

# Next-Gen Robotic Services

## FOR MMRP SAFETY & PRODUCTION EFFICIENCY



AN ASRC INDUSTRIAL COMPANY

### REPRESENTATIVE PROJECTS



#### Former Navy Dump Metals Removal & Revetment Construction KFS, US Army Space & Missile Defense Command | Kwajalein Atoll, RMI

**CHALLENGE** NWDD was contracted to remove metals along 2,000 ft of exposed shoreline near historic Navy dump sites from WWII. Burned debris had fused into thick slag, and excavation revealed multiple MEC anomalies, including a 50 lb bomb and MK35 5-inch projectiles.

**SOLUTION** NWDD retrofitted two on-island 30–40 T excavators with proprietary robotic kits and built a blast box command center compliant with EM-385-1-1 safety standards. The robotic systems completed high-impact excavation, hydraulic hammering, and metals removal, safely removing over 20,000 CY of MEC- and PCB-contaminated soil without incident.

2019



#### Robotics MMRP Services & Other Explosives Related Services Dawson Zapata JV, US Army Corps of Engineers | Fort Indiantown Gap, PA

**CHALLENGE** PWS identified areas with extremely high anomaly density and sensitive MEC, including 3.5-inch rockets and white phosphorus rounds. Hazard assessment noted a 338 ft HFD for 105 mm TNT rounds and a 77 ft MFD for unintentional detonations.

**SOLUTION** NWDD deployed a remotely operated 35 T excavator with a 3 CY trommel screen bucket, enabling safe excavation to 2 ft bgs while maintaining a 4,000 ft setback. High production and safety performance led to abandoning the original mag-and-dig plan. Over 4,000 CY of soil was excavated, sifted, and cleared in 15 days. During operations, a white phosphorus round detonated, but NWDD's remote system ensured zero injuries and maintained full safety—an outcome impossible under conventional methods.

2023



#### Remote Controlled Services for Environmental Remediation Aptim Federal Services, US Navy | Adak Island, AK

**CHALLENGE** Excavation and clearance at a former munitions disposal site on a rocky Bering Sea beach, exposed to high winds and heavy rain. Remote location required extensive logistics for equipment delivery. No MEC hazard assessment was completed.

**SOLUTION** NWDD Robotic Services deployed two 40 T remotely operated excavators to remove munitions and explosives of concern (MEC-impacted) soil from an armored blast box nearly 1,000 ft away. Achieved 100 CY/day production with screening support for 18 UXO technicians, clearing over 7,700 CY in half the time of previous armored long-reach methods.\*

2021



#### Range Maintenance US Army Corps of Engineers | Camp Shelby, MS

**CHALLENGE** Range maintenance required over large project site with heavy vegetation, protected wetlands, etc. Work performed in advance of MEC Reconnaissance Surveys in artillery, mortar, and tank dedicated impact area over site area of 433 acres.

**SOLUTION** NWDD mobilized two remotely operated 35–40 T excavators equipped with a Quadco hot saw, 5-finger grapple, Diamond mower, and tree shear. These attachments are cross-compatible with either machine, enabling continuous work as tasks change with terrain and vegetation. Due to advancements in NWDD's BVLOS system, NWDD's robotic machines averaged 4 acres per day—cut, mowed, and ground—compared to only 1 acre per day with the previous robotics contractor.\*\*

ONGOING

#### Robotic Heavy Equipment Systems to Support MEC Operations USA Environmental / US Army Corps of Engineers | Vieques, PR

**CHALLENGE** Extreme remote range clearance requiring multiple high-impact tasks, including vegetation removal, land clearing, soil sifting, remote winch operations for underwater MEC recovery, demilitarization of inert ordnance, and scrap metal processing.

**SOLUTION** NWDD deployed a 40 T robotic excavator with an armored mobile command center and a suite of hydraulic attachments. This "Swiss Army Knife" approach enabled diverse MEC removal tasks without extra mobilization time or cost. NWDD's system increased brush clearing and mowing to 1.5–2 grids per day versus 2 grids per week using previous methods.\*\*\*



### OVERVIEW

Northwest Demolition's (NWDD) Robotic Services division operates a suite of remote-controlled heavy equipment units in support of complex MMRP applications. This platform can be used to operate virtually any hydraulic or electric piece of equipment, including, but not limited to:

- Hydraulic Excavators
- Front-End Wheel Loaders
- Articulated Haul Trucks
- Screening Plants
- Trommel/Screening Buckets
- Hydraulic Shears
- Magnet
- Rotary Mower and Flail
- Rotary Shredder
- Tree Shears/Hot Saw
- Hydraulic Winch
- Grapple
- Impact Hammer

Applications in support of MMRP projects include:

- When MGF exceeds achievable working distance using conventional methods (e.g., armored long-front excavator, MK35 5-inch projectile, etc.)
- In advance of MEC hazard assessment (e.g., land clearing)
- In hazardous environments such as unstable ground, limited line of sight (LoS), elevated working surface, etc.
- Consolidation, movement, or handling of uncharacterized spoils



### WHY ROBOTICS?

#### RAPID DEPLOYMENT

NWDD's robotic equipment system can be deployed anywhere heavy equipment can be mobilized. With new electronic systems, NWDD's robotics kit can be installed in less than 1 week. Existing systems can be operable in less than 1 day.



#### PERFORMANCE

NWDD's proprietary platform allows for conventional operation of mechanized equipment at nearly zero loss of fidelity versus in-cab operation. On MMRP projects, this results in:

- 2x production for excavation over conventional armored long-reach methods\*
- 4x production over competitor's robotic systems\*\*
- 5x production for land clearing, mowing, and vegetation removal\*\*\*



#### UXO SAFETY

This system allows for high impact operation in MEC-containing areas while maintaining a safe distance for on-the-ground personnel. NWDD's systems can achieve working distances of up to 10 mi, including in work sites with beyond visual line of sight (BVLOS) challenges such as steep topography or dense vegetation.