been abandoned and no longer discharge to the Navy recharge basins. Prior to 1984, some Plant 03 production line rinse waters were discharged directly to storm drains leading to the recharge basins. It is reported that these waters were directly exposed to chemicals used in various industrial processes (involving the rinsing of manufactured parts). A new Industrial Waste Treatment Facility (Building 03-34) was connected to the municipal Nassau County sewer system on January 1, 1984. As of that date, all process wastewater from Plant 03 was pretreated at the new facility and discharged to the municipal sewer system.

When the 105-acres was fully operational, the Nassau County Department of Health periodically inspected and tested the outfall effluent. The results were reviewed to ensure that the effluent limitations complied with the SPDES permit. A review of available Northrop Grumman records indicated that effluent parameters were exceeded in Outfall 004 in the past, but appropriate corrective actions were taken by Northrop Grumman.

**New York State Well Water Permits**

Northrop Grumman currently holds permits for the operation of seven (7) production wells located on the Navy's 105-acres since Northrop Grumman is currently responsible for operation and maintenance of the production wells. Extraction of groundwater from Wells 10 and 11 is required to support current operations at Plant 5. Wells 13 and 15 are able to be used but are not currently required to support Northrop Grumman operations. Wells 8, 9, and 14 are inactive. It is anticipated that this permit will be in effect until operations at Plant 5 are terminated by Northrop Grumman sometime in February 2002.

**Air Emission Permits**

Due to the deactivation of the Navy's 105-acres by Northrop Grumman, there is currently only one active air emission source requiring a permit under New York State regulation 6NYCRR Part 201. That source is the Well Water Stripping Tower located on the north side of Plant 03. Changes in the New York State's water discharge regulations in the early 1990's made it a requirement that any water entering the Navy's recharge basins had to meet, at a minimum, federal drinking water standards for volatile organic compounds (VOCs). Northrop Grumman, in response to the new regulations, constructed the air stripping tower to insure that all groundwater extracted from Navy Wells 10 and 11 that was used in Plant 03 operations was treated for VOCs prior to use as non-contact cooling water.

Today, groundwater is still being extracted from Navy Wells 10 and 11, and distributed to support Plant 5 operations. Since Northrop Grumman is still responsible for operation and maintenance of this stripping tower, it has been included in Northrop Grumman's Title V Air Permit Application that was filed on December 9, 1998 for the Bethpage site.

**POLYCHLORINATED BIPHENYLS (PCBs)**

The Navy's Final Phase I EBS Report, dated January 1998, reported that oil containing PCBs was used in transformers and other electrical equipment at various locations through NWIRP Bethpage but that during the 1980's, all of the PCB-contaminated transformers were either replaced or retrofitted by the Grumman Aerospace Corporation. In addition, during Northrop Grumman's efforts, in 1998, to vacate the Navy's 105-acres, all other electrical equipment that contained PCB fluids were removed from the property. Accordingly, there are currently no transformers or other electrical equipment located on the 105-acres that utilize fluids that contain PCBs.

Surface and subsurface soils contaminated with PCBs do exist at the various AOCs located within IR Site 1, however this parcel will not be part of the initial conveyance to Nassau County and will be retained by the Navy in order to complete remedial actions associated with PCB-contaminated soils.

**UNDERGROUND/ABOVEGROUND STORAGE TANKS (USTs/ASTs)**

Tables 3-4 and 3-5 in the Navy's Final Phase I EBS Report, dated January 1998, provided tank numbers, location, contents, volume, and current status of each underground storage tank (UST) and aboveground storage tank (AST), respectively, that existed at that time on NWIRP Bethpage property.

In June 1999, the Navy submitted notification to the Nassau County Department of Health declaring several tanks as "Temporarily Out of Service" in accordance with Article XI of the Nassau County Public Health Ordinance. In July 1999, the Nassau County Department of Health responded to the Navy's letter by stating that the tanks in question should have been registered as "abandoned" since the Navy did not anticipate returning the tanks to an active status within one year. In response, the Navy submitted a request to abandon-in-place, 10 USTs and 17 ASTs. Approval was granted by Nassau County Department of Health to abandon-in-place the 10 USTs in accordance with the appropriate sections of Article XI but denied the Navy's request to abandon the 15 ASTs. Subsequently, the Navy complied with the requirements of Article XI for the abandonment of the 10 USTs by filling them with an inert material (sand) and also removed and disposed of the 17 ASTs. A representative of the Nassau County Department of Health performed oversight for all tank work described above.

All USTs and ASTs that currently remain on the 105-acres are listed in Table 1 of this EBST and will serve as the proper notification to Nassau County as to their existence.

Table

# TABLE 1

## USTs/ASTs REMAINING

## ON 105-ACRE PARCEL

| Agency Tank Number | Agency | Plant | Location/Use | Contents | Capacity | Material of Construction | Status | AST/UST | Last Tightness Test |
|---|---|---|---|---|---|---|---|---|---|
| 1362 | Nassau County Health Department | 03-07 | Salvage Yard - Boiler | No.2 | 4000 | FRP | In Service | UST | Nov-00 |
| 9339 | Nassau County Health Department | 17S-33 | Dravo Boiler | No.2 | 10000 | Steel | In Service | UST | Mar-94 |
| 9340 | Nassau County Health Department | 03-34 | IWTF - Boiler | No.2 | 2000 | Steel | In Service | UST | Jun-99 |
| 18 | Nassau County Fire Marshall | 03-01 | Fire Pump | Diesel | 275 | Steel | In Service | AST | N/A |
| 19 | Nassau County Fire Marshall | 03-01 | Fire Pump | Diesel | 275 | Steel | In Service | AST | N/A |
| 57 | Nassau County Fire Marshall | 17S-22 | Fire Pump House - Generator | Diesel | 275 | Steel | In Service | AST | N/A |
| 62 | Nassau County Fire Marshall | 03-01 | Generator | Diesel | 250 | Steel | In Service | AST | N/A |

## ASBESTOS-CONTAINING MATERIAL (ACM)

An Asbestos Survey was conducted for all of the structures located on NWIRP Bethpage property, with the exception of Plant 5, by Karl Associates on behalf of the Northrop Grumman Corporation. Results of this survey are documented in a Final Report, dated March 1997. Based on the recommendations contained within the Final Report, all damaged ACM that was identified within each structure located on the Navy's 105-acres was repaired.

In addition, Northern Division, Naval Facilities Engineering Command, utilizing the services of its asbestos consultant, Dewberry & Davis, performed an independent review of Karl Associates' Final Asbestos Report, dated March 1997, and also performed an inspection of all the ACM that was repaired. The results of Dewberry & Davis' review and inspection are documented in a report entitled Final Asbestos Survey/Update for NWIRP Bethpage dated April 1999. This report also includes the findings, drawings, and an Operation & Maintenance section for each structure inspected by Northrop Grumman's asbestos consultant. The conclusion of the Navy's report was that all damaged ACM identified on the 105-acres was satisfactorily repaired and that all existing ACM that remains within the 105-acre parcel has been inventoried and is in good condition.

This section of the EBST shall serve as notice to Nassau County that any future occupants of buildings within the 105-acres should consult either survey report to determine if ACM is present. If so, then Nassau County should consult the Operations & Maintenance Section for the appropriate building, prepared by Karl Associates and included in Dewberry & Davis' Final Asbestos Survey/Update, so that the appropriate OSHA protocols and procedures are followed for the proper handling of ACM. An electronic version, as well as a hard copy version of the Navy's Final Asbestos Survey/Update, dated April 1999, is located at the Bethpage facility and will remain there upon transfer of the property.

## LEAD-BASED PAINT

Lead-based paint (LBP) is suspected in any building constructed prior to 1978. It is the Navy's policy to conduct LBP surveys at those locations where the structure was used for residential purposes or if that structure is designated to be used for residential purposes in a land reuse plan. A LBP survey was not conducted at NWIRP Bethpage since no structure was ever used for residential purposes and the preferred land reuse plan proposed in the Navy's Final EIS dated April 2000 does not designate residential use for any existing building within the 105-acres. However, since most of the buildings that exist within the 105-acres were constructed prior to 1978, this section of the EBST will serve as notice to Nassau County that the possibility exists for the presence of lead-based paint. Nassau County should take the appropriate precautions associated with occupation of these buildings.

## PHASE II EBS REVIEW ITEMS

Several hundred Areas of Concern (AOCs) were identified in a series of Phase I Environmental Site Assessments (ESAs) that were prepared on behalf of the Northrop Grumman Corporation by Radian International. This effort, conducted from April 1997 through August 1998, was part of Northrop Grumman's deactivation requirements for the Navy's 105-acre property. A Final Phase I EBS Report was prepared by Tetra Tech NUS in January 1998, on behalf of the Navy, that enabled the Navy to verify that no other AOCs existed that may have been overlooked by Northrop Grumman. Section 6.0 of the Final Phase I EBS discussed the AOCs that

were identified by the Navy and Table 9-1 in Section 9.0 provides a summary list of the AOCs.

At the time that the Navy's Phase I EBS Report was finalized in January 1998, Northrop Grumman had already begun to address the majority of the AOCs in a series of Phase II ESAs. Therefore, for those AOCs that were not yet addressed by Northrop Grumman, the Navy, in Section 10.0 of the Final Phase I EBS Report, rated those areas as Category 7/Gray, requiring additional investigation. The appropriate additional investigations or remedial actions were ultimately completed for the Category 7 areas by Northrop Grumman and their efforts described in the appropriate Phase II ESA Report. Subsequent to the finalization of Northrop Grumman's Phase II ESAs, the Navy prepared an independent Phase II EBS document that summarized all of the work conducted by Northrop Grumman at the several-hundred identified AOCs.

Details regarding the additional work that was conducted by Northrop Grumman for Plants 03, 10, and 17 can be found in Chapters 3 through 5, respectively, of the Navy's Final Phase II EBS for NWIRP Bethpage dated February 2002. In addition, Tables 9-1 through 9-6, found in Section 9.0 of the Final Phase II EBS Report, outlines all of the AOCs identified on the 105-acres and their status. These tables have been reproduced and attached as Appendix A to the end of this EBST.

The majority of the areas of concern identified in, both the Navy's EBS Reports and Northrop Grumman's ESA Reports have been successfully addressed by the Northrop Grumman Corporation and have received approval from NYSDEC with only a few areas remaining.

The EBS sites listed below are the AOCs that the Navy has agreed to accept into NWIRP Bethpage's IR Program and, over the next several years, will continue to investigate and perform any required cleanup that is determined to be warranted for each site:

- AOC 22 - Former Underground Storage Tanks
- AOC 23 - Former Aboveground Storage Tanks
- AOC 30 - Various Storage Sheds
- AOC 35 - Sludge Drying Beds
- Drywell 34-07 (including AOC 34 - Former Autoclave Area)
- Drywell 20-08

The following paragraphs provide a description of each AOC and its current status. Figure 4 shows the location of the remaining AOCs.

AOCs 23, 30, and 35: All three of these areas are located in the northeast corner of IR Site 1 near the location of the former Roads and Grounds Building. Although identified as separate AOCs, Northrop Grumman investigated all three areas under the same environmental sampling event. The sampling revealed the presence of metals in excess of NYSDEC's TAGM values as well as SVOCs that exceeded STARS Memo values. Due to the fact that these areas are adjacent to the Navy's IR Site 1 and that the chemicals found in soil samples were consistent with chemicals found in IR Site 1 soils, the Navy agreed to pursue cleanup of this area at the same time that IR Site 1 soils are addressed. Therefore, these areas were included into the boundary of IR Site 1 and will also be addressed in accordance with the requirements of the July 1995 ROD for OU 1.

AOC 22 - Underground Storage Tank (UST) Site: This area was the former location of several USTs that stored No. 6 fuel oil that was used to fire several boilers inside of Plant 03 in order to generate steam. This practice was followed from 1941 until 1966 when a new Central Steam Plant became operational. Since the boilers were no longer required, these tanks were then used to store reserve

quantities of No. 4 fuel oil until the early 1980's when these tanks were removed.

Northrop Grumman investigated this area as part of their site assessment effort and found petroleum contamination within site soils that was related to these tanks and also identified the existence of a free product layer on the water table.

Northrop Grumman requested that the Navy continue to address this AOC under the ongoing IR program. However, in this case, Northern Division NAVFAC, with the concurrence of NAVAIR, agreed to continue to investigate this area under the Navy's Phase II EBS Program. To date, Northern Division NAVFAC, through the services of an environmental consultant, has completed delineation of the extent of petroleum contamination in soils. The Navy has also determined that there does not appear to be any measurable thickness of free product floating on top of the water table.

With no evidence of groundwater contamination and only minor exceedances of NYSDEC's STARS Memorandum guidance, the Navy recommended that no additional actions were warranted. This conclusion was submitted to NYSDEC whose response was that, at a minimum, they would like to see the Navy prepare a focused FS for different alternatives aimed at removing the petroleum-impacted soils beneath this site. The Navy agreed to NYSDEC's request and, in February 2002, completed the Focused FS for the AOC 22 Area. To date, no decision has been reached regarding future actions at this area.

Drywells 20-08 & 34-07: These two AOCs are drywells where concentrations of PCBs in soils were found at levels that exceeded New York State cleanup standards. Northrop Grumman identified this contamination during their review of all of the Bethpage drywells pursuant to the Underground Injection Control (UIC) program administered by the Nassau County Department of Health and the U.S. EPA's groundwater compliance branch.

These two drywells acted as catch basins for Bethpage's stormwater drainage system, with some stormwater recharge capabilities but were also connected to other catch basins that ultimately discharged into the Navy's recharge basins. The probable source of this PCB contamination is a maintenance area within Plant 03 just upgradient of these drywells. This area contained several autoclaves that were known to utilize fluids containing PCBs. In addition, this area also contained a number of floor drains that were connected to the stormwater drainage system that led to these drywells.

In June 1998, Northrop Grumman attempted to remediate these drywells by excavating to a depth of approximately 28 feet using a suitable shoring system. Northrop Grumman submitted that further excavation beyond this depth was infeasible since additional excavation could present adverse impacts to the structural integrity of the surrounding structures, including Plant 03. As a result, endpoint samples were collected and analyzed for RCRA metals, total petroleum hydrocarbons, VOCs, SVOCs, and PCBs. No significant contamination was detected in the endpoint samples with the exception of PCBs. At 28 feet, PCBs in soil were detected at a concentration of 1,800 ppm in Drywell 20-08 and 25,000 ppm in Drywell 34-07.

Northrop Grumman's recommendation for no further action was also based on the fact that risks associated with a direct contact exposure scenario to the PCB concentrations listed above were essentially eliminated due to their existence at significant depths.

In addition, Northrop Grumman felt that further excavation was technically impracticable and that the cost for additional excavation would not yield any significant decrease in risk. These recommendations were submitted to the U.S.

EPA and to NYSDEC for consideration. Both agencies disagreed with the Northrop Grumman's conclusions and required that additional remediations be conducted.

Northrop Grumman then requested that the Navy continue to address this AOC under the ongoing IR program. After consultation with NAVAIR, Northern Division NAVFAC agreed to include these drywells into the IR program as they met the definition of an IR site. However, the Navy required that Northrop Grumman collect the additional analytical data required by the regulatory agencies to determine the extent of the PCB contamination. The Navy has also required that Northrop Grumman prepare a focused FS to evaluate different remedial alternatives to address the deep soil contamination and the Navy would then implement the preferred remedial alternative that is chosen and agreed to by all parties. To date, Northrop Grumman has completed the delineation of PCB-contamination in both drywells to the satisfaction of NYSDEC and has begun development of the focused FS.

Based upon the conclusions presented in the Final Phase II EBS Report for the 105-acres, the category ratings for all areas have been updated from their original rating presented in the Final Phase I EBS Report, dated January 1998. These final ratings can be found in Section 10.0 of the Navy's Final Phase II EBS Report for NWIRP Bethpage, dated February 2002.

105-Acre Parcel

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EBST

# FIGURE 4

## LOCATION OF REMAINING AOCs INCLUDED IN IR PROGRAM




| | | | |
|---|---|---|---|
| DRAWN BY: J. LAMEY | DATE: 1/17/00 | Tetra Tech NUS, Inc. | CONTRACT NUMBER: N7576 / OWNER NUMBER: — |
| CHECKED BY: — | DATE: — | SITE LOCATION MAP<br>NWIRP BETHPAGE, NEW YORK | APPROVED BY: — / DATE: — |
| COST/SCHEDULE-AREA | | | APPROVED BY: — / DATE: — |
| SCALE: AS NOTED | | | DRAWING NO: FIGURE 4 / REV: 0 |

P:\GIS\NWIPR_BETHPAGE\BETHPAGE.APR AOC 22-AERIAL 8/22/00 JAL

## INSTALLATION RESTORATION (IR) PROGRAM SITES

### Descriptions of IR Program Efforts

The Navy has been conducting the Installation Restoration (IR) Program at Bethpage since 1986 when an Initial Assessment Study (IAS) was completed. The IAS identified three (3) sites, shown on Figure 5, where operations had resulted in the contamination of soil and groundwater. A description of the efforts conducted at each IR Site and a discussion of the environmental contamination that has been identified over the years through the Navy's IR Program is presented in the following paragraphs.

In 1991, a workplan was finalized and fieldwork conducted for a Remedial Investigation (RI) that attempted to delineate the nature and extent of soil and groundwater contamination at each of the Navy's IR Sites. During the Phase I RI process, widespread PCB contamination of the surface soils was found. The majority of the PCB detections were below 10 parts per million (ppm) with the exception of one location whose concentration exceeded 1,400 ppm. Upon this result being detected, an interim action was implemented by the Navy to protect human health. The action consisted of delineating the immediate area and covering those locations whose concentrations exceeded 50 ppm with a soil cover. This eliminated the possibility of direct dermal contact to the onsite worker and prevented dust from migrating to a nearby residential community.

Analytical results from the Phase I RI were published in a Final RI Report dated May 1992. The results of the RI indicated that sufficient data gaps existed, especially with regards to groundwater contamination, and that a Phase 2 RI was warranted.

The Phase 2 RI was initiated in the fall of 1992 and, in addition to more soil samples being taken to better delineate soil contamination, the Navy installed additional monitoring wells to help calibrate a new computer model. This computer model was developed to electronically duplicate aquifer characteristics to aid the Navy in predicting groundwater flow directions and the approximate size of the groundwater plume that existed beneath NWIRP Bethpage. Efforts associated with the Phase 2 RI were completed and results published in a Final Report dated October 1993. The major conclusions of the two-phase RI for each IR Site are presented below:

IR Site 1 - Former Drum Marshaling Area: Surface and subsurface soils contaminated with PCBs, metals, and VOCs existed at IR Site 1 at levels that exceeded New York State cleanup standards and that these soils were a major contributing factor to groundwater contamination in this area.

IR Site 2 - Recharge Basin Area: Subsurface soils at IR Site 2 in the vicinity of the former sludge drying beds, contained PCB contamination in excess of New York State cleanup standards. VOC contamination could not be found in subsurface soils at IR Site 2 and it was, therefore, determined that these soils were not a direct source of groundwater contamination in this area. However, the discharge of contaminated groundwater over the years to the recharge basins was acting as an indirect source of VOC contamination to groundwater.

FIGURE 5
LOCATION OF IR PROGRAM SITES

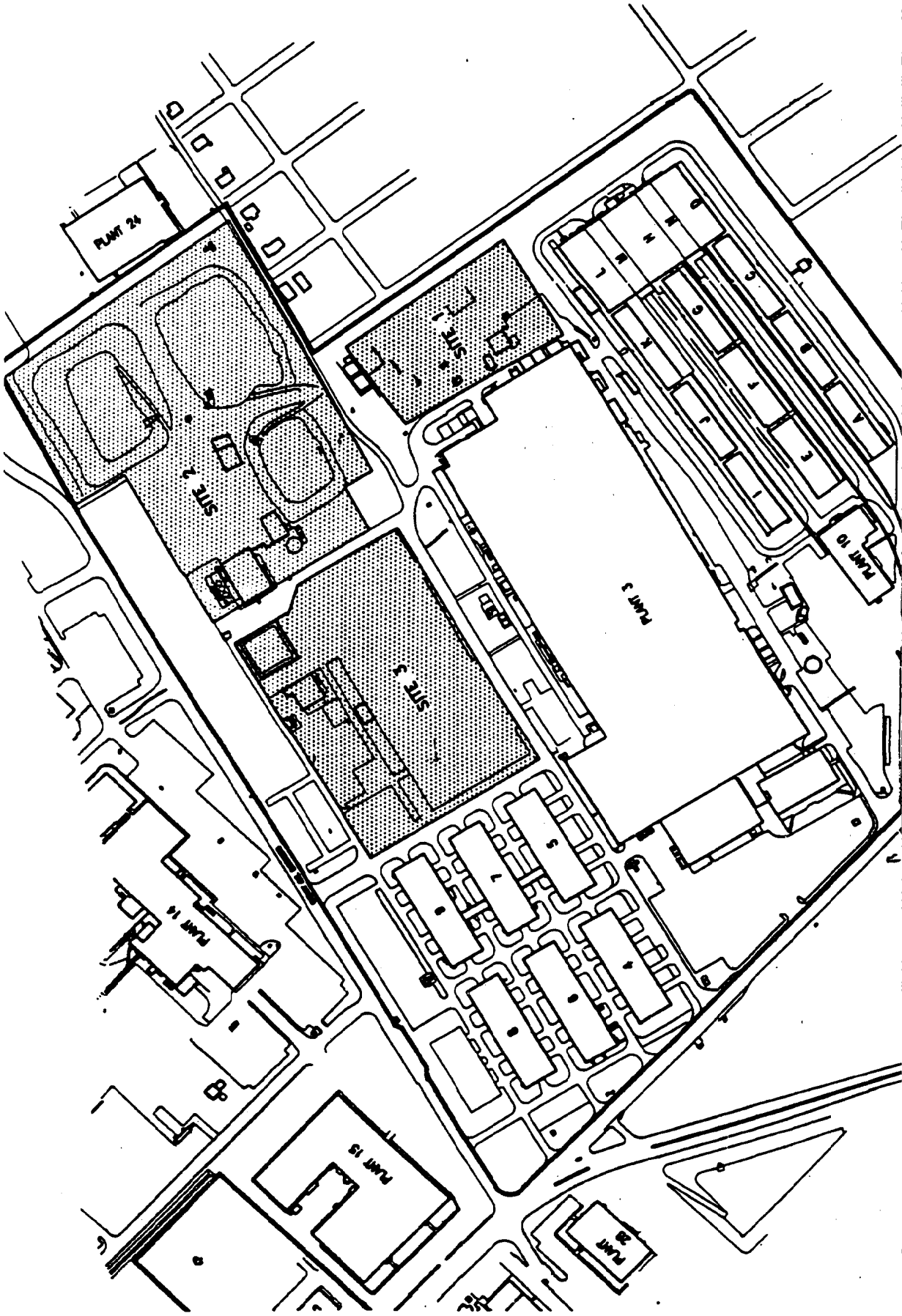


FIGURE 5
LOCATION OF IR PROGRAM SITES

IR Site 3 - Salvage Storage Area: No additional actions were recommended at IR Site 3. Some sporadic, low-level concentrations of compounds were detected in surface soils but not at levels that exceeded New York State cleanup standards. In addition, no detectable concentrations of chemicals could be found in subsurface soils.

Subsequent to the acceptance by NWIRP Bethpage's regulatory community that the two-phase RI adequately characterized the nature and extent of soil and groundwater contamination, the Navy proceeded with the development of a Feasibility Study (FS) to evaluate different remedial alternatives for addressing soil contamination at Sites 1 and 2 as well as groundwater contamination that underlies the Navy's property. The FS was finalized in March 1994 and led to the development of a Preferred Remedial Action Plan (PRAP). A preferred remedy for soils at Sites 1 and 2 was chosen and an interim remedial action (IRA) was also selected for groundwater. These components were then included into a subsequent Record of Decision that was signed in July 1995.

**Contents of the Record of Decision for Operable Unit 1 - SOILS**

The Record of Decision (ROD), entitled "Operable Unit 1" (OU 1), focused on the removal of inorganic and PCB contamination from soils at Sites 1 and 2; removal of VOC contamination from subsurface soils and shallow groundwater from IR Site 1 using Air Sparging/Soil Vapor Extraction (AS/SVE) technology; and treatment of the Bethpage Water District's public supply well #5 using an air stripping tower. A more detailed discussion of the contents of the ROD and the current status for each IR Site is presented below:

IR Site 1 - Former Drum Marshaling Area

The ROD for OU 1 at IR Site 1 called for the excavation of the inorganic and VOC-contaminated soils as well as the PCB-contaminated soils. Upon completion of the excavation, the Navy was to implement the installation of an Air Sparging/Soil Vapor Extraction (AS/SVE) System to address the deeper VOC-contaminated subsurface soils and shallow groundwater.

During the design characterization, it was discovered that the former cesspool/leachfield that existed beneath most of IR Site 1 still contained soils highly contaminated with metals and VOCs at levels that would define these soils as RCRA hazardous wastes. It was then decided to install the AS/SVE system first to address the high concentrations of VOC contamination in and around the former cesspool/leachfield and upon successful completion of this remedy, begin the excavation of the metal and PCB-contaminated soils.

The Navy successfully installed the AS/SVE system and it has been operating since August 1998. This system was operated until December 1999 when data was collected to evaluate the effectiveness of the system and determine of the remediation goals have been met. It was determined in a Report dated April 2000, prepared by the Foster Wheeler Environmental Corporation, that the AS/SVE system had reduced the VOC concentration in soils to levels that would not characterize them as hazardous waste for all of the targeted areas, with the exception of two. Per recommendations contained in the April 2000 Report, the Navy is currently working on optimization of the system to address the two areas where VOC concentrations in soils are still considered high. The Navy plans to continue operation of the AS/SVE system until the end of calendar year 2000 at which time it will be determined if the VOC concentration in soils at these two areas are consistent with the remainder of the site.

As mentioned earlier, after the VOC concentrations have been reduced in soils to levels that would no longer be considered as hazardous waste, the AS/SVE system will be dismantled and the soil excavation portion of the July 5, 1995 ROD for OU 1 would then be implemented.

Funding for implementation of this portion of the ROD has been identified in the Navy's FY 2002 Environmental Restoration, Navy (ER,N) budget.

IR Site 2 - Recharge Basin Area

The July 1995 ROD for OU 1 at IR Site 2 called for the excavation of the PCB-contaminated soils from the former location of the sludge drying beds. The Navy, from March through May 1996, initiated and successfully completed the removal of all PCB-contaminated soils at IR Site 2 with concentrations that exceeded 10 ppm, which is the State's cleanup standard for an industrial site.

However, sampling conducted as part of the Navy's investigation did show that residual chemicals did remain on surface soils but at levels that were below New York State cleanup standards. In accordance with the July 1995 ROD, an institutional control, in the form of a permeable soil or gravel cover, was implemented in November 2001 for those areas where residual metal and/or organic compounds were expected to remain. This action has insured that all direct contact pathways with these residual chemicals have been eliminated.

IR Site 3 - Salvage Storage Area

The two-phase RI concluded that no substantial contamination existed at this site that posed unacceptable risks to human health or the environment. However, as part of the July 5, 1995 ROD for OU 1, an institutional control was to be implemented for those areas where residual metal and/or organic compounds were expected to remain to insure that all direct contact pathways with these residual chemicals were eliminated. For IR Site 3, it was the Navy's intention, as part of the Phase II EBS effort, to resample surface soils at IR Site 3 to determine if any residual compounds remained. However, in the Spring of 1998, Northrop Grumman, as part of their deactivation requirements for the Navy's 105-acres, had removed all of the spare metal parts associated with the Salvage Storage Area. As part of this effort, and at the direction of the Navy's Caretaker Support Office, Northrop Grumman also cleaned and raked the entire Salvage Storage Area in order to remove all remaining metal debris and rocks greater than 1" in diameter. The areas of the Salvage Storage Area that were not covered by asphalt were then covered with 2 inches of topsoil and revegetated.

**Contents of the Record of Decision for Operable Unit 2 - GROUNDWATER**

Hazardous substances (as defined by CERCLA) have been released to groundwater from source areas located within the 105-acre Parcel. Based on available information, the levels of hazardous substances, mainly volatile organic compounds (VOCs), present in groundwater presents an unacceptable risk to potential users. In response, the Department of Navy, acting as the lead agency pursuant to Executive Order 12580, has issued, and is currently implementing, reference (e) to address contaminated groundwater located beneath NWIRP Bethpage as well as that portion of contaminated groundwater that has migrated off of NWIRP Bethpage property.

The Navy's ROD for Groundwater, discussed below, was based upon a Record of Decision for Regional Groundwater developed by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health, to address a commingled, regional groundwater contaminant plume located beneath property owned by the Navy as well as property owned by the Northrop Grumman and Occidental Chemical Corporations. NYSDEC's Operable Unit 2 ROD (reference f) described a remedial strategy that would address contaminated groundwater beneath both Navy and Northrop Grumman Corporation (NGC) property and also addresses that portion of contaminated groundwater that has migrated downgradient of both properties into the surrounding community. For information, the United States Environmental Protection Agency (USEPA) Region II previously issued a Record of Decision in September 2000 for that portion of the groundwater contaminant plume

that lies beneath and downgradient of property owned by Occidental Chemical since this facility, shown in reference to the Navy's property on Figure 7 of enclosure (1), is presently designated as a National Priorities List (NPL) site.

NYSDEC's Groundwater ROD discusses regional groundwater beneath the Navy and NGC properties plus the downgradient, commingled portion as a single entity or operable unit. The Navy's ROD, however, describes those components of NYSDEC's Groundwater ROD that will be implemented by the Department of Navy. For the purposes of the Navy's Groundwater ROD, groundwater has been divided into two subcomponents that describes the location of the groundwater contaminant plume. The two subcomponents include that portion of the groundwater contaminant plume that lies beneath the Navy's 105-acre parcel (on-site) and that portion of the groundwater contaminant plume that has migrated away from and off of the Navy's 105-acre parcel (off-site).

The Navy's selected remedy for on-site groundwater includes the following:

> An **institutional control** consisting of the placement of a restriction in the deed of transfer to the County of Nassau, New York prohibiting extraction of groundwater from within the boundaries of the 105-acre or Plant 20 parcels located at the Navy's former Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage facility. In order to aid in the compliance with the deed restriction, the Navy has completed the abandonment of the seven (7) deep production wells formerly located on the 105-acre parcel. The production wells were used for the extraction of groundwater as non-contact cooling water to support operations conducted by NGC during a time when Northrop Grumman leased the 105-acres from the Navy. If a future occupant of the Navy's 105-acre parcel wishes to pursue groundwater extraction, language will be included in the appropriate deed(s) of transfer requiring prior notification to and securing written permission from the Nassau County Department of Health and/or NYSDEC.

Further, the selected remedy for on-site groundwater is also based on the recognition that an existing groundwater extraction and treatment system, known as the Onsite Containment (ONCT) System, continues to contain and remediate VOC-contaminated groundwater emanating from the Navy's property. The ONCT system was constructed, and is currently being operated on an annual basis, by the Northrop Grumman Corporation and was installed as a component of NYSDEC's Regional Groundwater ROD. The Navy recognizes that continued operation of the ONCT system is paramount to ensuring that the Navy's selected remedy for on-site groundwater remains protective of human health and the environment. In the event that the ONCT system fails to continue to operate, along with the corresponding long-term maintenance and monitoring program for the ONCT system, the Navy also recognizes that it's on-site groundwater remedy would no longer be protective of human health or the environment. In this case the Navy will re-evaluate the protectiveness of the selected remedy on-site groundwater and implement all requisite measures as determined by the Navy in consultation with NYSDEC, NYSDOH, and the Nassau County Department of Health to ensure the continued protection of human health and the environment.

As stated above, NYSDEC's selected remedy for groundwater included a number of response measures that were categorized into a Groundwater Remedial Program and a Public Water Supply Protection Program. The components of these two programs for which the Department of Navy has agreed to implement are all considered to be located off of Navy property and are, therefore, being considered as off-site groundwater issues. The Navy's selected remedy for off-site groundwater includes the following:

**Groundwater Remedial Program**

- contaminant mass removal through groundwater extraction and treatment in an offsite area near the GM 38 monitoring well cluster;
- pre-design investigation to determine the optimal groundwater extraction location(s) in the GM 38 offsite treatment area(s);
- long term operation and maintenance of the GM 38 area remedy;
- additional groundwater investigation in the vicinity of well GM-75D2, or any other area identified as requiring additional groundwater investigation, in order to determine whether groundwater contamination represents a significant threat to downgradient public water supply wells and to further determine if a contaminant mass removal program, similar to the GM-38 Area program, is necessary. These actions will be implemented if a determination has been made by the Navy and NYSDEC that a significant threat to a downgradient public water supply exists.
- continued participation on the Technical Advisory Committee (TAC) that was established by NYSDEC that is comprised, at a minimum, of the involved regulatory Agencies, participating local water districts, and the Northrop Grumman Corporation.

The remedy for the high concentration of VOC contamination in groundwater near the GM-38 Area is anticipated to also be a pump and treat system due to the location of this contamination deep within the aquifer. Development of a design for the GM-38 Area remedy is currently underway.

Although the remedy for the GM-38 Area has not yet been installed, it is the Navy's position that remediation of this off-site portion of groundwater contamination does not directly affect the remedy that is in place for the groundwater beneath the Navy's 105-Acres. That remedy being the institutional control previously described.

**Public Water Supply Protection Program**

The Navy recognizes the importance of continued provision of potable water to those communities/populations served by water supply wells that are, or that may become, impacted by site-related contamination. To this end, the NYSDEC Groundwater ROD required that a public water supply protection program be implemented. The components of this program which the Department of Navy will implement include:

- installation of Vertical Profile Borings (VPBs) to gather water quality and lithologic data that will be used in the regional groundwater computer model to aid in the placement of outpost monitoring wells;
- development of a Public Water Supply Well Contingency Plan that uses data gathered during the VPB installation program and the regional groundwater computer model to identify the locations of the outpost monitoring wells and to also assign "trigger values" to each outpost well in order to determine if treatment or other comparable alternative measure will be required for other public water supply wellfields located downgradient of the VOC-contaminant plume. If triggered, this will alert the Navy to begin discussions with the appropriate water district regarding various treatment alternatives;
- installation of the outpost monitoring wells in areas upgradient of potentially affected water supply wellfields as outlined in the Public Water Supply Well Contingency Plan. To date, the regional groundwater computer model is predicting potential future impacts to the South Farmingdale Water District (SFWD) Wellfield that contains Well 4043 and a separate SFWD Wellfield containing Well 6150, as well as to the New York Water Service

(NYWS) Wellfield containing Well 8480. If future modeling efforts suggest that a water supply well may be impacted within some reasonable timeframe and it has been further determined that the projected contaminant flow path will not intercept an existing outpost monitoring well, then additional outpost monitoring well(s) would be designed, installed, and monitored.

- public water supply wellhead treatment or comparable alternative measures, as necessary, for the wellfields that become affected in the future, including but not limited to the wells listed above, from site-related contaminants.
- The provision of public water to residential or commercial structures that have private drinking water wells determined to be affected or potentially affected by the offsite migration of the NWIRP groundwater plume.

The status of each of the groundwater remedy components listed above is provided in the paragraphs below.

The Navy and Northrop Grumman have been working cooperatively with NYSDEC to address the groundwater contamination issues that exists beneath both complexes. This contaminated groundwater is referred to as "Operable Unit 2" (OU 2). A Final Feasibility Study for Regional Groundwater (OU2) dated November 2000, has been developed jointly by all three parties evaluated different remedial alternatives that would intercept and treat contaminated groundwater emanating from the Navy and Northrop Grumman properties.

In 1998, the Northrop Grumman Corporation successfully installed, as an interim remedial measure (IRM), a pump and treat containment system and currently continues to operate the pump and treat system. It's function is to intercept and contain contaminated groundwater from the Navy's 105-Acres and other Northrop Grumman properties so as to prevent VOC-contaminated groundwater from further migration to the south. The pump & treat containment system was designed using a computer model whose main assumption was that extraction rates for the various production wells located throughout both the Navy and Northrop Grumman properties remained at either current levels or lower. Extracting groundwater from these production wells at pumping rates higher than what was assumed in the IRM design, would adversely impact the effectiveness of the pump and treat containment system. To protect against such adverse impacts and by request of Nassau County, the Navy has abandoned all production wells located on the 105-acre parcel.

In March 2000, the Navy began another interim action consisting of the installation of a series of permanent groundwater monitoring wells based on a plan that was developed by Northrop Grumman. Construction of these wells is required so that the long-term effectiveness of the pump & treat system can be evaluated and groundwater sampling of these wells over time will also determine when the remediation goals set forth in the groundwater ROD have been met. Installation of these wells was completed in November 2001.

It should be noted that another component of the Public Water Supply Protection Program was the treatment of wellfields 4, 5, and 6 associated with the Bethpage Water District (BWD). Wells at these Plants had either been, or were thought would be, adversely impacted by VOC-contaminated groundwater emanating from Navy and NGC properties prior to issuance of NYSDEC's Groundwater ROD in 2001. Due to the immediate threat to public health, the Navy, in June 1996, supplied funding to BWD for the construction and 30-year operation of an air stripping treatment system installed on the BWD Plant 5 facility. This action was considered to be an interim action that was part of the Navy's Operable Unit 1 Soils ROD issued by the Navy in July 1995. In the mid-1990's, NGC took similar action to protect the water supplies at BWD Plants 4 and 6. In the event that the treatment systems installed on BWD Plants 4 and 6 are no longer funded, the Navy recognizes that it's OFF-SITE GROUNDWATER remedy would no longer be protective of human health or the environment. In this case, the Navy will re-evaluate the protectiveness of the OFF-SITE GROUNDWATER remedy and implement all requisite measures as

determined by the Navy in consultation with NYSDEC, NYSDOH, and the Nassau County Department of Health to ensure the continued protection of human health and the environment.

The remedy for the high concentration of VOC contamination in groundwater near the GM-38 Area is anticipated to also be a pump and treat system due to the location of this contamination deep within the aquifer. Presently, pre-design fieldwork is underway to install a series of vertical profile borings (VPBs) so that groundwater samples can be taken to better delineate the "hot-spot".

Although the remedy for the GM-38 Area has not yet been installed, it is the Navy's position that remediation of this off-site portion of groundwater contamination does not directly affect the remedy that is in place for the groundwater beneath the Navy's 105-Acres. That remedy being the pump & treat containment system described above.

## OTHER HAZARDOUS SUBSTANCE ISSUES

**Pesticides:** Table 3-6 of the Final Phase I EBS report lists pesticides used at NWIRP Bethpage since 1990. Pesticides and herbicides have been stored at an on-site pesticide shop for lawn maintenance since 1971. This area was located in the northern part of IR Site 1 and has since been fenced in as part of the IR Site. However, this area, known as AOC 30, is being retained by the Navy to address soils contaminated with metals and not pesticides.
Prior to 1970, the management and application of lawn care chemicals was contracted to local vendors. Soil samples taken at the three Navy IR sites routinely analyzed for pesticides.
The results indicated that little evidence of pesticides remained in IR site soils which represents the majority of the unpaved areas at NWIRP Bethpage.

**Radon:** It is the Navy's policy to only conduct radon survey at those Installations where residential uses exist or if residential uses are proposed in a land reuse plan. Neither of the above criteria exist at NWIRP Bethpage. Therefore, this section of the EBST will serve as notice to Nassau County that, to date, no radon surveys have been conducted at NWIRP Bethpage. It should be further noted that officials with the Nassau County Department of Health have indicated that radon testing is not necessary anywhere in the county because of the nature of the underlying soils.

**Medical Waste:** It was reported during preparation of the Calverton EBS, that small quantities of medical waste generated at first aid stations at Calverton were shipped to Grumman's headquarters in Bethpage, New York for proper disposal. This building is located on property that is, or was, owned by Northrop Grumman and not on the Navy's 105- acre property.

**Ammunition and Explosive Waste:** Based on records reviews and employee interviews, no information could be uncovered that would indicate that ammunition or explosive wastes were stored, released, or disposed of NWIRP Bethpage property, including the main 105-acre parcel.

