

# ENVIRONMENTAL HAPPENINGS AT PICATINNY ARSENAL

VOLUME 1, ISSUE 2 JULY 2004

## SOIL REUSE AT THE BASE

Picatinny Arsenal has submitted a work plan for the reuse of soil generated from the sumps investigation and the lead removal action. Picatinny Arsenal has asked that the soil be permitted to be reused as fill beneath a new building slab within the Group 3 area.

The NJDEP allows for the reuse of contaminated soils in certain cases and has specific requirements for the use of the soils as follows:

1. The contaminated soil intended for reuse shall be fully characterized and delineated pursuant to the site investigation, N.J.A.C. 7:26E-3 and remedial investigation, N.H.A.C. 7:26E-4, or, if the soil has not been fully characterized and delineated, the soil shall be sampled in accordance with all applicable requirements at N.J.A.C. 7:26E-1, 2, 3.4, and 3.6 at the following frequencies:

i. Field screening methods, if available pursuant to N.J.A.C. 7:26E2.1(b), shall be used to deter-

mine sample locations. Each 20 cubic yards of soil shall be screened with borings or test pits throughout the depth of the soil pile, at two foot intervals. Two samples shall be collected for laboratory analysis for the first 100 cubic yards of excavated material and one sample for each additional 100 cubic yards: and

ii. If contamination is not detectable by field screening methods, samples shall be collected for laboratory analysis from mid depth in the pile at a frequency of one sample per 20 cubic yards for the first 100 cubic yards of soil and one sample for each additional 100 cubic yards...

Field screening methods cannot be applied in this situation. There is a concern by the NJDEP about adequate characterization of the soil and about protectiveness of groundwater. The soil would be placed under a building slab but you would not want the soil to leach contaminants to groundwater or to contaminate pristine soil. The most likely alternative to on-site reuse is offsite disposal which can be costly. The NJDEP is currently evaluating the proposal for reuse.

## IN THE FIELD.....

Recent field activities for May and June 2004 include the following:

- AWDF Groundwater Investigation: Packer testing of the potable well.
- Site 20/24: Seed and fertilize cap.
- Lead Removal Action: Soil excavation and sampling in various areas.
- Mid-Valley Groundwater Investigation: Installation of new monitoring wells and sampling.
- 600 Bldg. Area RI: Installation of Gore-
- sorbers for soil gas survey.
- Areas B and D Groundwater Pilot Studies: Collect water samples for MNA parameters.
- Bldg. 31/33: Finish excavation. Groundwater sampling.
- Phase III 1A RI: Soil sampling in Area p and Area L.

## SPECIAL POINTS OF INTEREST:

- *Picatinny Arsenal lost \$1.5 million in funding for environmental projects. A possible reason for the loss of funds may be that anticipated RODs were not signed.*
- *A technical meeting was attended by representatives of the USEPA, NJDEP, PAERAB and Picatinny Arsenal on June 24th.*
- *The most recent PAERAB meeting was held on July 15th. Copies of the meeting minutes were distributed to RAB members shortly after the meeting.*
- *The RAB is now soliciting contributions to future newsletter issues. In addition, input on suggested future topics is welcomed. Dave Forti, Michael Glaab, Courtenay Huff, and Walter Krich are members of the newsletter editorial committee.*

## INSIDE THIS ISSUE:

PICATINNY IN THE NEWS	2
TRAINING & NEW GUIDANCE	2
NANOSCALE IRON STUDY	2
PERFORMANCE-BASED CONTRACTING	3
LETTER TO THE EDITOR	3
MAGNUS TREATABILITY STUDY	3
NEW LAND USE IN THE SBA	4
HOT OFF THE PRESS	5



## PICATINNY ARSENAL IN THE NEWS

Environmental issues were the topic of a recent Star-Ledger article by Kristen Alloway. The article entitled "Questions Dog the \$118M Effort at Tainted Arsenal" appeared in the Sunday, May 23, 2004 issue of the paper. As part of the article Ms. Alloway spoke with Ted Gabel of the Picatinny Arsenal Environmental Affairs Office, Bill Roach of the US Environmental Protection Agency, Michael Glaab - PARAB community co-chair, Dr. Peter Lederman - RAB

member, and Walter Krich - RAB member. Michael Glaab echoed the sentiments of many of the RAB members concerning the use of institutional controls as a remedial alternative. Mr. Glaab was quoted as follows: "I would prefer to see more soil removed or dealt with on site. Let's not cap it and forget about it. Let's just clean it up." Bill Roach of the USEPA also expressed a similar sentiment stating that, "Optimally, we'd like the contamination to be removed or

treated, but that's more expensive." Ms. Alloway also spoke to Cal Baier-Anderson, a toxicologist involved with the Aberdeen Proving Ground cleanup. He was quoted as follows: "The best thing to do is clean up a site for unlimited use and unrestricted access." Baier-Anderson further commented that institutional controls involve "pushing the problem to another decade, to another generation."

