



US Army Corps of Engineers
Huntington District

PLUM BROOK ORDNANCE WORKS ***Restoration Advisory Board***

Quarterly Fact Sheet

April-June 2009

SITE DESCRIPTION

The former Plum Brook Ordnance Works is located four (4) miles south of Sandusky, Ohio, near Lake Erie. Nitroaromatic explosives produced at the site included TNT, DNT, and pentolite; other products produced at the ordnance works included nitric and sulfuric acid. The plant operated for four years from 1941 to 1944, and was decontaminated by the end of 1945. Possession of the property was transferred to the Ordnance Department in 1946, then to the War Assets Department, and finally to the GSA in 1949. NASA acquired the property in 1963 and presently maintains and utilizes 6453.5 of the original 9009 acres.

SITE HISTORY

The U.S. Army entered into a contract with Trojan Powder Company for the purpose of manufacturing this ordnance. The official title for the site during this time was the Plum Brook Ordnance Works (PBOW). Groundbreaking to construct the facilities to support the manufacturing of ordnance began on April 15, 1941. Production began on December 16, V-J Day (1941). During the production period more than one billion pounds of ordnance was manufactured.

PBOW was placed in standby condition from 1945 to 1946. Throughout this time, the Army conducted decontamination and decommissioning (D&D) of many of the buildings and structures associated with the manufacturing of ordnance. Decontamination efforts on all TNT and DNT lines began in September 1945. Decontamination of TNT lines, acid lines, pentolite lines, and DNT lines was halted during the last quarter of 1945. Typical D&D methods for buildings and structures involved removal and relocation of all explosives to a burning ground where they were burned. Where possible, remaining buildings and structures were burned to the ground. Steam lines, drain lines, etc., were flushed and dismantled. There is no indication in PBOW historical records of where lines were flushed.

It is estimated that 65 percent of the necessary decontamination of PBOW was completed by December 1945. On midnight of December 17, the physical custody of the PBOW was transferred from Trojan Powder Company to the U.S. Army Ordnance Department. The Ordnance Department became the agency accountable for the property and the U.S. Army Corps of Engineers assumed responsibility for maintenance and custodial duties at the PBOW from January 1 through June 30, 1946.

After further decontamination efforts were completed, and the extent of contamination certified, PBOW was transferred to the War Assets Administration in August 1946. From 1946 to 1949 the property was protected and maintained by Matthew-Levio and Sons. In 1949 it was transferred to the General Services Administration (GSA), which maintained oversight of the facility. Ravenna Arsenal conducted further decontamination efforts from 1945 to 1958. NASA accepted the facility in 1963 after Ravenna Arsenal certified that the PBOW had been completely decontaminated and was suitable for unrestricted future use. After acceptance of the PBOW, NASA identified further areas that required decontamination. In 1964, NASA continued site decontamination and the removal of structures.

In 1956 an agreement was made to lease 500 acres of the north portion of the site to construct and operate the Plum Brook Reactor Facility (PBRF). NASA operated the PBRF from 1963-1973 under a license agreement with the Atomic Energy Commission (AEC). NASA currently has a license agreement with the Nuclear Regulatory Commission (NRC) for the safe protective storage of the PBRF. NASA acquired an additional 6,000 acres of the former PBOW on March 15, 1963, for the purpose of conducting various aerospace research activities. NASA continues to use the site today.

SUMMARY OF ACTIVITIES

Red Water Ponds Area

An interim soil removal action is complete at Pentolite Road; however additional excavation was required to obtain clean closure of the contaminated areas. A Non-Time Critical Removal Action (NTCRA) began in 2005 but could not be completed at that time because of insufficient funding. The removal action continued in spring 2007 and was completed in the fall of 2008. The Removal Action Construction Completion Report is complete and was presented to the public at the March 2009 Restoration Advisory Board (RAB) meeting. The project is returning to the CERCLA process (RI/FS Phase) and evaluations will be made to determine if additional remedial response actions are required to address any residual risk that may be present at the project. Any future restoration requirement will be defined in the Proposed Plan and Decision Document.

