1-30-003 A

**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

23 MAR 2006

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

Dear Mr. Scharf:

Subj: Navy Responses to Comments on 90% Draft Final Design for Construction of a Groundwater Remediation System at the GM-38 Area; NWIRP Bethpage, and Northrop Grumman Corporation, New York; NYS Registry #1-30-003 A & B

On November 11, 2005, the Navy forwarded the 90% Draft Final Design for the GM-38 Area Groundwater Remediation project to the New York State Department of Environmental Conservation (NYSDEC) and others for a 45-day public comment period that ended on December 31, 2005. This design was submitted in accordance with a NYSDEC Record of Decision for Groundwater dated March 2001 as well as a Navy Record of Decision for Groundwater dated April 2003.

The Navy received your letter dated January 18, 2006, forwarding comments regarding the 90 Percent Draft Final Design. Comments were provided by New York State Department of Environmental Conservation and Health, Dvirka & Bartilucci (consultant to Massapequa Water District and New York Water Service), Town of Oyster Bay, Cashin Spinelli & Ferretti (consultant to the Town of Oyster Bay), and H2M Group (consultant to the Bethpage Water District). The Navy, and the Navy's consultants, Tetra Tech EC and ARCADIS, have reviewed the comments and are providing responses in the enclosed Responsiveness Summary Document.

The 90% Draft Final Design and associated construction phase plans were also made available to the public to review and comment. No comments were received from the general public regarding the GM-38 Area Groundwater Remediation Project.

The Navy anticipates the NYSDEC's timely authorization to proceed with construction-phase mobilization and will be available for an anticipated conference call to discuss these responses at your convenience.

Please note that property access to support this project remains an issue. Correspondence sent out by the Navy's Philadelphia Real Estate office on October 27, 2005, to the various property owners requesting access, have gone unanswered to date. However, part of the delay is due to the recent announcement of the closing of the Naval Facilities Engineering Command's (NAVFACs) Northeast office here in Philadelphia on June 23, 2006.

At this time, all real estate matters associated with this project are being transferred to NAVFAC's Mid-Atlantic offices in Norfolk, Virginia. I will make every effort necessary to identify who the replacement real estate specialist will be so that the site access issues for this project can be resolved.

If you have any questions regarding the enclosed Responsiveness Summary Document, please contact me at (610) 595-0567, ext. 163 or by email at james.colter@navy.mil.

Sincerely,

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

Enclosure: (1) Responsiveness Summary Document

Distribution:
Rich Humann - H2M Group
Gary Loesch - H2M Group
Rob Burns - Dvirka & Bartilucci
John Mirando- Dvirka & Bartilucci
Tim Kelly - Nassau County DPW
Matt Russo - Town of Oyster Bay
Gene Smith - New York State Department of Transportation
Ken Rydzewski - Long Island Railroad
Carlo SanGiovanni - ARCADIS
Bill Fonda - NYSDEC (Stony Brook)
Rich Pfaender - Town of Oyster Bay
John Ellsworth - Cashin Spinelli & Ferretti
Darrol Lopez - Town of Hempstead
Arnold Palleschi - Hempstead Water
Andy Musgrave - Bethpage Water
Anthony Sabino, Esq. - Counsel to BWD
Frank Flood - Massapequa Water
Matt Snyder - New York Water Service
Information Repository

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John Cofman - Northrop Grumman
Carol Stein - USEPA Region II
Carla Struble - USEPA Region II
Paul Olivo -USEPA Region II
Hon. John Venditto-Town of Oyster Bay
Edoardo Licci-South Farmingdale Water
Dave Brayack - Tetra Tech NUS
Joe Kaminski - NAVAIR
Al Taormina - ECOR Solutions, Inc.
Jim McBride - RAB Community Co-Chair
Mike Grello - Community RAB Member
Hon. Ed Mangano-Community RAB Member
Ed Resch - Community RAB Member
Charles Bevilacqua-Community RAB
Roy Tringali - Community RAB Member
Rosemary Styne - Community RAB Member

# RESPONSE TO COMMENTS
# ON THE
# 90% DRAFT FINAL DESIGN FOR THE
# GM-38 GROUNDWATER REMEDIATION PROJECT
# AT THE
# NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
# BETHPAGE, NEW YORK

## OPERABLE UNIT NO. 2 GROUNDWATER
## NEW YORK STATE SITE NOS. 1-30-003 A & B

***Prepared for:***

**Department of the Navy**
**Engineering Field Activity, Northeast**
**Naval Facilities Engineering Command**
**10 Industrial Highway, Mail Stop #82**
**Lester, Pennsylvania 19113-2090**

**CONTRACT NUMBER N62472-99-D-0032**
**CONTRACT TASK ORDER NUMBER 0096**

***Prepared by:***

**Tetra Tech EC, Inc.**
**Bucks Town Corporate Campus**
**820 Town Center Drive, Suite 100**
**Langhorne, PA 19047-1748**

***Issued:***

**March 2006**

# RESPONSE TO COMMENT LETTER FROM NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Contract Specifications

Section 1.0, Introduction and Following: Add "and Northrop Grumman Site" wherever the text states that the plume has migrated off the NWIRP property.

**RESPONSE:**
**Comment is noted and applicable changes shall be made and submitted in the final version.**

1. Section 1.0, Fourth Paragraph: The exact operational closure criteria are not clear from this section. For example, which wells sampled will indicate system shut down? Also, the statement that the pump and treatment system will operate until groundwater maximum contaminant levels (MCLs) has been attained, contrasts the discussion in the text that the system will be shut down when 100 micrograms/liter has been attained. It would be preferable to add a line that states that the specifics of system shut down will be finalized in the operation, maintenance and monitoring program.

**RESPONSE:**
**Agreed. Reference to "MCLs" and to "100 micrograms/liter" shall be removed from the text. A document that proposes appropriate "exit strategies" are currently being prepared and will be submitted to NYSDEC for discussion.**

3. Page 01220-13, Section 3.9: Can connections be made from the treatment plant to the sanitary sewer? Also, can temporary, sanitary connections be made to the temporary site trailer?

**RESPONSE:**
**The treatment plant will be connected to the sanitary sewer. The details for the sewer main connection are shown on Drawing C-4 *Groundwater Extraction System Piping and Utility Route Details (sheet 2 of 3)* and drawing C-6, *GM-38 Groundwater Treatment Plant Trench Sections and Details*. At this time there are no plans to connect the temporary field trailer to the sanitary sewer or potable water lines.**

4. Page 02270-3, Part 3, Trench Excavations: All existing and installed utilities will be clearly marked out to prevent any service interruption.

**RESPONSE:**
**Agreed. The draft Site Specific Health and Safety Plan contains TtEC requirements and detailed procedures that will be used to mark out and avoid subsurface utilities.**

5. Page 02500-10, Section I, Louvers and Dampers: See comments on drawings A-1 through A-3.

**RESPONSE:**
**Refer to the response to Comment 10 below regarding drawings A-1 and A-3.**

6. Page 02910-4, Section 2.8: The pine trees should be warrantied so that dead and stressed trees can be replaced.

**RESPONSE:**
**Details of the maintenance program and warrantee period for the pine trees will be added to the specifications.**

Design Plan Sheets:
7. Drawing C-1:

   a. What are the screened depths of monitoring wells GM 38-01 through 38-04? Are there any other well installations planned as part of the operation, maintenance and monitoring program?

   b. The location of the municipal wells should be placed on the drawing.

**RESPONSE:**

**a. GM 38-01 through GM 38-04 are benchmarks used for surveying. Drawing C-1 is not intended to provide well installation information. Three injection wells and several monitoring wells will be installed concurrently with plant construction. A plan is presently being prepared that details the installation of additional wells.**

**b. TtEC will add the location of the Bethpage Water District (BWD) production wells if the data is provided. TtEC requests that the NYS DEC coordinate the acquisition of this data from BWD.**

8. Drawing C-2: Can the temporary access along the power line right of way to Broadway, be made the permanent entrance pathway in lieu of, or in addition to the northern pathway to Sophia streets?

**RESPONSE:**
**The Sophia Street site entrance is planned as the primary access road during plant operations only and not during the construction phase. Large trucks will not be able to access the site from Sophia Street due the short turning radii of the residential streets. The access road from Broadway Avenue was originally planned for construction only. However, it will be needed occasionally after construction and especially during vapor or liquid phase carbon change-out events.**

9. Drawing C-9: The pine trees should include periodic replacement should initial the trees become stressed and/or die.

**RESPONSE:**
**The maintenance program and warrantee period will be added to Technical Specification 02910 Site Restoration and Revegetation.**

10. Drawings A-1 through A-3: The treatment plant will be operating 24/7/365. Therefore, the louvered vents and discharge points that involve major inlets/outlets of air for the operation of the air stripper tower and associated blowers may present certain noise level concerns. This includes the air flow from other mechanical operations as well. It may be prudent, where possible to move some of these points to the highway side of the building.

**RESPONSE:**
**The exhaust for the vapor treatment system is located on the east (highway) side of the treatment building. There is a silencer specified for the intake to the system. There is no silencer associated with the exhaust of the treatment system. The exhaust will pass though three large vapor phase carbon units prior to discharge. This provides a significant mass to absorb operational noise. The velocity of the exhaust is anticipated to be low resulting in minimal noise.**

11. Drawing P-9: Are there leak detection devices on the building floors, air stripper sump and base of the LGAC units?

**RESPONSE:**
**There are no leak detection devices planned for the treatment building. However, the base of the air stripper is located in a 13' 9" deep secondary containment sump with area dimensions 20' x 20'. Any leaks into the stripper sump shall be manually pumped into the building sump or directly into the equalization tank and recirculated through the treatment process.**

**A 6" concrete curb is located around the perimeter of the building slab. The concrete slab is being designed to be slope toward the building sump located in the center of the plant thereby redirecting any operational leaks or spills into the building sump. A level switch will activate the pumps in the building sump to transfer any accumulated water into the equalization tank for treatment. If the building sump fills due to sump pump failure or any other reason, a high-high switch will activate a plant shutdown. The system cannot be restarted until the sump's high-high condition is corrected.**

Drawing M-1: Is natural gas available for building heat as opposed to the electric heaters?

**RESPONSE:**
**The plant would require approximately 240 kilowatts or 820,000 Btu per hour when all heaters are operating. In June 2005, TtEC met with a representative of Keyspan Energy Delivery to discuss the availability for natural gas service to the plant. It was determined that gas service adequate for plant heating does exist at the intersection of North Herman Avenue and Sophia Street. Since most homes in that area are on electric, Keyspan was to conduct a marketing search to determine if additional natural gas customers could be gained to make the service to the plant cost effective. On several occasions, TtEC tried to follow-up on the Keyspan marketing search but have been unsuccessful to date. Due to the timing of this project, the Navy has decided not to pursue the issue of supplying gas service to the treatment plant any further.**

Quality Control Plan:

12. Page 9.1, Section 9.1: A bullet should be added to note any concerns raised by local citizens can be noted in the additional remarks section of the daily Contractor Production Report. These concerns will be directly forwarded to the project coordinator and/or the citizen participation specialist(s) associated with this project. It may also be helpful to assemble a site contact list for various aspects of this project.

**RESPONSE:**
**Comment is noted and applicable changes shall be made and submitted in the final version.**

## RESPONSE TO COMMENT LETTER FROM DVIRKA & BARTILUCCI CONSULTING ENGINEERS ON BEHALF OF THE MASSAPEQUA WATER DISTRICT

1. According to page 1 of the 90% design report, the groundwater remediation system"Ywill operate for a period of five years or until the total volatile organic compound (VOC) concentrations in the GM-38 Area groundwater are at or below 2 to 5 micrograms per liter. It is subsequently stated that the system ***may*** (emphasis added) continue to be operated until total VOC concentrations in individual monitoring and recovery wells are at or below 100 micrograms per liter. This apparent contradiction should be clarified.