"Remember, this is a closed base. You can't get in, walk around and have a picnic at the tetryl pits."  
-Ted Gabel on the use of signs/fences as remedial actions

## UPCOMING TRAINING OPPORTUNITIES & NEW GUIDANCE

TRAINING IS AVAILABLE ON THE INTERNET. ACCESS PROGRAMS FROM YOUR COMPUTER AND PHONE. REGISTER ON-LINE SEVERAL WEEKS IN ADVANCE.

The **USEPA's Technology Innovation Program** periodically offers free internet training opportunities. Find details on programs and sign up at <http://clu.in.org/studio/seminar.cfm>.

In conjunction with the **USEPA**, the **Interstate Technology Regulatory Council (ITRC)** also provides free internet training courses. Upcoming courses are as fol-

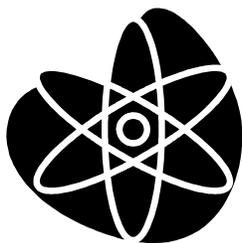
lows:

- In Situ Chemical Oxidation - October 7, 11:00 am to 1:15 pm
- What is Remediation Process Optimization and How Can It Help Me Identify Opportunities for Enhanced and More Efficient Remediation - September 28, 2:00 am to 4:15 pm
- Carbon Tetrachloride and Perchlorate - September 2, 11:00 to 1:15 pm

Register for courses at [www.itrc.org](http://www.itrc.org) or [www.clu.in.org/studio/](http://www.clu.in.org/studio/).

A new document is available at ITRC: "Technical and Regulatory Guidance for Design Document for Constructed Treatment Wetlands" (WTLND-1)

The document can be downloaded from the internet at <http://itrcweb.org>.



The unique element of this application of ZVI is the extremely small particle size along with a surface catalyst.

## NANOSCALE IRON STUDY TO PROCEED

At the recent June 24th technical meeting representatives of the USEPA and the NJDEP gave the "nod of approval" for the pilot study to proceed. Both the USEPA and NJDEP had provided comments on the work plan for the nanoscale iron study. Army responses to those comments were answered

satisfactorily. Details on the design of the injection wells were clarified at the meeting. The nanoscale iron study involves the injection of nanoscale zero-valent iron (ZVI) particles into the aquifer to accelerate reduction of chlorinated volatile organic compounds to simpler, innocuous compounds. De-

tails of the study were the subject of a presentation at the last RAB meeting in April 2004. PARS Environmental comments:

*"The use of elemental metals for in situ reductive dehalogenation is a proven technology that has been used extensively over the past 20 years. Metallic iron is the preferred metal due to its dehalogenation efficacy, cost, and benign environmental impact."*

## PERFORMANCE-BASED CONTRACTING

Picatinny Arsenal will soon be the subject of an Army-wide initiative to utilize performance-based contracting at more installations across the country. The use of performance-based contracting has several objectives as follows:

- Maximize contractor performance
- Maximize competition and innovation

- Maximize opportunities for competitive alternatives in lieu of government-directed solutions
- Shift risk to industry
- Achieve savings.

The use of performance-based contracting by the Army is in response to ever growing expenditures related to environmental remediation. By allowing contractors to deliver the

service using their own best practices, the hope is that processes will be streamlined with a focus on the end result and the elimination of the burden of contract modifications throughout a project's life. The extent to which savings will be realized is yet to be demonstrated.

Picatinny Arsenal considered adding a performance-based clause to the contract for



Area D groundwater remediation but later reconsidered. Area B seems to be the next proving ground as to whether such language can be utilized without compromising the intended remedial alternative.

## LETTER TO THE EDITOR

In response to the article on the Area E Groundwater Proposed Plan in the April 2004 issue, William Roach of the USEPA offered the following commentary which was submitted via e-mail on May 12, 2004:

"All, I offer one clarification on the newsletter which may be illuminating in the way the EPA interacts with the Army and vice versa. Regarding the Area E proposed plan, the

newsletter stated: "The USEPA questioned why a 'more aggressive alternative' that treated a larger area and which would reduce the overall time frame achieving groundwater standards was not considered. The appropriate place for consideration of such an alternative would have been in a feasibility study (FS). The FS for the site has already been completed and was subject of

discussion at one or more technical meetings."

