

Onshore Extended Well Tests (EWT) and Hydraulic Fracture Plan (HFP)

OGA may authorise extended periods of test production (extended well tests – EWT) from exploration or appraisal wells prior to the approval of a Field Development Plan if it can be demonstrated the licensee will thereby gain technical understanding or confidence in the performance of the field needed to progress towards a development.

The EWT should have realistic and definable appraisal objectives essential to the success of a development, and not be prejudicial to ultimate recovery. A plan of operations and explanation of why the intended completion and testing techniques are appropriate to test each stratigraphic level is required. There are no strict criteria governing the maximum volume to be produced or the duration of an EWT, but they are usually issued for 90 days to allow for operational delays. Duration may be extended if there is technical justification, but EWTs are not an alternative to production under an approved Field Development Plan.

There is no obligation to proceed with development following an EWT. EWT consent requires a formal letter of application that sets out the timetable and objectives of the test and quantities of oil and gas to be produced and saved or flared/vented. Proof of planning consent must be provided. OGA will check with the appropriate environmental regulator that the required environmental permits are in place and that the Health and Safety Executive have reviewed the plans. If oil and gas is to be saved during the EWT, a field determination may be required for the field in question. Throughout the test the operator must submit to OGA monthly oil, gas and water production figures. Please email these at the end of each month to david.roberts@oga.gsi.gov.uk

HFP

If hydraulic stimulation is proposed as part of the EWT, a hydraulic fracture plan (HFP) also must be agreed with OGA in consultation with EA.

A summary of what OGA may require is as follows, but less information may be required for a small volume hydraulic stimulation of a conventional target.

- a map and seismic lines showing faults near the well and along the well path, with a summary assessment of faulting and formation stresses in the area and the risk that the operations could reactivate existing faults
- information on the local background seismicity and assessment of the risk of induced seismicity
- a comparison of proposed activity to any previous operations and relationship to historical seismicity
- summary of the planned operations, including the techniques to be used, the location of monitoring points, stages, pumping pressures, volumes and the predicted extent of each proposed fracturing event
- proposed measures to mitigate the risk of inducing an earthquake and a description of decision tree for a real-time traffic light scheme for monitoring local seismicity

- the processes and procedures that will be put in place during hydraulic fracturing for fracture height monitoring to identify where the fractures are within the target formation and ensure that they are not near the permitted boundary
- in the event that the fractures extend beyond the EA permit boundary, the steps that would be taken to assess and if necessary mitigate the effect and limit further propagation outside the target rocks
- the type and duration of monitoring and reporting during and/or after hydraulic fracturing has taken place and the geologic data to be published
- procedure for post fracturing reporting of the location, orientation and extent of the induced fractures to demonstrate that the EA permit has been complied with. This will need to include provision for reporting on proposed mitigation measures to prevent propagation should fractures extend to within a short distance of the permitted boundary
- proposed level of seismic event above which fracturing cannot resume without consent after evidence is provided that the wells are not damaged and the groundwater remains protected



When is a HFP required?

TEST TYPE	LEAK OFF TEST (Pressure Integrity Test)	MINI FALL OFF TEST (DFIT)	CONVENTIONAL COMPLETION ACID WASH	CONVENTIONAL HYDRAULIC FRACTURE STIMULATION	UNCONVENTIONAL HIGH VOLUME HYDRAULIC FRACTURE STIMULATION
APPLICATION	Drilling Engineering Evaluation	Reservoir/Rock Engineering Evaluation	Commercial Production Evaluation	Commercial Production Evaluation	Commercial Production Evaluation
PRESSURE	< Frac Gradient	= Frac Gradient	< Frac Gradient	> Frac Gradient Conventional Reservoir	> Frac Gradient Unconventional Reservoir
FLUID	Drilling Fluid/Mud	KCL Water < 20 m3	Dilute HCL < 15 m3	Frac Fluid 15-150m3	Frac Fluid > 1000 m3
PROPPANT	-----	-----	-----	20/40 sand 5-40 tonne	20/40 sand 20 – 150 tonne
CHEMICALS	- -----	-----	HCL 15%	Gel Surfactant Breaker Biocide	Gel Surfactant Breaker Biocide
FLOW BACK FLUIDS	NO	NO	YES	YES	YES
Need HFP?				✓	✓

Please send request for EWT and HFP consents to Toni Harvey, Senior Geoscientist
toni.harvey@oga.gsi.gov.uk

Updated 25 February 2016