Finding of Suitability to Transfer

for 1-30-003B

Plant 20

Naval Weapons Industrial Reserve Plant (NWIRP)

Bethpage, New York

Engineering Field Activity Northeast
Naval Facilities Engineering Command

June 2002

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 JUN 2002

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

Dear Ms. Crotty:

Subj: SUBMISSION OF FINAL FINDING OF SUITABILITY TO TRANSFER (FOST) FOR THE PLANT 20 PARCEL AT THE NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NASSAU COUNTY, NEW YORK; NYS REGISTRY #1-30-003B

The Navy is pleased to submit a copy of the Final, signed version of the Finding of Suitability to Transfer (FOST) for a portion of the NWIRP Bethpage facility that is to be transferred to the County of Nassau, New York.

By signing the FOST for this property, known as the Plant 20 Parcel, the Commanding Officer of Engineering Field Activity, Northeast, Naval Facilities Engineering Command, has determined that this document has adequately addressed all environmental issues and that a FOST determination is warranted. All comments received during the comment period have been addressed in writing and can be found in enclosure (3) to the Final FOST.

The Navy is requesting that the enclosed document be added to the enclosures submitted as part of the Navy's petition to reclassify portions of the NWIRP Bethpage facility that was forwarded to NYSDEC for consideration in a letter dated 31 May 2002.

If you have any questions or require additional information, 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) Final FOST for Plant 20 Parcel (with enclosures)

Copy to:
NYSDEC (Albany), Steve Scharf
NYSDEC (Albany), Dennis Farrar
NYSDEC (Albany), Henry Wilkie
NYSDEC (Stony Brook), Stan Farkas
NYSDOH, Bill Gilday
EPA Region II, Dale Carpenter
EPA Region II, Carla Struble
Nassau County Health, Bruce McKay
Nassau County DPW, Tim Kelly
Northrop Grumman, Larry Leskovjan
Northrop Grumman, John Cofman

Copy to: (w/o enclosure)
NAVAIR, Judith Hare (AIR-8.2)
NAVAIR, Joe Kaminski (AIR-8.2D)
J.A. Jones, Al Taormina

PHASE II ENVIRONMENTAL SITE ASSESSMENT

FORMER NAVAL WEAPONS INDUST RIAL RESERVE PLANT (NWIRP)
TRANSPORTATION GARA GE - PLANT 20

SOUTH OYSTER BAY ROAD
HAMLET OF BETHPAGE
NASSAU COUNTY, NEW YORK

Prepared for:

Baumann Associates Realty Corp.
3355 Veterans Memorial Highway
Ronkonkoma, New York 11779

Prepared by:
Preferred Environmental Services
325 Merrick Road, 2 ND Floor
East Meadow, New York 11554
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April 2003

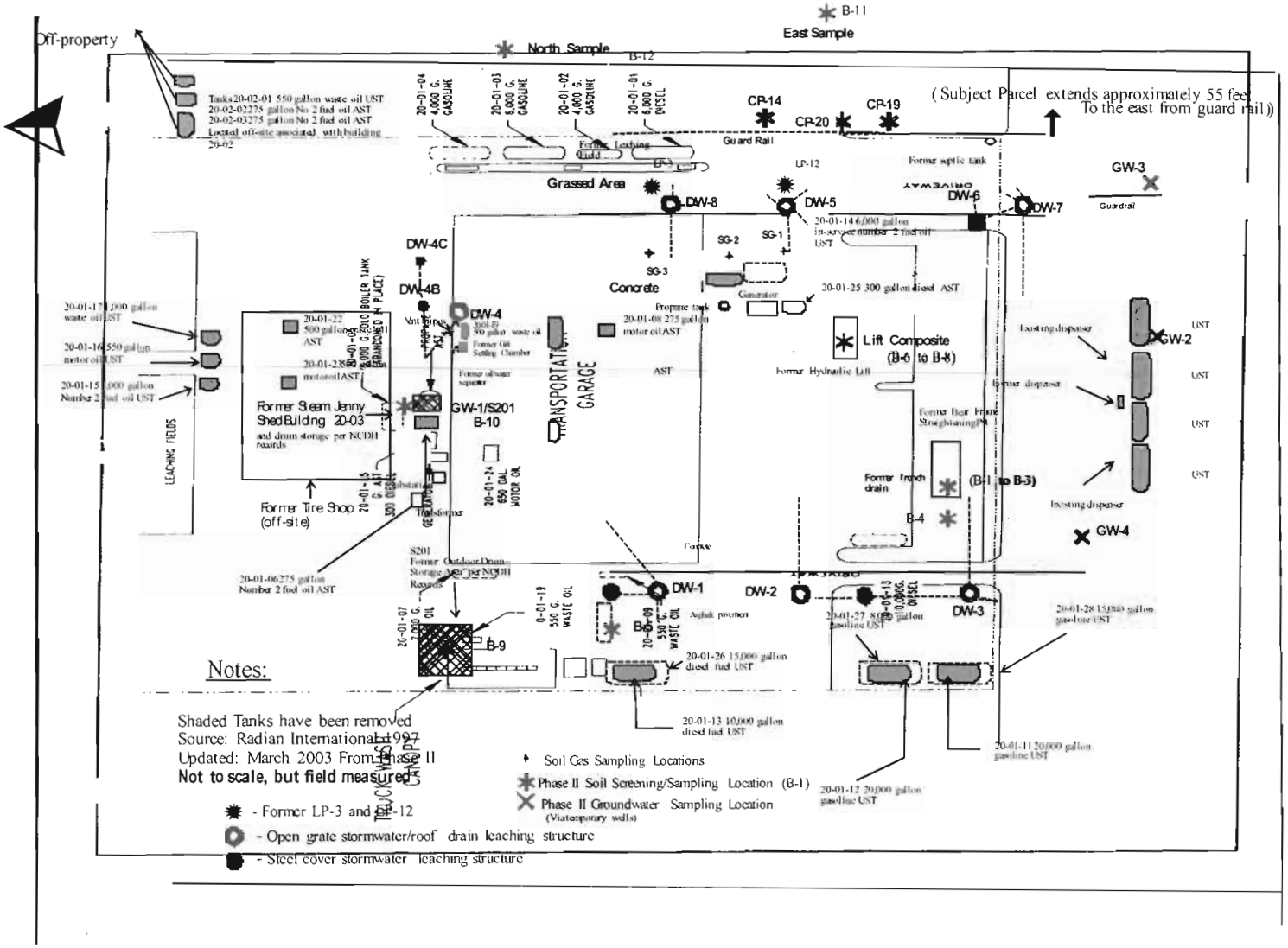

Figure 1 - Phase II Environmental Site Assessment Screening/Sampling Locations

at three locations proximate to two former UIC leaching pools. These samples were collected from within a small diameter sealed borehole installed via a rotary drill.

All drilling equipment was decontaminated prior to use and in between sampling locations by a physical scrub using municipal potable water and an alconox-detergent. Sampling equipment (mill slot Geoprobe well screen, stainless steel auger, etc.) was either decontaminated as described or laboratory-decontaminated dedicated sampling equipment was used (e.g., new polyethylene bailers/rope or poly-acetate Geoprobe tubes, etc.). The hollow stem augers were decontaminated via pressure/steam washing prior to use on site and physical decontamination on-site in between boreholes.

Sampling of Soil Gas in Area between the Building and Former UIC LP-3 and LP-12

The due diligence for the subject property revealed that a delisting petition submitted by the Navy to the NYSDOH had raised the issue of potential soil gas migration from the remaining VOCs residing at depths in excess of 18+ feet bgs at two former UIC structures (LP-3 and LP-12). The NYSDOH correspondence (see Appendix A) had cited a requirement for the evaluation of the concrete paved area between the building and the location of the former UIC structures. The former leaching structures were field located based upon as-built site plans and plotted in spray paint. A soil gas sampling location was selected directly in line with each of these two features (SG-1 and SG-3), within the middle of the first twenty foot portion of concrete pavement located to the west of the former pools. A third location (SG-2) was selected directly in the middle of these two soil gas sampling locations. It was noted that one of these locations, SG-1 was located proximate to No. 2 fuel oil UST (Tank No. 20-10-14), a removed tank (Tank No. 20-01-10) and an abandoned UST (Tank No. 20-01-05). The presence of these tanks may affect the test results.

A concrete core drill was used to excavate a very small (one inch diameter) borehole to a depth of three feet bgs. The drill was moved up and down to ensure that the interior drill cuttings were removed and a clean unobstructed borehole was present. A dedicated length of open-ended new teflon tubing was used and installed into the bottom of the borehole. The tubing was inserted in a new rubber plug which was inserted into the top of the small diameter borehole within the concrete. The area around the plug was sealed with a fast setting hydraulic cement (Dry Loc) used to seal out vapors such as in radon applications. A dedicated vacuum pump was connected to the teflon tubing and an independent calculation was made for each pump to pre-determine the amount of time required to move a minimum of one liter of air through each sorbent tube. The sorbent tubes were then attached and the pumps activated.

Dependent upon each of the pumps measured flow rate (between approximately 58 and 108

cubic feet minute [cfm]), between 1.9 liters a nd 3.8 liters of soil gas were moved through the sorbent tubes. This information was supplied to the laboratory (H2M Laboratory, Inc.) performing the analysis. The test method, EP A Method TO -17 allows a flowrate from 10 cfm to 400 cfm and up to 4 liters to be collected. The NYSDOH correspondence requested a flow rate not significantly faster than 100 cfm. Method TO-17 was selected as the constituents of concern, 1,3-dichlorobenzene, chlorobenzene, 1,2,4-trimethylbenzene, 1,3, 5- trimethylbenzene, trichlorobenzene, xylenes, etc. and their associated detection limits are achievable with this method.

3.0 Summary of Analytical Testing Data

A copy of the summary analytical testing data is provided as an attachment..

In order to evaluate the soil gas sampling results, comparison was made to the NYSDEC Division of Air Resources, Bureau of Stationary Sources, Guidelines for Control of Ambient Air Contaminants (DAR-1), formerly Air Guide-1, July 12, 2000. These guidelines were developed to protect the public and the envir onment from the adverse effects of exposure to toxic air contaminants. Specifically, short te rm guideline concentrations (SGCs, one hour) and annual guideline concentrations (AGCs) were developed to protect the general population from adverse inhalation exposures at off-site industrial properties. The guideline values were derived from the most recently available toxicological data, including the American Conference of Industrial Hygienis ts (ACGIH) TLVs and Short Term Exposure Limits (STELs) for the year 2000. A summary of those constituents detected and/or quantified above 10 ug/m ^{3} detection limit is provided on Table 7.

Soil Gas Sample Analytical Testing Results

Detections of soil gas at the three sampling locations were compared to the NYSDEC DAR Bureau of Stationary Sources Annual and S hort Term Guidance Concentrations (AGC/SGC).

The soil gas sampling data was evaluated for sp ecific VOCs related to the former LP-3 and LP-12. The overall purpose of these guidelines are for the permitting and calculation of allowable air emission sources. Therefore, the use of these guidelines values for comparison to the soil gas samples at three feet of de pth below the concrete paving, approximately 20 feet away from the building, allows for only a limited evaluation of these data with respect to allowable indoor air concentrations. This evaluation is further qualified by the fact that a vacuum pump was used to actively collect the sample, possibly increasing overall concentrations, on a time-weighted basis.

No VOCs were reported above the TO-17 method detection limit (10 ug/m ^{3}) at either of the

two soil gas sampling locations, SG-1 or SG-3 installed directly in line with the former UIC closed leaching pools of concern (LP-3 and LP-12).

Six VOCs (ethylbenzene, benzene, toluene, total xylenes, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene) were present however above 10 ug/m^3 at the middle soil gas sampling location, SG-2. Although present above detection, all concentrations were notably very low (within one order of magnitude of the MDL and were below their respective SCG/SCG with the exception of benzene at 12 ug/m^3). The concentration of benzene reported was significantly lower than its short term guidance concentration of 1,300 ug/m^3 but higher than its extremely conservative annual guidance value(AGCs) of 0.13 ug/m^3. It was noted in the field that this sampling location was proximate (as compared to other sampling locations) to the location of the former, abandoned and recently in-service USTs (removed Tank No. 20-01-10, abandoned Tank No. 20-01-05 and recently in-service Tank No. 20-01-14). (See Table 7)

4.0 Summary and Conclusions

The Phase II ESA identified recognized environmental conditions and/or remaining potential environmental concerns associated with the subject property as summarized below:

Soil Gas Sample Analytical Testing Results

No VOCs were reported detected at either of the two soil gas sampling locations, installed directly in line with the UIC leaching pools of concern (LP-3 and LP-12) in order to evaluate a potential exposure pathway of VOC vapor migration. This testing was cited as required by the NYSDOH for purposes of delisting of the subject property. Based upon a review of this data, it is anticipated that the data would be supportive of a delisting petition.