**Nuclear, Biological and Chemical (NBC) Waste:** During the preparation of the Navy's Phase I EBS, a thorough search of Northrop Grumman's records as well as interviews of current and past Northrop Grumman employees was conducted in order to identify potential areas of environmental concern. During the Phase I EBS effort, no information could be found relating to the manufacturing, storing, or disposal of nuclear, biological, and chemical weapons. However, in order to satisfy previous concerns of NYSDEC with regards to the Calverton facility, this issue was specifically addressed to Northrop Grumman's environmental department.

Their reply is documented in a letter to the Navy dated 20 November 1997. In that letter, Northrop Grumman pointed out that under New York State regulations pertaining to licensees of radioactive materials, that they were required to maintain inventory records of all licensable quantities of radioactive materials used on Northrop Grumman properties. Their records, which go back at least 25 years, did not reveal that any radioactive material was unaccounted for.

Regarding the issue of biological and chemical weapons, Northrop Grumman stated that their was no information available regarding the presence of such weapons either being manufactured, or remaining, at either the Bethpage or Calverton facilities.

## ADJACENT PROPERTIES

NWIRP Bethpage is located within a densely developed area of Long Island containing several light manufacturing operations. Figure 6 shows NWIRP Bethpage bounded to the north, northeast, south, southeast and west by property that was or is currently owned by the Northrop Grumman Corporation while land located due east of NWIRP Bethpage contains a suburban landscape comprised of single-family homes on small lots.

Plant 35, located northeast of the Navy's property, was a former administrative facility for Northrop Grumman and was sold. Currently, this building is partially being occupied by Briar Cliff College for use as a classroom facility and Gaines Berland Investment Banking for use as office space. Plant 14, located due north of the Navy's property, is a dual administrative and laboratory facility used by Northrop Grumman for aerospace systems research and development. Plant 24, located due east of the Navy's recharge basins, was used by Northrop Grumman as a central shipping and receiving facility and has been sold to Robert Plan & Associates.

Research to prepare this chapter included a comprehensive review of environmental databases as specified in ASTM PS 37-95. The review, conducted as part of the Phase I EBS, was completed for a 1-mile search area surrounding NWIRP Bethpage. The database search revealed 131 sites with records of leaking underground storage tanks located within 1 mile of NWIRP Bethpage, however, most of these incidences took place either on NWIRP Bethpage itself or on Northrop Grumman property. The remainder of this list showed that some incidences did take place at small businesses located in the residential neighborhoods to the east and southeast of the Navy's property.

A windshield survey was then conducted within a smaller radius for the properties that were within 0.25 miles of the perimeter of NWIRP Bethpage. Table 2, included at the end of this section, is a copy of Table 5-3 of the Final Phase I EBS Report for NWIRP Bethpage, dated January 1998. The map number referenced in the first column of the table corresponds to Figure 5-1 of the Final Phase I EBS Report. The purpose of the windshield survey was to visually inspect any adjacent properties to determine if any had the potential to adversely impact the environment of NWIRP Bethpage. Only one property was observed that appeared to have that potential.

The only property identified by this database records review that was of any significance was the Hooker/RUCO Polymer facility, owned by the Occidental Chemical Corporation. The facility, shown on Figure 7, is located approximately 850 feet west of NWIRP Bethpage's western boundary. This facility is the only National Priority List (NPL) site within a 1-mile radius of the Navy's 105-acres. The site is an active manufacturing facility encompassing approximately 17 acres of land with industrial buildings, storage tanks, and recharge basins.

This site is currently under the regulatory authority of the United States Environmental Protection Agency, Region II who is overseeing soil and groundwater investigations that have been or are currently being conducted at this site. Contaminated soils that have been identified at this site have been concluded to be confined to the Hooker/RUCO property and have little potential to adversely affect the Navy's property. However, groundwater has been found to be contaminated by several chlorinated solvents. Both the Phase I EBS and the Northrop Grumman ESAs concluded that groundwater contamination at this site could be adversely impacting the quality of groundwater underlying NWIRP Bethpage.

# FIGURE 6
# SURROUNDING PROPERTIES

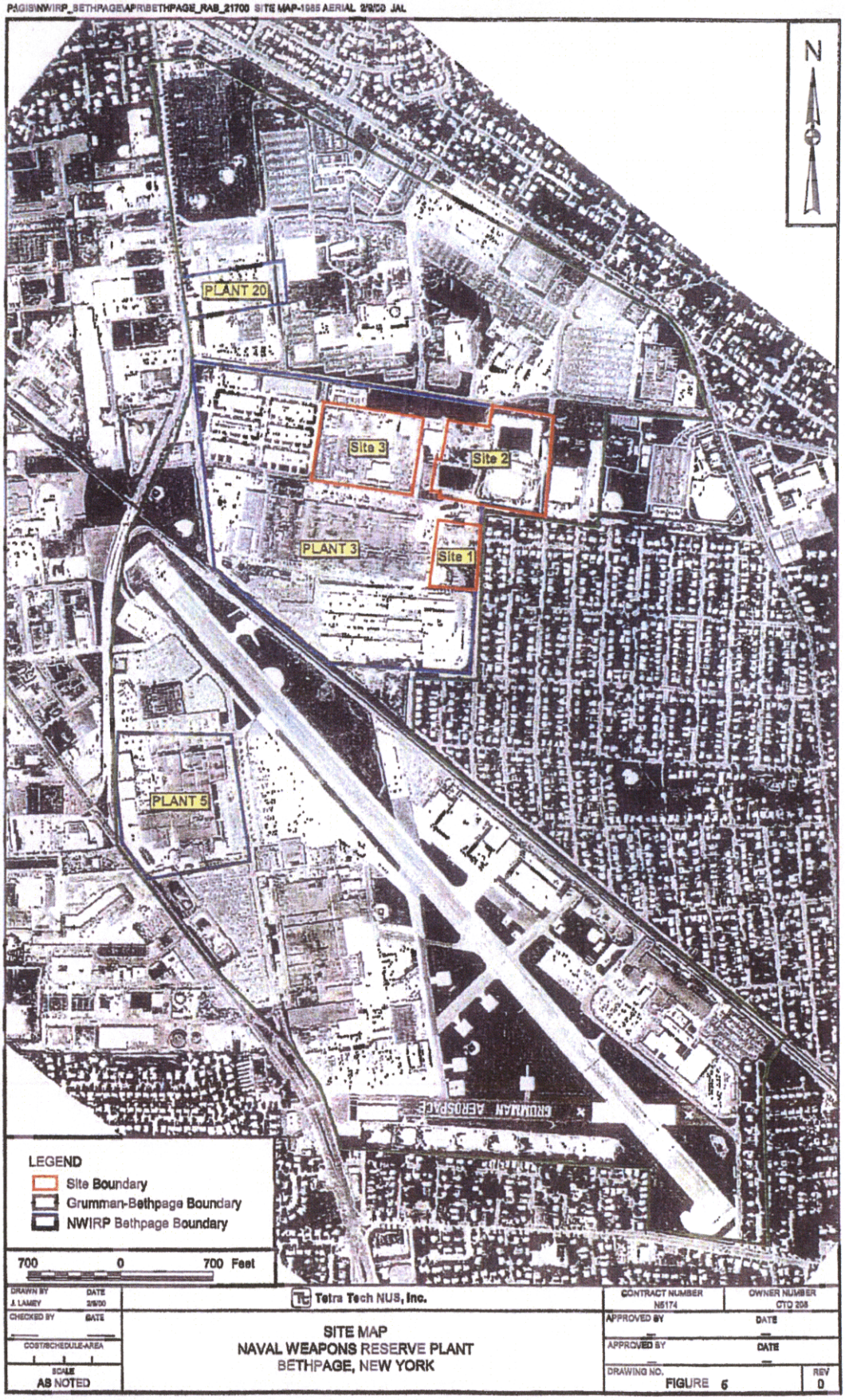

FIGURE 7
SITE MAP SHOWING HOOKER/RUCO

TABLE 2

SURROUNDING PROPERTIES WITH POTENTIAL ENVIRONMENTAL CONCERNS

ENVIRONMENTAL DATABASE SITES WITHIN 0.25-MILE VISUAL SITE RECONNAISSANCE AREA
NWIRP, BETHPAGE, NEW YORK

| Map Number[1] | Name | Address | Records[2] | Noted in VSR[3] | Notes[4] |
|---|---|---|---|---|---|
| 0 | RUCO Polymer | New South Road | NPL, CERCLIS, SHWS, LUST, Spills, ROD, CORRACTS, RCRIS-SQG | Yes | Also known as Hooker Chemical Site. No environmental problems evident from visual reconnaissance only. |
| 66 | L&D Service Station (formerly Getty) | 723 S. Oyster Bay Road | LUST, RCRIS-SQG, FINDS, AST | Yes | Also noted in old records as Getty Petroleum. UST leak occurred during tank test 3/17/88; cleanup 4/20/88. Registered 180-gal waste oil double wall AST. No visible environmental problems. |
| 66 | Behrouz Behzadpour | 600 S. Oyster Bay Road | Spills | No | Residence. 1-gal petroleum spill 12/28/94. Corrective action taken. |
| 77 | Frankie D's Service Station | 1234 Stewart Avenue | RCRIS-SQG, AST | Yes | Registered 250-gal #2 fuel oil double wall AST. No visible environmental problems. |
| 87 | Traffic accident scene | Stewart Avenue at Balsam Place | Spills | No | 10-gal petroleum spill during traffic accident outside of Grumman badging office on Stewart Ave 12/18/91. Cleanup 12/19/91. |
| 90 | Grand Prix Performance | 777 S. Oyster Bay Road | RCRIS-SQG, AST | No | Registered 275-gal motor oil AST with diking and pad. |
| 95 | Dexter Magnetic Materials | 400 Karin Lane | RCRIS-SQG, FINDS | Yes | No visible environmental problems |
| 96 | Bonanza Fabric Company | 35 Karin Lane | LUST | Yes | Leak 4/6/88, cleanup 5/16/88. No visible environmental problems. |
| 102 | Eagle Insurance Co. | 999 Stewart Avenue | LUST | No | No details on LUST incident. |
| 106 | Long Island Lighting Co. | 60 Commerce Place | Spills | No | 5-gal petroleum spill on 1/15/92 due to equipment failure. Cleanup 1/21/92. |
| 107 | Forest Chem Industries | 70 Commerce Place | Spills | No | Petroleum spill 10/10/89, cleanup 12/17/90. |
| 108 | Shell Gas Station | Stewart Ave, at Farmers Ave. | LUST, FINDS, RCRIS-LQG | Yes | LUST incident a tank test failure 1/29/88, cleanup 4/6/88. No visible environmental problems. |

**TABLE 2**
**ENVIRONMENTAL DATABASE SITES WITHIN 0.25-MILE VISUAL SITE RECONNAISSANCE AREA**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 2 OF 6**

| Map Number[1] | Name | Address | Records[2] | Noted in VSR[3] | Notes[4] |
|---|---|---|---|---|---|
| 109 | 2 Commerce Street, Bayonne, New Jersey | 2 Commerce Street | Spills | No | Appears to be a record error - discusses petroleum spill effects on Kill Van Kull, a waterbody not on Long Island. |
| 113 | Variety Petrol (P&G Fuel) | 317 New South Road | LUST | No | LUST incident a tank overfill 2/13/95. Corrective action taken. |
| 113 | Sid Harvey Refrigeration, Heating, and Air Conditioning | 317 New South Road | Spills | Yes | 2-gal petroleum spill 10/2/90, cleanup 10/9/90. No visible environmental problems. |
| 113 | ERM Northeast | 335 New South Road | LUST | No | LUST incident a tank test failure 9/16/92, cleanup 12/8/93. |
| 113 | Commercial Building #2 | 327 New South Road | AST | No | Registered 1,500-gal #2 fuel oil double-wall AST. |
| 115 | Salvati Foods | 595 S. Broadway. | UST | Yes | Registered #2 fuel oil UST, no details on containment. No visible environmental problems. Address in records different than observed location. |
| 116 | Hicksville Department of Public Works | New South Road at Morris Street | RCRIS-LQG, FINDS | Yes | No visible environmental problems. |
| 123 | Bethpage Metro | 900 Stewart Avenue | LUST, AST | No | LUST incident a tank test failure 12/31/87, cleanup 1/14/88. Registered 275-gal waste oil AST without secondary containment. |
| 123 | Bethpage VFSD | Stewart Avenue at Cherry Street | LUST, RCRIS-LQG, FINDS | Yes | LUST incident a tank test failure 8/1/87, cleanup 12/10/87. No visible environmental problems. |
| 144 | Residence | 205 Sycamore Avenue | Spills | No | Residence. 1-gal petroleum spill due to equipment failure 8/17/95, cleanup 8/18/95. |
| 145 | Romano Residence | 160 Sycamore Avenue | Spills | No | Residence. 5-gal petroleum spill due to equipment failure 11/29/92, cleanup 12/10/92. |

## TABLE 2

**ENVIRONMENTAL DATABASE SITES WITHIN 0.25-MILE VISUAL SITE RECONNAISSANCE AREA**
**NWIRP, BETHPAGE, NEW YORK**
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| Map Number[1] | Name | Address | Records[2] | Noted in VSR[3] | Notes[4] |
|---|---|---|---|---|---|
| 148 | Masi Residence | 265 Seventh Street | Spills | No | Residence. Petroleum spill due to vandalism 8/4/88, cleanup 11/25/88. |
| 149 | Edward Coleman Residence | 252 North Eleventh Street | Spills | No | Residence. 6-gal petroleum spill due to equipment failure 4/23/94, cleanup 4/25/94. |
| 155 | Fame Trucking, Inc. | 246 Eighth Street | RCRIS-SQG, FINDS | No | None. Residential area - likely a home business. |
| 157 | Blue Flame | 3 Washington Parkway | LUST, AST | Yes | No visible environmental problems. Several unlabeled empty 55-gallon drums observed from road. One LUST incident a tank failure 8/28/87, cleanup 12/24/90; other dated 5/13/93, corrective action taken but no other details. |
| 158 | Coral Graphics Services | 840 South Broadway | RCRIS-LQG, FINDS | Yes | No visible environmental problems. |
| 161 | DC Femia Auto Collision | 44 Washington Parkway | FINDS, RCRIS-SQG | Yes | No visible environmental problems. |
| 161 | John Grace & Co. | 34 Washington Parkway | FINDS, RCRIS-SQG | No | None. |
| 165 | Blue Flame | 17 Hazel Street | RCRIS-LQG | Yes | No visible environmental problems. |
| 166 | Werner Truck Company | 39 Jefry Street | Spills | No | 30-gal petroleum spill due to equipment failure 9/23/92, cleanup complete 9/23/92. |
| 166 | National Metal Spraying | 40 Jefry Street | RCRIS-SQG, FINDS | No | None. |
| 168 | New York Telephone | 920 S. Oyster Bay Road, Room 300 | RCRIS-LQG, FINDS | No | None. |
| 170 | Pride Utilities, Inc. | 70 Washington Parkway | RCRIS-SQG | Yes | No visible environmental problems. |
| 172 | General Electric | 939 South Broadway | Spills | No | 20-gal. petroleum spill due to equipment failure, cleanup 12/31/88. |

**TABLE 2**
**ENVIRONMENTAL DATABASE SITES WITHIN 0.25-MILE VISUAL SITE RECONNAISSANCE AREA**
**NWIRP, BETHPAGE, NEW YORK**
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| Map Number[1] | Name | Address | Records[2] | Noted in VSR[3] | Notes[4] |
|---|---|---|---|---|---|
| 172 | TBG Cogen Partners | 939 South Broadway | Spills, AST | Yes | No visible environmental problems. Map location incorrect; actual location is immediately south of Plant 05. Two registered gasoline ASTs in vaults. 32-gal petroleum spill due to equipment failure 8/7/92, cleanup 3/18/93. |
| 174 | Photo Works | 25 Bloomingdale Road | RCRIS-LQG | No | None. |
| 175 | C&D Type Setters | 960 South Broadway | RCRIS-LQG, FINDS | No | None. |
| 177 | Mr. Navanhoff | 37 Bloomingdale Road | Spills | No | Residence, 5-gal petroleum spill due to equipment failure, cleanup 9/20/97. |
| 178 | Avis Car Rental | 980 South Broadway | LUST | No | LUST incident a tank failure 2/21/89, cleanup 2/21/89. |
| 179 | Al Andriano Residence | 159 Twelfth Street | LUST | No | LUST incident a tank failure 2/23/93, cleanup 2/24/93. |
| 180 | Madan or Rajan Residence | 169 Sixth Street | Spills | No | Residence. 4-gal petroleum spill due to equipment failure 4/9/90, cleanup 4/17/90. |
| 180 | Contractor (?) | 173 North Sixth Street | Spills | No | 46-gal petroleum spill due to human error 12/17/93, cleanup 2/23/95. |
| 182 | Texaco | 1000 South Broadway | RCRIS-LQG | No | None. |
| 185 | Reliance | 167 Ninth Street | Spills | No | 1-gal petroleum spill 11/17/95, cleanup 11/17/95. |
| 186 | McManus Residence | 159 Tenth Street | Spills | No | Residence. Petroleum spill dated 11/17/95, cleanup 11/17/95. |
| 187 | Sanz Residence | 75 Meade Avenue | Spills | No | Residence. 7-gal petroleum spill due to equipment failure 5/15/92, cleanup 6/24/92. |
| 189 | Continental Collision | 77B Bloomingdale Road | RCRIS-SQG, FINDS | No | None. |
| 189 | Seal-It | 75 Bloomingdale Street | LUST, RCRIS-SQG | No | LUST incident dated 3/26/92, cleanup 1/14/93. |

**TABLE 2**
**ENVIRONMENTAL DATABASE SITES WITHIN 0.25-MILE VISUAL SITE RECONNAISSANCE AREA**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 5 OF 6**

| Map Number[1] | Name | Address | Records[2] | Noted in VSR[3] | Notes[4] |
|---|---|---|---|---|---|
| 192 | Two Guys Auto Repair | Hicksville Road and Broadway | AST | No | Two registered ASTs: 250-gal waste oil tank and 275-gal motor oil tank, both without secondary containment. |
| 192 | Gulf Service Station | Hicksville Road and Broadway | LUST | No | Two Guys Auto Repair and the Gulf Station appear to be located on same property. LUST incident dated 10/28/88; cleanup 12/7/88, no other details. |
| 197 | Jamoco Heating and Cooling | 105 Bloomingdale Road | FINDS | No | None. |
| 200 | Cascade Water Service | 113 Bloomingdale Road | FINDS | No | None. |
| 201 | Sunoco | 125 Bloomingdale Road | RCRIS-LQG, FINDS | No | None. |
| 205 | Dynamic Painting Company | 7 Willis Court | RCRIS-SQG, FINDS | No | None. |
| 206 | None Listed | 127 Engineers Road | Spills | No | Petroleum spill due to abandoned drums 2/24/86, cleanup 2/22/88. |
| 206 | Renaissance Design & Building, Inc. | 91 Engineers Road | RCRIS-SQG FINDS | No | None. |
| 206 | Shorewood Packaging | 55 Engineers Road | Spills | No | Spill date 4/10/90, cleanup 4/12/90. |
| 207 | Traffic accident scene | 625 Hicksville Road | Spills | No | 10-gal petroleum spill due to traffic accident 6/18/93, cleanup 6/10/94. |
| 207 | American Lithotech | 631 Hicksville Road | RCRIS-LQG, FINDS | No | None. |
| 210 | Hicksville Post Office | 260 Engineers Road | RCRIS-LQG, FINDS | No | None. |
| 211 | Boces Nassau Tech Bethpage | 610 Hicksville Road | RCRIS-SQG, FINDS | No | None. |
| 214 | Absolute Photo, Inc. | 184 Quality Plaza | RCRIS-LQG | No | None. |

**TABLE 2**
**ENVIRONMENTAL DATABASE SITES WITHIN 0.25-MILE VISUAL SITE RECONNAISSANCE AREA**
***NWIRP, BETHPAGE, NEW YORK***
**PAGE 6 OF 6**

| Map Number[1] | Name | Address | Records[2] | Noted in VSR[3] | Notes[4] |
|---|---|---|---|---|---|
| 216 | JC Precision Automotive | 590 Hicksville Road | AST | No | Registered 275-gal waste oil AST without secondary containment. |
| 218 | Phoenix Laboratories, Inc. | 175 Lauman Lane | RCRIS-SQG, FINDS | Yes | No visible environmental problems. |
| 218 | Progressive Circuits, Inc. | 180R Lauman Lane | RCRIS-SQG, FINDS | No | None. |
| 220 | Maytell Construction Company | 146 Lauman Lane | Spills | No | 2-gal petroleum spill due to equipment failure 1/17/91, cleanup 8/4/92. |
| 221 | Slomins, Inc. | 125 Lauman Lane | LUST, RCRIS-LQG, UST, FINDS | Yes | 2 LUST incidents: tank overfill 2/5/90, cleanup 2/5/90; tank test failure 4/17/91, cleanup 3/2/92; and tank test failure 7/10/95 with no cleanup details. No visible environmental problems. |
| 222 | Greco Brothers Bulk Terminal | Lauman Lane at Hicksville Road | UST, AST | Yes | Two registered USTs in service: a 20,000-gal kerosene tank and a 1,000-gal kerosene tank. One registered AST in service: fuel oil, no details on size (visual inspection suggests 100,000-gal plus). Four registered USTs that have been removed. No visible environmental problems. |

1 Refers to map location numbers in Figure 5-1.
2 See text of Section 5.1 for explanation of record type abbreviations.
3 Visual site reconnaissance (windshield survey) completed for Phase I EBS in May 1997.
4 Notes on spills, LUST incidents, and tank records are based on data in EDR, 1997. Other notes from notes taken during VSR.

## ENVIRONMENTAL CONDITION OF PROPERTY AND SUITABILITY TO TRANSFER

The environmental condition assigned to each unit of real property on NWIRP Bethpage's 105-Acres by the Phase I EBS is indicated using one of the following color-coded ratings:

| | |
|---|---|
| Category 1/White | Areas where no storage, release, disposal, or migration of hazardous substances or petroleum products has occurred. |
| Category 2/Blue | Areas where only storage of hazardous substances or petroleum products has occurred. |
| Category 3/Light Green | Areas of contamination below action levels. |
| Category 4/Dark Green | Areas of known contamination where remedial or removal actions have been taken. |
| Category 5/Yellow | Areas of known contamination where remedial or removal actions are underway. |
| Category 6/Red | Areas of known contamination where no remedial or removal actions have yet been initiated. |
| Category 7/Gray | Areas requiring further investigation. |

Table 10-1, found in Section 10.0 of the Navy's Final Phase II EBS for NWIRP Bethpage dated February 2002, is meant to be a summary list of each unit of Government-owned real property on the 105-acres and shows it's corresponding environmental condition rating. A copy of this table has been provided as Appendix B to this EBST. Buildings are identified by their Northrop Grumman building number and are also shown on Figure 6-1 of Section 6.0 of the Final Phase I EBS, dated January 1998. A separate figure, Figure 6-2, was provided in the Phase I EBS to show a close-up of the interior of Plant 03 where the majority of environmental sampling for the 105-acres took place.

Color-coded rating maps were also provided in Chapter 10 of the Final Phase II EBS, dated February 2002. Copies of these figures have been extracted from the Phase II EBS and included in this section of the EBST. Figure 8 is a copy of Figure 10-1 that shows the spatial extent of rated areas contained within Plant 03. The ratings correspond to a column on Table 10-1 labeled "Phase II EBS Rating". Figure 9 is a copy of Figure 10-2 and the spatial extent of rated areas for the remainder of the 105-acres.

Properties rated 1/White, 2/Blue, 3/Light Green, or 4/Dark Green are considered suitable for transfer. Properties rated as either Category 5/Yellow, 6/Red, or 7/Gray are not considered suitable for transfer until further environmental investigations and/or remediations are completed. Areas that have been rated in one of the three latter categories are limited to IR Site 1 and the six (6) other AOCs, discussed in Section 2.6 of this EBST, that have been included into the Navy's IR Program. As previously mentioned, the Navy will has combined all of these areas into one contiguous parcel measuring approximately 9 acres that will not be part of the initial conveyance to Nassau County. Figure 10 shows the configuration of the 9-acre parcel that is to be retained by the Navy in order to continue the appropriate response actions under NWIRP Bethpage's IR Program.

The column in Table 9-5 of the Final Phase II EBS entitled "Resolution" will serve as the notice of disclosure to Nassau County which the Government, under CERCLA 120(h), is required to include in the transfer documents for the property.

In addition to all of the buildings located on the 105-acres, the IR Sites were also given an environmental category rating. The following paragraphs describe the ratings given to each IR Site:

IR Site 1 - Former Drum Marshaling Area

This area is not considered suitable for transfer since implementation of the ROD for OU 1 has not been fully completed at this site nor at the other AOCs that have been included as part of IR Site 1. It is for this reason that this parcel has been given an environmental condition rating of Category5/Yellow meaning that releases of hazardous substances or petroleum products have occurred in excess of cleanup standards and that the appropriate response is in progress. As stated before, the Navy will be retaining this 9-acre parcel until such time that the appropriate remedial actions have been completed and the parcel determined to be suitable for transfer.

Since the Navy will be retaining this parcel in order to continue it's IR Program, a clause will be included in the transfer documentation that will grant the Navy access to any of the areas to be retained or any adjoining area(s) to conduct the appropriate environmental actions.

IR Site 2 - Recharge Basin Area

IR Site 2 was subdivided into three areas to better describe its environmental condition. The recharge basins, themselves, were rated as Category 3/Light Green in the Phase I EBS because low concentrations of several VOCs and metals were detected in sediment and surface water samples collected from the basins as part of the Navy's RI completed in 1992. The RI concluded that although the recharge basins could serve to direct contaminated stormwater to the underlying groundwater, the condition of the basins themselves did not represent a direct threat to the groundwater. Despite this conclusion, Northrop Grumman elected to conduct additional sampling of the recharge basins in 1998 as part of their efforts to vacate the 105-acres. The results were reported in a Phase II ESA dated April 22, 1998 (ERM, 1998b). The Phase II ESA report noted that low concentrations of certain semi-volatile organic compounds, metals, and PCBs were detected in the samples but that further actions were not warranted. Thus, the rating of 3/Light Green assigned in the Phase I EBS remained unchanged by the findings of the Phase II ESA.

An area located to the west of the recharge basins, known as the former sludge bed area, was rated as Category 5/Yellow in the Phase I EBS. PCB concentrations as high as 36.6 mg/kg were detected in subsurface soil samples taken at the location of the former sludge beds. In response, soil at the former location of the sludge beds was excavated in 1996 to attain a soil PCB concentration of less than 10 mg/kg as described in the July 1995 ROD for OU 1. The rating of Category 5/Yellow was assigned because, although the excavation had been completed, it had not yet been approved by the NYSDEC. A summary of field activities and confirmation sampling was presented in a Post Remedial Action Letter Report dated June 1996. Since no adverse comments were received from Bethpage's regulatory community regarding this report, a final rating for this area has been changed to Category 4/Dark Green for this EBST.

The third area within the boundaries of IR Site 2 contained a Sand Shed (Building 03-49). This structure was rated as Category 1/White during the Phase I EBS since sand was the only material ever stored within this structure.

With the successful completion of the Navy's remedial action, including implementation of the permeable soil or gravel cover along with the subsequent investigations of the basins themselves conducted by Northrop Grumman, the Navy believes that the entire recharge basin property appears to be environmentally suitable for transfer from the Navy to Nassau County for continued use and management as a recharge basin facility.

IR Site 3 - Salvage Storage Area

As discussed above, the two-phase RI concluded that no substantial contamination existed at this site that posed unacceptable risks to human health or the environment. However, as part of the July 5, 1995 ROD for OU 1, an institutional control was to be implemented for those areas where residual metal and/or organic compounds were expected to remain to insure that all direct contact pathways with these residual chemicals were eliminated. For IR Site 3, it was the Navy's intention, as part of the Phase II EBS effort, to resample surface soils at IR Site 3 to determine if any residual compounds remained. However, in the Spring of 1998, Northrop Grumman, as part of their deactivation requirements for the Navy's 105-acres, had removed all of the spare metal parts associated with the Salvage Storage Area.

As part of this effort, and at the direction of the Navy's Caretaker Support Office, Northrop Grumman also cleaned and raked the entire Salvage Storage Area in order to remove all remaining metal debris and rocks greater than 1" in diameter. The areas of the Salvage Storage Area that were not covered by asphalt were then covered with 2 inches of topsoil and revegetated. Based on the above, this area was given an environmental condition rating of 3/Light Green due to the fact that chemicals were detected at this site but at levels that were below action levels. and, therefore, did not require a response action.

Based on the Navy's conclusions that chemicals in surface soils did not exist at levels which would require a response action, plus the fact that the direct contact pathway to any residual chemicals was eliminated due to the efforts of Northrop Grumman to cover and re-vegetate the site, and Nassau County's plan to reuse this land for additional parking, the Navy believes that no additional actions are required for the continued protection of human health or the environment.

Groundwater

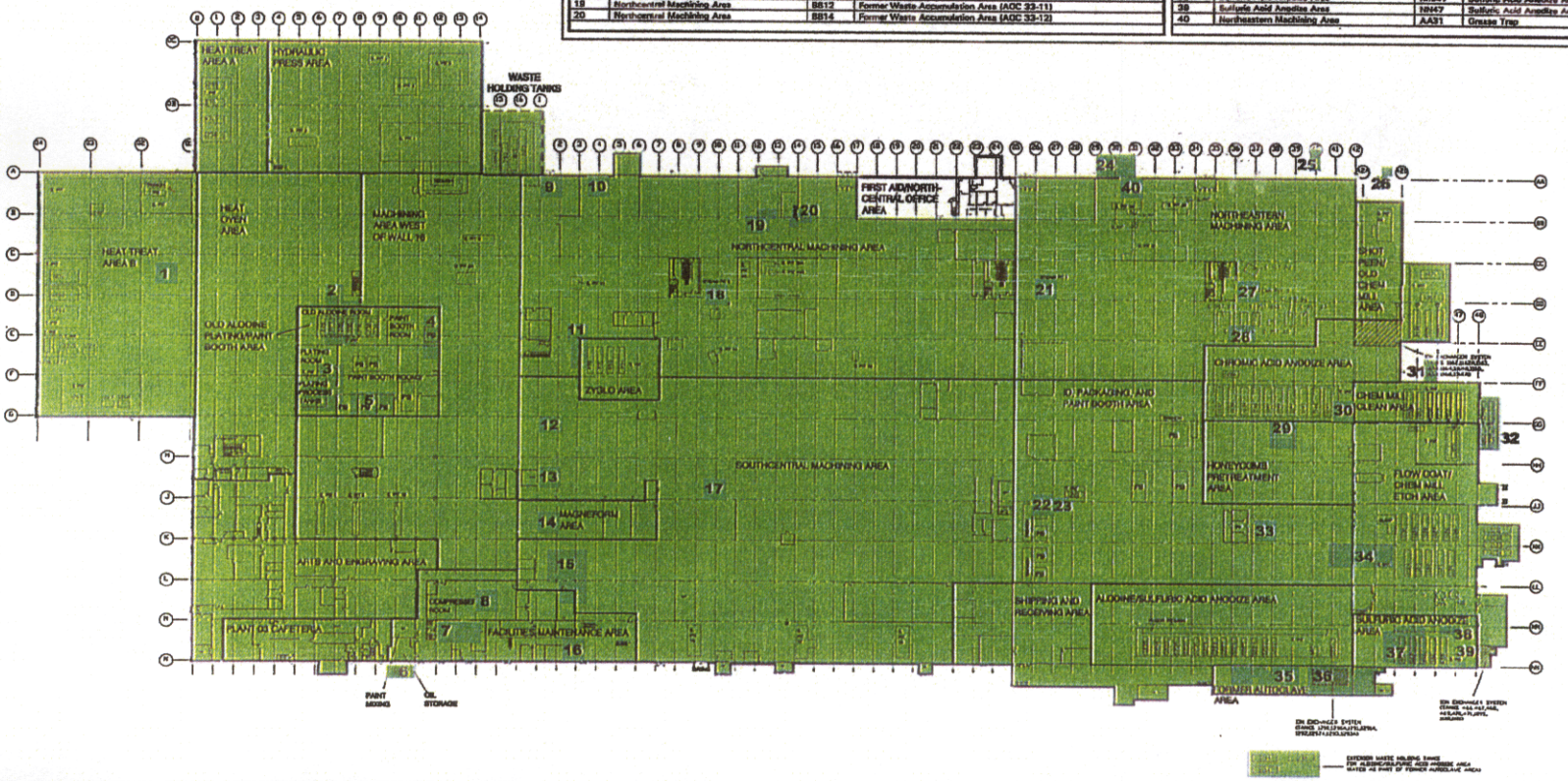
Based on previous discussions within this EBST, the groundwater beneath the 105-Acres has been given a Category Rating of 4/Dark Green recognizing that the pump & treat containment system currently in place on Northrop Grumman property is capturing and treating the deeper contaminated groundwater emanating from the Navy's 105-Acre parcel.

In addition, the Category Rating 4/Dark Green will also recognize that the Navy's Air Sparging/Soil Vapor Extraction (AS/SVE) System that was installed as a soils remedy at IR Site 1 is also indirectly providing treatment to the shallow contaminated groundwater beneath IR Site 1. This groundwater has been identified as the most contaminated groundwater on the 105-Acre Parcel. This system was not previously discussed in any detail in this EBST as it is constructed on that part of the 105-Acres that is being retained by the Navy and will not be part of the initial conveyance to Nassau County.

## DESCRIPTION OF AREAS SHOWN AS 4(DARK GREEN)

| Feature | Area | Nearest Column | Description |
|---|---|---|---|
| 1 | Heat Treat Area B | C02 | Drywell 24 |
| 2 | Old Alodine/Plating/Paint Booth Area | E7 | Old Alodine Area (AOC 2) |
| 3 | Old Alodine/Plating/Paint Booth Area | F8 | Plating Area (AOC 3) |
| 4 | Old Alodine/Plating/Paint Booth Area | EI2 | Paint Booth (AOC 1-8) |
| 5 | Old Alodine/Plating/Paint Booth Area | G8 | Paint Booths (AOCs 1-5 and 1-6) |
| 6 | Facilities Maintenance Area | M10 | Paint Mixing Room (AOC 24) (Exterior) |
| 7 | Facilities Maintenance Area | M13 | Compressor #1 Floor Drain |
| 8 | Facilities Maintenance Area | M14 | Compressor #3 Floor Drain |
| 9 | Northcentral Machining Area | AA1 | Historic Drywell |
| 10 | Northcentral Machining Area | AA4 | Grease Trap |
| 11 | Northcentral Machining Area | EE3 | Former Waste Accumulation Area (AOC 33-9) |
| 12 | Southcentral Machining Area | GG1 | Drywell (AOC 19) |
| 13 | Southcentral Machining Area | JJ2 | Drywell |
| 14 | Magnaform Area | KK1 | Floor Drain |
| 15 | Southcentral Machining Area | LL3 | Historic Paint Booth (AOC 1-20) |
| 16 | Facilities Maintenance Area | NN3 | Slop Sink |
| 17 | Southcentral Machining Area | JJ10 | Steam Pit Drain |
| 18 | Northcentral Machining Area | DD10 | Steam Pit Drain |
| 19 | Northcentral Machining Area | BB12 | Former Waste Accumulation Area (AOC 33-11) |
| 20 | Northcentral Machining Area | BB14 | Former Waste Accumulation Area (AOC 33-12) |

| Feature | Area | Nearest Column | Description |
|---|---|---|---|
| 21 | Northeastern Machining Area | DD27 | Steam Pit Drain |
| 22 | Identification, Packaging, & Paint Booth Area | JJ27 | Condensate Pit Drain |
| 23 | Identification, Packaging, & Paint Booth Area | JJ27 | Former Waste Accumulation Area (AOC 33-19) |
| 24 | Northeastern Machining Area | AA30 | Former Paint Waste Holding Tank (AOC 1-28) (Exterior) |
| 25 | Shot Peen/Old Chem Mill Area | AA40 | Old Chem Mill Area (AOC 14) (Exterior) |
| 26 | Shot Peen/Old Chem Mill Area | AA43 | Old Chem Mill Area (AOC 14) (Exterior) |
| 27 | Northeastern Machining Area | DD37 | Steam Pit Drain |
| 28 | Northeastern Machining Area | EE36 | Machine Pit |
| 29 | Honeycomb Pretreatment Area | GG38 | Honeycomb Pretreatment Area (AOC 13) |
| 30 | Chromic Acid Anodize Area | GG42 | Grease Trap |
| 31 | Chem Mill Clean Area | FF48 | Chem Mill Clean Area (AOC 6) (Exterior) |
| 32 | Chem Mill Clean Area | GG48 | Paint Waste Holding Tanks (Exterior) |
| 33 | Identification, Packaging, & Paint Booth Area | KK37 | Steam Pit Drain |
| 34 | Flow Coat/Chem Mill Etch Area | KK42 | PCB Contaminated Area (Part of AOC 34) |
| 35 | Former Autoclave Area | NN38 | Old Autoclave Area (AOC 34) |
| 36 | Former Autoclave Area | NN41 | Old Autoclave Area (AOC 34) |
| 37 | Sulfuric Acid Anodize Area | NN44 | Sulfuric Acid Anodize Area (AOC 9) |
| 38 | Sulfuric Acid Anodize Area | MM47 | Sulfuric Acid Anodize Area (AOC 9) |
| 39 | Sulfuric Acid Anodize Area | NN47 | Sulfuric Acid Anodize Area (AOC 9) |
| 40 | Northeastern Machining Area | AA31 | Grease Trap |




### Legend

- 1 - No Storage, Release or Disposal of Hazardous Substances or Petroleum Products
- 2 - Storage of Hazardous Substances or Petroleum Products, No Known Releases
- 3 - Known Releases of Hazardous Substances or Petroleum Products Below Action Levels
- 4 - Known Releases of Hazardous Substances or Petroleum Products Above Action Levels, Response Completed
- 5 - Known Releases of Hazardous Substances or Petroleum Products Above Action Levels, Response In Progress
- 6 - Known Release of Hazardous Substances or Petroleum Products Above Action Levels, No Response Initiated
- 7 - Additional Evaluation Required

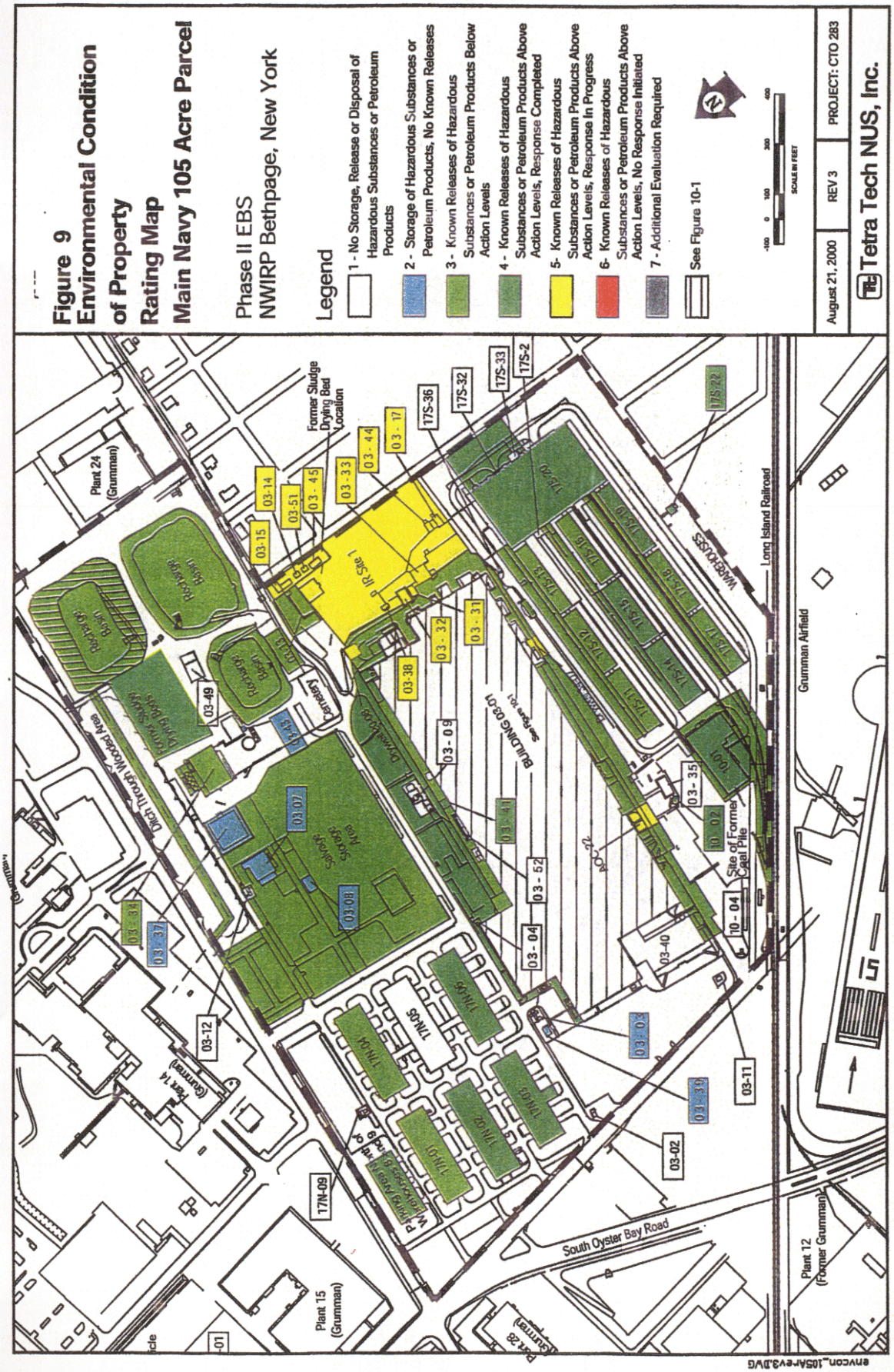
0 30 60 120 180
SCALE IN FEET

Jan. 10, 2000 | REV 2 | PROJECT: CTO 253

Tetra Tech NUS, Inc.

