

**Picatinny Arsenal Environmental Restoration Advisory Board
Meeting Minutes, Wednesday, March 27, 2013
Cannon Gate Conference Center – Picatinny Arsenal, New Jersey**

Attendees

Name	Organization
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Members

Ted Gabel	Government Co-Chair, Picatinny Arsenal
Mark Hiler	Community Co-Chair, Rockaway Twp. Env. Commission
Tom Brackin	Community Member, Rockaway Township
Brad Carroll	Community Member, Tilcon
David Forti	Community Member, Rockaway Township resident
Paul McGinley	Official representative of Wharton Borough
Pat Matarazzo	Community Member, Township of Verona; NJ Clean Water Council
Virginia Michelin	Official representative, Morris County, Planning & Development
Anne Pavelka	NJ Department of Environmental Protection (NJDEP)
William Roach	U.S. Environmental Protection Agency (EPA)
Lisa Voyce	Community Member, Mine Hill resident
Cara Sileno	Official representative of Rockaway Township

Members of the Public, Support Staff for RAB, Picatinny, EPA and NJDEP

Lt. Col. Jason Mackay	Garrison Commander, Picatinny Arsenal
Larry Brady	Picatinny Arsenal Legal
Tom Solecki	Picatinny Environmental Management Division
Jim Kealy	NJ Department of Environmental Protection (NJDEP)
Frank Misurelli	Picatinny Public Affairs Office
Ryan Steigerwalt	Weston Solutions, Inc.
Nicole Sharkey	Weston Solutions, Inc.
Lisa Szegedi	ARCADIS
J.B. Smith	Picatinny Environmental Management Division
Neil Julian	Picatinny/ARDEC
Sybil Lusardi	Picatinny/ARDEC
Barbara Dolce	Subsurface Solutions
Tom Crone	ARCADIS
Joanne Koslasky	Resident, Hopatcong
Henry VanDyke	Resident, Rockaway Borough
Katrina Harris	Bridge Consulting Corp.

Mr. Ted Gabel convened the meeting at 6:36 p.m. He welcomed all to the meeting and thanked everyone for attending.

Attendance

Ms. Harris took attendance of the Restoration Advisory Board (RAB) members.

Correspondence

Mr. Gabel asked Ms. Harris to review correspondence received since the last meeting. Ms. Harris stated the following correspondence had been received:

- A letter from the Borough of Rockaway appointing Mr. Thomas Trapasso as a community representative from the Borough of Rockaway.
- An email from Peter Tabbot of Rockaway Township asking Mr. James Breiten to be added as an alternative representative for Rockaway Township.
- An email from Cliff Morris of Tilcon stating Mr. Brad Carroll would be replacing him as Tilcon's representative.

Mr. Gabel noted comments on the 26 Sites Proposed Plan had been received from Board member, Mr. Michael Glaab, and from the New Jersey Department of Environmental Protection.

Resolutions, Motions, Significant Events

- A motion was made by Mr. Mark Hiler, seconded by Mr. David Forti, and unanimously adopted to approve the October 11, 2012 meeting minutes.
- The next meeting timeframe was set for early June 2013.

Agenda

Slide 1 (of Mr. Gabel's presentation): Agenda for March 27th Picatinny Arsenal RAB

Mr. Gabel reviewed the meeting agenda.

Technical Assistance for Public Participation Contract

Slide 2:

Mr. Gabel gave an update on the status of the Technical Assistance for Public Participation (TAPP) contract. He reminded the Board a contract for \$22,413.16 was awarded in fiscal year 2012 and the Picatinny procurement office had allowed funds to be used through March 2013 which had totaled \$19,389.23 through February billings. Mr. Gabel stated he had been able to procure one more option year for \$23,000. He noted the contracting officer suggested some of the \$23,000 be pulled back so it can be used and then request another purchase order for fiscal year 2014.

Mr. Gabel stated use of the TAPP contractor has slowed as documents have slowed. He reminded the Board Doodle polls have been sent asking Board community members if they want the TAPP contractor to review reports as they are submitted. He said recent reviewed by the TAPP contractor were the Green Pond Brook Long-Term Monitoring Report, the Former Burning Grounds Hybrid Cover, the MidValley Groundwater Remedial Design, and the EPA Memorandum on No Further Action Proposed Plan. He displayed a list of documents that will be submitted soon and asked if the Board would like to vote on the review tonight or continue with Doodle polls. Ms. Virginia Michelin advised she found it helpful to review the summary of the report provided by Mr. Gabel and then decide if additional support is needed. The Board community members agreed each document should be the topic of a Doodle poll.

Military Munitions Response Program/Lakes Remedial Investigation Update

Slide 1 (of Mr. Steigerwalt's presentation):

Mr. Gabel introduced Mr. Ryan Steigerwalt of Weston to give an update on the Lakes Munitions Response Site Remedial Investigation. Mr. Steigerwalt explained the Picatinny Military Munitions Response Program includes nine munitions response sites on Picatinny. He stated the program addresses potential explosives safety, health and environmental issues caused by past munitions related activities.