**RESPONSE:**
**Comment is noted and necessary clarification shall be made to the final document.**

**The GM-38 groundwater treatment system is not intended to remediate groundwater in the local aquifer to non-detectable levels. Rather, the intent of the system is to remove mass, reduce elevated VOC levels to levels similar to those in the surrounding aquifer, and in doing so will minimize impacts on water supply wells and currently unaffected portions of the aquifer.**

**The remedial goal is to reduce the elevated VOC levels, not eliminate all VOC impacts. While the anticipated period of operation, based on groundwater model predictions, is 5 to 10 years to achieve the System's goals, the system will remain in operation as long as significant VOC concentrations attributable to the GM-38 Area remain in the aquifer. A plan is presently being prepared and will be submitted to the NYSDEC that will detail the methodology for determining when the System can be shutdown.**

2. Since the goal for operation of the groundwater remediation system is to reduce VOC concentrations in the GM-38 Area, the shut-off criteria for the system should be based on achieving groundwater quality objectives rather than a specific operational period.

**RESPONSE:**
**Refer to the response to Comment No. 1 (above).**

3. As described in the document entitled, "Comprehensive Groundwater Model Report", dated April 2003, the model is based on the assumption that treated water will be recharged to the aquifer at locations where no impact on performance of the recovery wells will occur. The validity of this assumption should be verified when the location and specifications of the recharge system have been finalized.

**RESPONSE:**
**Injection wells for the groundwater treatment system shall be located to maximize the efficiency of contaminant removal from the two recovery wells. Optimal injection well locations shall be selected by use of regional groundwater model that is approved by the NYS DEC. Arcadis serves as a third party consultant on this project as a subcontractor of TtEC and is the proprietor of this regional groundwater model. The locations for the injection wells will be chosen based upon both the groundwater model data and logistical considerations.**

## RESPONSE TO COMMENT LETTER FROM THE TOWN OF OYSTER BAY DEPARTMENT OF PUBLIC WORKS – DIVISION OF ENGINEERING

Drawing C-1

- Utility list should note the associated utility:
- Nassau County Department of Public Works - sanitary sewer
- Keyspan - gas
- LIPA- electric
- Town of Oyster Bay Department of Public Works - streets and storm sewers

**RESPONSE:**
**A note indicating the type of utility shall be inserted within the information of each listed utility.**

Drawing C-2

- Note 15 - curb cut requires a permit from the Town of Oyster Bay Department of Public Works.
- Driveway apron and any necessary asphalt repair shall conform to Town of Oyster Bay Contract Specifications, January 1969.
- Provide a construction vehicle travel plan depicting how the site will be accessed from the area roads.

**RESPONSE:**

- **TtEC will obtain a Permit for Work on the Right of Way for the curb cut prior to construction.**
- **The curb cut will be installed in conformance with the Town of Oyster Bay Contract Specifications (Second Printing, January 2000).**
- **The construction vehicle travel plan is included in the Draft Traffic Control Plan dated, November 11, 2005. The Final Traffic Control Plan shall be provided to all project personnel and subcontractors.**

Drawing C-3

- Show property line for the Bethpage Water District.
- Add detail for construction fencing and signage (i.e., construction area, restricted area, etc.)

**RESPONSE:**

- **The property line for the Bethpage Water District will be shown in the final drawing.**
- **Fencing details and construction signage will be added to the site drawings.**

Drawing C-4

- Drawing shows installation of piping for future extraction well and additional discharge. Have any plans been made for where the future discharge will be directed and has permission been obtained from the owner of that discharge point?

**RESPONSE:**

**The treated groundwater will be discharged to four injection wells, as shown on site drawings. The treated groundwater will meet the clean-up criteria of the State Pollutant Discharge Elimination System (SPDES) as required by the New York State Department of Environmental Conservation.**

**The necessity of a future extraction well and alternate discharge points is not anticipated at this time. However, for the purpose of design contingency, these features were added to the design to minimize any future excavation around the building, which could adversely impact routine plant operation.**

Drawing C-7

- Note 7 - Town requests that all utilized streets be swept on a regularly scheduled basis, preferably prior to contractor shutdown for weekends and holidays.
- The berm off the north-west corner of the building should be stabilized with hydroseed or other means if the scheduled tree planting does not occur immediately after its construction.

**RESPONSE:**

**TtEC will meet the requirements of the "Maintenance" section of drawing C-7. The entrance shall be maintained in a condition, which will prevent tracking or flowing of sediment onto**

**public rights-of-way. All sediment spilled, dropped, washed, or tracked onto public rights-of-way must be removed immediately. A street sweeper shall be used depending on site conditions and is anticipated to be used regularly.**

**The berm will be stabilized during its construction.**

Drawing C-8

- Drawing does not depict any on-site drainage systems for the runoff from the access roads and building roof.
- It is requested that the berm be extended to the south-west of the building.
- The berm is scheduled to be constructed on top of the proposed underground electric cables - is this allowable?
- It is requested that the chain-link fence be vinyl coated with privacy slats in black/green.

**RESPONSE:**
**The runoff from the roof of the building will be discharged to the gravel parking area. Constructing a drainage swale at the eastern edge of the gravel parking area shall divert surface water run-on from east of the building. The drainage swale will flow from south to north and will discharge into a topographically lower area north of the gravel parking lot. The surface water over the gravel parking lot will follow the contour lines, generally to the north.**

**The purpose of the berm is to partially conceal the groundwater treatment building from the homes located to the northwest (North Herman and North Windhorst) of the site. As currently designed, the berm in combination with existing trees and proposed white pines should accomplish this goal. Extending the berm further to the southwest would necessitate the removal of existing trees. TtEC would like to retain as many existing trees as possible while minimizing the visual impacts to the surrounding neighborhood.**

**Comment is noted. While an electrical problem is not anticipated by the berm being located above a portion of the 15 kV direct burial cables, this trench will be redirected around the northern side of the berm.**

**Comment is noted. Screening strips or privacy slats shall be used as presented in Section 2.1.C of Technical Specification 02831.**

Drawing C-9

- A note should be added that the contractor is responsible for the plantings for a period of at least one year after installation and must replace any dead or damaged plantings in a timely fashion. After this maintenance period, the Navy should assume this responsibility until the system is decommissioned.

**RESPONSE:**
**The specifications will be modified to indicate maintenance and warrantee period of the plantings. This information shall also be inserted into the scope of work for site restoration.**

Drawings A2 & A3

- The outside of the building should be not be left as bare metal, but instead supplied with a non-reflective/glossy natural color (green/brown) paint.

**RESPONSE:**
**Comment is noted. The Town shall be asked to select the exterior color from color samples provided by the building manufacturer, once a manufacturer is selected.**

Drawing P-1

- Will a DEC permit be required for the groundwater effluent discharge, and what monitoring will be required of the Navy to ensure compliance with DEC groundwater effluent standards at system startup and during operation of the system?
- Will a DEC permit be required for the air stripper emissions, and what monitoring will be required of the Navy to ensure compliance with DEC air emissions standards at system startup and during operation of the system?

**RESPONSE:**
**In a letter to Mr. James Colter (Department of Navy) dated January 18, 2006, New York State Department of Environmental Conservation states that "Various permits are not required under Title 6 New York Code Rules and Regulations (NYCCR) Part 375.17 for the remedial design and remedial action, given the Federal Facilities Site Remediation Agreement (FFSRA) is in place. Comparable permit exemptions are also defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). However, the various components of this project must meet the substantive requirements of the permitting process."**

**TtEC plans to meet the intent of both, the State Pollutant Discharge Elimination System (SPDES) permit for effluent discharge by injection wells and the NYS-DEC Air Permit requirements for discharge treated vapor after the air stripper. The Town of Oyster Bay will be copied on these correspondences. Permit specifications will be detailed in the Operations and Maintenance manual prior to system start-up.**

Drawing P-8

- Confirm with the Nassau County Department of Health if a Toxic/Hazardous Materials Storage Permit is required for the storage of sodium hydroxide.

**RESPONSE:**
**Comment is noted. TtEC will contact the Nassau County Department of Health to determine if a permit is required for the storage of a 55-gallon drum of sodium hydroxide. See also**

**response above to comment for Drawing P-1. The design currently includes the use of a secondary containment system under the 55-gallon drum. The building floor is sloped toward the centrally located building sump, which would provide tertiary containment. In addition and as stated above, the Navy will comply with all substantive requirements of this permit but is exempt from the formal permitting process.**

Drawing E-2

- Will a backup power generator be installed or will the DEC allow system shutdown during power outages?

**RESPONSE:**
**There is no backup power system planned for the groundwater treatment system. Occasional, short-term shut downs are anticipated but should not have an adverse effect on the overall performance of the treatment system.**

## RESPONSE TO COMMENT LETTER FROM CASHIN SPINELLI & FERRETTI, LLC ON BEHALF OF THE TOWN OF OYSTER BAY

1. CSF has received a copy of a letter, dated December 21, 2005, which was prepared by the H2M Group on behalf of the Bethpage Water District (BWD) with respect to H2M's review of the subject documents. That letter, addressed to Mr. Vasudevan, Director of NYSDEC's Remediation Bureau A, highlights a series of concerns regarding the proposed project's potential effects on the BWD's operations; many of these issues have been expressed in prior correspondence prepared by H2M or the BWD's attorney. Based on our discussions with Town officials, it is CSF's understanding that satisfactory resolution of these concerns is of critical importance to the Town, particularly with respect to ensuring that the proposed project does not result in a significant adverse impact on the BWD's continuing ability to provide safe drinking water for its customers (who also are Town of Oyster Bay residents).

**RESPONSE:**
**The Navy has, and will continue to work with NYSDEC to satisfactorily resolve all comments submitted with regards to this project to the maximum extent possible. The Navy shall provide responses to each of H2M Group's comments in their letter dated December 21, 2005. Please note that the U.S. Navy is also committed to implementing this project with goal being no adverse impacts to BWD's ability to provide safe drinking water for their customers.**

2. CSF is not aware that the project sponsor has executed the requisite legal agreement with the Town of Oyster Bay to allow the proposed facility to be constructed on Town-owned land, as is being proposed. It is CSF's understanding, based on our discussions with Town officials, that such an agreement is not likely to be forthcoming until the project sponsor has satisfactorily addressed the concerns of the BWD, which H2M's December 21 letter expressly states has not

yet occurred. These circumstances appear to indicate that proceeding to "90 Percent Design" plans at this time may be premature and suggest that the Department of the Navy's anticipated March 2006 date for field mobilization to commence construction may not be realistic.

**RESPONSE:**
**The Navy is currently working with the various land owners to secure property access. TtEC is proceeding with various phases of project planning as directed by the Navy and the NYS DEC. so that when access is granted, the project can move forward. In the event that site access is not granted, the Navy will request assistance from the NYSDEC in obtaining access.**

3. The subject documents do not appear to contain provisions for a community monitoring program during and after construction. Of particular concern to the Town of Oyster Bay would be an assurance that the surrounding residential area is not adversely impacted by fugitive dust or noise during construction, or by organic chemical emissions or noise during startup and long-term operation of the proposed groundwater treatment facility.

**RESPONSE:**
**During the short-term construction activities, appropriate construction techniques will be implemented to reduce the impacts to the local residents to the maximum extent practicable. An Operations, Maintenance, and Monitoring (OM&M) Plan is presently being prepared that will outline efforts that will be implemented during the long-term operation of the plant to further reduce potential impacts to the local residents. For further information, please refer to the response to comment No. 4 below.**

4. The subject documents do not appear to indicate that any mechanism would be in place for project information to be relayed to the Town of Oyster Bay during construction or operation of the proposed facility on Town-owned land. It is CSF's understanding that some of the work that has already been completed on the site, including the installation of certain wells, was performed in a manner that resulted in what appears to have been avoidable impacts to the community and associated public controversy. If an agreement can be reached allowing the proposed treatment facility to be constructed on Town property, the Town will wish to have an open line of communication with the project sponsor and facility operator so that any potential problems can be promptly discussed and appropriately addressed as expeditiously as possible; and the Town also will wish to be notified of any substantive changes (including all change orders) with regard to the engineering plans and specifications for the proposed facility, so as to be apprised of current circumstances in order to properly respond to questions that may be received from the public. The mechanism by which this communication will occur between the project sponsor/facility operator and the Town should be expressly defined at this time.