Six VOCs were present at very low concentrations at a third sample collected in between the other sampling locations. Only one compound (benzene) was present above a guidance value, a very conservative concentration established as an annual exposure guidance. This sampling location is known to be proximate to several former or existing UST locations. Based upon this fact and no VOC detections at the other two sampling locations, it can be concluded that no evident VOC vapor migration is occurring in the subsurface relative to the residual VOCs present at depth in former LP-3 and LP-12. Incidental VOCs present in soil gas at the SG-2 location are most likely related to the proximate presence of the aforementioned tanks. The low concentrations of soil gas reported at SG-2 are not indicative of a significant release of petroleum product at this location. Furthermore, as only one minor exceedance of an AGC for one compound was detected, the sampling location is approximately 20 feet from the edge of the building and the concrete floor/slab is in good condition, no adverse impacts to the interior of the building are projected. These findings should be confirmed with the NYSDOH and NYSDEC.

5.0 Regulatory Compliance

Based upon a review of the soil gas data, no subsurface vapors were detected as emanating from the former UIC closed leaching pools (LP-3 and LP-12) at concentrations of concern

relative to the indoor air quality of the main building at Plant 20. A third sampling location reported several VOCs at low concentrations and only one above a guidance value. Same appear related to the proximity of several former and existing underground storage tanks but do not appear to evidence a significant release of petroleum product due to the low concentrations reported. It would be prudent to receive and review the integrity test data from the adjoining Tank No. 20-01-14 in order to ascertain if a relationship exists between the soil gas VOCs and the current tank status. An evaluation of the soil gas data was made based upon comparison to applicable guidance values, with respect to the sampling location, and the good condition of the concrete slab floor of the building. Based on the aforementioned, the soil gas data does not indicate a likelihood for adverse impacts to the indoor air quality. These data and conclusions should be provided to the NYSDEC and NYSDOH for confirmation.

Table 7
Summary of Volatile Organic Compounds (VOCs) De tected at Soil Gas Sampling Locations

Parameter (ug/m ^{3})	SG-1	SG-2	SG-3	SCGs	ACGs
Ethylbenzene	ND	16	ND	54,000	1,000
Benzene	ND	12	ND	1,300	.13
Toluene	ND	74	ND	37,000	400
m+p xylene	ND	73	ND	4,300	700
o-xylene	ND	27	ND	4,300	700
1,2,4-Trimethylbenzene	ND	35	ND	---	290
1,3,5-Trimethylbenzene	ND	42	ND	---	290

ND - Not Detected.
Bold # indicates detected c oncentration exceeds either or bot h of the NYSDEC DAR SGCs/AGCs.

EXCERPT FOR SOIL GAS INVESTIGATION FROM
PHASE II ENVIRONMENTAL SITE ASSESSMENT

FORMER NWIRP PLANT 20, BETHPAGE, NEW YORK
SECTION 46- BLOCK G P/O LOT 9

April 15, 2003

Scope:

Two leaching pools (LP-3 and LP-12) were closed under the UIC program, leaving residual volatile organic compound (VOC) contamination in-place at substantive depths below grade (18-24 feet bgs and 15-17 feet bgs). Furthermore, the study site has been confirmed to be a NYSDEC State Inactive Hazardous Waste Registry (Site No. 130003). A petition for delisting has been submitted by the Navy. The NYSDOH has required that the exposure pathway of inhalation of vapors from the closed UIC structures be evaluated in order to delist the subject property. **Three soil gas samples were collected from three feet underneath concrete pavement, between the building and former pools (LP-3 and LP-12), and analyzed for Volatile Organic Compounds (VOCs) as per NYSDOH requirements to provide data relative to this concern ;**

2.0 Phase II Site Investigation

The Phase II site investigation activities are documented in the provided photographic log. Table 1 has been prepared which provides a detailed summary of the field data regarding each individual site feature either screened or sampled during the Phase II. Table 1 also provides a summary of the analytical testing suite per sampling location.

The screening and sampling of the suspect existing or former site features identified above was performed using a combination of exploratory/investigatory technologies. The majority of subsurface sampling was performed using a Geoprobe drilling system. A Geoprobe is a vehicle-mounted machine that utilizes push technology to drive sampling tools into the subsurface to collect representative and discrete soil and groundwater samples. Where necessary, a rotary core drill or hand held rotary hammer drill was used to penetrate concrete pavement in order to obtain samples representative of the areas to be investigated. Hand augers were used to procure shallow samples or bottom sediments from open leaching structures such as the stormwater drywells. Due to a depth to groundwater in excess of 75 feet below grade surface (bgs) and several thick clay layers, a hollow stem auger rig was required to be mobilized to install temporary monitoring wells at two of the four groundwater sampling locations. Sampling of soil gas at a depth of 3 feet bgs was performed

ENCLOSURE 2

ENVIRONMENTAL COVENANTS, CONDITIONS, RESERVATIONS, and RESTRICTIONS

ENVIRONMENTAL COVENANTS, CONDITIONS, RESERVATIONS, and RESTRICTIONS

PLANT 20 PARCEL

1. Notice of Environmental Condition: Information concerning the environmental condition of the Plant 20 Parcel is contained in the documents known as the Environmental Baseline Survey to Transfer, Plant 20 Parcel, February 2002, 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 Plant 20 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 Plant 20 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. 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 Plant 20 Parcel and (b) any disruptions of the use and enjoyment of the Plant 20 Parcel Parcel. Attached hereto as Exhibit(s) "(____)" is the map showing the easement(s) agreed upon with the GRANTEE, its successors and assigns.

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 Plant 20 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 Plant 20 Parcel herein described. Improvements on the Plant 20 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 Plant 20 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 Plant 20 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 Plant 20 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, attached hereto as Exhibit "(____)" and made a part hereof, 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 Plant 20 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.

7. Excavation: The GRANTEE, its successors, and its assigns are hereby notified that residual chemicals exist at concentrations in excess of New York State Department of Environmental Conservation (NYSDEC) TAGM 4046 guidance criteria in subsurface soils at depths starting 2 feet below land surface at locations designated as Areas of Concern (AOCs) 3 and 4 on the Plant 20 Parcel. In response, the GRANTOR hereby notifies the GRANTEE that a two-foot barrier currently exists over AOCs 3 and 4 and that potential exposure pathways to these residual chemicals have been eliminated. GRANTEE hereby convenants, on behalf of itself, its successors, and its assigns, that it shall not excavate or otherwise disturb subsurface soils at AOCs 3 or 4 without prior consultation with the Navy. In addition, written permission must be submitted, reviewed, and approved by the NYSDEC and NYSDOH before excavating or otherwise disturbing subsurface soils. Any soils that are excavated from the 105-Acre Parcel must be properly disposed at an appropriate off-site location.

8. Covenant and Restriction Regarding Development for Permanent Residential Use: GRANTEE hereby covenants, on behalf of itself, its successors, and its assigns, that the Plant 20 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 area is for non-residential redevelopment).

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

MEMORANDUM FOR THE RECORD

Subj: FINDING OF SUITABILITY TO TRANSFER (FOST) FOR PLANT 20 PARCEL (4.5 ACRES) AT THE FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

Ref: (a) Final Phase I Environmental Baseline Survey (EBS) for NWIRP Bethpage, NY of Jan 98
(b) Final Phase II Environmental Baseline Survey (EBS) for NWIRP Bethpage, NY of Dec 99 (Revision I of May 02)
(c) Navy's Final Asbestos Survey/Update of Apr 99

Encl: (1) Environmental Baseline Survey for Transfer (EBST) for NWIRP Bethpage Plant 20 of May 02
(2) Environmental Covenants, Conditions, Reservations, and Restrictions for NWIRP Bethpage Plant 20 Property
(3) Responsiveness Summary

1. I have reviewed enclosure (1) for the property, known as "the Plant 20 Parcel", that is to be transferred to the County of Nassau, New York for non-residential redevelopment. The location of the property to be transferred is as follows:

> All real estate, buildings and structures located on what has been termed as the "Plant 20 Parcel" (4.5 acres) located at the former Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, New York, a Government-Owned/Contractor-Operated (GOCO) facility, owned by the Naval Air Systems Command (NAVAIR) and operated by the Northrop Grumman Corporation (Northrop Grumman).

This parcel was part of the overall conveyance of land and building associated with NWIRP Bethpage to Nassau County as mandated by special legislation (PL 105-85 Sec 2852 FY-1998), issued as part of the National Defense Authorization Act of 1998. This legislation was issued subsequent to NAVAIR's determination that NWIRP Bethpage was no longer needed to meet mission requirements.

2. The proposed land reuse of the Plant 20 Parcel is described in detail in the Navy's Final Environmental Impact Statement (FEIS) for Transfer and Reuse of NWIRP Bethpage dated April 2000. Reuse of the Plant 20 Parcel has also been described in Section 1.4 of enclosure (1).

3. An Initial Assessment Study (IAS), prepared by the Navy in December 1986 for NWIRPs Bethpage and Calverton, concluded that no hazardous waste disposal areas were identified on the Plant 20 Parcel and that No Further Action (NFA) was required. Reference (a) confirmed this finding. Reference (a) also concluded that the following environmental factors pose no known threat 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 4-2 of enclosure (1) lists the active storage tanks that remain on the Plant 20 parcel. The remainder of tanks listed on Table 4-3 of enclosure (1) have been removed. The Plant 20 Parcel is not on the National Priorities List (NPL), nor are there any sites being addressed under the Department of Defense (DoD) Installation Restoration (IR) Program.

4. A Final Phase I Environmental Site Assessment (ESA) prepared for NWIRP Bethpage by Northrop Grumman in February 1997 identified six areas of concern (AOC) within that part of the installation comprising the Plant 20 Parcel. The Phase I ESA concluded that each AOC required further investigation to determine whether possible contamination by hazardous substances or petroleum products posed a significant adverse effect on human health or the environment. Table 4-1 of enclosure 1 lists each AOC identified for the Plant 20 property.

5. A Final Phase II ESA prepared by Northrop Grumman specifically for the Plant 20 property in September 1997 presents the results of investigations conducted by Northrop Grumman to investigate each of the six AOCs identified in the Phase I ESA. The Phase II ESA concluded that no remediation or other further action is necessary at any of the six AOCs to ensure protection of human health or the environment. Table 4-1 of enclosure 1 summarizes the investigation results and conclusions regarding the need for further action for each AOC.

6. References (a) and (b), prepared by the Navy for NWIRP Bethpage in January 1998, documents the results of an environmental baseline survey (EBS) conducted independently of Northrop Grumman to document environmental history and condition of the installation, including the Plant 20 property, as of that time. The Phase I EBS was performed in accordance with the Department of Defense (DoD) Policy on the Environmental Review Process to Reach a Finding of Suitability to Transfer (FOST) of 1 June 1994 and the Memorandum of Understanding Between the United States Environmental Protection Agency (USEPA) and the DoD dated 4 May 1994.

7. The Final Phase I EBS documented site history and current environmental conditions, as of January 1998, and identified potential constraints for transfer of the land and improvements. The report consolidates and evaluates information from the previous Northrop Grumman ESAs; other environmental studies; visual inspections of NWIRP Bethpage property and improvements; information on hazardous substance and petroleum product management practices; descriptions of adjacent properties; reviews of maps, plans, and aerial photographs; interviews with current and former personnel; and records, correspondence, reports and other relevant information available from the Navy.

8. Enclosure 1 summarizes information from the sources listed above and includes the findings of an updated visual site inspection conducted in September 2001, along with interviews with Northrop Grumman employees who worked at the Plant 20 property since 1998, and review of environmental documentation pertaining to operations at the Plant 20 property since 1998.

9. Table 6-1 of enclosure (1) details the Environmental Conditions of Property (ECP) categories applicable to the Plant 20 property. The main vehicle maintenance building (Building 20-01) was assigned to ECP Category 4, which designates areas where release, disposal, or migration of hazardous substances or petroleum products has occurred, and required remedial or removal actions have been taken. The remedial action that was required for Building 20-01 was the cleanup and closure of a sanitary leachfield serving the building and located immediately to the east and northeast. Northrop Grumman successfully closed the leachfield in accordance with applicable underground injection control (UIC) requirements. The USEPA, who is the lead regulatory authority with regards to UIC closures, sent an approval letter to Northrop Grumman dated August 7, 1997 documenting that the leachfield was closed to the satisfaction of the USEPA.

Building 20-04 (vehicle wash facility) and the former location of the recently razed Building 20-03 (storage shed and steam jenny) were assigned to ECP Category 2, which designates areas where only storage of hazardous substances or petroleum products has occurred (for at least 1 year).

The remainder of the Plant 20 property was assigned to ECP Category 1, which designates areas where no storage, release, disposal, or migration of hazardous substances or petroleum products has occurred.

Sampling of groundwater wells located upgradient and downgradient of the Plant 20 Parcel, conducted by Northrop Grumman, showed that there were no hazardous substances detected that exceeded Federal or State drinking water standards.

10. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 120(h)(3)(A)(I) as implemented by 40 CFR 373.2 (b) requires that notification of the storage, for one year or more, the release or disposal of any hazardous substance of a reportable quantity be reported to subsequent transferees. Section 4.5 of enclosure 1 provides information on the remediation of the leachfield.

11. 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 (c) was prepared to summarize the inventory of all ACM and the efforts to repair damaged ACM that was conducted by Northrop Grumman on the Navy's property, including the Plant 20 Parcel. The report will document that all ACM existing within the buildings located on the Plant 20 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.