Slide 2: Mr. Steigerwalt displayed an aerial photograph showing the nine sites.

Slide 3: Mr. Steigerwalt showed an aerial photograph of the Lakes Munition Response Site and noted it includes both Picatinny Lake and Lake Denmark.

Slide 4: Mr. Steigerwalt advised most of the Lakes Munitions Response Site is underwater, but it does include some land portions. He advised the land portions are 17 acres and the water portion is 108 acres. He reminded the Board the Lakes Munitions Response Site is in the remedial investigation phase of CERCLA (Comprehensive Environmental Restoration, Compensation and Liability Act) where the objective is to collect enough data to define the nature and extent of munitions and explosives of concern and to supplement the existing data and survey information. Mr. Steigerwalt advised the investigation included both land and water geophysical surveys and dive work to investigate anomalies. He said the results will be used to assess the potential explosive hazards that might exist in the Lakes Munitions Response Site.

Slide 5: Mr. Steigerwalt first discussed the investigation of Picatinny Lake. He stated munitions and explosives of concern (MEC) might be present at Picatinny Lake due to explosive-related accidents at former production buildings, testing of a three-inch Barbet gun, storage, pyrotechnic testing, and the 1926 explosion. He noted munition debris has been found along the Picatinny Lake shoreline, and a previous underwater magnetic survey of the Lake identified 125 anomalies. Mr. Steigerwalt stated there were some data gaps which led to the performing of additional geophysical studies in the deepest portion of the Lake.

Slide 6: Mr. Steigerwalt discussed the surveys performed at Picatinny Lake. He advised the first objective was to assess the bottom conditions of Picatinny Lake using side-scan sonar surveys

and to identify any obstacles that may impact performing digital geophysical surveys. He explained this type of survey images the bottom of the Lake to see if there is anything that needs to be maneuvered around and also provides some bathymetry data to determine when to raise and lower the sensor to maintain constant altitude. Mr. Steigerwalt said the underwater geophysical surveys were conducted using electromagnetic sensors which can detect all metals, not just ferrous. He stated 2.8 miles of transect surveys were completed in July 2013 and 25 anomalies were selected for investigation in November 2013.

Slides 7-11: Mr. Steigerwalt showed photographs of the surveys and dive work being conducted. He explained the divers had video capability and safety personnel on the boat were able to assess the diver's location and any recovered items. He showed examples of the items recovered from Picatinny Lake and stated one MEC item was found and some munition debris, but the majority were cultural debris or scrap items.

Slide 12: Mr. Steigerwalt showed an aerial photograph of the Site with the results of the previous survey results and the locations where transect surveys were recently performed.

Slide 13: Mr. Steigerwalt showed an aerial photograph of the Site with a list of the anomalies and the recovered items. He stated some expended flares were recovered and a smoke canister.

Ms. Barbara Dolce asked what the visibility was at the bottom of the Lake. Mr. Steigerwalt said it was not very good, but they were able to pinpoint the location of the anomalies. Col. Mackay asked if sensory equipment was used to locate the anomalies, and Mr. Steigerwalt confirmed hand-held all-metals instruments were used. Mr. Mark Hiler asked how deep the instruments were able to detect anomalies. Mr. Steigerwalt responded that detection depends on the size of the item, with larger items being able to be detected at greater depths. He stated most of the items were near the surface of the Lake bottom.

Slide 14: Mr. Steigerwalt next reviewed the work done at Lake Denmark. He stated the Lake was part of a 60mm, 81mm, and 4.2 inch mortar testing range and overlapping 20mm range. He said a previous survey had identified several anomalies which were investigated, as well as conducting addition surveys in the northern portion of the Lake. He noted there is heavy vegetation in the northeastern portion of the Lake which makes it hard to access.

Mr. David Forti asked if the testing involved dropping the mortars in the Lakes. Mr. Steigerwalt responded that the mortars would be fired from the southern end of the Lake towards the north and east portions of the Lake. Mr. Forti asked if the mortars were live or practice. Mr. Steigerwalt said recovered items were practice. Mr. Gabel said anecdotal information suggests not all were practice rounds.

Slide 15: Mr. Steigerwalt showed a graphic of Lake Denmark with the location of firing points and impact areas.

Slide 16: Mr. Steigerwalt showed pictures of the boats used in the investigation. He advised Lake Denmark is shallower than Picatinny Lake, particularly in the northeastern portion. He advised underwater electromagnetic (all metals) geophysical surveys were conducted in

accessible portions of the Lake. He stated 3.08 miles of transect surveys were completed, and 10 anomalies were investigated.

Slide 17: Mr. Steigerwalt showed photographs of the sensor used and its deployment in the Lake.

