

GAO

Briefing Report to the Chairman,
Subcommittee on Environment, Energy,
and Natural Resources,
Committee on Government Operations,
House of Representatives

December 1985

HAZARDOUS WASTE

**Status of Cleanup at the
Former West Virginia
Ordnance Works**





United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-221138

December 6, 1985

The Honorable Mike Synar
Chairman, Subcommittee on Environment,
Energy, and Natural Resources
Committee on Government Operations
House of Representatives

Dear Mr. Chairman:

On June 13, 1985, you asked us to review the Department of Defense (DOD) program for identifying and cleaning up hazardous waste on its formerly owned properties. Because of the interest of Representative Bob Wise of West Virginia, it was agreed that, as a part of the review, we would provide you a status report on the progress of the decontamination at the former West Virginia Ordnance Works (now Clifton F. McClintic State Wildlife Station), Point Pleasant, West Virginia. On September 26, 1985, we briefed your staff on the preliminary results of our work, and have since updated the information presented in that briefing.

In summary, after discussing its responsibility for cleanup with the Environmental Protection Agency (EPA) for 2 years, the Army has accepted the lead role of investigation and cleanup at the ordnance works. The various phases of the decontamination program appear to be progressing smoothly. Officials of both the EPA and the West Virginia Department of Natural Resources have expressed their overall satisfaction with the Army's actions. Our observations are presented in more detail on pages 6 and 7 of the enclosed briefing document.

In conducting our review, we interviewed officials and examined records from DOD, EPA, the West Virginia Department of Natural Resources, and the General Services Administration. We did not independently evaluate the quality of the Army's cleanup efforts. We made our review between July and November 1985 in accordance with generally accepted government auditing standards.

The views of directly responsible DOD officials were sought during the course of our work and are incorporated in the enclosure where appropriate. In accordance with your wishes, we did not request DOD to review and comment officially on this report.

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As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of issuance. At that time, we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Harry R. Finley". The signature is written in a cursive style with a large, prominent initial "H".

Harry R. Finley
Senior Associate Director

**HAZARDOUS WASTE: STATUS OF CLEANUP AT THE
FORMER WEST VIRGINIA ORDNANCE WORKS**

HISTORY

- Pre-1942 Primary uses of the land included agriculture, forest, and pasture.
- 1942 The West Virginia Ordnance Works (WVOW) is established approximately 6 miles north of Point Pleasant, West Virginia, and consists of approximately 8,300 acres of land.
- WVOW is used for the manufacture of TNT which is shipped to other government installations for loading into munitions. No ordnance is assembled or stored at WVOW.
- 1945 Operations at WVOW end. It is decontaminated to be placed in a standby status, but no records currently exist showing the extent of this decontamination.
- 1946 The entire WVOW is declared excess to Army needs and the property is turned over to the War Assets Administration for disposal.
- 1946-49 Portions of WVOW are sold or transferred. Approximately 2,450 acres of the industrial area of WVOW are not released for sale because they are contaminated with TNT and TNT manufacturing by-products to the extent that decontamination is not considered feasible.
- 1949
- June The approximately 2,450 acres are given to the state of West Virginia for wildlife conservation. A deed is executed to transfer the property to the state, but does not refer to actual or potential contamination nor to liability arising from personal injury or property damage.
- October A subsequent deed is executed which states that the land has been subjected to contamination, but is decontaminated to the extent deemed reasonably necessary and consistent with economic considerations. This deed also stipulates that the state assumes all risk for personal injury or property damage arising out of ownership, maintenance, and use of the tract of land.

[We were told by an official at the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) that the second deed was probably issued at the request of the then War Department and represented an attempt to introduce some conformity into the deeds for excessed property. We were also told that the decontamination referred to in the second deed probably referred to those cleanup actions necessary to bring the property to "standby" status. We were unable to determine what, if any, decontamination took place between the times the two deeds were issued.]

On the 2,450 acres deeded to the state, the Clifton F. McClintic State Wildlife Station is established. A wildlife program is later started involving the construction of 36 ponds for waterfowl, fisheries, and furbearing animals. (A map showing McClintic and the former WVOW appears on page 8.)

1954 An inspection of WVOW property by the Army's Ordnance Ammunition Command detects no contamination on government property but finds contamination consisting of particles and chunks of TNT on McClintic.

1954-60 Discussions take place within the Army concerning appropriate procedures and responsibility for decontamination at WVOW.

1960 The Army removes some underground TNT processing lines and surface TNT.

RECENT ACTIVITIES

1979

January As part of its Installation Restoration Program, the Army conducts an archives search concerning WVOW, primarily by reviewing records of land transactions. There is no on-site visit.

