

Department of Defense

Open Burn Pit Report to Congress



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Under Secretary of Defense for Acquisition and Sustainment

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Introduction

Pursuant to Section 355 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Public Law 115-232, this report provides details of any ongoing use of open burn pits; and the feasibility of phasing out the use of open burn pits by using technology incinerators.

The Department of Defense (DoD) minimizes solid waste generation and disposal during contingency operations to protect the health and safety of our men and women in uniform. The disposal of hazardous waste, medical waste, tires or plastics in open burn pits during contingency operations can emit harmful smoke or fumes and is therefore strictly prohibited by DoD Instruction (DoDI) 4715.19, *Use of Open Air Burn Pits in Contingency Operations*, unless the Combatant Commander determines that no feasible alternative exists. Generally, the use of open burning is limited to short term contingency operations outside of the United States where no feasible alternative exists. For the longer term enduring locations, DoD uses conventional solid waste management practices.

If no feasible alternative exists, open burn pits are to be operated in a manner that prevents or minimizes risks to human health and harm to the environment. This report provides current policies and guidance, use of open burn pits, factors that influence their continued use, feasibility of phasing out and the challenges that are continuing to be investigated.

Current policies and guidance pertaining to burn pits

DoD incorporated the requirements of federal laws, regulations, and executive orders (EOs) that apply to open burn pits in contingency locations into DoD policy and guidance. In addition, the Geographic Combatant Commands (GCC) have developed specific policies and guidance in their areas of responsibility (AOR). This report includes references from the March 2016 *Report on Prohibition of Disposal of Covered Waste in Open-Air Burn Pits* submitted by the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics in response to Section 313 of the Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015, Public Law 113-291.

Department of Defense (DoD) Policies and Guidance

The Services, the Joint Staff and Combatant Commanders are guided by DoDI 4715.19, *Use of Open-Air Burn Pits in Contingency Operations*. The DoDI establishes policy, assigns responsibilities, and directs procedures regarding the use of open burn pits¹. The operational commanders are required to develop and approve solid waste management plans that describe the use of open burn pits and address the disposal of all wastes². Included in DoDI 4715.19 is the requirement for commanders of the Combatant Commands to issue specific engineering and medical guidance intended to protect human health and safety for burn pits.

¹ DoDI 4715.19, *Use of Open-Air Burn Pits in Contingency Operations*, page 8, paragraph 1.a.

² DoDI 4715.19, *Use of Open-Air Burn Pits in Contingency Operations*, page 9, paragraph 1.e

The DoDI 4715.22, *Environmental Management Policy for Contingency Locations* establishes policy, assigns responsibilities, and provides direction for environmental management at contingency locations. This includes references to DoDI 4715.19 for open-burn pits.

The DoDI 6490.03, *Deployment Health* establishes policy, assigns responsibilities, and provides direction for comprehensive deployment health program that applies to all deploying, deployed, and redeployed Service members and units. The program is designed to anticipate, recognize, evaluate, control, and mitigate health threats encountered during deployments.

U.S. Central Command (USCENTCOM) is currently the only GCC operating open burn pits. USCENTCOM has provided additional guidance and clarification in Central Command Regulation 200-1, (CCR 200-1) *Protection and Enhancement of Environmental Assets* and Central Command Regulation 200-2, (CCR 200-2) *Contingency Environmental Guidance*. CCR 200-1 establishes the requirement for the USCENTCOM Environmental Lead (CEL) to develop and manage an environmental assessment program at sites within the USCENTCOM AOR³. The guidance in CCR 200-1 is further amplified by CCR 200-2 which provides additional guidance on the requirement for environmental surveys and reports⁴. CCR 200-2 also specifically includes the requirement to develop an open burn pit plan to address proper segregation and management of solid waste streams to insure burn operations are safe and efficient⁵.

Ongoing use of Open Burn Pits

In conducting the research to complete this report, each of the Services provided a current list of open burn pits at contingency locations where they were designated as the Lead Service⁶ according the Contingency Location Master List. The data collected included the locations, type of operation (U.S. operated or contracted) where open-burning was occurring of any type of waste. The list was not limited to open burning of medical waste, hazardous waste, tires and plastics commonly referred to as “covered waste.” The table below is a result of the data call performed on March 8, 2019.