Slide 18: Mr. Steigerwalt showed photographs of items recovered, including a 60mm practice mortar that was recovered close to the firing point.

Slide 19: Mr. Steigerwalt showed an aerial photograph of the Site, noting the red lines mark where the transect surveys were performed.

Slide 20: Mr. Steigerwalt showed an aerial photograph of the Site with the locations of the anomalies investigated and the items recovered. He stated most of the items were cultural debris and the “no find” designation is related to the geology of the Lake.

Slide 21: Mr. Steigerwalt reviewed the project schedule. He stated most of the remedial investigation field work is completed, with some work remaining related to the off-post site to be potentially completed in April 2013. He noted Picatinny’s Community Involvement Plan had been updated. He said the 300 Marsh Area letter report will be submitted to regulators in April and planned to be finalized in June 2013. He advised the draft Remedial Investigation Report will be submitted to regulators in July 2013, and the final report targeted for completion in October 2013.

Mr. Gabel advised the Army is planning to fund from Feasibility Study through the Record of Decision for all munition response sites except perhaps the off-post site.

Mr. Pat Matarazzo asked about the water quality of the Lakes. Mr. Gabel responded both Lakes are part of the Installation Restoration Program and have been extensively investigated. He said to summarize the results in a very general manner, he would say surface water results did not trigger any need for action. He said there may be some elevated levels in the sediment in Lake Picatinny which will be further evaluated in an upcoming Feasibility Study.

Mr. Matarazzo asked about fish tissue and acute or chronic bioassays. Mr. Gabel noted both types of studies have been completed. He said there are fishing restrictions based on the State’s analysis of the data which showed some PCBs and mercury in the fish.

Ms. Dolce asked if all the needed permissions had been obtained for the off-post work. Mr. Steigerwalt said there are still right-of-entry issues being worked on, but they are looking at non-intrusive surveys for the off-post site.

Installation Restoration Program/MidValley Groundwater Remedial Action Update

Slide 1 (of Mr. Crone’s presentation): Mr. Gabel introduced Mr. Tom Crone of ARCADIS to give an update on the implementation of the remedy for the MidValley groundwater. Mr. Gabel reminded the Board there had been a public meeting on the Proposed Plan for this site in June of

2012. He stated since that time ARCADIS had developed a remedial design and remedial action work plan and begun implementing the remedy.

Slide 2: Mr. Crone reviewed his agenda of topics noting he would briefly review the background of the site and discuss the remedial design concepts and the construction and implementation of the remedial action. He stated the TAPP contractor had reviewed the remedial design and prepared a briefing for the Board's community members. Mr. Crone said the remedy has been implemented, and the groundwater is undergoing treatment.

Slide 3: Mr. Crone reviewed the major phases of the CERCLA process, noting it begins with a remedial investigation where the site is characterized. He said the site then moves into the Feasibility Study phase where possible remedies are assessed and then communicated to the public through a Proposed Plan and a 30-day public comment period. Mr. Crone said the next step is the Record of Decision which is a legal document binding the Army to implement the selected action which is then implemented during the Remedial Action phase. He said the MidVally groundwater site is currently in the final phase of Long-Term Operation, Monitoring and Maintenance.

Slide 4: Mr. Crone reminded the Board the selected remedy for this site was in-situ bioremediation with monitored natural attenuation for TCE-contaminated groundwater, monitored natural attenuation for RDX-contaminated groundwater, and possibly a small soil removal for RDX-contaminated groundwater.

Slide 5: Mr. Crone next gave a brief review of the site and site issues.

Slide 6: Mr. Crone displayed a map showing the site location.

Slide 7: Mr. Crone explained there are broadly distributed groundwater impacts, and several sites were aggregated into a single groundwater study site. He showed a list of the historical uses of the site which included propellant manufacturing, testing facilities, recycling facility, munitions assembly, and disposal area (Shell Burial Areas).

Slide 8: Mr. Crone showed a graphic of the regional conceptual site model and discussed the geology. He noted the plume originates up on the valley wall and flows through bedrock in the center of the valley.

Slides 9 - 10: Mr. Crone showed two maps depicting the location of contamination in the shallow groundwater and the deeper groundwater. He said there are several plumes in the shallow groundwater with the TCE plume being the focus of the in-situ bioremediation treatment. He said there are low levels of TCE in the western plume which is flowing towards Green Pond Brook which flows to the south. Mr. Crone pointed out the location of the RDX plume and the northern volatile organic compound plume. He stated the contamination in the deeper groundwater is slightly more contained, but the groundwater flows through tighter bedrock. He noted the deeper groundwater plume also flows towards Green Pond Brook.

Slide 11: Mr. Crone showed a close-up view of the TCE plume located underground near Building 3109 and noted this is the location where the treatment system was installed.

Slide 12: Mr. Crone next reviewed the Remedial Design concepts.