TNT Area B

During the RI/FS phase, LRN and LRH agreed to complete an action memorandum for a NTCRA for the soils. An Interim Soil Removal Action was completed and removed the contaminated soils that exceeded the RGOs. The Final Interim Soil Removal Action Report was submitted in July 2007. The preliminary Draft Decision Document and Proposed Plan were completed in early 2005 and have been held until completion of the groundwater Feasibility Study. The Draft Proposed Plan has been reviewed by the team and a public meeting was held on 16 July 2009. The draft decision document will be submitted for review following the 30-day public comment period for the proposed plan.

TNT Area A and TNT Area C

The FS was submitted on 29 August 2003. LRN/LRH completed Draft Action Memorandums for NTCRA for soils removals and held a Public Meeting on 10 May 2004. Removal Actions were not funded and the team returned to the CERCLA process. The Preliminary Draft Decision Documents and Proposed Plans for Area A and Area C were prepared in August 2005. Revised Draft Proposed Plan for TNT Area C and addendum to the FS were submitted in May 2008 for review. Based on comments received and to support the evaluation of remedial alternatives for soil at the TNT manufacturing areas, a bench-scale treatability study using alkaline hydrolysis for nitroaromatic contaminants was conducted during the summer of 2008. Addendum to the FS and final proposed plan for TNT Area C have been reviewed. Final proposed plan was submitted 10 March 2009 and a public meeting was held on 12 March 2009. The draft decision has been reviewed by the team and the final document was submitted in 28 July 2009. Submittal of the FS addendum and draft proposed plan for TNT Area A was delayed pending future land-use decision. Per discussion/agreement with LRH and LRL OC on 10 April 2009, the PDT moved forward with unrestricted future use at TNT Area A. The preliminary draft FS Addendum and PP were submitted to the EMCX on 7 May 2009 for review and have been approved for distribution to the team in August.

Groundwater - TNT A, B and C & Red Water Ponds Areas

The Final Groundwater Report of Findings was submitted in April 2005. A Task Order was awarded to Shaw Environmental in late November 2005 for the Groundwater Feasibility Study (FS) in TNT Areas A, B, C, and Red Water Ponds Areas. The Final Baseline Human Health Risk Assessment of Groundwater Report was submitted in September 2006. The Revised Final Feasibility Study was submitted in December 2008. The Draft Proposed Plan for Groundwater and the Red Water Ponds Area was submitted to the EMCX on April 6, 2009. Upon resolution of CX's comments, the document will be submitted to the team for review.

Reservoir No. 2 Burning Ground

Remedial Investigation Part 1

In late February 2005, the Delivery Order was modified to include additional soil samples to further define a specific portion of the burning grounds. This additional soil sampling was conducted in late April 2005. The Interim Final Report was submitted in early July 2005 and included all soils and groundwater results. Comments on the report were received and discussed at the PBOW Team meeting in early December 2005. The final report was received in mid-January 2006.

Engineering Evaluation/Cost Analysis (EE/CA)

Based on discussions in the September 2005 PBOW Team meeting, an EE/CA was scoped and Delivery Order was awarded in late October 2005. Field activities were completed in early December 2005 and the Treatability Summary Report was delivered in April 2006. The alternatives were presented at the Team Meeting and RAB Meeting in May 2006. Comments from the HTRW-CX regarding need for proceeding with action memorandum and remedial action could not be resolved. The EE/CA was finalized in June 2008 and the findings will be incorporated in the CERCLA process. A contract was awarded in late January 2008 to conduct a Risk Assessment (RA) at the site. Final RA work plans were submitted in August 2008. The Final Risk Assessment Report is expected in September 2009.

Acid Areas

Acid Areas 2 and 3

The Draft Soils Remedial Investigation Report was submitted in early August 2005, comments on the report were received in late September 2005. The comment responses were discussed at the PBOW Team Meeting in December 2005. Based on the discussions, USACE decided to delay the delivery of the final document and modify the Delivery Order to include additional sediment and surface water sampling in the Acids Areas. Surface water sampling was conducted in mid-May 2006 and sediment sampling was conducted in early June 2006. The Final Site Characterization Report, Remedial Investigation, Part 1 at Acid Areas 2 and 3 was submitted in March 2007. Final risk assessment / screening level documents were submitted in February 2008. A contract was awarded in late January 2008 to complete delineation sampling, the Feasibility Study, Proposed Plan and Decision Document. Delineation sampling began in November 2008 and was completed the last week of May 2009. Completion of the Feasibility Study is dependent upon results of delineation sampling which is needed to determine contamination volumes. The draft report is planned for early 2010.