Due to the sensitivity of ongoing operations and to protect U.S. service members deployed, the specific details associated with each contingency location were not listed. The data collected were aggregated into a single table showing the number of burn pits by country and type. The open burn pits are categorized by the type of operator:

- U.S. operated
- Contractor operated (U.S.)

³ Central Command Regulation 200-1, Protection and Enhancement of Environmental Assets, page 11, paragraph 2.5.a

⁴ Central Command Regulation 200-2, USCENTCOM Contingency Environmental Standards, page 9

⁵ Central Command Regulation 200-2, USCENTCOM Contingency Environmental Standards, page 49

⁶ Pursuant to DoD Directive 3000.10, the designated Lead Service is responsible for the base operations support to the mission and tenants at contingency locations.

No location listed in the table has more than 500 personnel assigned. DoDI 4715.19 directs how Combatant Commands report if there is no feasible alternative for disposing of waste other than open burn pits. The Department then notifies Congress of this determination and provides a health assessment after 180 days.

The data provided for Syria or Afghanistan does not account for any ongoing or future changes (increases or reductions) in number of contingency locations, personnel, equipment, weapon systems or mission. Specific questions should be referred to the applicable Combatant Commands.

| <i>Location</i> | <i>U.S. Forces Operated</i> | <i>Contract Operated (US)</i> | <i>Total</i> |
|--------------------|-----------------------------|-------------------------------|--------------|
| <i>Syria</i> | <i>5</i> | <i>2</i> | <i>7</i> |
| <i>Afghanistan</i> | <i>1</i> | <i>0</i> | <i>1</i> |
| <i>Egypt</i> | <i>1</i> | <i>0</i> | <i>1</i> |
| | | | <i>9</i> |

Table 1. Current Open Burn Pits from Military Department Data Call on March 8, 2019. (All types of waste)

Influencing Factors

There are several factors that influence the continued use of open burn pits. The first is the short-term nature of contingency locations which includes both the mission focus and the rotation of deployed personnel. The second is the infrastructure gaps and limited contract disposal capabilities in contested environments such as Iraq, Syria, Afghanistan, or Yemen. The third are the resource investments required to fund, install, operate, and maintain long-term solutions such as incinerators or engineered landfills.

Contingency locations are designed to be temporary in nature and not enduring. The specialized function of waste management support in these locations is usually performed by engineers. However, engineers are not generally available at every contingency location. Since units, personnel, and equipment assigned at these locations vary depending on the mission, the waste management requirement and waste stream generated can also vary greatly. Additionally, many small locations especially those operated by functionally unique small units may not be manned full-time. Therefore, these small locations do not generally produce the consistent waste streams required by clean, efficient, and reliable incinerators. Conversely, large logistics hubs or maintenance depot facilities are likely to generate a much larger waste stream suitable for incineration. Most service members are not trained to perform large scale waste management. Supply and equipment packaging materials, and wet food waste are the largest components of waste. Open burning remains a field expedient alternative to reduce waste volume and protect troops from disease.

Second, the capacity and waste management practices of host nation disposal by contractors varies greatly in locations where U.S. Forces and Coalition partners operate. In

countries such as Iraq, Syria, or Afghanistan it is common practice to burn waste in open pits. Our host nation partners dispose of waste for us, however there are many cases where trash is burned just outside the gate by contractors. When U.S. contracts for waste disposal, the contractors are required to comply with DoD policies and guidance.

Finally, the long-term waste management solutions of Engineered Landfills or Incinerators, require significant resources to fund, install, operate, and maintain on a contingency location. Engineered landfills require substantial resources to construct and operate. The design and construction of a landfill can require a military construction (MILCON) project which takes considerable time, funds, and land. Incinerators require a slightly smaller investment to purchase, however toxic chemicals caused by burning plastics can still be generated in the stacks. Most Service members are not trained to operate incinerators or engineered landfills, which are prone to failure when not rigorously operated and maintained. Also, DoD policy discourages investment in robust facilities at contingency locations or capabilities which increase fuel consumption without increasing lethality of the force.

Feasibility of Phasing out the use of open-burning

Existing Technology

Waste to Energy (WTE) conversion has been studied by DoD for application at small contingency locations. The key WTE premise is that incinerators can burn solid waste to generate power, reducing the demand for diesel generators and providing on-site disposal of solid waste. The performance barriers for WTE systems continue to be size, cost, weight, low technical maturity, maintenance in the field, feedstock limitations, high fuel demand, and low energy yield.

