

# PLATFORM SLOT RECOVERY

From planning to conductor recovery and installation, Acteon companies deliver a comprehensive service.



**CIS**   **claxton**   **InterAct**



**ACTEON** *companies*

ACTEON HAS AN OUTSTANDING PORTFOLIO OF COMPLEMENTARY PRODUCTS FOR THE SUBSEA MARKETPLACE. THE EXPERIENCE SHARED BY ACTEON COMPANIES OPENS THE OPPORTUNITY FOR A FRESH APPROACH TO SUBSEA OPERATIONS AND SERVICES.

AS RESERVOIRS ARE DEPLETED, PRODUCTION FROM SPECIFIC WELLS MAY NO LONGER BE FINANCIALLY VIABLE. OPERATORS CAN COST-EFFECTIVELY DRILL NEW, MORE PRODUCTIVE WELLS AND EXTEND PLATFORM AND FIELD LIFE BY RECLAIMING SLOTS FROM UNDERPERFORMING WELLS.



# MANAGING AND EXTENDING THE LIVES OF ASSETS

As operators face the ongoing challenges of maturing fields, ageing infrastructure and difficult market conditions, it has never been more crucial to manage and extend the lives of assets.

**Through advances in drilling technology and reservoir modelling, slot recovery has proved to be a robust solution.**

Plugging and abandoning (P&A) of underperforming wells enables slots to be recovered in the subsea template or platform well bay. New wells, which will use the existing infrastructure and offer enhanced recovery rates, can then be drilled using the freed slot.

By combining their strengths, Acteon group companies have established a strong track record in managing and executing the different phases of the slot-recovery process – from field redevelopment, the planning of abandonments and P&A, through to new slot delivery and installing the conductors.





## WORKING TOGETHER... WITH A FRESH APPROACH

Acteon has assembled a unique portfolio of subsea products and services, and takes a concerted approach to the challenges of a very demanding subsea marketplace. This is especially relevant to the group's platform slot-recovery capability. By drawing on the technologies and abilities of various group companies – recognised leaders in their fields – services are offered throughout the entire slot-recovery process, from planning through to completion.

These companies include

- **InterAct** for field development analyses and project management
- **Claxton** for conductor and multiple casing recovery, cutting equipment, drilling and pinning systems, hydraulic jacks, whipstock design, whipstock supply, and conductor fatigue assessments
- **CIS** for running whipstocks and cameras, driveability and conductor installation services.

As part of an organisation that challenges conventional wisdom, Acteon operating companies are pioneering the concept of rigless slot recovery in which operations are carried out from small, readily available boats such as anchor-handling vessels. This approach helps operators to cut project costs and remove activities from the critical field-development path.

### FIELD DEVELOPMENT – SEEING THE BIGGER PICTURE

A robust development scheme that is optimised to balance the capital and operating costs against the forecast production from the overall asset is a prerequisite for achieving maximum shareholder value from a slot-recovery initiative. Experience shows that the projects that consider the field, rather than the individual wells, tend to deliver the highest returns.

InterAct is a high-level engineering consulting and project management firm that has established a track record in field development and slot-recovery projects for multiple operators. The

company's consultants will help answer critical technical, commercial and operational questions, such as

- **Why is this well underperforming?**  
There are several techniques that may enhance a well's recovery rates more cost-effectively than slot recovery, including workover and stimulation.
- **Which part of the reservoir should be entered?**  
The location, trajectory, final diameter and length of a new well can have a major bearing on its capital and operating expenditure.
- **Can the new conductor be deflected and driven to depth at this location?**  
A significant curvature will be imposed on the new conductor as it kicks off the whipstock. Without sufficient control, the forces generated during the driving process could destroy the existing well, whipstock or pipe. It is essential that the forces required to deflect the conductor be established.
- **How will the proposed slot recovery impact on the existing facility?**  
Additional production at an ageing facility can, on occasions, lead to operational difficulties. For instance, the facility may have insufficient capacity for processing, separation or power generation for the new load. Additional flow-assurance chemicals may be required. Pumps may need uprating. Deck space may be at a premium.
- **What return on investment can be achieved?**  
Economic analyses call for in-depth evaluation of many factors, including the costs of abandoning the well, pulling out the conductors, and re-drilling and deviating the well, and also the production rate forecasts. Production constraints, mechanical or structural limitations and the production swing must be used in any calculations.

**ACTEON PROVIDES THE COMPLETE RANGE OF SERVICES REQUIRED FOR EFFECTIVE CONDUCTOR SLOT-RECOVERY OPERATIONS. FIELD-PROVEN EQUIPMENT, INCLUDING CUTTING AND RECOVERY PACKAGES, CONDUCTOR WHIPSTOCKS AND DRIVING EQUIPMENT, IS COMBINED WITH FULL ENGINEERING CONSULTANCY AND ECONOMIC ANALYSES. THE RESULT IS AN UNRIVALLED SERVICE PACKAGE.**

Acteon provides the complete range of services required for effective conductor slot-recovery operations. Field-proven equipment, including cutting and recovery packages, conductor whipstocks and driving equipment, is combined with full engineering consultancy and economic analyses. The result is an unrivalled service package.