**RESPONSE:**
**The Town of Oyster Bay has been, and will continue to be, included in the planning and construction of the groundwater treatment system. The Town of Oyster Bay has been copied on all correspondence regarding the planning and execution of this project. Additionally, the Town has been invited to the Restoration Advisory Board (RAB) meetings, community workshops, and Technical Advisory Board (TAC) meetings. The Navy also has Information**

**Repositories located at the Bethpage Public Library as well as on the internet where all documents related to this project, as well as for other Navy-related cleanup actions, are available for review.**

5. Periodically during the pre-design investigation TtEC distributed project updates to the surrounding neighborhood. Updates were provided door-to-door when there was an activity anticipated to impact the neighborhood such as a change of drilling locations, overnight drilling, or to inform residents about future activities such as site restoration and surveying. A total of nine updates were provided during the six-month pre-design investigation from November 2004 to May 2005. Two subsequent updates were also distributed to inform residents about surveying and groundwater sampling. The last update was distributed to inform residents the ninety percent Draft Final Design document was available for review and comment at the Navy's Information Repository. Copies of all of the door-to-door leaflets were provided to The Town of Oyster Bay for review prior to distribution.

**RESPONSE:**
**The Navy and TtEC plan to retain these methods of communication with the community during the construction and subsequent operations and maintenance period of this project. During the construction phase of this project TtEC will have a field trailer on-site. A designated TtEC representative will be available to address public questions or concerns.**

6. The subject documents indicate that roadway access to the proposed facility would occur from Sofia Street and Broadway. Clarification is requested regarding the volume and type (e.g., in terms of trucks, especially heavy trucks, versus personal vehicles) of traffic that is expected to occur at each location, both during construction and the long-term operation of the facility. A suitable analysis should be performed to assess the impacts that would result to residents along the routes to and from these two access locations due to project-generated traffic.

**RESPONSE:**
**Primary access to the site during construction will be from Broadway Avenue. The construction trailer will be located adjacent to Broadway Avenue on the utility right-of-way property. Personnel vehicles and trucks will be required to stop at the trailer. The Sophia Street entrance is not suitable for large truck traffic due to the short turning radius from Broadway Avenue onto Sophia Street and from Sophia Street onto the access road. Due to the scope of the project there will be numerous personnel vehicles and trucks of all sizes. TtEC will, when feasible, schedule truck deliveries during off-peak hours (between 9:00 a.m. and 4:00 p.m.). TtEC will also minimize to the extent practical, multiple, concurrent truck deliveries.**

**Traffic to the plant during long-term operations will typically be one personal vehicle accessing the site from Sophia Street. Periodic plant maintenance such as replacement of vapor and liquid phase carbon will be necessary. Periodically, a truck will need access to the plant to deliver supplies or to perform routine maintenance such as granular activated carbon change-outs. Larger vehicles associated with these tasks will access the site from Broadway Avenue.**

7. The *Draft Soil Erosion and Sediment Control Plan* identifies Areduction of truck speeds" and Ausing waterY on access roads" as the only means of dust suppression that would be implemented during construction. Further details are requested, including the anticipated method of water application and the source of water supply that will be used for dust suppression purposes over the duration of the construction work.

**RESPONSE:**
**Per the *Draft Traffic Control Plan for Construction Tasks GM-38 Area Groundwater Contamination,* Section 5.6 Dust Control and Spillage, all work areas will be maintained within the limits of work, staging area and along haul routes, in order to prevent dust generation due to this operation that would contribute to air pollution. Dust control will be accomplished by the sprinkling of water or a dilute solution (less then 0.05%) of water plus bio-degradable surfactant. Sprinkling, where used, shall be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times. Dust control will be performed as the work proceeds and whenever a dust nuisance or hazard occurs."**

**Water during the construction phase will be supplied via fire hydrant. A fire hydrant permit will be obtained from the Bethpage Water District. The source of water for the construction phase will be included in the specifications.**

8. The *Draft Waste Management Plan* indicates that groundwater from well purging and development will be discharged to sanitary manholes. It is requested that the locations of these manholes, as well as the status of the application for any approvals that may be needed from Nassau County, be specified.

**RESPONSE:**
**During the pre-design investigation, TtEC obtained a permit from the County of Nassau Department of Public Works (Nassau DPW) for sewer discharge. The Nassau DPW approved three manholes for discharge of development water. The first manhole is located within the right of way at the south end of North Windhorst Road and the second discharge point is located within the right of way at the north end of South Herman Avenue and the third manhole is located at the dead end at the south end of South Herman Avenue. TtEC will renew this permit for water discharge during the next phase of well installation. A reference to this permit, the proposed manholes and the applicable drawing(s) depicting their locations will be added to the Draft Waste Management Plan.**

9. The *Site Restoration Plan* (Sheet C-9)

f. The textual notes included on this plan sheet and the corresponding section of the Technical Specifications indicate that 100 white pines (10-12 feet in height, with a minimum average diameter of 3 inches, and at an approximate spacing of 10 feet on-center) will be planted on the site in connection with the proposed project. However, the drawing itself shows an average spacing that is somewhat greater than 10 feet on-center, such that more than 100 trees would be needed to achieve the specified extent of coverage using a 10-foot spacing. Therefore, it appears that either the drawing should be adjusted to show 10-foot spacing between the planted trees or the textual description in the notes should be amended to correspond to the drawing. It should be

assumed that the denser planting plan described in the textual notes (i.e., with a 10-foot spacing) would be preferable to both neighboring residents and the Town, as it would provide more effective screening and buffering.

**RESPONSE:**
**As part of interim site restoration, TtEC planted 21 white pine trees along the gravel access road paralleling the Seaford Oyster Bay Expressway and an additional 17 in other areas after completion of the pre-design Investigation. The proposed planting of white pine trees during construction of the groundwater treatment will fill in the gaps between the white pines planted after the pre-design investigation and existing trees and vegetation. TtEC will modify Drawing C-9 to better show existing white pine trees.**

g. The spacing that is shown for the white pines to be planted on the south side of the treatment building and along portions of the Seaford-Oyster Bay Expressway right-of-way in the vicinity of the project site appears to be substantially greater than 10 feet. An explanation is requested as to the reasons why, presumably, it has been concluded that a lesser degree of screening is needed in these areas; or else, the spacing and number of trees should be adjusted on the plan to provide 10-foot on-center spacing.

**RESPONSE:**
**Dense vegetation exists on the south side of the groundwater treatment plant so white pines were spaced greater than ten feet on center. The existing dense vegetation will remain intact to the extent practical and aid in the visual screening of the building. Additionally, the white pines planted during the pre-design investigation will be shown on the drawing. See also response to comment No. 8a above.**

h. There appears to be a gap in the line of white pines on the southwest side of the proposed treatment building. It is recommended that consideration be given to planting additional white pines in this area, unless it can be shown that existing vegetation to be retained will provide adequate screening from the perspective of homes located to the southwest of the site (i.e., at the northerly termini of South Windhorst and South Hermann Avenues).

**RESPONSE:**
**It is anticipated that the density of existing vegetation is sufficient to screen the view of homes located to the southwest of the treatment plant. However, if this is not the case, the Navy will consider planting additional white pines.**

i. The Site Restoration Plan (and paragraph 2.7 of Section 02910, Site Restoration and Revegetation, of the Technical Specifications) indicates that peat moss and fertilizers consisting of nitrate of soda and holly tone acid will be used during planting." A detailed specification should be provided to ensure that the proper quantities and application methods for peat moss and fertilizers are used during planting.

**RESPONSE:**
**Further detail regarding the application of peat moss and fertilizers will be added to the section 02910 of the specifications.**

j. The provisions that will be in place for monitoring the health of new landscaping vegetation, and replacing dead or dying plants on the proposed project site in a timely manner, should be described in detail.

**RESPONSE:**
**Further details will be added to the specification to indicate the initial care, warrantee period and replacement protocol for the white pine trees.**

10. Details regarding the exterior lighting plan for the proposed facility are requested, as well as an analysis to demonstrate that fugitive light from subject property will not adversely impact neighboring residents.

**RESPONSE:**
**Comments from residents regarding fugitive light from other public facilities in the immediate area were of primary consideration in specifying the type of exterior lights for this building. The exterior lights will be motion activated so that they will only turn on when someone approaches the building. The lights will also be equipped with a protective shroud that deflects the light downward during the time the lights are activated. The outdoor lighting details shall be clarified in Section 2.2 of Technical Specification 16470 Lighting and in the bill of materials of electrical drawing E-6.**

11. Methods that will be implemented to ensure proper site security, especially in regard to ascertaining that the installation of the proposed facility on Town property will not create an attractive nuisance which would adversely impact neighboring residents, should be specified.

**RESPONSE:**
**The treatment facility shall have similar security features that other public facilities in the immediate area currently use. Specifically,**

- **8 feet high chain link fence w/ vehicular and personnel gates will surround the treatment facility. The entire chain link fencing system (including all gates) shall be fit with fiberglass screening strips. Strips shall be 2-inches wide and either black or green in color and installed vertically. Three separate strands of barbed wire will be provided above and along the top of the entire chain link fence.**
- **Exterior lighting will be motion activated as discussed in the response to comment No. 9 above.**
- **An interior security alarm shall provide indication of any type of break-in. An auto dialer specific to the fire and security alarms shall contact a local alarm company in the event of an incident.**

12. It is requested that summary information be provided regarding the on-site storage of hazardous materials during operation of the proposed facility, including: types and quantities of chemicals

to be stored on-site; sketch map of chemical storage locations and method of storage (e.g., aboveground tank, underground tank, containers, etc.); spill prevention and containment measures that will be in place; and provisions for and frequency of hazardous waste removal from the site.

**RESPONSE:**
**Prior to system operation, TtEC shall prepare and submit an Operation and Maintenance Plan. This plan shall include a Waste Management section specific to the operation and maintenance phase of this project. This Waste Management section shall address the generation, storage and disposal of all wastes generated at the groundwater treatment plant. The types and quantities of chemicals and their locations will be presented in the Operations and Maintenance manual for the plant.**

13. Information is requested regarding further opportunities that will be provided for public input prior to the issuance of approvals for the proposed project, particularly with regard to the anticipated timing/scheduling and format of future public participation events.

**RESPONSE:**
**There will be no further formal comment periods associated with the design of this project. At the request of NYSDEC, an informal community workshop may be planned to present the "Final Approved Design" to the community, part of which will be discussions regarding the Navy's responses to comments submitted. However, upon approval of the design by NYSDEC, and pending site access by the various land owners, the Navy will move this project into the Remedial Action phase by implementing the approved remedial design. Please note that there were no public comments received on this submittal. Comments were provided by NYSDEC, Town of Oyster Bay DPW, as well as from consultants representing the Town of Oyster Bay and various water authorities. Please note, however, that the Navy will continue to hold its Restoration Advisory Board (RAB) meetings to discuss the status of cleanup actions both on and off of the Navy's property and those updates will include relevant information regarding this project.**

## RESPONSE TO COMMENT LETTER FROM H2M GROUP ON BEHALF OF BETHPAGE WATER DISTRICT

1. The sampling results of July 2005 show vinyl chloride at contamination concentrations of 187 and 183 ppb at RW-1MW-2 and RW-1, respectively. Vinyl chloride has been detected on site most recently in GP-3, but has not been detected in any off-site wells in this area until now. The GM-38 wells are non detect for vinyl chloride. Also, in the same two wells, contaminant concentrations of 476 and 708 ppb cis-1,2-dichloroethene were detected. The GM-38 sample results were 2.1 ppb and 8.3 ppb. In addition, the trichloroethene (TCE) concentration at RW-1 was 327 ppb, as compared to 1,350 ppb at GM-38D2. Based on the proximity of RW-1 to the District's public supply wells, the presence of excessive vinyl chloride contamination and cis-1,2-dichloriethene in RW-1 and the lack of information regarding source, path and concentration of contaminants, RW-1 cannot be permitted to pump as an extraction well as it will put the public supply wells at risk.