There is no current DoD program of record for deployable solid waste incinerators, and none in inventory for units to deploy with. The commercial incinerator market consists of units optimized for energy efficiency and clean emissions, which rely on significant infrastructure and maintenance and material handling processes to maintain steady state operating conditions. These units are unsuitable for deployed operations. Despite significant RDT&E investment, no vendor or academic has been able to meet the basic DoD deployable incinerator requirements of scalability, transportability, reliability, and fuel economy. Another factor is that the Department's strategic investments are focused on providing a more lethal force, vice investment in costly support systems.

Although incinerators have been used successfully in many enduring locations, they are not currently capable of meeting the needs of contingency locations world-wide.

Opportunities and Current Developments

DoD continues to research alternatives and test incinerator solutions that could eventually produce a more mobile and scalable solution to be fielded. The National Defense Center for Energy and Environment report documented the results of efficiency and performance

tests when incinerating a waste stream consistent with a contingency location⁷. These evaluations also have included the operator's health and protection of the environment.

The updates in policy and guidance have added more specific requirements on reporting, analysis in solid waste management plans, increased frequency of monitoring, and health assessments. The number of open burn pits has declined due to awareness, contracted disposal solutions, and additional theater support for hazardous and solid waste disposal. This has resulted in reducing the overall exposure of our men and women in uniform.

The Department continues to improve our knowledge of these airborne hazard exposures, such as those generated in open burn pits, so that we can protect the health of the force, prevent exposure, and provide the best possible medical care if exposed. The scope of the Department's efforts range from reducing exposures wherever possible, improving exposure monitoring at contingency locations of all airborne hazards, tracking exposures, and documentation. In collaboration with the Department of Veterans Affairs, DoD is working on burn pit registry enrollment, targeted health effects research, education of healthcare providers, and improved health risk communications.

Conclusion

The health and safety of our men and women in uniform is our utmost priority. The DoD prohibits the use of open burn pits for disposal of waste in contingency locations unless there is no feasible alternative. The Services, Joint Staff and Combatant Commands rely on the policy and guidance provided in DoDI 4715.19. USCENTCOM has provided further guidance for open-burn pits in their AOR.

As of the March 2019, there are currently 9 U.S operated or contracted open-burn pit operations occurring at DoD contingency locations. No location identified had more than 500 personnel assigned. USCENTCOM is the sole GCC conducting open burn operations.

Although RDT&E continues, no technology or equipment solution has been devised that could eliminate all waste burning requirements for every contingency location. The most cost effective solution remains contracted disposal when available. The practical solution appears to be risk management involving aspects of doctrine, organization, training, material, leadership personnel, and facilities, and personnel health and exposure monitoring. The Department continues to test, evaluate, and field improvements to reduce its logistical footprint and the health and environmental impact of operations.

⁷ Incinerator Demonstration/Validation Final Report, National Defense Center for Energy and Environment, February 4, 2013

Acronyms

| Acronym | Definition |
|----------------|--|
| DoD | Department of Defense |
| DoDI | Department of Defense Instruction |
| EOs | Executive Orders |
| AOR | Area of Responsibility |
| USCENTCOM | United States Central Command |
| CCR | Central Command Regulation |
| CEL | USCENTCOM Environmental Lead |
| U.S. | United States |
| MILCON | Military Construction |
| WTE | Waste to Energy |
| WEC | Waste to Energy Converter |
| NDCEE | National Defense Center for Energy and Environment |

Appendix A. OSD and US CENTCOM Open Burn Policies Index

| Department | Policy Code | Policy Title |
|-------------------|--------------------|--|
| OSD | DoDI 4715.19 | <i>Use of Open-Air Burn Pits in Contingency Operations</i> |
| OSD | DoDI 4715.22 | <i>Environmental Management Policy for Contingency Locations</i> |
| OSD | DoDI 6490.03 | <i>Deployment Health</i> |
| CENTCOM | CCR 200-1 | <i>Protection and Enhancement of Environmental Assets</i> |
| CENTCOM | CCR 200-2 | <i>Contingency Environmental Guidance</i> |