February The Army concludes that there is no significant danger and that it should take no further action because: (1) the amount of information was limited, (2) West Virginia knew about the potential contamination at

time of transfer, (3) time has elapsed since the property was transferred, and (4) no explosive contamination was discovered.

1981

February West Virginia Department of Natural Resources becomes aware of potential contamination problems at former military ordnance plants and begins a preliminary investigation at McClintic.

April The preliminary investigation concludes that a potential hazard to the public may exist and recommends that additional work be done to determine the source and extent of the contamination.

West Virginia nominates WVOW for the National Priorities List created under the Comprehensive Environmental Response, Compensation, and Liability Act. WVOW is nominated because of the importance of the McClintic wetlands areas and the potential exposure to the public at a popular recreation area located within the boundaries of WVOW.

May Personnel at McClintic notice "red water," a by-product of TNT manufacturing, seeping into pond number 13.

November The Environmental Protection Agency (EPA) requests the Army to take proper remedial action at McClintic, despite the "hold harmless" clause in the deed of transfer.

The Army, while discussing its cleanup responsibilities with EPA over the next 24 months, is providing assistance to the NUS Corporation, which was under contract to EPA to prepare the Remedial Action Master Plan for McClintic.

December An EPA environmental response team performs a field review at McClintic.

1982

April A technical assistance team for EPA begins a historical data search, soil

sampling, installation of monitoring wells, and a hazard assessment.

December WVOW is included in the National Priorities List

1983

January The NUS Corporation conducts an on-site inspection of McClintic as part of the preparation of the Remedial Action Master Plan.

September The NUS Corporation releases a Remedial Action Master Plan, the primary planning document for all remedial measures, and the Remedial Investigation and Feasibility Study Work Plan, a task-by-task breakdown of the activities required in performing the Remedial Investigation and Feasibility Study.

In assessing the potential threat of the contamination at McClintic, the master plan concludes that the most serious public health risk is the contamination of drinking water wells located outside of McClintic by the migration of contaminated shallow ground water.

December The Army tells EPA that it has elected to conduct the necessary cleanup actions at McClintic.

1984

May EPA concurs with Army's request to assume responsibility for response actions at WVOW.

August Environmental Science and Engineering, Incorporated, under contract to USATHAMA, releases the results of an archives search concerning WVOW. This report concludes that the potential exists for contamination to migrate through surface water and/or groundwater to the deeper layers of the underlying aquifer or to the nearby Ohio River and to the potable water supplies of nearby cities and towns.

October Environmental Science and Engineering begins work on the Remedial Investigation Report at WVOW.

November Environmental Science and Engineering releases a technical plan for assessing the contamination and contamination migration in soils, surface water, and groundwater, and for evaluating remedial action alternatives.

1985

August Based on a draft Remedial Investigation Report, personnel at USATHAMA informed us that they believe cleanup actions at McClintic will be limited to removal of the remaining underground TNT processing lines and removal and/or incineration of soil. Cleanup will not involve extensive groundwater treatment.

Both EPA and West Virginia have been involved with the Remedial Investigation Report and USATHAMA personnel do not expect any problems with it. For example, EPA requested USATHAMA to include reactivity sampling and testing of McClintic soil to determine if the soil is explosive. Previously, USATHAMA provided data collected from other TNT manufacturing plants, and not specific data on McClintic. Based on the general data, USATHAMA does not believe that the soil will be "reactive" since TNT must be tightly enclosed, not just buried, before it will react.

USATHAMA provides the following estimates for the cleanup of the surface contamination at WVOW:

Reactivity sampling and testing completed	January 1986
Draft Feasibility Study completed	March 1986
Feasibility Study approved by EPA	June 1986
Remedial action initiated	August 1986
Remedial action completed	Summer 1987

According to USATHAMA, the Feasibility Study will address the available alternatives for dealing with surface, subsurface, and groundwater contamination. Although the study is underway, it will not be completed until USATHAMA receives the results of the reactivity sampling and testing requested by EPA. The reason for this delay is that until it can be demonstrated whether the soil at

McClintic is reactive, the appropriate treatment of the contaminated soil is unknown and cannot be addressed in the Feasibility Study. According to USATHAMA personnel, EPA will not consider a feasibility study that does not address cleanup alternatives for all forms of contamination at McClintic.

September The completed Remedial Investigation Report prepared by Environmental Science and Engineering is forwarded to USATHAMA, EPA, and West Virginia. This report characterizes the hydrogeologic conditions of the site and quantifies the extent of contamination in soils, groundwater, surface water, sediments, and underground process lines.

November EPA officials told us that overall, since the Army decided in 1983 to take responsibility for the cleanup, they are pleased with the Army's progress at WVOW. They reviewed the Remedial Investigation Report and found no significant problems, although there are some points which need to be resolved. Their main concern was that the Army include the reactivity testing for McClintic, which it did.