Slide 13: Mr. Crone explained the in-situ bioremediation for TCE involves the injection of emulsified vegetable oil at the head of the plume where concentrations are the highest, near Building 3109. He stated the oil is injected through 18 wells in bedrock ranging from 90 feet to 190 feet deep. He noted the bioremediation will treat the highest concentrations while monitored natural attenuation will treat the lower concentrations downgradient. Mr. Crone said the time to achieve the remediation is estimated to be 35 years while the time without the bioremediation would be 190 years. He stated the monitored natural attenuation portion will finish at the same time as the active treatment. Ms. Anne Pavelka asked how often the injections would be done, and Mr. Crone advised the current plan is every one to two years, but the exact timing will be subject to ongoing data collection and analysis.

Slide 14: Mr. Crone displayed a map showing the location of the three injection lines.

Slide 15: Mr. Crone next discussed the construction and implementation of the remedy.

Slides 16 and 17: Mr. Crone showed photographs of personnel performing unexploded ordnance surveys prior to the installation of the 18 injection wells. Mr. Crone stated one anomaly was encountered during the installation of the wells, and the well location was moved to avoid the anomaly.

Slides 18 and 19: Mr. Crone showed photographs of the drilling rig used to install the injection wells. He stated the size of the wells ranged from two inches to six inches, depending on the ultimate purpose for each well.

Slide 20: Mr. Crone displayed a photograph of wells being completed with pads being installed around the surface.

Slide 21: Mr. Crone stated the original plans were to mobilize just prior to the arrival of Hurricane Sandy; plans were changed and mobilization occurred the week after Thanksgiving. He advised drilling of the wells took about three months with several of the wells being close to 200 feet in bedrock. He stated the drilling was completed in February, well completion occurred in February and March, and in March the first injection event began and took about ten days. He showed a photograph of the mixing of the vegetable oil being done onsite and advised it is a one percent solution mixed with water and then circulated and pumped into the well. He stated the volumes range from about 50 gallons upwards to 200 gallons depending on what each well will accept. Mr. Crone explained the solution starts the bioremediation process by acting as a food source to explode the micropopulation and eventually to break down the TCE to water and carbon dioxide.

Slides 22 and 23: Mr. Crone showed photographs of a flush-mounted well and wells that extend a short distance above ground. He pointed out monitoring wells nearby that will show whether

the vegetable oil is being distributed, as well as monitoring the concentrations of TCE. Mr. Gabel stated there are approximately 50 to 60 groundwater monitoring wells through the MidValley study area. Mr. Crone agreed and noted these groundwater wells will be monitored on a quarterly basis during the remediation.

Mr. Crone reminded the Board a similar bioremediation had been implemented at Area B utilizing molasses. He explained because the MidValley area has tighter bedrock and fractures, the vegetable oil will remain in the sub-surface longer.

Slide 24: Mr. Crone showed the potential timeframes for the remediation.

Slide 25: Mr. Crone next discussed a potential soil removal related to the RDX plume. He stated there some RDX impacts detected in the soil, and those soils may require removal.

Slides 26 and 27: Mr. Crone showed photographs of the area where the soil is located. He stated additional investigation is planned to be done very soon, and a site visit had recently occurred with the New Jersey Department of the Environment to look at the locations for 12 soil borings which will be installed down to groundwater or bedrock whichever occurs first (about 12 feet below ground surface). He stated based on the analysis of the soil, the soils may be removed and disposed of off-site. Mr. Crone said the area is smaller than an acre and the removal would amount to perhaps five dump trucks.

Slide 28: Mr. Crone said the next steps would be to start the quarterly monitoring and the assessment of the RDX contaminated soils for possible removal.

Installation Restoration Programs/26 Sites Proposed Plan Update

Slide 1: Mr. Gabel stated Mr. Crone's presentation on the 26 Sites Proposed Plan would be very similar to the presentation given at the public meeting on March 7.

Slide 2: Mr. Crone stated the public meeting on March 7 opened the 30-day public comment period which ends on April 6. He noted copies of the meeting transcript are available for anyone interested. Mr. Crone advised his presentation tonight would summarize information needed for community members to evaluate the recommended remedy and answer any questions. He stated formal comments to be included in the Responsiveness Summary should be submitted through the formal comment process which he would review at the end of the presentation.

Slide 3: Mr. Crone reviewed the topics covered by his presentation. He noted he would discuss the sites' histories and summarize the findings of the environmental investigations. He stated the recommended remedy is a result of the CERCLA risk assessment process so he would be reviewing that process. He noted he also would discuss how the recommended alternative relates to the New Jersey Department of Environmental Protection (NJDEP) regulations.

Slide 4: Mr. Crone displayed the major phases of the CERCLA process and stated the sites are currently at the Proposed Plan stage. He stated the sites have been characterized through a remedial investigation, and a feasibility study has been completed to assess possible remedies.

