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FORMER PLUM BROOK ORDNANCE WORKS

Sandusky, Ohio (Currently NASA Plum Brook Station)

Monthly Fact Sheet

June 2016

SITE DESCRIPTION - PBOW is located approximately 4 miles south of Sandusky, Ohio, and 59 miles west of Cleveland. Although located primarily in Perkins and Oxford Townships, the eastern edge of the site extends into Huron and Milan Townships. PBOW is in general bounded on the north by Bogart Road, on the south by Mason Road, on the west by Patten Tract Road, and on the east by U.S. Highway 250. The area surrounding PBOW is mostly agricultural and residential.

SITE HISTORY - The former Plum Brook Ordnance Works (PBOW) was established by the War Department as a government-owned, contractor-operated (GOCO) facility for the production of 2,4,6-trinitrotoluene (TNT), 2,4-dinitrotoluene (DNT), and pentolite during World War II. The PBOW site originally consisted of approximately 9,100 acres, approximately 3,500 acres of which was used as a buffer area outside the facility fence line. The property was acquired in the name of the United States of America in 1941. The government contractor, Trojan Powder Company, operated the production facility from December 1941 until 1945. It is estimated that during this period more than 1 billion pounds of nitroaromatic explosives were manufactured.

At the end of production in September 1945, PBOW was placed in standby operation status and the Army conducted decontamination and decommissioning activities. On December 17, 1945 the U.S. Army Ordnance Department (Ordnance Department) obtained physical control of the site. The Ordnance Department continued decontamination efforts until August 1946. In 1946 over 6,200 acres, 3,231 being located within the fenced area, were transferred to the War Assets Administration (WAA), and approximately 2,800 acres were transferred to the Ravenna Arsenal. This 2,800-acre parcel, transferred to Ravenna Arsenal and referred to as the Magazine Area (and also the Plum Brook Depot), was transferred again in July 1947 to the Erie Ordnance Depot, LeCarne, Ohio. The Magazine Area included approximately 2,300 acres inside the fence line and 500 acres of the buffer area, outside of the fence line.

In 1949, the General Services Administration (GSA) took control of WAA's portion of the PBOW property, which included an indeterminate amount of acreage outside of the fence line due to conveyances by WAA to private landowners during the late 1940s and early 1950s. It is believed that farmers were given the opportunity to buy back land in the buffer area, outside the fence line.

In June 1954, the Army reacquired the 3,231 acres within the PBOW fence line that was previously transferred to the WAA and subsequently to GSA. From August 1954 to sometime in 1958, further

decontamination was performed by the Army. The decontamination included removal of and disposal of contaminated surface and subsurface soil around the buildings and wooden and ceramic waste disposal lines containing TNT. This included thousands of pounds of TNT which were discovered in catch basins that were removed and incinerated at the burning grounds.

Two property use agreements were entered into by the Army and the National Advisory Committee of Aeronautics (NACA), the predecessor of NASA, in March 1956 and January 1958, respectively. The first agreement was for approximately 500 acres on which NACA built a nuclear reactor. The second agreement gave NACA (NASA as of October 1958) use of an additional 2,700 acres within the fenced area but outside the Magazine Area, for a total of 3,231 acres under the two use agreements. At this time, NASA had use of all property inside the PBOW fence except the 2,300 acres in the Magazine Area. The Army declared this 3,231-acre property as excess in October 1958.

In September 1961, the Army declared the Magazine Area as excess, and NASA formally requested custody of the property in October 1961. On March 15, 1963, accountability and custody of the PBOW property (6,031 acres) were transferred from the Department of the Army to NASA.

However, prior to NASA's acceptance of the property in March 1963, Ravenna Arsenal performed additional decontamination and subsequently certified 500 acres of the former PBOW property was decontaminated and suitable for unrestricted future use. This decontamination certification was only for the 500 acres in the former pentolite manufacturing area (area where NASA built the nuclear reactor) under the first use agreement. NASA identified additional DOD-related contamination in 1963, after transfer of the property. NASA performed further decontamination efforts and the removal of structures in 1964.

NASA has operated and maintained the property inside the fence line since 1963, and the facility currently located there is the NASA Glenn Research Center, Plum Brook Station. NASA operates the property as a space research facility in support of its John Glenn Research Center at Lewis Field, Cleveland, Ohio. Most of the aerospace testing facilities built in the 1960s at the site have been demolished, or are currently on standby or inactive status. During 1967 through 1971, NASA purchased approximately 2,000 acres outside of the fence line from local farmers as "buffer." On April 18, 1978, NASA declared approximately 2,152 acres of PBOW as excess. This excess included approximately 1,500 acres of farmland outside the fence, including those acres purchased from farmers beginning in 1967, and was sold as farmland. Also, 46 acres outside of the fence in the northeast corner of the PBOW facility near the guard house was conveyed to The Perkins Township Board of Education and is used as a bus transportation area. In addition, the 2,152 acres of PBOW declared excess included a 604-acre parcel in the western part of the fenced area known as "Parcel 59." This area, although previously declared excess, was not transferred and remains under NASA control. According to a NASA newsletter, NASA presently controls approximately 6,432 acres; this includes approximately 5,500 acres within the fence line and 900 acres outside of the fence which have been leased for agriculture.

