Processing Range Residue

at the

Former Vieques Naval Training Range
Vieques, Puerto Rico utilizing

Size Reduction/ Crusher Technology

May 2007
Establish a Central Processing Center (CPC) for Scrap Management:

- To shred, mutilate, deform, flash and 5X-certify all Munitions Debris (MD) prior to releasing it to a qualified recycler.

- Ensure all MD and Range Related Debris (RRD) is managed as required by the Department of Defense (DoD) and the Department of the Navy directives, as well as applicable Federal, State, and local laws.
Central Processing Center is the Single Source for Processing Munitions Debris and Range Related Debris

Qualified UXO Technicians Manage Entire Scope of Operations

Senior PIKA Management Provide Oversight and Direction on Development and Implementation of the Safety and Quality Program
Location of VNTR

Central Processing Center
## MPPEH and Processing Technologies

<table>
<thead>
<tr>
<th>MPPEH</th>
<th>Technology Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RRD</strong></td>
<td></td>
</tr>
<tr>
<td>Targets</td>
<td>Petrogen Torches &amp; Hydraulic Shear</td>
</tr>
<tr>
<td><strong>MD</strong></td>
<td></td>
</tr>
<tr>
<td>MK-80 Series Bombs</td>
<td>Hydraulic Shear</td>
</tr>
<tr>
<td>20, 25, 30 and 40mm Projectiles and Fuzes</td>
<td>Smaller Crusher (TBD)</td>
</tr>
<tr>
<td>75, 105mm Ejection Projectiles, 2.75 Rockets, BDU-33, BDU-48, 60 and 81 mm Mortars</td>
<td>Impact Crusher</td>
</tr>
<tr>
<td>API Rounds, 155 mm and 5 inch Projectiles</td>
<td>Waterjet Cutter, Flashing Furnace &amp; Petrogen Torches</td>
</tr>
<tr>
<td>All Processed MD &amp; Scrap</td>
<td>Flashing Furnace</td>
</tr>
</tbody>
</table>
Central Processing Center (CPC)
All targets are inspected and downsized in the field before recovery to the CPC.

Downsizing of targets is performed using a combination of Petrogen Torches and the Hydraulic Shear and then transported back to the CPC using a dump truck.
Processing of MD - Various Technologies

- Hydraulic Shear - MK80 Series Bombs & Targets
- Waterjet Cutter - API Rounds
- Impact Crusher - BDU33
- Flashing Furnace - Flashing of all MD
Impact Crusher

- Far Less preventative and corrective maintenance because more simple mechanism (far less moving parts)
- No hydraulics or electronics
- Design permits operation even when maintenance is required
- Long standing proven technology over decades of use
- Impact technologies are more destructive
- Impact is one of the methods to 5X demil designation
- Broader range of Munitions processing capabilities
- Less chance of break downs in remote locations
- Self powered, does not need generator
- Wear items are easily field replaced and comparatively inexpensive
- Opportunity to buy rebuilt unit at fraction of original cost
Schedule for deployment of Impact Crusher is as follows:

<table>
<thead>
<tr>
<th>Process</th>
<th>Estimated Completion Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run Off Test at SLC-Hagerstown</td>
<td>October 13, 2006</td>
<td>Completed</td>
</tr>
<tr>
<td>Order Placement</td>
<td>October 16, 2006</td>
<td>Completed</td>
</tr>
<tr>
<td>Completion of De-commissioning</td>
<td>October 24, 2006</td>
<td>Completed</td>
</tr>
<tr>
<td>Shipment from SLC-Hagerstown</td>
<td>November 20, 2006</td>
<td>Completed</td>
</tr>
<tr>
<td>Arrival in Vieques*</td>
<td>December 5, 2006</td>
<td>Completed</td>
</tr>
<tr>
<td>Commissioning begins*</td>
<td>December 11, 2006</td>
<td>Completed</td>
</tr>
<tr>
<td>Fully Operational*</td>
<td>December 22, 2006</td>
<td>Completed</td>
</tr>
</tbody>
</table>
Equipment Updates – Impact Crusher

Arrival of Impact Crusher in Vieques

Unloading the Impact Crusher at the CPC
Equipment Updates – Impact Crusher

Installation of Impact Crusher using a Crane

Continue Installation
Impact Crusher - Fully Commissioned
Impact Crusher – Processing BDU33’s

Loading Inert BDU-33’s into the Hammermill

Processed BDU-33’s
Flashing Furnace - Technical Specifications

- **Transportability:** complete system highway transportable on a 48’ trailer
- **Heat cycle time:** 45 to 90 minute depending upon load size and type
- **Operating temperature range:** 1000°F - 1600°F
- **Load capacity:** 10,000 lbs. per batch
- **Throughput:** 2 tons/ hour, typical
- **Nominal internal dimension:** 5' high x 7' wide x 17' long
Flashing Furnace - Technical Specifications Contd.

- Insulation: ceramic wool allows rapid heat up and cool down
- Cooling air input system: for rapid cool down
- Unfired afterburner: to minimize emissions
- Instrumentation: ability to record and verify each load temperature
- Burners: oil-fired dual burners with propane pilots; 6M BTU/hr capacity
Thermal Flashing of Scrap

Monitoring & Recording Core Temperatures using Computers

Core Temperature

- Core Temp Basket 1
- Core Temp Basket 2

Chart showing the Temperatures reached and the Time taken

Documentation Prepared for Each Cycle of Flashing Operations
Thermal Flashing of Scrap

- Scrap flashed for safety reasons and recycled – therefore not considered to be a “waste”

- Scrap may have trace quantities of explosive contamination, but does not exhibit D003 characteristic – therefore not classified as “hazardous” by RCRA

- RCRA regulations not applicable; RCRA permits not required for operation
All processed MD or RRD is 5X certified and then loaded into containers to be transported to a Scrap Recycling Facility.
Central Processing Center

- Flashing Furnace
- Fuel Tank
- Waterjet Cutter
- Impact Crusher
- MD/RRD Storing Area
- Hydraulic Shear
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