

## Production Optimisation | 2012

### BP

Customer: James Chesher, Production Recovery Manager

Project phase: NA

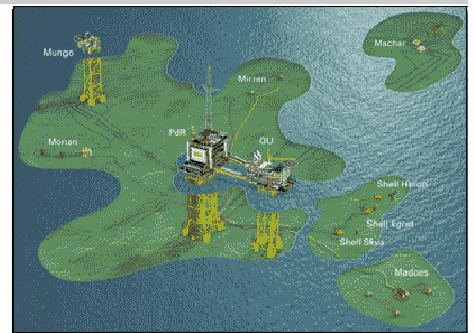
Dundas scope: Reservoir Engineering  
Integrated Asset Modelling  
Production Optimisation

Testimonial: *Awaiting approval of external affairs.*

### PROJECT DESCRIPTION

The Eastern Trough Area Project (ETAP) – comprising Machar, Madoes, Marnock, Mirren, Monan and Mungo fields – produces through a Central Processing Facility (CPF) that is further shared with the Heron cluster. All produced water is re-injected into a Palaeocene aquifer above the Marnock reservoir. Ability to dispose of this water imposes an important constraint within which existing production must be managed and future options evaluated.

A modelling tool was required, capable of optimising each field's base production in combination with various rate and reserve adding opportunities. The rights of each cluster to its share of central processing capacity also had to be respected. Monte Carlo analysis of the development alternatives was a further prerequisite.



### DUNDAS ROLE

Drawing on its subsurface and integrated asset modelling experience, Dundas proposed coupling reservoir performance type-curves with a Simplex optimisation algorithm in order to develop a suitable tool within the client's required timeframe and run-time limits. Functionality to represent infill drilling, reservoir blowdown and debottlenecking options for produced water handling was provided. Ability to describe input parameters in terms of distributions was also incorporated, allowing Monte Carlo simulation and evaluation of the probability of each outcome.

A flexible programming approach facilitated incorporation of amendments at client request as they emerged during the project. All products were delivered on time and within budget, using standard industry software.