**RESPONSE:**
**See below.**

2. The results of the sampling at RW-2 revealed a TCE concentration of 185 ppb, as compared to 1,350 ppb TCE at GM-38D. Regardless of any attempt to interpret the data / model to state that the extraction well is in the hot spot, the laboratory data proves that it is not. The laboratory data has confirmed that RW-2 is not located in the hot spot.

**RESPONSE:**
**See below.**

3. With regard to the capture zone and hot spot maps, we cannot agree that RW-1 or RW-2 are in the hot spot. The laboratory data confirms that neither well is in the hot spot. The maps conveniently show the hot spot of the plume in and around both extraction wells, when the real laboratory data proves otherwise. What information are we to use in making critical decisions, what we think can be (theoretical model) or what we know to be (actual laboratory analyses)?

**RESPONSES TO COMMENTS 1, 2, AND 3:**
**In response to these comments previously made by H2M, NYSDEC requested that the Navy conduct a series of tasks as outlined in a letter to the Navy dated June 22, 2005. These tasks were conducted by TtEC and ARCADIS in the months following issuance of NYSDEC's letter and the results were presented in a report dated September 14, 2005 and entitled "GM-38 Area Remedy Design Support Groundwater Sampling Results and Capture Zone Interpretation". This report was forwarded to NYSDEC in response to their request. Although not in attendance, it was the Navy's understanding that the results provided in the above-referenced report were provided to H2M and the BWD and further discussed at a meeting held on October 19, 2005. In a letter to the Navy dated November 21, 2005, NYSDEC directed the Navy to release the draft 90 percent design for review.**

**In addition to the information supplied in the above-referenced report, the Navy would like to add that the Navy is aware of the vinyl chloride (VC) issue. Vinyl chloride was first identified in this area by the pre-design vertical profile boring program and presented in the "GM-38 Area Vertical Profile Boring Installation Summary Report" dated February 2002 and revised May 2002. This report was submitted to the NYSDEC and TAC committee at that time. There are plans to install additional monitoring wells between areas where VC has been detected and the Navy's treatment system as well as BWD Plant 4. The installation of these monitoring wells will occur simultaneous to the treatment plant construction phase in order to minimize disturbance to the surrounding residential area to the best extent possible. H2M's frustration is understandable as these plans have not been presented for comment by the Navy as they will be part of the Operation, Maintenance, and Monitoring (OM&M) plan which is currently under development and therefore has not been forwarded for review as of yet. In short, the Navy's treatment, as currently designed, will be able to address VC in influent water. The Navy will be able to tell if VC could potentially be heading toward BWD Plant 4 through detections in the monitoring well network.**

**With regards to the "hot spot" issue, there continues to be a difference in the definition of the term between the Navy and H2M. H2M contends that the "hot spot" is the area where the highest concentrations of TVOCs exist (typically, this has been in the vicinity of the GM-38D wells located on Broadway Avenue). The Navy's definition of the "hot spot" area not only includes this area but a larger area where TVOCs are less concentrated. The latter was the basis for the current design of the GM-38 Area Treatment system. Please remember that the objective of this system, as stated in both the Navy's and NYSDEC's Records of Decision (RODs), has always been to remove mass and reduce elevated VOC concentrations in the aquifer and not to reduce VOC concentrations to non-detect levels.**

4. With the recent completion of the recovery wells, at a minimum, the well at the end of North Windhorst is located outside the hot spot to the east and is within the influence of the District's Plant No. 4. Hydraulic test data has not been provided for RW-1, but based on our evaluation of its location and proximity to Plant No. 4, RW-1 is also likely within the influence of the supply wells at Plant No. 4. The District remains significantly concerned that the recovery wells will further draw the elevated contamination closer to Plant No. 4 and further within its influence. Any plan that results in the potential for further contamination of the public supply wells is unacceptable.

**RESPONSE:**
**Please refer to the ARCADIS letter report dated September 14, 2005 and entitled "GM-38 Area Remedy Design Support Groundwater Sampling Results and Capture Zone Interpretation" where a capture zone analysis was performed in response to a NYSDEC request.**

**It is not the intent of the Navy to adversely impact operation of BWD Plant 4 with the operation of the GM-38 Area Treatment System. Rather, the Navy believes that the operation of the GM-38 Area Treatment System will actually help in reducing VOC concentrations currently being experienced at BWD Plant 4. BWD Plant 4 currently experiences VOC contamination due to the presence of VOCs in the aquifer surrounding BWD Plant 4's capture zone. What the GM-38 Area Treatment System will do in regard to BWD Plant 4 is to minimize the potential for VOC concentrations north and west of the GM-38 Area, and from contamination directly above the BWD Plant 4 wells, from being drawn into BWD Plant 4's capture zone. The GM 38 remedial wells will operate at a shallower depth than the BWD Plant 4 well, which will reduce the potential for vertical migration of contaminants towards the BWD Plant 4 well screen.**

5. As you know, the design of the existing air stripping system at Plant No. 4 can treat a maximum influent concentration of 600 ppb down to an effluent of 2 ppb. The design was prepared in 1993 based on the very limited information available at the time as compared to today. As you know, the District has a non-detection" policy regarding VOCs in its treated water supply. Accordingly, a design of 600 ppb down to 2 ppb would be equivalent to a treatment of 150 ppb to non-detect. Based on the potential of up to 250 ppb, the District will likely experience detections in the treated effluent. This would cause the District to be forced to remove the plant from service. Removing the plant from service would have a serious impact on the District's ability to meet peak demand and fire flow conditions since it is the District's largest supply facility. As such,

the District cannot be in agreement with any action that could cause the plant to have to be taken off line. It is the District's strong opinion that the recovery well is not located in the correct position. The well should have been located within the highest known concentration area at Arthur Avenue to maximize mass removal and help minimize the significance of the impact at Plant 4.

**RESPONSE:**
**(See also the above Response to Comments 1, 2, 3 and 4.) In addition to the above, the Navy has finalized a wellhead treatment contingency plan (WHTCP) that supports the requirements of the ROD.**

6. Based on the above, should the contamination concentrations at Plant No. 4 become too excessive to treat, as determined by the District, the District will be forced to shut down the water supply facility. Should this situation occur, the District will be seeking cost recovery from Grumman and the Navy as required for either improving the treatment system or replacing the plant completely.

**RESPONSE:**
**Comment is noted.**

With regard to the 90% design documents, the following comments are provided for your consideration:

1. The permanent access road to the treatment plant originates from the east end of Sophia Street. The property from 120 feet west of the end of Sophia Street to the end of Sophia Street is owned by the Bethpage Water District. An easement agreement with the Water District to enter and exit the access road from Sophia Street must be in place prior to the completion of the design.

**RESPONSE:**
**Comment is noted.**

2. Correspondence from the Navy indicated that construction is planned to start in March of 2006. Many general construction aspects of the project require permitting from the Town of Oyster Bay. What is the status of the Navy's permitting process with the Town?

**RESPONSE:**
**A copy of the 90% draft final design was provided to the Town of Oyster Bay. Currently, the Navy is working with the Town of Oyster Bay to extend the temporary access agreements that were issued allowing the Navy to conduct the pre-design investigation so that construction activities may commence pending approval of the Navy's design by NYSDEC. During construction, efforts will be made to secure a long-term easement interest for operation of the system.**

3. The treatment system is stated to operate for a period of no less than 5 years, unless area groundwater contamination is at or below 2 to 5 parts per billion (ppb), and no more than 10 years, unless TVOC concentrations in individual monitoring wells are at or below 100 ppb. First

of all, a 10 year maximum operation is unacceptable should groundwater contamination remain above 100 ppb. Secondly, the stated operational parameters are exactly the reason we continue to disagree with the location of the extraction wells. Conveniently, with RW-2 (185 ppb TCE) not being located within the 1,400 ppb TCE hot spot, there exists the potential for a pre-mature system shut-down by the Navy prior to the full remediation of the area. Time of operation should not be a criteria, groundwater contamination should. Also, the plan states that the Navy may shut down a well or modify extraction rates to optimize performance, but there is no mention of any performance basis in making such a determination. The NYSDEC must have regulatory control over the system performance and operation, not the Navy.

**RESPONSE:**
**The shutdown criteria cited by H2M is only intended at this time to state the purpose and intent of the treatment system so as to prevent the Navy from being required to operate the system indefinitely in order to remediate trace-level impacts in the aquifer. While the anticipated period of operation, based on model predictions, is 5 to 10 years to achieve the treatment system goals, the system will remain in operation as long as significant VOC concentrations attributable to the GM-38 Area remain in the aquifer. The actual shut-down criteria and the methodology that will be used to establish the criteria has not yet been determined. However, the shut-down criteria will not be based solely on the concentration of VOCs in one or both of the remedial wells. An exit strategy is currently being prepared by the Navy and will be submitted to NYSDEC for approval. Throughout operation of the plant, the Navy, as well as NYSSDEC, will monitor the system and a joint determination will be made at the appropriate time with regards to plant shut down.**

4. Vinyl chloride (187 ppb) was found in extraction and monitoring wells at RW-1. There have been no detections of vinyl chloride in any other off-site monitoring wells in the area. There is no data as to the source, path, extent, concentration, etc., of vinyl chloride contamination in the area, yet a design influent of 300 ppb has been selected. Please provide the basis of selecting this design influent.

**RESPONSE:**
**Vinyl chloride was first identified in this area by the pre-design vertical profile boring program and presented in the "GM-38 Area Vertical Profile Boring Installation Summary Report" dated February 2002 and revised May 2002. This report was submitted to the NYSDEC and TAC committee at that time.**

**The vinyl chloride concentration of 300 ppb was first detected in Vertical Profile Boring No. 51 (VPB-51) at a depth of 241 - 242 feet below ground surface in a sample collected by Tetra Tech NUS, Inc. (TtNUS) on July 19, 2001. VPB-51 is located in the northeastern portion of the GM-38 Area utility easement, at the southern end of the BWD Plant No. 4 property and east of North Herman Avenue. The VPB-51 concentrations were reported by TtNUS in a report dated May 2002 (revised) and entitled "GM-38 Area Vertical Profile Boring Installation Summary Report". During the development of the "GM-38 Area Groundwater Remedy Analysis Report", also prepared by TTEC in February 2003, the groundwater concentration of 300 ppb was used in Table 3-2 as the maximum vinyl chloride concentration.**

5. The plan states that the number and locations of injection wells will be determined after acquiring additional hydrogeologic data and performance data on the initial injection wells. This is a statement of work that should be done during a study or design phase, not a construction phase. How can an extraction / injection remediation system be designed and constructed without knowing how or where the treated water is going to be injected? Important basic treatment system information continues to be lacking in the plan.

**RESPONSE (from ARCADIS):**
**The design modeling for the GM-38 Area Treatment System initially assumed that treated water should be disposed at a sufficient distance from the extraction wells such that little or no interference between the wells would result. The extraction rates of the remedial wells, the well locations and screen zones were selected under this assumption to produce the desired capture zone and achieve the System's goals.**

**To date, one injection well has been drilled (IW-1). Recent modeling suggests that some interference will occur between RW-1 and IW-1 when water is re-injected following treatment. The modeling also suggested that if the injection well gallery were moved approximately 1,000 feet south of RW-1 little to no interference would occur between the injection Wells and RW-1. However, the modeling also showed that even if left in its currently proposed location, the System would still achieve its design goals. The interference would result in a slight reduction in the overall size of the System's capture zone, but would not prevent the System from removing the elevated VOCs.**

**ARCADIS is continuing to work with TtEC to finalize the details associated with the injection well network. It is the Navy's desire to start the groundwater remediation as soon as possible, and therefore, this work is still on-going as to not to cause further delay to the design, and ultimately, the start-up of the Plant.**

6. The plan states that equipment will be sized to prevent the discharge of contaminants to the atmosphere or the groundwater in excess of permitted or regulated values. This is too vague. The not to exceed value should be stated. For treated water being injected into the ground, the value should be less than 0.5 ppb.

