

NASA water line started with TNT

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Plum Brook Station photo/ used with permission of NASA

Construction of the pipeline in the summer of 1941, somewhere between what is now NASA Plum Brook Station and Sheldon Marsh State Nature Preserve.

The acquisition of the use of raw water lines that formerly fed water to NASA Plum Brook Station, now to provide water for local water treatment facilities, was a wonderful collaboration of both NASA and local government officials.

But the history of the lines should be understood. It was reported that the lines “...were constructed in the 1940s by the federal government to serve a nuclear reactor at Plum Brook.” Not entirely so.

In fact, two water lines (underground pipes) were installed, both in the spring and summer of 1941. The larger line was laid down in a rather straight line, about five miles long from a constructed concrete pump station on Lake Erie about three quarters of a mile west of Huron, west of Rye Beach Road, to the center of Plum Brook Station. That structure, today, is on the northeast corner of the Sheldon Marsh State Nature Preserve, with a 0.9 mile access roadway extending to Cleveland Road.

A second, smaller water feed line, about 5 miles in length, was constructed from the east side of Sandusky, on Sandusky Bay, to the new Plum Brook Ordnance Works. It would provide a backup source of water should the other, larger water line fail.

The facilities at Sheldon Marsh, the road, the pump station, and the main water line were constructed in 1941 as a crucial part of the Plum Brook Ordnance Works then being constructed (for the most part) in Perkins Township, present-day NASA Plum Brook Station.

All of this occurred long before NASA existed, long before NASA constructed and operated a nuclear test facility (now safely dismantled and removed) — which did use Lake Erie water from the line as a backup or make-up water coolant supply. But that was in the 1960s and 70s.

From 1941 through 1945 raw water from Lake Erie was needed to manufacture massive amounts of TNT, trinitrotoluene, the major high-explosive used in World War II ordnances. The Plum Brook Ordnance Works was one of over a dozen major explosives manufacturing facilities that supported the Allied war effort. Over a billion pounds of TNT was manufactured here, using rail tank loads of toluene, distilled from coke production and crude oil.

The toluene was then reacted with concentrations of both nitric and sulphuric acids (also manufactured at the Ordnance Works), which attached three nitrates to the toluene, yielding the waxlike TNT, trinitrotoluene.

The TNT was purified, and sent by rail in wooden boxes to the Ravenna Arsenal in eastern Ohio, where the TNT was melted and poured into artillery shells, hand grenades, and other munitions that helped us win World War II.

Trainloads of boxes of TNT also left the Plum Brook Ordnance Works to ports on the East Coast, where they were loaded onto ocean freighters, destined for the use of ordnance by our allies in both the UK and Russia.

Over three thousand employees worked around the clock at the facility from 1941 to 1945, employed by the Trojan Powder Company, which operated the Plum Brook Ordnance Works for the War Department (the owner).

Interestingly, as with many other facilities in WWII, the Plum Brook Ordnance Works was one of the first equal opportunity employers of the time. Able-bodied men served in the armed forces; consequently large percentages of workers were women and cultural minorities.

I was given permission by NASA to examine the WWII records of the Plum Brook Ordnance Works, which reveal that the Trojan Powder Company was gratified with the work done by all of its employees. It was proud to employ such a new diversity of productive workers. That, dare I contend, set the tone for employment after the war.

Most of the manufacturing facilities from WWII at Plum Brook Station have been removed, carefully with full environmental cleanup — a process by the US Army Corps of Engineers that continues but is nearing completion.

But the pump station at Sheldon Marsh State Nature Preserve, and the water lines between Plum Brook Station and Sandusky and Sheldon Marsh are intact, and are now being brought into favorable use in the 21st century.

We all benefit from the far-sighted collaboration of NASA and local water agencies and officials in the adaptive re-use of these unique local remnants of the WWII war effort.



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John Blakeman is a retired Perkins High School biology instructor, who works intermittently at NASA Plum Brook Station as an environmental specialist, where he advises NASA on the management and restoration of the native ecosystems there; particularly in the eventual restoration of up to 3,000 acres of the former Firelands Prairie. He plans and conducts prescribed fires at the Station, and oversees the restoration of near-virgin prairies at the site. He has done extensive historical research on both NASA at Plum Brook Station, and the massive Plum Brook Ordnance Works that first created the site in World War II.

Blakeman was a guest on "Between the Lines." Watch it at [sanduskyregister.com/ btl](http://sanduskyregister.com/btl).