

Case study: Quantified data for mooring life extension

Overview

The Horn Mountain SPAR was projected to continue production past the original design life. To facilitate the new operating period, Occidental Petroleum required quantifiable asset data in support of detailed mooring life extension assessments.

Solution

Our industry-leading Asset Integrity team have the experience and technology required to enable clients to adopt risk and condition-based asset maintenance. In many cases, this can allow asset life to be extended, at no cost to safety or performance.

Ashtead Technology provided a turnkey inspection service, generating real-world data including mooring chain measurements, 3D modelling, and wire rope cleaning and inspection.

Our specialists worked in conjunction with engineering contactor Genesis Oil & Gas Consultants over a one-week period to execute the life extension inspection on the Horn Mountain SPAR, moored at 5,400ft water depth.

Our trained mooring inspectors used our optical Chain Measurement System (CMS), 3D Modelling, and mooring Rope Cleaning and Inspection System (RCIS) to gather the critical data.



Benefits and value

The Asset Integrity team used a progressive inspection framework to efficiently gather the most valuable data for the offshore vessel time allocated. This ensured that costs and resources were used most effectively, cutting expenditure for the client.

Chain measurements were used to calculate wear/corrosion rate and estimate future service life, with close visual inspection (CVI) of wire ropes following cleaning by the RCIS in order to assess wire rope condition.



3D models of chain links, with an error tolerance of less than 0.1%, were used for finite element strength analysis,

“The mooring life of the Horn Mountain SPAR was extended thanks to the highly-accurate results and fast data delivery of these systems.



Derek Latimer, Project Manager Asset Integrity