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ENVIRONMENTAL

Steven M. Scharf, P.E.
Bureau of Eastern Remedial Action
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233

Subject:
Response to comments regarding Remediation Plan for GM-38D Area, Outpost Well Monitoring, and Hydraulic Effectiveness Evaluation, Northrop Grumman Facility/ Naval Weapons Industrial Reserve Plant, Bethpage, NY

Date:
31 March 2003

Contact:
Michael F. Wolfert

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mwolfert@arcadis-us.com

Our ref:
NY001348.0014.00001

Dear Mr. Scharf:

On behalf of Northrop Grumman Corporation, ARCADIS G&M, Inc has prepared this response letter to address comments submitted by several entities regarding the Remediation Plan for the GM-38 Area, the Outpost Monitoring Well Plan, and the Hydraulic Effectiveness Evaluation of the Onsite Groundwater Remedy related to the Northrop Grumman Facility/ Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY. The following comments have been received/reviewed:

- December 2, 2002 letter from H2M Group on behalf of Bethpage Water District (BWD) to Steven Scharf (NYSDEC).
- December 5, 2002 letter from H2M Group on behalf of South Farmingdale Water District (SFWD) and New York Water Service (NYWS) to Steven Scharf (NYSDEC).
- January 2, 2003 letter from Dvirka and Bartilucci on behalf of the Massapequa Water District (MWD) to Steven Scharf (NYSDEC).
- January 2, 2003 letter from H2M Group on behalf of South Farmingdale Water District (SFWD) and New York Water Service NYWS) to Carlo San Giovanni (ARCADIS).

Many of the comments are common to several letters. ARCADIS has, therefore, prepared this response letter to address all comments in a single response letter rather than address each comment letter individually. The following text addresses the comments and/or issues raised in the aforementioned letters. We have paraphrased the comments/issues raised, followed by our response.

1. Comment: The Remediation Plan for the GM-38 Area and the Outpost Monitoring Well Plan have been developed based on specific project goals, available data, accepted engineering practice, and groundwater modeling. It has been stated that groundwater modeling techniques have been used at this facility for many years as a tool to aid in decision making processes. In that regard, over the years, the existing groundwater model has been modified to meet the specific goals of the questions being asked. To date, however, no single comprehensive modeling report is available that chronicles and documents the majority of modeling completed to date.

Reply: In response to this issue, ARCADIS will prepare a comprehensive groundwater modeling report. The report will contain existing modeling reports as appendices and new text will be provided that integrates the reports and describes the goals/rationale for the various modeling efforts, to date. We anticipate that the report will be available for distribution in early April 2003.

2. Comment: Several comments have focused on the impact of implementing the GM-38 Remediation Plan. Specifically, the goals and expected results of implementing this plan have been questioned with regards to contaminant concentrations expected to remain in groundwater south of the GM-38 Area. It has been suggested that an additional remedial extraction well south of the GM-38 Area may be warranted.

Reply: In response to this comment, ARCADIS will be performing additional modeling analysis focusing on the benefit of an additional extraction well in the area south of the proposed GM-38 remedial system. Documentation will be provided that summarizes the results of the modeling described above. Additional documentation will also be provided that clarifies the results (to the south) associated with proposed GM-38 remedial system operation. It is expected that these results will be distributed by mid to late April.

3. Comment: It had been noted that "Table 1" of the October 30, 2002 Updated Model Report referenced average pumping in units of *million gallons per day*.

Reply: As pointed out, the table was improperly labeled and should have referenced *gallons per minute*. Pumping well data input in the model are set using units of days (time) and cubic feet (volume) converted from gallons per minute. The correct data was input to the model.

4. Comment: It was pointed out that the elevations of three SFWD wells have been simulated with incorrect elevations (off by 5 to 10 feet).

Reply: For completeness, these elevations will be corrected, however it is noted that these changes will not have any significant impact on model simulation results.

5. Comment: A large database of information has been collected from the Vertical Profile Boring (VPB) program. From these data, decisions had been made regarding the locations (depths) of screen zones for permanent monitoring wells. Several questions have been asked regarding the selection of permanent well screen zones based on the observed VPB data (specifically at VPB-39 and VPB-73 on the Northrop Grumman site).

Reply: In mid to late April, a report (the "Hydraulic Effectiveness Report") will be available for distribution. This report will include all of the data (related to the hydraulic effectiveness portion of the VPB program) collected as well as the rationale regarding the installation of the permanent monitoring wells. Explanations for where monitoring well screen zones were not placed at horizons where the highest VOC concentrations were detected during VPB installation will be provided.

6. Comment: Several questions have been asked regarding the selection of outpost monitoring well locations, depths, construction methods, and "trigger values". To date, information on these topics has been presented at TAC meetings and via meeting handouts.

Reply: In late-April or early-May, a report titled "Public Supply Well Contingency Plan" will be available. This report will address these questions and will include maps and tables that will enhance the readers understanding of the selected outpost well locations. Specific suggestions for well locations and/or screen placement that have been received/requested by interested parties will be considered.

7. Comment: The Remediation Plan for the GM-38 Area specifies a 5 ppb treated effluent goal. A comment has been made regarding the lack of conservatism in selecting this goal considering there may be large fluctuations in raw water concentrations. It has been requested that the design assumptions and design calculations be made available for review.

Reply: All design assumptions and any design-related calculations will be part of the Implementation Plan for the GM-38 remedy that will be developed and submitted by the Navy's Remediation Action Contractor (RAC), Foster Wheeler Environmental Corporation. A draft version of this document will be made available to the members of the Technical Advisory Committee for review.

8. Comment: Many groundwater monitoring wells and VPBs have been used to delineate the extent of the groundwater plume. A comment/suggestion was made calling for additional monitoring wells and confirmatory sampling downgradient of the delineated plume extent.

Reply: This comment has been offered previously (February 21, 2002 TAC meeting). The VPBs installed to date have adequately delineated the plume to the south. Additionally the Public Supply wells south of the delineated plume are currently clean. Therefore, the decision to install additional VPBs/wells to further delineate the plume has been set aside for a Phase 2 investigation, the need for which would be revisited at the time the Public Supply wells are impacted.

We trust that the above responses and/or the forthcoming reports have and will successfully address the comments and concerns offered in the four comment letters. Please call any of the undersigned if you have any questions.

Sincerely,

ARCADIS G&M, Inc.

Carlo San Giovanni

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