

N90845.AR.001831
NWIRP BETHPAGE
5090.3a

MINUTES FOR THE RESTORATION ADVISORY BOARD (RAB) MEETING HELD ON 1 APRIL
2015 AT THE TOWN OF OYSTER BAY BETHPAGE COMMUNITY CENTER NWIRP
BETHPAGE NY
05/15/2015
RESOLUTION CONSULTANTS

RESTORATION ADVISORY BOARD
MEETING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP),
BETHPAGE
TOWN OF OYSTER BAY BETHPAGE COMMUNITY CENTER
103 GRUMMAN ROAD WEST, BETHPAGE, NEW
YORK WEDNESDAY, APRIL 1, 2015

The Thirty-fifth (35th) meeting of the Restoration Advisory Board (RAB) was held at the Bethpage Community Center in Bethpage, New York. Meeting attendees included representatives from the Navy (Lora Fly, Tom Kreidel, Jim Tarr, Joe McCloud), Management Edge (Gayle Waldron), New York State Department of Environmental Conservation (NYSDEC) (Steven Scharf, Jim Harrington, Henry Wilkie, John Swartout, Walter Parish), New York State Department of Health (NYSDOH) (Steve Karpinski), United States Environmental Protection Agency (USEPA) (Robert Alvey, Peter Mannino), Nassau County Department of Health (NCDOH) (Joseph DeFranco) Town of Oyster Bay (John Ellsworth), Town of Hempstead (John Reinhardt) H&S Environmental (Al Taormina and Jennifer Good), Bethpage Water District (Michael Boufis, Ann Kenna, Thomas Scotto and John Sullivan), Massapequa Water District (Stan Carey and Joseph Tricarco), H2M (Rich Humann-BWD, and Paul Grainger-MWD), David Brayack (Tetra Tech), and Resolution Consultants (Brian Caldwell, Eleanor Vivaudou, Vincent Varrichio, Gordon Hicks, Valerie Thayer and Michael Zobel). RAB members in attendance were Sandra D’Arcangelo, Robert Horan, Ethan Irwin, Tim Cook, Jeanne O’Connor, Charles Bevilacqua, Eugenia Mazarra, David Sobolow, Rose Walker and Rosemary Styne. There were 40 residents from Bethpage and neighboring towns in attendance. The meeting sign-in sheet is provided as Appendix A.

WELCOME AND AGENDA REVIEW

The Navy representative, Ms. Lora Fly, welcomed everyone to the RAB meeting and presented the meeting agenda and the introduction of the new RAB members. Ms. Fly also introduced Gayle Waldron (Management Edge, serving the role of facilitator in support of the RAB), who then went over the Rules of Conduct to ensure that everyone is allowed the opportunity to comment. The Rules of Conduct are provided in Appendix A. Ms. Fly informed the attendees about navigation of the public website for NWIRP Bethpage (<http://go.usa.gov/DyXF>).

ENVIRONMENTAL RESTORATION PROGRAM REVIEW

Ms. Fly turned the meeting over to Jim Harrington, NYSDEC's Director of Remedial Bureau A. Mr. Harrington explained that this meeting was going to be a little different from the last meetings. He stated that the RAB members met prior to this meeting and wanted to explain the plume to clarify public understanding. The plume is comprised of two sites but is split into 3 parts. The original Grumman Property Complex is the first site. The groundwater that has left the Grumman property (OU2) is the second site. The Bethpage Community Park (Operable Unit [OU3]) is the third site. There are several Records of Decisions (RODs). The NYSDEC OU2 ROD was issued to the Navy, Northrop Grumman and Hooker Ruco for off-site groundwater. The ROD requires full delineation of the plume, treatment of hotspots as needed. A hotspot is defined in the OU2 ROD is an area of contamination that is much higher than the surrounding area, containing greater than 1000 parts per billion (ppb) Volatile Organic Compounds [VOCs]) and wellhead treatment to protect public water supply wells. Grumman also has a ROD for the groundwater associated with Bethpage Community Park (OU3). (OU3).

Mr. Harrington introduced the regulators: Henry Wilkie NYSDEC, Steve Scharf NYSDEC, Steve Karpinski NYSDOH, John Swartwout NYSDEC, and Rob Alvey EPA.