**Figure 8**
**Environmental Condition of Property Ratings Map**
**Interior of Building 03-01**
**Phase II EBS**
**NWIRP Bethpage, New York**

# FIGURE 9
# ENVIRONMENTAL CONDITION OF THE REMAINDER OF THE NAVY'S 105-ACRES



# FIGURE 10
# 8.5-ACRE PARCEL TO BE RETAINED BY NAVY

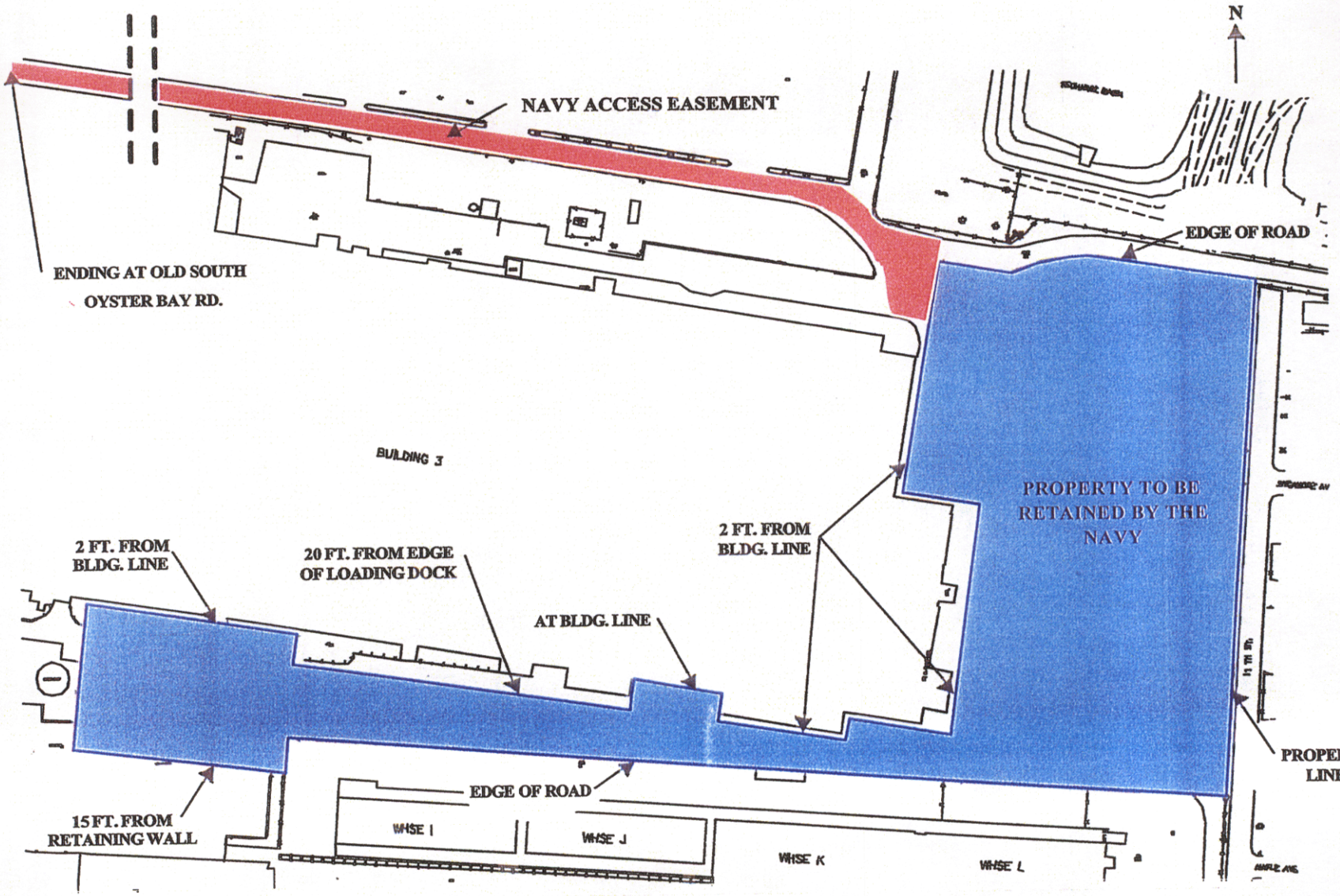



FIGURE 10
8.5-ACRE PARCEL TO BE RETAINED BY THE NAVY

## REFERENCES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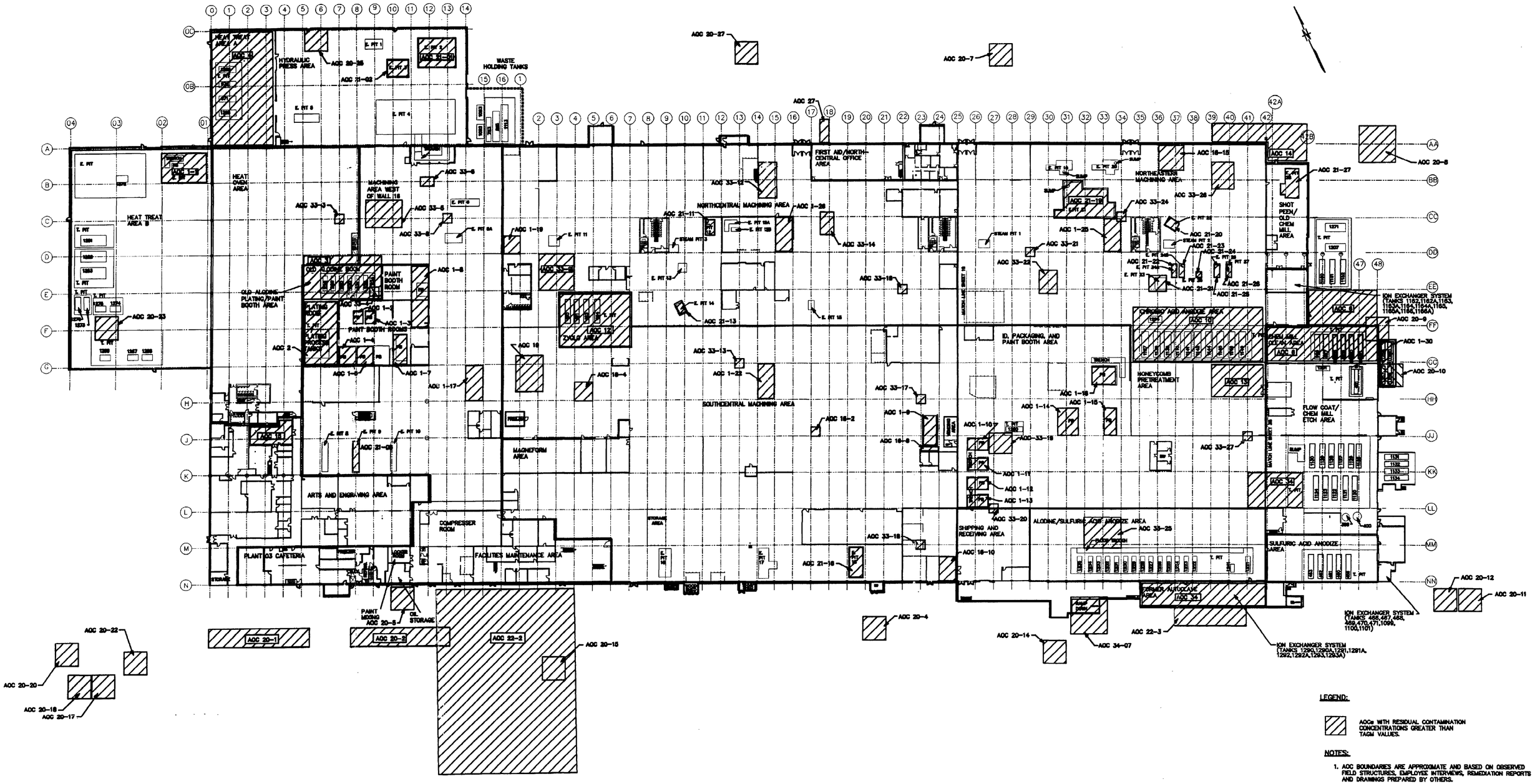
# APPENDIX A
# SUMMARY OF AOCs

DRAWING NO. FIGURE 10-3 REV. 0




LEGEND:

AOCs WITH RESIDUAL CONTAMINATION CONCENTRATIONS GREATER THAN TAGM VALUES.

NOTES:

1. AOC BOUNDARIES ARE APPROXIMATE AND BASED ON OBSERVED FIELD STRUCTURES, EMPLOYEE INTERVIEWS, REMEDIATION REPORTS AND DRAWINGS PREPARED BY OTHERS.
2. AOC BOUNDARIES WERE GENERALLY SELECTED AS FOLLOWS:
   - WHERE APPLICABLE, WALLS WERE USED. (FOR EXAMPLE, PAINT BOOTHS)
   - FOR PITS, THE BOUNDARY IS OUT SIDE THE TOP OF THE PIT.
   - SATELLITE ACCUMULATION AREAS ARE 10' X 10'. DRY WELLS ARE 25' X 25'
   - ANALYTICAL RESULTS WERE CONSIDERED.

0 50 100
SCALE IN FEET

| NO. | DATE | REVISIONS | BY | CHKD | APPD |
|---|---|---|---|---|---|

| REFERENCES | NO. | RELEASED FOR | BY | DATE |
|---|---|---|---|---|

DRAWN BY HJB DATE 1/9/01
CHECKED BY DATE
COST/SCHED--AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

AOCs WITH RESIDUAL CONTAMINATION
INTERIOR OF BUILDING 03-01
PHASE II EBS
NWIRP BETHPAGE, NEW YORK

CONTRACT NO. 7576 | OWNER NO. ----
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 8A | REV. 0

ACAD: 7576CM12.dwg 01/24/02 HJB

00771874

DRAWING NO. FIGURE 10-4 REV. 0

PLANT 28 (GRUMMAN)
PLANT 14 (GRUMMAN)
PLANT 15 (GRUMMAN)
PLANT 24 (GRUMMAN)
PLANT 25 (GRUMMAN)
PLANT 12 (GRUMMAN)
DITCH THROUGH WOODED AREA
FORMER SLUDGE DRYING BEDS
IR SITE 2
IR SITE 3
IR SITE 1
RECHARGE BASIN
RECHARGE BASIN
RECHARGE BASIN
SALVAGE STORAGE AREA
CEMETARY
BLDG 20
AOC 20-3
AOC 20-4
SOUTH OYSTER BAY ROAD
BLDG 115
BLDG 114
BLDG 21
BLDG 22
AOC 17-12
AOC 17-10
17N-04
17N-05
17N-01
AOC 17-8
17N-02
AOC 17-2
AOC 17-3
17N-06
AOC 17-1
17N-03
AOC 3-12
AOC 3-23
AOC 3-23
AOC 3-23
AOC 3-35
AOC 3-30
AOC 10-8
17S-20
AOC 10-7
17S-13
17S-12
17S-10
17S-11
17S-18
17S-19
17S-14
17S-16
17S-17
WAREHOUSES
AOC 10-4
10-01
AOC 10-3
AOC 10-1
AOC 10
AOC 10-2
LONG ISLAND RAILROAD
GRUMMAN AIRFIELD
SOUTH OYSTER BAY ROAD

LEGEND:

IR SITES

NOTES:

1. AOC BOUNDARIES ARE APPROXIMATE AND BASED ON OBSERVED FIELD STRUCTURES, EMPLOYEE INTERVIEWS, REMEDIATION REPORTS AND DRAWINGS PREPARED BY OTHERS.
2. AOC BOUNDARIES WERE GENERALLY SELECTED AS FOLLOWS:
   - WHERE APPLICABLE, WALLS WERE USED. (FOR EXAMPLE, PAINT BOOTHS)
   - FOR PITS, THE BOUNDARY IS OUTSIDE THE TOP OF THE PIT.
   - SATELLITE ACCUMULATION AREAS ARE 10' X 10'. DRY WELLS ARE 25' X 25'
   - ANALYTICAL RESULTS WERE CONSIDERED.

0 150 300
SCALE IN FEET

| NO. | DATE | REVISIONS | BY | CHKD | APPD |
|---|---|---|---|---|---|

| REFERENCES | NO. | RELEASED FOR | BY | DATE |
|---|---|---|---|---|

DRAWN BY HJB DATE 1/9/02
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

# AOCs WITH RESIDUAL CONTAMINATION
# MAIN NAVY 105 ACRE PARCEL
# PHASE II EBS
# NWIRP BETHPAGE, NEW YORK

CONTRACT NO. 7576
OWNER NO. ----
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 9A
REV. 0

ACAD: 7576GM11.dwg 01/24/02 HJB

TABLE 9-1

RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN
NWIRP, BETHPAGE, NEW YORK


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 1<br><br>Paint Booths: Existing paint booths (16), historic paint booths (10), Kolene paint stripper, and waste holding tanks 793, 794, 1257, 1258, 1259, and 1260. | Constituents of Concern exceeding the TAGM #4046 criteria remain at 11 of 28 AOCs. See Table 9-2 for a more detailed description of each AOC. | | | | |
| AOC 2<br><br>Plating Area: Extensive floor staining around tanks and TCE Tank 210 | AOC 2I | Chromium | 63 mg/kg (2-4 feet) | EBS section: Old Alodine/Plating/Paint Booth Area.<br><br>In 1998, metal contaminated soils were removed to a depth of 14 feet below ground surface. 1 (side-wall sample) of 24 samples collected from 9 boring locations contained chromium above the TAGM #4046 criterion of 10 mg/kg. No additional excavation was performed.<br><br>References: ESA[3] – Sections 3.3.2, 5.2, 6.2 and Figure 5-6.<br>Correspondence letter [2] (4/29/98). | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[6]. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 3<br><br>Old Alodine Area: Stained and cracked concrete in Old Alodine Area, former Alodine Leaching Well and Overflow Pit. | 03-03-11<br><br>03-03-11W | Arsenic<br><br>Chromium<br><br>Selenium<br><br>Zinc | 12.8 mg/kg (0-2 feet)<br><br>64.2 mg/kg (0-2 feet)<br><br>11.2 mg/kg (0-2 feet)<br>88.3 mg/kg (0-2 feet) | EBS section: Old Alodine/Plating/Paint Booth Area.<br><br>In 1997, 1 of 10 subsurface soil samples collected from 5 boring locations in the vicinity of waste transfer tank 815 contained arsenic, chromium, selenium and zinc above the TAGM #4046 criteria (7.5 mg/kg, 10 mg/kg, 2 mg/kg and 20 mg/kg, respectively).<br><br>In 1998, approximately 2700 $yd^3$ of metal contaminated soils were removed to an approximate depth of 30 feet below ground surface.<br><br>References: ESA[3] – Sections 3.3.3, 5.3, 6.3 and Figure 5-7.<br>Correspondence letters [2] (10/27/97, 2/2/98, 2/24/98 and 3/23/98). | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[6]. |
| AOC 4<br><br>Heat Treat Area A: Residue around Tanks 971 and 972; hydraulic fluid sump and potential leaks from hydraulic ram on Tank 1255. | 03-04-02A | B(a)P | 70 µg/kg (0-2 feet) | EBS section: Heat Treat Area A.<br><br>in 1997, 10 subsurface soil samples were collected from 4 boring locations. The TAGM #4046 criterion for benzo(a)pyrene (61 ug/kg) was exceeded in 1 of 10 samples collected in the vicinity of the hydraulic oil sump. However, based on the low concentrations and the marginal nature of the exceedance no further action is required for this AOC. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 3.3.4, 5.4 and 6.4.<br>Correspondence letter [2] (10/27/97). | No excavation required.<br><br>Deed notification required[6]. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 5<br><br>Heat Treat Area B: Drain in pit and sump for Tank 1272, and vapor degreaser Tank 1251. | NA | NA | NA | EBS section: Heat Treat Area B.<br><br>In 1997, 15 subsurface soil samples were collected from 8 boring locations. There were no TAGM #4046 criteria exceedances.<br><br>References: ESA[3] – Sections 3.3.5, 5.5 and 6.5. | No remediation required. |
| AOC 6<br><br>Chem Mill Clean: Eroded concrete in trench and sump and documented chromium contamination outside Building 03-01 at Column FF46. | AOC 6F (excavation pit floor sample) | Chromium<br><br>Zinc | 250/4.8 mg/kg (12 feet)<br>50 mg/kg (12 feet) | EBS section: Chem Mill Clean Area.<br><br>In 1998, metal contaminated soils were excavated to depths of 4 feet and 12 feet below ground surface. 1 of 13 endpoint samples collected from 6 boring locations contained chromium and zinc at concentrations exceeding the TAGM #4046 criteria of 10 mg/kg and 20 mg/kg, respectively. The sample with the chromium exceedance was re-analyzed, resulting in a chromium concentration of only 4.8 mg/kg. Therefore, the sample collected at a depth interval of 5 – 7 feet below ground surface from location AOC 6D would contain the maximum chromium concentration (47 mg/kg) above the TAGM #4046 criterion of 10 mg/kg. In addition, zinc is not regulated as a hazardous substance. Based on these findings, no further excavation is required for this AOC.<br><br>References: ESA[3] – Sections 3.3.6, 5.6, 6.6 and Figure 5-8.<br>Correspondence letters [2] (10/27/97, 3/23/98, 5/13/98 and 6/23/98). | No additional excavation required.<br><br>The interior area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[6]. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 7<br><br>Chem Mill Flowcoat Area: Soil gas survey indicating PCE contamination; extensive use of PCE and toluene; floor staining with maskant, Maskant Tanks 451 and 697; and drying area. | NA | NA | NA | EBS section: Flow Coat/Chem Mill Etch Area.<br><br>In 1997, 8 subsurface soil samples were collected from 4 boring locations. There were no TAGM #4046 criteria exceedances.<br><br>References: ESA[3] – Sections 3.3.7, 5.7 and 6.7.<br>Correspondence letter [2] (8/14,22/98). | No remediation required. |
| AOC 8<br><br>Chem Mill Etch: Corroded concrete below tanks, and floor trench that leads to a sump. | NA | NA | NA | EBS section: Flow Coat/Chem Mill Etch Area.<br><br>In 1997, 5 subsurface soil samples were collected from 3 boring locations. There were no TAGM #4046 criteria exceedances.<br><br>References: ESA[3] – Sections 3.3.8, 5.8 and 6.8.<br>Correspondence letter [2] (8/14/97). | No excavation required. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 9<br><br>Sulfuric Acid Anodize: Deteriorated concrete from chromic and sulfuric acid leaks at Tanks 461 and 457, former underground waste holding tanks 962 and 963 and the presence of PCE absorber and recovery systems. | NA | NA | NA | EBS section: Sulfuric Acid Anodize Area.<br><br>In 1998, two phases of excavation were conducted at a location between support columns 43 and 45 of plant 3 (see Drawing 1 of the ESA). In the first phase, an area of approximately 440 $ft^2$ with metal contaminated soils was removed. In the second phase, an area of approximately 160 $ft^2$ with metal contaminated soils was removed. 3 endpoint samples were collected from 3 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>In 1998, metal contaminated soils were excavated to various depths of 4', 6' and 8' bgs at areas located between support columns 46 and 48 of plant 3 (see Drawing 1 of the ESA). 17 endpoint samples were collected from 7 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.9, 5.9, 6.9 and Figure 5-9.<br>Correspondence letters [2] (1/30/98 and 4/28/98). | No additional excavation required. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 10<br><br>Chromic Acid Anodize: Stained floor in process pit area; TCE vapor degreaser; demineralizer room pit, Shell Pella oil pit and waste transfer tanks 1150, 1151, and 1152. | 03-10-01 | Zinc | 25.7 mg/kg | EBS section: Chromic Acid Anodize Area.<br><br>Prior to 1997 activities, the chemical process pits were decontaminated with high-pressure steam and detergent.<br><br>In 1997, 18 subsurface soil samples were collected from 9 boring locations. 1 of 18 subsurface soil samples contained zinc above the TAGM #4046 criterion (20 mg/kg). The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 3.3.10, 5.10 and 6.10<br>Correspondence letters [2] (8/14/97, 10/27/97 and 11/25/97) | No excavation required.<br><br>Deed notification required[6]. |
| AOC 11<br><br>Alodine/Sulfuric Acid Anodize: TCE vapor degreaser Tank 1221, process pit, sumps, trench, and waste transfer tanks 1236, 1237, and 1238 | NA | NA | NA | EBS section: Alodine/Sulfuric Acid Anodize Area. (Waste transfer tanks included in Former Autoclave Area).<br><br>In 1997, 12 subsurface soil samples were collected from 6 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.11, 5.11 and 6.11.<br>Correspondence letter [2] (8/14/97). | No remediation required. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 12<br><br>Penetrant Inspection: Tank pit and underground waste holding tanks 1092 and 1093 | 03-12-02N | B(a)P | 120 ug/kg (0-2 feet) | EBS section: Zyglo Area; Waste Holding Tanks East of Hydraulic Press Area.<br><br>In 1997, 3 of 35 subsurface soil samples collected from 14 boring locations contained benzo(a)pyrene and phenol above the TAGM #4046 criteria (61 ug/kg and 500 ug/kg, respectively).<br><br>Due to the close proximity of AOC 12 and AOC 33-09, the phenol contaminated soils at AOC 12 were removed as part of the excavation conducted for AOC 33-09. (See also-Table 9-5).<br><br>References: ESA[3] – Sections 3.3.12, 5.12 and 6.12.<br>Correspondence letter [2] (5/13/98). | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[6]. |
| AOC 13<br><br>Honeycomb Pretreatment Area: Navy soil gas survey indicating PCE contamination; TCE Degreaser Tank 965; TCE Still 966; and Tanks 806, 377, and 395 containing chromium. | AOC 13E | Chromium<br><br>Zinc | 33 mg/kg (2-4 feet)<br>47 mg/kg (2-4 feet) | EBS section: Honeycomb Pretreatment Area.<br><br>In 1998, approximately 336 $yd^3$ of metal contaminated soils were removed to 12' below ground surface. 5 of 19 endpoint samples collected from 9 boring locations contained chromium above the TAGM #4046 criterion of 10 mg/kg. 1 of 19 endpoint samples contained zinc above the TAGM #4046 criteria (20 mg/kg).<br><br>References: ESA[3] – Sections 3.3.13, 5.13, 6.13 and Figure 5-10.<br>Correspondence letter [2] (4/14/98). | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[6]. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 14<br><br>Old Chem Mill: TCE Degreaser Tank 920 and Still 302; and Waste Holding Tanks 81, 83, 84, 1049, and 1050. | AOC14NE E<br><br>AOC14NE C | Chromium<br><br>Zinc | 68 mg/kg (6 feet)<br>110 mg/kg (2 feet) | EBS section: Shot Peen/Old Chem Mill Area.<br><br>In 1998, approximately 53 $yd^3$ of metal contaminated soils were removed to 6' below ground surface and approximately 76 $yd^3$ of metal contaminated soils were removed to 10' below ground surface. Concentrations of chromium and zinc were above the TAGM #4046 criterion of 10 mg/kg and 20 mg/kg, respectively.<br><br>References: ESA[3] – Sections 3.3.14, 5.14 , 6.14 and Figure 5-11.<br>Correspondence letter [2] (4/28/98). | No additional excavation required.<br><br>Area was backfilled with soil.<br><br>Deed notification required[6]. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 15<br><br>Printed Circuit and Engraving Departments: Solvent and chromate usage in printed circuit and engraving departments. | 03-15-04<br><br>03-15-03 | Chromium<br><br>Cadmium<br><br>Zinc | 273/4.3 mg/kg (0-2 feet)<br>1.6 mg/kg (0-2 feet)<br>26 mg/kg (2-4 feet) | EBS section: Arts and Engraving Area.<br><br>In 1997, 18 subsurface soil samples were collected from 9 boring locations. 1 of 10 samples contained cadmium above the TAGM #4046 criterion of 1.0 mg/kg. 5 of 18 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. 4 of 10 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. However, reanalysis of the sample with the maximum chromium concentration found chromium at only 4.3 mg/kg. Therefore, the sample collected at a depth interval of 0 – 2 feet below ground surface from location 03-15-04W would contain the maximum chromium concentration (14 mg/kg) above the TAGM #4046 criterion of 10 mg/kg. Based on the chromium results for the re-analyzed sample and the marginal nature of the cadmium and zinc exceedances, no further action is required for this AOC. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 3.3.15, 5.15 and 6.15.<br>Correspondence letter [2] (3/23/98). | No excavation required.<br><br>Deed notification required[6]. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 16<br><br>Machine Shops: Extensive floor staining from cutting and lubricating oil. | 03-16-02<br><br>03-16-04<br><br>03-16-10 | Selenium<br><br>Chromium<br><br>Zinc | 4.1 mg/kg (0-2 feet)<br>86.5 mg/kg (4-7 feet)<br>594 mg/kg (0-2 feet) | EBS section: Machine Shop West of Wall 16; South-central, North-central, & Northeastern Machining Areas.<br><br>In 1997, 61 subsurface soil samples were collected from 29 soil borings located throughout the machine shop floors. Selenium, chromium and zinc were detected in several samples above the TAGM #4046 criteria of 2 mg/kg, 10 mg/kg and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils. No further action is required for this AOC.<br><br>References: ESA[3] – Sections 3.3.16, 5.16 and 6.16.<br>Correspondence letter [2] (3/23/98). | No remediation required.<br><br>Deed notification required[6]. |
| AOC 17<br><br>Boiler Room: Boiler blow off (drywells) and floor drains in boiler room. | NA | NA | NA | EBS section: Facilities Maintenance Area.<br><br>This AOC is not addressed under the Phase II study. Correspondence with NCDH indicates that Northrop Grumman has excavated soils under the floor drains in compliance with county UIC regulations.<br><br>References: ESA[3] – Sections 3.3.17, 5.17 and 6.17. | No remediation required. |
| AOC 18<br><br>Router Room: Former degreasing pit in router room and TCE Degreaser Tank 256. | NA | NA | NA | EBS section: Heat Oven Area.<br><br>In 1997, 4 subsurface soil samples were collected from 2 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.18, 5.18 and 6.18. | No remediation required. |

**TABLE 9-1**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 19<br><br>Dry Wells at Columns GG7 and JJ2: Dry well at Column GG7 connected to floor drains. | AOC19 E | B(a)A<br><br>Chrysene<br><br>B(a)P<br><br>D(a,h)A | 820 ug/kg (22 feet)<br><br>980 ug/kg (22 feet)<br><br>800 ug/kg (22 feet)<br><br>160 ug/kg (22 feet) | EBS section: South-central Machining Area.<br><br>In 1998, approximately 322 $yd^3$ of VOC, SVOC, and metal contaminated soils were removed to a depth of 22' below ground surface, in the vicinity of Column JJ2. 7 of 16 endpoint samples collected from 8 boring locations in the vicinity of Column JJ2 contained benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene above the TAGM #4046 criteria of 224 ug/kg 400 ug/kg 61 ug/kg and 14 ug/kg, respectively. Based on the depth of the maximum contaminant concentrations, no further action is required for this AOC.<br><br>References: ESA[3] – Sections 3.3.19, 5.19, 6.19 and Figure 5-12.<br>Correspondence letter [2] (4/28/98). | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[6]. |
| AOC 20<br><br>Diffusion Galleries and Dry Wells: Diffusion galleries south of Plant 03 between Columns N0 to N13 and drywells external to Plant 03. | Constituents of Concern exceeding the TAGM #4046 criteria remain at 10 of 29 AOCs. See Table 9-3 for a more detailed description of each AOC. | | | | |

**TABLE 9-1**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 21<br><br>Equipment Pits: Designated equipment pits (27) in Table 1 of Phase I ESA (Radian, 1997a) | Constituents of Concern exceeding the TAGM #4046 criteria remain at 9 of 28 AOCs.<br>See Table 9-4 for a more detailed description of each AOC. | | | | |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 22<br><br>Petroleum Storage Tanks USTs: USTs and Former UST locations in three areas:<br><br>1. Area north of Bldg 03-13 (USTs 03-13-1, 03-13-2 and 03-13-3). | 03-22-11A | B(a)A<br><br>B (a)P<br><br>D(a,h)A | 760 ug/kg (2-4 feet)<br>720 ug/kg (2-4 feet)<br>64 ug/kg (2-4 feet) | 1. EBS section: Area north of Building 03-13.<br>In 1997, 1 of 7 subsurface soil samples collected from 3 boring locations contained benzo(a)anthracene benzo(a)pyrene and dibenzo(a,h)anthracene above the TAGM #4046 criteria of 224 ug/kg, 61 ug/kg and 14 ug/kg, respectively.<br><br>References: ESA[3] – Sections 3.3.22, 5.22, and 6.22 | No excavation required.<br><br>Deed notification required[6].<br><br>Retained by Navy, no additional investigation required. |
| AOC 22 (contiuned)<br><br>Petroleum Storage Tanks USTs: USTs and Former UST locations in three areas:<br><br>2. Area south of Bldg 03-01 (USTs 03-01-1, 03-01-2 and 03-01-3). | 03-22-16<br><br><br><br><br>03-22-01BS | Chrysene<br><br>B(a)P<br><br><br>D(a,h)A<br><br>B(a)A | 7500 ug/kg (60-62 feet)<br>2700 ug/kg (60-62 feet)<br><br>450 ug/kg (22-24 feet)<br>4300 ug/kg (60-62 feet) | 2. EBS Section: Area south of Building 03-01, near Facility Maintenance Area.<br><br>In 1997, 128 subsurface soil samples were collected from 21 boring locations as part of the Phase II ESA for Plant 03 (Northrop Grumman, Aug. 1998). Several samples contained chrysene, benzo(a)pyrene, dibenzo(a,h)anthracene and benzo(a)anthracene above the TAGM #4046 criteria of 400 ug/kg, 61 ug/kg, 14 ug/kg and 224 u/kg, respectively.<br><br>In 2000, 14 subsurface soil samples were collected from 14 boring locations as part of the RCRA Facility Assessment for AOC 22 (TtNUS, Jan 2000). 1 of 3 samples (TT-22-SB05) analyzed for SVOCs contained chrysene (980 ug/kg, 55-59 feet) above the TAGM #4046 criteria of 400 ug/kg.<br><br>References: RCRA Facility Assessment for AOC 22[5].<br>ESA[3] – Sections 3.3.22, 5.22, 6.22 and Figure 5-14. | No excavation required.<br><br>Area being retained by Navy for further investigation. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 22 (continued)<br><br>Petroleum Storage Tanks USTs: USTs and Former UST locations in three areas:<br><br>3. Area south of Bldg 03-01 (UST 03-01-05). | 03-22-08A | B(a)P | 100 ug/kg (6-8 feet) | 3. EBS section: Area south of Building 03-01, near Former Autoclave Area.<br><br>In 1997, one of seven subsurface soil samples collected from three boring locations contained benzo(a)pyrene above the 61 ug/kg TAGM #4046 criterion. However, based on the low concentration, no further action is required for this part of AOC 22.<br><br>References: ESA[3] – Sections 3.3.22, 5.22, and 6.22. | No excavation required.<br><br>Deed notification required[6]. |
| AOC 23<br><br>Former Above Ground Storage Tanks | NA | See IR Site 1 | See IR Site 1 | EBS section: Former Drum Marshalling Areas/ Plant 03 Leachfield.<br><br>In 1997, 42 subsurface soil samples were collected from 19 boring locations. Laboratory analysis of soils collected from Sample Location (SL) 06 found benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, selenium, thallium, chromium, cadmium, copper, zinc, and PCBs above the TAGM #4046 criteria. Metal, SVOC, and PCB contaminated soils in the vicinity of SL 06 are currently under investigation as part of the Navy's Site 1 IR program.<br><br>References: ESA[3] – Sections 3.3.23, 5.23 6.23 and Figure 5-15. | No excavation required at this time.<br><br>Area being retained by Navy for further investigation. |

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**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 24<br><br>Storage Room at Column N11 | NA | NA | NA | EBS Section: Facilities Maintenance Area.<br><br>In 1998, approximately 56 $yd^3$ of zinc and SVOC contaminated soils were removed to a depth of six feet below ground surface. 8 endpoint soil samples were collected from 5 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.24, 5.24 6.24 and Figure 5-16.<br>Correspondence letters [2] (3/23/98 and 4/17/98). | No additional excavation required. |

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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 25<br><br>Roads and Grounds Building 03-13: Storage of oil, pesticides, and paints | NA | NA | NA | EBS section: Building 03-13 (Sanitation Office).<br><br>In 1997, 5 subsurface soil samples were collected from 2 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.25, 5.25 and 6.25. | No remediation required. |
| AOC 26<br><br>Chemical Storage Building 03-31, 03-32: Potential for historic leaks from chemical storage; current storage of PCE and acid; sump and waste storage tank. | NA | NA | NA | EBS section: Buildings 03-31 and 03-32 (Bottle Gas Storage/ Chemical Storage Building).<br><br>In 1997, 9 subsurface soil samples were collected from 4 boring locations. There were no exceedances of the TAGM #4046 criteria. Note: These buildings are rated 5/Yellow (areas of known contamination where remedial or removal actions are underway) in the EBS only because they are located in the area of the Former Drum Marshalling Area.<br><br>References: ESA[3] – Sections 3.3.26, 5.26 and 6.26. | No remediation required. |
| AOC 27<br><br>Storage Shed Building 03-41: Concrete trench with accumulated oily sludge. | AOC 27A | B(a)A<br><br>B(a)P<br><br>D(a,h)A | 530 ug/kg (3-5 feet)<br>450 ug/kg (3-5 feet)<br>99 ug/kg (3-5 feet) | EBS section: Building 03-41 (Storage Shed).<br><br>In 1998, approximately 287 $yd^3$ of SVOC contaminated soils were removed to approximately sixteen feet below ground surface. 2 of 16 endpoint samples collected from 8 boring locations contained benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene above the TAGM #4046 criteria of 220, ug/kg 61 ug/kg and 14 ug/kg, respectively.<br><br>References: ESA[3] – Sections 3.3.27, 5.27, 6.27 and Figure 5-17.<br>Correspondence letters [2] (4/28/98, 5/21/98 and 6/23/98). | No additional excavation required.<br><br>Deed notification required[6]. |

**TABLE 9-1**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 28<br><br>Pesticide Storage Building 03-44: Pesticide storage with a floor drain. | NA | NA | NA | EBS section: Razed as of the Phase I EBS, this building location was inspected as part of Building 03-17 (Equipment Repair Shop).<br><br>In 1997, 5 subsurface soil samples were collected from 2 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.28, 5.28 and 6.28. | No remediation required. |
| AOC 29<br><br>Flammable Storage Shed next to Propane Storage Shed (Unnumbered): Potential for leaks from the storage of flammable liquids. | NA | NA | NA | EBS section: Razed as of the Phase I EBS, this building location was inspected as part of Building 03-33 (Transportation Garage).<br><br>In 1997, two subsurface soil samples were collected from one boring location. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.29, 5.29 and 6.29. | No remediation required. |
| AOC 30<br><br>Unidentified Storage Sheds: Potential for leaks of oil and pesticides through plywood floors at middle and southern sheds. | NA | See IR Site 1 | See IR Site 1 | EBS sections: Building 03-15 (Facility Maintenance Garage); Building 03-14 (Facility Maintenance Storage); Buildings 03-45 and 03-51 (Storage Sheds).<br><br>In 1997, 44 subsurface soil samples were collected from 17 boring locations. Laboratory analysis found benzo(a)pyrene, dibenzo(a,h)anthracene, cadmium, copper, zinc, silver and arsenic were detected above the TAGM #4046 criteria. Metal and SVOC contaminated soils in this area are currently being addressed under the Navy's Site 1 IR Program.<br><br>References: ESA[3] – Sections 3.3.30, 5.30 6.30 and Figure 5-15. | Area being retained by Navy for further investigation. |

