

**24" GAS PIPELINE PROTECTION
KWALE, NIGERIA**

Pipeline Protection

Product: Articulated Concrete Block Mattresses (ACBM)

Problem

The Kwale-OB/OB gas pipeline is a 48 Km, 24" diameter pipeline. It is the only means of delivering natural gas from the Kwale Gas Plant to the OB/OB Gas Treatment Plant which in turn delivers Gas to the Bonny LNG. Installation of the pipeline was carried out in 2004. Towards the end of September 2012, Nigeria experienced some of its worst flooding in 50 years and it was over this period that the pipeline within the river crossing near Kwale was damaged and the gas supply to the OB/OB gas treatment plant was interrupted in October 2012.

A detailed investigation was carried out and reported findings revealed extensively erosion and several topographic changes to the riverbed. This, coupled with the high flood water current was determined as the cause of the pipe breakage.



Intervention schedule

Due to the strategic importance of the pipeline, an urgent repair was carried out commencing in November 2012.

The objectives were;

- To locate and ascertain the extent of the damaged 24" gas pipeline
- To confirm the point of damage of the HDD (Horizontal Directional Drilling) line and the landed section
- Identify the optimum solution for the repair of the gas pipeline while undertaking a HDD installation method as the permanent solution

Solution

From a number of proposals, including that of Maccaferri, NAOC and FENOG identified that ACBM mattresses would be the best suitable solution to restore functionality of the pipeline.

ACBM mattresses were used to repair and prevent future scour effects and to ballast and stabilize the new pipeline.

The high flexibility and modularity of the ACBM, enabled the rapid installation of the pipeline protection solution and the restoration of distribution of gas to power generation facilities throughout the country.



Client:

NIGERIAN AGIP OIL Co. (NAOC)

Main contractor:

FENOG NIGERIA LTD

Products used:

ACBM mattresses

Date of construction

April 2013

Maccaferri supplied:

- 130 No. ACBM mattresses 5.26 x 2.26 x 0.20 m.
- 1 ACBM manual lifting frame for mattress installation

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