

MEMORANDUM THRU

CENWO-HX-H (T. Donaldson)

CENWO-HX (M. Davies)

FOR FILE

SUBJECT: Site Visit to IAAAP 11/28/00

1. On 28-30 November 2000 Luke McCormick visited Iowa Army Ammunition Plant (IAAAP) near Burlington, IA. The visit was in support of the IRP and FUSRAP actions being performed at IAAAP. Persons contacted at the site included Kevin Howe, the Omaha District Project Manager, Bob Haines the American Ordnance (AO) Safety Officer, Butch Hicks, the AO Rad tech, and Nick Alino, TN&A.
2. Luke Visited Firing Site 12 (FS-12), Firing Site 6 (FS-6), and attended interviews with former IAAAP employees. The following information was gathered from the site visits and interviews.

- a. Firing Site 12.

The DOE report on surveys of the interiors of Buildings used by AEC, included a reference to DOE finding DU fragments located outside the building at FS-12. DOE did not inform anyone of this at the time of the survey (June 2000). TN&A (USACE contractor) personnel did a random survey of soils at FS-12 and located what appeared to be about 20-50 spots of elevated radiation. Some had visible fragments with yellow and green oxidation. Sites were marked with pin flags. American Ordnance (Plant operating contractor) personnel collected the visible fragments and any visible contaminated soil using a shovel and placed the fragments in a new 55 gallon drum. The drum, when collection was complete, appeared to contain less than 2 inches of fill consisting mostly of dirt with 2-4" fragments interspersed. I ran an MCA spectrum of one fragment and the spectrum corresponded with a natural Uranium spectrum on file. (DU and Natural Uranium should have nearly identical spectrums).

Firing Site 12 is a currently active firing site. Bob Haines, the AO safety officer, and Butch Hicks, the AO rad tech, agreed to stop access and use of firing site 12.

Conceptualization of the site. It is believed that this DU was left on site from the previous remediation, probably buried beneath a few inches of soil. It is now at the surface as the result of frost 'heave' and plowing or other operations performed on site. The locations where the fragments were found nearly surrounded the firing site and building, with the furthest fragments found at about 100 meters, and the vast majority of the fragments found to the west and north of the building within about 20 meters. Most of the fragments are thought to have been found on the surface or partially buried, with only a

few completely buried under an inch or so of soil. The soil type is primarily clay but the firing site is covered with gravel and it is evident that the soil has been disturbed a number of times.

A confounding factor for remediation is the potential for unexploded ordnance at the site.

b. FS-6.

The interview with Larry Pennibaker (sp) indicated that hydro shots were conducted on FS-12, and that he personally was not involved in them and had little in-depth knowledge of the hydro shots. Larry had conducted test firings of spheres at FS-6. The spheres consisted of an outer shell and an inner shell of explosives with a 1/16" thick shell of DU between the shells. The spheres were about 18" in diameter. The number of test firings of this type is unknown.

Butch Hicks and Luke McCormick conducted a walkover of the area using pancake GM detectors, and were unable to detect any radiation above background at FS-6.

Conceptually, it is expected that the DU shell would be dispersed as a fine particulate during the detonation. This particulate would settle out of the air very quickly. (Studies of DU involved in Tank fires and in hard target impacts showed that most all of the DU particulate fell out of the air within 20 meters of the site with the furthest detected DU falling at 50 meters.). Any contamination at the site would be dispersed in the surrounding soils, aging would change the oxidation states a number of times making the DU water soluble at some time during the last 30 years. It is not expected that elevated DU concentrations will be found in the soils at FS-6.

c. Line 1.

During the site drive through and interview, it was mentioned that building 1-77 was where Tritium bottles were stored. The bottles arrived full and were not opened. From there they were installed in the weapons. The area was described as very clean and is not suspected to have any tritium contamination. Confirmation swipes are suggested. Building 1-15 was described as a receiving area for packages of radioactive materials used by AEC. It was also described as a very clean operation and the building is not expected to be contaminated. Explosive spheres which contained a thin DU shell were machined in building 1-40. Because the DU was sandwiched between layers of explosives, the machining generated very little waste and contamination was not expected.

3. POC for this memorandum is Luke McCormick, health physicist, CENDO-HX-H, (402) 697-2588.

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