12. Many of the buildings and structures present on the Plant 20 parcel 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 Plant 20 parcel. 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.

13. NWIRP Bethpage's Plant 20 Parcel (4.5 acres) is suitable for the intended use for non-residential activity in accordance with the redevelopment strategy outlined in the FEIS for NWIRP Bethpage dated April 2000, with the following restrictions:

a. Residual compounds at levels that exceed NYSDEC TAGM 4046 criteria remain at four locations (AOCs 3 and 4; Leachpools 3 and 12) at depths below two feet below land surface. Consultation with NYSDEC, NYSDOH, and Nassau County DOH, must first be undertaken prior to all construction or other soil disturbance activities in these areas. In addition, efforts must be undertaken so that humans are not exposed to soils at these locations. The conveyance of the Plant 20 Parcel will require that the above language be included as a land use restriction in the deed of transfer.

b. Due to the proximity of a groundwater treatment system located on nearby property owned by Northrop Grumman, pumping of groundwater at the Plant 20 Parcel shall be restricted. A formal groundwater use restriction will become part of the deed as written in enclosure (2).

14. I hereby find that NWIRP Bethpage's Plant 20 Parcel is suitable to transfer under the terms and conditions of this FOST consistent with and for non-residential redevelopment. Environmental Covenants, Conditions, Reservations, and Restrictions will be included in the transfer deed as presented in enclosure 2. 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.

15. The record of information before me, which was compiled after diligent inquiry, supports the conclusion that the use of the Plant 20 property, for the proposed uses, will not result in significant risk to human health or the environment. A Notice of Availability for Public Review was published in The Bethpage Tribune on February 13 and 20 to receive comments on the draft FOST from the Public. Copies of this FOST and enclosures (1) and (2) were also placed in the Navy's Information Repository located at the Bethpage Public Library.

The Region II offices of the U.S. Environmental Protection Agency, the New York State Department of Environmental Conservation and Health, and the Nassau County Department of Health have reviewed references (a) and (b), enclosure (1) and this FOST. Comments received from these agencies on draft versions of references (a) and (b) have been addressed and incorporated into this final document. Their comments on enclosure (1) and this FOST are attached, with accompanying Navy responses, as enclosure 3.

16. References (a) through (c) 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.

Date 10 JUNE 2002

J. W. ZORICA
Captain, CEC, U.S. Navy
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ENCLOSURE 1

ENVIRONMENTAL BASELINE
SURVEY FOR TRANSFER FOR PLANT 20

Environmental Baseline Survey for Transfer

for

Plant 20

Naval Weapons Industrial Reserve Plant (NWIRP)

Bethpage, New York

Engineering Field Activity Northeast
Naval Facilities Engineering Command

Contract Number N62472-90-D-1298

Contract Task Order 0283

May 2002

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EXECUTIVE SUMMARY

The property known as Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, New York was a Government-owned, contractor-operated (GOCO) installation comprising approximately 109.5 acres of land and several buildings formerly leased by the Navy to the Northrop Grumman Corporation (Northrop Grumman). As a result of Northrop Grumman's decision to terminate its operations at NWIRP Bethpage, the U.S. Congress passed legislation (PL 105-85) in 1997 authorizing conveyance of NWIRP Bethpage to Nassau County, New York for redevelopment. The Navy is transferring NWIRP Bethpage property to Nassau County in phases, as ongoing environmental investigation and remediation work renders areas of the property suitable for transfer. The following Environmental Baseline Survey for Transfer (EBST) addresses the transfer to Nassau County of a 4.5-acre component of NWIRP Bethpage termed Plant 20.

An Environmental Baseline Survey (EBS) is required under Department of Defense (DOD) policy before any real property can be sold, leased, transferred, or acquired. The EBS is also used by DoD agencies to meet their obligations under Section 120 (h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. A Phase I EBS consisting of an environmental records review, visual site inspection, and interviews with current and former site employees was completed in January 1998 for all of NWIRP Bethpage, including but not limited to the Plant 20 property. The objective was to document the installation's environmental condition resulting from the storage, use, and disposal of hazardous substances and petroleum products throughout its operational history. The EBST serves to highlight that information contained in the Phase I EBS regarding Plant 20 and to update that information.

The information summarized in the EBST supports a conclusion that the Plant 20 property is environmentally suitable, in accordance with CERCLA Section 120(h), for transfer to Nassau County for industrial redevelopment. The EBST serves as the notice required by Section 120(h)(1) regarding the type and quantity of hazardous substances known to have been stored, released, or disposed of on the property. In accordance with Section 120(h)(3)(a)(ii) and (iii), the transfer documentation must contain a convenant warranting that any response action or corrective action found to be necessary after the date of transfer shall be conducted by the Navy and include a clause granting the Navy access to the Plant 20 property for such an action.

1.0 INTRODUCTION

The following Environmental Baseline Survey for Transfer (EBST) is prepared to support a Finding of Suitability to Transfer (FOST) for a tract of property termed Plant 20 that is part of the Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, New York (Figure 1-1). Special legislation (PL 105-85) was passed in 1997 to authorize conveyance of NWIRP Bethpage from the Navy to Nassau County, New York for redevelopment. The Plant 20 property represents one of multiple tracts of NWIRP Bethpage property that the Navy plans to convey to Nassau County once ongoing environmental investigation and cleanup activities are completed.

NWIRP Bethpage was a Government-owned, contractor operated (GOCO) installation leased by the Navy to the Northrop Grumman Corporation (Northrop Grumman), who used the property to manufacture aircraft and other defense products under contract to the Navy. The mission of Northrop Grumman's Bethpage operations included research prototyping, testing, design, engineering, fabrication, and primary assembly of military aircraft. Northrop Grumman also owned and operated a complex of other manufacturing buildings and land adjoining NWIRP Bethpage independently of the Navy. NWIRP Bethpage plus the adjoining Northrop Grumman-owned property formed a defense manufacturing campus totaling approximately 605 acres. Northrop Grumman never used the Plant 20 property for manufacturing activities but instead utilized the property and improvements for the storage and maintenance of vehicles used in its Bethpage operations.

1.1 PURPOSE

This EBST updates the information on the Plant 20 property presented in a Phase I EBS completed by the Navy for NWIRP Bethpage in January 1998 (CF Braun, 1998). The EBST and accompanying FOST are prepared in accordance with Section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EBST summarizes information on the Plant 20 property from the Phase I EBS and provides an updated description of the environmental condition of the property just prior to its anticipated transfer to Nassau County. The EBST provides the technical information necessary to support a conclusion that the Plant 20 property is environmentally suitable for transfer in compliance with CERCLA 120(h).

The EBST and earlier Phase I EBS present information gathered through environmental record searches, interviews, and visual site inspection of the property in accordance with procedures developed by the American Society of Testing and Materials (ASTM). Information on the environmental history of the Plant 20 property through 1997 is described in the Phase I EBS. Additional information on the environmental condition of the Plant 20 property through 1997 is contained in a Phase I environmental site assessment

(ESA) completed by Northrop Grumman for Plant 20 (Radian, 1997a) and in a Phase II ESA (Radian, 1997b). The Phase II ESA report presents the results of environmental sampling and analysis performed by Northrop Grumman in response to issues raised in the Phase I ESA. The EBST incorporates the Phase I EBS and Northrop Grumman's Phase I and Phase II ESA reports by reference and provides additional information on the environmental condition of the Plant 20 property subsequent to completion of the earlier reports.

The EBST also references the Final Phase II EBS for NWIRP Bethpage dated May 2002 (TtNUS, 2002). The Phase II EBS expanded the Phase I EBS to consider the sampling results reported in Northrop Grumman's Phase II ESA.

1.2 PROPERTY DESCRIPTION

The Plant 20 property consists of approximately 4.5 acres of land that has served as Northrop Grumman's vehicle maintenance complex since 1943. The property is an outparcel located approximately 500 feet north of the main 105-acre parcel that contains the former aircraft manufacturing plant (Plant 03) and most other NWIRP Bethpage facilities. The property supports a main vehicle maintenance building (Building 20-01), storage shed (Building 20-03), vehicle wash facility (Building 20-04), paved parking area, outdoor fuel pumps, and other improvements (Figure 1-2). Building 20-02 was a storage shed located near the northeastern corner of the 4.5-acre property that was razed in the 1980s. Except for a narrow lawn adjoining South Oyster Bay Road, the entire property consists of buildings or pavement used for parking or vehicle storage.

Building 20-01, the principal structure on the Plant 20 property, is a brick and steel frame building on a concrete slab measuring approximately 25,243 square feet. Most of the interior space is used for storage, maintenance, and repair of trucks and other vehicles. Seven rollup doors allow vehicular entry to bays where mechanical services are performed. Smaller rooms serve as administrative and storage areas associated with vehicle maintenance operations. Areas of the building were also formerly used to wash vehicles, and a vehicle painting line was operated in the building until the early 1990s.

The Plant 20 property is bounded to the west by South Oyster Bay Road, to the south by Northrop Grumman-owned Plant 15, and to the east by Northrop Grumman-owned Plant 14. The land north of the Plant 20 property was formerly used as recreational open space by employees at Northrop Grumman's Bethpage campus but was recently used to construct a hotel. Northrop Grumman-owned Plants 14 and 15 are used for aerospace systems research and development. Privately owned commercial and light industrial property is located across South Oyster Bay Road from the parcel.

1.3 PAST AND PRESENT USES OF THE PROPERTY

Since its initial improvement in 1943, the Plant 20 property has been used exclusively as a vehicle maintenance and storage facility. Pumps dispensing gasoline and diesel fuel are located just south of Building 20-01. Building 20-04, a vehicle wash-rack is located immediately north of Building 20-01. Most of the interior floor space in Building 20-01 is used for vehicle storage. Several small rooms are used as offices or for other administrative purposes. Rooms in Building 20-01 also formerly housed an interior vehicle wash rack and a paint booth used for the spray painting of vehicles.

The aerial photographs reviewed for the Phase I EBS show that NWIRP Bethpage, including the Plant 20 property, was a mixture of farmland and woodland prior to Government acquisition. Industrial development in the local vicinity at that time was limited to Northrop Grumman-owned facilities south of the Long Island Railroad, outside of the property that would be subsequently owned by the Navy. The Phase 1 EBS reports that the Plant 20 property appears in much its present form in each of the aerial photographs reviewed for years subsequent to Government acquisition of the property (1945, 1950, 1957, 1963, 1969, 1978, 1983, and 1985).

1.4 PROPOSED PROPERTY REUSE

Nassau County proposes to use the Plant 20 property for industrial redevelopment. The overall use of the property will therefore not change following transfer from the Navy to Nassau County. The environmental impact statement (EIS) for transfer and reuse of NWIRP Bethpage (NAVFAC, 2000) identifies a preferred reuse plan calling for demolition of the existing Plant 20 improvements and use of the 4.5-acre parcel for development of restaurant, conference center, and health club facilities. Each of the two reuse alternatives evaluated in the EIS also call for demolition of the existing Plant 20 improvements and use of the parcel for development of new light industrial or office facilities, respectively. The proposed use therefore represents a continuation of the present land use category but is at variance with reuse changes previously contemplated for the property.