Mr. Joseph DeFranco of the Nassau County Department of Health (NCDOH) and Michael Boufis of the Bethpage Water District (BWD) were introduced to provide their perspectives. Mr. DeFranco stated that the NCDOH ensures that the tap water is safe to drink. BWD's water quality meets all Federal, State, and County standards. The water districts are required to perform sampling of their water prior to distribution, and the results are non-detect for VOCs associated with the plumes. Consequently, there is no cause for concern about the safety of the drinking water. Mr. Boufis stated that there is some public confusion about the difference between groundwater and drinking water. The groundwater is raw water extracted from the ground, which is then passed through the water districts treatment systems to remove contaminants prior to entering the distribution system as drinking water. The test results for VOCs in the distribution system can be found at the district or library. There are various sampling points within the distribution system where BWD collects random samples. The BWD has a new 2 million gallon storage tank and is currently drilling a new well that will be outside of the plume. All are welcome to visit the treatment systems for a tour. The treatment system is monitored 24 hours a day, seven days a week.

Mr. Harrington then explained the basics of the offsite groundwater investigation, and the question was asked why does it take so long to install a well or boring? Brian Caldwell of Resolution Consultants responded that the Navy started an aggressive drilling schedule to delineate the plume in 2009. All the data for the wells that are currently scheduled to be installed will be obtained by mid-2016. The Navy attempts to find locations that minimize inconvenience to the public, including ingress/egress and noise. The Navy provides advanced notice to nearby residents. Drilling takes 6-8 weeks to complete a vertical profile boring (VPB) and 4-6 weeks to install a permanent monitoring well. Additional time is needed to analyze the results and pick depths for monitoring wells. There is usually a 2-3 week lag time between VPB installation and monitoring well installation at individual drill locations.

Mr. David Sobolow, the RAB Co-chair, then introduced himself and the members of the RAB that were present. Mr. Sobolow then stated that questions should be directed to the RAB. If the RAB could not answer them they would ask the appropriate expert.

Discussion questions were as follows:

- 1 Is drilling mud from the trucks a health hazard? No. The mud from the drilling operations is containerized. VOCs that were contained in the mud will have volatilized during the drilling process. The air near the drilling operations is continuously monitored during the drilling.
- 2 Was there ever a time from the 1940's until now when BWD drinking water was not tested for all the contaminants that are tested for today? In the late 1940's the Grumman facility had its own drinking water well complaints of bad taste in the water. NG determined that there were contaminants in the water and switched to the BWD to obtain water. VOCs testing began in the late 1970's per the EPA regulations.
- 3 After 30 years of working on this cleanup please explain how the installation for wells in various locations will contain the plume from spreading further? The ROD does not require removal of all contamination. It requires that the Navy and NG keep additional contamination from moving off-site, protect public water supply wells, and track the plume to investigate and address hot spots if one is found. The On-site Containment Treatment System (ONCT), located at the southern boundary of the former Grumman facility is adequate for preventing any further contamination from leaving site. Protection of the water supply wells is accomplished through groundwater monitoring and wellhead protection, and investigation and addressing of hotspots is being accomplished through the offsite drilling program.

- 4 Is the water from New York American Water (NYAW) safe to drink? Yes. NYAW is treated and tested the same as the other water districts.
- 5 There is a new granular activated carbon (GAC) unit on Seaman's Neck Road but you state there is no contamination there; why was it built? As shown on the handouts, the offsite plume could be migrating in that direction; low levels of VOCs have been detected, but they are below the drinking water standards. The GAC unit was installed as a protective, proactive measure in the event NYAW detects VOCs above drinking water standards in raw groundwater. It is better to protect the wells than to leave them unprotected.
- 6 If the ONCT system is operating at 100% then what is the contamination that is being seen upgradient of Bethpage Plant 6? This is believed to be contamination that left the site before the ONCT began operation.
- 7 When can we find our results of drilling? After the data is validated it becomes public knowledge and can be found at the information repository at the Bethpage library. It may not be easily understandable. An independent consultant will be hired to help the RAB members understand what the data means. This will be funded by the Navy. The Navy is also preparing fact sheets for each drilling location that will be available as soon as possible after the data is validated.
- 8 Why is communication from the water districts and the county officials almost non-existent? The RAB needs to be a liaison. There needs to be a better way to communicate with the RAB. You are welcome to send questions to Lora Fly who will forward them to the correct person. If you would like it done differently, please contact her. You may also contact David Sobolow, the RAB Community Co-Chair.
- 9 Why has it taken over 25 years to address plume? NYSDEC has been providing oversight to the Navy and NG over the years, and many activities have been completed towards addressing the plume. For example, the ONCT, which runs 24/7 has been installed and designed to eliminate any more offsite migration, and removes 35 gallons of VOCs every month. An offsite hotspot was detected (GM 38 hotspot) and a treatment system was installed 6 years ago. The data shows it has successfully addressed this hot spot. The Navy has recently identified the hotspot north of BWD Plant 6. Work is underway to address this hotspot as well.
- 10 Are any of the water supply wells closed south of Central Ave? BWD has voluntarily taken this production well offline.