Mr. Crone said the Proposed Plan is currently in the public libraries and available for review. Mr. Crone stated comments on the Proposed Plan will be in the Responsiveness Summary which is part of the Record of Decision, the next phase of the CERCLA process.

Slides 5 and 6: Mr. Crone stated the 26 industrial sites are located throughout the installation and range in size from less than an acre to several acres. He said most are no longer active, and many of the structures have been demolished. He advised the new Navy facility has been built on top of several of the sites. Mr. Crone stated the issue regarding the applicable regulations for the sites or the “soils dispute” has been discussed numerous times at previous Board meetings. Mr. Crone displayed a map showing the location of the sites.

Slides 7 and 8: Mr. Crone showed a list of the sites included in the Proposed Plan. He noted the uses of the sites ranged from tetryl pits to apple orchards and were generally industrial sites. He displayed a grouping of the sites into uses: former disposal pits (2); former industrial process line (1); former explosive manufacturing/maintenance shops (15); former power plant (1); above ground tanks/controlled waste storage (2); ordnance/flare testing facility (1); former magazines (2); apple tree orchard (1); and former pistol range (1).

Slide 9: Mr. Crone stated there have been some actions taken at the sites including removing soil, partial capping by the new Navy building and parking lot, demolition of many buildings, removing tanks, and removing sumps and catch basins.

Slides 10 and 11: Mr. Crone discussed the environmental investigations conducted at the site, noting there have been extensive investigations under CERCLA and other programs beginning in the 1990s and continuing into the 2000s. He advised groundwater, sediment, surface water and soil have been sampled and analyzed. He gave an example of Site 17, Northern Tetryl Pits, where four environmental investigations have been conducted with over 150 soil samples collected, in addition to sediment and groundwater samples.

Slides 12 – 15: Mr. Crone showed photographs of several of the sites: Former Tetryl Pits, Ordnance Facilities and Nitrocellulose Facility.

Slides 16 and 17: Mr. Crone next discussed the CERCLA risk assessment process. He stated CERCLA sites are assessed through a site-specific risk assessment process overseen and approved by the EPA and developed using EPA guidance. He explained if the assessment results in unacceptable health risk or ecological impacts, CERCLA requires the site to advance to an action. He stated none of the 26 sites have unacceptable impacts for the current and anticipated use. Mr. Crone said while the previous statements summarize the CERCLA process implementation for these sites, he next would discuss how these conclusions were reached and more details on the CERCLA risk assessment process.

Slide 18: Mr. Crone explained the four major steps to a risk assessment are: hazard identification, exposure assessment, toxicity assessment, and a risk characterization for the site’s reasonably anticipated use.

Slide 19: Mr. Crone stated during the hazard identification phase chemical data is screened against risk-based criteria. He said if the data exceeds the risk-based criteria, it does not mean there is an unacceptable risk, but means further evaluation is warranted.

Slide 20: Mr. Crone said the exposure pathways step looks at who could be exposed to the chemical contamination. He said the residential scenario assumes someone living on the site for 30 years, 24 hours a day, while the industrial scenario assumes a five-day work week over 25 years. Mr. Crone explained a third scenario, construction workers, assumes a much shorter exposure time, but a higher level of exposure through direct contact with soil. He stated exposure by ecological receptors is also evaluated.

Slide 21: Mr. Crone explained the exposure assessment assumes exposure across a site and not within one small area. He said one elevated concentration on a site would not drive an action because it is not reasonable to assume a person spends their working life outside in a single small area. He stated CERCLA assesses risk for the current and anticipated future use which for these 26 sites is military/industrial and no residential use is planned for any of these sites.

Slide 22: Mr. Crone explained the toxicity assessment phase assesses the possible health effects of chemicals based on the dose and concentration and how it affects the human body.

Slide 23: Mr. Crone stated the risk characterization phase is a quantitative assessment which determines a cancer risk for a site with EPA's guidance defining an acceptable cancer risk as 1 in 10,000.

Slide 24: Mr. Crone advised the risk assessment for these sites determined none of the sites have unacceptable health or ecological impacts and thus no action is triggered for the current and anticipated use of military/industrial. He noted the contamination in place does not allow for unrestricted residential use.

Slides 25 - 27: Mr. Crone said based on the risk assessment the recommended action for the sites is No Further Action with Annual Reporting to EPA and NJDEP verifying the land use has remained the same. He noted Picatinny has numerous controls in place such as its Master Plan and controlled access which would apply to the sites in the Proposed Plan. He said the selected action ensures conditions remain protective of human health and the environment. Mr. Crone noted in addition to the annual reporting, CERCLA requires five-year reviews to be conducted to ensure risk assumptions are still valid.