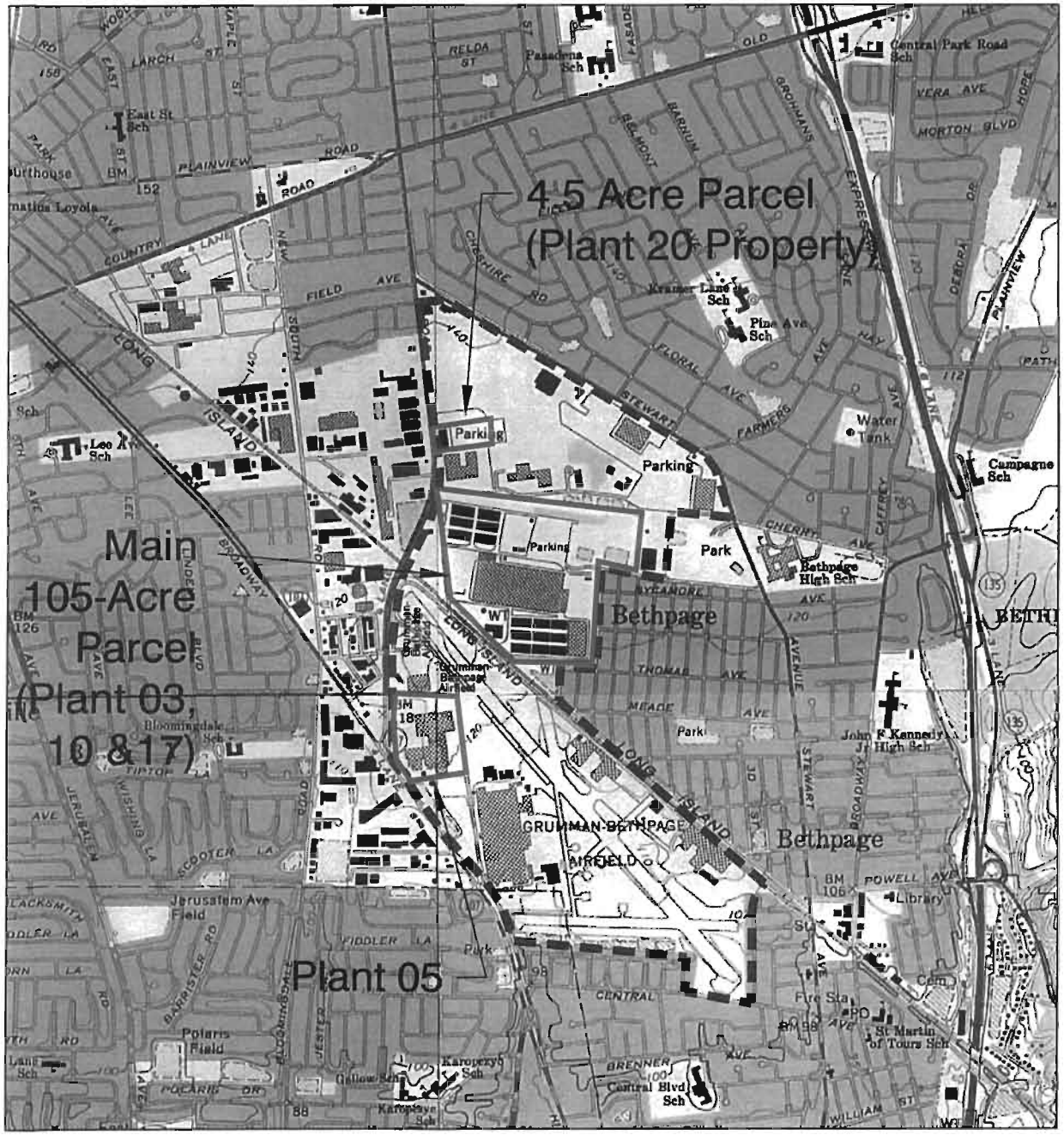

Figure 1-1

Site Location Map

NWIRP Bethpage, New York

Legend

NWIRP Bethpage Boundary

Former Northrop Grumman Bethpage Complex Boundary

N

0 1000 2000 3000

SCALE IN FEET

Dec 10, 2001	REV 0	PROJECT: CTO 283

Tetra Tech NUS, Inc.

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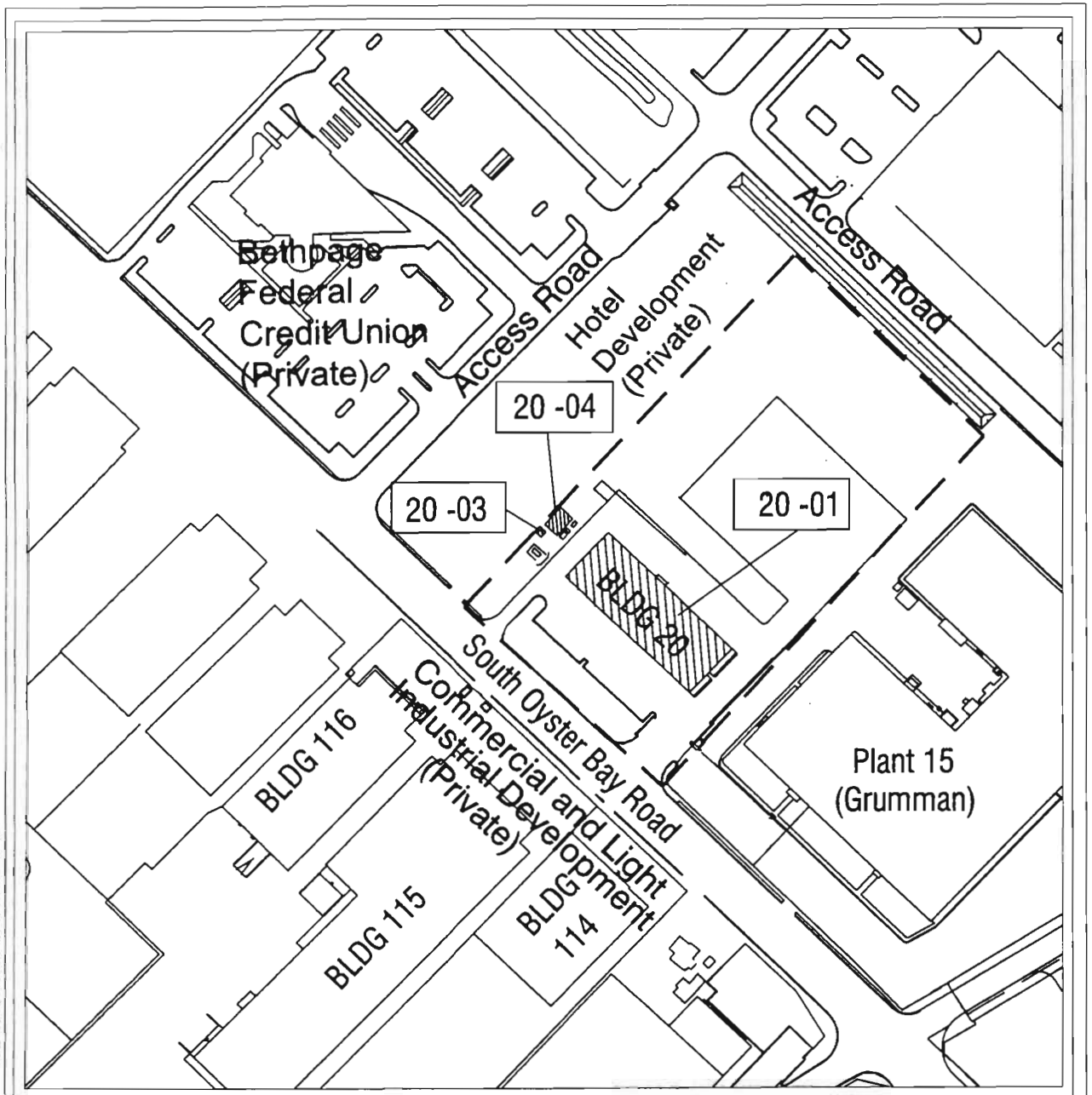

Figure 1-2

Plant 20 Property Building Numbers

NWIRP Bethpage, New York

Parcel Perimeter

Building

Note: All Northrop Grumman AOCs for Plant 20 were associated with building 20-01.

N

0 200 400

SCALE IN FEET

December 10, 200	REV 0	PROJECT: CTO 283

Tetra Tech NUS, Inc.

2.0 SURVEY METHODOLOGY

The EBST updates the Phase I EBS completed for NWIRP Bethpage in January 1998 (CF Braun, 1998). The EBST follows methodology outlined in the *Standard Practice for Conducting Environmental Baseline Surveys* published by ASTM (ASTM D 6008-96) (ASTM, 1996). The Phase I EBS followed a similar predecessor version of ASTM D 6008-96. The methodology involves reviewing relevant environmental records, conducting a visual site inspection, and interviewing persons knowledgeable about past and present operations at the subject property.

2.1 RECORDS REVIEW

The Phase I EBS included a comprehensive review of pertinent environmental records available from the Navy, Northrop Grumman, the New York State Department of Environmental Conservation (NYSDEC), and the Nassau County Department of Health (NCDH). The Phase II EBS also summarized and provided copies of correspondence between Northrop Grumman and the NYSDEC and NCDH concerning the progress of environmental investigation, remediation, and closure of specific sites at NWIRP Bethpage, including the Plant 20 property.

In addition to the Phase I and Phase II EBS reports, two ESA documents prepared for the Plant 20 property by Northrop Grumman were reviewed as part of the EBST. The Phase I ESA (Radian, 1997a) was completed using methodology similar to that of a Phase I EBS. It identified specific areas of concern (AOCs) that Northrop Grumman will investigate further, and remediate if necessary, prior to vacating the Plant 20 property. The Phase II ESA (Radian 1997b) reported the results of the investigations proposed in the Phase I document.

2.2 VISUAL SITE INSPECTION

Tetra Tech performed a visual site inspection of the Plant 20 property on September 19, 2001. Mr. Peyton Doub, CEP of Tetra Tech was escorted by representatives of Northrop Grumman on the VSI. The escorts included Mr. Larry Leskovjan; Manager of Northrop Grumman's Environmental, Safety, Health, & Medical program; and Mr. Fred Weber; who works under Mr. Leskovjan. Both Mr. Leskovjan and Mr. Weber work full-time at Northrop Grumman's Bethpage offices and oversee Northrop Grumman's efforts to complete environmental cleanup of the Bethpage facilities. The escorts also included Mr. Cliff Heightman, who has worked in Plant 20 itself since 1990. Plant 20 had remained in continuous operation as a vehicle storage and maintenance facility as of September 2001 despite the recent closure of most manufacturing operations at NWIRP Bethpage and other Northrop Grumman Bethpage facilities.

2.3 INTERVIEWS

As noted in Section 2.2.2, Mr. Larry Leskovjan and Mr. Fred Weber of Northrop Grumman's Environmental, Safety, Health, & Medical Program accompanied representatives of Tetra Tech on the September 19, 2001 visual site inspection. Mr. Leskovjan and Mr. Weber work full-time at Northrop Grumman's Bethpage offices and oversee Northrop Grumman's efforts to complete environmental cleanup of the Bethpage facilities. Mr. Cliff Heightman, who has worked in Plant 20 itself since 1990, also accompanied the Tetra Tech representatives. Mr. Leskovjan and Mr. Weber answered questions pertaining to the progress of environmental cleanup activities at Plant 20, and Mr. Heightman answered questions pertaining to recent operations at Plant 20, since completion of the Phase I EBS in 1997.

2.4 PROPERTY CLASSIFICATION

The EBST uses the environmental condition of property (ECP) categories in Table 2-1 to classify each unit of real property on NWIRP Bethpage, including the Plant 20 property. The EBST uses the ECP category descriptions in the third column of Table 2-1. These are the same descriptions used in the Phase I and Phase II EBS reports. The fourth column presents modified descriptions that have been used to classify property in most EBS reports prepared since 1998 in the context of the Base Closure and Realignment Act (BRAC) (as published in ASTM D 5746 – 98; ASTM, 1998). It is noted that NWIRP Bethpage was closed by special legislation outside of the context of BRAC.

TABLE 2-1

ECP CATEGORIES USED IN PHASE 1 EBS
NWIRP, BETHPAGE, NEW YORK

Category	Map Color	Description, As Used in Other NWIRP Bethpage Reports	Description Presently Used in BRAC EBSs
1	White	Areas where no storage, release, disposal, or migration of hazardous substances or petroleum products has occurred	An area or parcel of real property where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent properties)
2	Blue	Areas where only storage of hazardous substances or petroleum products has occurred (for at least 1 year).	An area or parcel of real property where only the release or disposal of petroleum products or their derivatives has occurred
3	Light Green	Areas where release, disposal, or migration of hazardous substances or petroleum products has occurred, but the resulting contamination is below action levels	An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but at concentrations that do not require removal or remedial action.
4	Dark Green	Areas where release, disposal, or migration of hazardous substances or petroleum products has occurred, and required remedial or removal actions have been taken	An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, and all remedial actions necessary to protect human health and the environment have been taken
5	Yellow	Areas where release, disposal, or migration of hazardous substances or petroleum products has occurred, and remedial or removal actions are under way	An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, and removal or remedial actions, or both, are under way, but all required actions have not yet been taken
6	Red	Areas where release, disposal, or migration of hazardous substances or petroleum products has occurred, and no remedial or removal actions have been initiated	An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but required response actions have not yet been initiated
7	Gray	Areas requiring further investigation	An area or parcel of real property that is not evaluated or require additional evaluation

3.0 ENVIRONMENTAL SETTING

Chapter 2 of the Phase I EBS report dated January 1998 provides a detailed description of the physical setting of NWIRP Bethpage, including the Plant 20 property. The information summarized below is from the Phase I EBS (CF Braun, 1998) and EIS for transfer and reuse (NAVFAC, 2000).

3.1 CLIMATE AND METEOROLOGY

The combined influence of prevailing westerly winds and the proximity of the Atlantic Ocean produces a modified continental climate on Long Island. Temperature extremes are mitigated by the Atlantic Ocean and by Long Island Sound. The climate is fairly humid. In winter, the annual average temperature is 33^0F and in the summer the average temperature is 72^0F. The total annual precipitation is 42 inches. Of this 21 inches usually falls in April through September. The average seasonal snowfall is 27 inches and the average relative humidity in mid afternoon is about 55 percent (SCS, 1987).

3.2 TOPOGRAPHY

Topography around NWIRP Bethpage, including the Plant 20 property, is relatively flat with an approximate elevation of 120 feet above mean sea level. Most natural physical features such as hills, depressions, and streams have been reshaped or eliminated because of high density urban development. The 4.5-acre Plant 20 property is flat and almost completely paved.

3.3 GEOLOGY

NWIRP Bethpage, including the Plant 20 property, is underlain by approximately 1,100 feet of unconsolidated sediments that overlie crystalline bedrock. The unconsolidated sediments consist of four distinct geologic units that in descending order are the Upper Glacial Formation, the Magothy Formation, the Raritan Clay Member of the Raritan Formation, and the Lloyd Sand Member of the Raritan Formation. The crystalline bedrock consists primarily of metamorphic and igneous rocks including schist, gneiss, and granite. The regional dip of the bedrock is to the south-southeast. All of the geologic units dip in this direction, although to varying degrees (Isbister, 1966).