### **WELL ABANDONMENT – RISING TO THE CHALLENGE**

The first activity on location is the cutting and permanent plugging of the old well. The conductor casing and the inner strings of cemented-together casings must be cut, removed and laid out before the well can be cemented; this is a highly challenging phase.

Claxton brings over 25 years' offshore experience to the table: a heritage that includes the first-ever rigless abandonment in North Sea and a suite of leading-edge equipment such as

- Rapier® tubing bandsaws for rapid severance of tubing joints
- Rapier casing bandsaws to enable multiple casing string recovery
- drilling and pinning machines to secure multiple casing strings
- SABRE® abrasive-jet cutting systems for single-pass internal cutting of conductors
- hydraulic-jack or torsion-based systems for verifying deep casing cuts
- fast-track design of cost-effective bespoke interfaces to facilitate rigless conductor recovery.

Crucially, access to this equipment means the entire operation can be carried out without resorting to a drilling rig.

### **WHIPSTOCK – LEVERAGING EXPERIENCE**

The conductor casing whipstock deflects the new conductor along a deviated path and is a key element in slot recovery. Well conductor specialist Claxton advises on the most suitable whipstock type and mode of installation. The company will also supply a bespoke

whipstock, which stabs or latches into the existing casing at the mudline and provides an angled kick-off point for the new conductor string. Claxton whipstocks are available for any size of conductor pipe and have a simple remote release mechanism, so they can be run quickly and efficiently.

### **CONDUCTOR INSTALLATION – DRIVING THE OPTIMAL SOLUTION**

CIS, one of the world's leading installers of oilfield conductors, will run and install the whipstock either above or below the seabed. With the aid of a proprietary shallow-depth camera system, the crew will stab the whipstock accurately into position. The casing does not need to be prepared and divers are not required.

CIS's offshore teams normally work alongside the drilling crew and take control of all aspects of the conductor installation process, including pipe handling, running and make-up. Using one of a range of CIS hydraulic hammers, the conductor will be driven until it reaches the desired penetration or meets refusal. In either case, the crew will determine that the conductor has adequate bearing capacity to support subsequent drilling operations. The conductor is then cold cut to the desired length. With the new conductor in place, a new well can be drilled for full-bore production.



## PROJECT PROFILES

### OVERCOMING TECHNICAL CHALLENGES

During a slot-recovery project for a major operator offshore Trinidad, CIS had to overcome a series of technical challenges. For example, the misalignment of the platform substructure created problems during the retrieval of the old casing.

Once the slot was cleared, CIS used a disposable camera system to help in stabbing the conductor whipstock into place on the old conductor stump. The new conductor string then glided off the whipstock and was stabbed into the seabed.

The conductor was then driven to refusal, the well was drilled and completed, and the slot was recovered. The client said the operation was a technological success.

### RIGLESS SLOT RECOVERY ENHANCES PROJECT ECONOMICS

A 38-year-old well in the North Sea had been shut in because of corrosion fatigue in the 20-in. conductor approximately 6 m below sea level. Because of the tight weather window for the recovery operation, the operator required a fast-track decommissioning solution.

Acteon companies worked together to perform rigless abandonment on the normally unmanned platform:

- **InterAct** developed a strategy for the cementing and wireline perforating, which was executed by the operator's term contractors.
- **Claxton** provided an abrasive cutting package that severed the three inner casing strings below the mudline in a single pass. Alongside this, a conductor-recovery system was developed to interface with the platform and achieve a multiple casing string recovery. The system included lifting support beams, boom cranes and a hydraulic jacking package. Slip-type tension rings and drilling-and-pinning and bandsaw machines to recover the 9<sup>5</sup>/<sub>8</sub>-, 13<sup>3</sup>/<sub>8</sub>- and 20-in. casings to surface were also included.

The abandonment drew on various field-proven techniques and technologies, including for wireline perforating, cementing, abrasive cutting, hydraulic jacking and multiple-casing retrieval, from several service companies. The project management ensured that all the service companies' operations were delivered in a seamless manner. The project was completed on schedule for less than half the cost of an equivalent rig-based operation.

THE BREADTH OF EXPERTISE AND EQUIPMENT ACROSS ACTEON  
ENABLES SLOT RECOVERIES TO BE PERFORMED WITHOUT USING  
A DRILLING RIG OR A PLATFORM-BASED CRANE, WHICH BRINGS  
SIGNIFICANT COST BENEFITS.

*To find out more, please speak to your usual representative or contact any of the operating companies shown below.*

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