**TABLE 9-1**
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| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 31<br><br>Subsurface Vault at Column AA11: Subsurface vault filled with soil and metal scraps. | NA | NA | NA | EBS section: North-central Machining Area.<br><br>In 1997, 4 subsurface soil samples were collected from 2 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.31, 5.31 and 6.31. | No remediation required. |
| AOC 32<br><br>PCE and TCE Storage Tanks: PCE underground storage tanks 1090 and 1091, PCE aboveground storage tank 1207, and TCE aboveground storage tanks 11, 885, and 1271. | NA | NA | NA | EBS section: Chromic Acid Anodize Area (Tanks 1090, 1091, 1207, and 1271); Shot Peen/Old Chem Mill Area (Tank 885); Northeastern Machining Area (Tank 11).<br><br>In 1997, 18 subsurface soil samples were collected from 6 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.32, 5.32 and 6.32.<br>Correspondence letter [2] (8/14/97) | No remediation required. |
| AOC 33<br><br>Waste Accumulation Areas: Designated waste accumulation areas as shown in Table 5 of Phase I ESA (Radian, 1997a). | Constituents of Concern exceeding the TAGM #4046 criteria remain at 10 of 27 AOCs.<br>See Table 9-5 for a more detailed description of each AOC. | | | | |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 34 (except Dry well 34-07)<br><br>2 Areas - Old Autoclave Area: Use of PCB containing heat transfer fluid and reported leaks of heat transfer fluid, drain pit near Column LL41, waste cooling pit near Column KK42, two interior drywells near Column KK42; and drywells 23 and 25. | AOC34G (North)<br><br>03-34-02A (South) | B(a)P<br><br>D(a,h)A<br><br>B(a)A<br><br>B(a)P<br><br>B(b)F<br><br>B(k)F<br><br>Chrysene<br><br>D(a,h)A | 71 ug/kg (7-9 feet)<br><br>30 ug/kg(7-9 feet)<br><br>1800 ug/kg(0-2 feet)<br><br>1700 ug/kg(0-2 feet)<br><br>1900 ug/kg(0-2 feet)<br><br>1200 ug/kg(0-2 feet)<br><br>1900 ug/kg(0-2 feet)<br><br>630 ug/kg(0-2 feet) | EBS section: Former Autoclave Area and Identification, Packaging, and Paint Booth Area.<br><br>In 1998, SVOC and PCB contaminated soils were removed from two areas in the vicinity of the Old Autoclave Area. Approximately 384 $yd^3$ of contaminated soil was removed to 16 feet below ground surface and approximately 1017 $yd^3$ of contaminated soil was removed to 30 feet below ground surface. Not including dry-well 34-07, 1 of 30 endpoint samples collected from 18 boring locations contained benzo(a)pyrene and dibenzo(a,h)anthracene above the TAGM #4046 criteria of 61 ug/kg and 14 ug/kg, respectively.<br><br>References: ESA[3] – Sections 3.3.34, 5.34, 6.34 and Figure 5-21 and 5-22.<br>Correspondence letters [2] (3/23/98, 5/13/98, 6/25/98 and 9/14/98). | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[6]. |
| AOC 34-07<br><br>Exterior Dry-well 34-07 | 03-34-07B | PCB (Aroclor-1242) | 6900 mg/kg (20-22 feet) | In 1997, Aroclor-1242 was detected in 8 of 8 subsurface soil samples collected from 3 boring locations within Dry-well 34-07. 5 of 8 samples contained PCBs above the TAGM #4046 criteria of 10 mg/kg. Due to deep PCB contamination, Drywell 34-07 is currently being addressed under the Navy's Site 1 IR Program.<br><br>References: ESA[3] – Sections 3.3.34, 5.34, 6.34 and Figure 5-21 and 5-22. | Area being retained by Navy.<br><br>Additional investigation required for drywell 34-07. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 35<br><br>Former Sludge Drying Bed: Located due east of the northeast corner of Plant 03. | NA | See IR Site 1 | See IR Site 1 | EBS section: Land under Buildings 03-14 and 03-15.<br><br>Metal and SVOC contaminated soil in the vicinity of the sludge drying bed is currently being addressed under the Navy 's Site 1 IR Program.<br><br>References: ESA[3] – Sections 3.3.35, 5.35, 6.35 and Figure 5-15. | Area being retained by Navy for further investigation. |
| AOC 36<br><br>Unbiased random locations throughout Building 03-01 to investigate possible unidentified contamination pathways. | NA | NA | NA | EBS section: Various.<br><br>In 1997, 199 subsurface soil samples were collected from 53 randomly placed boring locations. Due to the close proximity of AOC 36-10 and AOC 34, approximately 384 $yd^3$ of SVOC and PCB contaminated soils were removed from AOC 36 (see Section 6-36 of the ESA) to 16 feet below ground surface. 11 endpoint samples were collected from 8 boring locations within the excavation pit of AOC 34. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.36, 5.36, 6.36, Drawing 1.<br>Correspondence letters [2] (3/23/98 and 5/13/98). | No additional excavation required. |
| AOC 37<br><br>Cafeteria Elevator | NA | NA | NA | EBS section: Plant 03 Cafeteria.<br><br>In 1997, 3 subsurface soil samples were collected from 1 boring location. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.37, 5.37 and 6.37. | No remediation required. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 38<br><br>Water Effluent Sump Pit: Sump pit that accepted water effluent from an oil/water separator before discharge to the sewer system. | NA | NA | NA | EBS section: Facilities Maintenance Area.<br><br>In 1997, 2 subsurface soil samples were collected form 1 boring location. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.38, 5.38 and 6.38 | No remediation required. |
| AOC 39<br><br>Water Blowdown Pit | NA | NA | NA | EBS section: Facilities Maintenance Area.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 3.3.39, 5.39, 6.39. | No remediation required. |
| IR Site 1<br><br>Former Drum Marshaling Area | <br><br>SB119<br><br>SB119<br><br>SB119<br><br>SS103<br><br>SS103<br><br>SS105<br><br>SS103 | VOCs (e.g) -<br>- TCE<br><br>- PCE<br><br>- 1,1,1-TCA<br><br>Aroclor 1242<br><br>Aroclor 1248<br><br>Aroclor 1254<br><br>Chromium | <br><br>200 ug/kg (3-5 feet)<br><br>4800 ug/kg (3-5 feet)<br><br>72 ug/kg (3-5 feet)<br><br>25 mg/kg (0-0.5 feet)<br><br>1300 mg/kg (0-0.5 feet)<br><br>170 mg/kg (0-0.5 feet)<br><br>61.1 mg/kg (0-0.5 feet) | Site was investigated as part of IR program. Remedial actions are in progress. In accordance with the 1995 Record of Decision for OU 1, an air sparging and soil vapor extraction system has been operating at the site since 1996 to remove VOCs from site soils and shallow groundwater. Based on the most recent data, VOCs are expected to be at or below remediation goals.<br><br>The 1995 OU 1 Record of Decision for the site identifies excavation and offsite treatment and/or disposal for PCB and metal contaminated soils and a permeable cover and natural attenuation of lessor contaminated soils. These actions are in the design phase.<br><br>References: Remedial Investigation Report Phase 1, May 1992. Remedial Investigation Report Phase 2, October 1993. | Area is being retained by Navy. |

**TABLE 9-1**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern [4] (AOC) | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth (1) | Description | Remediation Conducted |
|---|---|---|---|---|---|
| IR Site 2<br><br>Recharge Basin Area | BP-S2-252<br>BP-S2-252<br>BP-S2-252<br>BP-S2-252<br>BP-S2-258<br>BP-S2-258<br><br>SB215<br>SB219 | B(a)P<br>B(a)A<br>B(b)F<br>D(ah)A<br>Aroclor 1248<br>Arsenic<br>VOCs (e.g) -<br>- TCE<br>- PCE | 5500 ug/kg (0.5-1 feet)<br>5600 ug/kg (0.5-1 feet)<br>5900 ug/kg (0.5-1 feet)<br>830 ug/kg (0.5-1 feet)<br>5100 ug/kg (0.5-1 feet)<br>9.7 mg/kg (0.5-1 feet)<br><br>32 ug/kg (3-5 feet)<br>6 ug/kg (3-5 feet) | The 1995 OU 1 Record of Decision for the site identifies excavation and offsite treatment and/or disposal for PCB contaminated soils and a permeable cover and natural attenuation of lessor contaminated soils.<br><br>In 1996, 7,239 tons of PCB-contaminated soil were excavated to a depth of about 10 feet and replaced with clean fill.<br><br>17 surface soil samples were collected across the site in 2001 to determine extent of the final cover. In 2001, a 6-inch layer of clean fill was placed over the site to prevent exposure to residual contamination. These actions are complete.<br><br>References: Remedial Investigation Report Phase 1, May 1992. Sites 2 and 3 Soil Results Letter Report, June 2001. | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of clean soil.<br><br>Deed notification required[6]. |
| IR Site 3<br><br>Salvage Storage Area | SS321<br>SS322<br><br>SB334<br>SB 304 | B(a)P<br>As<br>VOCs (e.g) -<br>- TCE<br>- PCE | 660 ug/kg (0-0.5 feet)<br>10.4 mg/kg (0-0.5 feet)<br><br>9 ug/kg (3-5 feet)<br>55 ug/kg (19-21 feet) | The 1995 OU 1 Record of Decision for the site identifies a permeable cover and natural attenuation of lessor contaminated soils.<br><br>Debris was removed from the site. Surface soils were scraped and approximately two inches of clean soil were on the site as a cover to prevent exposure to residual contamination. 10 surface soil samples were collected in 2001 and the results confirmed the effectiveness of this action. Therefore, these actions are complete.<br><br>Reference: Sites 2 and 3 Soil Results Letter Report, June 2001. | No excavation required.<br><br>Surface soil was scrapped and area was capped with 2" of clean soil.<br><br>Deed notification required[6]. |

# TABLE 9-1
# RESOLUTION OF AOCs IDENTIFIED FOR PLANT 03 BY NORTHROP GRUMMAN
# NWIRP, BETHPAGE, NEW YORK


Notes:
Refer to Figures 3-1 and 3-2 of this document for graphical depiction of AOC locations.
Table presents the environmental condition of Plant 3 AOCs 01 through 39 as of January, 2001

Definitions:
NA = Not Applicable.
B(a)P = Benzo(a)pyrene
B(a)A = Benzo(a)anthracene
D(a,h)A = Dibenzo(a,h)anthracene

(1) Sample collection depths measured from ground surface and presented as depth intervals below ground surface (bgs). If no depth interval is given, the interval is the same as the preceding interval.

(2) Information sources include miscellaneous correspondence letters from Northrop Grumman Corporation to NYSDEC and NCDH for the following AOCs:

AOC 02: Letter dated April 29, 1998 from Northrop Grumman to NYSDEC states that concrete and soil were excavated from pit, transported off site, and disposed of in accordance with state regulations. The excavation pit was backfilled with certified material. Letter dated June 23, 1998 from NYSDEC to Northrop Grumman approved the remediation.

AOC 03: Letter dated February 2, 1998 from Northrop Grumman to NYSDEC states that concrete and 2700 $yd^3$ of contaminated soils were excavated from to a depth of 29 feet bgs from under tank pit. Letter dated December 27, 1997 from Northrop Grumman to NYSDEC addresses the Waste Transfer Tank Area. Letter dated February 24, 1998 from NYSDEC to Northrop Grumman Remediation approved remediation.

AOC 4: Letter dated October 27, 1997 from Northrop Grumman to NYSDEC requested No Further Action (NFA) / backfill activities.

AOC 6: Letter dated October 27, 1997 form Northrop Grumman to NYSDEC reported findings for this area. Letter dated May 13, 1998 from Northrop Grumman to NYSDEC states that exterior area soils were excavated to depths of 4 and 12 feet. Letter dated June 23, 1998 from NYSDEC to Northrop Grumman approved remediation.

AOC 7: Letter dated August 14, 1997 from Northrop Grumman to NYSDEC reported findings for this area. Letter dated August 22, 1997 from NYSDEC to Northrop Grumman granted approval to fill flow coat process pit in.

AOC 8: Letter dated August 14, 1997 from Northrop Grumman to NYSDEC reported findings for this area. Letter dated August 22, 1997 from NYSDEC to Northrop Grumman granted approval to fill Chem-Mill Etch process pit in.

AOC 9: Letter dated January 30, 1998 from Northrop Grumman to NYSDEC states that contaminated soil was excavated from this area as necessary. Letter dated April 28, 1998 from Northrop Grumman to NYSDEC reported endpoint sample results. Letter dated June 23, 1998 from NYSDEC to Northrop Grumman approved remediation.

AOC 10: Letter dated November 25, 1997 from Northrop Grumman to NYSDEC reported results for including the chromic acid process pit. Letters dated August 14 and October 27, 1997 from Northrop Grumman to NYSDEC present similar results for the demineralizer (ion exchanger), Shell Pella pit, and waste transfer tanks.

AOC 11: Letter dated August 14, 1997 from Northrop Grumman to NYSDEC reported findings for this area. letter dated August 12, 1998 from NYSDEC to Northrop Grumman granted approval to back-fill the excavation pit.

AOC 13: Letter dated April 14, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were excavated from this area. Letter dated June 23, 1998 form NYSDE to Northrop Grumman approved remediation.

AOC 14: Letter dated April 28, 1998 from Northrop Grumman to NYSDEC states that contaminated soil was excavated as necessary from exterior locations. Letter dated May 13, 1998 from NYSDEC to Northrop Grumman approved remediation.

AOC 15: Letter dated March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.

AOC 16: Letter dated March 23, 1998 from Northrop Grumman to NYSDEC requested NFA for all machine shop areas.

AOC 19: Letter dated April 28, 1998 to NYSDEC states that the soils of were excavated from below the location of the former drywells near Column JJ2.

AOC 24: Letter dated March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area. Letter dated April 17, 1998 from Northrop Grumman to NYSDEC states that soil was excavated as necessary. Letter dated June 23, 1998 from NYSDEC to Northrop Grumman approved remediation.

AOC 27: letter dated April 28, 1998 from Northrop Grumman to NYSDEC stated that soil under the shed was excavated to a depth of approximately 16 feet. Letter dated May 21, 1998 from Northrop Grumman to NYSDEC addresses residual concentrations of PAHs in the sidewalls of the excavation, closing out the remediation of AOC 27. Letter dated June 23, 1998 from NYSDEC to Northrop Grumman states that the remediation is acceptable.

AOC 32: Findings for reported to NYSDEC in letter dated August 14, 1997.

AOC 34: Letter dated May 13, 1998 from Northrop Grumman to NYSDEC states that soils at were excavated as necessary.

AOC 38: letter dated February 10, 1998 from Northrop Grumman to NYSDEC reported findings for this area.

AOC 39: letter dated February 10, 1998 from Northrop Grumman to NYSDEC reported findings for this area.

(3) Final Phase II Environmental Site Assessment (ESA) for Plant 3, GOCO Facility, Bethpage New York (Radian International, 1998a); Volume 1-Technical Findings; Volume 2-Analytical Results Tables AOC01-AOC08; Volume 3-Analytical Results Tables AOC09-AOC32; Volume 4-Analytical Results Tables AOC33-AOC39; Volume 5-Borehole Logs AOC01-AOC20; Volume 6-Borehole Logs AOC21-AOC39.

(4) See Drawing 1 of the Final Phase II ESA for a graphical depiction of AOC locations.

(5) RCRA Facility Assessment for AOC 22, NWIRP Bethpage, New York (TtNUS 2000).

(6) Notification of AOC location and presence of residual contamination will be provided in quick claim deed by referencing Table 9-1 and Figure 10-3 in Final Phase 2 EBS.

TABLE 9-2

RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-1)<br>PB1 | 03-01-01<br><br><br><br>03-01-01W<br><br><br><br>03-01-01NN | Chromium<br><br>Zinc<br><br>Copper<br><br>Mercury<br><br>B(a)A<br><br>B(a)P<br><br>B(k)F<br><br>Chrysene<br><br>D(a,h)A | 128 mg/kg (2-4 feet)<br><br>546 mg/kg (2-4 feet)<br><br>83.3 mg/kg (0-2 feet)<br><br>1.3 mg/kg (0-2 feet)<br><br>1600 ug/kg (0-2 feet)<br><br>1300 ug/kg (0-2 feet)<br><br>1300 ug/kg (0-2 feet)<br><br>1400 ug/kg (0-2 feet)<br><br>330 ug/kg (0-2 feet) | EBS Section: Heat Treat Area B (near Column AO.2)<br><br>In 1997, 43 subsurface soil samples were collected from 12 boring locations, to a depth of 12' below ground surface.<br>• 1 of 43 samples contained mercury and benzo(k)fluoranthene above the TAGM #4046 criteria of 0.1 mg/kg and 1100 ug/kg, respectively.<br>• 4 of 43 samples contained dibenzo(a,h)anthracene above the TAGM #4046 criterion of 14 ug/kg.<br>• 5 of 43 samples contained copper above the TAGM #4046 criterion of 25 mg/kg.<br>• 6 of 43 samples contained chrysene above the TAGM #4046 criterion of 400 ug/kg.<br>• 7 of 43 samples contained benzo(a)pyrene above the TAGM #4046 criterion of 224 ug/kg.<br>• 8 of 43 samples contained chromium and benzo(a)pyrene above the TAGM #4046 criteria of 10 mg/kg and 61 ug/kg, respectively.<br>• 11 of 43 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg.<br>The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter [2] (3/23/98). | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-2**

**RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-2) PB2 | 03-01-02 | Zinc | 22.2 mg/kg (0-2 feet) | EBS Section: Old Alodine/Plating/ Paint Booth Area (near Column F8)<br><br>In 1997, 1 of 2 subsurface soil samples collected from one boring location contained zinc above the TAGM #4046 criterion of 20 m/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 1-3) PB3 | 03-01-03 | Arsenic<br><br>Chromium<br><br>Copper<br><br>Nickel<br><br>Selenium<br><br>Zinc | 8.8 mg/kg (0-2 feet)<br><br>22.7 mg/kg (0-2 feet)<br><br>34.9 mg/kg (0-2 feet)<br><br>16.6 mg/kg (0-2 feet)<br><br>2.8 mg/kg (0-2 feet)<br><br>45.3 mg/kg (0-2 feet) | EBS Section: Old Alodine/Plating/Paint Booth Area (near Column F9)<br><br>In 1997, 1 of 2 subsurface soil samples collected from one boring location contained arsenic, chromium, copper, nickel, selenium and zinc above the TAGM #4046 criteria of 7.5, 10, 25, 13, 2, and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required.<br><br>Deed notification required[5]. |

TABLE 9-2

RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-4)<br>PB4 | 03-01-04 | Chromium<br><br>Nickel<br><br>Selenium<br><br>Zinc | 45.2 mg/kg (0-2 feet)<br>16.2 mg/kg (0-2 feet)<br>2.3 mg/kg (0-2 feet)<br>39.6 mg/kg (0-2 feet) | EBS Section: Old Alodine/Plating/Paint Booth Area (near Column G7)<br><br>In 1997, 1 of 2 subsurface soil samples collected from one boring location contained chromium, nickel and selenium above the TAGM #4046 criteria of 10, 13, and 2 mg/kg, respectively. Both subsurface soil samples contained zinc above the TAGM criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 1-5)<br>PB5 | AOC1-5,6D | Chromium<br><br>Zinc | 26 mg/kg (2 feet)<br>25 mg/kg (0-2 feet) | EBS Section: Old Alodine/Plating/Paint Booth Area (near Column G8)<br><br>In 1998, approximately 121 $yd^3$ of metal contaminated soils were removed to 4' below ground surface at AOCs 1-5 and 1-6. Due to the close proximity of paint booths 5 and 6, these areas were excavated together. A total of 10 sidewall and floor endpoint samples were collected from 10 boring locations. 2 of 10 endpoint samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1, 6.1 and Figure 5-1.<br>Correspondence letter(s) [2] (4/1/98 and 5/13/98) | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[5]. |

**TABLE 9-2**

**RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 4 OF 17**

| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-6)<br>PB6 | NA | NA | NA | EBS Section: Old Alodine/Plating/Paint Booth Area (near Column G9)<br><br>AOC 1-6 was remediated in conjunction with AOC 1-5.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1, 6.1 and Figure 5-1.<br>Correspondence letter(s) [2] (4/1/98 and 5/13/98) | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[5]. |
| (AOC 1-7)<br>PB7 | 03-01-07B<br><br>03-01-07C<br><br>03-01-07 | Selenium<br><br>Chromium<br><br>B(a)P<br><br>Zinc | 5.8 mg/kg (0-2 feet)<br>19.2 mg/kg (0-2 feet)<br>140 ug/kg (0-2 feet)<br>20.7 mg/kg (0-2 feet) | EBS Section: Old Alodine/Plating/ Paint Booth Area (near Column G10)<br>In 1997, 6 subsurface soil samples were collected from 3 boring locations to a depth of 4' below ground surface. 1 of 6 samples contained chromium, selenium and zinc above the TAGM #4046 criteria of 10, 2 and 20 mg/kg, respectively. 3 of 6 samples contained benzo(a)pyrene above the TAGM #4046 criteria of 61 ug/kg. A 6" concrete slab exists over the area of contamination, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (3/23/98) | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-2**

**RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-8)<br>PB8 | AOC 1-8D<br><br><br><br><br><br>AOC 1-8H (pit floor) | Zinc<br><br>B(a)A<br><br>B(a)P<br><br>D(a,h)P<br><br>Chromium | 69 mg/kg (0-2 feet)<br>350 ug/kg (0-2 feet)<br>230 ug/kg (0-2 feet)<br>33 ug/kg (0-2 feet)<br>32 mg/kg (6 feet) | EBS Section: Old Alodine/Plating/Paint Booth Area (near Column E11)<br>In 1998, approximately 569 $yd^3$ of metal, VOC and SVOC contaminated soils were removed to 6' below ground surface. 1 of 16 endpoint samples collected from 10 boring locations contained benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene above the TAGM #4046 criteria of 224, 61 and 14 ug/kg, respectively. 4 of 16 endpoint samples contained chromium, and 2 of 16 endpoint samples contained zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively. A 6" concrete slab covers the area of contamination, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1, 6.1 and Figure 5-2.<br>Correspondence letter(s) [2] (5/7/98 and 6/23/98) | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[5]. |

**TABLE 9-2**

**RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 6 OF 17**

| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-9)<br>PB9 | 03-01-09<br><br><br><br>03-01-09N<br><br>03-01-09W | Arsenic<br><br>Selenium<br><br>Zinc<br><br>Chromium | 14.2 mg/kg (2-4 feet)<br>11.6 mg/kg (2-4 feet)<br>87.8 mg/kg (6-8 feet)<br>33.2 mg/kg (4-6 feet) | EBS Section: Southcentral Machining Area (near Column JJ24)<br><br>In 1997, 20 subsurface soil samples were collected from 6 boring locations, to a depth of 8' below ground surface. 11 of 20 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. 3 of 20 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. 2 of 20 samples contained arsenic above the TAGM #4046 criterion of 7.5 mg/kg. 1 of 20 samples contained selenium above the TAGM #4046 criterion of 2 mg/kg.<br>A 6" concrete slab exists over the area of contamination, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (3/23/98) | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 1-10)<br>PB10 | 03-01-10 | Zinc | 51.3 mg/kg (0-2 feet) | EBS Section: ID, Packaging, & Paint Booth Area (near Column KK26)<br><br>In 1997, 10 subsurface soil samples were collected from 5 boring locations to a depth of 4' below ground surface. 1 of 10 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. A 6" concrete slab exists over the area of contamination, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (12/22/97 and 3/23/98) | No remediation required.<br><br>Deed notification required[5]. |

TABLE 9-2

RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-11) PB11 | 03-01-11 | Zinc | 35.1 mg/kg (2-4 feet) | EBS Section: ID, Packaging, & Paint Booth Area (near Column LL26)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (12/22/97) | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 1-12) PB12 | 03-01-12 | Zinc | 66.4 mg/kg (2-4 feet) | EBS Section: ID, Packaging, & Paint Booth Area (near Column LL26)<br><br>In 1997, 18 subsurface soil samples were collected from 6 boring locations to a depth of 8' below ground surface. 1 of 18 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. A 6" concrete slab exists over the area of contamination, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (12/22/97) | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-2**

**RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-13) PB13 | 03-01-13 | Zinc | 21.4 mg/kg (0-2 feet) | EBS Section: ID, Packaging, & Paint Booth Area (near Column MM26)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (12/22/97) | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 1-14) PB14 | 03-01-14 | Copper<br><br>Chromium<br><br>Nickel<br><br>Mercury<br><br>Arsenic<br><br>Zinc | 139 mg/kg (2-4 feet)<br><br>71.6 mg/kg (2-4 feet)<br>534 mg/kg (2-4 feet)<br>1.5 mg/kg( 2-4 feet)<br>9.5 mg/kg (2-4 feet)<br>30.1 mg/kg (2-4 feet) | EBS Section: ID, Packaging, & Paint Booth Area (near Column JJ31)<br><br>In 1997, 20 subsurface soil samples were collected from 6 boring locations to a depth of 8' below ground surface. 1 of 20 samples contained copper, nickel, mercury and zinc above the TAGM #4046 criteria of 25, 13, 0.1 and 20 mg/kg, respectively. 2 of 20 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. 3 of 20 samples contained arsenic above the TAGM #4046 criteria of 7.5 mg/kg. A 6" concrete slab exists over the area of contamination, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (3/23/98) | No remediation required.<br><br>Deed notification required[5]. |

TABLE 9-2

RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-15) PB15 | 03-01-15 | Chromium | 10.5 mg/kg (0-2 feet) | EBS Section: ID, Packaging, & Paint Booth Area (near Column JJ33)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 1-16) PB16 | 03-01-16 | B(a)P<br><br>Chromium<br><br>Zinc | 78 ug/kg (0-2 feet)<br>60.9 mg/kg (2-4 feet)<br>31.4 mg/kg (2/4 feet) | EBS Section: ID, Packaging, & Paint Booth Area (near Column GG33)<br><br>In 1997, 22 subsurface soil samples were collected from 7 boring locations to a depth of 8' below ground surface. 5 of 22 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. 4 of 22 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. 1 of 22 samples contained benzo(a)pyrene above the TAGM #4046 criterion of 61 ug/kg. A 6" concrete slab exists over the area of contamination, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (3/23/98) | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-2**

**RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-17)<br>HPB1 | 03-01-17 | Chromium<br><br>Zinc | 19.9 mg/kg (2-4 feet)<br>44 mg/kg (2-4 feet) | EBS Section: Machining Area West of Wall 16 (near Column 14)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. 2 of 2 samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 1-18)<br>HPB2 | NA | NA | NA | EBS Section: Machining Area West of Wall 16 (near Column H15)<br><br>In 1997, 2 subsurface soil samples were collected from 2 boring locations to a depth of 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required. |

**TABLE 9-2**

**RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 11 OF 17**

| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-19)<br>HPB3 | 03-01-19<br><br>03-01-19E | Zinc<br><br>B(a)A<br><br>B(a)P | 73.5 mg/kg (0-2 feet)<br><br>390 ug/kg (0-2 feet)<br><br>370 ug/kg (0-2 feet) | EBS Section: Northcentral Machining Area (near Column DD1)<br><br>In 1997, 10 subsurface soil samples were collected from 5 boring locations to a depth of 4' below ground surface. 3 of 10 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. 1 of 10 samples contained benzo(a)anthracene and benzo(a)pyrene above the TAGM #4046 criteria of 224 and 61 ug/kg, respectively. A 6" concrete slab exists over the area of contamination, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (3/23/98) | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-2**

**RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-20) HPB4 | NA | NA | NA | EBS Section: Southcentral Machining Area (near Column LL3)<br><br>In 1998, approximately 642 $yd^3$ of metal, VOC (TCE ranging from 920-250000 ug/kg) and SVOC contaminated soils were removed to 10' below ground surface. A total of 23 sidwall and floor endpoint samples were collected from 16 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>In 1997, 1 of 2 subsurface soil samples collected from 1 boring location to 4' below ground surface contained dibenzo(a,h)anthracene (27 ug/kg) and benzo(a)pyrene (84 ug/kg) above the TAGM #4046 criteria of 14 and 61 ug/kg, respectively.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1, 6.1 and Figure 5-3.<br>Correspondence letter(s) [2] (5/7/98 and 6/23/98) | No additional excavation required. |
| (AOC 1-21) HPB5 | NA | NA | NA | EBS Section: Southcentral Machining Area (near Column G14)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required. |

TABLE 9-2

RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-22) HPB6 | 03-01-22 | Chromium | 13.9 mg/kg (0-2 feet) | EBS Section: Southcentral Machining Area (near Column HH14)<br><br>In 1997 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 1-23) HPB7 | NA | NA | NA | EBS Section: Southcentral Machining Area (near Column G23)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required. |
| (AOC 1-24) HPB8 | NA | NA | NA | EBS Section: ID, Packaging, & Paint Booth Area (near Column HH35)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required. |

**TABLE 9-2**

**RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-25)<br>HPB 9 | 03-01-25 | Chromium<br><br>Nickel<br><br>Zinc | 16.3 mg/kg (2-4 feet)<br>14.2 mg/kg (2-4 feet)<br>29.4 mg/kg (2-4 feet) | EBS Section: Northeastern Machining Area (near Column DD33)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. 1 of 2 samples contained chromium, nickel and zinc above the TAGM #4046 criteria of 10, 13, and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 1-26)<br>HPB10 | 03-01-26 | Zinc | 72.8 mg/kg (0-2 feet) | EBS Section: Northcentral Machining Area (near Column DD15)<br><br>In 1997, 10 subsurface soil samples were collected from 5 boring locations to a depth of 4' below ground surface. 3 of 10 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. A 6" concrete slab exists over the area of contamination, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1 and 6.1.<br>Correspondence letter(s) [2] (3/23/98) | No remediation required.<br><br>Deed notification required[5]. |

TABLE 9-2

RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Paint Booth Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 1-29) Paint Waste Tank 794 | NA | NA | NA | EBS Section: Northeastern Machining Area (near Column AA30)<br><br>In 1998, approximately 118 $yd^3$ of metal and SVOC contaminated soils were removed to 4' below ground surface in the vicinity of the Paint Waste Tank. A total of 8 sidewall and floor endpoint samples were collected from 8 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1, 6.1 and Figure 5-4.<br>Correspondence letter(s) [2] (3/24/98 and 5/13/98) | No additional excavation required. |
| (AOC 1-30) Paint Waste Holding Tanks | AOC 1-30D<br><br>AOC 1-30F2<br><br>AOC 1-30F3<br><br>AOC 1-30F4 | Zinc<br><br>B(a)P<br><br>Arsenic<br><br>Chromium | 74 mg/kg (1-3 feet)<br><br>100 ug/kg (6 feet)<br><br>13 mg/kg (6 feet)<br><br>17 mg/kg (6 feet) | EBS Section: Chem Mill Clean Area (near Column GG48)<br><br>In 1998, approximately 216 $yd^3$ of metal and SVOC contaminated soils were removed to a depth of 6' below ground surface. A total of 13 sidewall and floor endpoint samples were collected from 9 boring locations. 4 of 13 endpoint samples contained zinc and benzo(a)pyrene above the TAGM #4046 criteria of 20 mg/kg and 61 ug/kg, respectively. 2 of 13 endpoint samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. 1 of 13 endpoint samples contained arsenic above the TAGM #4046 criteria of 7.5 mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.1, 5.1, 6.1 and Figure 5-5.<br>Correspondence letter(s) [2] (3/24/98 and 5/13/98) | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[5]. |

## TABLE 9-2

## RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1
## NWIRP, BETHPAGE, NEW YORK
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Notes:
Refer to Figure 3-1 of this document for graphical depiction of AOC locations
Refer to Drawing 1 of Northrop Grumman's Phase 1 ESA for Plant 03 (Radian, 1997a) for graphical depiction of Plant 03 AOCs, primary sample locations, and delineation sample locations.
Refer to Figures 5-1 through 5-5, of Northrop Grumman's Phase 1 ESA for Plant 03 (Radian, 1997a) for graphical depiction of paint booth sample locations
Table presents the environmental condition of Plant 3 AOC 01-01 through AOC 01-30 as of January, 2001.
The designations AOC 1-27 and AOC 1-28 were not used.

Definitions:
NA = Not Applicable.
B(a)P = Benzo(a)pyrene
B(a)A = Benzo(a)anthracene
D(a,h)A = Dibenzo(a,h)anthracene
B(k)F = Benzo(k)fluoranthene

(1) Sample collection depths are measured from ground surface and presented as depth intervals below ground surface (bgs). If no depth interval is given, the interval is the same as the preceding interval.

(2) Information sources include miscellaneous correspondence letters from Northrop Grumman Corporation to NYSDEC and NCDH for the following AOCs:

AOC 1-1: Letter dated March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.
AOC 1-5: Letter dated April 1, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were excavated from under this area. Letter dated May 13, 1998 from NYSDEC to Northrop Grumman approved remediation.
AOC 1-6: Letter dated April 1, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were excavated from under this area. Letter dated May 13, 1998 from NYSDEC to Northrop Grumman approved remediation.
AOC 1-7: Letter dated March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.
AOC 1-8: Letter dated May 7, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were excavated from under this area. Letter dated June 23, 1998 from NYSDEC to Northrop Grumman approved remediation.
AOC 1-9: letter dated March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.

AOC 1-10: Letters dated December 22, 1997 and March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.

AOC 1-11: Letters dated December 22, 1997 and March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.
AOC 1-12: Letter dated December 22, 1997 from Northrop Grumman to NYSDEC reported findings for this area.
AOC 1-13: Letter dated December 22, 1997 from Northrop Grumman to NYSDEC reported findings for this area.
AOC 1-14: Letter dated March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.
AOC 1-16: Letters dated December 22, 1998 and March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.
AOC 1-19: Letter dated March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.
AOC 1-20: Letter dated May 7,1998 to NYSDEC states that contaminated soils were excavated from the former site of (HPB4). Letter dated June 23, 1998 from NYSDEC to Northrop Grumman approved remediation.
AOC 1-26: Letter dated March 23, 1998 from Northrop Grumman to NYSDEC reported findings for this area.
AOC 1-29: Letter dated March 24, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were excavated from this area. Letter dated May 18, 1998 from NYSDEC to Northrop Grumman approved remediation.
AOC 1-30: Letter dated March 24, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were excavated from this area. Letter dated May 13, 1998 from NYSDEC to Northrop Grumman approved remediation.

## TABLE 9-2

## RESOLUTION OF PAINT BOOTHS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 1
## NWIRP, BETHPAGE, NEW YORK
## PAGE 17 OF 17

(3) Final Phase II Environmental Site Assessment (ESA) for Plant 3, GOCO Facility, Bethpage New York (Radian International, 1998a); Volume 1-Technical Findings; Volume 2-Analytical Results Tables AOC01-AOC08 and Volume 5-Borehole Logs AOC01-AOC20.

(4) See Drawing 1 of Northrop Grumman's Final Phase II ESA for a graphical depiction of AOC locations.

(5) Notification of AOC location and presence of residual contamination will be provided in quick claim deed by referencing Table 9-1 and Figure 10-3 in Final Phase 2 EBS.

**TABLE 9-3**

**RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 1 OF 12**

| Area of Concern (AOC) / Dry Well Number[4] | **Boring Location(s)** | **Constituents of Concern** | **Maximum Constituent Concentration and Depth [1]** | **Description** | **Remediation Conducted** |
|---|---|---|---|---|---|
| (AOC 20-1)<br>1 | 03-20-01 | Chromium<br><br>Zinc | 19.9 mg/kg (8-10 feet)<br>23.9 mg/kg (10-12 feet) | Former diffusion gallery: Exterior area south of west section of Building 03-01.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 12' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. Both samples contained zinc above the TAGM #4046 criterion of 20 mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |
| (AOC 20-2)<br>2 | 03-20-02 | Chromium | 13.9 mg/kg (8-10 feet) | Former diffusion gallery: Exterior area south of west section of Building 03-01.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 12' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |

TABLE 9-3

RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-3)<br>3 | NA | NA | NA | Dry well location: Exterior area south of eastern section of Building 03-01.<br><br>In 1997, the vertical extent of metal, SVOC and PCB contaminated soil was determined to extend to 14' below ground surface.<br><br>In 1998, approximately 210 $yd^3$ of metal, SVOC and PCB contaminated soils were removed to a depth of 18' below ground surface. 1 endpoint soil sample was collected from the excavation pit floor and analyzed for RCRA metals, VOCs, SVOCs and TPH. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1.<br>Correspondence letter(s) [2] (6/17/98) | No additional excavation required. |
| (AOC 20-4)<br>4 | Endpoint Sample 20-04 | Chromium | 28.6 mg/kg (24-25 feet) | Dry well location: Exterior area south of eastern section of Building 03-01.<br><br>In 1998, approximately 240 $yd^3$ of metal, VOC, SVOC and PCB contaminated soils were removed to 24' below ground surface. One endpoint sample was collected from the excavation pit floor at a depth interval of 24'-25'. The endpoint sample contained chromium above the TAGM #4046 criterion of 10 mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1.<br>Correspondence letter(s) [2] (6/25/98) | No additional excavation required.<br><br>Deed notification required[7]. |

TABLE 9-3

RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20
NWIRP, BETHPAGE, NEW YORK
PAGE 3 OF 12

| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-5)<br>5 | 03-20-05 | Mercury<br><br>Chromium | 0.24 mg/kg (10-12 feet)<br>10.2 mg/kg (10-12 feet) | Dry well location: Exterior area south of west section of Building 03-01.<br><br>In 1997, 12 subsurface soil samples were collected from 6 boring locations to 14' below ground surface. 2 of 12 samples contained mercury above the TAGM #4046 criterion of 0.1 mg/kg. 1 of 12 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |
| (AOC 20-6)<br>6 | NA | NA | NA | Dry well location: Exterior area north of eastern section of Building 03-01.<br><br>In 1998, metal, VOC, SVOC and PCB contaminated soils were removed to 16' below ground surface. 1 endpoint sample was collected from the excavation pit floor. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1.<br>Correspondence letter(s) [2] (6/26/98) | No additional excavation required. |
| (AOC 20-7)<br>7 | 20-07 | Chromium | 13.5 mg/kg (16-17 feet) | Dry well location: Exterior area north of eastern section of Building 03-01.<br><br>In 1998, approximately 40 $yd^3$ of metal and SVOC contaminated soils were removed to 16' below ground surface. 1 endpoint soil sample collected from the excavation pit floor contained chromium above the TAGM #4046 criteria of 10 mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1.<br>Correspondence letter(s) [2] (6/25/98) | No additional excavation required.<br><br>Area was backfilled with soil.<br><br>Deed notification required[7]. |

TABLE 9-3

RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-8)<br>8 | Excavation Structure 20-08 | Aroclor-1016 | 1400 mg/kg (29-31 feet) | Dry well location: Exterior area east of Building 03-01.<br><br>In 1998, metal, VOC, SVOC and PCB contaminated soils were removed to 30' below ground surface. 12 endpoint samples were collected as deep as 54' below ground surface from one boring location in the excavation pit. 6 of 12 endpoint samples contained PCBs above the TAGM #4046 criterion of 10 mg/kg. PCB impacted soils in this area are currently being investigated under the Navy's Site 1 IR Program.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1.<br>Correspondence letter(s) [2] (9/14/98) | Area being retained by Navy for further investigation. |
| (AOC 20-9)<br>9 | 03-20-09 | Chromium<br><br>Zinc<br><br>B(a)P<br><br>B(a)A | 18.9 mg/kg (10-12 feet)<br>20.8 mg/kg (10-12 feet)<br>290 ug/kg (10-12 feet)<br>270 ug/kg (10-12 feet) | Dry well location: Exterior area east of Building 03-01.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 14' below ground surface. 1 of 2 subsurface soil samples contained chromium, zinc, benzo(a)pyrene and benzo(a)anthracene above the TAGM #4046 criteria of 10 mg/kg, 20 mg/kg, 61 ug/kg and 224 ug/kg, respectively.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |
| (AOC 20-10)<br>10 | 03-20-10 | Zinc | 20.6 mg/kg (12-14 feet) | Dry well location: Underneath exterior paint waste-holding tanks associated with Chem Mill Clean Area.<br><br>In 1997, 1 of 2 subsurface soil samples collected from 1 boring location contained zinc above the TAGM #4046 criterion of 20 mg/kg. Interior contaminated areas are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |

**TABLE 9-3**

**RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 5 OF 12**

| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-11)<br>11 | 03-20-11 | Chromium<br><br>Zinc | 19.3 mg/kg (10-12 feet)<br>22.4 mg/kg (10-12 feet) | Dry well location: Exterior area east of Building 03-01.<br><br>In 1997, 1 of 2 subsurface soil samples collected from 1 boring location contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |
| (AOC 20-12)<br>12 | 03-20-12 | Chromium | 42.9 mg/kg (10-12 feet) | Dry well location: Exterior area east of Building 03-01.<br><br>In 1997, 1 of 2 subsurface soil samples collected from one boring location contained chromium above the TAGM #4046 criterion of 10 mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |

**TABLE 9-3**

**RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 6 OF 12**

| Area of Concern (AOC) / Dry Well Number[4] | **Boring Location(s)** | **Constituents of Concern** | **Maximum Constituent Concentration and Depth [1]** | **Description** | **Remediation Conducted** |
|---|---|---|---|---|---|
| (AOC 20-13)<br>13 | NA | NA | NA | Dry well location: Exterior area south of eastern section of Building 03-01.<br><br>In 1998, approximately 325 $yd^3$ of metal, SVOC and PCB contaminated soils were removed to 28' below ground surface. One endpoint sample was collected from the excavation pit floor. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1.<br>Correspondence letter(s) [2] (6/26/98) | No additional excavation required. |
| (AOC 20-14)<br>14 | 03-20-14 | Zinc | 20.8 mg/kg (12-14 feet) | Dry well location: Exterior area south of eastern section of Building 03-01.<br><br>In 1997, 1 of 4 subsurface soil samples collected from 2 boring locations contained zinc above the TAGM #4046 criterion of 20 mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |

TABLE 9-3

**RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 7 OF 12**

| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-15)<br>15 | TTAOC20-SB04 (TtNUS, 2000) | Chromium<br><br>Lead | 17 mg/kg (3-5 feet)<br>9.7 mg/kg (3-5 feet) | Dry well location: Exterior area south of eastern section of Building 03-01.<br><br>Due to the close proximity of AOC 22 and dry well # 15, the 1997 data generated from sample location 03-22-15A (collected as part of Northrop Grumman's Phase 2 ESA, investigation of AOC 22) is considered relevant to the environmental condition of AOC 20-15. Lead (4070 mg/kg), mercury (0.47 mg/kg) and zinc (119 mg/kg) were detected in this sample above the TAGM #4046 criteria of 7.8[6], 0.1, and 20 mg/kg, respectively.<br><br>In 1999, 12 subsurface soil samples were collected from 4 boring locations immediately adjacent to the 1997 boring (03-22-15A) as part of the Former Dry Well Investigation for AOC 20 (TtNUS, Jan. 2000). Subsurface soil samples were collected as deep as 17' below ground surface. 3 of 12 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. 1 of 12 samples contained lead above the TAGM #4046 criterion of 7.8[6] mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1.<br>Former Dry Well Investigation South of Plant 03, AOC 20.[5] | No remediation required.<br><br>Deed notification required[7]. |
| (AOC 20-16)<br>16 | NA | NA | NA | Dry well location:<br><br>In 1996, one subsurface soil sample was collected from one boring location as part of the Phase 1 investigation for Plant 03. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Executive Summary, Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required. |