The Upper Glacial Formation (commonly referred to as glacial deposits) forms the surface deposits on NWIRP Bethpage. These glacial deposits consist chiefly of coarse sands and gravels. The deposits are generally about 30 to 45 feet deep, but local variations in thickness are common due to irregular and undulating contact with underlying Magothy Formation. Recent intrusive field investigation defined the

contact between the formations as the horizon where gravel becomes very rare to absent, and variegated finer sands, silts, and clays prevail.

3.4 HYDROGEOLOGY

The Upper Glacial and Magothy Formations comprise the aquifer of concern at NWIRP Bethpage, including the Plant 20 property. Regionally, these formations are regarded as forming a common, interconnected aquifer as the coarse nature of each unit near their contact and the lack of any regionally confining clay unit allows for the unrestricted flow of groundwater between the formations.

The water table beneath NWIRP Bethpage has been found only within the Magothy Formation. A published report indicates that the water table to the south and west (and possibly beneath part of NWIRP Bethpage) occurs within the glacial deposits, although this boundary was based on limited data and was considered approximate. Static water elevations from monitoring wells on NWIRP Bethpage collected at regular intervals from August 1991 to September 1992 indicate that although the water table exhibits a seasonal fluctuation, it does not rise to the Upper Glacial Formation.

The Upper Glacial aquifer is no longer considered an important source of potable water in the immediate area because of its poor quality. It is now pumped only for minor industrial use. In other parts of Long Island, however, this aquifer is still a major source of potable water. The Upper Glacial aquifer is generally a high yielding unit with favorable hydraulic characteristics. The glacial deposits are characterized by a moderate to high primary porosity and permeability.

The Magothy Formation is the major source of public water in Nassau County. The most productive water-bearing zones are the discontinuous lenses of sand and gravel that occur within the generally siltier matrix. The major water-bearing zone is the basal gravel. Results of pumping tests conducted on site of the Magothy Formation indicate that the horizontal hydraulic conductivity of Magothy Formation beneath the NWIRP is about 100 feet/day and the vertical hydraulic conductivity ranged from a high of 10.27 feet/day to a low of 3.98 feet/day (Smolensky and Feldman, 1988; HNUS, 1994). Because of the extreme lateral and vertical lithologic heterogeneity of the Magothy, any hydraulic values obtained will be strongly dependent on both the geographic location of the test and the stratigraphic (vertical) section covered by the test.

3.5 SOILS

NWIRP Bethpage lies within two soil associations: the Urban Land-Hempstead association and the Urban Land-Riverhead association. The Hempstead series consists of very deep, well drained soils on outwash plains. The soils are formed in a loamy mantle overlying stratified sand and gravel. The Hempstead soils characteristically have a thick, dark surface layer. The Riverhead series consists of very deep, well drained

soils that are formed in glacial outwash deposits. The soils are on crests and side slopes of low morainic hills and on the tops and sides of outwash plains and terraces (SCS, 1987). Nearly all of the 4.5-acre Plant 20 property is paved, and exposed surface soils are largely limited to an ornamental lawn facing South Oyster Bay Road.

3.6 SURFACE WATER HYDROLOGY

The 4.5-acre plant 20 property does not contain or adjoin any streams or other surface water features.

3.7 VEGETATION AND ECOLOGY

The 4.5-acre Plant 20 property is completely developed and lacks natural terrestrial or aquatic habitats. It is completely surrounded by urban development and does not adjoin any natural terrestrial or aquatic habitats. Files maintained by the NYSDEC Natural Heritage Program show several sightings of rare, threatened, and endangered plant species on what is now NWIRP Bethpage, prior to Federal acquisition in the 1940s (Albert, 1997). However, none of these species likely survived the subsequent dense urban development of NWIRP Bethpage and surroundings. The parcel does not include or adjoin wetlands or lands within the 100-year or 500-year floodplain.

3.8 HISTORICAL AND CULTURAL RESOURCES

An archaeological reconnaissance survey conducted as part of the EIS for transfer and reuse of NWIRP Bethpage (NAVFAC, 2000) concluded that any archaeological resources that may have been present on the property prior to development would have been destroyed or severely impacted by ground disturbance during the intensive urban development since Government acquisition. An intensive-level historic resources survey conducted as part of the EIS identified a portion of the 105-acre parcel containing those NWIRP Bethpage facilities designated as Plants 03, 10, and 17 as a historic district eligible for the National Register of Historic Places based on its historic association with World War II and the Cold War. However, the 4.5-acre Plant 20 property was not included within the historic district. The report concluded that other areas within the former Northrop Grumman Bethpage campus, including the Plant 20 property, have been highly altered and no longer convey the feeling and association of a large World War II or Cold War aerospace manufacturer.

4.0 SUMMARY OF DATA FOR SUBJECT PROPERTY

The following section summarizes data for the Plant 20 property reported in the Phase I EBS, Phase II EBS, and other records reviewed for the EBST, including records pertaining to operations conducted subsequent to completion of the earlier documents.

4.1 FEDERAL, STATE, OR LOCAL NOTICES OF VIOLATION

The environmental records search conducted for the Phase I EBS did not indicate any notices of violation for that part of NWIRP Bethpage comprising the Plant 20 property. According to Larry Leskovjan and Fred Weber of Northrop Grumman, there have been no spills or releases of hazardous substances or petroleum products at the Plant 20 property since completion of the Northrop Grumman's ESA reports (which are summarized in the Phase I and Phase II EBS reports). There have been no notices of violation for the Plant 20 property subsequent to the ESA reports.

4.2 HAZARDOUS SUBSTANCE AND PETROLEUM PRODUCT MANAGEMENT PRACTICES

Recent Operations (since completion of Northrop Grumman ESA Reports): Prior to 1991, Northrop Grumman operated a small "less than 90 day" hazardous waste storage area within Plant 20 for accumulating several drum size containers. The unit was located along the western wall near the middle of the building. Closure of this unit was completed in 2000 and approved in January 2001.

Used motor oil and other petroleum wastes generated by vehicle maintenance operations at Building 20-01 are presently collected in a series of 55-gallon drums in one of the garage bays (Appendix A, Photo 1). This satellite accumulation area appeared tidy and well managed during the September 19, 2001 visual site inspection. The concrete floor in the bay was in good condition without significant staining and without noticeable cracks or other physical deterioration. There was no physical evidence that liquids from the drums could have been released to the environment.

Gasoline, diesel fuel, and No. 2 fuel oil are stored in various storage tanks on the 4.5-acre parcel. These tanks include USTs associated with fuel pumps on the south side of Building 20-01 that are used to fuel Northrop Grumman vehicles (Appendix A, Photo 2). Storage tanks are discussed further in Section 4.3.

Vehicular paint operations continued inside Building 20-01 until the mid 1990s but had shut down prior to completion of the Phase I and Phase II EBS reports. The former paint room is presently used to store large white portable metal boxes that house power units related to an aircraft demonstration project (Appendix A, Photo 3). There were no potential environmental concerns associated with storage of these

machines. Small quantities of paint, lacquer, lubricants, and detergents are stored in metal lockers at various locations in the vehicle maintenance building Appendix A, Photo 4). The lockers appeared relatively neat without visible evidence of releases when inspected during the September 29, 2001 visual site inspection.

Vehicles were formerly washed in an interior wash bay (Appendix A, Photo 5) and an exterior wash rack (Appendix A, Photo 6). Both facilities were recently taken out of service. The floors in both facilities were observed to be in good condition during the September 19 visual site inspection.

Past Operations (before completion of Northrop Grumman ESA reports): Table 4-1 lists six areas of concern (AOCs) identified by Northrop Grumman for environmental investigation based on a review of historical operations at the Plant 20 property (Radian, 1997a). The AOCs include the locations of a former paint shop drain and drain line (AOC 1), a former waste oil storage area (AOC 2), a former unused product storage area (AOC 3), a former oil dispensing area (AOC 4), and a former vehicular hydraulic lift reservoir (AOC 5). A sixth AOC constituted the locations of removed or abandoned USTs (AOC 6). AOC 6 is discussed further in Section 4.3, below. Northrop Grumman conducted a systematic program of soil sampling and analysis for each AOC location and concluded that no remedial action was necessary to protect human health and the environment (Radian, 1997b).

Because of the potential for undocumented past operations in Building 20-01 that could affect the environment, Northrop Grumman also collected soil samples from random locations within a 4-foot depth under the concrete slab and analyzed the samples for metals, volatile organic compounds (VOCs), total petroleum hydrocarbons (TPHs), polychlorinated biphenyls (PCBs), and select glycols. Although mercury concentrations in exceedance of soil cleanup guidance levels established by the NYSDEC (TAGM criteria) were found, additional soil samples collected to delineate the suspected mercury contamination did not confirm the presence of mercury. Therefore, no further action was recommended (Dvirka & Bartilucci, 2000).

4.3 STORAGE TANKS

Table 4-2 lists each UST and AST presently in service on the Plant 20 property. There are no process tanks on the Plant 20 property. There have been no reported releases from any storage tank subsequent to completion of the Northrop Grumman's ESA reports, which are summarized in the Phase II EBS. The tanks are registered with the Nassau County Fire Marshal's office and Nassau County Department of Health.

As part of its investigations reported in the Phase II ESA for Plant 20 (Radian, 1997b), Northrop Grumman collected soil samples in a depth range of 10 to 20 feet beneath the location of each removed or

abandoned UST on the Plant 20 property and analyzed the samples for semivolatile organic compounds (SVOCs), (TPHs), and PCBs. The Phase II ESA concluded that soils at those locations did not require excavation to protect the environment.

The Phase I EBS includes comprehensive tables listing each UST and AST then present, or known to have been present historically, on the Plant 20 property. There is no evidence that process tanks have ever been located on the Plant 20 property. Table 4-3 tracks the disposition of each UST and AST listed in the Phase I EBS.

4.4 DRY WELLS

Northrop Grumman investigated soils at the bottom of a series of dry wells associated with Building 20-01 for possible contamination by metals, VOCs, SVOCs, TPHs, PCBs, glycols, and organic halides. Northrop Grumman remediated soils under the dry wells as necessary and closed the wells, or retrofitted the wells for storm water drainage, in accordance with applicable underground injection control (UIC) regulations. The US Environmental Protection Agency issued a letter in June 1998 approving closure of the dry wells (Dvirka & Bartilucci, 2000).

Chemical degreasing agents consisting of chlorobenzene, dichlorobenzene, and trichlorobenzene; and fuels consisting of ethylbenzene and xylene were detected in subsurface soils in two leaching pools at concentrations greater than the NYSDEC TAGM 4046 criteria for protection of underlying groundwater. These chemicals were detected at depths of 15 to 24 feet below ground surface and approximately 35 to 55 feet above the water table. Groundwater testing conducted down gradient of Plant 20 did not indicate significant impact associated with these leaching pools.

4.5 TREATMENT SYSTEMS

Sanitary wastewater from Plant 20 was originally directed to a series of leaching fields located immediately east and northeast of Building 20-01. Northrop Grumman closed the leaching fields in 1997 in accordance with applicable UIC requirements and received EPA concurrence (Radian, 1997b). Since that time, sanitary wastewater from Plant 20 has been discharged to municipal sewers.

4.6 INSTALLATION RESTORATION PROGRAM SITES

None of the sites addressed as part of the Navy's Installation Restoration (IR) program for NWIRP Bethpage are located within the 4.5-acre Plant 20 property.

4.7 ASBESTOS

An asbestos survey conducted for Plant 20 identified several asbestos-containing materials in the vehicle maintenance building, including pipe insulation; elbows, valves, and tees (EVTs); roofing material; floor tiles; and boiler breeching in Building 20-01 (Karl & Associates, 1997). The survey recommended removal or encapsulation of several damaged segments of pipe insulation and several deteriorated EVTs. These actions were subsequently completed. The survey concluded that the asbestos-containing floor tiles, boiler breeching, and roofing materials in Building 20-01 were in fair or good condition and did not recommend actions to address these materials.

4.8 LEAD

The Plant 20 improvements were constructed prior to 1978, the year when the Department of Defense instituted a ban on the use of lead-based paint (defined as paint having 0.06 percent lead by weight). Therefore lead-based paint is assumed to be present on each painted Plant 20 structure even though no formal analyses have been conducted. Peeling and chipped paint was observed at several locations on interior walls in the vehicle maintenance building during the September 19, 2001 visual site inspection. The observed areas with peeling or chipped paint were remediated in January 2002 in accordance with applicable standards.

4.9 RADON

The Plant 20 buildings have not been surveyed for radon. It is Navy policy to conduct radon surveys only at those installations presently used or proposed for residential purposes. As land use at NWIRP Bethpage is limited to industrial and administrative purposes, the Navy has not performed a radon survey for any part of the installation, including the Plant 20 property. Officials with the Nassau County Department of Health have indicated that radon testing is not necessary anywhere in the county because the underlying soils do not have elevated radon levels.