Slides 28 – 30: Mr. Crone discussed the soils dispute issue. He stated Picatinny is a Superfund site regulated under CERCLA, and the question arose as to whether the NJ State soil remediation standards apply to a CERCLA site with acceptable health risks for the current and anticipated use. He advised EPA and the Army have concurred that the NJ State soil remediation standards do not and have proposed that the remedy of No Further Action with Annual Reporting is sufficient to protect human health and the environment. Mr. Crone stated NJDEP disagrees with this decision and has advised they will not concur with the remedy.

Mr. Crone explained the difference between the two positions is that CERCLA is a site-specific risk-based program based on a trigger threshold of additional cancer risk of 1 in 10,000. He said NJDEP regulations are a compliance-based program requiring cleanup of anything above standards calculated based on general exposure assumptions and a trigger threshold of 1 in 1,000,000.

Mr. Crone summarized by stating that while EPA and the Army agree there is no risk trigger for an action, NJDEP does not agree in some cases. Mr. Crone stated Picatinny is a CERCLA site, and the Army needs to follow the CERCLA regulation. [After the meeting, Mr. Roach clarified that when risk levels are acceptable at a site, remedial action is not necessary. NJDEP maintains that a remedial action is necessary when their soil cleanup standards are exceeded.]

Slides 31 – 33: Mr. Crone reiterated the public comment period is open until April 6, and the Army encourages all to provide comments on the proposed remedy. He noted the comments will be included in the Record of Decision, and EPA will take the comments into consideration as one of the modifying criteria under CERCLA which leads to selecting a final remedy. Mr. Crone displayed the information on the two libraries where the Proposed Plan is available for review. Mr. Gabel offered to send an electronic copy of the Proposed Plan to anyone who would like a copy. Mr. Gabel said the Proposed Plan is also available on the ARCADIS RAB FTP site for the Board members. Mr. Crone provided Mr. Gabel's mailing address and email address and noted comments could be submitted by either method.

Mr. Crone summarized by stating risk assessments are performed on all sites at Picatinny. He stated his prior presentation on MidValley groundwater is one example of where a risk assessment triggered the need for an action. He said the risk assessment on these 26 sites did not result in unacceptable levels and thus did not trigger an action.

Mr. Bill Roach from EPA advised no Remedial Design would be needed if the no further action remedy is selected as the final remedy.

Ms. Anne Pavelka of NJDEP advised she had emailed copies of NJDEP's comments to Board members and she also had copies with her for anyone who would like a copy. She said she wanted to highlight some of NJDEP's concerns as addressed in their March 7 letter to the Army. Ms. Pavelka made the following statement:

NJDEP feels the Proposed Plan of no further action with monitoring of land use and existing institutional controls is not acceptable. It is not protective of human health and the environment. The Proposed Plan does not address significant contamination that is present in several areas of concern and avoids using the New Jersey Remediation Standards as Applicable or Relevant and Appropriate Requirements (ARARs).

Our Remediation Standards establish minimum standards for the remediation of contaminated groundwater and surface water, as well as the minimum residential direct contact and non-residential direct contact Soil Remediation Standards. These are promulgated standards, and we consider them to be ARARs. In addition, the Proposed Plan uses a baseline risk range of 10^{-4} to 10^{-6} and it should be noted by law the NJDEP is

required to use a target risk of 10^{-6} for each individual carcinogen or cancer-causing compound. The NJDEP considers that the target carcinogenic risk of 10^{-6} to be an ARAR.

NJDEP regulations require that a remedial action be implemented when the concentration of any contaminant exceeds applicable ground water, surface water, or soil remediation standards. Ecologically sensitive areas are remediated to the ecological screening criterion or the criterion developed through an ecological risk assessment process.

NJDEP regulations require a minimum of institutional controls and appropriate engineering controls if the Army is leaving any contamination or concentrations greater than the applicable New Jersey Soil Remediation Standards. The NJDEP considers institutional controls and engineering controls, as well as the land use monitoring and the existing institutional controls discussed in this Proposed Plan, to be response actions under CERCLA. Therefore, according to CERCLA, ARARs are applicable and the NJDEP's Soil Remediation Standards must be applied.

Significant contamination has been identified in a number of areas. We feel contaminant delineation, which is part of the remedial investigation, has not been completed as part of the remedial investigation. We feel a proposal for no action is not supported by the data. In 2011, the NJDEP submitted comments to the Army on their Feasibility Study for the 26 Sites. These comments have not been addressed in any kind of detail. We feel these Feasibility Study comments must be addressed in detail and the Proposed Plan amended.