Acid Area 1

A contract was awarded in late September 2006 to Jacobs Engineering, Inc. to continue the Remedial Investigation at Acid Area 1. Field work began in spring 2007 with soil sampling, piezometers installation and surface water reconnaissance, and surface water and sediment sampling in late spring 2007. Bedrock wells were installed in July 2007. Groundwater sampling was delayed until early November due to the absence of groundwater in the area. A contract was awarded in late January 2008 to complete a Risk Assessment for Acid Area 1. The final Risk Assessment work plans were submitted in early April 2009. Comments from OEPA disputing responses to Risk Assessor's comments on the draft document have been resolved. The final Site Characterization Report (part 1) was submitted July 20, 2009.

Waste Water Treatment Plants 1&3 and Ash Pits 1&3

Based on Limited Site Investigations (LSI) performed in 2000 for these areas, a contract was awarded in June 2008 to conduct a Remedial Investigation, a Human Health Risk Assessment and Ecological Risk Screening. Field data collection began in early 2009 and will continue through fall 2009. The draft Site Characterization report is expected for review in the spring 2010.

Waste Water Treatment Plant 1 - Wooden Sewer Lines

To date no investigation has been conducted along the wood-stave sewer line extending from the TNT Area A pump house toward WWTP1. Several thousand feet of the sewer line remain intact. A contract was awarded in June 2008 to conduct an RI to delineate the traces of these sewer lines and to investigate potential nitroaromatic contamination which may have affected soil and groundwater along these traces. The contract was modified in April 2009 to include investigation of the sewer line from the TNT B area to WWTP No. 1. The data will also be utilized in a Baseline Human Health Risk Assessment and a screening level Ecological Risk Assessment. Field data collection began in winter 2008-2009 with draft Site Characterization report to be submitted spring 2010.

Ash Pit 2

A contract was awarded in September 2008 to conduct Remedial Investigation, Human Health Risk Assessment and Ecological Risk Screening for this AOC. Field collection began in winter 2008-2009 with the draft characterization report expected in spring 2010.

Garage Maintenance (Locomotive Bldg) Area

A contract was awarded in October 2008 to conduct Remedial Investigation, Human Health Risk Assessment and Ecological Risk Screening for this AOC. Field data collection is scheduled to begin in the winter 2009 with draft Characterization Report to be submitted spring 2010.

Restoration Advisory Board

Restoration Advisory Board (RAB) meetings are scheduled when sufficient technical information is available to present to the community members, or at the request of the RAB. A RAB meeting was held on June 18, 2009.

Project Team Meetings

Team meetings are conducted several times throughout the year to discuss project issues. A Full Team Meeting includes representatives from USACE, NASA, OEPA, and USACE contractors. A USACE Team Meeting includes only project participants from LRH, LRN and other USACE representatives as appropriate.

PBOW WEBSITE

USACE Huntington continues to maintain the website which is dedicated to keeping the public informed about the PBOW activities. This site is continuously updated. Currently, USACE is working to have the Administrative Record (AR) accessible on the FUDS website, which is an ongoing process. The website is located at: www.lrh.usace.army.mil/projects/current/derp-fuds/pbow.

PBOW TOLL FREE NUMBER

USACE Huntington has a toll-free number in place for your use. If you have any information such as personal knowledge, photographs, maps, newspaper articles of past activities or other information you would be willing to share, or if you have questions about current activities at the site, please feel free to use the toll free number. USACE is interested in hearing from you, so call toll free (800) 822-8413 and ask for Lisa Humphreys.

PROJECT CONTACT

The PBOW Project Manager is Richard L. Meadows in the Huntington District (CELRH-PM-P). You may contact Mr. Meadows at (304) 399-5388, fax (304) 399-5715 or via email at Richard.L.Meadows@Lrh01.usace.army.mil. He may be reached during the hours of 8:00 a.m. to 5:00 p.m, Monday - Friday. You may also call the toll free number (800-822-8413) and ask to be transferred directly to his office.