

PREPRODUCTION INITIATIVE-NELP HIGH-PRESSURE WATER JET SYSTEM TEST PLAN

SITE: MOMAU 11, CHARLESTON, SC

1.0 OBJECTIVE

This test plan describes the data collection procedure for the high-pressure water jet system. The data will be used to determine the efficiency, effectiveness, overall performance of the unit, and the unit's ability to interface successfully with site operations.

2.0 DESCRIPTION

The high-pressure water jet system is designed to remove paint, corrosion, and marine growth from mines of various configurations. The system uses automated equipment for the blasting of cylindrical mines and equipment for manual blasting and manipulation of mines that are spherical, cubical, and other shapes. The unit uses high-pressure water in place of dry blast media (*e.g.*, garnet grit, walnut, glass beads, sand, and black diamond).

3.0 TEST PLAN

The high-pressure water jet system should be operated according to manufacturer instructions. The mines should be carefully inspected both before and after blasting to determine blasting effectiveness and whether damage is being caused to the mines.

3.1 Approach

Quantitative and qualitative data will be acquired by completion of Table 1.

3.1.1 Instructions for Completing Table 1

- **Date:** Indicate dates the unit was used.
- **Contaminants Removed:** Note whether the mine surface was covered primarily with paint, corrosion, or marine growth. If paint was removed, record whether the paint was lead-based.
- **Use of Unit**
 - **Type:** Record the type or part number of the mine.
 - **Quantity:** Indicate the total quantity of mines of this type processed on a given day.
- **Consumables Used:** Record the type, number, and cost of consumables used.

- **Consumables Ordered:** Record the type, number, and cost of consumables ordered.
- **Time/Task:** Record the time per unit task (*i.e.*, the cycle time per mine).
- **Downtime/Month**
 - **Time Period:** Record periods when the unit was not in use.
 - **Reason:** Explain whether downtime was due to repairs, maintenance, workload, or other reasons.
- **Qualitative Assessment:** Provide a narrative evaluation of the abilities of the high-pressure water jet system. Briefly discuss:
 - Efficiency of the unit (*e.g.*, time and cost savings)
 - Ease of use and the unit’s ability to successfully interface with the other site mine cleaning, refurbishment, and repainting operations. Please discuss any interference caused by the unit (*e.g.*, such as excessive noise, steam output) to other operations taking place in the vicinity of the system.
 - Safety of the unit for operators
 - Environmental concerns—including waste disposal costs, logistical problems with waste disposal, ability to separate liquid from waste, etc.
 - Overall satisfaction with the surface preparation of the mines. Please compare to the cleanliness of mines processed by former methods.

3.1.2 Instructions for Completing Table 2

- **Date:** Record dates the unit was used.
- **Presence of the Following (Manual Cleaning):** Indicate “yes” or “no” in the appropriate column regarding whether any of the following characteristics are present. If “yes,” list the specific mines that had evidence of these deficiencies and the locations of those deficiencies in the qualitative assessment section.
 - Mine flange damage
 - Surface damage
 - Incomplete or non-uniform stripping
- **Presence of the Following (Automatic Cleaning Unit):** Indicate “yes” or “no” in the appropriate column as to whether any of the following characteristics are present. If “yes,” list the specific mines that had evidence of these deficiencies and the locations of those deficiencies in the qualitative assessment section.
 - Mine flange damage
 - Surface damage
 - Incomplete or non-uniform stripping

- **Mine Damage:** Indicate whether new damage was caused or any existing damage was worsened by the high-pressure water jet system.
- **Interior Corrosion of Unit:** Based on visual observation, indicate “yes” or “no” regarding whether there is interior corrosion of the unit. Note the exact location and size (area) of the corrosion.
- **Leakage of Unit:** Based on visual observation, please indicate “yes” or “no” regarding whether there is leakage of the unit. Note the exact location and approximate amount of leakage.
- **Qualitative Assessment:** Include specific details on any of the above sections marked “yes.”

4.0 REPORTING

The data entry forms are a concise method of data collection. The forms should be completed on a daily basis. Data will be collected for 1 year. During this time, periodic status reports on the testing will be submitted to NAWCADLKE. The final report will include detailed results and observations, assess the efficiency and cost-effectiveness of the unit, and evaluate its ability to interface with site operations.

Table 1

Date	Contaminants Removed			Use of Unit		Consumables Used			Consumables Ordered			Time/Task	Downtime/Month	
	Paint	Corrosion	Marine Growth	Type	Quantity	Type	No.	Cost	Type	No.	Cost		Time Period	Reason

Qualitative Assessment*:

Please comment on the effectiveness and efficiency of the unit.

*Attach extra sheet if required.

Table 2

Date	Presence of the Following (Manual Cleaning Unit)			Presence of the Following (Automatic Cleaning Unit)			Mine Damage	Interior Corrosion	Leakage
	Flange Damage	Surface Damage	Incomplete or Non- Uniform Stripping	Flange Damage	Surface Damage	Incomplete or Non- Uniform Stripping			

Qualitative Assessment*:

Provide details on any question answered “yes.”

* extra Attach sheet if require