**RESPONSE:**
**Permit specifications will be detailed in the work plan for start up of the system and in the Operations and Maintenance manual for the plant. In accordance with Title 6 of New York Code Rules and Regulations (NYCRR) Part 375.17, since a Federal Facilities Site Remediation Agreement (FFSRA) is in place between the Navy and NYSDEC, an actual permit will not be issued as long as the substantive technical requirements of the permit are met. The discharge criteria for groundwater and air will be included in the Operations, Maintenance and Monitoring (O,M&M) Plan Manual. The Town of Oyster Bay will be provided copies of these documents.**

7. Statements made regarding factors that need to be in place to make the remediation system effective include the long term operation and maintenance of VOC removal systems at three Bethpage public supply well fields for at least 30 years, or until treatment at the public supply wells is no longer required, or Bethpage decides to shut down the well fields. First, Bethpage operations should be in no way connected to the effectiveness of the remediation system performance. Second, we do not understand the connection between the Bethpage operations and the treatment system effectiveness given it is stated that the Bethpage wells could operate for 30 years or be shut down tomorrow?

**RESPONSE:**
**Comment is noted and this section shall be clarified by the following. The action items listed are related to the Navy's ROD for Naval Weapons Industrial Reserve Plant Bethpage, New York Operable Unit 2 - Groundwater, dated April 2003 (Revision 1). The statements made regarding factors that need to be in place are not referring to making the GM-38 Area Treatment System effective, but rather the entire remedial strategy for OU 2, of which the GM-38 remedy is only one part. The overall remedial strategy for groundwater includes (1) operation of the ONCT system; (2) long-term monitoring of on-site and off-site wells; (3) addressing the GM-38 Area; and (4) continued operation of the Bethpage Water District treatment systems already put into place by the Navy and Northrop Grumman for BWD Plants 4, 5 and 6. The statements to which H2M is referring are included only to state that if any of these action items change or fail to continue to be implemented, the Navy would need to re-evaluate the overall chosen remedial strategy to ensure it remains protective of human health and the environment.**

8. The plan states a vinyl chloride contingency plan is to be in place to deal with large quantities of vinyl chloride that may be encountered from an upstream contaminant source. This statement contradicts the fact that the plan is proceeding without any information on the excessive vinyl chloride contamination discovered at RW-1. Since the NYSDEC has no data on vinyl chloride, how can a contingency plan possibly be put in place prior to a sufficient study? Since the NYSDEC is proceeding with the current plan, a vinyl chloride contingency plan based on no data will unfortunately be of little help should the public supply wells be impacted with vinyl chloride. Please explain how a contingency plan will prevent vinyl chloride contamination from entering the public supply wells.

**RESPONSE:**
**Comment is noted and this section shall be clarified. The vinyl chloride contingency plan to which H2M is referring deals with the existence of vinyl chloride that exists upgradient of Northrop Grumman on property previously owned by the Occidental Chemical Company. The system that is referred to as potentially being impacted by vinyl chloride is the ONCT system located on Northrop Grumman's southern property boundary. With regards to the GM-38 treatment system, the remedial design provides treatment of vinyl chloride in groundwater by air stripping and stripper off-gas treatment by a vapor phase system.**

9. The plan states that discussions with the NYSDEC have already revealed that a State Pollutant Discharge Elimination System (SPDES) Permit will not be issued by the NYSDEC, even though an application will be made. If an application is made, and a permit is not granted, how can the discharge be permissible under this plan?

**RESPONSE:**
**In a letter from NYSDEC to the Navy dated January 18, 2006, NYSDEC stated the following, Various permits are not required under Title 6 New York Code Rules and Regulations (NYCCR) Part 375.17 for the remedial design and remedial action, given the Federal Facilities Site Remediation Agreement (FFSRA) is in place. Comparable permit exemptions are also defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). However, the various components of this project must meet the substantive requirements of the permitting process."**

10. In the potable water line specification, the referenced meter equipment must be Apurchased through "not supplied by" the Bethpage Water District. Also, the specification refers to the meter and RPZ being installed along the public right-of-way. Please note that the referenced location is not a public right of way, but is Bethpage Water District property. Further, the specification states that the subcontractor will tap the existing water line. Please amend to state that the subcontractor prepares for the tap, but the Water District performs the actual tap.

**RESPONSE:**
**Comment is noted. Applicable changes shall be provided in the final design.**

11. The air stripper specification infers that a nozzle assembly will be used to distribute influent water over the packing material. Details of the nozzle system were not provided, but should be included in the specifications. Nozzle distributors have been known to fail, resulting in short-circuiting of the packing material. A distribution tray should also be used to ensure that adequate water distribution occurs should a nozzle fail. Also, instrumentation should be included in the form of a low pressure safety circuit on the influent line to shut the system down on nozzle failure. When in normal operation, a certain water pressure will be created by the nozzle operation. Should a nozzle fail, the inlet water pressure will decrease. Such systems have been required by the Health Department as a safety against short-circuiting within the tower and inadequate treatment.

**RESPONSE:**
**Comment is noted. Nozzle details shall be included in the specifications. If the scenario described above by H2M were to occur and the air stripper removal efficiency becomes reduced, the process water would still be polished by the liquid--phase carbon system as the final step of the process system. Therefore, the discharge water would still be within discharge criteria and routine process sampling by the operators would note the reduced removal efficiency of the air stripper, indicating maintenance/repairs are required.**

12. Air flow requirements must be strictly adhered to for successful treatment. A failure circuit is described in the specifications such that should a low air pressure at the blower outlet be present, the system will shut down. An air flow safety should also be included such that if the blower is not producing the required air flow, while still satisfying the pressure safety, the system should still shut down since treatment effectiveness is being compromised.

**RESPONSE:**
**Both low air pressure indicating there is short-circuiting in the system and high air pressure indicating there is a blockage in the system, will cause the system to go into alarm mode, notifying the operator that a problem exists with the air stripper. For this reason, it is felt that a redundant air-flow switch is not necessary for this application.**

13. A caustic feed system is included in the treatment process. Please explain the purpose of pH adjustment, including the pH objective prior to injection. Given the natural pH of the groundwater and the affect on pH by the air stripping process, we are unsure as to the purpose of the pH adjustment system.

**RESPONSE:**
**As the final step of the process, a pH meter monitors the acidity/alkalinity level of the discharge process water. The caustic feed system was included as a safety measure should the pH drop below the discharge criteria. There is a possibility that the process water pH may drop below discharge criteria following treatment through the unit processes. In this case, NaOH would be added to the discharge stream to bring the treated process water pH to within discharge criteria. Influent groundwater is anticipated to have a pH value of 5.5, discharge criteria is anticipated to have a pH level of 6.5 to 8.0 standard units.**

14. The carbon polishing system for water treatment will consist of two (2) 20,000 pound carbon loaded vessels. The piping arrangement is described as being in series or parallel, allowing for the switch of primary and secondary carbon treatment and actually taking a vessel off line and treating the flow though one vessel. Typically, the manufacturer recommends no more than a 700 gpm flow through a single vessel. The proposed system will potentially have 1,100 gpm flow through one vessel. The manufacturer should confirm that this operation will not adversely impact the treatment objectives.

**RESPONSE:**
**During normal operations, the GAC system is designed to be operated in a parallel configuration only. The piping arrangement will allow for versatility of the system during GAC change-outs where the flow could be reduced to allow uninterrupted operations during the change-out. Carbon media in both vessels will be replaced during each planned change-out. Also, should conditions warrant, series or single vessel operation may be preferred should extraction flow rates be reduced in the future.**

15. The system is to operate continuously, yet there is only an uninterruptible power supply (UPS) proposed for the PLC control system. Emergency power generation for the entire treatment system should be required to ensure that the treatment system can operate during any and all periods of LIPA power outages.

**RESPONSE:**
**The purpose of the UPS is to allow the PLC to remain in operation if there is a very brief power interruption (seconds), and to allow the PLC to be shutdown in an orderly fashion following a prolonged power outage (minutes). It is not the intent of the UPS to provide power to the PLC during extended power outages (hours). There is no provision for emergency power generation to keep the system in operation during all periods of LIPA power outages.**

16. Is this plant to be manned 24 hours a day, 7 days a week, for all the years of operation? There is an autodialer system included to notify someone that there has been an alarm or failure in the plant. Who is the autodialer going to call, and what is the response time? Downtime of the treatment system must be minimized.

**RESPONSE:**
**The design does not necessitate the plant to be continuously maintained by an operator. Details of plant operations will be addressed in the Operations and Maintenance Plan (O&M). Currently, it is being recommended that an operator be at the plant during normal business hours on two B three days per week. The operator(s) shall monitor plant operations remotely by use of software such as pcAnywhere™. The auto dialer will immediately notify the primary operator of an alarm or shutdown scenario. The auto dialer shall continue to call phone numbers of project personnel until the alarm is acknowledged. The type of alarm message will dictate whether the operator can manage the problem remotely or must respond.**

17. The extraction wells are proposed to be operated by variable speed well pumps. Why are the well pumps variable speed if the flow rates are supposed to be the determining factors of the treatment system? Also, the variable frequency drives for the well pump motors are planned to be controlled by water level in the wells themselves. How is this pertinent? The well pumps are planned to be set at 150 feet below grade, which should be well below pumping levels, and the system is designed for flow rates of 300 and 800 gpm. Well pump output should be the controlling factor for the treatment system, not water levels. Nowhere have water levels been identified as a factor in the remediation system. Also, the plan states that the variable frequency drives will be set to maintain an operator selected speed. We also do not understand this process. If the purpose of the drive is to vary speed, why would there be a speed setpoint? We feel the drive should be controlled by a flow setpoint.

**RESPONSE:**
**Variable speed drives (VSDs) for the well pumps serve two purposes. First, VSDs allow the plant operator to precisely control the groundwater flow rates from the extraction wells and set a selected flow setpoint for the pumps to maintain. Secondly, use of VSDs are an energy saving option and follow in line with ASHRAE 90.1 (energy efficient design of buildings and equipment), as opposed to using a valve to control the extraction flow rate. The plant operator will manually set the speed of the well pump motor to maintain the desired flow rate. Once speed is selected to maintain desired flow rate, the flow rate will remain constant. As a safety measure, the VSD will shutdown the corresponding well pump in case of low water level in the**

**well (protect pump from running dry). The level transducer in the well serves only as an level alarm sensor and level indicating sensor, not as an operational signal for the well pump. The VSD speed for extraction flow rate control is selected manually and is not automatic.**

18. The described automatic blower shut-down sequence can result in untreated water cascading through the tower without any air flow. Prior to the blower automatically shutting down, the flow through the tower has to be stopped and a time delay has to be added so that any water in the tower is fully treated before the blower stops.

**RESPONSE:**
**System operation provides for the air stripper feed pumps to be shutdown whenever there is an air stripper blower shutdown. Should the blower shutdown, groundwater would no longer be delivered to the air stripper tower and the minimal remaining water at the top of the stripper would cascade down and be contained in the air stripper sump. Two reasons why this is not a concern is that shutdown of the blower is not an instantaneous event, once power is removed from the blower, it continues to spin coming to a gradual stop and, therefore, continues to provide airflow for a short period. Second, the polishing liquid-phase GAC units would provide any required treatment of the groundwater should it not receive full treatment through the air stripper, once the system is restarted. Additionally, providing a time delay between blower shutdown and feed pump shutdown would not provide any benefit during a power failure.**

19. The purpose for the termination vault for future well connections must be further explained. It has already been clearly stated that a third well will not be included in the treatment process. Who, why, when, how will it be decided that a third extraction well is required?