The Army has said that contamination at the sites in the Proposed Plan is within the 10^{-4} to 10^{-6} risk range, and therefore no action is proposed. We disagree with this assessment regarding the risk posed by these areas. An evaluation of the risk assessment indicates that data from many specific discharge areas, where significant contamination is present, were inappropriately averaged over large areas of the individual sites. This averaging included a large number of samples that were non-detect. The average contaminant levels in the discharge areas were diluted, therefore masking the true risk to human health and the environment. Under the Proposed Plan, contamination in surface soil would be left in some areas that the NJDEP considers hotspot or source material which clearly requires remediation. Some examples of contaminants left in surface soil include lead up to 19,500 parts per million (our non-residential direct contact soil remediation standard is 800 parts per million), PCBs up to 143 parts per million (our standard is 1 part per million), barium up to 100,000 parts per million (our standard is 59,000 parts per million), mercury up to 600 parts per million (our standard is 65 parts per million), arsenic up to 251 parts per million (our standard is 19 parts per million), and DDT, a pesticide, up to 16 parts per million (our standard is 8 parts per million). Also, contaminated soils, specifically metals and PCBs, in some areas have impacted sediments in Picatinny Lake and other wetland areas. These soils are not controlled and may continue to migrate into surface water and sediments in the future.

Significant discharge areas that require additional cleanup in accordance with New Jersey's Remediation Standards include but are limited to: Ordnance Facilities and Flare

Testing Area which includes Flare Island on the shore of Picatinny Lake; Abandoned Pistol Range; the Nitroglycerine Processing Area; the Apple Trees Recreational Area; and, the Northern Tetryl Pits.

Ms. Pavelka said her statement summarizes what she had discussed at the public meeting and what is contained in NJDEP's letter. She advised Jim Kealy, NJDEP's Technical Coordinator for Picatinny Arsenal, was also present and both of them would be interested in further discussing their position.

Mr. Paul McGinley asked about the sampling results and whether NJDEP did its own sampling or obtained the information from the Army contractors' reports. Ms. Pavelka said NJDEP usually does not conduct its own sampling but oversees the sampling done by the responsible party and reviews all the Army's sampling reports. Ms. Pavelka said NJDEP was looking specifically at sampling results at discharge areas while the Army's risk assessment averaged the samples from the discharge areas and the rest of the site. Mr. Gabel said the Army recognizes NJDEP considers some of the areas to be "hotspots"; however, the Army followed the CERCLA protocol, and the results which determined there were no risks were reviewed by EPA as well as Army experts.

Ms. Pavelka asked Mr. Gabel to talk about the two risk assessments developed with the first risk assessment showing a risk did exist. Mr. Gabel said the draft risk assessment was updated with new data and new EPA guidance toxicity numbers, protocol was followed, and the revised risk assessment reviewed and approved by EPA's risk assessors. Mr. Roach confirmed the risk assessment changed based on the new EPA toxicity numbers which decreased. [After the meeting, NJDEP requested the following clarifications be made to the minutes. "In reviewing the 2009 Feasibility Study, Appendix C, Risk Reevaluation Memorandum, the risk assessments were updated by changing input parameters to the risk assessment model and the USEPA Adult Lead Model. The report states that for all contaminants, other than lead, the soil to skin adherence factor was updated in the risk assessment model. The report states that the preliminary remediation goal for lead was modified based on updating the soil ingestion rates and geometric standard deviation inputs to the USEPA Adult Lead Model. These are very complex analyses, but the toxicity values did not change or decrease."]

Mr. Brad Carroll asked for confirmation that if the land use changed then the parameters would change so if a site use was changed to residential, the site would be re-evaluated. Mr. Gabel said if the Army made that decision, the Army would re-evaluate all the data, possibly collect additional data, and if action needed to be taken for residential use, action would be taken.

Mr. Matarazzo asked if NJDEP was aware of the protocols and approved the process before the risk assessment was performed. Mr. Kealy responded that NJDEP reviewed the remedial investigation data and at the point seven years ago when the remedial investigation was being completed, NJDEP was operating under an agreement with the Army, referred to as the "Geis (former Picatinny Commander) agreement," where the Army agreed they would follow NJDEP cleanup standards. Mr. Kealy stated the standards were not ARARs at that time since they were not promulgated standards. He stated because NJDEP's standards are based on generic risk assessments, NJDEP does not review site-specific risk assessments so it did not review the risk

assessment developed for these sites. He said in 2008 NJDEP standards were promulgated, and the sites had moved beyond the investigation stage into the remedy evaluation stage. He stated the Army advised if the sites do not exceed 10-4 risk, then ARARs do not apply, and the Army would not be taking an action. He said NJDEP then went back and looked at the risk assessment and became concerned about the averaging of samples at some sites such as Flare Island.

Mr. Matarazzo asked if NJDEP did or did not sign off on the risk assessment. Mr. Kealy responded that NJDEP had agreed to the remedial investigation but had not initially reviewed the risk assessment because of the previous understanding that the Army would comply with NJDEP standards.

Mr. Forti asked if there are any engineering controls around the hot spots, and Mr. Gabel responded there are not any engineering controls. Mr. Forti asked whether a residential scenario was used for the Apple Orchard site. Mr. Gabel said a recreational scenarios was used for that site but it did not trigger any need for action.