First of all, proposed plans are reviewed by upper management at EPA who do not review FSs and attend technical meetings. If they question why a more aggressive alternative was not considered, then I am obligated to include it as a comment on the proposed plan. The Army should respond (continued on page 4)

### DISTRIBUTION OF NEWSLETTER

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## PH-A REPORTS ON THE MAGNUS TREATABILITY STUDY FOR AREA D GROUNDWATER

An innovative technology is being applied to Area D to find alternate technologies that may one day complement or even replace the permeable treatment wall planned for the area.

phA described the results of May 2004 sampling in their June 2004 report. phA is the firm overseeing a pilot

test using the MAGNUS system – an in situ remediation technique in which propane and other nutrients are injected into the subsurface to stimulate natural microbes to degrade the TCE. The test was started in December 2002. Sampling results for TCE do not appear to exhibit a definitive

trend indicating that the MAGNUS system can be effective. While there are isolated data points with concentrations an order of magnitude lower than baseline results, most data exhibit a relatively unchanged concentration. No statistical analysis has been performed to date. However, Ph-A

concludes that "active injection results in a subsurface environment that is conducive to aerobic oxidative processes." Active injection is supposed to continue until the end of this calendar year with sampling to conclude in January 2005. *Is this snake oil or a viable remedial alternative?*

to the comment stating that a more aggressive alternative was considered in the FS but screened out because it was deemed too costly instead of saying that the comment should have been raised during review of the FS. Furthermore, EPA did comment on this issue in the FS. The following is the relevant EPA comment on the Area E FS and the Army response (several iterations):

**Original EPA Comment:** Another alternative should be developed comprised of in situ chemical oxidation (ISCO) of hot spots and mass removal configured extraction wells. Significant reductions in hot spot concentrations in the target areas in Figure 7-1 may reduce the TCE levels to the 1 to 10 ug/l levels and the expanded pump and treat extraction wells should shorten the overall cleanup time to reach Remedial Action Objectives (RAOs).

**Army Response:** The area of the current (1999) extent of the contaminant plume with concentrations ranging from 1 ug/l to 20 ug/l is approximately 828,000 sq. ft. Given the calculations completed in Appendix C for the placement of extraction wells, pumping of the groundwater with lower concentrations would require the installation of approximately eight (8) wells, for a combined pumping capacity of over 200 gpm, for a duration of approximately 5 years. It is unlikely that the aquifer would sustain this yield over the long-term. Even if the aquifer was capable of sustaining this yield, 200 gpm is greater than the current capacity of the existing pump and treat system, which would require a capital investment to upgrade the capacity of the plant. Operation and Maintenance (O&M) costs for the plant would be in the range of \$400,000 per year, for a total addition cost of \$1.5 million over 5 years. Compared to a cost of \$165,000 for Monitored Natural Attenuation (MNA) over 38 years. Therefore, this alternative was determined to be too costly to include in the detailed analysis of alternatives.

**New EPA Comment:** The Army states that an alternative using ISCO and extraction wells would have a total additional cost of \$1.5 million dollars over five years. The total cost of this alternative is unclear because the Army does not indicate which original cost this additional \$1.5 million would be added. This alternative was abandoned by the Army because it was deemed too costly. However, cost savings resulting from a reduced time frame for MNA to reach an RAO of 10 ug/l clean-up, instead of a 20 ug/l clean-up, would partially offset any additional costs from treating this larger area. The Army should more clearly indicate the additional cost and clean-up time required to reach RAOs using this alternative.

**New Army Response:** Costs were evaluated to reduce clean up time from 30 years (ISCO and MNA) to 5 years (ISCO and

pump and treat). The additional cost of \$1.5 million was a comparison of the O&M costs for ISCO with MNA and ISCO with extraction pump and treat. Currently, the estimated O&M cost for ISCO is approximately \$500,000. The O&M cost of a treatment plan would be approximately \$2 million (\$400,000 each year for five years), resulting in a increased O&M cost of \$1.5 million. In addition, significant capital costs would also be required since the capacity of the existing plant would be exceeded. An upgrade to the treatment plant was recently costed for the Area D FS and additional capital cost was approximately \$350,000. The combined alternative is not preferred based on the approximate total cost to implement ISCO and pump and treat would be nearly \$3 million.”