PROJECT ACTIVITIES

Project 1803 – RI/FS Low Scope

Phase Completion

- Remedial Investigation/Feasibility Study (RI/FS) – Completed 30 September 1998
- Project Closeout (PCO) – Completed 30 September 2004

Project 1806 – ASR Complete NOFA OEW MMRP

Phase Completion

- PCO – Completed 26 October 2009

Project 1809 – Site Management

Phase Completion

- Site Investigation (SI) – Completed 30 September 2009
- PCO – Completed 30 September 2009

Project 1810 – Community Relations and Restoration Advisory Board

Phase Completion

- No phase associated – On-going

Monthly Update

- Quarterly Restoration Advisory Board (RAB) meetings
- Most recent RAB Meeting was held Thursday 09 June 2016 and consisted of an update of projects currently under RI/FS and RA-C phase as well as a presentation of the Acid Area 2 Construction Completion Report..
- Next scheduled meeting is Thursday, 08 September 2016 and will be site visit for the RAB members as well as the interested public to see projects currently under remediation.

Project 1811 – Additional BGs

Phase Completion

- PCO – Completed 19 September 2009

Project 1812 - Reservoir No. 2 Burning Ground

Phase Completion

- RI/FS – Completed May 2014
- Engineering Evaluation/Cost Analysis (EE/CA)
 - Left report in the draft-final stage (June 2008) per HQ determination of no immediate risk issue
 - Picked back up in the RI/FS process to complete remediation under RD and RA-C phases
- Removal Design (RmD) – Completed 11 May 2007
- Remedial Design (RD) – Completed 30 June 2014
- Remedial Action – Construction (RA-C) – on-going

Monthly Update

- Remedial Action – Construction (RA-C)
 - Phase II - Excavation is complete for the AOC. All non-haz soil has been hauled off to the landfill for use as daily cover. The Alkaline Hydrolysis process has been completed on the hazardous soil. Backfill of the AOC has started. Field efforts are on schedule to be completed 31 October 2016.

Project 1813 - TNT Area A (Soils)

Phase Completion

- RI/FS – Completed 29 June 2011
- RD – Completed 18 March 2013
- RA-C – Phase I completed 31 March 2013 & Phase 2 completed 31 May 2014
- PCO – Completed 6 March 2015

Project 1814 - TNT Area B (Soils)

Phase Completion

- RI/FS – Completed 23 September 2009
- RmD – Completed 16 June 2006
- Removal Action-Construction (RmA-C) – Completed 5 June 2007
- PCO – Completed 31 March 2010

Project 1815 - TNT Area C (Soils)

Phase Completion

- RI/FS – Completed 15 January 2010
- RD – Completed 22 January 2010
- RA-C – Completed 31 January 2013
- PCO – Completed 13 September 2013

Project 1816 – TNT Loading Area

Phase Completion

- LSI – Completed 31 July 2000
- PCO – Completed 30 September 2002

Project 1817 - Waste Water Treatment Plants 1 and 3 with Wooden Sewer Lines

Phase Completion

- LSI – Completed 30 September 2000
- RI/FS – Completed 21 April 2016
- RD – On-going

Monthly Update – WWTP# 1 and #3 Site (including TNTA/TNTB to WWTP1 Wooden Sewer Lines)

- RI/FS - Final Decision Document with authorized signature sent to Ohio EPA on 14 March 2016 for concurrence. Received Ohio EPA concurrence letter 6 May 2016.
- RD – Government estimate was prepared and submitted to Contracting. Received contractor's proposal. Conducted technical analysis and contract was awarded last week of June 2016.

Project 1818 - Waste Water Treatment Plant #2 with Sewer Lines

Phase Completion

- RI/FS – On-going
 - NASA has agreed to take future responsibility for the WWTP#2 Site, excluding the TNTC to WWTP#2 Sewer Line and the Steel Sewer Lines
 - Only limited DOD contamination was found (no risk drivers identified) associated with the TNTC to WWTP#2 Sewer Line and the Steel Sewer Lines; therefore the FS is not required and the project will proceed to a no further action Proposed Plan and Decision Document

Monthly Update

- RI/FS - Final Proposed Plan completed. Held public meeting 25 February 2016, and conducted 30-day public review. No comments received during review. No responsiveness summary required. Internal Draft Decision Document under USACE review.

