

Offshore Pipeline Decommissioning

Baleen Process Solutions delivers successful completion of a turnkey offshore pipeline abandonment project in the GOM.



Figure 1. Modular Water Treatment Package

BACKGROUND

Baleen Process Solutions' client requested a turnkey solution for an offshore pipeline decommissioning project in the Gulf of Mexico. The pipeline to be decommissioned was packed with 50% dead oil, 50% seawater, and had a possibility of paraffin. The pipeline was approximately 13.5 miles long, riser to riser.

A few key requirements were to capture the existing crude for resale and meet NPDES discharge requirements.

SITUATION

Baleen Process Solutions worked closely with the operator to engineer a custom-tailored solution to achieve the project goals:

- Perform Incident-Free Operations (IFO)
- Depressurize the pipeline
- Perform pumping of seawater to flush the pipeline and propel the gel pig
- Meet injection rates and required pressure specifications
- Separate and capture crude oil
- Offloading the crude for later resale
- Meet NPDES discharge requirements
- Maintain an overall project budget

Project Data:

- **Pipeline Length** – 13.5 miles
- **Pipeline Diameter** – 6 inch and 8 inch
- **Injection Rates** – 3 to 5 bpm

SOLUTION

Baleen Process Solutions, in partnership with ChampionX, worked with the operator to develop a detailed process for de-inventorying the crude, capturing the crude in tankage, high-pressure flushing, selection of the gel pig, water treatment, and offloading of the crude for resale. Seawater was pumped in the pipeline for pushing the gel pig and flushing the pipeline. Baleen's BMV-2 granular activated carbon technology was selected to treat flushing fluids to meet NPDES discharge compliance, perform Incident Free Operations (IFO), and maintain the overall project budget to provide a cost-effective solution.

Baleen Process Solutions provided a portable pumping package, a gel pig, and modular water treatment system. The system was compiled of our High-Pressure Pumps, SRV-28 Solids Removal Skids, BMV-2 GAC Vessels, and tankage for oil recovery. Our engineered solution ensured 100% of the dischargeable fluids met overboard compliance limits and successfully captured the pipelines' oil inventory.

The flushing and gel pig pumping spread was utilized on a utility vessel on the front end. The water treatment spread and tankage to capture the reclaimed oil were placed on a liftboat on the receiving end. Baleen Process Solutions engineering team provided all necessary documentation (PFD, PIDs, procedures, and SAFE chart).

RESULTS

In total, 2,366 BBLs of fluid were treated and discharged overboard, meeting the NPDES discharge compliance. The captured oil was transported to the dock and the client later sold the oil. The expertise of the Baleen Process Solutions' engineering and operations team ensured a successful and incident-free operations.

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Clean Water Overboard

250 BBL Magnum Mud DOT Tank
 29'10" x 8'6" x 10'10"
 Dry Weight: 24,000 lbs
 Op. Weight: 93,888lbs (200BBLs, SG=1.0)
 MAWP = 20psig

Tool Box
 Dimensions: 67" x 52" x 49"
 Weight: 5,000lbs

BMV-2 GAC
 44"x55"x49"
 Dry Weight: 5,000lbs
 Op. Weight: 5,500lbs

BMV-2 GAC
 44"x55"x49"
 Dry Weight: 5,000lbs
 Op. Weight: 5,500lbs

500 BBL Magnum Mud DOT Tank
 42'7" x 10' x 12'6"
 Dry Weight: 34,500 lbs
 Op. Weight: 181,618lbs (420BBLs, SG=1.0)
 MAWP = 20psig

250 BBL Magnum Mud DOT Tank
 29'10" x 8'6" x 10'10"
 Dry Weight: 24,000 lbs
 Op. Weight: 93,888lbs (200BBLs, SG=1.0)
 MAWP = 20psig

Lift Boat

CRANE

Platform

Bridge
 2" 2,500psi Hose w/fig 1502

Process Connection:
 4" ANSI 600WSP Flange

From Pipeline

High pressure valve
 DOQ

Low pressure valve
 DOQ

CRANE

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Simple Solutions to Complex Water Challenges