TABLE 9-3

RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-17)<br>17 | 03-20-17 | Chromium<br>Zinc<br>B(a)P | 10.5 mg/kg (10-12 feet)<br>29.7 mg/kg (12-14 feet)<br>110 ug/kg (12-14 feet) | Dry well location: Exterior area south of GAC PROM (Building 03-40).<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 14' below ground surface. 1 of 2 samples contained chromium and benzo(a)pyrene above the TAGM #4046 criteria of 10 mg/kg and 61 ug/kg, respectively. Both samples contained zinc above the TAGM #4046 criteria of 20 mg/kg.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |
| (AOC 20-18)<br>18 | 03-20-18 | B(a)P<br>Chromium<br>Copper<br>Zinc | 200 ug/kg (12-14 feet)<br>39 mg/kg (12-14 feet)<br>48.3 mg/kg (12-14 feet)<br>35 mg/kg (12-14 feet) | Dry well location: Exterior area south of GAC PROM (Building 03-40).<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 14' below ground surface. 1 of 2 samples contained chromium, copper, zinc and benzo(a)pyrene above the TAGM #4046 criteria of 10 m/kg, 25 mg/kg, 20 mg/kg and 61 ug/kg, respectively.<br><br>References: ESA[3] – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |
| (AOC 20-19)<br>19 | NA | NA | NA | Dry well location: Exterior area south of GAC PROM (Building 03-40).<br><br>In 1996, one subsurface soil sample was collected from one boring location as part of the Phase 1 investigation for Plant 03. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Executive Summary, Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required. |

TABLE 9-3

**RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 9 OF 12**

| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-20)<br>20 | 03-20-20 | Chromium | 12.3 mg/kg (12-14 feet) | Dry well location: Exterior area south of GAC PROM (Building 03-40).<br><br>In 1997, 2 subsurface soil samples were collected from one boring location to 14' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg.<br><br>References: ESA(3) – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |
| (AOC 20-21)<br>21 | NA | NA | NA | Dry well location: Exterior area south of GAC PROM (Building 03-40).<br><br>In 1997, 2 subsurface soil samples were collected from one boring location to 14' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA(3) – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required. |

**TABLE 9-3**

**RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20**
**NWIRP, BETHPAGE, NEW YORK**
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| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-22)<br>22 | 03-20-22AA | Arsenic<br>Cadmium<br>Chromium<br>Zinc<br>Chrysene<br>B(a)A<br>B(a)P<br>D(a,h)A | 13.1 mg/kg (6-8 feet)<br>1.5 mg/kg (6-8 feet)<br>19.8 mg/kg (6-8 feet)<br>132 mg/kg (6-8 feet)<br>1200 ug/kg (6-8 feet)<br>800 ug/kg (8-10 feet)<br>720 ug/kg (8-10 feet)<br>200 ug/kg (8-10 feet) | Dry well location: Exterior area south of GAC PROM (Building 03-40).<br><br>In 1997, 4 subsurface soil samples were collected from 1 boring location to 14' below ground surface. 1 of 4 samples contained arsenic, cadmium and dibenzo(a,h)anthracene above the TAGM #4046 criteria of 7.5 mg/kg, 1 mg/kg and 14 ug/kg, respectively. 3 of 4 samples contained chromium, zinc, benzo(a)anthracene, benzo(a)pyrene and chrysene above the TAGM #4046 criteria of 10 mg/kg, 20 mg/kg, 224 ug/kg, 61 ug/kg and 400 ug/kg, respectively.<br><br>References: ESA(3) – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |
| (AOC 20-23)<br>23 | 03-20-23 | Zinc<br>Chromium | 52.4 mg/kg (10-12 feet)<br>28.3 mg/kg (10-12 feet) | Dry well location: Under Heat Treat Area B, located near Column F0.3.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 14' below ground surface. 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. Both samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA(3) – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |

**TABLE 9-3**

**RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-24)<br>24 | NA | NA | NA | Dry well location: Under Heat Treat Area B, located near Column D0.2.<br><br>In 1998, metal and SVOC contaminated soils were removed to approximately 16' below ground surface. One endpoint sample was collected from the excavation pit floor. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA(3) – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1.<br>Correspondence letter(s) [2] (5/21/98) | No additional excavation required. |
| (AOC 20-25)<br>25 | 03-20-25 | Selenium<br><br>Cadmium<br><br>Chromium<br><br>Zinc | 4.4 mg/kg (10-12 feet)<br>6.3 mg/kg (12-14 feet)<br>17.7 mg/kg (12-14 feet)<br><br>33.0 mg/kg (12-14 feet) | Dry well location: Under Hydraulic Press Area, near Column OC6.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 14' below ground surface. 1 of 2 samples contained selenium and chromium above the TAGM #4046 criteria of 2 and 10 mg/kg, respectively. Both samples contained cadmium and zinc above the TAGM #4046 criteria of 1 and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA(3) – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |

**TABLE 9-3**

**RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20**
**NWIRP, BETHPAGE, NEW YORK**
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| Area of Concern (AOC) / Dry Well Number[4] | **Boring Location(s)** | **Constituents of Concern** | **Maximum Constituent Concentration and Depth [1]** | **Description** | **Remediation Conducted** |
|---|---|---|---|---|---|
| (AOC 20-26)<br>26 | NA | NA | NA | Dry well location: Not mapped in Northrop Grumman's reports or correspondence.<br><br>In 1996, one subsurface soil sample was collected from one boring location as part of the Phase 1 investigation for Plant 03. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Executive Summary, Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required. |
| (AOC 20-27)<br>27 | 03-20-27<br><br><br><br>03-20-27B | Selenium<br><br>Chromium<br><br>B(a)P<br><br>Zinc | 4.2 mg/kg (10-12 feet)<br>11.1 mg/kg (12-14 feet)<br>110 ug/kg (12-14 feet)<br>22.7 mg/kg (12-14 feet) | Dry well location: Exterior area north of eastern section of Building 03-01.<br><br>In 1997, 4 subsurface soil samples were collected from 2 boring locations to 14' below ground surface. 1 of 4 samples contained chromium, selenium and zinc above the TAGM #4046 criteria of 10, 2 and 20 mg/kg, respectively. 2 of 4 samples contained benzo(a)pyrene above the TAGM #4046 criterion of 61 ug/kg.<br><br>References: ESA(3) – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required.<br><br>Deed notification required[7]. |

TABLE 9-3

RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20
NWIRP, BETHPAGE, NEW YORK
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| Area of Concern (AOC) / Dry Well Number[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 20-28)<br>28 | NA | NA | NA | Dry well location: Exterior area north of eastern section of Building 03-01.<br><br>In 1998, metal, SVOC and PCB contaminated soils were removed to approximately 14' below ground surface. One endpoint sample was collected from the excavation pit floor. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA(3) – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1.<br>Correspondence letter(s) [2] (/26/98) | No additional excavation required. |
| (AOC 20-29)<br>29 | NA | NA | NA | Dry well location: Exterior area south of eastern section of Building 03-01.<br><br>In 1997, 2 subsurface soil samples were collected from one boring location to 14' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA(3) – Sections 2.5.20, 3.3.20, 5.20, 6.20 and Table 3-1. | No remediation required. |

Notes:
Refer to Drawing 1 of Northrop Grumman's Phase 1 ESA for Plant 03 (Radian, 1997a) for graphical depiction of Plant 03 AOCs, primary sample locations, and delineation sample locations.
Table presents the environmental condition of Plant 3 AOC 20-01 through AOC 20-29 as of January, 2001.
The designations AOC 01-27 and AOC 01-28 were not used.

Definitions:
NA = Not Applicable.
B(a)P = Benzo(a)pyrene
B(a)A = Benzo(a)anthracene
D(a,h)A = Dibenzo(a,h)anthracene
B[k]F = Benzo(k)fluoranthene

## TABLE 9-3

## RESOLUTION OF INTERIOR AND EXTERIOR DRY WELLS ASSOCIATED WITH BUILDING 03-01 IDENTIFIED AS PART OF AOC 20
## NWIRP, BETHPAGE, NEW YORK
## PAGE 14 OF 12

(1) Sample collection depths are measured from ground surface and presented as depth intervals below ground surface (bgs). If no depth interval is given, the interval is the same as the preceding interval.

(2) Information sources include miscellaneous correspondence letters from Northrop Grumman Corporation to NYSDEC and NCDH for the following AOCs:

AOC 20-03: Letter dated June 17, 1998 from Northrop Grumman to NCDH states that contaminated soils were removed from under the dry well to a depth of 18 feet bgs.
AOC 20-04: Letter dated June 25, 1998 from Northrop Grumman to NCDH states that contaminated soils were removed from under the dry well to 24 feet bgs and the subject dry well was fitted with a catch basin and integrated to the existing storm drainage system
AOC 20-06: Letter dated June 26, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were removed from under dry well to a depth of 16 feet bgs.
AOC 20-07: Letter dated June 25, 1998 from Northrop Grumman to NCDH states that contaminated soils were removed from under the dry well to a depth of 16 feet bgs.
AOC 20-08: Letter dated September 14, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were removed from under the dry well to a depth of 30 feet bgs. However, the USEPA expressed concern over the elevated PCB concentrations in endpoint samples. This AOC is currently being investigated under the Navy's Site 1 IR program.
AOC 20-13: Letter dated June 26, 1998 from Northrop Grumman to NCDH states that contaminated soils were removed from under the dry well to a depth of 28 feet bgs.
AOC 20-24: Letter dated May 21, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were removed from under the dry well to a depth of 16 feet bgs.
AOC 20-28: Letter dated June 26, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were removed from under the dry well to a depth of 14 feet bgs.

(3) Final Phase II Environmental Site Assessment (ESA) for Plant 3, GOCO Facility, Bethpage New York (Radian International, 1998a); Volume 1-Technical Findings; Volume 3-Analytical Results Tables AOC 09-AOC 32 and Volume 5-Borehole Logs AOC 01-AOC 20.

(4) See Drawing 1 of Northrop Grumman's Final Phase II ESA (Radian International 1998a) for a graphical depiction of AOC/sample locations.

(5) Former Dry Well Investigation South OF Plant NO 03, Area Of Concern 20, Naval Weapons Reserve Plant (NWIRP) Bethpage, NY (Tetra Tech NUS, January 2000). Prepared as part of the Free Product Investigation conducted at the Bethpage Facility.

(6) Site Background for lead, Halliburton NUS Environmental Corporation, May 1992. Final Remedial Investigation Report NWIRP Bethpage.

(7) Notification of AOC location and presence of residual contamination will be provided in quick claim deed by referencing Table 9-1 and Figure 10-3 in Final Phase 2 EBS.

**TABLE 9-4**

**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-01)<br>2 | 03-21-01 | Chromium | 10.9 mg/kg (2-4 feet) | EBS section: Hydraulic Press Area (near Column OC13)<br><br>In 1997, 1 of 2 subsurface soil samples collected from 1 boring location contained chromium above the TAGM #4046 criteria of 10 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 21-02)<br>3 | 03-21-02 | Cadmium<br><br>Chromium<br><br>Copper<br><br>Zinc | 1.1 mg/kg (0-2 feet)<br>14.2 mg/kg (0-2 feet)<br>28.5 mg/kg (0-2 feet)<br>45.5 mg/kg (0-2 feet) | EBS section: Hydraulic Press Area (near Column OB10)<br><br>In 1997, 2 subsurface soil samples were collected form 1 boring location to 4' below ground surface. 1 of 2 samples contained cadmium chromium and copper above the TAGM #4046 criteria of 1, 10 and 25 mg/kg, respectively. Both samples contained zinc above the TAGM #4046 criteria of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 21-03)<br>4 | NA | NA | NA | EBS section: Hydraulic Press Area (near Column OB12)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21. | No remediation required. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-04)<br>6 | NA | NA | NA | EBS section: Machining Area West of Wall 16 (near Column C14)<br><br>In 1997, equipment pit #6 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required. |
| (AOC 21-05)<br>6A | NA | NA | NA | EBS section: Machining Area West of Wall 16 (near Column D13)<br><br>In 1997, equipment pit #6A was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-06)<br>7 | NA | NA | NA | EBS section: Machining Area West of Wall 16 (near Column H13)<br><br>In 1997, equipment pit #7 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required. |
| (AOC 21-07)<br>8 | NA | NA | NA | EBS section: Machining Area West of Wall 16 (near Column K7)<br><br>In 1997, equipment pit #8 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-08)<br>9 | 03-21-08 | Chromium<br><br>Zinc | 14.7 mg/kg (2-4 feet)<br>33 mg/kg (2-4 feet) | EBS section: Machining Area West of Wall 16 (near Column K8)<br><br>In 1997, equipment pit #9 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (8/29/97). | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 21-09)<br>10 | NA | NA | NA | EBS section: Machining Area West of Wall 16 (near Column K9)<br><br>In 1997, equipment pit #10 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-10) 11 | NA | NA | NA | EBS section: North-central Machining Area (near column CC3)<br><br>In 1997, equipment pit #11 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (4/29/98). | No remediation required. |
| (AOC 21-11) 12 | 03-21-11 | Zinc | 26.6 mg/kg(2-4 feet) | EBS section: North-central Machining Area (near Column CC11)<br><br>In 1997, equipment pit #12 was decontaminated using high-pressure water/steam and detergent. 6 subsurface soil samples were collected from 2 boring locations to 4' below ground surface. 1 of 6 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-12)<br>12B | NA | NA | NA | EBS section: North-central Machining Area (near Column CC13)<br><br>In 1997, equipment pit #12B was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (8/29/97). | No remediation required. |
| (AOC 21-13)<br>14 | 03-21-13 | Arsenic<br><br>Chromium<br><br>Selenium<br><br>Zinc | 11.6 mg/kg (0-2 feet)<br>303 mg/kg (0-2 feet)<br>7.5 mg/kg (0-2 feet)<br>36 mg/kg (0-2 feet) | EBS section: North-central Machining Area (near Column FF10)<br><br>In 1997, equipment pit #14 was decontaminated using high-pressure water/steam and detergent. A total of 10 subsurface soil samples were collected from 5 boring locations to 4' below ground surface. 1 of 10 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. 1 of 2 samples contained arsenic, selenium and zinc above the TAGM #4046 criteria of 7.5, 2 and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97 and 3/23/98). | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-14)<br>15 | NA | NA | NA | EBS section: North-central Machining Area (near Column EE17)<br><br>In 1997, equipment pit #15 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required. |
| (AOC 21-15)<br>16 | NA | NA | NA | EBS section: South-central Machining Area (near Column MM9)<br><br>In 1997, equipment pit #16 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-16) 18 | 03-21-16 | Zinc | 30.4 mg/kg (0-2 feet) | EBS section: South-central Machining Area (near Column MM19)<br><br>In 1997, equipment pit #18 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 21-17) 19 | NA | NA | NA | EBS section: Northeastern Machining Area (near Column BB31)<br><br>In 1997, equipment pit #19 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-18)<br>20 | NA | NA | NA | EBS section: Northeastern Machining Area (near Column BB34)<br><br>In 1997, 4 subsurface soil samples were collected form 2 boring locations to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (2/10/98). | No remediation required. |
| (AOC 21-19)<br>21 | 03-21-19 | Zinc<br><br>Chromium | 36.2 mg/kg (0-2 feet)<br>16.9 mg/kg (2-4 feet) | EBS section: Northeastern Machining Area (near Column BB31)<br><br>In 1997, equipment pit #21 was decontaminated using high-pressure water/steam and detergent. 4 subsurface soil samples were collected from 1 boring location to 8' below ground surface. 2 of 4 samples contained chromium and zinc above the TAGM #446 criteria of 10 and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-20)<br>22 | 03-21-20 | Chromium<br><br>Zinc | 13.6 mg/kg (2-4 feet)<br>25 mg/kg (2-4 feet) | EBS section: Northeastern Machining Area (near Column CC37)<br><br>In 1997, equipment pit #22 was decontaminated using high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criteria of 10 mg/kg. Both samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 21-21)<br>23 | 03-21-21<br><br>03-21-21G | Zinc<br><br>PCE<br><br>TCE | 38.9 mg/kg(0-2 feet)<br>14000 ug/kg (12 feet)<br>10000 ug/kg (12 feet) | EBS section: Northeastern Machining Area (near Column EE36)<br><br>In 1997, 37 subsurface soil samples were collected from 7 boring locations to 12' below ground surface. 2 of 2 samples contained zinc above the TAGM #4046 criteria of 20 mg/kg. 7 of 35 samples contained tetrachloroethene above the TAGM #4046 criteria of 1400 ug/kg. 4 of 35 samples contained trichloroethene above the TAGM #4046 criteria of 700 ug/kg. Letter dated May 21, 1998 to NYSDEC states that soil was excavated to a depth of 12 feet, and that no further action is necessary.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[5]. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-22)<br>24A | 03-21-22 | Zinc<br><br>Chromium | 43.3 mg/kg (0-2 feet)<br>17.9 mg/kg (2-4 feet) | EBS section: Northeastern Machining Area (near Column EE37)<br><br>In 1997, equipment pit #24A was decontaminated with high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. Both samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21, 6.21 and Figure 5-13.<br>Correspondence letter [2] (10/30/97). | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 21-23)<br>24B | 03-21-23 | Cadmium<br><br>Chromium<br><br>Zinc | 1.3 mg/kg (2-4 feet)<br>24.5 mg/kg (2-4 feet)<br>87.7 mg/kg (2-4 feet) | EBS section: Northeastern Machining Area (near Column EE37)<br><br>In 1997, equipment pit #24B was decontaminated with high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained cadmium and chromium above the TAGM #4046 criteria of 1 and 10 mg/kg, respectively. Both samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97 and 3/23/98). | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-24) 25 | 03-21-24 | Zinc<br><br>Arsenic<br><br>Chromium<br><br>Selenium | 27.1 mg/kg (0-2 feet)<br>9.2 mg/kg (2-4 feet)<br>16.3 mg/kg (2-4 feet)<br>4.7 mg/kg (2-4 feet) | EBS section: Northeastern Machining Area (near Column EE38)<br><br>In 1997, equipment pit #25 was decontaminated with high-pressure water/steam and detergent. 14 subsurface soil samples were collected from 4 locations to 8' below ground surface. 2 of 2 samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively. 1 of 2 samples contained arsenic above the TAGM #4046 criteria of 7.5 mg/kg. 1 of 14 samples contained selenium above the TAGM #4046 criterion of 2 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97 and 3/23/98). | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-25)<br>26 | 03-21-25 | Selenium<br><br>Zinc | 2.9 mg/kg (0-2 feet)<br>33.5 mg/kg (0-2 feet) | EBS section: Northeastern Machining Area (near Column EE39)<br><br>In 1997, equipment pit #26 was decontaminated using high-pressure water/steam and detergent. 6 subsurface soil samples were collected from 3 boring locations to a depth of 4' below ground surface. 2 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. 1 of 2 samples contained selenium above the TAGM #4046 criterion of 2 mg/kg. Lead was detected at 1660 mg/kg in a sample collected from the 0-2 feet interval. However, re-analysis of the original sample aliquot detected lead at only 4.5 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97 and 3/23/98). | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 21-26)<br>27 | 03-21-26 | Chromium<br><br>Zinc | 19.7 mg/kg (0-2 feet)<br>20.4 mg/kg (0-2 feet) | EBS section: Northeastern Machining Area (near Column EE40)<br><br>In 1997, equipment pit #27 was decontaminated a high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/30/97). | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-4**
**RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Pit Number [4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 21-27) 28 | 03-21-27 | Chromium | 10.1 mg/kg (0-2 feet) | EBS section: Shot Peen/Old Chem Mill Area (near Column BB43)<br><br>In 1997, equipment pit #28 was decontaminated with high-pressure water/steam and detergent. 2 subsurface soil samples were collected from 1 boring location to 4 ' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (8/29/97) | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 21-28) 1 | NA | NA | NA | EBS section: Hydraulic Press Area (near Column OC9)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.21, 3.3.21, 5.21 and 6.21.<br>Correspondence letter [2] (10/22/97). | No remediation required. |

Notes: Refer to Drawing 1 of Northrop Grumman's Phase 1 ESA for Plant 03 (Radian, 1997a) for graphical depiction of Plant 03 AOCs, primary sample locations, and delineation sample locations.
Table presents the environmental condition of Plant 3 AOC 21-01 through AOC 21-28 as of January, 2001.

Definitions:
PCE = Tetrachloroethene
TCE = Trichloroethene
NA = Not Applicable.

# TABLE 9-4
# RESOLUTION OF MACHINING EQUIPMENT PITS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 21
# NWIRP, BETHPAGE, NEW YORK


(1) Sample collection depths measured from ground surface and presented as depth intervals below ground surface (bgs). If no depth interval is given, the interval is the same as the preceding interval.

(2) Information sources include miscellaneous correspondence letters from Northrop Grumman Corporation to NYSDEC and NCDH for the following AOCs:

AOCs 21-01: Letter dated October 13, 1997 from Northrop Grumman Corporation to NYSDEC, reported findings and concluded that no further action was necessary for equipment pit #2.
AOCs 21-04, AOC 21-05, 21-06, 21-07, 21-09, 21-10, 21-11, 21-13, 21-14, 21-15, 21-16, 21-17, 21-19, 21-20, 21-22, 21-23, 21-24, 21-25 and 21-26: Several letters dated October 30, 1997 from Northrop Grumman Corporation to NYSDEC, reported findings and concluded that no further action was necessary for the above equipment pits.
AOCs 21-08, 21-12 and 21-27: Letter dated August 29, 1997 from Northrop Grumman Corporation to NYSDEC reported findings and concluded that no further action was necessary equipment pits #9, #12B and #28, respectively.
AOCs 21-14, 21-23, 21-24 and 21-25: Letter dated March 23, 1998 from Northrop Grumman Corporation to NYSDEC reported findings for and concluded that no further action was necessary equipment pits #15, #24B, #25 and #26, respectively.
AOC 21-18: Letter dated February 10, 1998 from Northrop Grumman Corporation to NYSDEC reported findings and concluded that no further action was necessary for equipment pit #20.
AOC 21-28: letter dated December 22, 1997 from Northrop Grumman Corporation to NYSDEC reported findings and concluded that no further action was necessary for equipment pit #1.

(3) Final Phase II Environmental Site Assessment (ESA) for Plant 3, GOCO Facility, Bethpage New York (Radian International, 1998a); Volume 1-Technical Findings; Volume 3-Analytical Results Tables AOC 09-AOC 32 and Volume 6-Borehole Logs AOC 21-AOC 39.

(4) See Drawing 1 of Northrop Grumman's Final Phase II ESA (Radian International 1998a) for a graphical depiction of AOC/sample locations.

(5) Notification of AOC location and presence of residual contamination will be provided in quick claim deed by referencing Table 9-1 and Figure 10-3 in Final Phase 2 EBS.

TABLE 9-5

RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 AS PART OF AOC 33
NWIRP, BETHPAGE, NEW YORK


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-1)<br>1 | NA | NA | NA | EBS section: Heat Treat Area B (near Col. A0.4)<br><br>Due to its location over the Heat Treat Area 13 process pit, the Waste Accumulation Area identified as AOC 33-1 was removed from Northrop Grumman's Phase 2 scope of work.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required. |
| (AOC 33-2)<br>2 | NA | NA | NA | EBS section: Heat Treat Area B (near Col. F0.4)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required. |
| (AOC 33-3)<br>3 | 03-33-03 | Chromium<br><br>Zinc | 13.6 mg/kg (0-2 feet)<br>22.9 mg/kg (0-2 feet) | EBS section: Heat Oven Area (near Col. C7)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-4)<br>4 | 03-33-04 | Arsenic<br><br>Chromium<br><br>Zinc | 9.3 mg/kg (0-2 feet)<br>31.6 mg/kg (0-2 feet)<br>35.8 mg/kg (0-2 feet) | EBS section: Old Alodine/Plating/Paint Booth Area (near Col. E9)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained arsenic above the TAGM #4046 criterion of 7.5 mg/kg. Both samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-5) 5 | 03-33-05 | Zinc | 36.3 mg/kg (0-2 feet) | EBS section: Machining Area West of Wall 16 (near Col. C10) | No remediation required. |
| | | B(a)A | 760 ug/kg (0-2 feet) | In 1997, 28 subsurface soil samples were collected from 16 boring locations to 4' below ground surface. The following constituents were detected in the samples:<br>- 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg.<br>- 2 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg.<br>- 1 of 28 samples contained chrysene above the TAGM #4046 criterion of 400 mg/kg.<br>- 2 of 28 samples contained benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene above the TAGM #4046 criteria of 224, 61 and 14 ug/kg, respectively.<br>The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | Deed notification required[5]. |
| | | B(a)P | 470 ug/kg (0-2 feet) | | |
| | | Chromium | 17.5 mg/kg (2-4 feet) | | |
| | 03-33-05W | Chrysene | 730 ug/kg (0-2 feet) | | |
| | | D(a,h)A | 90 ug/kg (0-2 feet) | | |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-6)<br>6 | 03-33-06 | B(a)A<br>B(a)P<br>B(b)F<br>B(k)F<br>Chrysene | 1800 ug/kg (0-2 feet)<br>1100 ug/kg (0-2 feet)<br>2100 ug/kg (0-2 feet)<br>2400 ug/kg (0-2 feet)<br>1300 ug/kg (0-2 feet) | EBS section: Machining Area West of Wall 16 (near Col. B12)<br><br>In 1997, 10 subsurface soil samples were collected from 5 boring locations to 4' below ground surface. 1 of 10 samples contained benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene and chrysene above the TAGM #4046 criteria of 224, 1100, 1100 and 400 ug/kg, respectively. 2 of 10 samples contained benzo(a)pyrene above the TAGM #4046 criterion of 61 ug/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 33-7)<br>7 | NA | NA | NA | EBS section: Machining Area West of Wall 16 (near Col. B13)<br><br>In 1997, 2 subsurface soil samples were collected form 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-8)<br>8 | 03-33-08<br><br><br><br>03-33-08A | Chromium<br><br>Zinc<br><br>B(a)A<br><br>Chrysene | 10.4 mg/kg (2-4 feet)<br><br>24.9 mg/kg (2-4 feet)<br><br>330 ug/kg (2-4 feet)<br><br>430 ug/kg (2-4 feet) | EBS section: Machining Area West of Wall 16 (near Col. C13)<br><br>In 1997, 5 subsurface soil samples were collected from 2 boring locations to 6' below ground surface. 1 of 2 subsurface soil samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively. 1 of 5 samples contained benzo(a)anthracene and chrysene above the TAGM #4046 criteria of 224 and 400 ug/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-9)<br>9 | AOC 33-09C | B(a)A<br>B(b)F<br>B(k)F<br>B(a)P<br>D(a,h)A<br>Chrysene | 1300 ug/kg (8-10 feet)<br>1150 ug/kg (8-10 feet)<br>1150 ug/kg (8-10 feet)<br>1100 ug/kg (8-10 feet)<br>210 ug/kg (8-10 feet)<br>1300 ug/kg (8-10 feet) | EBS section: Zyglo Area (near Col. EE3)<br><br>In 1998, approximately 521 $yd^3$ of metal, VOC and SVOC contaminated soils were removed to 12' below ground surface. 24 sidewall and floor endpoint samples were collected from 16 boring locations in the vicinity of the excavation pit. The following constituents were detected in the samples:<br>- 1 of 24 samples contained benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene and chrysene above the TAGM #4046 criteria of 224, 1100, 1100 and 400 ug/kg, respectively.<br>- 3 of 24 samples contained dibenzo(a,h)anthracene above the TAGM #4046 criterion of 14 ug/kg.<br>- 4 of 24 samples contained benzo(a)pyrene above the TAGM #4046 criteria of 61 ug/kg.<br>The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33, 6.33 and Figure 5-18.<br>Correspondence letter(s) [2] (5/13/98) | No additional excavation required.<br><br>Deed notification required[5]. |
| (AOC 33-10)<br>10 | NA | NA | NA | EBS section: South-central Machining Area (near Col. GG10)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-11)<br>11 | NA | NA | NA | EBS section: North-central Machining Area (near Col. BB12)<br><br>In 1998, approximately 637 $yd^3$ of metal and SVOC contaminated soil was removed to 10' below ground surface. 21 endpoint samples were collected form 17 boring locations in the vicinity of the excavation pit. Due to the close proximity of AOCs 33-11 and 33-12, the impacted soils were excavated during one activity and endpoint samples were collected from a common excavation pit area. There were no exceedances of the TAGM #4046 criteria in endpoint samples collected in the vicinity of AOC 33-11.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 6.33 and Figure 5-19.<br>Correspondence letter(s) [2] (5/13/98) | No additional remediation required. |
| (AOC 33-12)<br>12 | AOC 33-$2A_{12}$ | B(a)A<br><br>B(a)P<br><br>Chrysene | 410 ug/kg (2.5-4 feet)<br><br>320 ug/kg (2.5-4 feet)<br><br>420 ug/kg (2.5-4 feet) | EBS section: North-central Machining Area (near Col. BB14)<br><br>In 1998, approximately 637 $yd^3$ of metal and SVOC contaminated soil was removed to 10' below ground surface. 21 endpoint samples were collected form 17 boring locations in the vicinity of the excavation pit. Due to the close proximity of AOCs 33-11 and 33-12, impacted soils were excavated during one activity and endpoint samples were collected from a common excavation pit area. 1 of 21 samples contained benzo(a)anthracene, benzo(a)pyrene and chrysene above the TAGM #4046 criteria of 224, 61 and 400 ug/kg, respectively.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 6.33 and Figure 5-19.<br>Correspondence letter(s) [2] (5/13/98) | No additional remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-13)<br>13 | 03-33-13 | Chromium<br><br>Copper<br><br>Nickel | 18.8 mg/kg (0-2 feet)<br>30.8 mg/kg (0-2 feet)<br>14.5 mg/kg (0-2 feet) | EBS section: South-central Machining Area (near Col. GG13)<br><br>In 1977, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained chromium, copper and nickel above the TAGM #4046 criteria of 10, 25 and 13 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 33-14)<br>14 | 03-33-14 | B(a)A<br><br>B(a)P<br><br>Chrysene<br><br>Zinc | 860 ug/kg (0-2 feet)<br>500 ug/kg (0-2 feet)<br>640 ug/kg (0-2 feet)<br>20.8 mg/kg (2-4 feet) | EBS section: North-central Machining Area (near Col. CC18)<br><br>In 1997, 10 subsurface soil samples were collected from 5 boring locations to 4' below ground surface. 1 of 10 samples contained benzo(a)anthracene, chrysene and zinc above the TAGM #4046 criteria of 224 ug/kg, 400 ug/kg and 20 mg/kg, respectively. 2 of 10 samples contained benzo(a)pyrene above the TAGM #4046 criterion of 61 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-15) 15 | NA | NA | NA | EBS section: South-central Machining Area (near Col. KK19)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required. |
| (AOC 33-16) 16 | 03-33-16 | Zinc | 25.8 mg/kg (2-4 feet) | EBS section: North-central Machining Area (near Col. EE22)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained zinc above the TAGM #4046 criteria of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 33-17) 17 | 03-33-17 | Chromium | 10.8 mg/kg (2-4 feet) | EBS section: South-central Machining Area (near Col. HH23)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criteria of 10 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-18)<br>18 | 03-33-18 | Chromium | 18.1 mg/kg (0-2 feet) | EBS section: Shipping & Receiving Area (near Col. MM23)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criteria of 10 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 33-19)<br>19 | AOC 33-19C | B(a)A<br><br>B(a)P<br><br>D(a,h)A<br><br>Chrysene | 960 ug/kg (2-4 feet)<br>870 ug/kg (2-4 feet)<br>230 ug/kg (2-4 feet)<br>990 ug/kg (2-4 feet) | EBS section: ID, Packaging, & Paint Booth Area (near Col. JJ27)<br><br>In 1998, approximately 61 $yd^3$ of SVOC contaminated soils were removed to 10' below ground surface. A total of 8 sidewall and floor endpoint samples were collected from 5 boring locations in the vicinity of the excavation pit. The following constituents were detected in the endpoint samples:<br>- 2 of 8 samples contained chrysene above the TAGM #4046 criteria of 400 ug/kg.<br>- 4 of 8 samples contained benzo(a)anthracene and dibenzo(a,h)anthracene above the TAGM #4046 criteria of 224 and 14 ug/kg, respectively.<br>- 5 of 8 samples contained benzo(a)pyrene above the TAGM #4046 criteria of 61 mg/kg.<br>The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br>References: ESA[3] – Sections 2.5.33, 3.3.33; 5.33 6.33 and Figure 5-20.<br>Correspondence letter(s) [2] (4/14/98) | No remediation additional required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-20) 20 | 03-33-20 | Zinc | 20.1 mg/kg (2-4 feet) | EBS section: ID, Packaging, & Paint Booth Area (near Col. LL27)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained zinc above the TAGM #4046 criteria of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 33-21) 21 | 03-33-21 | Zinc | 27.3 mg/kg (0-2 feet) | EBS section: Northeastern Machining Area (near Col. DD29)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained zinc above the TAGM #4046 criteria of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-22)<br>22 | 03-33-22<br><br><br>03-33-22A<br><br><br>03-33-22E<br><br>03-33-22S<br><br>03-33-22SA | Chromium<br><br>Zinc<br><br>B(a)A<br><br>Chrysene<br><br>B(b)F<br><br>B(a)P<br><br>Phenol | 101.5 mg/kg (2-4 feet)<br><br>31.1 mg/kg (2-4 feet)<br><br>2900 ug/kg (4-6 feet)<br><br>3300 ug/kg (4-6 feet)<br><br>1900 ug/kg (4-6 feet)<br><br>920 ug/kg (4-6 feet)<br><br>64 ug/kg (6-8 feet) | EBS section: Northeastern Machining Area (near Col. EE30)<br><br>In 1997, 77 subsurface soil samples were collected from 18 boring locations to 8' below ground surface. The following constituents were detected in the samples:<br>- 1 of 77 samples contained benzo(b)fluoranthene above the TAGM #4046 criterion of 1100 ug/kg.<br>- 1 of 2 samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively.<br>- 3 of 77 samples contained benzo(a)pyrene above the TAGM #4046 criterion of 61 ug/kg.<br>- 5 of 77 samples contained benzo(a)anthracene and phenol above the TAGM #4046 criteria of 224 and 30 ug/kg, respectively.<br>The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 33-23)<br>23 | NA | NA | NA | EBS section: South-central Machining Area (near Col. HH33)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-24) 24 | 03-33-24 | Zinc | 27.7 mg/kg (2-4 feet) | EBS section: Northeastern Machining Area (near Col. CC34)<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-25)<br>25 | 03-33-25<br><br>03-33-25E<br><br><br><br><br>03-33-25<br><br>03-33-25EDNE | Zinc<br><br>B(a)P<br><br>B(b)F<br><br>Chrysene<br><br>D(a,h)A<br><br>B(a)A | 20.6 mg/kg (2-4 feet)<br><br>1600 ug/kg (0-2 feet)<br><br>3400 ug/kg (0-2 feet)<br><br>2400 ug/kg (0-2 feet)<br><br>44 ug/kg (4-6 feet)<br><br>1700 ug/kg (2-4 feet) | EBS section: Alodine/Sulfuric Acid Anodize Area (near Col. MM33)<br><br>In 1997, 39 subsurface soil samples were collected from 14 boring locations to 6' below ground surface. The following constituents were detected in the samples:<br>- 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg.<br>- 2 of 39 samples contained benzo(b)fluoranthene above the TAGM #4046 criterion of 1100 ug/kg.<br>- 3 of 39 samples contained dibenzo(a,h)anthracene above the TAGM #4046 criterion of 14 ug/kg.<br>- 5 of 39 samples contained chrysene above the TAGM #4046 criterion of 400 ug/kg.<br>- 10 of 39 samples contained benzo(a)anthracene above the TAGM #4046 criterion of 224 ug/kg.<br>- 31 of 39 samples contained benzo(a)pyrene above the TAGM 4046 criterion of 61 ug/kg.<br>The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |

**TABLE 9-5**
**RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) / Waste Accumulation Area[4] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| (AOC 33-26)<br>26 | 03-33-26<br><br><br><br>03-33-26N<br><br>03-33-26NNW<br><br>03-33-26NDNE | Zinc<br><br>Phenol<br><br><br>B(a)A<br><br>B(a)P<br><br>D(a,h)A | 30.9 mg/kg (0-2 feet)<br><br>1200 ug/kg (2-5 feet)<br><br><br>470 ug/kg (4-6 feet)<br><br>520 ug/kg (8-10 feet)<br><br>94 ug/kg (0-2 feet) | EBS section: Northeastern Machining Area (near Col. BB40)<br><br>In 1997, 53 subsurface soil samples were collected from 14 boring locations to 10' below ground surface. The following constituents were detected in the samples:<br>- 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg.<br>- 2 of 53 samples contained phenol above the TAGM #4046 criterion of 30 ug/kg.<br>- 3 of 53 samples contained benzo(a)anthracene and dibenzo(a,h)anthracene above the TAGM #4046 criteria of 224 and 14 ug/kg, respectively.<br>- 7 of 53 samples contained benzo(a)pyrene above the TAGM #4046 criterion of 61 ug/kg.<br>The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |
| (AOC 33-27)<br>27 | 03-33-27 | Chromium<br><br>Zinc | 12.4 mg/kg (2-4 feet)<br><br>29.1 mg/kg (2-4 feet) | EBS section: ID, Packaging, & Paint Booth Area (near Col. JJ41)<br><br>In 1997, 2 subsurface soil samples were collected form 1 boring location to 4' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg. Both subsurface soil samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[3] – Sections 2.5.33, 3.3.33, 5.33 and 6.33. | No remediation required.<br><br>Deed notification required[5]. |

# TABLE 9-5
# RESOLUTION OF SMALL VOLUME WASTE ACCUMULATION AREAS IN BUILDING 03-01 IDENTIFIED AS PART OF AOC 33
# NWIRP, BETHPAGE, NEW YORK


Notes:
Refer to Drawing 1 of Northrop Grumman's Phase 1 ESA for Plant 03 (Radian, 1997a) for graphical depiction of Plant 03 AOCs, primary sample locations, and delineation sample locations.
Table presents the environmental condition of Plant 3 AOC 33-01 through AOC 33-27 as of January, 2001.

Definitions:
NA = Not Applicable.
B(a)P = Benzo(a)pyrene
B(a)A = Benzo(a)anthracene
D(a,h)A = Dibenzo(a,h)anthracene
B(k)F = Benzo(k)fluoranthene
B(b)F = Benzo(b)fluoranthene

(1) Sample collection depths are measured from ground surface and presented as depth intervals below ground surface (bgs). If no depth interval is given, the interval is the same as the preceding interval.

(2) Information sources include miscellaneous correspondence letters from Northrop Grumman Corporation to NYSDEC and NCDH for the following AOCs:

AOC 33-09: Letter dated May 13, 1998 from Northrop Grumman to NYSDEC states that soil was excavated to depths of 8 and 12 feet below ground surface.
AOCs 33-11/12: Letter dated May 13, 1998 from Northrop Grumman to NYSDEC, reported that soil was excavated to a depths of 8 and 10 feet below ground surface.
AOC 33-19: Letter dated April 14, 1998 from Northrop Grumman to NYSDEC states that soil was excavated to a depth of 10 feet below ground surface.

(3) Final Phase II Environmental Site Assessment (ESA) for Plant 3, GOCO Facility, Bethpage New York (Radian International, 1998a); Volume 1-Technical Findings; Volume 4-Analytical Results Tables AOC 33-AOC 39 and Volume 6-Borehole Logs AOC 21-AOC 39.

(4) See Drawing 1 of Northrop Grumman's Final Phase II ESA (Radian International 1998a) for a graphical depiction of AOC/sample locations.

(5) Notification of AOC location and presence of residual contamination will be provided in quick claim deed by referencing Table 9-1 and Figure 10-3 in Final Phase 2 EBS.