**RESPONSE:**
**For clarification, the Navy's statement that a third well would not be included was referring to a third well located to the south of the GM-38 Area near the location of Mid-Island Hospital. It was determined that this well would not be efficient in the remediation of the GM-38 Area. While the necessity of a future extraction well and alternate discharge points is not anticipated at this time, the Navy instructed TtEC to include this vault in the event that a third well, located within the GM-38 Area, would be requested by NYSDEC for future installation. If this were to occur, these features added to the design would minimize any future excavation around the building as well as the need for any building modifications, which would have greater adverse impacts on routine plant operations.**

# APPENDIX

**New York State Department of Environmental Conservation**
**Comment Letter**

**January 18, 2006**

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

Erin M. Crotty
Commissioner

January 18, 2006

James L. Colter
Department of the Navy
Engineering Field Activity, Northeast
Naval Facilities Engineering Command
10 Industrial Highway
Lester, PA 19113-2090

RE: Northrop Grumman, Naval Weapons Industrial Research Plant (NWIRP) Bethpage and Grumman Steel Los Sites, Nassau County Sites No. 1-30-003A, B &C.

Dear Mr. Colter:

Tetra Tech EC Inc., on behalf of the Department of the Navy, has submitted the draft 90 percent design package for the GM 38-Area Groundwater Remediation as part of the Operable Unit 2 (OU2) groundwater remedial remediation for the Naval Weapons Industrial Reserve Plant (NWIRP) and Northrop Grumman Sites. This draft 90 percent design has been reviewed by New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH), with comments below. Also, comments received from the Town of Oyster Bay (TOB) and the TOB in-house consultant, the Bethpage Water District (H2M Group), the Massapequa Water District and the New York Water Service Inc. (D&B Inc.), faxed under previous cover, are also officially enclosed with this letter.

Various permits are not required under Title 6 New York Code Rules and regulations (NYCRR) Part 375.17 for the remedial design and remedial action, given the Federal Facilities Site Remediation Agreement (FFSRA) is in place. Comparable permit exemptions are also defined under the Comprehensive Environmental Response, Liability and Compensation Act (CERCLA). However, the various components of this project must meet the substantive requirements of the permitting process. For example, the discharge of the treatment plant must conform with State Pollutant Discharge Elimination System (SPDES) discharge limits. The Navy contractor is currently preparing the documents for the SPDES application process.

## Contract Specifications

**1. Section 1.0, Introduction and Following:** Add "and Northrop Grumman Site" wherever the text states that the plume has migrated off the NWIRP property.

**2. Section 1.0, Fourth Paragraph:** The exact operational closure criteria are not clear from this section. For example, which wells sampled will indicate system shut down? Also, the statement that the pump and treatment system will operate until groundwater maximum contaminant levels (MCLs) has been attained, contrasts the discussion in the text that the system will be shut down when 100 micrograms/liter has been attained. It would be preferable to add a line that states that the specifics of system shut down will be finalized in the operation, maintenance and monitoring program.

**3. Page 01220-13, Section 3.9:** Can connections be made from the treatment plant to the sanitary sewer? Also, can temporary, sanitary connections be made to the temporary site trailer?

**4. Page 02270-3, Part 3, Trench Excavations:** All existing and installed utilities will be clearly marked out to prevent any service interruption.

**5. Page 02500-10, Section I, Louvers and Dampers:** See comments on drawings A-1 through A-3.

**6. Page 02910-4, Section 2.8:** The pine trees should be warrantied so that dead and stressed trees can be replaced.

## Design Plan Sheets:

**7. Drawing C-1:**

a. what are the screened depths of monitoring wells GM 38-01 through 38-04? Are there any other well installations planned as part of the operation, maintenance and monitoring program?

b. The location of the municipal wells should be placed on the drawing.

**8. Drawing C-2:** Can the temporary access along the power line right of way to Broadway, be made the permanent entrance pathway in lieu of, or in addition to the northern pathway to Sophia streets?

**9. Drawing C-9:** The pine trees should include periodic replacement should initial the trees become stressed and/or die.

**10. Drawings A-1 through A-3:** The treatment plant will be operating 24/7/365. Therefore, the louvered vents and discharge points that involve major inlets/outlets of air for the operation of the air stripper tower and associated blowers may present certain noise level concerns. This includes the air flow from other mechanical operations as well. It may be prudent, where possible to move some of these points to the highway side of the building.

**11. Drawing P-9:** Are there leak detection devices on the building floors, air stripper sump and base of the LGAC units?

**Drawing M-1:** Is natural gas available for building heat as opposed to the electric heaters?

**Quality Control Plan:**

**12. Page 9.1, Section 9.1:** A bullet should be added to note any concerns raised by local citizens can be noted in the additional remarks section of the daily Contractor Production Report. These concerns will be directly forwarded to the project coordinator and/or the citizen participation specialist(s) associated with this project. It may also be helpful to assemble a site contact list for various aspects of this project.

The Navy will prepare a responsiveness summary for the technical comments received, and prepare to discuss these comments, at either a conference call and/or meeting with reviewers prior to finalizing the responsiveness summary.

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

Sincerely,

Steven M. Scharf

Steven M. Scharf, P.E.
Project Engineer
Bureau of Remedial Action
Division of Environmental Remediation
(GM38D2RD90%comment.wpd)

Enclosures

c/w/enc: J. Swartwout/S. Scharf/File
J. Cofman, Northrop Grumman

ec/w/o/enc: W. Parish, DEC Region 1 (Via E-mail)
W. Fonda, DEC Region 1 (Via E-mail)
T. Wescott, NYSDOH (Via E-mail)

**Comment Letter from Dvirka and Bartilucci Consulting Engineer on behalf of the Massapequa Water District**

**January 10, 2006**

Dvirka and Bartilucci
CONSULTING ENGINEERS
330 Crossways Park Drive, Woodbury, New York, 11797-2015
516-364-9890 • Fax: 516-364-9045

**D&B FAX NO: (516) 364 - 9045** **DATE:** 1/10/06

**COMPANY NAME:** NYSDEC

**ATTENTION:** Steve Scharf

**FAX NO.:** (518) 402-9[illegible]

**FROM:** Kenneth Wenz

**SUBJECT:** Comments on GM-38 Area 90% Design **JOB#:** 1883

**NO. OF PAGES:** 3
(including cover sheet)

**MESSAGE:**

Steve:

Attached please find a letter providing our comments on the referenced document. A printed copy will follow by first class mail. Please call me if you have any questions or require any additional information.

**THANK YOU:**

Dvirka and Bartilucci
CONSULTING ENGINEERS
330 Crossways Park Drive, Woodbury, New York, 11797-2015
516-364-9890 • 718-460-3634 • Fax: 516-364-9045
e-mail: findingsolutions@db-eng.com



January 10, 2006

Richard Tobin, Superintendent
Massapequa Water District
84 Grand Avenue
Massapequa, NY 11758

Re: Northrop Grumman and NWIRP Sites
90 % Design Review
D&B No. 1883

Dear Mr. Tobin:

In accordance with your request, we have performed a cursory review of the 90-percent contract drawings and technical specifications for Groundwater Extraction, Treatment, and Re-injection System to be located at the GM-38 Area. Please note that our review was limited to a general overview of the types and sizes of the proposed equipment based on the design criteria stated in the documents.

The treatment system includes two extraction wells with a total flow rate of 1,100 gpm. The wells discharge to an equalization tank from which the water is pumped to a packed tower aeration system. The effluent from the packed tower is pumped through a particulate filter and liquid phase carbon vessels. The finished water is then treated with sodium hydroxide to raise the pH prior to discharging to a series of four injection wells. The offgas from the packed tower is treated with vapor phase carbon prior to being discharged to the atmosphere.

This type of treatment system is considered to be a conventional pump and treat type of system using time-tested technology to remove volatile organic compounds (VOC's) from groundwater. Further, the major equipment items specified appear to be adequately sized for the flow rate and concentrations of the constituents indicated in the design criteria.

**Dvirka and Bartilucci**
CONSULTING ENGINEERS



Based on a preliminary review of the 90% draft final design document, it appears that the proposed recovery well locations and screen zones, and proposed groundwater extraction rate will be adequate to capture the "hot spot" plume within the GM-38 Area (total VOC concentrations above 500 micrograms per liter). However, the following comments regarding operation of the system are offered:

- According to page 1 of the 90% design report, the groundwater remediation system "...will operate for a period of five years or until the total volatile organic compound (VOC) concentrations in the GM-38 Area groundwater are at or below 2 to 5 micrograms per liter." It is subsequently stated that the system ***may*** (emphasis added) continue to be operated until total VOC concentrations in individual monitoring and recovery wells are at or below 100 micrograms per liter. This apparent contradiction should be clarified.

- Since the goal for operation of the groundwater remediation system is to reduce VOC concentrations in the GM-38 Area, the shut-off criteria for the system should be based on achieving groundwater quality objectives rather than a specific operational period.

- As described in the document entitled, "Comprehensive Groundwater Model Report," dated April 2003, the model is based on the assumption that treated water will be recharged to the aquifer at locations where no impact on performance of the recovery wells will occur. The validity of this assumption should be verified when the location and specifications of the recharge system have been finalized.

If you are interested in discussing any specific aspect of this system, or would prefer a more detailed review, please feel free to call me.

Very truly yours,

John A. Mirando, P.E.
Vice President

JAM/KPW(t)/ajm
cc: S. Scharf (NYSDEC)
K. Wenz (D&B)
• 1883\JAM06LTR-01.doc

**The Town of Oyster Bay Department of Public Works**
**Division of Engineering Comment Letter**

**December 29, 2005**

TOWN OF OYSTER BAY
DEPARTMENT OF PUBLIC WORKS
Syosset, New York 11791-5699
www.oysterbaytown.com

Richard W. Lenz, P.E., N.S.P.E.
Commissioner

(516) 677-5935

December 29, 2005

Mr. Steve Scharf, Project Engineer
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Re: GM-38 Area Treatment System Draft Final Design

Dear Mr. Scharf:

As per the notice received from Mr. Stavros Patselas of Tetra Tech EC, Inc., please consider the following comments regarding the 90% Draft Final Design for the GM-38 Area Treatment System, Bethpage:

**Drawing C-1**

- Utility list should note the associated utility:
  - Nassau County Department of Public Works – sanitary sewer
  - Keyspan – gas
  - LIPA – electric
  - Town of Oyster Bay Department of Public Works – streets and storm sewers

**Drawing C-2**

- Note 15 – curb cut requires a permit from the Town of Oyster Bay Department of Public Works.
- Driveway apron and any necessary asphalt repair shall conform to Town of Oyster Bay Contract Specifications, January 1969.
- Provide a construction vehicle travel plan depicting how the site will be accessed from the area roads.

**Drawing C-3**

- Show property line for the Bethpage Water District.
- Add detail for construction fencing and signage (i.e., construction area, restricted area, etc.)

**Drawing C-4**

- Drawing shows installation of piping for future extraction well and additional discharge. Have any plans been made for where the future discharge will be directed and has permission been obtained from the owner of that discharge point?

**Drawing C-7**

- Note 7 - Town requests that all utilized streets be swept on a regularly scheduled basis, preferably prior to contractor shutdown for weekends and holidays.
- The berm off the north-west corner of the building should be stabilized with hydroseed or other means if the scheduled tree planting does not occur immediately after its construction.

**Drawing C-8**

- Drawing does not depict any on-site drainage systems for the runoff from the access roads and building roof.
- It is requested that the berm be extended to the south-west of the building.
- The berm is scheduled to be constructed on top of the proposed underground electric cables – is this allowable?
- It is requested that the chain-link fence be vinyl coated with privacy slats in black/green.