- 11 How can I get results, and if the results are non-detect, why are you drilling again at my location? Once the data is available, the Navy or its representative can provide you with your specific results. The wells are installed to confirm the VPB results and track the path of the plume. If the results of the VPB were non-detect, the well is put in as a proactive, protective measure to serve as an early warning to the water districts in the event there is any future plume migration.
- 12 How much has Navy spent on clean up? Over 80 million.

Discussions occurred regarding recent legislation and the progression of addressing the OU2 plume:

Mr. Harrington stated that NG has not signed a Consent Order but they are entering into negotiations with NYSDEC. In December, Governor Cuomo signed NY Law 513, which requires a report by the New York State Department of Environmental Conservation (NYSDEC) focused "on utilization of hydraulic containment and state of the art remediation practices ... without utilizing well head treatment" to address groundwater contamination migrating from properties previously owned by DON and Northrop Grumman in Bethpage, New York. As part of that effort, NYSDEC is hiring an independent standby engineering contractor, who will evaluate if full hydraulic containment is feasible. NYSDEC estimated that the evaluation will be completed by the end of the year. The DEC has a planned budget for \$150,000 to do the study. The study will evaluate if full hydraulic containment is a viable option for plume.

Last summer a hotspot was identified upgradient of BWD Plant 6. The Navy's preliminary Strategic Plan includes a pilot study to determine the best groundwater extraction point for the hotspot. The Navy is looking for NYSDEC concurrence on that preliminary Strategic Plan. There will be additional characterization to delineate the hot spot to ascertain if there are also non-Navy contributors. The Navy noted that they intend to provide all funding for wellhead treatment systems attributable to the Navy.

Mr. Joseph Saladino, an assemblyman from the ninth district spoke. He stated that last year he heard a concern and wanted to get a bill passed in order to understand what is going on. He spoke to the NYSDEC and NYSDOH to evaluate and implement a plan to hydraulically contain the plume and move forward. He is committed to getting funding for NYSDEC to evaluate such a plan. He estimated the cost of such a remedy would be in excess of \$175 million. He has worked with the NYSDEC to get the plan in place to start a Request for Proposal (RFP) and contract for an independent engineering firm to evaluate the plan.

Mr. Saladino explained the concept of the plan, which is to install extraction wells along Southern

State Parkway, recover groundwater, pipe it north to facility treatment facility on NG property, and re-introduce it as groundwater. He noted that this approach has been used successfully in other parts of New York. Mr. Harrington stated that the bill signed on December 21 was to evaluate options, hire a contractor, and deliver a report that lays out the options including. The data that will be evaluated is from reports and studies that the NYSDEC has in their possession. The results of this report will indicate if full containment is a feasible remedy for the NG and Navy plumes. NYSDEC will hire a third party engineering company that has no COI with NG and Navy. The COI question will be answered on April 6. Once that is complete, an updated scope of work will be sent out and NYSDEC will select a contractor to implement the scope of work.

Mr. Saladino stated that the sponsor memo has the option to include stopping the plume and fully remediating it, using wellhead treatment as the last option. Mr. Sobolow asked if Mr. Saladino has been able to sit down with a hydraulic engineer to see if full containment is actually feasible. Mr. Saladino stated he has worked with firms and had conversations with engineers who have reviewed reports about Purex, which is one of the sites this conceptual approach was modeled after.