**TABLE 9-6**

**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| **Phase II ESA for Salvage Storage Area, Permitted Drum Storage Facility, and Industrial Waste Treatment Plant** | | | | | |
| AOC 1<br>UST 03-07-01 (old) | NA | NA | NA | EBS Section: Salvage Storage Area.<br><br>In 1997, 11 subsurface soil samples were collected from 3 boring locations to 24' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.1, 3.3.1.2, 5.1.1, 6.0, Figure 2 and Table 5-1. | No remediation required. |
| AOC 2<br>UST 03-28-01 | NA | NA | NA | EBS Section: South of Building 03-34<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 20' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[3] – Sections 2.5.2, 3.3.2, 5.2, 6.0, Figure 2 and Table 5-1. | No remediation required. |
| **Phase II ESA for Plant 10 and Plant 17 South Warehouses** | | | | | |
| AOC 1<br>Former Drywell Outside Plant 10 | 10-01A | 1,2-DCE<br><br>Cr | 740 ug/kg (12-14 feet)<br>11 mg/kg (12-14 feet) | EBS Section: Immediately exterior of Building 10-01.<br><br>In 1997, 6 subsurface soil samples were collected from 3 boring locations to 34' below ground surface. 1 of 6 samples contained 1,2-dichloroethene and chromium above the TAGM #4046 criteria of 300 ug/kg and 10 mg/kg, respectively.<br><br>References: ESA[4] – Sections 2.5.1, 5.1.1, 6.1, 6.2, Figure 3 and Figure 4.<br>Correspondence Letter(s) [2] 3/30/98. | No remediation required.<br><br>Deed notification required[8]. |

**TABLE 9-6**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 2<br>Former Sanitary Leaching Chambers Outside of Plant 10<br>(Consists of Dry-wells 10-2AA, 10-2BA, 10-2CA, former septic tank and settling chambers.) | Drywell 10-2CA | Mercury | 0.16 mg/kg (14-15 feet) | EBS Section: Immediately exterior of Building 10-01.<br><br>In 1998, approximately 320 $yd^3$ of metal contaminated soils were removed to a depth of 24' below ground surface. Due to the close proximity of the settling chambers, drywells and septic tank, these features were excavated as one unit. 5 endpoint samples were collected from 5 discrete locations within the excavation pit. 1 of 5 samples contained mercury above the #TAGM 4046 criterion of 0.1 mg/kg.<br><br>References: ESA[4] – Sections 2.5.2, 5.2, 6.1, 6.2, Figure 3 and Figure 4.<br>Correspondence letter(s) [2] 6/26/98. | No additional excavation required.<br><br>Area was backfilled with soil.<br><br>Deed notification required[8]. |
| AOC 3<br>Subsurface Piping at Plant 10<br>(Wet Chemistry Laboratory and Paint Lab Area) | SSS-03<br>(Near South Wall)<br><br>SSNF-08<br>(North Floor) | Mercury<br><br>B(a)A<br><br>D(a,h)A | 2.2 mg/kg (3 feet)<br>320 ug/kg (3 feet)<br><br>43 ug/kg (8 feet) | EBS Section: Building 10-01.<br><br>In 1998, approximately 50$yd^3$ of metal and SVOC contaminated soils were removed to 8' below ground surface. 10 endpoint soil samples were collected from the excavation pit. The following constituents were detected in the samples:<br>- 1 of 10 samples contained benzo(a)anthracene above the TAGM #4046 criterion of 224 ug/kg.<br>- 2 of 10 samples contained dibenzo(a,h)anthracene above the TAGM #4046 criterion of 14 ug/kg.<br>- 3 of 10 samples contained mercury above the TAGM #4046 criterion of 0.1 mg/kg.<br><br>References: ESA[4] – Sections 2.5.3, 5.3.1, 6.1, 6.2, Figure 3 and Figure 4.<br>Correspondence letter(s) [2] 3/31/98. | No additional excavation required.<br><br>Area was backfilled with soil and capped with 6" of concrete.<br><br>Deed notification required[8]. |

**TABLE 9-6**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 4<br>Stained Floor in Machine Shop at Plant 10 | 10-04B<br><br><br><br>10-04A | Arsenic<br><br>Chromium<br><br>B(a)P<br><br>Zn | 13.5 mg/kg (0-2 feet)<br><br>68.2 mg/kg (0-2 feet)<br><br>73 ug/kg (2-4 feet)<br>20 mg/kg (2-4 feet) | EBS Section: Building 10-01.<br><br>In 1997, 5 subsurface soil samples were collected from 2 boring locations to 4' below ground surface. The following constituents were detected in the samples:<br>- 1 of 5 samples contained arsenic and benzo(a)pyrene above the TAGM #4046 criteria of 7.5 mg/kg and 61 ug/kg, respectively.<br>- 2 of 5 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg.<br>- 3 of 5 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg.<br>The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br>References: ESA(4) – Sections 2.5.4, 5.4, 6.1, 6.2, Figure 3 and Figure 4<br>Correspondence letter(s) [2] 3/30/98. | No remediation required.<br><br>Deed notification required[8]. |
| AOC 5<br>Loading Dock at Plant 10 | NA | NA | NA | EBS Section: Building 10-01.<br><br>In 1997, 4 subsurface soil samples were collected form 2 boring locations to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA (4) – Sections 2.5.5, 5.5, 6.1, 6.2, Figure 3 and Figure 4. | No remediation required. |

**TABLE 9-6**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 6<br>Former Stormwater Dry Wells(17S-06EA and 17S-06FA) Outside of Plant 17 South Warehouses | NA | NA | NA | EBS Section: Immediately exterior of each Plant 17S warehouse.<br><br>In 1998, metal, VOC, SVOC and PCB contaminated soils were removed from former drywells 17S06EA and 17S-06FA to a depth of 24' below ground surface. 2 endpoint samples were collected from the floor of each drywell. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA [4] – Sections 2.5.6, 5.6, 6.1 and 6.2. Correspondence letter(s) [2] 3/30/98 and 6/22/98. | No additional excavation required. |
| AOC 7<br>Drywell Inside of Warehouse N at Plant 17 South | 17S-07-1 | Cr<br><br>Zn<br><br>B(a)A<br><br>B(a)P<br><br>Chrysene<br><br>D(a,h)A<br><br>Phenol | 17.9 mg/kg (12-14 feet)<br>411 mg/kg (12-14 feet)<br>1200 ug/kg (12-14 feet)<br>950 ug/kg (12-14 feet)<br>1200 ug/kg (12-14 feet)<br>73 ug/kg (12-14 feet)<br>340 ug/kg (12-14 feet) | EBS Section: Building 17S-20.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 34' below ground surface. 1 of 2 samples contained chromium, zinc, benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene and phenol above the TAGM #4046 criteria of 10 mg/kg, 20 mg/kg, 224 ug/kg, 61 ug/kg, 400 ug/kg, 14 ug/kg and 30 ug/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[4] – Sections 2.5.7, 5.7, 6.1 and 6.2. | No remediation required.<br><br>Deed notification required[8]. |

**TABLE 9-6**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 8<br>Former Sanitary Leaching Chambers East of Warehouses L and M at Plant 17 South | 17S-08D<br><br>17S-08A | As<br><br>Zn | 21.8 mg/kg (32-34 feet)<br>21.9 mg/kg (12-14 feet) | EBS Section: Building 17S-20.<br><br>In 1997, 12 subsurface soil samples were collected from 6 boring locations to 34' below ground surface. 1 of 12 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. 5 of 12 samples contained arsenic above the TAGM #4046 criterion of 7.5 mg/kg.<br><br>References: ESA[4] – Sections 2.5.8, 5.8, 6.1, 6.2 and Figure 4.<br>Correspondence letter(s) [2] 3/30/98. | No remediation required.<br><br>Deed notification required[8]. |

**Phase II ESA for Plant 17 North Warehouses**

| | | | | | |
|---|---|---|---|---|---|
| AOC 1<br>Former Stormwater Dry Well at Warehouse 4 | 17-01 | Cr | 13.1 mg/kg (32-34 feet) | EBS Section: Building 17N-3<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 34' below ground surface. 1 of 2 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg.<br><br>References: ESA[5] – Sections 2.5.1, 5.1 and Figure 3. | No remediation required.<br><br>Deed notification required[8]. |
| AOC 2<br>Former Oil Barrel Storage Area at Warehouse 4 | WHES4-SS4-10 | Cr | 13.4 mg/kg (6 feet) | EBS Section: Building 17N-3.<br><br>- In 1998, approximately 266 $yd^3$ of metal and SVOC contaminated soil was removed to a depth of 6' below ground surface. A total of 14 sidewall and floor endpoint soil samples were collected from 13 boring locations. Additional soil was excavated at one location and the new endpoint had no exceedances.<br><br>References: ESA[5] – Sections 2.5.2, 5.2, 6.0 and Figure 3.<br>Correspondence letter(s) [2] 3/31/98 | No additional excavation required.<br><br>Deed notification required[8]. |

**TABLE 9-6**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 3<br>Trench in Warehouse 5 | 17-03A | Cr<br><br>Zn | 11.6 mg/kg (2-4 feet)<br>22.3 mg/kg (2-4 feet) | EBS Section: Building 17N-6.<br><br>In 1997, 3 subsurface soil samples were collected from 2 boring locations to 4' below ground surface. 1 of 3 samples contained chromium and zinc above the TAGM #4046 criteria of 10 and 20 mg/kg, respectively. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[5] – Sections 2.5.3, 5.3 ad Figure 3. | No remediation required.<br><br>Deed notification required[8]. |
| AOC 4<br>Former Septic Tank and Leaching Pools at Warehouse 5 | NA | NA | NA | EBS Section: Building 17N-6.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 34' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[5] – Sections 2.5.4, 5.4 and Figure 3. | No remediation required. |
| AOC 5<br>Former Pit at Warehouse 6 | NA | NA | NA | EBS Section: Building 17N-2.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[5] – Sections 2.5.5, 5.5 and Figure 3. | No remediation required. |
| AOC 6<br>Drum Storage Area at Warehouse 8 | NA | NA | NA | EBS Section: Building 17N-1.<br><br>In 1997, 4 subsurface soil samples were collected from 2 boring locations to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[5] – Sections 2.5.6, 5.6 and Figure 3. | No remediation required. |

**TABLE 9-6**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 7<br>Staining at Air Compressor at Warehouse 8 | NA | NA | NA | EBS Section: Building 17N-1.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[5] – Sections 2.5.7, 5.7 and Figure 3. | No remediation required. |
| AOC 8<br>Staining in Chemical Storage Area at Warehouse 8 | 17-08D | Cr<br><br>Zn<br><br>Hg | 11.2 mg/kg (0-2 feet)<br>21.5 mg/kg (0-2 feet)<br>0.31 mg/kg (0-2 feet) | EBS Section: Building 17N-1.<br><br>In 1997, 12 subsurface soil samples were collected from 6 boring locations to 4' below ground surface. The following constituents of concern were detected in the samples:<br>- 2 of 12 samples contained chromium and mercury above the TAGM #4046 criteria of 10 and 0.1 mg/kg, respectively.<br>- 1 of 12 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg.<br>The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br>References: ESA[5] – Sections 2.5.8, 5.8, 6.0 and Figure 3. | No remediation required.<br><br>Deed notification required[8]. |
| AOC 9<br>Sump at Warehouse 9 | NA | NA | NA | EBS Section: Building 17N-4.<br><br>In 1997, 1 subsurface soil sample was collected from 1 boring location to 2' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[5] – Sections 2.5.9, 5.9 and Figure 3. | No remediation required. |

**TABLE 9-6**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 10 Router Bench Collection Trenches in Warehouse 9 | 17-10A | Zn | 32.6 mg/kg (2-4 feet) | EBS Section: Building 17N-4.<br><br>In 1997, 4 subsurface soil samples were collected from 2 boring locations to 4' below ground surface. 1 of 4 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[5] – Sections 2.5.10, 5.10 and Figure 3. | No remediation required.<br><br>Deed notification required[8]. |
| AOC 11 Former Sanitary Leaching Chambers South of Warehouse 8 | NA | NA | NA | EBS Section: Building 17N-1.<br><br>In 1997, 6 subsurface soil samples were collected from 3 boring locations to 34' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[5] – Sections 2.5.11, 5.11 and Figure 3. | No remediation required. |
| AOC 12 Historic Drum Storage Area North of Warehouse 8 | WHSE#8SSW-1 | Cr | 19.7 mg/kg (7 feet) | EBS Section: Land Area.<br><br>In 1998, approximately 2500 $yd^3$ of metal, VOC, SVOC, and PCB contaminated soil was removed to a depth of 4' below ground surface. Initial endpoint samples contained chromium, arsenic, trichloroethene and PCBs above the TAGM #4046 criteria. Soils in the vicinity of 5 sample locations required additional excavation to 7' below ground surface, which removed approximately 276 $yd^3$ of metal, VOC and PCB contaminated soil. 5 endpoint samples were collected from the floor of each secondary excavation pit. 1 of 5 samples contained chromium above the TAGM #4046 criterion of 10 mg/kg.<br><br>References: ESA[5] – Sections 2.5.12, 5.12, 6.0, Figure 3 and Figure 6.<br>Correspondence letter(s) [2] 3/31/98 | No additional excavation required.<br><br>Deed notification required[8]. |

**TABLE 9-6**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 13<br>Lead Paint at All Plant 17N Warehouses | NA | NA | NA | EBS Section: 17N Buildings.<br><br>In 1997, 24 surface soil samples were collected from 24 boring locations. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[5] – Sections 2.5.13, 5.13 and Figure 3. | No remediation required. |

**Phase II ESA for Plant 20**

| | | | | | |
|---|---|---|---|---|---|
| AOC 1<br>Paint Shop Floor and Drain Line | NA | NA | NA | EBS Section: Building 20-01.<br><br>In 1997, 4 subsurface soil samples were collected from 2 boring locations to a depth of 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[6] – Sections 2.5.1, 5.1 and Figure 2. | No remediation required. |
| AOC 2<br>Waste Oil Storage Area | NA | NA | NA | EBS Section: Building 20-01.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[6] – Sections 2.5.2, 5.2 and Figure 2. | No remediation required. |
| AOC 3<br>Unused Product Storage Area | 20-03 | Hg<br><br>Zn | 0.11 mg/kg (2-4 feet)<br>31.4 mg/kg (2-4 feet) | EBS Section: Building 20-01.<br><br>In 1997, 14 subsurface soil samples were collected from 4 boring locations to 8' below ground surface. 1 of 14 samples contained mercury above the TAGM #4046 criterion of 0.1 mg/kg. 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[6] – Sections 2.5.3, 5.3 and Figure 2. | No remediation required.<br><br>Deed notification required[8]. |

**TABLE 9-6**
**RESOLUTION OF AOCs IDENTIFIED FOR PLANTS 10, 17, AND 20 BY PHASE I ESAs**
**NWIRP, BETHPAGE, NEW YORK**


| Area of Concern (AOC) [7] | Boring Location(s) | Constituents of Concern | Maximum Constituent Concentration and Depth [1] | Description | Remediation Conducted |
|---|---|---|---|---|---|
| AOC 4<br>Oil Dispensing Area | 20-04 | Zn | 20.1 mg/kg (2-4 feet) | EBS Section: Building 20-01.<br><br>In 1997, 9 subsurface soil samples were collected from 2 boring locations to a depth of 14' below ground surface. 1 of 2 samples contained zinc above the TAGM #4046 criterion of 20 mg/kg. The areas of contamination are covered with at least 6" of concrete, minimizing human exposure to subsurface soils.<br><br>References: ESA[6] – Sections 2.5.4, 5.4 and Figure 3. | No remediation required.<br><br>Deed notification required[8]. |
| AOC 5<br>Hydraulic Lift Reservoir | NA | NA | NA | EBS Section: Building 20-01.<br><br>In 1997, 2 subsurface soil samples were collected from 1 boring location to a depth of 4' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[6] – Sections 2.5.5, 5.5 and Figure 3. | No remediation required. |
| AOC 6<br>Removed or Abandoned USTs | NA | NA | NA | EBS Section: Building 20-01.<br><br>In 1997, 12 subsurface soil samples were collected from 4 boring locations to 24' below ground surface. There were no exceedances of the TAGM #4046 criteria.<br><br>References: ESA[6] – Sections 2.5.6, 5.6 and Figure 3. | No remediation required. |

Notes:
Table presents the environmental condition of the following GOCO facilities as of January, 2001: Salvage Storage Area, Permitted Drum Storage Facility and the Industrial Waste Treatment Plant-AOC-01 through AOC-02; Plant 10-AOC-01 through AOC-05; Plant 17 South Warehouses-AOC-06 through AOC-08; Plant 17 North Warehouses-AOC-01 through AOC-13 and Plant 20-AOC-01 through AOC-06.

Definitions:
NA = Not Applicable.
1,2-DCE = 1,2-Dichloroethene
B(a)A = Benzo(a)anthracene
D(a,h)A = Dibenzo(a,h)anthracene
B(a)P = Benzo(a)Pyrene

(1) Sample collection depths measured from ground surface and presented as depth intervals below ground surface (bgs). If no depth interval is given, the interval is the same as the preceding interval.

(2) Information sources include miscellaneous correspondence letters from Northrop Grumman Corporation to NYSDEC and NCDH for the following AOCs:

Plant 10, AOC-01: Letter dated March 30, 1998 from Northrop Grumman to NYSDEC reported the findings of the Phase 2 Program for this AOC.

Plant 10, AOC-02: Letter dated June 26, 1998 from Northrop Grumman to NYSDEC states that 320 cubic yards of contaminated soils were removed from various leaching chambers located immediately exterior to Plant 10.

Plant 10, AOC-03: Letter dated March 31, 1998 from Northrop Grumman to NYSDEC states that 50 cubic yards of contaminated soils were removed from beneath concrete floor.

Plant 10, AOC-04: Letter dated March 30, 1998 from Northrop Grumman to NYSDEC reported the Phase 2 findings for this AOC.

Plant 17 South, AOC-06: Letters dated March 30, 1998 and June 22, 1998 from Northrop Grumman to NYSDEC states that contaminated soils were removed to a depth of 24 feet below ground surface from two former dry-wells located exterior of the Plant 17 South warehouses.

Plant 17 South, AOC-08: Letter dated March 30, 1998 from Northrop Grumman to NYSDEC reported the Phase 2 findings for this AOC.

Plant 17 North, AOC-02: Letter dated March 31, 1998 from Northrop Grumman to NYSDEC states that 266 cubic yards of contaminated soils were removed from the former oil barrel storage area.

Plant 17 North, AOC-12 Letter dated March 31, 1998 from Northrop Grumman to NYSDEC states that approximately 2800 cubic yards of contaminated soils were removed from the drum storage area north of Plant 17.

(3) Final Phase II Environmental Site Assessment (ESA) for the Salvage Area, Permitted Drum Storage Facility, and Industrial Waste Treatment Plant; GOCO Facility, Bethpage, New York (Radian International; September, 1997).

(4) Final Phase II Environmental Site Assessment (ESA) for Plant 10 and Plant 17 South Warehouses; GOCO Facility, Bethpage, New York (Radian International; March 1998).

(5) Final Phase II Environmental Site Assessment (ESA) for Plant 17 North Warehouses; GOCO Facility, Bethpage, New York (Radian International; December 1997).

(6) Final Phase II Environmental Site Assessment (ESA) for Plant 20 Transportation Maintenance Facility; GOCO Facility, Bethpage, New York (Radian International; September 1997).

(7) Refer to the following figures for a graphical depiction of AOC/sample locations:

Northrop Grumman's Phase II ESA for the Salvage Area, Permitted Drum Storage Facility, and Industrial Waste Treatment Plant; Figure 2.
Northrop Grumman's Phase II ESA for Plant 10 and Plant 17 South Warehouses; Figure 3.
Northrop Grumman's Phase II ESA for Plant 17 North Warehouses; Figure 3.
Northrop Grumman's Phase II ESA for Plant 20 Transportation Maintenance Facility; Figure 2.

(8) Notification of AOC location and presence of residual contamination will be provided in quick claim deed by referencing Table 9-1 and Figure 10-3 in Final Phase 2 EBS.

# APPENDIX B
# ENVIRONMENTAL CONDITION OF PROPERTY

## TABLE 10-1

## ENVIRONMENTAL CONDITION RATING SUMMARY
## NWIRP, BETHPAGE, NEW YORK
## PAGE 1 OF 5

| Real Property Unit | Phase I EBS Rating | Phase II[(1)] EBS Rating | Addressed in Phase II EBS Section | Suitable for Transfer Without Further Action |
|---|---|---|---|---|
| Building 03-01: Western Part | | | | |
| Plant 03 Cafeteria | 7/Gray | 3/Light Green | 3.1.1 | Yes |
| Heat Treat Area A | 7/Gray | 3/Light Green | 3.1.2 | Yes |
| Hydraulic Press Area | 7/Gray | 3/Light Green | 3.1.3 | Yes |
| Heat Treat Area B | 7/Gray | 4/Dark Green | 3.1.4 | Yes |
| Arts & Engraving Area | 2/Blue | 3/Light Green | 3.1.5 | Yes |
| Heat Oven Area | 1/White | 3/Light Green | 3.1.6 | Yes |
| Facilities Maintenance Area (Interior) | 7/Gray | 4/Dark Green | 3.1.7 | Yes |
| Old Alodine/Plating/Paint Booth Area | 7/Gray | 4/Dark Green | 3.1.8 | Yes |
| Machining Area West of Wall 16 | 7/Gray | 3/Light Green | 3.1.9 | Yes |
| Building 03-01: Eastern Part | | | | |
| Shipping and Receiving Area (Interior) | 7/Gray | 3/Light Green | 3.2.1 | Yes |
| Exterior Area Outside Shipping and Receiving Area Containing Drywell 34-07 | 1/White | 5/Yellow | 3.2.1 | No |
| Exterior Area Containing Drywell 20-08 | 1/White | 5/Yellow | 3.2.11 | No |
| Alodine/Sulfuric Acid Anodize Area | 2/Blue | 3/Light Green | 3.2.2 | Yes |
| Former Autoclave Area | 7/Gray | 4/Dark Green | 3.2.3 | Yes |
| Honeycomb Pretreatment Area | 7/Gray | 4/Dark Green | 3.2.4 | Yes |
| Chromic Acid Anodize Area | 7/Gray | 4/Dark Green | 3.2.5 | Yes |
| Southcentral Machining Area | 7/Gray | 4/Dark Green | 3.2.6 | Yes |
| Magneform Area | 7/Gray | 4/Dark Green | 3.2.7 | Yes |
| Identification, Packaging, Paint Booth Area | 7/Gray | 4/Dark Green | 3.2.8 | Yes |
| Northcentral Machining Area | 7/Gray | 4/Dark Green | 3.2.9 | Yes |

**TABLE 10-1**
**ENVIRONMENTAL CONDITION RATING SUMMARY**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 2 of 5**

| Real Property Unit | Phase I EBS Rating | Phase II EBS Rating | Addressed in Phase II EBS Section | Suitable for Transfer Without Further Action |
|---|---|---|---|---|
| First Aid/Northcentral Office Area | 1/White | 1/White | 3.2.10 | Yes |
| Shot Peen/Old Chem Mill Area | 7/Gray | 4/Dark Green | 3.2.11 | Yes |
| Flow Coat/Chem Mill Etch Area | 3/Light Green | 4/Dark Green | 3.2.12 | Yes |
| Sulfuric Acid Anodize Area | 7/Gray | 4/Dark Green | 3.2.13 | Yes |
| Northeastern Machining Area | 7/Gray | 4/Dark Green | 3.2.14 | Yes |
| Chem Mill Clean Area | 5/Yellow | 4/Dark Green | 3.2.15 | Yes |
| Zyglo Area | 7/Gray | 4/Dark Green | 3.2.16 | Yes |
| Waste Holding Tanks (East of Hy. Press A) | 3/Light Green | 3/Light Green | 3.2.17 | Yes |
| Area North of Building 03-01 | | | | |
| Building 03-02 | 1/White | 1/White | 3.3.1 | Yes |
| Building 03-04 | 1/White | 1/White | 3.3.1 | Yes |
| Building 03-09 | 1/White | 1/White | 3.3.1 | Yes |
| Building 03-11 | 1/White | 1/White | 3.3.1 | Yes |
| Building 03-03 | 2/Blue | 2/Blue | 3.3.2 | Yes |
| Building 03-39 | 2/Blue | 2/Blue | 3.3.3 | Yes |
| Building 03-41 | 1/White | 4/Dark Green | 3.3.4 | Yes |
| Building 03-52 | 1/White | 1/White | 3.3.5 | Yes |
| Area East of Building 03-01 | | | | |
| Former Drum Marshalling Area/Leachfield | 5/Yellow | 5/Yellow | 3.4.1 | No |
| Building 03-13 | 7/Gray | 3/Light Green | 3.4.2 | Yes |
| Building 03-14 | 1/White | 6/Red | 3.4.3 | No |
| Building 03-15 | 7/Gray | 6/Red | 3.4.4 | No |
| Buildings 03-31 and 03-32 | 7/Gray | 5/Yellow | 3.4.5 | No |
| Building 03-33 | 1/White | 5/Yellow | 3.4.6 | No |
| Building 03-38 | 7/Gray | 5/Yellow | 3.4.7 | No |
| Buildings 03-17 and 03-44 | 7/Gray | 5/Yellow | 3.4.8 | No |
| Building 03-45 | 7/Gray | 6/Red | 3.4.9 | No |
| Building 03-51 | 1/White | 6/Red | 3.4.10 | No |
| Northeast Part of Navy Parcel | | | | |
| Building 03-07 | 2/Blue | 2/Blue | 3.5.1 | Yes |
| Building 03-08 | 7/Gray | 2/Blue | 3.5.2 | Yes |
| Salvage Storage Area | 3/Light Green | 3/Light Green | 3.5.3 | Yes |
| Building 03-12 | 1/White | 1/White | 3.5.4 | Yes |

**TABLE 10-1**
**ENVIRONMENTAL CONDITION RATING SUMMARY**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 3 of 5**

| Real Property Unit | Phase I EBS Rating | Phase II EBS Rating | Addressed in Phase II EBS Section | Suitable for Transfer Without Further Action |
|---|---|---|---|---|
| Building 03-34 | 7/Gray | 3/Light Green | 3.5.5 | Yes |
| Building 03-37 | 2/Blue | 2/Blue | 3.5.6 | Yes |
| Building 03-43 | 7/Gray | 2/Blue | 3.5.7 | Yes |
| Building 03-49 | 1/White | 1/White | 3.5.8 | Yes |
| Recharge Basins | 3/Light Green | 3/Light Green | 3.5.9 | Yes |
| Former Sludge Drying Beds | 5/Yellow | 4/Dark Green | 3.5.9 | Yes |
| Cemetery | 1/White | 1/White | 3.5.10 | Yes |
| Ditch Through Wooded Area | 7/Gray | 3/Light Green | 3.5.11 | Yes |
| Plant 10 | | | | |
| Building 10-01 | 7/Gray | 4/Dark Green | 4.1 | Yes |
| Building 10-02 | 7/Gray | 4/Dark Green | 4.2 | Yes |
| Building 10-04 | 1/White | 1/White | 4.3 | Yes |
| Building 03-40 | 1/White | 1/White | 4.4 | Yes |
| Building 03-35 | 1/White | 1/White | 4.5 | Yes |
| Plant 17: North Warehouse Complex | | | | |
| Building 17N-1 | 7/Gray | 3/Light Green | 5.1.1 | Yes |
| Building 17N-2 | 1/White | 4/Dark Green | 5.1.2 | Yes |
| Building 17N-3 | 1/White | 4/Dark Green | 5.1.3 | Yes |
| Building 17N-4 | 7/Gray | 3/Light Green | 5.1.4 | Yes |
| Building 17N-5 | 1/White | 1/White | 5.1.5 | Yes |
| Building 17N-6 | 7/Gray | 4/Dark Green | 5.1.6 | Yes |
| Building 17N-9 | 1/White | 1/White | 5.1.7 | Yes |
| Parking Area North of Warehouses 8 & 9 | 7/Gray | 4/Dark Green | 5.1.7 | Yes |
| Plant 17: South Warehouse Complex | | | | |
| Building 17S-11 | 1/White | 3/Light Green | 5.2.1 | Yes |
| Building 17S-12 | 1/White | 3/Light Green | 5.2.1 | Yes |
| Building 17S-13 | 2/Blue | 3/Light Green | 5.2.1 | Yes |
| Building 17S-14 | 1/White | 4/Dark Green | 5.2.1 | Yes |

**TABLE 10-1**
**ENVIRONMENTAL CONDITION RATING SUMMARY**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 4 of 5**

| Real Property Unit | Phase I EBS Rating | Phase II EBS Rating | Addressed in Phase II EBS Section | Suitable for Transfer Without Further Action |
|---|---|---|---|---|
| Building 17S-15 | 1/White | 4/Dark Green | 5.2.1 | Yes |
| Building 17S-16 | 2/Blue | 3/Light Green | 5.2.1 | Yes |
| Building 17S-17 | 1/White | 3/Light Green | 5.2.1 | Yes |
| Building 17S-18 | 1/White | 3/Light Green | 5.2.1 | Yes |
| Building 17S-19 | 1/White | 4/Dark Green | 5.2.1 | Yes |
| Building 17S-20 | 7/Gray | 4/Dark Green | 5.2.2 | Yes |
| Building 17S-22 | 7/Gray | 4/Dark Green | 5.2.3 | Yes |
| Building 17S-25 | 1/White | 1/White | 5.2.4 | Yes |
| Buildings 17S-32 and 17S-33 | 1/White | 1/White | 5.2.5 | Yes |
| Building 17S-36 | 1/White | 1/White | 5.2.6 | Yes |
| Plant 20 | | | | |
| Building 20-01 | 5/Yellow | 4/Dark Green | 6.1 | Yes |
| Building 20-03 | 2/Blue | 2/Blue | 6.2 | Yes |
| Building 20-04 | 2/Blue | 2/Blue | 6.2 | Yes |
| Building 05-01 | | | | |
| Shuttle Wing Hangar | 1/White | 6/Red | 7.1.1 | No |
| OAO Hangar | 7/Gray | 6/Red | 7.1.2 | No |
| SBMS File Storage Area | 1/White | 6/Red | 7.1.3 | No |
| Facilities Maintenance Area | 2/Blue | 6/Red | 7.1.4 | No |
| Transportation and Distribution Area | 1/White | 3/Light Green | 7.1.5 | Yes |
| Alodine Room and Paint Area | 7/Gray | 6/Red | 7.1.6 | No |
| Heat Treat/Heat Oven Area | 7/Gray | 6/Red | 7.1.7 | No |
| Storage Area by Heat Treat Area | 7/Gray | 3/Light Green | 7.1.8 | Yes |
| Structural Test Hangars | 2/Blue | 6/Red | 7.1.9 | No |
| Retirees Area | 7/Gray | 3/Light Green | 7.1.10 | Yes |
| Old Model Shop | 7/Gray | 6/Red | 7.1.11 | No |
| ATDC Area | 7/Gray | 6/Red | 7.1.12 | No |
| EA6B Program Area | 7/Gray | 6/Red | 7.1.13 | No |
| East Side Offices | 1/White | 6/Red | 7.1.14 | No |
| Plant 05 Cafeteria | 1/White | 6/Red | 7.1.15 | No |
| High Bay Area (Includes Building 05-18) | 7/Gray | 6/Red | 7.1.16 | No |

**TABLE 10-1**
**ENVIRONMENTAL CONDITION RATING SUMMARY**
**NWIRP, BETHPAGE, NEW YORK**
**PAGE 5 of 5**

| Real Property Unit | Phase I EBS Rating | Phase II EBS Rating | Addressed in Phase II EBS Section | Suitable for Transfer Without Further Action |
|---|---|---|---|---|
| Other Navy-owned Plant 05 Buildings | | | | |
| Building 05-05 | 7/Gray | 3/Light Green | 7.2.1 | Yes |
| Building 05-08 | 7/Gray | 3/Light Green | 7.2.2 | Yes |
| Building 05-11 | 1/White | 3/Light Green | 7.2.3 | Yes |
| Building 25-03 | 2/Blue | 6/Red | 7.2.4 | No |
| Building 25-05 | 2/Blue | 3/Light Green | 7.2.5 | Yes |
| Building 25-11 | 2/Blue | 3/Light Green | 7.2.6 | Yes |

1 For shop areas within Building 03-01 designated in the table as having a 4/Dark Green Phase II EBS rating, Figure 10-1 shows as dark green only the specific locations that underwent, excavation or other remedial activity. The remainder of those shop areas is shown in Figure 10-1 as light green. Other real property units outside of Building 03-01 are depicted in their entirely in Figures 10-2 and 10-5 using the color corresponding to the Phase II EBS rating in this table.

**ENCLOSURE 2**

**ENVIRONMENTAL COVENANTS,**
**CONDITIONS, RESERVATIONS, and RESTRICTIONS**

# ENVIRONMENTAL COVENANTS, CONDITIONS, RESERVATIONS, and RESTRICTIONS

## 105-ACRE PARCEL

1. Notice of Environmental Condition: Information concerning the environmental condition of the 105-Acre Parcel is contained in the documents known as the Environmental Baseline Survey to Transfer, 105-Acre Parcel, September 2000, at the former Naval Weapons Industrial Reserve Plant, Bethpage, NY, which is incorporated herein by reference, and the receipt of which are hereby acknowledged by the GRANTEE.

2. Covenant required by Title 42, United States Code at section 9620(h)(3)(B): In accordance with the requirements and limitations contained in *Title 42, United States Code at section 9620(h)(3)(B)*, the GRANTOR hereby warrants that:

(a) all remedial action necessary to protect human health and the environment with respect to any hazardous substances remaining on the 105-Acre Parcel has been taken, and

(b) any additional remedial action found to be necessary after delivery of this Deed shall be conducted by the GRANTOR.

3. Reservation of Access by Title, 42 United States Code at the section 9620(h)(3)(C): In accordance with the requirements and limitations contained in *Title42, United States Code at section 9620(h)(3)(C),* the GRANTOR expressly reserves all reasonable and appropriate rights of access to the 105-Acre Parcel described herein when remedial action or corrective action is found to be necessary after delivery of this Deed. The right of access described herein shall include the right to conduct tests, investigations, and surveys, including, where necessary, drilling, testpitting, boring, and other similar activities. Such rights shall also include the right to conduct, operate, maintain or undertake any other response or remedial action as required or necessary including, but not limited to, monitoring wells, pumping wells, and treatment facilities. 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 human health and environment. GRANTEE agrees to comply with activities of the GRANTOR in furtherance of these covenants and will take no action to interfere with future necessary remedial and investigative actions of the GRANTOR. Any such entry, including such activities, responses or remedial actions, shall be coordinated with the GRANTEE or its successors and assigns, and shall be performed in a manner which minimizes (a) any damage to any structures on the 105-Acre Parcel and (b) any disruptions of the use and enjoyment of the 105-Acre Parcel.

4. Lead-Based Paint: The GRANTEE covenants and agrees, on behalf of itself, its successors and assigns, that it will comply with all Federal, state, and local laws relating to lead-based paint in its use and occupancy of the 105-Acre Parcel (including demolition and disposal of existing improvements). The GRANTEE shall hold harmless and indemnify the GRANTOR from and against any and all loss, judgement, claims, demands, expenses, or damages or whatever nature or kind which might arise or be made against the GRANTOR as a result of lead-based paint having been present on the 105-Acre Parcel herein described. Improvements on the 105-Acre Parcel were constructed prior to 1978 and, as with all such improvements, a lead-based paint hazard may be present.

5. Presence of Asbestos: The GRANTEE, its successors and assigns, are hereby warned and do acknowledge that certain portions of the improvements on the 105-Acre Parcel subject to this Deed are thought to contain asbestos-laden materials. The GRANTEE, by acceptance of this Deed, covenants and agrees, for itself, its successors and assigns, that in its use and occupancy of the 105-Acre Parcel (including demolition and disposal of existing improvements) it will comply with all Federal, state, and local laws relating to asbestos and that the GRANTOR assumes no liability for damages for personal injury, illness, disability or death to the GRANTEEOR, or to GRANTEE's successors, assigns, employees, invitees, or any other person, including members of the general public, arising from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with asbestos on the 105-Acre Parcel, whether the GRANTEE, its successors or assigns, has properly warned or failed to properly warn the individual(s) injured. Section 101-47.304-13 of the Federal Property Management Regulations contains complete warnings and responsibilities relating to asbestos-laden materials.

6. Groundwater: The GRANTEE, its successors and assigns are hereby warned and do acknowledge that use of the groundwater on the 105-Acre Parcel subject to this Deed is restricted. The GRANTEE, by acceptance of this Deed, covenants and agrees, for itself, its successors and assigns, that it will comply with the groundwater use restriction described below:

> An **institutional control** consisting of the placement of a restriction in the deed of transfer to the County of Nassau, New York prohibiting extraction of groundwater from within the boundaries of the 105-acre parcel located at the Navy's former Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage facility. In order to aid in the compliance with the deed restriction, the Navy has completed the abandonment of the seven (7) deep production wells formerly located on the 105-acre parcel. The production wells were used for the extraction of groundwater as non-contact cooling water to support operations conducted by NGC during a time when Northrop Grumman leased the 105-acres from the Navy. If a future occupant of the Navy's 105-acre parcel wishes to pursue groundwater extraction, GRANTEE hereby convenants, on behalf of itself, its successors, and its assigns, to furnish prior notification and secure written permission from the Nassau County Department of Health and/or New York State Department of Environmental Conservation.

7. Excavation: The GRANTEE, its successors, and its assigns are hereby notified that residual chemicals exist at various Areas of Concern (AOCs) throughout the 105-acre parcel in subsurface soils at various depths but no shallower than 6-inches below land surface. The locations of these AOCs are identified and summary information regarding each AOC can be found, in Appendix A of the Final FOST for NWIRP Bethpage dated January 2003. The GRANTEE, its successors, and its assigns are hereby notified that these residual chemicals, in some instances, do exceed NYSDEC TAGM 4046 State Recommended Soil Cleanup Objectives. In response, the GRANTOR hereby notifies the GRANTEE that for all AOCs, a barrier of either soil, gravel, concrete, or a combination of same is currently in place in order to eliminate potential exposure pathways to these residual chemicals. GRANTEE hereby convenants, on behalf of itself, its successors, and its assigns, that a request shall be submitted to NYSDEC and NYSDOH for review and approval before excavating, or otherwise disturbing subsurface soils at designated AOC areas. Any contaminated soils that are excavated from the 105-Acre Parcel must be properly disposed at appropriate off-site locations.

8. Covenant and Restriction Regarding Development for Permanent Residential Use: GRANTEE hereby covenants, on behalf of itself, its successors, and its assigns, that the 105-Acre Parcel will not be used for non-industrial purposes such as residential, recreational, and child day care land uses (it being understood that the preferred land reuse for this Parcel is commercial/industrial as outlined in the Navy's Final Environmental Impact Statement (FEIS) dated April 2000).

9. Vapor Intrusion: The GRANTEE, its successors and assigns do hereby acknowledge that the latest use with the existing floor plan of Plant 3, located on the Navy's 105-acre parcel, was non-residential and that the current quality of the indoor air within Plant 3 meets those standards for occupancy of a commercial/industrial building as set forth by the Occupational Safety and Health Administration (OSHA). The GRANTEE, by acceptance of this Deed, covenants and agrees, for itself, its successors and assigns, that if a change in the use of Plant 3 building pursued for uses other than commercial/industrial or a change in the existing floor plan of Plant 3, prior notification and written permission must first be secured from the New York State Department of Environmental Conservation. The GRANTEE further covenants and agrees, for itself, its successors and assigns, that in order to prevent any potential impacts to indoor air quality, any new structures built on the 105-Acre Parcel shall, if deemed necessary by the New York State Department of Environmental Conservation, include a sub-slab venting/depressurization system designed by an engineer licensed to practice in New York State.

**ENCLOSURE 3**

**CORRESPONDENCE**

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

February 5, 2003

James L. Colter (EV21/JLC)
Department of the Navy
Engineering Field Activity, Northeast
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop #82
Lester, PA 19113-2090

Re: Determination that Remedial Actions are Operating Properly and Successfully (OPS)
Former Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, New York

Dear Mr. Colter:

By letter of September 23, 2002 to the Navy, EPA informed you that we had concluded that a demonstration must be made, to EPA's satisfaction, that the treatment system, or systems, which are being or have been designed to address the groundwater contamination emanating from NWIRP Bethpage are operating properly and successfully (OPS) prior to the proposed Navy transfer of any portion of that property. This conclusion stems from the requirement set forth in Section 120(h)(3)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This letter is written in response to your December 20, 2002 letter of response.