## NEW LAND USE OPTIONS PURSUED

Picatinny Arsenal is planning to use property in the Southern Boundary Area as a high technology park. The following is a statement of work for an environmental assessment for the area; the SOW describes the intended use of the area:

“The Business Interface Office and Picatinny’s Garrison organization located at US Army ARDEC, Picatinny Arsenal, New Jersey, was tasked with implementing innovative ways to more efficiently use ARDEC’s real property and intellectual property assets as a means to enhance mission capability and reduce the installations operating costs. Consistent with this mission, Picatinny received approval (Jan 04) of their development concept and Title 10 document from the Department of the Army and Congress to proceed with an Enhanced Use Leasing initiative to develop 120 acres of land and 100,000 sq. ft. of non-excess facilities to bring mission related tenants on site at Picatinny.

It is anticipated that via this Enhanced Use Leasing initiative, Picatinny will serve as a State-of-the-Art R&D Campus for mission related tenants offering a robust R&D environment with access to unique prototyping facilities/capabilities, intellectual property, and over 1,800 highly trained Scientists and Engineers. Opportunities will also exist to establish on site satellite campuses of major universities’ wherein educational opportunities for advanced S&T degrees will be made available to Picatinny employees as well as to interested individuals living in the region.

Forging these public/private alliances will yield manifold benefits. The Army will maintain its core missions at Picatinny while through innovative financial arrangements, operating costs will be reduced. Private R&D will benefit through the use of the existing well-developed physical infrastructure and high tech personnel resources as well as from the enhanced ease of permit acquisition within the boundaries of Picatinny.”

Further, according to the P3 POC, “it is envisioned that the proposed Hi-Tech/University Park development will be in an area where there will be minimal environmental impacts. In fact, Picatinny and the developer team are planning on using the Post Farm landfill (IRP site) and the Ball Fields along Parker Road as potential development locations. This can be a win/win situation for all parties, if these brownfield sites *can be mitigated and reused*. The Post Farm landfill is being reviewed for the potential site of a R&D laboratory and the Ball fields (and parts of Site 25) are being reviewed as a site to house 3 separate industrial buildings to include an administrative facility, educational/training facility, and hi-tech conferencing center all in a business campus type setting.”



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## PICATINNY ARSENAL IS ON THE WEB

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[HTTP://W4.PICA.ARMY.MIL](http://w4.pica.army.mil)

If you have any questions or require additional information on any of the subjects in this newsletter, please contact Barbara Dolce at Subsurface Solutions LLC. Subsurface Solutions LLC is the Technical Assistance for Public Participation (TAPP) contractor for the Picatinny Arsenal Environmental Restoration Advisory Board (PAERAB).

In accordance with federal regulations PAERAB meetings are open to the public and attendance by the community is encouraged. The date and time of an upcoming PAERAB meeting are advertised in local newspapers. For further information please contact Michael Glaab (PAERAB Community Co-Chair) at 973-663-9605 ([michaelglaab@worldnet.att.net](mailto:michaelglaab@worldnet.att.net)) or the Environmental Affairs office at Picatinny Arsenal (Ted Gabel, PAERAB Army Co-Chair at 973-724-6748).

The TAPP - Technical Assistance for Public Participation program is a DOD program that provides a mechanism for community members of Restoration Advisory Boards and Technical Review Committees to obtain technical assistance. Its purpose is to provide citizen and/or community groups with professionals to assist them in their review of environmental issues at military installations. For example, a TAPP process may involve helping the public understand environmental remediation alternatives by providing an unbiased technical analysis and recommendation.

The newsletter is intended to provide an update on newly drafted documents, field activities at Picatinny Arsenal, upcoming events related to environmental issues at the site, and discussions at technical meetings. In addition, notice of new or revised Federal or State regulations may also be included.

The PAERAB also maintains a website at <http://www.PAERAB.US>.

## HOT OFF THE PRESS....

- Pilot Study Work Plan for Site 2 Nano-scale Zero Valent Iron Groundwater Treatment Pilot Study, Draft, May 2004
- Task Order 17 Phase III and Phase I 2A/3A Sites Ecological Risk Assessment Work Plan, Draft Final, June 2004
- Record of Decision Green Pond Brook/Bear Swamp Brook, Draft Final, June 2004
- Group I Sites Feasibility Study, Draft Final, June 2004
- Record of Decision Site 23 -The Post
- Farm Landfill, Draft Final, June 2004
- Trichloroethylene Treatability Study Groundwater Monitoring Report for Area D, Building 92, Final, June 2004 [Prepared by PhA Environmental Restoration for the Picatinny Arsenal Environmental Affairs Office]



*Documents can be reviewed by the public at the following locations:*  
*Rockaway Township Library*  
*Morris County Library*  
*Both sites maintain a repository of final reports and of documents for which public comment is solicited.*