- 13 Please explain the "danger/concerns" of living over a contaminated plume? Mr. DeFranco and Mr. Karpinski answered the question as follows: There is none because the depth of contamination in OU2 is several hundred feet deep and there is clean soil and water isolating the contamination from impacting homes. Soil vapor intrusion (SVI) occurs when contamination is shallow; the only place this has been found is in the neighborhood immediately east of former NWIRP Bethpage. Soil vapors were successfully addressed by the Navy and are continuing to be addressed through the operation of an onsite soil vapor extraction system, to minimize risk in that neighborhood.
- 14 When or where do they announce RAB meetings? The RAB meetings are posted on the Navy website and in local paper. Flyers are also distributed in areas where they are currently drilling. The RAB Co-chair also put a notice in the local supermarkets. You may also sign-in for email notifications.
- 15 How is Hooker Ruco site affecting comingling of plumes at the ONCT? Is it addressed by NG with the ONCT system? Hooker Ruco is an on the National priority list and groundwater remediation is being addressed by EPA. There is a remedy in place for the Hooker Ruco site.
- 16 Why do I need to go to Bethpage library to get information? Is there a place on line? Yes, there is a place on line; the address is in the fact sheet provided with tonight's meeting. NWIRP Bethpage (<http://go.usa.gov/DyXF>).
- 17 Should there be other public meetings? Are two meetings enough? The Navy can add a meeting but only for the OU1 and OU2 Navy sites, not for NG sites.

- 18 In a meeting like this, why is there never a discussion as to how many people have been diagnosed with cancer in the area? Steve Karpinski, NYSDOH, responded that TCE has been identified as human carcinogen. The connection with the chemical has to include exposure by drinking, breathing, or getting it on the skin. The drinking water is at non-detect levels, therefore there is no exposure. Back in the early 70s, there may have been exposures but they were of unknown duration and dose. Based on NYSDOH evaluation in the area, there is not a demonstrable difference between the Bethpage community and that of the general population. In the U.S., Cancer is a common disease that 40% of the population will experience cancer. Cancer clusters are defined when a lot of cancer occurs in a specific area. There are many types of cancer. A very high number of the same type of cancer is needed in a population to define a cluster. It is difficult to make the connection with environmental causes, and there is no evidence or reason to make the connection here.
- 19 The NYSDOH limit is 5 parts per billion (ppb) TCE. Can you assure that, based on evidence; it is okay to be living in areas close by the plume? Living in close proximity does not mean there is an exposure to the deep untreated groundwater. If there is no exposure there is no danger.
- 20 Are there any areas of residential receptors that have not been identified? Mr. Karpinski stated that there have been no identified residential receptors.
- 21 Was there a health risk before? Mr. Karpinski answered that there may have been before EPA, NYSDEC, and NYSDOH regulations were implemented in the late 1970's, but not since the implementation of these regulations.

In response to a question to clarify what remedial measures have been implemented by the Navy, Lora Fly stated that there has been extensive remediation of the groundwater by the ONCT. The GM-38 hotspot treatment plant has been running since 2009. Four water districts have also had wellhead treatment installed, all funded by the Navy. Wellhead treatment is needed because as the plume migrates, portions of it follow more permeable sections of the aquifer, or plume fingers, at different levels in the aquifer. This is a result of the underlying geology. Because of these fingers, wellhead treatment would still be needed on the water supply wells.

Mr. Saladino asked if contaminant is not feasible, is the Navy committed to paying for wellhead treatment. Lora Fly stated that all the water districts impacted by the Navy plume have the Navy's commitment to pay capital and operation and maintenance costs for wellhead treatment. Sometimes payment is upfront like South Farmingdale, and sometimes it is negotiated as they go like other water districts. If outpost monitoring wells show contamination then negotiations are started with the water district as to the best way to address the contamination with wellhead treatment.

22 Has a chemical solution been considered? Long Island is a sole source aquifer. Adding a chemical to treat in the long run is not an acceptable solution to NYSDEC, and is not technically feasible due to the depth of the contamination and hydraulic characteristics of the aquifer.

