



Subsea Excavation Specialists – Decommissioning Services – Asset Recovery – Renewable Services

BTE80 WROV HMFE Excavation Tool

Please allow me to introduce myself. I am Bob Nelson Marin™'s General Manager. I would like to take this opportunity to introduce the patented EVO™BTE80 HMFE (Hydrodynamic Mass Flow Excavation) System. Marin offers our client's the EVO™BTE80 ROV mounted excavation tool as part of our subsea equipment portfolio. For your convenience, I have attached Marin's information folder which contains the specification sheet for the EVO™BTE80 unit as well as specification sheets for our entire collection of excavation tooling, grab systems, and recovery tooling portfolio.

Below is a summary of the benefits of using the EVO™BTE80 system.

Minimal Deck Space – The EVO™BTE80 is mounted and powered by the ROV which is already aboard the vessel / rig. The EVO™BTE80 is not surface operated by a HPU or Centrifugal pump allowing for greater deck space.

EVO™BTE80 Profile - The small profile of the EVO™BTE80 allows for adaptable maneuverability around subsea structures. This enables the tool to perform excavations in close proximity to any subsea structures in areas where larger trenching equipment cannot operate.

EVO™BTE80 Mounting Bracket – The EVO™BTE80 mounting bracket is compatible with the majority of ROV systems. The EVO™BTE80 is easily mounted using bolts to the front of the ROV via the mounting frame. This ensures a low profile for handleability.

Precision Jetting Capability – The EVO™BTE80 system can be fitted with a Roto-Jet System which provides precision jetting when necessary.

100% Contingency – Marin provides a package of spares and consumables as part of the EVO™BTE80 spread which ensures operations run with minimal downtime.

Plug and Play – The EVO™BTE80's simplistic hydraulic piping matrix easily connects the ROV's hydraulic system to our subsea excavator.

The EVO™BTE80 was successfully used on two campaigns with Technip. The scopes of work are detailed below. The ROV utilized on the below work scopes was the Canyon TXLX 64 WCROV.

Work Scope 1.

Water Depth - Water Depth at the location varied from 6,800ft to 7,400ft

Location – Lucius Field, GOM.

SOW - Umbilical and Flowlines buried 5ft depth from MSBL

Soil Shear Strength - 20psf (pressure per square foot)

Main Flowline 8.625" OD x 0.875" WT API 5L X65 - Length 4,058ft

Infield Umbilical 3.90" OD electro-hydraulic umbilical – Length 2,120ft

Infield Flexible Flowline 6.55" ID x 17.458" OD – Length 2,324ft

Gas Lift Infield 4.93" OD – Length ~1,100ft

Work Scope 2.

Water Depth - Water Depth at the location varied from 6,800ft to 7,400ft

Location - Dalmatian Field, GOM

SOW - Umbilical and Flowlines buried 5ft depth from MSBL

Soil Shear Strength - 20psf (pressure per square foot)

Main Flowline 8.625" OD x 0.875" WT API 5L X65 Grad Seamless Pipe – Length 3,456.73ft

Infield Umbilical 3.90" OD – Length 2,114.47ft

Infield Flexible Flowline 6.55" ID x 17.458" OD – Length 2,326.10ft

Gas Lift Infield 4.93" OD – Length 300ft

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