**Drawing C-9**

- A note should be added that the contractor is responsible for the plantings for a period of at least one year after installation and must replace any dead or damaged plantings in a timely fashion. After this maintenance period, the Navy should assume this responsibility until the system is decommissioned.

**Drawings A2 & A3**

- The outside of the building should be not be left as bare metal, but instead supplied with a non-reflective/glossy natural color (green/brown) paint.

**Drawing P-1**

- Will a DEC permit be required for the groundwater effluent discharge, and what monitoring will be required of the Navy to ensure compliance with DEC groundwater effluent standards at system startup and during operation of the system?
- Will a DEC permit be required for the air stripper emissions, and what monitoring will be required of the Navy to ensure compliance with DEC air emissions standards at system startup and during operation of the system?

**Drawing P-8**

- Confirm with the Nassau County Department of Health if a Toxic/Hazardous Materials Storage Permit is required for the storage of sodium hydroxide.

**Drawing E-2**

- Will a backup power generator be installed or will the DEC allow system shutdown during power outages?

It is unknown if this project requires a State Environmental Quality Review determination prior to construction, and if so, who would act as lead agency. Also, contractor's work hours are to conform to Town of Oyster Bay Town Code.

If you have any questions regarding these comments, please contact Matthew Russo, Division of Engineering, at (516) 677-5719.

Very truly yours,

FOR JAMES T. WHELAN
DIVISION OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

for RICHARD W. LENZ, P.E.
COMMISSIONER
DEPARTMENT OF PUBLIC WORKS

RWL:JTW:MR:jm

c: Steven Marx, Counsel to the Supervisor
Richard Pfaender, Assistant to the Supervisor

Gm-38 area dec 90% comments

**Comment Letter from Cashin Spinelli & Ferretti, LLC**
**on behalf of the Town of Oyster Bay**

**December 30, 2005**

**Cashin Spinelli & Ferretti, LLC**
***Program & Construction Management***
***Municipal Planning***

4170 Veterans Memorial Highway, Suite 102
Bohemia, New York 11716

(T) 631-737-9170
(F) 631-737-9171

**VIA FAX (518-402-9022),**
**E-MAIL (sxscharf@gw.dec.state.ny.us),**
**and Regular Mail**

December 30, 2005

Steven M. Scharf, P.E.
Project Engineer
Bureau of Remedial Action A
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, NY 12233-7015

RE: **Northrop Grumman & NWIRP Sites, Town of Oyster Bay, Nassau County Site Nos. 1-30-003A&B (CSF #40:502)**

Dear Mr. Scharf:

This correspondence is submitted by Cashin Spinelli & Ferretti, LLC (CSF) on behalf of the Town of Oyster Bay. CSF is an environmental consultant to the Town, and we have been requested by the Office of the Town Supervisor to review the documents that were forwarded to the Town regarding the "Draft 90 Percent Design for Construction of a Groundwater Extraction, Treatment, and Re-injection System Located at the GM-38 Area". Your letter of November 14, 2005 requests that comments be returned by December 30, 2005.

On behalf of the Town of Oyster Bay, CSF respectfully submits the following comments:

1. CSF has received a copy of a letter, dated December 21, 2005, which was prepared by the H2M Group on behalf of the Bethpage Water District (BWD) with respect to H2M's review of the subject documents. That letter, addressed to Mr. Vasudevan, Director of NYSDEC's Remediation Bureau A, highlights a series of concerns regarding the proposed project's potential effects on the BWD's operations; many of these issues have been expressed in prior correspondence prepared by H2M or the BWD's attorney. Based on our discussions with Town officials, it is CSF's understanding that satisfactory resolution of these concerns is of critical importance to the Town, particularly with respect to ensuring that the proposed project does not result in a significant adverse impact on the BWD's continuing ability to provide safe drinking water for its customers (who also are Town of Oyster Bay residents).

2. CSF is not aware that the project sponsor has executed the requisite legal agreement with the Town of Oyster Bay to allow the proposed facility to be constructed on Town-owned land, as is being proposed. It is CSF's understanding, based on our discussions with Town officials, that such an agreement is not likely to be forthcoming until the project sponsor has satisfactorily addressed the concerns of the BWD, which H2M's December 21 letter expressly states has not yet occurred. These circumstances appear to indicate that proceeding to "90 Percent Design" plans at this time may be premature and suggest that the Department of the Navy's anticipated March 2006 date for field mobilization to commence construction may not be realistic.

3. The subject documents do not appear to contain provisions for a community monitoring program during and after construction. Of particular concern to the Town of Oyster Bay would be an assurance that the surrounding residential area is not adversely impacted by fugitive dust or noise during construction, or by organic chemical emissions or noise during startup and long-term operation of the proposed groundwater treatment facility.

4. The subject documents do not appear to indicate that any mechanism would be in place for project information to be relayed to the Town of Oyster Bay during construction or operation of the proposed facility on Town-owned land. It is CSF's understanding that some of the work that has already been completed on the site, including the installation of certain wells, was performed in a manner that resulted in what appears to have been avoidable impacts to the community and associated public controversy. If an agreement can be reached allowing the proposed treatment facility to be constructed on Town property, the Town will wish to have an open line of communication with the project sponsor and facility operator so that any potential problems can be promptly discussed and appropriately addressed as expeditiously as possible; and the Town also will wish to be notified of any substantive changes (including all change orders) with regard to the engineering plans and specifications for the proposed facility, so as to be apprised of current circumstances in order to properly respond to questions that may be received from the public. The mechanism by which this communication will occur between the project sponsor/facility operator and the Town should be expressly defined at this time.

5. The subject documents indicate that roadway access to the proposed facility would occur from Sofia Street and Broadway. Clarification is requested regarding the volume and type (e.g., in terms of trucks, especially heavy trucks, versus personal vehicles) of traffic that is expected to occur at each location, both during construction and the long-term operation of the facility. A suitable analysis should be performed to assess the impacts that would result to residents along the routes to and from these two access locations due to project-generated traffic.

6. The *Draft Soil Erosion and Sediment Control Plan* identifies "reduction of truck speeds" and "using water... on access roads" as the only means of dust suppression that would be implemented during construction. Further details are requested, including the anticipated method of water application and the source of water supply that will be used for dust suppression purposes over the duration of the construction work.

7. The *Draft Waste Management Plan* indicates that groundwater from well purging and development will be discharged to sanitary manholes. It is requested that the locations of these manholes, as well as the status of the application for any approvals that may be needed from Nassau County, be specified.

8. The *Site Restoration Plan* (Sheet C-9) –

   a. The textual notes included on this plan sheet and the corresponding section of the Technical Specifications indicate that 100 white pines (10-12 feet in height, with a minimum average diameter of 3 inches, and at an approximate spacing of 10 feet on-center) will be planted on the site in connection with the proposed project. However, the drawing itself shows an average spacing that is somewhat greater than 10 feet on-center, such that more than 100 trees would be needed to achieve the specified extent of coverage using a 10-foot spacing. Therefore, it appears that either the drawing should be adjusted to show 10-foot spacing between the planted trees or the textual description in the notes should be amended to correspond to the drawing. It should be assumed that the denser planting plan described in the textual notes (i.e., with a 10-foot spacing) would be preferable to both neighboring residents and the Town, as it would provide more effective screening and buffering.

   b. The spacing that is shown for the white pines to be planted on the south side of the treatment building and along portions of the Seaford-Oyster Bay Expressway right-of-way in the vicinity of the project site appears to be substantially greater than 10 feet. An explanation is requested as to the reasons why, presumably, it has been concluded that a lesser degree of screening is needed in these areas; or else, the spacing and number of trees should be adjusted on the plan to provide 10-foot on-center spacing.

   c. There appears to be a gap in the line of white pines on the southwest side of the proposed treatment building. It is recommended that consideration be given to planting additional white pines in this area, unless it can be shown that existing vegetation to be retained will provide adequate screening from the perspective of homes located to the southwest of the site (i.e., at the northerly termini of South Windhorst and South Hermann Avenues).

   d. The Site Restoration Plan (and paragraph 2.7 of Section 02910, Site Restoration and Revegetation, of the Technical Specifications) indicates that "peat moss and fertilizers consisting of nitrate of soda and holly tone acid will be used during planting." A detailed specification should be provided to ensure that the proper quantities and application methods for peat moss and fertilizers are used during planting.

   e. The provisions that will be in place for monitoring the health of new landscaping vegetation, and replacing dead or dying plants on the proposed project site in a timely manner, should be described in detail.

9. Details regarding the exterior lighting plan for the proposed facility are requested, as well as an analysis to demonstrate that fugitive light from subject property will not adversely impact neighboring residents.

10. Methods that will be implemented to ensure proper site security, especially in regard to ascertaining that the installation of the proposed facility on Town property will not create an attractive nuisance which would adversely impact neighboring residents, should be specified.

11. It is requested that summary information be provided regarding the on-site storage of hazardous materials during operation of the proposed facility, including: types and quantities of chemicals to be stored on-site; sketch map of chemical storage locations and method of storage (e.g., aboveground tank, underground tank, containers, etc.); spill prevention and

containment measures that will be in place; and provisions for and frequency of hazardous waste removal from the site.

12. Information is requested regarding further opportunities that will be provided for public input prior to the issuance of approvals for the proposed project, particularly with regard to the anticipated timing/scheduling and format of future public participation events.

We hope that the foregoing will be helpful in finalizing the design plans and completing the review process for the proposed facility, and we look forward to your responses to these comments and the comments provided in the December 21 letter from H2M.

Please do not hesitate to contact me if you have any questions. I can be reached at (516) 677-5824. My mailing address is:

Town of Oyster Bay
Department of Environmental Resources
150 Miller Place
Syosset, New York 11791

Attention: John Ellsworth, Environmental Consultant

Very truly yours,

CASHIN SPINELLI & FERRETTI, LLC

John M. Ellsworth
Director of Planning and Environmental Services

cc: Leonard Genova, Deputy Supervisor, Town of Oyster Bay
James M. Byrne, P.E., Commissioner, Town of Oyster Bay Department of Environmental Resources
Richard W. Lenz, P.E., Commissioner, Town of Oyster Bay Department of Public Works
Matthew Russo, Town of Oyster Bay Engineering Division
Anthony J. Sabino, Esq.
Richard W. Humann, P.E., H2M

**Comment Letter from Holzmacher, McLendon, & Murrell, P.C. on behalf of the Bethpage Water District**

**December 21, 2005**

H2M GROUP

ACEC MEMBER SUPPORTING EXCELLENCE IN ENGINEERING

Holzmacher, McLendon & Murrell, P.C. ◣ H2M Associates, Inc.
H2M Labs, Inc. ◣ H2M Construction Management, Inc.
575 Broad Hollow Road, Melville, New York 11747
(631) 756-3000, Fax: (631) 694-4122
www.h2m.com



December 21, 2005

Mr. Chittibabu Vasudevan, Ph.D., P.E.
Director
Remedial Action Bureau A
Division of Environmental Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

Re: Bethpage Water District
Naval Weapons Industrial Reserve Plant (NWIRP) – OU2
GM-38 Area Remediation – 90% Design
H2M Project No.: BPWD 05-50

Dear Mr. Vasudevan:

In conjunction with the Bethpage Water District, we have received and reviewed the 90% design documents for the above referenced project. We are providing you with our technical comments on the design documents as required during this public comment period, which ends December 31, 2005. As already stated to the NYSDEC numerous times, the Bethpage Water District is gravely concerned about the implementation of this remediation system and its potential adverse impact to public supply wells. Although your office has attempted to persuade the Bethpage Water District that this remediation plan will not adversely impact its public supply wells through mere discussion, without any supporting data, the District stands fast that it is against this plan moving forward as designed with what we feel are basic flaws and unanswered questions. Please do not construe our comments as in any way supporting this plan. The District is commenting as required because it is clear that the NYSDEC is not heeding the warning of the District by placing the interest of the public water supplier at risk. Under whatever pressure the NYSDEC is proceeding without adequately answering key questions, the Bethpage Water District will be forced to take its necessary steps to oppose this current plan.