23 Is the Lloyd aquifer contaminated? No.

Mr. Saladino questioned whether any remediation has been done. Mr. Harrington stated that the groundwater data shows that south of the ONCT, contamination has stopped migrating off site and that wellhead treatment has made it possible so that no one is exposed. Water samples collected from all water district distribution points have concentrations at non-detect or 0.5 ppb.

APPENDIX A

1 APRIL 2015 RAB MEETING SIGN-IN SHEET AND RULES OF CONDUCT

35th RAB Meeting for NWIRP Bethpage
 April 1, 2015
 Sign-in List

Name (Print)	Phone number and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
Ad TAORMINA			
Mike Boufis			
Dave Brayock			
Bill Seevers			
THOMAS SCOTTO JR			
Ann Kenna			
JOHN R SULLIVAN			
Valerie Thayer			
MIKE TOWN			
Rich Catalano			
SAUL ASH			
Joanne Perico			
Joseph Tricario			
Stan Carey			
Bill Merklin			
Vincent Uarricchio			

**35th RAB Meeting for NWIRP Bethpage
April 1, 2015
Sign-in List**

Name (Print)	Phone number and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
Gordon Hicks			
Mike Zobel			
Rich Humann.			
Jen Gaud			
J. TARR			
JOE MULLONS			
Tom Kreidel			
Ethan Frumir			
Frank Anastasi			
Ahren Tatro			
P. B. ALVEY			
Brian Caldwell			
Michael Hampton			
CAROL TETA			
Prudence LaScala			
Alex Susskind			

35th RAB Meeting for NWIRP Bethpage
April 1, 2015
Sign-in List

Name (Print)	Phone and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
Rosemary Styne E. Mazzala			
MARY STYNE			
PAUL GRANGER			
John Ellsworth			
TIM COOK			
Ellen Braierlan			
JANET MAASS			
Anne Conroy			
ROBERT HORAN			
CAROL ZITO			
R. DEL PRETE			
M. HACKER			
DAVID SOBOLOW			
Lori Leistman			
Steven Scharf			

**35th RAB Meeting for NWIRP Bethpage
April 1, 2015
Sign-in List**

Name (Print)	Phone number and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
Diane DeRosa			
Robert DeRosa			
John Reinhardt			
Peter Schimmel			
Laura Sadler			
Jose Valdez			
JAMES WELI			
Charles Bevilacqua			
Thomas Reilly			
Annetta Korsun			
Matthew Nune			
Tom Fosoull			
Steve Ronne			
Eleanor V. Nardou			

35th RAB Meeting for NWIRP Bethpage
April 1, 2015
Sign-in List

Name (Print)	Phone and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
Carl Bonafide			
Carl Bonafide			
Gleb Perelman			
WALTER PARKISH			
HENRY WILKIE			
WILLIAM SCURIE			
Peter Mannino			
Emily Dorley			
SANDRA DIARCANGELO			

**35th RAB Meeting for NWIRP Bethpage
April 1, 2015
Sign-in List**

Name (Print)	Phone number and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
Terri Buch			
Cockaine Koller			
Thomas Ng			
Deanna Ver-Souvo			

**35th RAB Meeting for NWIRP Bethpage
April 1, 2015
Sign-in List**

Name (Print)	Phone number and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
EDWARDS OLMSTEAD			
Marie Pustorino			

**35th RAB Meeting for NWIRP Bethpage
April 1, 2015
Sign-in List**

Name (Print)	Phone number and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
Jeanne O'Connor			
CHARLES BEVILACQUA			



GROUND RULES
APRIL 2015 RESTORATION ADVISORY BOARD (RAB)

NAVAL WEAPONS INDUSTRIAL
RESERVE PLANT BETHPAGE
LONG ISLAND, NEW YORK

04/01/2015

Naval Weapons Industrial Reserve Plant Bethpage RAB Ground Rules



- **Respect others:**
 - One Speaker at a time
 - No interruptions
 - No side conversations
 - Ask questions at designated times
- **Listen and stay open to all points of view.**
- **Stay focused on the topics; avoid digressions.**
- **Turn cell phones and /or pagers off, or on vibrate, and respond during breaks, except for emergencies.**