Project 1819 – Pentolite Waste Area Lagoons (PAWL)

Phase Completion

- LSI – Completed 30 September 2000
- PCO – Completed 30 September 2002

Project 1820 - Red Water Ponds Area (Soils for PRRWP only)

Phase Completion

- RI/FS – On-going
- RmD – Completed 5 June 2007
- RmA-C – Completed 30 March 2009
 - Residual risk issues remain and further remediation will be conducted under the RA-C phase
- RD – On-going

Monthly Update

- RI/FS - Received HQ Washington signature on DD. Currently awaiting Ohio EPA concurrence letter.
- RD – RA-C Contract was awarded 30 June 2016.

Project 1821 - Ash Pits 1 and 3

Phase Completion

- LSI – Completed 30 September 2000
- RI/FS – On-going (Will be completed when PCO is finalized)
- PCO – On-going – Needs to be closed out in FUDSMIS

Monthly Update – Ash Pit 1&3 (including Coal Yards 1&3)

- PCO - PCO packet approved 2 May 2016.

Project 1822 - Powerhouse 2 Ash Pits

Phase Completion

- RI/FS – On-going (will be completed when PCO is finalized)
- PCO – On-going

Monthly Update

- RI/FS - Received CELRL signature 8 March 2016 on Final DD. Received Ohio EPA concurrence letter 11 April 2016. Submitted PCO packet to CELRL for approval.
- PCO – Submitted PCO packet to CELRL / CELRD for signature.

Project 1823 Acid Area 1

Phase Completion

- LSI – Completed 30 September 1999
- RI/FS – On-going

Monthly Update – Acid Area 1 (Project 1823)

- RI/FS - Final Decision Document with revised Executive Summary issued to Headquarters Washington 16 March 2016. HQ signed Final DD. Ohio EPA concurrence has been requested.
- RD – Beginning preparation of the SOW packet for an RA-C award mid-November 2016.

Project 1824 – Lower Toluene Tanks (LTT)

Phase Completion

- LSI – Completed 26 June 2006
- PCO – Completed 5 October 2006

Project 1825 - Garage Maintenance (Locomotive Bldg, Wash House, Sellite and Unloading Areas)

Phase Completion

- LSI – Completed 30 September 2000
- RI/FS – On-going

Monthly Update – Garage Maintenance Area

- RI/FS – Internal team review completed. CX Draft Proposed Plan issued 10 June 16 with comments due 5 July 2016. Currently under USACE CX internal review.

Project 1826 - Groundwater - TNT A, B and C & Red Water Ponds Areas

Phase Completion

- SI – Completed 30 September 1999
- Remedial Action-Operations (RA-O) – Completed 30 September 2005
 - The RA-O covered the well maintenance/monitoring portion of the project and LRD told us to include that under the current phase from then on
- RI/FS – Completed 8 July 2015
- PCO – Completed 8 July 2015

Project 1827 – There has never been a project assigned to 1827

Project 1828 - Acid Area 2

Phase Completion

- LSI – Completed 30 September 1999
- RI/FS – Completed 18 August 2014
- RD – Completed 16 September 2014
- RA-C – On-going (Will be completed when PCO is finalized)
- PCO – On-going

Monthly Update – Acid Area 2 (Project 1828)

- Project Closeout (done during the last active phase of Remedial Action – Construction (RA-C))
 - PCO packet was prepared and submitted to Ohio EPA requesting their concurrence letter for the project closeout.

Project 1829 - Acid Area 3

Phase Completion

- LSI – Completed 30 September 1999

- RI/FS – Completed 30 October 2014
- RD – Completed 8 January 2015
- RA-C – On-going

Monthly Update – Acid Area 3 (Project 1829)

- Remedial Action – Construction (RA-C) Continuing excavation of several hot spots, obtaining screening samples, stockpiling w/ sampling and disposing to landfill as appropriate.

Project 1830 – Ransom Road Disposal Area

Phase Completion

- RI/FS – SOW for RI/FS to be submitted to Contracting (LRN) for award in 4th Qtr (pending availability of funds)
- Cost to Complete estimate was prepared and is awaiting QC and SR approval so that funds will be budgeted in FY17 for in-house efforts.

PROJECT TEAM MEETINGS

Team meetings are conducted prior to each RAB meeting to discuss project issues and review presentation material planned for the RAB meeting. A Full Team Meeting includes representatives from USACE, NASA, Ohio EPA, and USACE contractors. The last team meeting was held on Thursday, 09 June 2016 at the PBOW field office trailer. The next team meeting is scheduled for Thursday, 08 September 2016 at the PBOW field office trailer.

PBOW WEBSITE

USACE Huntington continues to maintain the website which is dedicated to keeping the public informed about the PBOW activities. This site is updated throughout the year. The PBOW Administrative Record is no longer available electronically but the Public Repository (for public viewing) is still maintained at the Firelands College Library Reference Desk and updated on a quarterly basis.

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. You may call toll free (800) 822-8413 to speak with the USACE PBOW Technical Coordinator.

PROJECT CONTACT

The PBOW Project Manager may be contacted at (304) 399-5388, fax (304) 399-5715 or via email at PBOW@usace.army.mil.