

Camp Minden M6 and CBI Potential Technology Screening Information

| Name of Technology Vendor Contact Information Website or link to additional information | Please describe how your technology or process works and the equipment involved. Is this existing equipment or does it need to be fabricated? Is a donor explosive required? | Has your technology/ process been tested or used with M6, CBI, propellants, or similar materials? What permits or approvals do you have in hand? Describe actual uses, volumes treated, and results of tests or applications for M6 like materials. | Can your technology/ process be implemented on-site at Camp Minden? How long would it take to mobilize, install and be ready to treat material? Would it require any extra handling or preparation of the M6 and CBI? What are the key space and logistical requirements for your installation on-site including storage of residues/wastes? | What is the Destruction Efficiency of your process? What is the nature of the residues/wastes that will remain, and what processes/disposal/ recycling will be used for this residue/ waste? What percent volume reduction (or addition) is achieved? | What is the nature and composition of any emissions? How are emissions monitored, captured, tested, treated and ultimately disposed? What potential hazards to workers, other on-base personnel and nearby residents should be considered and how are they managed? | What is the highest throughput you have achieved you're your process? What is the reasonable maximum daily capacity/ throughput you believe you could achieve at Camp Minden? What is the reliability and maintenance requirements of your equipment? Is it subject to weather? |
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| <p>Thermal Treatment/ Tunnel Furnace</p> <p>CH2M HILL, Dynasafe US, and Expal Team</p> <p>P.O.C. Carlos Giron CH2M HILL, Inc. Vice President (225) 663-5190</p> | <p>Up to two PLC controlled Tunnel Furnaces will be used. The furnaces are equipped with individual trays that will have a specified amount of either M6 or CBI. The material will move through an airlock into an ignition system in a combustion chamber. The chamber is enclosed and emissions generated inside the combustion chamber will be captured and sent to a pollution abatement system. Once combustion is complete, the tray will automatically move into an area to dump the ash. It then leaves the sealed portion of the system and is cooled prior to repeating the circuit.</p> <p>The system will require fabrication. No donor charges are required.</p> | <p>We have experience thermally treating similar types of propellants as well as a wide range of other explosives and munitions. We are using our broad experience in this area to custom design a higher throughput process, specifically for the material at Camp Minden, and are extremely confident in the potential for success.</p> <p>In regards to existing permits, our team includes explosives handling experts from Expal. Expal personnel have offices on Camp Minden and have been handling the M6 (as well as other explosives) on this facility. They have unique insight into the logistical challenges with handling and transport of this material. Expal personnel are licensed by Louisiana State Police as Explosive Handlers, have Explosive Blaster's license, and commercial driver's licenses. Expal employees also have Alcohol, Tobacco and Firearms (ATF) licenses to allow for handling and transportation of the M6 and CBI from storage magazines to a central treatment area on Camp Minden.</p> | <p>Yes, this technology is applicable to the materials (M6 and CBI) stored at Camp Minden. We anticipate approximately 10 months to design and install our system. The design will include design of the system to transfer the material in the existing containers into the furnace. The facilities at E-Line provide ample space (200 by 75 feet) for equipment, as well as access to utilities: electricity, natural gas, and water. E-line is also conveniently situated on Camp Minden to allow for proper explosive safety quantity distances that will be needed for the handling and treatment phase of the project. Maintaining safe work distances are essential to protecting workers and the surrounding community.</p> | <p>Based on the characteristics of the M6 and data obtained from burn tests, we are confident the destruction efficiency will be in excess of 99.95%, resulting in 0.05% (or less) material generated per unit weight treated.</p> <p>Waste ash will be generated, which will require characterization and disposal. There will also be a dry waste stream from the pollution abatement system that will also require characterization and disposal. We anticipate that all waste streams generated should be able to be disposed at either a hazardous or non-hazardous waste disposal facility.</p> <p>Empty containers containing the M6 Propellant and CBI compounds will be characterized and disposed of in compliance with applicable or relevant and appropriate requirements.</p> <p>Area E provides ample space and utilities (electricity, natural gas, and water) to safely accommodate the thermal treatment system.</p> | <p>Combustion of M6 and CBI will generate emissions that generally contain moderate quantities of particulates (in similar quantities as diesel emissions) carbon dioxide, carbon monoxide and water. Our technology uses a combustion chamber inside of an air lock that captures these emissions (including dust) and sends them to a pollution abatement system for treatment and storage, therefore eliminating any release of these hazardous substances to the environment. A continuous emissions monitoring system is an integral component of the pollution abatement system. The pollution abatement and emissions monitoring system will ensure that state and federal emission limits for clean air are met. These proven technologies have been used with a wide range of munitions (including chemical munitions) at other sites and we are confident that these technologies will ensure that there are no releases of emissions that could harm human health or the environment.</p> | <p>We currently (or have in the past) operated thermal destruction systems that have achieved 120 kg/hr throughput. This technology is currently being used at the Anniston Army Depot to destroy grenades at a rate of approximately 2880 grenades per hour.</p> <p>For Camp Minden, we are custom-designing a thermal destruction system that will have a throughput of approximately 1,200 kg/hr. This will only require approximately 10 months to complete destruction of the M6 and CBI in less than a year. This system is also scalable such that an additional furnace can be added (if desired) to cut the treatment time down to approximately 7 months. This equipment is designed to operate 24 hours a day, 7 days per week, and our units can typically operate for several years with minimal maintenance required. Minimal personnel are needed to operate our equipment. As a result, we see no issues for less than one year of continuous operation at Camp Minden.</p> |