4.10 PESTICIDES

There is no available evidence that pesticides have been stored on the Plant 20 property. The Phase I EBS indicates that pesticides used in the maintenance of NWIRP Bethpage were stored in a pesticide storage building on the main 105-acre parcel (as part of Plant 03) from 1971 until the recent closure of most manufacturing operations.

4.11 PCBs

The Phase I EBS notes that there are no remaining electrical transformers containing PCBs anywhere on NWIRP Bethpage.

4.12 MEDICAL WASTE

Available information does not suggest that medical waste has been stored, released, or disposed of at the Plant 20 property.

4.13 AMMUNITION AND EXPLOSIVE WASTE

Available information does not suggest that ammunition or explosive wastes have been stored, released, or disposed of at the Plant 20 property. Storage or handling of ammunition or explosives would not be expected at a vehicle maintenance facility.

4.14 NUCLEAR, BIOLOGICAL, AND CHEMICAL WASTE

Available information does not suggest that nuclear, biological, or chemical weapons or their waste have been stored, released, or disposed of at the Plant 20 property. Storage or handling of such materials would not be expected at a vehicle maintenance facility.

4.15 OTHER SURFACE OBSERVATIONS

During the September 19, 2001 visual site inspection, an oily stain was observed on the concrete floor of a small building (Building 20-03) housing a steam jenny that formerly serviced the exterior wash rack (Building 20-04) (Appendix A, Photo 7). Northrop Grumman subsequently removed the shed in December 2001 and inspected the concrete slab for cracks or other pathways that might have allowed the oily substance causing the stain to have contacted soil under or adjacent to the slab. No such cracks or other pathways were observed. Northrop Grumman then removed the slab for proper disposal. There was no stains or other visible evidence of contamination in the underlying soil.

4.16 GROUNDWATER

There is no evidence of groundwater contamination directly under the Plant 20 property or associated with past operations at the facility. The quality of groundwater at Plant 20 property was characterized based on

activities at adjacent properties, where similar, but low concentrations of chlorinated solvents were detected in both hydraulically upgradient and downgradient monitoring wells. 1,1,1-Trichloroethane was detected at a maximum concentration of 5 ug/l in one groundwater monitoring well downgradient of Plant 20. This concentration is equal to the New York State Maximum Concentration Limit for this chemical in drinking water supplies. However, 1,1,1-trichloroethane was also detected at similar concentrations in groundwater monitoring wells located north and hydraulically upgradient of Plant 20 (1.3 to 2.6 ug/l).

In addition to 1,1,1-trichloroethane, methyl butyl ketone and trichlorofluoromethane (VOC) were detected in upgradient groundwater wells, but at concentrations less than New York State Maximum Concentration Limits for drinking water supplies. Sodium was also detected in the groundwater at a concentration of 29 mg/l. The groundwater criteria for sodium is 20 mg/l.

TABLE 4-1

NORTHROP GRUMMAN PHASE II ENVIRONMENTAL ASSESSMENT RESULTS
NWIRP, BETHPAGE, NEW YORK
PAGE 1 OF 3

Area of Concern (AOC) [3]	Boring Location(s)	Constituents of Concern	Maximum Constituent Concentration and Depth [1]	Description	Remediation Conducted
Phase II ESA for Plant 20					
AOC 1 Paint Shop Floor and Drain Line	NA	NA	NA	EBS Section: Building 20-01. 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. References: ESA[2] – Sections 2.5.1, 5.1 and Figure 2.	No remediation required.
AOC 2 Waste Oil Storage Area	NA	NA	NA	EBS Section: Building 20-01. 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. References: ESA[2] – Sections 2.5.2, 5.2 and Figure 2.	No remediation required.
AOC 3 Unused Product Storage Area	20-03	Hg Zn	0.11 mg/kg (2-4 feet) 31.4 mg/kg (2-4 feet)	EBS Section: Building 20-01. 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. References: ESA[2] – Sections 2.5.3, 5.3 and Figure 2.	No remediation required. Deed notification required [4]
AOC 4 Oil Dispensing Area	20-04	Zn	20.1 mg/kg (2-4 feet)	EBS Section: Building 20-01. 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. References: ESA[2] – Sections 2.5.4, 5.4 and Figure 3.	No remediation required. Deed notification required [4]

TABLE 4-1 (Continued)
NORTHROP GRUMMAN PHASE II ENVIRONMENTAL ASSESSMENT RESULTS
NWIRP, BETHPAGE, NEW YORK
PAGE 2 OF 3

Area of Concern (AOC) [3]	Boring Location(s)	Constituents of Concern	Maximum Constituent Concentration and Depth [1]	Description	Remediation Conducted
AOC 5 Hydraulic Lift Reservoir	NA	NA	NA	EBS Section: Building 20-01. In 1997, 2 subsurface soils samples were collected from 1 boring location to a depth of 4' below ground surface. There were no exceedances of the TAGM #4046 criteria. References: ESA[2] – Sections 2.5.5, 5.5 and Figure 3.	No remediation required.
AOC 6 Removed or Abandoned USTs	NA	NA	NA	EBS Section: Building 20-01. 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. References: ESA[2] – Sections 2.5.6, 5.6 and Figure 3.	No remediation required.
Leaching Pool No. 3: Dry Well 3	Boring number not defined.	Chloro-benzene 1,3-DCB 1,4-DCB Ethylbenzene Xylene	5,900 ug/kg (22-24 feet) 5,700ug/kg 11,000 ug/kg 6,100 ug/kg 55,000 ug/kg	In 1997, subsurface soil sampling and analysis detected chlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, ethylbenzene and xylene above the TAGM #4046 criteria of 1700, 1600, 8500, 5500 and 1200 ug/kg, respectively. References: Correspondence letter[5] 8/7/97.	No remediation recommended. Deed notification required [4]
Leaching Pool No. 12: Dry Well 12	Boring number not defined.	1,3-DCB 1,2,4-TCB	18,000 ug/kg (15-17 feet) 24,000 ug/kg	In 1997, subsurface soil sampling and analysis detected 1,3-dichlorobenzene and 1,2,4-trichlorobenzene above the TAGM #4046 criteria of 1600 and 3400 ug/kg, respectively. References: Correspondence letter[5] 8/7/97.	No remediation recommended. Deed notification required [4]

Table presents the environmental condition of the following GOCO facilities as of January 2002: Plant 20-AOC-01 through AOC-06.

TABLE 4-1 (Continued)
NORTHROP GRUMMAN PHASE II ENVIRONMENTAL ASSESSMENT RESULTS
NWIRP, BETHPAGE, NEW YORK
PAGE 3 OF 3

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).
(2) Final Phase II Environmental Site Assessment (ESA) for Plant 20 Transportation Maintenance Facility; GOCO Facility, Bethpage, New York (Radian International; September 1997).
(3) Refer to the following figures for a graphical depiction of AOC/sample locations: Northrop Grumman's Phase II ESA for Plant 20 Transportation Maintenance Facility; Figure 2.
(4) Notification of AOC location and presence of residual contamination will be provided in quick claim deed by Referencing Table 9-6 and Figure 10-4 in the Final Phase 2 EBS.
(5) Refer to Northrop Grumman's Phase II ESA for Plant 20 Transportation Maintenance Facility; Figure 2 for a graphical depiction of AOC/sample locations

TABLE 4-2

PLANT 20 ACTIVE STORAGE TANKS
NWIRP, BETHPAGE, NEW YORK[1]

Number	Type	Volume	Contents	Material	Date[2] Inst.	Leak[3] Detn.	Alarm	Tight Test	Notes
20-01-14	UST	6,000	No. 2 Fuel Oil	Fiber-glass	1979	No	No	08/99	In Service
20-01-24	AST	650	Motor Oil	Steel	1996	Yes	No	NA	In Service
20-01-25	AST	300	Diesel	Steel	1996	Yes	Yes	NA	In Service
20-01-26	UST	15,000	Diesel	Double Fiber-glass	1998	Yes	Yes	08/98	In Service
20-01-27	UST	8,000	Gasoline	Double Fiber-glass	1998	Yes	Yes	08/98	In Service
20-01-28	UST	15,000	Gasoline	Double Fiber-glass	1998	Yes	Yes	08/98	In Service

[1] Source: Personal communication with Mr. Fred Weber of the Northrop Grumman Communication, November 28, 2001
[2] Date Installed
[3] Leak Detection
NA - Not Applicable.

TABLE 4-3

PLANT 20 STORAGE TANK HISTORY
NWIRP, BETHPAGE, NEW YORK

Number	Type	Volume	Contents	Material	Date[1] Install	Leak[2] Detect	Alarm	Notes
20-01-1	UST	6,000	Diesel	Fiber-glass	1977	No	No	Tank removed and replaced in 1998 by 20-01-26, -27, and -28.
20-01-2	UST	6,000	Gasoline	Fiber-glass	1977	No	No	Tank removed and replaced in 1998 by 20-01-26, -27, and -28.
20-01-3	UST	4,000	Gasoline	Fiber-glass	1977	No	No	Tank removed and replaced in 1998 by 20-01-26, -27, and -28.
20-01-4	UST	6,000	Gasoline	Steel	1975	No	No	Removed 1990
20-01-5	UST	5,000	No. 2 Fuel Oil	Steel	1943	No	No	Abandoned in Place 1991
20-01-6	AST	275	No. 2 Fuel Oil	Steel	1943	No	No	Removed 2000
20-01-7	UST	2,000	Used Oil	Steel	1968	No	No	Removed 1995
20-01-8	AST	275	Motor Oil	Steel	1968	No	No	Removed 1996
20-01-9	UST	550	Used Oil	Steel	1968	No	No	Removed 1992
20-01-10	UST	550	Diesel	Steel	1968	No	No	Removed 1992
20-01-10A	UST	550	Diesel	Steel	1968	No	No	Removed 1996
20-01-11	UST	20,000	Gasoline	Fiber-glass	1979	No	No	Tank removed and replaced in 1998 by 20-01-26, -27, and -28.
20-01-12	UST	20,000	Gasoline	Fiber-glass	1979	No	No	Tank removed and replaced in 1998 by 20-01-26, -27, and -28.
20-01-13	UST	10,000	Diesel	Fiber-glass	1979	No	No	Tank removed and replaced in 1998 by 20-01-26, -27, and -28.
20-01-14	UST	6,000	No. 2 Fuel Oil	Fiber-glass	1979	No	No	In Service, see Table 4-2.
20-01-15	UST	1,000	No. 2 Fuel Oil	Fiber-glass	1985	No	No	Removed 1996
20-01-16	UST	550	Motor Oil	Fiber-glass	1985	No	No	Removed 1990
20-01-17	UST	1,000	Waste Oil	Fiber-glass	1985	No	No	Removed 1990
20-01-18	Invalid tank registration number							
20-01-19	UST	550	Waste Oil	Fiber-glass	1982	No	No	Removed 1999
20-01-20	AST	275	Motor Oil	Steel	1968	No	No	Removed 1996

TABLE 4-3 (Continued) - PAGE 2
PLANT 20 STORAGE TANK HISTORY
NWIRP, BETHPAGE, NEW YORK

Number	Type	Volume	Contents	Material	Date[1] Install	Leak[2] Detect	Alarm	Notes
20-01-21	AST	275	Motor Oil	Steel	1968	No	No	Removed 1996
20-01-22	AST	500	Waste Oil	Steel	1992	No	No	Removed 1996
20-01-23	AST	500	Motor Oil	Steel	1992	No	No	Removed 1996
20-01-24	AST	650	Motor Oil	Steel	1996	Yes	No	In Service, see Table 4-2
20-01-25	AST	300	Diesel	Steel	1996	Yes	Yes	In Service, see Table 4-2
20-01-26	UST	15,000	Diesel	Double Fiber-glass	1998	Yes	Yes	In Service, see Table 4-2
20-01-27	UST	8,000	Gasoline	Double Fiber-glass	1998	Yes	Yes	In Service, see Table 4-2
20-01-28	UST	15,000	Gasoline	Double Fiber-glass	1998	Yes	Yes	In Service, see Table 4-2
20-03-22	AST	550	Waste Oil	NA	NA	NA	NA	Removed date unknown.
20-01-T	AST	550	Diesel	NA	NA	NA	NA	Removed date unknown.