Ms. Michelin asked if is known what type of activities are going to occur at the hot spots. Mr. Gabel said Picatinny's master planning process and environmental management system involves every project being put into the systems for review. Mr. Gabel said no major project is planned for any of the 26 sites for the next few years. He noted there may be some additional buildings demolished. Col. Mackay confirmed Mr. Gabel's statement that no major construction is planned at these sites.

Ms. Pavelka said the issue is Picatinny is in New Jersey and NJDEP has standards applied statewide, and the Army has found a way to not use the standards which everyone else in the State uses. She stated the Army has taken action at other sites where the risk under CERCLA did not trigger an action. Mr. Gabel concurred the Army had taken actions in the past where it was not required, but those actions were partly Army initiative and partly negotiations. Mr. Roach said EPA proposed the idea of moving forward independently of the Army as EPA considered it likely that Picatinny's use as military/industrial will continue for a long time and existing engineering controls also played a significant part in EPA's decision to move forward with a Proposed Plan. Mr. Roach said the access security controls at Picatinny also played a role, and monitoring will be in place so regulators would be notified of a potential change in use.

Ms. Pavelka questioned whether monitoring is considered an action. Mr. Roach responded that EPA's policy is any kind of monitoring is not considered an action. Ms. Pavelka asked if groundwater monitoring would be considered an action. Mr. Roach said as long as the action is not monitored natural attenuation, groundwater monitoring is not an action. Mr. Roach noted the Army can conduct removal actions outside of ARARs.

Ms. Pavelka stated there is professional judgment used in the development of the risk assessment, such as the averaging of samples. Mr. Gabel responded that the risk assessment development was done in coordination with EPA's risk assessors who then reviewed and approved the final document which discusses how the calculations were performed. Mr. Roach said the work plan for the site includes a sampling plan and when contaminants are averaged, there is an algorithm with a 95% upper confidence limit so it not just an average but higher than

the average. Ms. Voyce said there is currently a national debate on compliance averaging and how to determine the exposure areas in a risk assessment, and the determination of the exposure area is specifically determined by guidance. Ms. Voyce said it is not as simple as selecting some samples to be averaged as there are many checks and balances built into the system of performing a risk assessment.

Mr. Matarazzo said New Jersey has the right to promulgate a standard that is more stringent than Federal standards and EPA should not override the State.

Mr. Mark Hiler suggested the discussion be wrapped up. He encouraged all to send written comments to Mr. Gabel as they do have an effect on the selection of the final remedy.

Installation Restoration Programs/Upcoming Proposed Plan

Slide 1 (of Mr. Gabel's Presentation): Mr. Gabel stated a new Proposed Plan may be issued before the next Board meeting. He advised this new Proposed Plan would address another 26 industrial sites scattered throughout Picatinny.

Slide 2: Mr. Gabel showed a list of the sites. He noted where a site name uses "shed" or "building," it refers to the area around that building which was investigated to determine if any historic activities in the building have had an impact, and not specifically the building itself.

Slide 3: Mr. Gabel displayed a list of former site uses.

Slide 4: Mr. Gabel displayed a map showing the location of the sites.

Slide 5: Mr. Gabel advised the sites have been investigated and the Feasibility Study was discussed at a previous Board meeting. He noted the recommended action will be no further action with monitoring and reporting.

Mr. Gabel advised there were be two additional Proposed Plans released this year, one for five sites and one for 45 sites.

Mr. Gabel said if the Board is interested, a presentation could be done by the Army or EPA or a contractor on risk assessments at the next meeting to help the Board in its review of the upcoming proposed plans. Ms. Voyce also offered to assist in such a presentation.

Membership

Mr. Hiler re-introduced Mr. Henry Van Dyke to the Board and stated Mr. Van Dyke has attended several meetings and is interested in membership. He advised Mr. Van Dyke is a former Picatinny branch manager and very knowledgeable about the installation. He stated Mr. Van Dyke is a resident of Rockaway Borough. Mr. Hiler made a motion to accept Mr. Van Dyke as a community member, Mr. Matarazzo seconded the motion, and the motion was unanimously approved.

New Business

Mr. Matarazzo mentioned a May 2 seminar on site remediation being held in Atlantic City and said he would send the information to Mr. Gabel for distribution to the Board.

Next Meeting

The Board agreed to a timeframe of early June for the next meeting.

A motion was made by Mr. Hiler, seconded by Mr. Forti, and unanimously approved to adjourn the meeting at 8:32 p.m.

Picatinny Restoration Advisory Board Meeting
March 27, 2013
Pending/In Progress Action Items

Date Created	Action Item	Person Responsible	Status
10/20/2011	Discuss available documents for review by TAPP consultant at each Board meeting	Ted Gabel	Ongoing
3/27/2013	Schedule next RAB meeting for early June.	Ted Gabel/Katrina Harris	Pending