In your December 20, 2002 letter, the Navy reiterates its belief that an OPS determination is unnecessary, as there is no active Navy remedy specifically on the property proposed for transfer. EPA disagrees. Section 120(3)(a)(ii)(I) of CERCLA requires that "all remedial action...with respect to any such substance remaining on the property has been taken before the date of...transfer,..." (emphasis added). Groundwater contaminants underlie the Navy property. Remedial action with respect to such, in the form of the Northrop Grumman treatment system (even though not physically located on the property to be transferred), is being taken. The Navy concedes, and we agree, that without that system in place and operating properly, the Navy would have to consider how to address this condition. Therefore, that system must be demonstrated to be operating properly and successfully before any transfer occurs.

You advise that an *Evaluation for the Operable Unit 2 on-Site Containment (ONCT) System*, prepared on behalf of the Northrop Grumman Corporation, is scheduled to be submitted to the NYSDEC by the end of this month. The Navy believes the report will contain information to

support an OPS determination. We, too, hope that this is the case so that EPA will be able support a FOST for the expeditious transfer of the 105 acre portion of NWIRP Bethpage. Section 120(h)(3)(B) of CERCLA is silent as to who has the obligation to make the "demonstration" to EPA, so if the Grumman Report contains the information necessary to support an OPS determination, that obligation will be met and we can make a positive determination. We will certainly consult with the State, as the lead regulatory entity at non-National Priority List sites such as NWIRP Bethpage. Its historical involvement in reviewing and approving NWIRP Bethpage documents is greater than ours, and therefore its review of the Grumman Report will be instructive.

A facsimile of this letter will be sent to you today. If you have any questions, please feel free to contact me at (212) 637-4322.

Sincerely,

Carla M. Struble, P.E.
Federal Facilities Section

cc: S. Scharf, NYSDEC-Albany
R. Rosinko, NYSDEC- White Plains
F. Castaldo, Naval Air Systems Command
J. Kaminski, NAVAIR
M. Olsen, NAVAIR
R. DiLombardo, NAVFAC - Northern Division

**New York State Department of Environmental Conservation**
**Division of Environmental Remediation**
**Remedial Action Bureau A, 11th Floor**
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9620 FAX: (518) 402-9022

Erin M. Crotty
Commissioner

July 25, 2003

James Colter
Dept. Of the Navy, Northern Division
Naval Facilities Engineering Command (NAVFAC),
10 Industrial Highway, Mail Stop No. 82
Lester, PA 19113-2090

RE: Naval Weapons Industrial Research Plant (NWIRP) Bethpage Operable Unit 2 (OU2) Record of Decision, Groundwater Remedy, Nassau County Site No. 1-30-003B.

Dear Mr. Colter:

The Department of the Navy (the Navy) submitted a revised copy of the Naval Weapons Industrial Reserve Plant (NWIRP) Site Finding of Suitability to Transfer, 105 Acre Parcel (NWIRP), dated January 2003. This FOST has been reviewed by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH). Based on the review of the January 2003 revised FOST, The State of New York has no further comments.

**Boundary Modification of Plant 3**

Analytical data compiled as part of the Plant 3 Phase II Environmental Baseline Survey (EBS) and the subsequent FOST indicates the presence of trichloroethene (TCE) at levels above typical background concentrations for indoor air. As we have discussed during our July 18, 2003 telephone conversation, these results may be indicative of potential 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). Previous soil gas testing beneath the Plant 3 slab identified TCE and tetrachloroethene (PCE) at levels up to about 600,000 $\mu g/m^3$ and 5,000,000 $\mu g/m^3$ respectively in the eastern area of the building. 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.

In order to address these potential indoor air intrusion concerns, The Department of the Navy (Navy) has tentatively agreed to submit a proposal on this subject. This proposal will be consistent with USEPA guidance on the subject. The USEPA maintains the following website that contains some of the latest guidance on the subject:

**http://www.epa.gov/epaoswer/hazwaste/ca/eis/vapor.htm**

In the meantime, if you have any questions, please contact me at (518)402-9620.

Sincerely,

Steven M. Scharf, P.E.
Project Engineer
Remedial Action Bureau A
Division of Environmental Remediation

c:

W. Parish, Region 1 (Via E-mail)
J. Lovejoy, NCDH (Via E-mail)
D. Brayack, TTNUS (Via e-mail)
J. Cofman, Northrop Grumman (Via e-mail)
D. Stern, Arcadis G&M (Via e-mail)
C. Struble, USEPA (Via e-mail)
I. Ushe, NYSDOH (Via e-mail)
T. Kelly, (Via e-mail) (Colterrod2.wpd)

**New York State Department of Environmental Conservation**
**Division of Environmental Remediation, 12th Floor**
625 Broadway, Albany, New York 12233-7011
**Phone:** (518) 402-9706 • **FAX:** (518) 402-9020
**Website:** www.dec.state.ny.us

Erin M. Crotty
Commissioner

JUN 10 2003

James L. Colter
Remedial Project Manager
Department of the Navy
Engineering Field Activity, Northeast
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop, #82
Lester, PA 19113-2090

Re: Petition to Modify
Naval Weapons Industrial Reserve Plant
Site 130003B

Dear Mr. Colter:

This letter is in response to your petition requesting a modification to the subject site as listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State.

After reviews by the New York State Department of Environmental Conservation and the New York State Department of Health, we are pleased to inform you that a part of your petition has been approved. The other part of your petition, however, has been denied, without prejudice to re-submission, due to incompleteness per 6NYCRR 375-1.9(c).

Your request to remove the Plant 20 portion of the site from Registry listing has been approved and covers the noncontiguous, 4.6 acre parcel of property designated by Tax Map Number: Section 46 / Block G / Lot 9. The approval to delist is granted with the numerous covenants and restrictions on the use of Plant 20 as set forth in the Deed, which has covenants and restrictions that run with the land and are binding upon the County, its successors and/or assigns, and all future Title holders to said property as spelled out in the Quit Claim Deed dated December 10, 2002 and recorded in the Nassau County Clerk's Office. This approval is based on the information submitted with the original May 31, 2002 petition, additional responses dated December 27, 2002 and the results of subsequent soil gas sampling data collected in 2003 by Preferred Environmental Services on behalf of a prospective buyer of the property. Based on the information provided, this site does not pose a significant threat and does not qualify as a listed Registry site.

Your request to modify the boundaries of the Registry-listed portions of the main site to include only the parcel of land associated with the IR Site 1 Area (also known as the Former Drum Marshaling Area), and reduce the size of the current site from 105 acres of property (designated by Tax Map Numbers: Section 46 / Block G / Lots 5 and 8) to the 8.7 acres of property covering the IR Site 1 Area, has been denied as stated above.

For further assistance relative to this matter, please contact William Shaw, Acting Site Control Section Chief at (518) 402-9553 or Steve Scharf, Project Manager at (518) 402-9620.

Sincerely,

Dale A. Desnoyers
Director
Division of Environmental Remediation

cc: W. Shaw
S. Scharf

**DEPARTMENT OF THE NAVY**
ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO
5090
Code EV21/JLC

27 DEC 2002

Mr. Steve Scharf, P.E.
Project Engineer
Bureau of Eastern Remedial Action
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-1010

Dear Steve:

Subj: NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NASSAU COUNTY, NEW YORK; NYS REGISTRY #1-30-003B

This letter is being submitted in order to respond to comments made by New York State Departments of Environmental Conservation (NYSDEC) and Health (NYSDOH) personnel regarding various efforts associated with the NWIRP Bethpage facility. Comments that have been addressed were forwarded to the Navy by way of the following letters:

- NYSDEC Letter of October 29, 2002, regarding Navy Petition to Modify NWIRP Bethpage in NYSDEC's Registry of Inactive Hazardous Waste Sites;
- NYSDEC Letter of October 1, 2002, forwarding NYSDOH Comments of September 27, 2002, regarding the following:
  - FOST for 105-Acre Parcel;
  - Construction Completion Report for IR Sites 2 and 3;
  - Phase II EBS for NWIRP Bethpage;
  - Navy Petition to Delist portions of Navy property from NYSDEC Registry of Inactive Hazardous Waste Sites;
- NYSDEC Letter of July 10, 2002, regarding the Navy's Draft Record of Decision for Groundwater

The first bullet forwarded NYSDEC's denial of the Navy Petition to Modify the boundaries the Inactive Hazardous Waste Site citing incompleteness of the petition as the reason. Responses to the NYSDEC letter are provided in enclosure (1). In addition, enclosures (2) and (3) are provided as requested to complete the Navy's petition. Enclosure (2) contains a Certification Page and a revised Figure 1 for the Navy's *Construction Completion Report for IR Sites 2 and 3.*

The second bullet forwarded various comments from NYSDOH regarding several documents forwarded by the Navy. Responses to the NYSDOH comments are provided in enclosure (4). One of NYSDOH's comments requested the collection of soil gas data at the eastern end of Plant 3. Enclosure (5) is being provided to forward soil gas and soil boring data collected in 1995 as part of the Navy's pre-design activities associated with the Air Sparging/Soil Vapor Extraction System. Although this report, itself, was not forwarded to NYSDEC or NYSDOH, the results of the report were incorporated into a Design Analysis Report that was forwarded to NYSDEC and NYSDOH on September 25, 1997. A NYSDEC letter was submitted on October 23, 1997 that generally concurred with the design parameters of the AS/SVE system. A copy of this letter has been included as enclosure (6). Another of NYSDOH's comments requested the collection of additional soil samples in and around IR Site 2 and along a grass strip adjacent to a roadway entering the Navy's property on the east. It was asked that these soil samples be analyzed for the presence of polychlorinated biphenyls (PCBs). As requested, the Navy has collected several soil samples and the results of the laboratory analysis is provided in enclosure (7).

The third bullet forwarded NYSDEC comments on the Navy's Draft Record of Decision for Groundwater. Based upon the significant amount of comments received from NYSDEC, as well as members of the Technical Advisory Committee (TAC), it was necessary to significantly revise the Navy's ROD for Groundwater. Enclosure (8) forwards the latest version of the Navy's ROD for Groundwater at NWIRP Bethpage. Please refer to the responsiveness section of enclosure (8) for Navy responses to NYSDEC comments as well as other comments forwarded by the Bethpage TAC and the USEPA Region II. A copy of enclosure (8) has been forwarded to the Commanding Officer of the Naval Air Systems Command for signature as he is the signing authority for CERCLA actions at NWIRP Bethpage.

Finally, enclosure (9) has also been revised to reflect the current status of the environmental condition of property at NWIRP Bethpage. Please refer to the responsiveness summary section of enclosure (9) for Navy responses to various comments including those forwarded by the NYSDEC correspondence listed above. Enclosure (9) is currently being reviewed by the Commanding Officer of Engineering Field Activity, Northeast, as per Navy policy. By receipt of this letter, NYSDEC is hereby notified of the Navy's intention to sign enclosure (9).

The Navy would like to suggest that after enclosures (1) through (9) are reviewed, that a meeting be held in Albany, New York in January 2003 to discuss all of NYSDEC's concerns regarding NWIRP Bethpage.

If you have any questions regarding the enclosed documents, or would like to discuss potential meeting dates, please give me a call at (610) 595-0567, extension 163.

Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Enclosures: (1) Navy Responses to NYSDEC Comments regarding Petition to Modify Boundaries of Inactive Hazardous Waste Site #1-30-003B
(2) Certification of Completion and Revised Figure 1 for *Construction Completion Report for Sites 2 and 3 of May 2002*
(3) Legal Description for Parcel to be Retained by Navy
(4) Navy Responses to NYSDOH Comments regarding various Navy Documents
(5) *Remedial Design, Phase II Pre-Design Investigation Letter Report for Site 1* dated July 1995
(6) Letter from NYSDEC dated October 23, 1997
(7) Letter Report Supplemental Surface Soil Sample Results dated December 9, 2002
(8) Navy's Record of Decision for Groundwater at NWIRP Bethpage dated January 2003
(9) Final FOST for NWIRP Bethpage's 105-Acre Parcel dated September 2000, Revision 1 dated February 2002, Revision 2 dated January 2003

Copy to:
NYSDEC (Albany), Henry Wilkie (Enclosures 1 - 9)
NYSDEC (Stony Brook), Stan Farkas (Enclosures 1 - 9)
NYSDEC (Albany), Gerard Burke (Enclosure 2)
NYSDEC (Albany), Dennis Farrar (Enclosures 1, 2, 3)
NYSDOH, Bill Gilday (Enclosures 1 - 9)
NAVAIR, Joe Kaminski (Enclosures 1 - 9)
J.A. Jones, Al Taormina (Enclosures 1 - 9)

Copy to (w/o enclosures)
USEPA Region II, Carla Struble
Nassau County DPW, Tim Kelly

**DEPARTMENT OF THE NAVY**
ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO
5090
Code EV21/JLC

20 DEC 2002

Ms. Carla Struble
United States Environmental Protection Agency
Region II
Federal Facilities Section
290 Broadway, 18th Floor
New York, NY 10007-1866

Dear Ms. Struble:

Subj: OPERATING PROPERLY AND SUCCESSFULLY DETERMINATION FOR NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

The Navy is in receipt of your letter dated September 23, 2002 in which the USEPA forwarded a rebuttal to Navy responses, submitted on May 17, 2002, regarding the need for an Operating Properly and Successfully (OPS) Determination for the Navy's groundwater remedy located at NWIRP Bethpage. In short, the USEPA disagrees with the Navy's conclusion that an OPS determination is not required.

The Navy would like to clarify the use of the terms "on-site" and "off-site" used to describe the different portions of the contaminated groundwater plume. The Navy agrees with the EPA's assessment that the term "on-site", as defined in the National Contingency Plan" includes the areal extent of the plume regardless of whether it migrates beyond property boundaries. The Navy was referring not to the extent of contamination but the extent of the Navy property to be transferred, and should have used the terms "on-property" and off-property", to describe the locations for which various groundwater remedial components are to be installed, since the OPS guidance refers to the remedies that are located on "property" to be transferred.

The Navy would also like to expand on the reasons for the Navy's recognition of the downgradient groundwater treatment system that was installed and is being operated by the Northrop Grumman Corporation. The Navy's recognition of the downgradient groundwater treatment system is consistent with the USEPA's recognition of the same treatment system to contain and treat groundwater containing total volatile organic compounds (TVOCs) that have migrated off of property owned by the Occidental Chemical Corporation (Hooker/RUCO). The USEPA's ROD for the Hooker/RUCO facility, issued in September 2000, called for the

installation of an active remedy to address that portion of the vinyl chloride subplume that is located on, and just downgradient, of the Hooker/RUCO facility. The ROD goes on to say that:

> "The selected remedy is also based on the recognition that an existing groundwater extraction and treatment system (Northrop Treatment System) . . . is containing and remediating a commingled plume of TCE and PCE contamination from the Northrop, NWIRP and the Hooker/RUCO sites. EPA's selected remedy, designated as Operable Unit Three (OU-3), together with the Northrop Treatment System, which is expected to operate for at least the next thirty years, will prevent further migration of groundwater contamination and will effectively address the contamination emanating from the Hooker/RUCO Facility".

The Navy recognizes the same Northrop Treatment System for the same reason. That being, that the Northrop Treatment System effectively addresses the contamination that lies beneath the NWIRP Bethpage property and will prevent the further migration of the "off-property" component of groundwater contamination. Further, the Navy agrees with the EPA's assessment that if the Northrop Treatment System fails to continue to operate, that the remedy that the Navy is proposing would have to be reconsidered with the possibility that an active system would need to be installed on Navy property. However, until such time as the Northrop Treatment system fails to operate, projecting potential future actions at this time is not appropriate. Furthermore, the fact that the EPA would rely on this remedy as a part of their off-site remedy in their Hooker/RUCO ROD greatly increases the Navy's confidence in the viability of the NGC ONCT system.

In summary, an OPS determination is not necessary since there is no active Navy remedy continuing on the property that is to be transferred. However, the EPA may be interested in reviewing a report that is being prepared on behalf of the Northrop Grumman Corporation entitled *Hydraulic Effectiveness Evaluation for the Operable Unit 2 On-Site Containment (ONCT) System*. This report, which is required by NYSDEC as part of their Operable Unit 2 Groundwater ROD issued in March 2001, provides a determination that the Northrop Treatment System is operating properly and functioning as designed. Although the Navy has not yet seen this report, it is believed to contain similar information to that of an OPS determination.

If you have any questions or would like to discuss this issue further, please give me a call at (610) 595-0567, extension 163.

Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Copy to:
NYSDEC (Albany), Steve Scharf
NYSDEC (Albany), Henry Wilkie
NYSDEC (Stony Brook), Stan Farkas
USEPA Region II, Syed Quadri
NAVAIR, Joe Kaminski
J.A. Jones, Al Taormina

**New York State Department of Environmental Conservation**
**Division of Environmental Remediation, 12th Floor**
525 Broadway, Albany, New York 12233-7011
**Phone:** (518) 402-9706 • **FAX:** (518) 402-9020
**Website:** www.dec.state.ny.us

Erin M. Crotty
Commissioner

OCT 29 2002

James L. Colter
Remedial Project Manager
Department of the Navy
Engineering Field Activity, Northeast
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop, #82
Lester, PA 19113-2090

Dear Mr. Colter:

Re: Petition to Modify
Naval Weapons Industrial Reserve Plant
Site ID #130003B

This is in response to your petition requesting that the subject site be modified in the Registry of Inactive Hazardous Waste Disposal Sites in New York State.

Upon a review by the New York State Departments of Environmental Conservation (Department) and Department of Health (DOH), your petition is being denied without prejudice to resubmittal due to incompleteness per 6NYCRR 375-1.9(c).

We are denying your request to modify the boundaries of the main 105 acre parcel with tax map numbers of section 46, block G, lots 5 and 8 by the removal of all areas except the IR Site 1 area (Former Drum Marshaling Area), consisting of 8.7 acres. We are also denying your request to delist the noncontiguous 4.6 acre parcel of land known as the Plant 20 parcel with tax map numbers of section 46, block G, lot 9.

The incompleteness of the petition consists of the following omissions:

1. **Finding of Suitability to Transfer (FOST - 105 Acre Parcel), Enclosure 2, Deed Notification and Restriction:** The Department of the Navy needs to revise the deed restriction and institutional controls listed in Enclosure 2 of the FOST. These revisions must be submitted to and accepted by the Department's Division of Environmental Remediation (DER) and Division of Solid and Hazardous Materials (DSHM).

The deed restrictions must then be filed with the Nassau County Office of Records (NCOR). The following revisions should be made to the deed restrictions:

a) Tables 9-1 through 9-6 of the FOST Appendix should be included on the deed notice filed with the NCOR.

b) Figures 8A and 9A (2 by 3 foldout sheets) of the FOST should be included with the deed restrictions filed with the NCOR.

c) Institutional Controls and deed restrictions, specified in the NWIRP OU 1 Soils Record of Decision (ROD) for Sites 2 and 3 must be in place before the portion of the property petitioned can be delisted and transferred to NCOR.

d) The Department of the Navy needs to submit a draft of the declaration of the covenants and restrictions along with the metes and bounds description of the area where digging will be prohibited/restricted for our review and acceptance.

e) The groundwater use restrictions also need to be specified in the declaration of the covenants and restrictions.

2. **NWIRP Plant 3 (105 Acre Parcel) Installation and Restoration (IR) Operable Unit 1, Sites 1, 2 and 3 Construction Completion Report:** The Bureau of Construction Services is the project lead for this part of the project and Sites 2 and 3 are part of the areas to be delisted and subsequently transferred as part of the FOST. This report was commented on by the Bureau of Construction Services and their comments have yet to be addressed. This Construction Report needs to be finalized before this portion of the site can be delisted (see also comment 1C above).

3. The Major Modification of the 6NYCRR Part 373 Permit Removal of the 105 Acre Site Statement of Basis Report must be approved by the DSHM before the petition to modify the boundaries of the 105 acre parcel can be approved.

4. **Finding of Suitability to Transfer (FOST - Plant 20 Parcel), Enclosure 2, Deed Notification and Restriction:** The deed restrictions included in Enclosure 2 of the FOST must be filed with the NCOR. The Plant 20 Parcel can be delisted separately from the main 105 acre parcel.

5. The tax map numbers and a metes and bounds description for the remaining 8.7 acres of the main 105 acre parcel need to be provided.

The New York State Department of Health's comments (Gilday to Scharf/Wilkie) regarding the FOST for Plants 3 and 20, the Construction Completion Report for Installation and Restoration (IR) for sites 2 and 3, the Phase II Environmental Baseline Survey, NWIRP, Bethpage, and the petition to delist portions of the 105 acre facility and Plant 20 from the Department's Registry of Inactive Hazardous Waste Disposal Sites were sent directly to the Department of the Navy on October 1, 2002. These comments need to be addressed before the requested boundary modifications can be approved.

If we may be of further assistance regarding this matter, please contact Dennis Farrar at (518) 402-9553 or Steve Scharf at (518) 402-9620.

Sincerely,

Dale A. Desnoyers
Acting Director
Division of Environmental Remediation

cc: D. Farrar
S. Scharf

**New York State Department of Environmental Conservation**
**Division of Environmental Remediation**
**Bureau of Eastern Remedial Action, 11th Floor**
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9620 FAX: (518) 402-9022

Erin M. Crotty
Commissioner

October 1, 2002

James Colter
Dept. Of the Navy, Northern Division
Naval Facilities Engineering Command (NAVFAC),
10 Industrial Highway, Mail Stop No. 82
Lester, PA 19113-2090

Dear Mr. Colter:

RE: Naval Weapons Industrial Research Plant (NWIRP), Nassau County Site No. 1-30-003B.

By means of this letter, the New York State Department of Environmental Conservation (NYSDEC) is transmitting the New York State Department of Health (NYSDOH) (9/27/02 Gilday to Scharf/Wilkie) comments directly to the Department of the Navy regarding the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Site. More specifically, the comments contained in Mr. Gilday's letter cover the Finding of Suitability to Transfer (FOST) for Plants 3 (88 acres) and 20, the Construction Completion Report for Installation and Restoration (IR) Sites 2 and 3, the Phase II Environmental Baseline Survey, NWIRP, Bethpage and the petition to delist portions of the 105 acre facility and Plant 20 from the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites.

Once you have had the opportunity to review the enclosed comment letter, please contact me at (518)402-9620 so that a conference call to discuss these outstanding issues can be arranged.

Sincerely,

Steven M. Scharf, P.E.
Project Engineer
Bureau of Eastern Remedial Action
Division of Environmental Remediation

(Coltefost.wpd)

Enclosure
c/w/enc: W. Gilday, NYSDOH (via e-mail)
J. Lovejoy, NCDOH
T. Kelly, NCPDW
J. Cofman, Northrop Grumman

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
*Commissioner*

Dennis P. Whalen
*Executive Deputy Commissioner*

September 27, 2002

Steven Scharf
NYS Dept. of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7014

Henry Wikie
NYS Dept. of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 8th Floor
Albany, NY 12233-7252

RE: NWIRP (Site #130003b)
Bethpage, Nassau County

Dear Mr. Scharf and Mr. Wilkie:

I have reviewed the documentation record of remedial/corrective action activities for the Naval 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. 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.

2. 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).

Previous soil gas testing beneath Plant 3 identified TCE and tetrachloroethene (PCE) at levels up to about 600,000 $\mu g/m^3$ and 5,000,000 $\mu g/m^3$, 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.

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.

3. 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 2000 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 about 6,000 to 45,000 $\mu g/m^3$ of PCE and up to about 5,000 $\mu g/m^3$ of TCE are present in soil vapor captured from the extraction wells nearest Plant 3. More recent data from 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 Concentration 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 $\mu g/m^3$ and 50,000 $\mu g/m^3$, 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.

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

4. 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.

5. 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.

6. 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.

7. 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.

*Petition Enclosure 2: Property Survey for 105-Acre Parcel*

8. Information contained in the Environmental Baseline Survey to Transfer, Revision 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 lines as depicted in Figure 10 of the EBST.

*Petition Enclosure 3: Property Survey for Plant 20 Parcel*

No comments.

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

9. Inclusion of Tables 9-1 through 9-6, along with Figures 8A and 9A, is an excellent feature of the EBS and the 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.

10. 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.

11. 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.

12. Re: Statements in the Phase II EBS and the October 2, 2000 Navy Response to NYSDEC Comments Regarding the Draft Phase II EBS Report for the NWIRP

a. TAGM 4046 does not include a RSCO of 10 ppm for carcinogenic PAHs (cPAHs). Other factors, such as 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.

b. 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.

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

13. Paragraph 3 of the Environmental Covenants, Conditions, Reservations, and Restrictions (ECCRRs, also commonly referred to as "deed 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 the environment."

14. 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.

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

- protective covers and any other engineering controls associated with site remedies and corrective 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.

16. 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.

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

17. 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.

Thank you for the opportunity to review this petition and to provide comments on the supporting documentation. If you have any questions about this correspondence, please contact me at 518-402-7880.

Sincerely,

William Gilday
Senior Sanitary Engineer
Bureau of Environmental Exposure Investigation

cc: Mr. G. Litwin/Mr. R. Fedigan/File
Mr. C. Vasudevan
Mr. E. Dassatti
Mr. R. Knizek/Mr. G. Burke
Mr. R. Marino/Mr. B. Pine
Mr. W. Parish (NYSDEC Reg.1)
Mr. A. Cava/Mr. S. Farkas (NYSDEC Reg 1)
Mr. R. Weitzman (NCDOH)
Mr. T. Kelly (NCDPW)

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

SEP 2 3 2002

James L. Colter (EV21/JLC)
Department of the Navy
Engineering Field Activity, Northeast
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop #82
Lester, PA 19113-2090

Re: Draft Finding of Suitability to Transfer (FOST) for the 105 Acre Parcel at the Former Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, New York

Dear Mr. Colter:

I am writing regarding the draft Finding of Suitability to Transfer ("FOST") for the 105 acre parcel at the former Naval Weapons Industrial Reserve plant (the "Site") located in Bethpage, New York. More specifically, I am responding to your May 17, 2002 letter concerning this matter, which was written in response to a November 3, 2000 letter that Paul Ingrisano of EPA transmitted to you.

In that November 3, 2000 letter, we posed the question of whether a particular demonstration is necessary prior to your finalizing and memorializing the finding set forth in the FOST. The demonstration in question is one embodied in Section 120(h)(3)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, and as it relates to this Site, we asked whether certain off-property groundwater treatment systems are operating properly and successfully ("OPS").

In your response, you discuss elements of the remedial history at the Site, such as (1) the soils remedy selected by you in July of 1995 addressing soils on the 105 acre parcel, (2) the ground water remedy selected by the New York State Department of Environmental Conservation in March of 2001 addressing groundwater contamination downgradient of the 105 acre parcel, and (3) the current draft remedy proposed by you for the groundwater contamination underlying the 105 acres parcel, which includes institutional controls but does not include active groundwater remediation.

You then proceed to explain how you define "on-site" and "off-site" for the purposes of splitting the groundwater operable unit (#2) into the two above-referenced components, namely the groundwater contamination underlying the 105 acres parcel and the groundwater contamination downgradient of the 105 acre parcel. Finally, you conclude that because only the "on-site" remedy (or the remedy addressing the ground water contamination underlying the 105 acre parcel) affects the property to be transferred and that because no treatment is associated with this remedy, no such OPS determination is necessary.

The EPA disagrees. First, and while it may seem like merely semantics, your "on-site" and "off-site" definitions are inconsistent with the National Contingency Plan. "On-site" means, at a minimum, the areal extent of contamination. Therefore, the Site would certainly extend beyond the legal boundary of the 105 acres and continue to the extent that the contamination has migrated.

You acknowledge responsibility for the plume emanating from the Site on page two of your letter, in the fourth paragraph. You also acknowledge that the current proposed remedy for the ground water contamination underlying the 105 acres parcel is only appropriate for consideration, "based on the recognition that an existing groundwater containment and treatment system is operating on downgradient property owned by Northrop Grumman Corporation."

This recognition that without the downgradient groundwater containment and treatment system a different remedy, perhaps employing active treatment, would have to be selected for the 105 acre parcel to address the underlying contamination is significant. Thus, this downgradient portion of the Site remedy, regardless of how you define on-site, is essential to your being able to propose the groundwater remedy you do, and if it were to fail to perform properly, then the remedy you are proposing would have to be reconsidered and it is possible that active remediation would be necessary on the 105 acre parcel. It is for this reason that we have concluded that a demonstration must be made to our satisfaction that the system, or systems, which are being or have been designed to address the groundwater contamination emanating from the Site are operating properly and successfully.

A facsimile of this letter will be sent to you today. If you have any questions, please feel free to contact me at (212) 637-4322.

Sincerely,

Carla M. Struble, P.E.
Federal Facilities Section

cc: S. Scharf, NYSDEC-Albany
R. Rosinko, NYSDEC- White Plains

**New York State Department of Environmental Conservation**
**Division of Environmental Remediation**
**Bureau of Hazardous Site Control, 11th Floor**
25 Broadway, Albany, New York 12233-7014
**Phone:** (518) 402-9551 • **FAX:** (518) 402-9020
**Website:** www.dec.state.ny.us

Erin M. Crotty
Commissioner

JUN 17 2002

James L. Colter, Remedial Project Manager
Department of the Navy
Engineering Field Activity, Northeast
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop, #82
Lester, PA 19113-2090

Dear Mr. Colter:

Re: Petition to Modify
Naval Weapons Industrial Reserve Plant
Site ID #130003B

This is in response to your petition dated May 31, 2002, requesting that the subject site be modified in the Registry of Inactive Hazardous Waste Disposal Sites in New York State.

At this time your request is being reviewed and evaluated. A decision on your request will be issued to you in the near future.

If you have any questions, please contact me or Burton Pine of my staff at (518) 402-9553.

Sincerely,

Dennis J. Farrar
Chief
Site Control Section

**DEPARTMENT OF THE NAVY**
ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO
5090
Code EV21/JLC

31 MAY 2002

Ms. Erin M. Crotty
Commissioner
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-1010

Dear Ms. Crotty:

Subj: NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NASSAU COUNTY, NEW YORK; NYS REGISTRY #1-30-003B

The Navy is forwarding this letter to petition NYSDEC to reclassify the subject site in the Registry of Inactive Hazardous Waste Sites in New York State. This petition comes as a result of the Navy's decision to convey all property associated with NWIRP Bethpage to the County of Nassau, New York.

NWIRP Bethpage was a government-owned/contractor operated (GOCO) facility, owned by the Department of Navy through the Naval Air Systems Command (NAVAIRSYSCOM) and, until September 1998, operated by the Northrop Grumman Corporation (formerly Grumman Aerospace Corporation). NWIRP Bethpage is comprised of property included in two, non-contiguous parcels; the main 105-acre parcel and a separate 4.6-acre parcel of land known as the Plant 20 Parcel. NWIRP Bethpage also consists of a 632,000 SF research and engineering building, known as Plant 05, that is owned by the Navy but is located on land owned by the Northrop Grumman Corporation within their former 605-acre campus that, at one time, surrounded the Navy's 105-acre Parcel.

Since the inception of NWIRP Bethpage in 1933, the main mission of the facility was the research prototyping, testing, design engineering, fabrication, and primary assembly of military aircraft. NWIRP Bethpage's mission was carried out primarily on the 105-acre parcel that, in addition to Plant 03, also included quality control laboratories, two warehouse complexes, three water recharge basins, and an industrial wastewater treatment plant.

There were three (3) distinct areas within the 105-acre parcel that were the subject of environmental investigations conducted since the early 1990's as part of the Navy's Installation Restoration (IR) Program. The site names are:

- IR Site 1 - Former Drum Marshaling Area
- IR Site 2 - Recharge Basin Area
- IR Site 3 - Salvage Storage Area

All appropriate documentation related to the IR Program has been previously submitted to NYSDEC for information, review, and comment including a Record of Decision issued by the Navy in July 1995 for Soils at IR Sites 1, 2 and 3 labeled as Operable Unit 1. All components of the July 1995 OU 1 ROD have been completed at IR Sites 2 and 3 including a permeable soil cover that was recently applied over IR Sites 2 and 3. Attached is a Construction Completion Report, dated May 2002, that describes, in detail, all activities conducted as part of the application of the soil cover.

Work associated with the OU 1 ROD is currently underway at IR Site 1 but has not been completed. Since it is anticipated that work at IR Site 1 will not be completed before the property is to be conveyed to Nassau County, this 8.7-acre parcel will not be part of the initial transfer of property but will be retained by the Navy pending completion of soil-related activities. As such, this site is not being included as part of this petition.

A property survey was prepared to support the upcoming conveyance of land to Nassau County including legal descriptions of the property to be conveyed as well as for the property to be retained. A copy of the survey and legal descriptions for both the 105-acre Parcel and the Plant 20 Parcel have also been included with this petition.

A complete description of the parcels to be transferred and retained can be found in a Statement of Basis for a Major Modification of the Bethpage Facility Part 373 Permit. This document, entitled *Removal of the 105-Acre GOCO Site*, dated August 2000 and Revised February 2001, was developed by Dvirka and Bartilucci Consulting Engineers on behalf of Northrop Grumman and was submitted to NYSDEC for consideration on February 23, 2001. This petition should be considered part of the Major Modification and included in the Statement of Basis.

After Northrop Grumman operationally vacated the Navy's property, the Navy conducted a basewide Environmental Baseline Survey (EBS). This two-phase report documented operational, regulatory, and remedial histories associated with the Navy's 105-acre property and the Plant 20 Parcel and was heavily based on numerous site assessment reports prepared independently by Northrop Grumman. A Final Phase I EBS was submitted to NYSDEC in January 1998. Draft and Final versions of a Phase II EBS were submitted in March and December 1999, respectively. NYSDEC submitted numerous comments in a letter dated February 10, 2000. The Navy responded to these comments in a letter to NYSDEC on 2 October 2000. Additional comments from the NYSDOH were submitted during a meeting held in Albany on April 11, 2001 which prompted the Navy to prepare a revision to the Final Phase II EBS that was recently submitted to NYSDEC on May 30, 2002. A copy of the Revised Final Phase II EBS is also attached to this petition.

The Navy also submitted a Draft Finding of Suitability to Transfer (FOST) document to NYSDEC and NYSDOH for review on 28 September 2000. NYSDEC and NYSDOH comments on the Draft FOST were also a topic of discussion at the April 11$^{th}$ meeting. The Navy's responses to comments made at that meeting were incorporated into a Draft-Final FOST issued to NYSDEC and NYSDOH on 20 February 2002. The Navy also updated the Draft-Final FOST to reflect the current status of the Groundwater Operable Unit by incorporating language regarding the OU 2 ROD issued by NYSDEC on March 29, 2001.

To date, the Navy has not received any correspondence regarding this latest submission.

It is the Navy's intention to have Engineering Field Activity, Northeast's Commanding Officer, an engineer with a P.E. certification, sign the FOST document stating that the site is suitable for transfer and that all remedial activity has been completed for the parcel(s) of land that are to be transferred. This will not include the 8.7-acre parcel that will be retained by the Navy. A separate FOST document will be prepared for that parcel when appropriate.

By issuance of this letter, the Navy is requesting that the boundaries that currently define Site 1-30-003B on New York State's Registry of Inactive Hazardous Waste Sites be modified to only include the 8.7-acre parcel that is to be retained by the Department of Navy in order to complete soil-related activities.

If you have any questions, please give me a call at (610) 595-0567, extension 163.

Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Enclosures: (1) Construction Completion Report for IR Sites 2 and 3
(2) Property Survey for 105-Acre Parcel
(3) Property Survey for Plant 20 Parcel
(4) Final Phase II EBS (Revision I dated May 2002)

Copy to:
NYSDEC
Bureau of Hazardous Site Control
11th Floor
625 Broadway
Albany, New York 12233-7014
ATTN: Dennis Farrar (3 copies of all enclosures)

Copy to: (Enclosure 1 only)
NAVAIR, Joe Kaminski
NYSDEC (Albany), Gerard Burke
NYSDEC (Albany), Steve Scharf
NYSDEC (Albany), Henry Wilkie
NYSDEC (Stony Brook), Stan Farkas
NYSDOH, Bill Gilday
USEPA Region II, Dale Carpenter
USEPA Region II, Carla Struble
Northrop Grumman, Larry Leskovian
Northrop Grumman, John Cofman
Nassau County DPW, Tim Kelly
J.A. Jones, Al Taormina
RAB Co-Chair, Jim McBride (3 copies)
Information Repository, Bethpage Library

**DEPARTMENT OF THE NAVY**
ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Code EV21/JLC
May 17, 2002

Ms. Carla Struble
United States Environmental Protection Agency
Region II
Federal Facilities Section
290 Broadway, 18th Floor
New York, NY 10007-1866

Dear Ms. Struble:

Subj: NAVY RESPONSES TO USEPA REGION II COMMENTS REGARDING DRAFT FOST AND EBST FOR 105-ACRE PARCEL AT THE FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

A draft version of the subject FOST and EBST was previously submitted to the Region II offices of the USEPA on September 28, 2000 and comments were returned to the Navy in a letter from the USEPA dated November 3, 2000. This letter is forwarding the Navy's responses to those comments for consideration.

To summarize, the comments received from the Region II offices of the USEPA are shown below:

> USEPA REGION II COMMENTS: FOST, page 5, Item #11: The EPA needs to determine whether: the pump and treat system for contaminated groundwater; the air stripping systems for the public water supply wells owned by the Bethpage Water District; and, the future installation of the separate treatment system to address the high concentrations of VOCs located in and around the vicinity of GM-38, are "action necessary to protect human health and the environment with respect to any ... substance remaining on the property ..." and need to be demonstrated to EPA as Operating Properly and Successfully, pursuant to CERCLA Sections 120(H)(3)(A)(11) and 120(H)(3)(B).

The remedial actions listed above are part of a Record of Decision for Operable Unit 2 (OU 2) - Groundwater issued by New York State Department of Environmental Conservation (NYSDEC) on March 29, 2001. NYSDEC has named the Department of Navy and Northrop Grumman Corporation as the Potentially Responsible Parties (PRPs) with regards to groundwater contamination that exists on and downgradient of both properties.

The Department of Navy recognizes it's responsibilities with regards to the remediation of groundwater contamination emanating from NWIRP Bethpage and, in response, will issue a Record of Decision (ROD) for the groundwater operable unit (Operable Unit 2) at NWIRP Bethpage, New York. The Navy's Draft OU 2 ROD was submitted to you under separate correspondence dated 15 May 2002. For information, the Department of Navy previously issued a ROD for OU 1 in July 1995, which outlined several actions that have since been completed with regards to soil contamination at NWIRP Bethpage.

These RODs were issued pursuant to Executive Order 12580, in which the President delegated his CERCLA authority to the Department of Defense for releases occurring on or from DoD Installations. Accordingly, DoD re-delegated it's Lead Agency Authority to the individual departments and more specifically, to the Department of Navy (DoN), for CERLCA releases on or from DoN installations.

The Navy's ROD for OU 2 at NWIRP Bethpage was developed using NYSDEC's ROD for Regional Groundwater (OU 2) as guidance. However, the Navy has split up NWIRP Bethpage's OU 2 into two parts; on-site groundwater and off-site groundwater. On-site groundwater is defined as groundwater that lies directly beneath the Navy's 105-acre parcel. Off-site groundwater is defined as groundwater that is located downgradient of Navy and Northrop Grumman properties in which VOC contamination from both properties has commingled.

As stated in the Navy's Draft OU 2 ROD, the Navy's selected remedy for on-site groundwater is also based on the recognition that an existing groundwater containment and treatment system is operating on downgradient property owned by the Northrop Grumman Corporation. This recognition was based on a similar recognition of the Northrop Grumman Treatment System mentioned in a Record of Decision for the Hooker Chemical/RUCO Polymer Superfund Site, issued in September 2000 and prepared by the Region II office of the USEPA.

Therefore, only the Navy remedy for the on-site portion of the groundwater operable unit directly affects the "property to be transferred" which in this case, is the Navy's 105-acre parcel. As such, since this remedy only involves the application of a deed restriction prohibiting the extraction of groundwater (an institutional control), the Navy's selected remedy does not involve the construction or installation of an approved remedial design. Accordingly, this remedy will be complete at the time of deed transfer.

Further, it is the Navy's position that the air stripping systems for the public water supply wells owned by the Bethpage Water District and the future installation of the separate treatment system to address the high concentrations of VOCs located in and around the vicinity of GM-38, are not actions that are needed to protect human health and the environment from substances remaining on "property to

be transferred" after the on-site institutional controls are established. These remedies will be located in areas that are one and a half miles to the south of NWIRP Bethpage. These actions are necessary in order to aid in the overall remediation of groundwater however, due to their extreme distance, the institutional controls to be applied to the 105-acre Parcel are protective of human health and the environment, independent of the off-site groundwater remedies.