Representatives of the West Virginia Department of Natural Resources told us that they concur with EPA officials' assessment of the Army's progress to date. They have also reviewed the Remedial Investigation Report, and have only minor points to be discussed with USATHAMA.

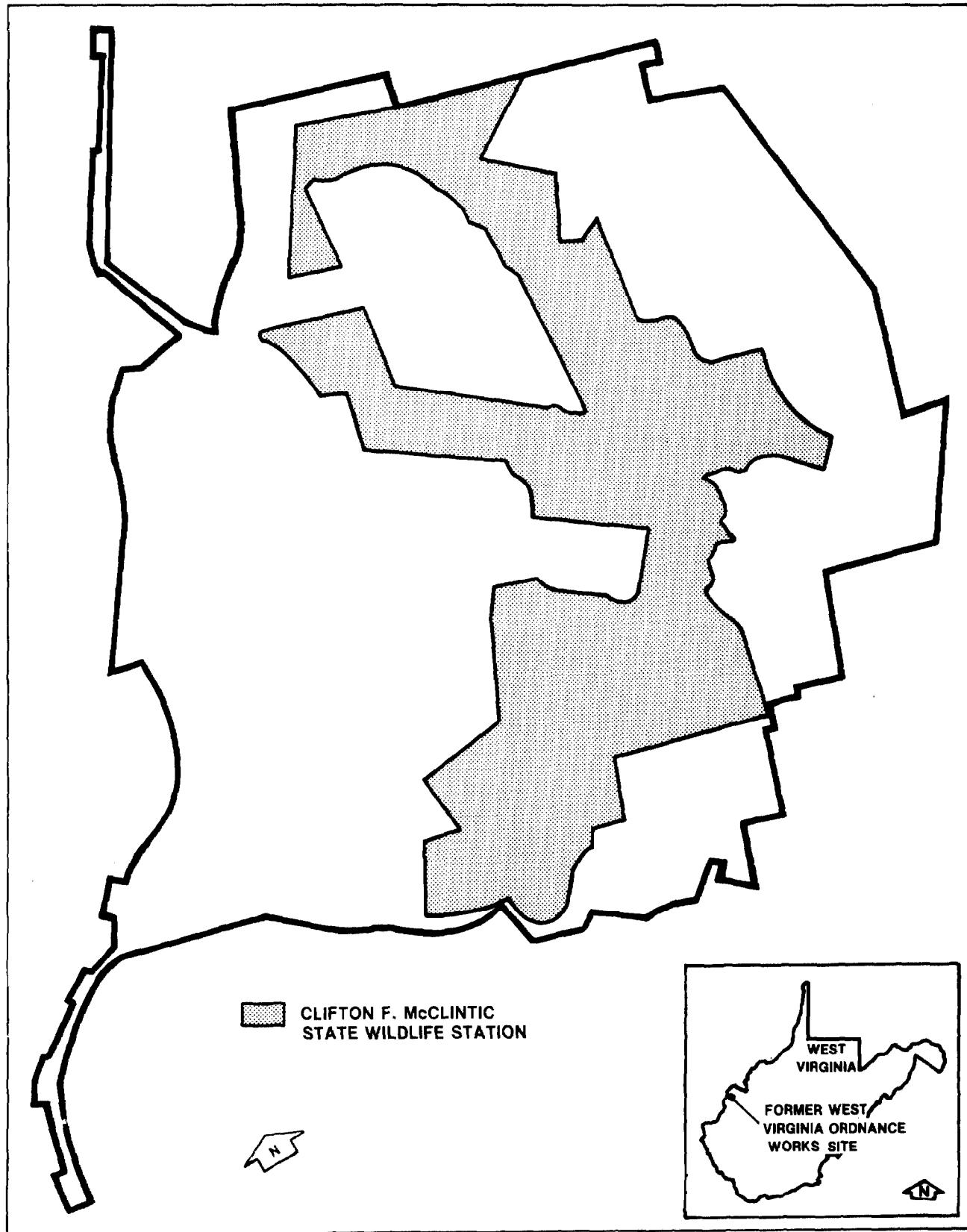
GAO OBSERVATIONS

After some initial debate over responsibility for cleanup, the Army has accepted the lead role for remedial action at the former WVOW. The various phases of the decontamination program appear to be progressing smoothly.

Based on the studies to date on WVOW, USATHAMA personnel believe that TNT and TNT manufacturing by-product contamination is limited to McClintic and adjacent acreage owned by Mason County, West Virginia, and the federal government. Monitoring wells around the perimeter of these tracts and on privately owned property have detected no TNT contamination.

Both EPA and the West Virginia Department of Natural Resources have expressed overall satisfaction with the Army's actions.

Figure 1: Former West Virginia Ordnance Works



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