

## Excavate, Segregate and Remove MEC and MD at Lake City Army Ammunition Plant, Independence, Missouri

### LAKE CITY ARMY AMMUNITION PLANT (LCAAP)

LCAAP is a Government-owned, Contractor operated facility located within the city limits of Independence, Missouri, encompassing 458 buildings on 3,935 acres. The facility is an active U.S. Army Operations Support Command (OSC) Installation and the largest small-arms (5.56 - 30 mm) manufacturing plant in the world. The plant was opened in 1941 and operated by Remington Arms Company, Inc. from 1941 through 1985 (except for the non-production years). LCAAP has produced a variety of small arms ammunition since 1941, including .30 caliber, .38 caliber, .50 caliber, 5.56mm, 7.62mm, 20mm, and 30mm ammunition. During WWII, 5.7 billion cartridges were produced; during the Korean Conflict, 1.1 billion, and during the Vietnam conflict, 14.4 billion. In November 1985, plant operations were assumed by Olin Corporation. Alliant Tech Systems assumed plant operations in April 2000.

PIKA's project objectives included providing labor, materials, equipment, and supervision to perform the excavation, segregation, and removal of munitions and explosives of concern (MEC) and munitions debris (MD) from 5,000 cubic yards of construction debris, scrap metal, and soil at Area of Interest 31A at LCAAP.

### SERVICES PERFORMED

PIKA provided teams of UXO specialists and MEC-trained crews to write and provide work plans, scopes, and all MEC-related safety documents for this project including a planned approach to perform the removal actions, to address the explosives safety issues presented by MEC, and to coordinate with the subcontractors. In addition to the work plans, PIKA prepared an Explosives Safety Submission (ESS) for review and approval by the Department of Defense Explosives Safety Board (DDESB). Additional documents were required upon discovery of depleted uranium (DU) contaminated rounds and asbestos containing material (ACM) in the construction debris.

The removal effort involved the initial sweeping and surface clearance to remove visible MEC and MD prior to beginning the excavation operations. This operation involved the blow in place (BIP) of any identified MEC that was determined to be unacceptable to move. Any MEC identified as safe to move was staged in an area and prepared for intentional detonation of the MEC and certification and disposal of MD.

Once the area was deemed clear of any visible MEC/MD, PIKA crews excavated for subsurface clearance to grade level (depth of undisturbed soil). The excavated soil was moved to a sorting/sifting area where it was further processed to remove MEC by utilizing a power screen conveyor system. From this staged area, PIKA's UXO crews screened the soil and sorted to remove MEC/MD. MEC/MD were prepared for intentional detonation, when required, and all items were certified, demilitarized and transferred to the LCAAP, COR in accordance with appropriate USACE guidelines for MEC/MD.

### UNEXPECTED CONDITIONS/DISCOVERIES

During these operations, the field crews encountered a total of four (4) 20 mm M-101 Depleted Uranium (DU) Davy Crockett projectiles. PIKA brought in an in-house radiological technician to survey the area to make sure the radiological contamination from the DU had not spread. These rounds were recovered from the screened soil and transferred to the LCAAP, COR for final disposition.

In addition, PIKA's Corporate Safety and Health Manager identified ACM in the construction debris that later tested to be friable asbestos. PIKA developed amendments to the work plans and, with proper level personal protective equipment, performed the safe removal of the ACM and prepared the ACM for final disposition.

### PROJECT HIGHLIGHTS

- *Developed Work and Safety Plans for all Aspects of Site Activities*
- *Unexpected Radiologically Contaminated Rounds and Asbestos*
- *Developed Explosives Safety Submission for DDESB*
- *Excavated, Screened, and Sorted MEC/MD from 5,000 Cubic Yards of Construction Debris, Scrap Metal, and Soil*
- *Government Meetings to Address Safety Issues*
- *Environmentally Related Facility Improvement*
- *Zero OSHA Violations and Zero Lost Work Days*