The Navy is also forwarding a Draft-Final version of the FOST and EBST for the NWIRP Bethpage 105-acre Parcel for information. A copy of this document was previously sent to the New York State Department of Environmental Conservation offices in Albany and Stony Brook, New York, as well as to the New York State Department of Health on 20 February 2002. Enclosure (3) to that document provided Navy responses to comments that were made at an April 11, 2001 meeting in Albany, New York, as well as comments submitted by other agencies during the document's comment review period.

If you have any questions regarding the Navy's response to the USEPA Region II's comment on the Draft FOST and EBST for the 105-acre Parcel at NWIRP Bethpage, please give me a call at (610) 595-0567, extension 163.

Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Enclosure: (1) Draft-Final FOST & EBST for NWIRP Bethpage's 105-acre Parcel

Copy to: (w/o enclosure)
NYSDEC (Albany), Steve Scharf
NYSDEC (Albany), Henry Wilkie
NYSDEC (Stony Brook), Stan Farkas
NYSDOH, Bill Gilday
USEPA Region II, Dale Carpenter
NAVAIR, Joe Kaminski
J.A. Jones, Al Taormina

**DEPARTMENT OF THE NAVY**
ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Code EV21/JC

20 FEB 2002

Mr. Steve Scharf
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Dear Mr. Scharf:

Subj: **DRAFT-FINAL** FINDING OF SUITABILITY TO TRANSFER (FOST) AND ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER (EBST) FOR 105-ACRE PARCEL AT THE FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

Enclosed is a draft-final version of the U.S. Navy's Finding of Suitability to Transfer (FOST) and associated Environmental Baseline Survey for Transfer (EBST) for the Navy's main 105-Acre Parcel located at the NWIRP Bethpage facility.

All comments that were made at the April 11, 2001 meeting in Albany, New York regarding the draft FOST & EBST have been addressed and can be found in enclosure (3) to the FOST. Other comments submitted during the comment period have also been included in enclosure (3) with the exception of the Navy's response to an EPA Region II comment. The Navy is still currently drafting a response regarding the EPA's contention that an Operating Properly and Successfully (OPS) determination is required.

In response to a request made by NYSDOH during the April 11, 2001 meeting, the tables that discuss each Area of Concern (AOC) identified on the 105-acres have been enhanced to provide as much information regarding each AOC as possible along with recommendations for additional actions, if appropriate. In addition, two figures have been added that shows the location of each AOC where residual compounds remain. Upon acceptance, these revised tables and figures will be included into Appendix B of the EBST and into Sections 9 and 10, respectively, of a revised version of the Final Phase II EBS, previously dated December 1999, that will be issued under separate correspondence. The revised tables and figures will also be referenced in the upcoming deed of transfer for the 105-acres thereby providing the necessary notification required under CERCLA 120(H).

The Navy would like to ask that the NYSDEC and NYSDOH review the documents that have been enclosed with this letter and be prepared to discuss them at an upcoming meeting that the Navy would like to have in Albany sometime in early March 2002. At that time, the Navy would also like to discuss the status of the Federal Facilities Site Remediation Agreement for Navy implementation of various components to the OU 2 Groundwater ROD that was previously sent to NYSDEC Office of Counsel in December 2001.

If you have any questions, please give me a call at (610) 595-0567, extension 163.

Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Enclosures: (1) AOC Tables 9-1 through 9-6
(2) Draft-Final FOST and associated EBST

Copy to:
NYSDEC (Albany), Henry Wilkie
NYSDEC (Stony Brook), Stan Farkas
NYSDOH, Bill Gilday

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION 2**
**290 BROADWAY**
**NEW YORK, NY 10007-1866**

NOV 0 3 2000

James L. Colter
Remedial Project Manager
Department of the Navy, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop, #82
Lester, PA 19113-2090

Re: Draft Finding of Suitability to Transfer (FOST) for the Main 105-Acre Parcel at the Naval Weapons Industrial Reserve Plant, Bethpage, New York

Dear Mr. Colter:

This letter is in response to your request for EPA's comments on the above-captioned document, dated September 28, 2000. EPA has the following preliminary comments:

*FOST, page 5, item #11. The EPA needs to determine whether: the pump and treat system for contaminated groundwater; the air stripping systems for the public water supply wells owned by the Bethpage Water District; and, the future installation of the separate treatment system to address the high concentrations of VOCs located in and around the vicinity of GM-38, are "action necessary to protect human health and the environment with respect to any ... substance remaining on the property ..." and need to be demonstrated to EPA as Operating Properly and Successfully, pursuant to CERCLA §§ 120(H)(3)(A)(11) and 120(H)(3)(B).*

Pending Navy submission of clarifying information on the above systems and EPA evaluation of that information, EPA regrets that it is unable to concur with the Navy at this time on a Finding of Suitability to Transfer.

I am available to meet with you at your earliest convenience to discuss these comments, if you feel it is necessary. Otherwise, if you have any questions or require further clarification of the above, please feel free to call me at (212) 637-4337.

Sincerely,

Paul G. Ingrisano

Paul G. Ingrisano
Project Manager
Federal Facilities Section

cc: S. Scharf, NYSDEC

**DEPARTMENT OF THE NAVY**
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Code 09TB/JC

28 SEP 2000

Mr. Steve Scharf
New York State Department of Environmental Conservation
Division of Environmental Remediation
50 Wolf Road
Albany, New York 12233-7010

Dear Mr. Scharf:

Subject: DRAFT FINDING OF SUITABILITY TO TRANSFER (FOST) AND ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER (EBST) FOR 105-ACRE PARCEL AT THE FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

Enclosed is a draft version of the U.S. Navy's Finding of Suitability to Transfer (FOST) and associated Environmental Baseline Survey for Transfer (EBST) for the Navy's main 105-Acre Parcel located at the NWIRP Bethpage facility. It is requested that your agency review these documents and return comments back to this Command no later than November 3, 2000.

Copies have also been sent to NYSDEC Region I offices in Stony Brook, NY, the U.S. Environmental Protection Agency, Region II, the New York State Department of Health, Nassau County Department of Health, Nassau County Department of Public Works, and the community members of Bethpage's Restoration Advisory Board (RAB) for their review. A Notice of Availability will also be issued in the Bethpage Tribune newspaper in order to solicit comments from the general public.

The 105-Acre portion of the Bethpage property has been determined to be in excess to the needs of the Naval Air Systems Command due to the decision made by the Northrop Grumman Corporation to terminate operations at the Bethpage facility. Therefore, the Department of Navy has decided to transfer the 105-Acres to the County of Nassau, New York.

The enclosures were prepared to document the current environmental condition of the 105-Acres and was based upon information provided in the Navy's Phase I and II Environmental Baseline Surveys (EBSs). These documents were prepared in accordance with CERCLA 120(h) to determine if any adverse environmental impacts had occurred due to the former use of the property.

If you have any questions or require additional information, please give me a call at (610) 595-0567, extension 163. Comments can be submitted in writing by either fax at (610) 595-0555 or by email at colterjl@efdnorth.navfac.navy.mil.

Sincerely,

James L. Colter

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Enclosure: (1) Draft FOST and associated EBST

**DEPARTMENT OF THE NAVY**
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Code 09TB/JC

28 SEP 2000

Mr. Stan Farkas
New York State Department of Environmental Conservation
Division of Hazardous Substance Regulation
Region I Headquarters
SUNY Campus, Building 40
Stony Brook, New York 11790-2356

Dear Mr. Farkas:

Subject: DRAFT FINDING OF SUITABILITY TO TRANSFER (FOST) AND ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER (EBST) FOR 105-ACRE PARCEL AT THE FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

Enclosed is a draft version of the U.S. Navy's Finding of Suitability to Transfer (FOST) and associated Environmental Baseline Survey for Transfer (EBST) for the Navy's main 105-Acre Parcel located at the NWIRP Bethpage facility. It is requested that your agency review these documents and return comments back to this Command no later than November 3, 2000.

Copies have also been sent to NYSDEC in Albany, NY, the U.S. Environmental Protection Agency, Region II, the New York State Department of Health, Nassau County Department of Health, Nassau County Department of Public Works, and the community members of Bethpage's Restoration Advisory Board (RAB) for their review. A Notice of Availability will also be issued in the Bethpage Tribune newspaper in order to solicit comments from the general public.

The 105-Acre portion of the Bethpage property has been determined to be in excess to the needs of the Naval Air Systems Command due to the decision made by the Northrop Grumman Corporation to terminate operations at the Bethpage facility. Therefore, the Department of Navy has decided to transfer the 105-Acres to the County of Nassau, New York.

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If you have any questions or require additional information, please give me a call at (610) 595-0567, extension 163. Comments can be submitted in writing by either fax at (610) 595-0555 or by email at colterjl@efdnorth.navfac.navy.mil.

Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Enclosure: (1) Draft FOST and associated EBST

**DEPARTMENT OF THE NAVY**
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Code 09TB/JC

28 SEP 2000

Mr. Bill Gilday
New York State Department of Health
2 University Place
Room 205
Albany, New York 12203-3313

Dear Mr. Gilday:

Subject: DRAFT FINDING OF SUITABILITY TO TRANSFER (FOST) AND ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER (EBST) FOR 105-ACRE PARCEL AT THE FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

Enclosed is a draft version of the U.S. Navy's Finding of Suitability to Transfer (FOST) and associated Environmental Baseline Survey for Transfer (EBST) for the Navy's main 105-Acre Parcel located at the NWIRP Bethpage facility. It is requested that your agency review these documents and return comments back to this Command no later than November 3, 2000.

Copies have also been sent to NYSDEC offices in Albany and Stony Brook, NY, the U.S. Environmental Protection Agency, Region II, the Nassau County Department of Health, Nassau County Department of Public Works, and the community members of Bethpage's Restoration Advisory Board (RAB) for their review. A Notice of Availability will also be issued in the Bethpage Tribune newspaper in order to solicit comments from the general public.

The 105-Acre portion of the Bethpage property has been determined to be in excess to the needs of the Naval Air Systems Command due to the decision made by the Northrop Grumman Corporation to terminate operations at the Bethpage facility. Therefore, the Department of Navy has decided to transfer the 105-Acres to the County of Nassau, New York.

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If you have any questions or require additional information, please give me a call at (610) 595-0567, extension 163. Comments can be submitted in writing by either fax at (610) 595-0555 or by email at colterjl@efdnorth.navfac.navy.mil.

Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Enclosure: (1) Draft FOST and associated EBST

**DEPARTMENT OF THE NAVY**
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Code 09TB/JC
28 SEP 2000

Mr. Bruce Mackay
Nassau County Department of Health
Division of Environmental Health
240 Old Country Road
Mineola, NY 11501-4250

Dear Mr. Mackay:

Subject: DRAFT FINDING OF SUITABILITY TO TRANSFER (FOST) AND ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER (EBST) FOR 105-ACRE PARCEL AT THE FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

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Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Enclosure: (1) Draft FOST and associated EBST

**DEPARTMENT OF THE NAVY**
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Code 09TB/JC

28 SEP 2000

Mr. Paul Ingrisano
U.S. Environmental Protection Agency, Region II
Federal Facilities Section
290 Broadway
New York, NY 10007-1866

Dear Mr. Ingrisano:

Subject: DRAFT FINDING OF SUITABILITY TO TRANSFER (FOST) AND ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER (EBST) FOR 105-ACRE PARCEL AT THE FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

Enclosed is a draft version of the U.S. Navy's Finding of Suitability to Transfer (FOST) and associated Environmental Baseline Survey for Transfer (EBST) for the Navy's main 105-Acre Parcel located at the NWIRP Bethpage facility. It is requested that your agency review these documents and return comments back to this Command no later than November 3, 2000.

Copies have also been sent to NYSDEC offices in Albany and Stony Brook, NY, the New York State Department of Health, Nassau County Department of Health, Nassau County Department of Public Works, and the community members of Bethpage's Restoration Advisory Board (RAB) for their review. A Notice of Availability will also be issued in the Bethpage Tribune newspaper in order to solicit comments from the general public.

The 105-Acre portion of the Bethpage property has been determined to be in excess to the needs of the Naval Air Systems Command due to the decision made by the Northrop Grumman Corporation to terminate operations at the Bethpage facility. Therefore, the Department of Navy has decided to transfer the 105-Acres to the County of Nassau, New York.

The enclosures were prepared to document the current environmental condition of the 105-Acres and was based upon information provided in the Navy's Phase I and II Environmental Baseline Surveys (EBSs). These documents were prepared in accordance with CERCLA 120(h) to determine if any adverse environmental impacts had occurred due to the former use of the property.

If you have any questions or require additional information, please give me a call at (610) 595-0567 extension 163. Comments can be submitted in writing by either fax at (610) 595-0555 or by email at colterjl@efdnorth.navfac.navy.mil.

Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the Commanding Officer

Enclosure: (1) Draft FOST and associated EBST

Copy to: (w/o enclosure)
USEPA Region II, Carol Stein
USEPA Region II, Bob Wing

**DEPARTMENT OF THE NAVY**
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Code 09TB/JC

28 SEP 2000

MEMORANDUM

**FOR THE MEMBERS OF THE RESTORATION ADVISORY BOARD (RAB) FOR THE INSTALLATION RESTORATION PROGRAM AT NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK**

Enclosed is a draft version of the U.S. Navy's Finding of Suitability to Transfer (FOST) and associated Environmental Baseline Survey for Transfer (EBST) for the Navy's main 105-Acre Parcel located at the NWIRP Bethpage facility. These documents are being sent to you for your information. It is requested that if you have comments regarding the enclosed documents, that you return them back to this Command no later than November 3, 2000.

Copies have also been sent to the appropriate regulatory agencies for their review and a Notice of Availability will also be issued in the Bethpage Tribune newspaper to solicit comments from the general public.

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If you have any questions or require additional information, please give me a call at (610) 595-0567, extension 163. Comments can be submitted in writing by either fax at (610) 595-0555 or by email at colterjl@efdnorth.navfac.navy.mil.

Sincerely,

JAMES L. COLTER
Remedial Project Manager
By direction of the
Commanding Officer

Enclosure: (1) Draft FOST and associated EBST

Distribution:

Nassau County DPW, Tim Kelly
DCMC, Martin Simonson
Town of Oyster Bay, Hon. John Venditto
Town of Oyster Bay DPW, Tom Clark
Northrop Grumman, John Cofman
Community Co-Chair, Jim McBride
Community RAB Member, Hon. Ed Mangano
Community RAB Member, Linda Mangano
Community RAB Member, Ed Resch
Community RAB Member, Charles Bevilacqua
Community RAB Member, Roy Tringali
Community RAB Member, Rosemary Styne
Community RAB Member, John Lovisolo

**ENCLOSURE 4**

**RESPONSES TO REGULATORY COMMENTS ON DRAFT FOST AND EBST**

**COMMENT RESPONSES FROM ENGINEERING FIELD ACTIVITY, NORTHEAST REGARDING**

**DRAFT FINDING OF SUITABILITY FOR TRANSFER (FOST) AND DRAFT ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER (EBST) FOR 105-ACRE PARCEL**

**NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK**

**COMMENTS FROM U.S. EPA, REGION II DATED NOVEMBER 3, 2000:**

**COMMENT**: FOST, page 5, Item #11: The EPA needs to determine whether: the pump and treat system for contaminated groundwater; the air stripping systems for the public water supply wells owned by the Bethpage Water District; and, the future installation of the separate treatment system to address the high concentrations of VOCs located in and around the vicinity of GM-38, are "action necessary to protect human health and the environment with respect to any ... substance remaining on the property ..." and need to be demonstrated to EPA as Operating Properly and Successfully, pursuant to CERCLA Sections 120(H)(3)(A)(11) and 120(H)(3)(B).

**RESPONSE**: The remedial actions listed above are part of a Record of Decision for Operable Unit 2 (OU 2) - Groundwater issued by New York State Department of Environmental Conservation (NYSDEC) on March 29, 2001. NYSDEC has named the Department of Navy and Northrop Grumman Corporation as the Potentially Responsible Parties (PRPs) with regards to groundwater contamination that exists on and downgradient of both properties.

The Department of Navy recognizes it's responsibilities with regards to the remediation of groundwater contamination emanating from NWIRP Bethpage and, in response, has issued a Record of Decision (ROD) for the groundwater operable unit (Operable Unit 2) at NWIRP Bethpage, New York. For information, the Department of Navy previously issued a ROD for OU 1 in July 1995, which outlined several actions that have since been completed with regards to soil contamination at NWIRP Bethpage. These RODs were issued pursuant to Executive Order 12580, in which the President delegated his CERCLA authority to the Department of Defense for releases occurring on or from DoD Installations. Accordingly, DoD re-delegated it's Lead Agency Authority to the individual departments and more specifically, to the Department of Navy (DoN), for CERLCA releases on or from DoN installations.

The Navy's ROD for OU 2 at NWIRP Bethpage was developed using NYSDEC's ROD for Regional Groundwater (OU 2) as guidance. However, the Navy has split up NWIRP Bethpage's OU 2 into two parts; on-site groundwater and off-site groundwater. On-site groundwater is defined as groundwater that lies directly beneath the Navy's 105-acre parcel. Off-site groundwater is defined as groundwater that is located downgradient of Navy and Northrop Grumman properties in which VOC contamination from both properties has commingled.

As part of this comment response, the Navy has attached the OU 2 ROD for NWIRP Bethpage which outlines the components of the on-site and off-site portions of the groundwater operable unit. As stated in the OU 2 ROD, the Navy's selected remedy is also based on the recognition that an existing groundwater containment and treatment system is operating on downgradient property owned by the Northrop Grumman Corporation. This recognition was based on a similar recognition of the Northrop Grumman Treatment System mentioned in a Record of Decision for the Hooker Chemical/RUCO Polymer Superfund Site, issued in September 2000 and prepared by the Region II office of the USEPA.

Based on the attached OU 2 ROD for NWIRP Bethpage, only the Navy remedy for the on-site portion of the groundwater operable unit directly affects the "property to be transferred" which in this case, is the Navy's 105-acre parcel. As such, since this remedy only involves the application of a deed restriction prohibiting the extraction of groundwater (an institutional control), the Navy's selected remedy does not involve the construction or installation of an approved remedial design. Accordingly, this remedy will be complete at the time of transfer.

Further, it is the Navy's position that the air stripping systems for the public water supply wells owned by the Bethpage Water District and the future installation of the separate treatment system to address the high concentrations of VOCs located in and around the vicinity of GM-38, are not actions that are needed to protect human health and the environment from substances remaining on "property to be transferred". These remedies will be located in areas that are one and a half miles to the south of NWIRP Bethpage. These actions are necessary in order to aid in the overall remediation of groundwater however, due to their extreme distance, the Navy feels that these remedies do not have a direct impact on groundwater beneath the 105-acre Parcel.

**REBUTTAL FROM U.S. EPA, REGION II DATED SEPTEMBER 23, 2002:**

**COMMENT**: The EPA disagrees. First, and while it may seem like merely semantics, your 'on-site" and "off-site" definitions are inconsistent with the National Contingency Plan. "On-site" means, at a minimum, the aerial extent of contamination. Therefore, the Site would certainly extend beyond the legal boundary of the 105 acres and continue to the extent that the contamination has migrated.

You acknowledge responsibility for the plume emanating from the Site on page two of your letter, in the fourth paragraph. You also acknowledge that the current proposed remedy for the ground water contamination underlying the 105 acres parcel is only appropriate for consideration, "based on the recognition that an existing groundwater containment and treatment system is operating on downgradient property owned by Northrop Grumman Corporation".

This recognition that without the downgradient groundwater containment and treatment system, a different remedy, perhaps employing active treatment, would have to be selected for the 105 acre parcel to

address the underlying contamination, is significant. Thus, this downgradient portion of the Site remedy, regardless of how you define on-site, is essential to your being able to proposed the groundwater remedy you do, and if it were to fail to perform properly, then the remedy you are proposing would have to be reconsidered and it is possible that active remediation would be necessary on the 105 acre parcel. It is for this reason that we have concluded that a demonstration must be made to our satisfaction that the system, or systems, which are being or have been designed to address the groundwater contamination emanating from the Site are operating properly and successfully.

**NAVY RESPONSE TO EPA REBUTTAL:**

The Navy would like to clarify the use of the terms "on-site" and "off-site" used to describe the different portions of the contaminated groundwater plume. The Navy agrees with the EPA's assessment that the term "on-site", as defined in the National Contingency Plan" includes the areal extent of the plume regardless of whether it migrates beyond property boundaries. The Navy was referring not to the extent of contamination but the extent of the Navy property to be transferred, and should have used the terms "on-property" and off-property", to describe the locations for which various groundwater remedial components are to be installed, since the OPS guidance refers to the remedies that are located on "property" to be transferred.

The Navy would also like to expand on the reasons for the Navy's recognition of the downgradient groundwater treatment system that was installed and is being operated by the Northrop Grumman Corporation. The Navy's recognition of the downgradient groundwater treatment system is consistent with the USEPA's recognition of the same treatment system to contain and treat groundwater containing total volatile organic compounds (TVOCs) that have migrated off of property owned by the Occidental Chemical Corporation (Hooker/RUCO). The USEPA's ROD for the Hooker/RUCO facility, issued in September 2000, called for the installation of an active remedy to address that portion of the vinyl chloride subplume that is located on, and just downgradient, of the Hooker/RUCO facility. The ROD goes on to say that:

> "The selected remedy is also based on the recognition that an existing groundwater extraction and treatment system (Northrop Treatment System) . . . is containing and remediating a commingled plume of TCE and PCE contamination from the Northrop, NWIRP and the Hooker/RUCO sites. EPA's selected remedy, designated as Operable Unit Three (OU-3), together with the Northrop Treatment System, which is expected to operate for at least the next thirty years, will prevent further migration of groundwater contamination and will effectively address the contamination emanating from the Hooker/RUCO Facility".

The Navy recognizes the same Northrop Treatment System for the same reason. That being, that the Northrop Treatment System effectively addresses the contamination that lies beneath the NWIRP Bethpage property and will prevent the further migration of the "off-property" component of groundwater contamination. Further, the Navy agrees with the EPA's assessment that if the Northrop Treatment System fails to continue to operate, that the remedy that the Navy is proposing would have to be reconsidered with the possibility that an active system would need to be installed on Navy property. However, until such time as the Northrop Treatment system fails to operate, projecting potential future actions at this time is not appropriate. Furthermore, the fact that the EPA would rely on this remedy as a part of their off-site remedy in their Hooker/RUCO ROD greatly increases the Navy's confidence in the viability of the NGC ONCT system.

In summary, an OPS determination is not necessary since there is no active Navy remedy continuing on the property that is to be transferred. However, the EPA may be interested in reviewing a report that is being prepared on behalf of the Northrop Grumman Corporation entitled *Hydraulic Effectiveness Evaluation for the Operable Unit 2 On-Site Containment (ONCT) System.* This report, which is required by NYSDEC as part of their Operable Unit 2 Groundwater ROD issued in March 2001, provides a determination that the Northrop Treatment System is operating properly and functioning as designed. Although the Navy has not yet seen this report, it is believed to contain similar information to that of an OPS determination.

**VERBAL COMMENTS FROM NEW YORK STATE DEC ISSUED DURING DOCUMENT REVIEW MEETING HELD IN ALBANY, NY ON APRIL 11, 2001:**

**COMMENT**: Deed Restriction language should be written to require prior consultation by the Navy but require written permission and concurrence from the NYSDEC.

**RESPONSE**: Those deed restrictions that will require prior consultation will be rewritten in the Notices, Covenants, Conditions, Reservations, and Restrictions section stating that prior consultation with the Navy will be required but that written permission must be submitted, reviewed, and approved by the NYSDEC before taking any actions that have been restricted in the deed of transfer. This language will appear in Enclosure (2) to the FOST.

**COMMENT**: Update the deed restriction language stating that for any excavations that are to occur on the 105-acre property, that the excavated soils must be properly disposed.

**RESPONSE**: The appropriate language will be included into the Notices, Covenants, Conditions, Reservations, and Restrictions section that appears as Enclosure (2) to the FOST.

**COMMENT**: FOST will need to be updated to reflect the current status of the groundwater issue and include all of the components of the recently issued OU 2 Groundwater Record of Decision (ROD).

**RESPONSE**: The various components of the OU 2 Groundwater ROD issued by NYSDEC on March 29, 2001, will be appropriately updated in the FOST and in the Groundwater subsection of the EBST. The Navy will also include the current status of implementation of those various components.

**COMMENT**: For the tanks that are to remain on the 105-acres, please update the status of what the tanks are used for and when the last tightness test was conducted.

**RESPONSE**: Table 1 on Page 13 of the Draft EBST (enclosure 1 to the Draft FOST) shows the USTs and ASTs that will be remaining on the 105-acre property. In accordance with appropriate regulations, Tanks 18, 19, 57, and 62 are ASTs and, as such, do not require tightness testing.

The remaining three tanks on Table 1 are USTs and the dates of their last tightness test are as follows: Tank 1362 in November 2000; Tank 9339 in March 1994; and Tank 9340 in June 1999. This information will be added to a revision to Table 1.

Please note that when NWIRP Bethpage was considered as a Large Quantity Generator (LQG) with regards to fuel storage, the USTs were governed by NYSDEC regulations that required tightness testing every 5 years. However, since NWIRP Bethpage's fuel storage has since been downgraded to a Small Quantity Generator (SQG) and, as such, the USTs now fall under the cognizance of the Nassau County Health Department whose regulations for USTs require tightness testing annually unless monitoring devices such as Leak Detection Systems are in place. Therefore, since Tanks 9339 and 9340 have a Leak Detection System in place, they are now exempt from further tightness testing requirements. Tank 1362, on the other hand, will still require an annual tightness test due to the lack of any monitoring devices in place. The above information will also be added to a revision to Table 1.

**COMMENTS FROM NEW YORK STATE DEC REGARDING NAVY'S PETITION TO MODIFY BOUNDARIES OF INACTIVE HAZARDOUS WASTE SITE 1-30-003B DATED OCTOBER 29, 2002:**

The incompleteness of the petition consists of the following omissions:

1. **Finding of Suitability to Transfer (FOST - 105 Acre Parcel), Enclosure 2, Deed Notification and Restriction**: The Department of Navy needs to revise the deed restriction and institutional controls listed in Enclosure 2 of the FOST. These revisions must be submitted to and accepted by the Department's Division of Environmental Remediation (DER) and Division of Solid and Hazardous Materials (DSHM).

   The deed restriction must then be filed with the Nassau County Office of Records (NCOR). The following revisions should be made to the deed restrictions:

   a) Tables 9-1 through 9-6 of the FOST Appendix should be included on the deed notice filed with the NCOR.

   b) Figures 8A and 9A (2 by 3 foldout sheets) of the FOST should be included with the deed restriction filed with the NCOR.

   c) Institutional Controls and deed restrictions, specified in the NWIRP OU 1 Soils Record of Decision (ROD) for Sites 2 and 3 must be in place before the portion of the property petitioned can be delisted and transferred to NCOR.

   d) The Department of Navy needs to submit a draft of the declaration of the covenants and restrictions along with the metes and bounds description of the area where digging will be prohibited/restricted for our review and acceptance.

   e) The groundwater use restrictions also need to be specified in the declaration of the covenants and restrictions.

**RESPONSE TO 1**: The Department of the Navy is presently without the requisite authority to place an encumbrance on any Federal property, including the 105-acres, prior to conveyance. The Navy's real estate disposal authority for the 105-acres, as well as for Plant 20, is special authority issued as part of Special Legislation. This authority allows the Department of Navy to issue restrictions as part of the deeds of transfer for property that is to be conveyed. Regarding the 105-acre property, all required deed restrictions will be included in the Quitclaim deed(s) that will be used to convey title to the ultimate transferee. That Quitclaim deed(s), with the restrictions, will then be recorded with the NCOR.

**RESPONSE TO 1a**: Reference to Tables 9-1 through 9-6 in Appendix A of the FOST for the 105-Acre Parcel will be included in the deed of transfer.

**RESPONSE TO 1b**: Reference to Figures 8A and 9A in Appendix A of the FOST for the 105-Acre Parcel will be included in the deed of transfer.

**RESPONSE TO 1c**: The institutional control of a soil cover atop Sites 2 and 3 has been completed (see Construction Completion Report dated May 2002).

For reasons stated in the Navy's response to Item 1 above, the Navy can not encumber property prior to conveyance. However, notification of those areas where residual compounds remain, will be included in the appropriate transfer documents.

**RESPONSE TO 1d**: By issuance of the Draft FOST, including enclosure (2) to the FOST, the Navy has provided the NYSDEC with the covenants and restrictions expected to be part placed on the property that is to be conveyed.

Please note that the Navy is not restricting digging in those AOCs where residual compounds remain. The Navy is simply notifying the transferee of their existence so that the appropriate precautions can be taken by the transferee for worker protection and to insure appropriate soil disposal. Therefore, since an actual restriction is not being placed on these areas, the Navy does not feel that metes and bounds survey of each AOC is warranted. Instead, the Navy developed tables and figures depicting each AOC location where a residual compound remains and included this information into Appendix A of the FOST.

RESPONSE TO 1e: Agreed. Item 6 of the Environmental Covenants, Conditions, and Restrictions (enclosure 2 of the FOST) is vague regarding groundwater use restrictions. This item will be amended to be more specific regarding the restriction of groundwater use beneath the 105-acre parcel.

2. **NWIRP Plant 3 (105 Acre Parcel) Installation and Restoration (IR) Operable Unit 1, Sites 1, 2 and 3 Construction Completion Report**: The Bureau of Construction Services is the project lead for this part of the project and Sites 2 and 3 are part of the areas to be delisted and subsequently transferred as part of the FOST. This report was commented on by the Bureau of Construction Services and their comments have yet to be addressed. This Construction Report needs to be finalized before this portion of the site can be delisted (see also comment 1C above).

**RESPONSE TO 2**: Comment noted. There were only 2 comments issued regarding the above Report. The first was to include a new figure in the front of the document. A revised figure was developed and forwarded to NYSDEC via email for inclusion into their copy of the report. The second was to have a New York licensed Professional Engineer declare that the work at Site 2 was completed as designed. A New York State licensed P.E. from Tetra Tech NUS, who provided oversight during installation of the permeable soil/gravel cover, has performed an engineering review of the work conducted by CAPE

Environmental. His findings have been summarized in a Declaration Page. The Declaration page and the revised Figure will be forwarded to Mr. Gerard Burke or NYSDEC's Bureau of Construction Services. These pages should be inserted appropriately into the Construction Completion Report dated May 2002.

3. The Major Modification of the 6NYCRR Pat 373 Permit Removal of the 105 acres site Statement of Basis Report must be approved by the DSHM before the petition to modify the boundaries of the 105-acre parcel can be approved.

**RESPONSE TO 3**: Comment noted. The document referenced above was prepared by the Northrop Grumman Corporation and submitted to Mr. Steve Kaminski of NYSDEC for review back in February 2001. The Navy is not aware of any comments that were forwarded to Northrop Grumman regarding the referenced document. Therefore, the Navy has assumed that NYSDEC concurs with the document as submitted.

4. **Finding of Suitability to Transfer (FOST - Plant 20 Parcel), Enclosure 2, Deed Notification and Restriction**: The deed restrictions included in Enclosure 2 of the FOST must be filed with the NCOR. The Plant 20 parcel can be delisted separately form the main 105 acre parcel.

**RESPONSE TO 4**: As stated in the Response to 1 above, the Department of the Navy is presently without the requisite authority to place an encumbrance on any Federal property, including Plant 20, prior to conveyance. The Navy's real estate disposal authority for Plant 20, as well as for the 105-acress, is special authority issued as part of Special Legislation. This authority allows the Department of Navy to issue restrictions as part of the deeds of transfer for property that is to be conveyed. Regarding the Plant 20 property, all required deed restrictions have been included in the Quitclaim deed that will be used to convey title to the ultimate transferee. That Quitclaim deed, with the restrictions, will then be recorded with the NCOR.

5. The tax map numbers and a metes and bounds description for the remaining 8.7 acres of the main 105 acres parcel need to be provided.

**RESPONSE TO 5**: A property survey map for the entire 105-acre parcel, including the 8.7 acres that is to be retained by the Navy, was previously submitted as enclosure 2 to the Boundary Modification Request that was sent to Ms. Erin Crotty of NYSDEC on May 31, 2002. A legal description of the 8.7-acre parcel has been completed and will be forwarded to NYSDEC and to the attention of Mr. Dennis Farrar and Mr. Steve Scharf. This legal description will be used to describe this area in the quickclaim deed.

**COMMENT**: The New York State Department of Health's comments (Gilday to Scharf/Wilkie) regarding the FOST for Plants 3 and 20, the Construction Completion Report for Installation and Restoration (IR) for sites 2 and 3, the Phase II Environmental Baseline Survey, NWIRP, Bethpage, and the petition to delist portions of the 105 acre facility

and Plant 20 from the Department's registry of Inactive Hazardous Waste Disposal Sites were dent directly to the Department of Navy on October 1, 2002. The comments need to be addressed before the requested boundary modifications can be approved.

**RESPONSE**: Navy responses to NYSDOH comments referenced above have been completed and presented in a separate comment response document.

**VERBAL REQUEST FROM NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) ISSUED DURING DOCUMENT REVIEW MEETING HELD IN ALBANY, NY ON APRIL 11, 2001:**

**COMMENT**: The NYSDOH would like to ask that the Navy conduct air sampling to determine the indoor air quality within Plant 3. The NYSDOH will sometimes get phone calls from future tenants of former industrial buildings inquiring about the quality of air in and around their workspaces. The NYSDOH would like to have this actual analytical data to better respond to phone calls regarding Plant 3.

**RESPONSE**: In response to the above request, the Navy along with representatives from NYSDOH and Nassau County, identified air sampling locations during a site visit held on February 7, 2001. These locations were then incorporated into a workplan entitled "Plant 3 Air Sampling, NWIRP Bethpage, NY". This workplan was submitted on February 16, 2001 to NWIRP Bethpage's regulatory community as well as the Community Co-Chair of Bethpage's Restoration Advisory Board (RAB) for review. No comments regarding the workplan were received. The Navy then implemented the workplan on February 21, 2001, the results of which were included in a Draft Air Sampling Results document that was handed to the NYSDEC and NYSDOH during a technical review meeting held on April 11, 2001. To date, no comments have been received regarding the draft document and the Navy, therefore, is considering this document to be Final and this issue resolved to the satisfaction of the NYSDEC and NYSDOH.

**COMMENT**: In order to aid in our review of the Phase II EBS and FOST, it is requested that the Tables in Section 9.0 be enhanced to include as much information regarding the actions taken by Northrop Grumman at each AOC.

**RESPONSE**: Tables 9-1 through 9-7 and Figures 10-3 and 10-4 have been added to a Revised version of the Final Phase II EBS. These Tables (with the exception of Table 9-7 Plant 05) and Figures were also included into the Final EBST for the 105-Acre Parcel.

**COMMENTS FROM NEW YORK STATE DOH REGARDING VARIOUS NAVY ENVIRONENTAL DOCUMENTS DATED SEPTEMBER 27, 2002: (Comments forwarded by NYSDEC Letter of October 1, 2002)**

**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 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 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.

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.

**COMMENTS FROM COUNTY OF NASSAU - INDUSTIRAL DEVELOPMENT AGENCY DATED JANUARY 17, 2001:**

**COMMENT**: IR Site 3 (Former Salvage Storage Area) - The County hereby requests that the Navy resample the surface soils as intended as part of the Phase II EBS (Environmental Baseline Survey) to determine if in fact any residual compounds remain. Although the Navy decided against this sampling because Northrop Grumman cleaned, raked and revegetated this area, and the reuse plan call for this area to be used for parking, the County would like to know definitively if the soil contains any compounds at levels of concern. With this information, a determination can be made if deed restrictions are needed for this location should the future use change.

**RESPONSE**: In response to the above request, the Navy prepared a workplan to conduct surface and near-surface soil sampling at both IR Sites 2 and 3. This workplan was submitted on February 16, 2001 to NWIRP Bethpage's regulatory community, including Nassau County DOH and DPW as well as the Community Co-Chair of Bethpage's Restoration Advisory Board (RAB) for review. No comments regarding the soil sampling workplan were received.
The Navy, along with a representative of Nassau County DPW, conducted a site visit on February 7, 2001, to locate potential soil sampling locations at both IR Sites 2 and 3. The Navy then implemented the sampling workplan on February 20 and 21, 2001, the results of which were included in a Draft Soil Sampling Results Report that was forwarded to members of NWIRP Bethpage's regulatory and RAB communities, including Nassau County DOH and DPW on June 21, 2001. The Draft Report of Results concluded that no additional cover would be required at IR Site 3 since the average concentration of residual compounds was less than typical industrial standards. However, a deed notification will be placed on the site because of the presence of residual compounds. This deed notification is only being included to alert potential future occupants of this site that residual compounds remain and that any future disturbances of soil in this area should include appropriate safeguards especially with respect to offsite disposal of soils from this area. In addition, at the request of NYSDEC, an additional provision will be added requiring written permission and approval from NYSDEC and NYSDOH prior to excavation or disturbance of these subsurface soils.

**COMMENT**: IR Site 2 (Recharge Basin Area) - The County would like to see the application of the permeable soil cover in the former sludge drying area done as soon as possible as to not hold up the transfer.

**RESPONSE**: In response to the above request, the Navy prepared a workplan to conduct surface and near-surface soil sampling at both IR Sites 2 and 3. This workplan was submitted on February 16, 2001 to NWIRP Bethpage's regulatory community, including Nassau County DOH and DPW as well as the Community Co-Chair of Bethpage's Restoration Advisory Board (RAB) for review. No comments regarding the soil sampling workplan were received. The Navy, along with a representative of Nassau County DPW, conducted a site visit on February 7, 2001, to locate potential soil sampling locations at both IR Sites 2 and 3. The Navy then implemented the sampling workplan on

February 20 and 21, 2001, the results of which were included in a Draft Soil Sampling Results Report that was forwarded to members of NWIRP Bethpage's regulatory and RAB communities, including Nassau County DOH and DPW on June 21, 2001.

This Draft Report of Results also included a workplan to apply a permeable cover over portions of IR Site 2. No comments were received regarding the draft report of results and permeable cover workplan, therefore, the Navy considered these reports to be Final.

The Navy then secured the services of an environmental contractor to implement the permeable cover workplan as submitted. Application of the permeable cover over IR Site 2 was conducted in November 2001 and has been completed.

In addition, a deed notification will be placed on the site to alert potential future occupants of this site that residual compounds remain 6 inches below the newly applied surface soils and that any future disturbances of soil in this area should include appropriate safeguards especially with respect to offsite disposal of soils from this area. In addition, at the request of NYSDEC, an additional provision will be added requiring written permission and approval from NYSDEC and NYSDOH prior to excavation or disturbance of these subsurface soils.

**COMMENT**: Air Stripping Tower (Plant 03) - Does the Navy have an agreement with Northrop Grumman to dismantle this equipment when Northrop Grumman no longer needs it for its Plant 05 operations? And if so, does that agreement transfer to the County when we acquire the property?

**RESPONSE**: The Navy does not have an agreement with Northrop Grumman to dismantle the Air Stripping tower located on the north side of Plant 3 once Plant 5 operations have been completed.

During the abandonment of the seven Navy production wells, described below, the Navy also dismantled and removed the Plant 3 Air Stripping Tower.

**COMMENT**: Production Wells - The County hereby requests that the seven (7) production wells (wells 8, 9, 10, 11, 13, 14 and 15) be properly abandoned, including wells 10 and 11 when no longer needed by Northrop Grumman to support Plant 05 Operations.

**RESPONSE**: In accordance with the County's request, the Navy completed abandonment of seven (7) production wells on the 105-Acre Parcel in December 2000. In addition, the Navy also abandoned two Navy production wells that were located on Northrop Grumman property in the vicinity of Plant 05 (Navy wells 5 and 6). Closure of these wells were in accordance with NYSDEC guidelines regarding well abandonment. It is further recognized that closure of these wells has eliminated the possibility of increased groundwater extraction from the Navy's property. This will help to keep the pump and treat groundwater containment system, located downgradient on Northrop Grumman Property, operating as designed.