[1] Date Installed
[2] Leak Detection
NA - Not Available

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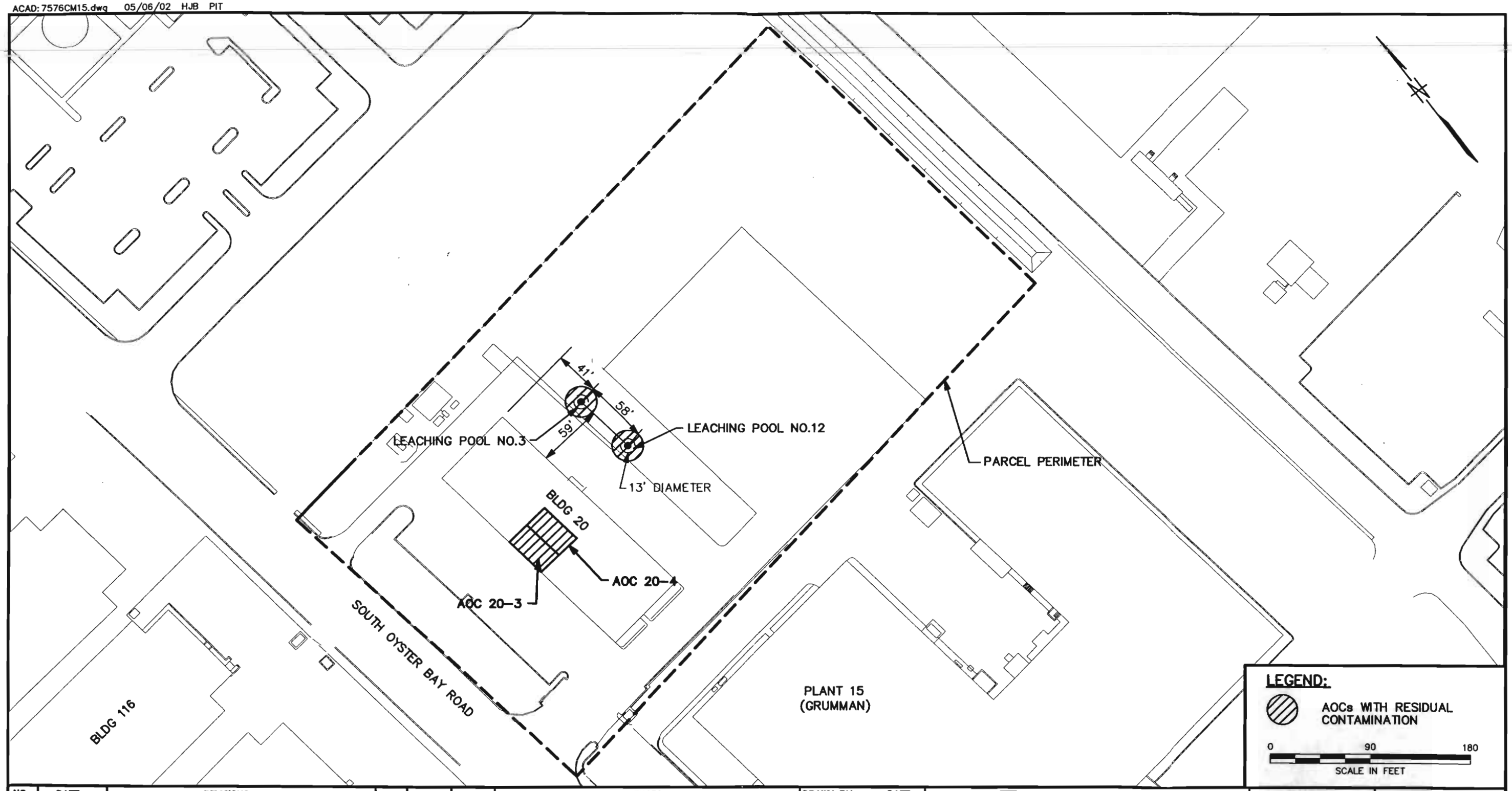

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJB DATE 5/6/02
CHECKED BY DATE
COST/SCHED--AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

AOC DEED NOTIFICATION
PLANT 20 EBST
NWIRP BETHPAGE, NEW YORK

CONTRACT NO. 7576 | OWNER NO. —
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 4-1 | REV. 0

FORM CADD NO. TtNUS_BH.DGN - REV 0 - 1/20/98

5.0 SUMMARY OF DATA FOR ADJACENT PROPERTIES

NWIRP Bethpage is surrounded by a densely developed suburban landscape comprising a mosaic of single family homes on small lots, neighborhood shops and service stations, and light industry.

A detailed review of properties adjacent to NWIRP Bethpage is provided in the Phase I EBS. This review included a computerized environmental database search, in accordance with ASTM Provisional Standard 37-95 (PS 37-95), for all properties within 1 mile of the perimeter of NWIRP Bethpage (including the perimeter of the Plant 20 property). It also involved a visual site reconnaissance of properties within a 0.25-mile radius of the perimeter of NWIRP Bethpage (including the perimeter of the Plant 20 property) in May 1997. None of the properties investigated appeared to have a potential to significantly affect the environmental condition of the land surface anywhere in NWIRP Bethpage, including the 4.5 acres constituting the Plant 20 property. The Phase I EBS did acknowledge that some of these properties could potentially affect regional groundwater. But, as noted in Section 4.16, there is no evidence of groundwater contamination in the immediate vicinity of the Plant 20 property.

The computerized environmental database search identified the Hooker Chemical/RUCO Polymer Corporation facility, located approximately 1,500 feet west of the Plant 20 property, as the only National Priority List (NPL) site within a 1-mile radius of NWIRP Bethpage. The Hooker/RUCO site is an active plastics manufacturing facility encompassing approximately 17 acres of land with industrial buildings, storage tanks, and recharge basins. Soil at the Hooker/RUCO site have been found to be contaminated by chlorinated solvents, ethylbenzene, toluene, polyaromatic halides, phenols, phthalates, and PCBs. Groundwater under the Hooker/RUCO site has been found to be contaminated by several chlorinated solvents. The Navy and Northrop Grumman acknowledge that groundwater contamination from the Hooker/RUCO site could be influencing the quality of groundwater underlying parts of NWIRP Bethpage, but not the Plant 20 property.

An additional site identified by the computerized environmental database search as being in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) is the Servo Corporation of America site at 111 New South Road, approximately 0.5 mile northwest of NWIRP Bethpage. The CERCLIS includes not only NPL sites but also sites under investigation for possible inclusion in the NPL. The Phase I EBS concludes that this site has little or no potential to affect the environmental condition of NWIRP Bethpage, including the Plant 20 property.

The computerized environmental database search revealed 131 sites within the 1-mile search radius from NWIRP Bethpage with records of leaking underground storage tanks (LUSTs). The search conducted specifically for Plant 20 and included in Grumman's Phase I ESA revealed 30 LUST sites. The Phase I ESA provides details on those LUST sites within a 0.5-mile radius of the Plant 20 (which is the minimum

search distance recommended specifically for LUST records). Most of the LUST incidences took place on NWIRP Bethpage or at Northrop Grumman-owned facilities, although some took place at small businesses and residences in the residential neighborhoods east and southeast of the property. The Phase I ESA indicated that none of these specific incidences are known to have affected the surface of NWIRP Bethpage, but it concluded that regional groundwater may have been affected. However, as noted in Section 4.16, groundwater samples from wells located close to the Plant 20 property indicate that the groundwater directly under the property is not substantially contaminated.

The September 19, 2001 visual site inspection suggested that the only substantial land use change subsequent to completion of the Phase I EBS for property adjoining Plant 20 is the development of a hotel immediately north of Plant 20. This hotel was constructed on property formerly owned by Northrop Grumman and used as recreational open space on the Bethpage campus. Operations at the hotel have little potential to affect the environmental quality of the surface at Plant 20.

6.0 ENVIRONMENTAL CONDITION OF PROPERTY AND SUITABILITY TO TRANSFER

Section 6.1 presents conclusions as to the environmental condition of the NWIRP Bethpage Plant 20 property. Section 6.2 presents conclusions as to the environmental suitability of the Plant 20 property for transfer.

6.1 ENVIRONMENTAL CONDITION OF PROPERTY

Based on the information reviewed to complete the EBST, including relevant information from earlier EBS reports and Northrop Grumman ESA reports, the ECP categories shown in Table 6-1 and Figure 6-1 are assigned to each area on the Plant 20 property. The rationale for assignment of ECP categories to each area within the Plant 20 property are summarized below:

Building 20-01 (Vehicle Maintenance Building): Building 20-01, including associated exterior service areas and the former site of the leachfield that received sanitary wastewater from the building, is assigned an ECP category of 4/Dark Green, defined as

> *Areas where release, disposal, or migration of hazardous substances or petroleum products has occurred, and required remedial or removal actions have been taken*

Building 20-01 and adjoining exterior areas were assigned an ECP category of 5/Yellow in the Phase I EBS. At that time, Northrop Grumman was in the process of remediating the leachfield. Additionally, Northrop Grumman had identified but not yet investigated the AOCs listed in Table 4-1 (Radian, 1997a). Since that time, Northrop Grumman has completed remediation and closure of the leachfield. Northrop Grumman has also completed investigation of each of the AOCs listed in Table 4-1 and concluded that no further action is necessary (Radian, 1997b). Review of environmental records pertaining to Northrop Grumman's operation of Building 20-01 since completion of the Phase II ESA and interviews and visual site inspection activities conducted on September 19, 2001 did not identify any new environmental concerns requiring further investigation.

Building 20-03 (Storage Shed and Steam Jenny): Building 20-03 is assigned an ECP category of 2/Blue, defined as:

> *Areas where only storage of hazardous substances or petroleum products has occurred (for at least 1 year).*

The Phase I EBS assigned an ECP category of 2/Blue to the building because of storage of fuel oil to fuel the steam jenny. As noted in Section 4.15, an oily stain was observed in September 2001 on the concrete floor of a small building housing a steam jenny that formerly serviced the exterior wash rack (Appendix A, Photo 7). Northrop Grumman subsequently removed the shed and inspected the concrete slab for cracks or other pathways that might have allowed the oily substance causing the stain to have contacted soil under or adjacent to the slab. No such cracks or other pathways were observed. Northrop Grumman then removed the slab for proper disposal. There was no stains or other visible evidence of contamination in the underlying soil.

Building 20-04 (Vehicle Wash Facility): Building 20-04 is assigned an ECP category of 2/Blue, defined as:

> *Areas where only storage of hazardous substances or petroleum products has occurred (for at least 1 year).*

The Phase I EBS assigned an ECP category of 2/Blue to the building because of an oil-water separator that collected rinsate from a drain on the bermed pad. There was no evidence of releases from the oil-water separator at that time and there is no evidence of releases since that time.

6.2 ENVIRONMENTAL SUITABILITY TO TRANSFER

Based on the information reviewed to complete the EBST, including relevant information from earlier EBS reports and Northrop Grumman ESA reports, it is concluded that the NWIRP Bethpage Plant 20 property is environmentally suitable for transfer from the Navy to Nassau County for continued use as a vehicle maintenance facility or for other industrial uses. This EBST and the documents that it references provide the information that will have to be disclosed to Nassau County in accordance with CERCLA Section 120(h)(3)(A)(i). In accordance with Section 120(h)(3)(A)(ii) and (iii), the transfer documentation will also have to contain a convenant warranting that any response action or corrective action found to be necessary after the date of transfer will be conducted by the Navy. It will also have to include a clause granting the Navy access to the subject property or adjoining property for such an action.

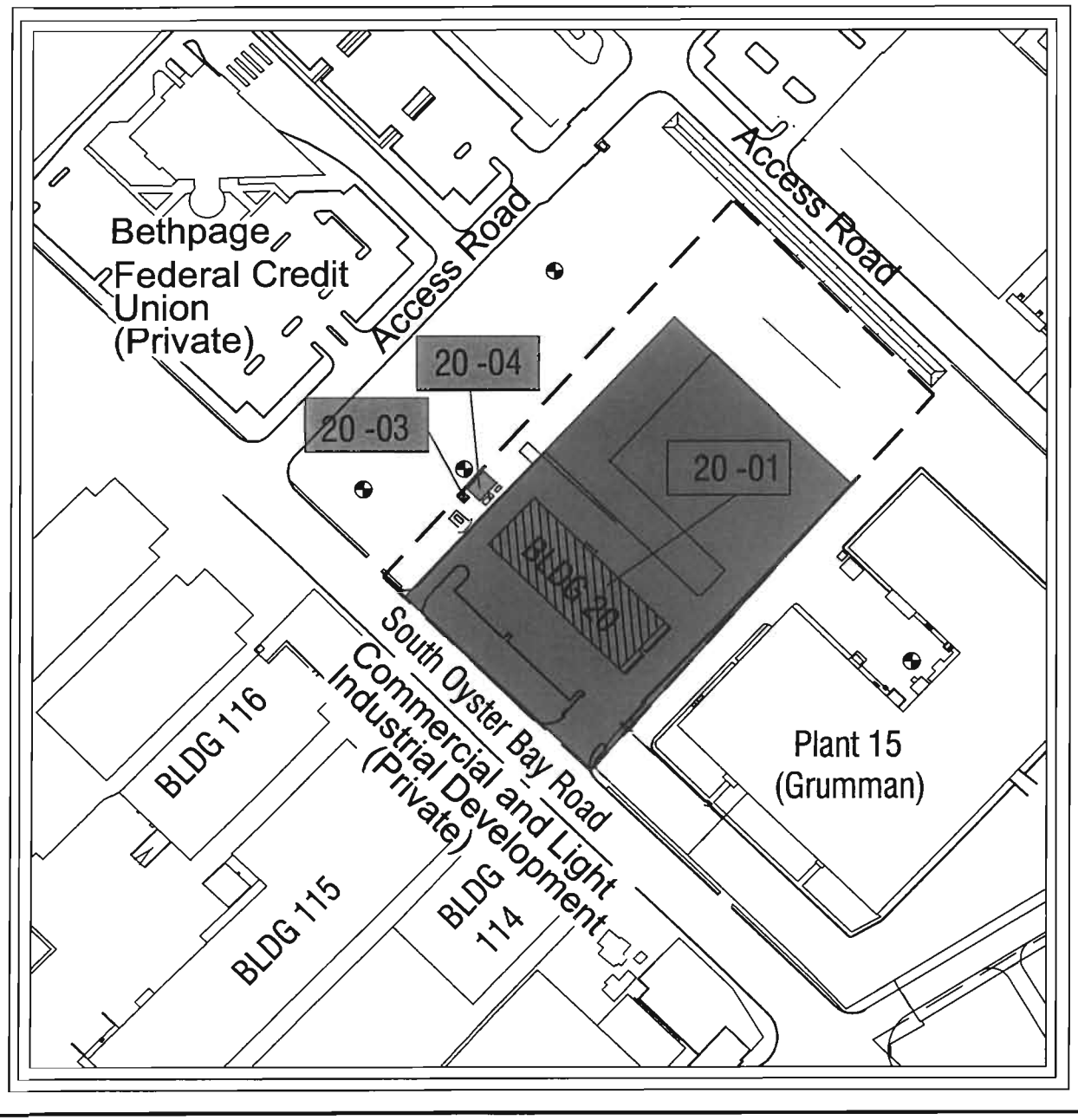

Figure 6-1

Environmental Condition of Property Map 4.5 Acre Parcel (Plant 20)

NWIRP Bethpage, New York

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 Releases of Hazardous Substances or Petroleum Products Above Action Levels, No Response Initiated
- 7 - Additional Evaluation Required
- Groundwater Monitoring Well
- Groundwater Flow

N

0 200 400

SCALE IN FEET

Jan. 25, 2002	REV 1	PROJECT: CTO 283

Tetra Tech NUS, Inc.