Although the NYSDEC has provided a written response to our past comments, we reiterate that making statements to the District that "all is well" with the plan, without the necessary supporting data, is cavalier given the history of the inaccuracy of modeling on this project and the severity of the potential for public supply well impacts. Accordingly, the following previously submitted comments still need to be addressed to the satisfaction of the District, with supporting data, to demonstrate that this plan will not adversely impact the supply wells.

1. The sampling results of July 2005 show vinyl chloride at contamination concentrations of 187 and 183 ppb at RW-1MW-2 and RW-1, respectively. Vinyl chloride has been detected on site most recently in GP-3, but has not been detected in any off-site wells in this area until now. The GM-38 wells are non detect for vinyl chloride. Also, in the same two wells, contaminant concentrations of 476 and 708 ppb cis-1,2-dichloroethene were detected. The GM-38 sample results were 2.1 ppb and 8.3 ppb. In addition, the trichloroethene (TCE) concentration at RW-1 was 327 ppb, as compared to 1,350 ppb at GM-38D2. Based on the proximity of RW-1 to the District's public supply wells, the

H2MGROUP



presence of excessive vinyl chloride contamination and cis-1,2-dichloriethene in RW-1 and the lack of information regarding source, path and concentration of contaminants, RW-1 cannot be permitted to pump as an extraction well as it will put the public supply wells at risk.

2. The results of the sampling at RW-2 revealed a TCE concentration of 185 ppb, as compared to 1,350 ppb TCE at GM-38D. Regardless of any attempt to interpret the data / model to state that the extraction well is in the hot spot, the laboratory data proves that it is not. The laboratory data has confirmed that RW-2 is not located in the hot spot.

3. With regard to the capture zone and hot spot maps, we cannot agree that RW-1 or RW-2 are in the hot spot. The laboratory data confirms that neither well is in the hot spot. The maps conveniently show the hot spot of the plume in and around both extraction wells, when the real laboratory data proves otherwise. What information are we to use in making critical decisions, what we think can be (theoretical model) or what we know to be (actual laboratory analyses)?

4. With the recent completion of the recovery wells, at a minimum, the well at the end of North Windhorst is located outside the hot spot to the east and is within the influence of the District's Plant No. 4. Hydraulic test data has not been provided for RW-1, but based on our evaluation of its location and proximity to Plant No. 4, RW-1 is also likely within the influence of the supply wells at Plant No. 4. The District remains significantly concerned that the recovery wells will further draw the elevated contamination closer to Plant No. 4 and further within its influence. Any plan that results in the potential for further contamination of the public supply wells is unacceptable.

5. As you know, the design of the existing air stripping system at Plant No. 4 can treat a maximum influent concentration of 600 ppb down to an effluent of 2 ppb. The design was prepared in 1993 based on the very limited information available at the time as compared to today. As you know, the District has a "non-detection" policy regarding VOCs in its treated water supply. Accordingly, a design of 600 ppb down to 2 ppb would be equivalent to a treatment of 150 ppb to non-detect. Based on the potential of up to 250 ppb, the District will likely experience detections in the treated effluent. This would cause the District to be forced to remove the plant from service. Removing the plant from service would have a serious impact on the District's ability to meet peak demand and fire flow conditions since it is the District's largest supply facility. As such, the District cannot be in agreement with any action that could cause the plant to have to be taken off line. It is the District's strong opinion that the recovery well is not located in the correct position. The well should have been located within the highest known concentration area at Arthur Avenue to maximize mass removal and help minimize the significance of the impact at Plant 4.

6. Based on the above, should the contamination concentrations at Plant No. 4 become too excessive to treat, as determined by the District, the District will be forced to shut down the water supply facility. Should this situation occur, the District will be seeking cost recovery from Grumman and the Navy as required for either improving the treatment system or replacing the plant completely.

With regard to the 90% design documents, the following comments are provided for your consideration:

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1. The permanent access road to the treatment plant originates from the east end of Sophia Street. The property from 120 feet west of the end of Sophia Street to the end of Sophia Street is owned by the Bethpage Water District. An easement agreement with the Water District to enter and exit the access road from Sophia Street must be in place prior to the completion of the design.

2. Correspondence from the Navy indicated that construction is planned to start in March of 2006. Many general construction aspects of the project require permitting from the Town of Oyster Bay. What is the status of the Navy's permitting process with the Town?

3. The treatment system is stated to operate for a period of no less than 5 years, unless area groundwater contamination is at or below 2 to 5 parts per billion (ppb), and no more than 10 years, unless TVOC concentrations in individual monitoring wells are at or below 100 ppb. First of all, a 10 year maximum operation is unacceptable should groundwater contamination remain above 100 ppb. Secondly, the stated operational parameters are exactly the reason we continue to disagree with the location of the extraction wells. Conveniently, with RW-2 (185 ppb TCE) not being located within the 1,400 ppb TCE hot spot, there exists the potential for a pre-mature system shut-down by the Navy prior to the full remediation of the area. Time of operation should not be a criteria, groundwater contamination should. Also, the plan states that the Navy may shut down a well or modify extraction rates to optimize performance, but there is no mention of any performance basis in making such a determination. The NYSDEC must have regulatory control over the system performance and operation, not the Navy.

4. Vinyl chloride (187 ppb) was found in extraction and monitoring wells at RW-1. There have been no detections of vinyl chloride in any other off-site monitoring wells in the area. There is no data as to the source, path, extent, concentration, etc., of vinyl chloride contamination in the area, yet a design influent of 300 ppb has been selected. Please provide the basis of selecting this design influent.

5. The plan states that the number and locations of injection wells will be determined after acquiring additional hydrogeologic data and performance data on the initial injection wells. This is a statement of work that should be done during a study or design phase, not a construction phase. How can an extraction / injection remediation system be designed and constructed without knowing how or where the treated water is going to be injected? Important basic treatment system information continues to be lacking in the plan.

6. The plan states that equipment will be sized to prevent the discharge of contaminants to the atmosphere or the groundwater in excess of permitted or regulated values. This is too vague. The not to exceed value should be stated. For treated water being injected into the ground, the value should be less than 0.5 ppb.

7. Statements made regarding factors that need to be in place to make the remediation system effective include the long term operation and maintenance of VOC removal systems at three Bethpage public supply well fields for at least 30 years, or until treatment at the public supply wells is no longer required, or Bethpage decides to shut down the well fields. First, Bethpage operations should be in no way connected to the effectiveness of the remediation system

performance. Second, we do not understand the connection between the Bethpage operations and the treatment system effectiveness given it is stated that the Bethpage wells could operate for 30 years or be shut down tomorrow?

8. The plan states a vinyl chloride contingency plan is to be in place to deal with large quantities of vinyl chloride that may be encountered from an upstream contaminant source. This statement contradicts the fact that the plan is proceeding without any information on the excessive vinyl chloride contamination discovered at RW-1. Since the NYSDEC has no data on vinyl chloride, how can a contingency plan possibly be put in place prior to a sufficient study? Since the NYSDEC is proceeding with the current plan, a vinyl chloride contingency plan based on no data will unfortunately be of little help should the public supply wells be impacted with vinyl chloride. Please explain how a contingency plan will prevent vinyl chloride contamination from entering the public supply wells.

9. The plan states that discussions with the NYSDEC have already revealed that a State Pollutant Discharge Elimination System (SPDES) Permit will not be issued by the NYSDEC, even though an application will be made. If an application is made, and a permit is not granted, how can the discharge be permissible under this plan?

10. In the potable water line specification, the referenced meter equipment must be "purchased through" not "supplied by" the Bethpage Water District. Also, the specification refers to the meter and RPZ being installed along the public right-of-way. Please note that the referenced location is not a public right of way, but is Bethpage Water District property. Further, the specification states that the subcontractor will tap the existing water line. Please amend to state that the subcontractor prepares for the tap, but the Water District performs the actual tap.

11. The air stripper specification infers that a nozzle assembly will be used to distribute influent water over the packing material. Details of the nozzle system were not provided, but should be included in the specifications. Nozzle distributors have been known to fail, resulting in short-circuiting of the packing material. A distribution tray should also be used to ensure that adequate water distribution occurs should a nozzle fail. Also, instrumentation should be included in the form of a low pressure safety circuit on the influent line to shut the system down on nozzle failure. When in normal operation, a certain water pressure will be created by the nozzle operation. Should a nozzle fail, the inlet water pressure will decrease. Such systems have been required by the Health Department as a safety against short-circuiting within the tower and inadequate treatment.

12. Air flow requirements must be strictly adhered to for successful treatment. A failure circuit is described in the specifications such that should a low air pressure at the blower outlet be present, the system will shut down. An air flow safety should also be included such that if the blower is not producing the required air flow, while still satisfying the pressure safety, the system should still shut down since treatment effectiveness is being compromised.

13. A caustic feed system is included in the treatment process. Please explain the purpose of pH adjustment, including the pH objective prior to injection. Given the natural pH of the

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groundwater and the affect on pH by the air stripping process, we are unsure as to the purpose of the pH adjustment system.

14. The carbon polishing system for water treatment will consist of two (2) 20,000 pound carbon loaded vessels. The piping arrangement is described as being in series or parallel, allowing for the switch of primary and secondary carbon treatment and actually taking a vessel off line and treating the flow though one vessel. Typically, the manufacturer recommends no more than a 700 gpm flow through a single vessel. The proposed system will potentially have 1,100 gpm flow through one vessel. The manufacturer should confirm that this operation will not adversely impact the treatment objectives.

15. The system is to operate continuously, yet there is only an uninterruptible power supply (UPS) proposed for the PLC control system. Emergency power generation for the entire treatment system should be required to ensure that the treatment system can operate during any and all periods of LIPA power outages.

16. Is this plant to be manned 24 hours a day, 7 days a week, for all the years of operation? There is an autodialer system included to notify someone that there has been an alarm or failure in the plant. Who is the autodialer going to call, and what is the response time? Downtime of the treatment system must be minimized.

17. The extraction wells are proposed to be operated by variable speed well pumps. Why are the well pumps variable speed if the flow rates are supposed to be the determining factors of the treatment system? Also, the variable frequency drives for the well pump motors are planned to be controlled by water level in the wells themselves. How is this pertinent? The well pumps are planned to be set at 150 feet below grade, which should be well below pumping levels, and the system is designed for flow rates of 300 and 800 gpm. Well pump output should be the controlling factor for the treatment system, not water levels. Nowhere have water levels been identified as a factor in the remediation system. Also, the plan states that the variable frequency drives will be set to maintain an operator selected speed. We also do not understand this process. If the purpose of the drive is to vary speed, why would there be a speed setpoint? We feel the drive should be controlled by a flow setpoint.

18. The described automatic blower shut-down sequence can result in untreated water cascading through the tower without any air flow. Prior to the blower automatically shutting down, the flow through the tower has to be stopped and a time delay has to be added so that any water in the tower is fully treated before the blower stops.

19. The purpose for the termination vault for future well connections must be further explained. It has already been clearly stated that a third well will not be included in the treatment process. Who, why, when, how will it be decided that a third extraction well is required?

Once the above comments have been reviewed, we would appreciate a written response so that we can understand how each comment is being addressed, if at all. The District would also like to be informed

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as early as possible as to the time and date of the public information session for this plan so that we can schedule ourselves accordingly.

Very truly yours,

HOLZMACHER, McLENDON & MURRELL, P.C.

Richard W. Humann, P.E.

cc: Board of Commissioners
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Anthony Sabino, Esq.
United States Senator Charles E. Schumer
United States Senator Hillary Rodham Clinton
United States Congressman Peter T. King
New York State Senator Carl L. Marcellino
New York State Assemblyman Joseph S. Saladino
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