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LETTER AND COMMENTS FROM NEW YORK STATE DEPARTMENT OF HEALTH
REGARDING POTENTIALLY CONTAMINATED GROUNDWATER PLUME EMANATING
FROM GRUMMAN AND NAVAL INSTALLATION NWIRP BETHPAGE NY
08/19/2011
NEW YORK STATE DEPARTMENT OF HEALTH

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HEALTH

Nirav R. Shah, M.D., M.P.H.
Commissioner

Sue Kelly
Executive Deputy Commissioner

August 19, 2011

Massapequa Water District
Board of Commissioners
84 Grand Avenue
Massapequa, New York 11758

Dear Commissioners:

This letter is in response to your July 25, 2011 letter to Governor Andrew M. Cuomo, and your May 23, 2011 letter to Dr. Roger Sokol of the Bureau of Water Supply Protection, regarding concerns related to the plume emanating from the Grumman and Navy sites in Bethpage and its potential impact on Massapequa Water District wells.

With respect to well head treatment for public water supplies, the Department of Health agrees that preventing contamination of drinking water wells is preferable to well head treatment. However, we also know that well head treatment is an effective, proven method to provide drinking water that meets drinking water standards. The fact that many wells in Nassau County are being successfully treated using well head treatment is evidence of the effectiveness of this approach.

We share your concern that future changes to federal drinking water standards for volatile organic chemicals could pose new challenges to water systems that have to treat contaminated groundwater. While this bears watching, changes to the standards will not be in place for several years and it is unknown what changes will be promulgated, if any. We do know that the technologies already available for removing these contaminants are proven effective and robust. These technologies are being successfully used to treat drinking water at many locations, including wells currently impacted by the Grumman-Navy Yard plume. This knowledge gives us confidence that the technologies can remain effective if the drinking water standards are revised.

As noted in a March 2, 2011 letter from the Department to Massapequa Water Superintendent Mr. Stan Carey, we understand that the water district is in a position where it cannot control the contaminant plume and must depend on other parties to perform investigations and to report the findings of these investigations. The efforts that Massapequa Water has made, and is continuing to make, demonstrate that the utility and its administrators and operators are making diligent efforts to protect its source water quality and its customers from the threat of contamination.

For over twenty years, the New York State Department of Health has been involved in characterization and remediation activities at the Navy-Grumman site. As detailed in the attachment, since last September, our staff has participated in several meetings convened by Senator Schumer, and are familiar with the findings and recommendations from the "Remedy

Optimization Team Report for the Bethpage Groundwater Plume Remedy" prepared by the Navy's Technical Team for Optimization of the Bethpage Plume Remedy, which concluded that the general strategy of on-site source containment and off-site plume monitoring has been successful in reducing the impacts to down-gradient public supply wells, and acknowledged that known off-site groundwater contamination hot spots need to be effectively contained to reduce future impacts to the down-gradient aquifer. Furthermore, the team also recommended conducting an evaluation of the technical and economic feasibility of plume containment at its leading edge and consideration of other alternatives.

Currently, the NYSDEC is preparing a Proposed Remedial Action Plan (PRAP) for Operable Unit (OU) 3, which includes the most easterly plume emanating from the Bethpage Park area. The OU 3 PRAP will incorporate a number of the recommendations outlined in the Optimization Report. The draft plan is expected to be released for comment prior to the end of the summer.

The New York State Department of Health has and will continue to work with Federal, State and local agencies, and with the water districts to determine the most appropriate actions that will need to be taken to address the groundwater plume and to protect the public water supply wells from further contamination. My staff will continue to stay involved in remediation activities. Please contact Mr. Steven Bates, Acting Director of the Bureau of Environmental Exposure Investigation at 518/402-7860 if you have additional questions about the proposed remedy.

Sincerely,



Howard A. Freed, M.D.
Director
Center for Environmental Health

cc: S. Bates

As you know, at your request Senator Schumer convened a meeting which included representatives from USEPA, USGS, NYSDEC, NYSDOH, Nassau County DOH, Northrup Grumman, Department of the Navy and representatives from each of the affected water districts, including Massapequa. At this meeting, you presented the concerns as discussed in your letter: impact of upgradient public water supply wells, the continued migration of the plume towards the Massapequa wells, and the groundwater modeling used by Northrup Grumman to predict groundwater contaminant migration. I also understand your position that wellhead treatment for Volatile Organic Chemicals (VOC) contamination is not acceptable to the Massapequa Water District.

Senator Schumer directed the Federal agencies (USEPA and USGS) to evaluate the groundwater plume modeling used to aid in development of the groundwater remedy for the off-site plume, and convened a new advisory committee, the Southeast Nassau Water Committee, to address technical issues and concerns raised by the water districts. Senator Schumer also expressed concern with the selected remedies and asked for a full review of the cleanup plans.

The USGS in cooperation with the USEPA prepared the report "*The Simulation of Groundwater Flow in a VOC-Contaminated Area near Bethpage, Nassau County, New York – A Discussion of Modeling Considerations.*" The report concluded that the way the current model is being utilized ignores information on temporal variation of several factors such as: public-supply pumping; groundwater discharges from systems remediating VOC plumes; recharge and precipitation rates; and water levels and streamflows. This modeling approach also ignores the potential for future variation in the above factors. The discussion noted that consideration of transient phenomena such as pumping cycles, redirection of containment system waters for industrial use, and climate change scenarios may help formulate future hypothetical simulations. It was also noted that public domain computer programs, USGS guidance reports on transient state calibration and uncertainty methods, and additional local and regional datasets are available to gain additional confidence in model evaluations and better judge their limitations.

As an outcome of Senator Schumer's meeting, the Navy convened a Remedy Optimization Team, made up of independent nationally recognized experts in the environmental remediation field. The team was established to evaluate the effectiveness of previous and ongoing remedies, evaluate the effectiveness of the current monitoring well network, and provide review of the USGS/USEPA evaluation of the Northrup Grumman groundwater modeling.

The "*Remedy Optimization Team Report for the Bethpage Groundwater Plume Remedy*" prepared by the Navy's Technical Team for Optimization of the Bethpage Plume Remedy concluded that the general strategy of on-site source containment and off-site plume monitoring has succeeded in reducing the impacts to down-gradient public supply wells. However, the Technical Team acknowledged that known off-site groundwater contamination hot spots need to be effectively contained to reduce future impacts to the down-gradient aquifer. The Technical Team agrees with the general assessment of the USGS's technical report and added that some of the noted modeling inadequacies can be addressed by improved modeling techniques, but that inherent limitations of any modeling effort at this large and complex site are likely to remain. The Technical Team recommended that the off-site monitoring network needs to be augmented to better quantify hydrogeologic parameters critical for improved groundwater flow modeling, to

better evaluate the on-site remedial measures currently in place, to better evaluate contributions to the plume from other non-Navy, non-Northrop Grumman Corporation sources, to better understand the overall plume's eastern and western boundaries and its leading edge, and to better monitor the plume's progress beyond its current leading edge. The Technical Team also recommends that an evaluation be conducted of the technical and economic feasibility of plume containment at its leading edge and of other alternatives, and that a comprehensive conceptual site model for all off-site groundwater contamination be developed, kept updated and be used as a dynamic tool to guide each successive monitoring, modeling, and treatment step.

Currently, the NYSDEC is preparing the Proposed Remedial Action Plan (PRAP) for Operable Unit (OU) 3, which includes the most easterly plume emanating from the Bethpage Park area. The OU 3 PRAP will incorporate a number of the recommendations outlined in the Optimization Report. The draft plan is expected to be released for comment prior to the end of the summer.