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TABLE 6-1

PLANT 20 ECP CATEGORY ASSIGNMENTS
NWIRP,BETHPAGE, NEW YORK

Property Area	Building Number	ECP Category (Original System) (See Figure 6-1)	ECP Category (BRAC System)
Vehicle Maintenance Building and surrounding exterior areas	20-01	4/Dark Green	4/Dark Green
Storage Shed and Steam Jenny	20-03	2/Blue	1/White
Vehicle Wash Facility	20-04	2/Blue	1/White
Remainder of 4.5-Acre Parcel	N/A	1/White	1/White

7.0 LIST OF PREPARERS

J. Peyton Doub, CEP

BS, Plant Sciences, Cornell University, 1982

MS, Botany, University of California at Davis, 1984

Years of Experience: 16

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APPENDIX A

PHOTOGRAPHS OF PLANT 20 PROPERTY

APPENDIX A
PHOTOGRAPHS OF PLANT 20 PROPERTY
VISUAL SITE INSPECTION
SEPTEMBER 19, 2001

Photo 1: Satellite Accumulation Area in Building 20-01

Photo 2: Fuel Pumps on South Side of Building 20-01

APPENDIX A, CONTINUED
PHOTOGRAPHS OF PLANT 20 PROPERTY
VISUAL SITE INSPECTION
SEPTEMBER 19, 2001

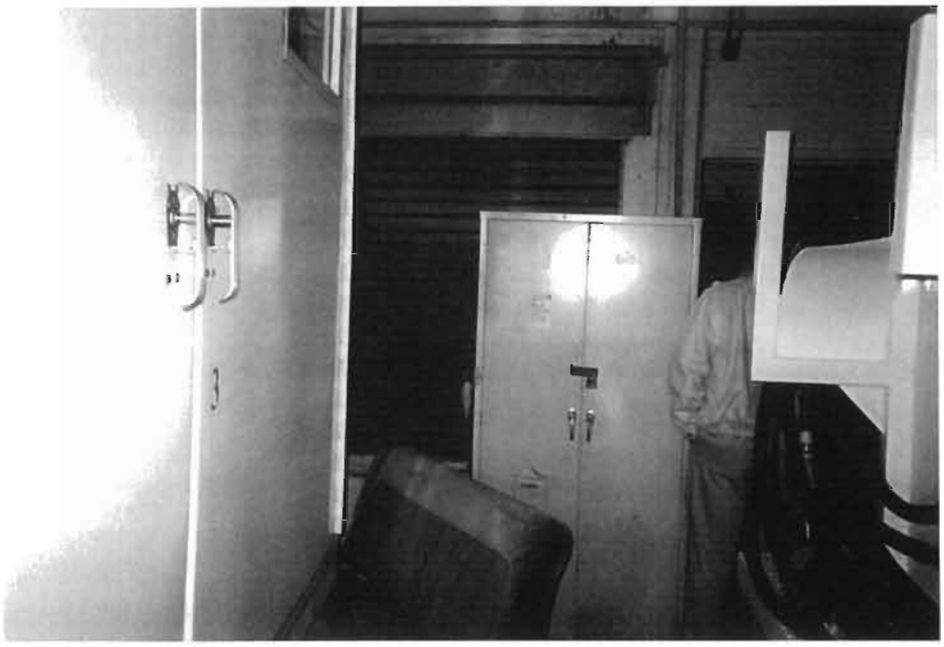

Photo 3: Former Paint Room in Building 20-01

Photo 4: Storage Locker in Building 20-01

APPENDIX A, CONTINUED
PHOTOGRAPHS OF PLANT 20 PROPERTY
VISUAL SITE INSPECTION
SEPTEMBER 19, 2001

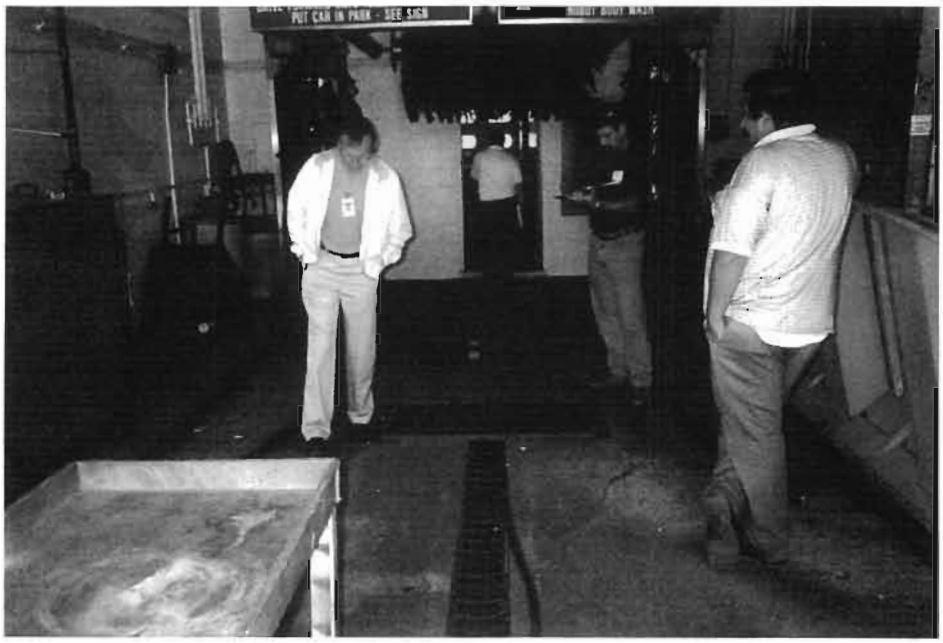

Photo 5: Interior Vehicle Wash Bay in Building 20-01

Photo 6: Exterior Vehicle Wash Rack (Building 20-04)

APPENDIX A, CONTINUED
PHOTOGRAPHS OF PLANT 20 PROPERTY
VISUAL SITE INSPECTION
SEPTEMBER 19, 2001

Photo 7: Steam Jenny in Building 20-03

ENCLOSURE 2

ENVIRONMENTAL COVENANTS,
CONDITIONS, RESERVATIONS, AND RESTRICTIONS

ENVIRONMENTAL COVENANTS, CONDITIONS, RESERVATIONS, and RESTRICTIONS

PLANT 20 PARCEL

1. Notice of Environmental Condition: Information concerning the environmental condition of the Plant 20 Parcel is contained in the documents known as the Environmental Baseline Survey to Transfer, Plant 20 Parcel, May 2002, 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 Plant 20 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 Plant 20 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. 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 Plant 20 Parcel and (b) any disruptions of the use and enjoyment of the Plant 20 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 Plant 20 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 Plant 20 Parcel herein described. Improvements on the Plant 20 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 Plant 20 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 Plant 20 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 Plant 20 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 Plant 20 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.

7. Excavation: The GRANTEE, its successors, and its assigns are hereby notified that residual chemicals exist at concentrations in excess of New York State Department of Environmental Conservation (NYSDEC) TAGM 4046 guidance criteria in subsurface soils at depths starting 2 feet below land surface at locations designated as Areas of Concern (AOCs) 3 and 4 and leachpits LP-3 and LP-12 on the Plant 20 Parcel. In response, the GRANTOR hereby notifies the GRANTEE that a minimum two-foot barrier currently exists over AOCs 3 and 4 and LPs 3 and 12 and that potential exposure pathways to these residual chemicals have been eliminated. GRANTEE hereby convenants, on behalf of itself, its successors, and its assigns, that it shall not excavate or otherwise disturb subsurface soils at AOCs 3 or 4 and LPs 3 or 12 without submitting written permission that is to be reviewed and approved by the NYSDEC and NYSDOH before excavating or otherwise disturbing subsurface soils in these areas. Any soils that are excavated from these locations must be properly characterized and disposed at an appropriate off-site location.

8. Covenant and Restriction Regarding Development for Permanent Residential Use: GRANTEE hereby covenants, on behalf of itself, its successors, and its assigns, that the Plant 20 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 area is for non-residential redevelopment).

ENCLOSURE 3

RESPONSIVENESS SUMMARY

COMMENT RESPONSE FROM ENGINEERING FIELD ACTIVITY, NORTHEAST
REGARDING
DRAFT FINDING OF SUITABILITY FOR TRANSFER (FOST) AND
DRAFT ENVIRONMENTAL BASELINE SURVEY FOR TRANSFER (EBST)
FOR PLANT 20 PARCEL
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK

COMMENTS FROM COUNTY OF NASSAU, DEPARTMENT OF PUBLIC WORKS (03/28/02):

COMMENT: EBST Section 4.3 – Storage Tanks: The County indicated that the EBST should note that all active tanks at Plant 20 are registered and permitted with the Nassau County Fire Marshal's Office and the Nassau County Department of Health. Also a copy of the permits should be part of this document.

RESPONSE: Language was inserted into Section 4.3 noting that all active tanks are registered with the Nassau County Fire Marshal's office and Nassau County Department of Health. Tank permits are currently in the name of Northrop Grumman and the Navy is in the process of transferring ownership of the tanks from Northrop Grumman to Navy. Therefore, making the current tank permits part of this document would not be appropriate since those permits will soon be outdated.

The tanks will remain in Navy ownership until such time as the new owner of the property is identified. Ownership will then be transferred from Navy to the new party at the time the deed of transfer is executed.

COMMENTS FROM NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, REGION 1 OFFICE (02/27/02):

COMMENT: Northrop Grumman operated a hazardous waste storage area at Plant 20, prior to 1991. The closure plan for this area was approved on August 10, 2000, and the Certification of Closure was approved on January 10, 2001.

RESPONSE: Acknowledged. Appropriate language was added into Section 4.2 – Recent Operations within the EBST.

COMMENTS FROM NASSAU COUNTY DEPARTMENT OF HEALTH (03/20/02):

COMMENT: Enclosure 2 – Environmental Covenants, Conditions, Reservations, and Restrictions: Section 7 of this document notifies that residual chemicals exist at AOCs 3 and 4 above NYSDEC TAGM 4046 guidance criteria. No other areas where such a condition occurs are noted, and as such, there is an implication that none exist. However, as stated in a USEPA August 7, 1997 letter to Northrop Grumman Corporation regarding Underground Injection Control (UIC) closures at Plant 20 (copy enclosed), residual soil contamination above TAGM clean-up criteria also exists at depth beneath the former leachfield. Specifically, elevated levels of volatile organic chemicals remain at former leaching pool locations LP-3 and LP-12 at depths minimally of 18-24 feet and 15-17 feet, respectively. This information should therefore be included within the Environmental Covenant document.

RESPONSE: The Navy has included this information within Section 4.2 – Past Operations within the EBST. In addition, leach pits 3 and 12 have also been included with AOCs 3 and 4 in Item 7 of enclosure (2) stating that a restriction will be placed in the deed of transfer requiring consultation and approval from NYSDEC and NYSDOH prior to disturbing soils in these areas.

COMMENT: Enclosure 4 – Finding of Suitability to Transfer: Section 9 incorrectly states that the closure of the leachfield was approved by Nassau County Department of Health. The Health Department provides assistance to the USEPA during UIC closure activities but does not approve final closures or authorizes the reuse of injection wells. With respect to Plant 20, this Department in fact recommended additional remediation of leaching pools LP-3 and LP-12 to the USEPA and the NYSDEC, however neither agency concurred. The statement indicating the Health Department approved the closure work should therefore be removed.

RESPONSE: Agreed. The reference to Nassau County Department of Health approval has been removed.