

Products & Services Application Suitability

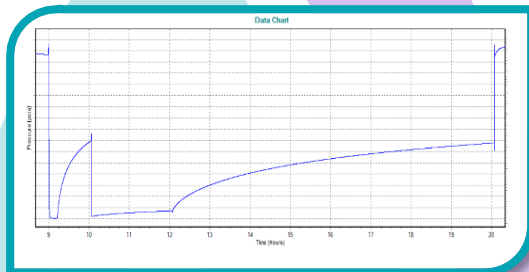
Drill Stem Testing

Drill Stem Testing is the most conventional form of formation testing to determine formation pressure, skin, and fluid flow characteristics, where wells are being allowed to produce water, gas or oil from the target zone.

Testing is performed by exposing the formation to controlled depressurised environments, encouraging flow from the formation. Subsequent shut in periods measure and record recovery periods.

Resulting data sets are analysed by Reservoir Engineers and Hydro Geologists to calculate reservoir permeability and forecast production rates.

Industry application: Oil & Gas exploration, Coal Mining and Water Well drilling.



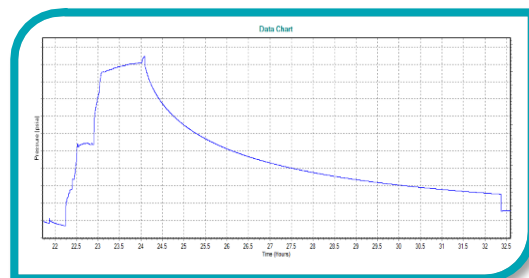
Injection Fall Off Testing

Injection Fall Off Testing (IFOT) is an alternative test methodology to determine formation pressure, skin, and fluid flow characteristics where Drill Stem Testing is operationally not possible.

During an IFOT, a fluid is injected at a predetermined flow rate, pressure and time interval as designed by Testing Engineers. The testing parameters are based on offset well data, expected application envelopes and test objectives.

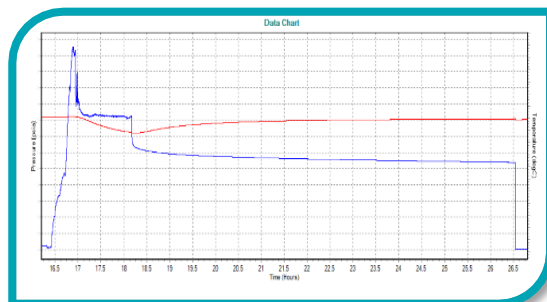
A subsequent fall off period similarly monitors and records the pressure fall off period, during which the formation absorbs the residual pressure from the injection period. Reservoir Engineers and Hydro Geologists can derive formation permeability and limited forecast production rates.

Industry application: Oil & Gas exploration, Coal Mining and Pre-Production Leech Mining.



Diagnostic Fracture Injection Testing

Diagnostic Fracture Injection Testing (DFIT) is a test methodology to determine fracture and formation parameters, including fluid efficiency, fracture closure pressure (or minimum in-situ stress), fluid leak-off coefficient and fracture gradient, transmissibility, fracture half-length, skin and initial formation pressure.



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Similar to IFOT, a fluid is injected at a higher pressure gradient to induce fracture openings for a period of time and measure volume of fluid absorbed.

Subsequent shut in periods monitor and record fracture closure pressures. Data sets analysed by Well Engineers, Mining Engineers and Civil Engineers will provide invaluable information for hydro stimulation planning and risk mitigations.

Industry application: Oil & Gas, Hard Rock Mining, Geotechnical and Construction.

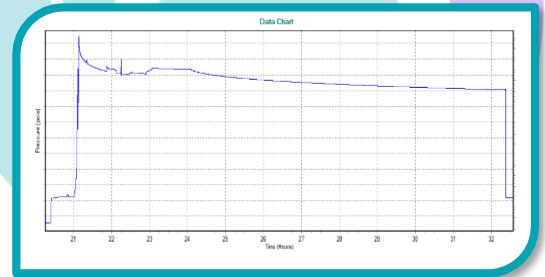
Hydro Stimulations

Hydro Stimulations utilise subsurface tools to isolate specific target zones with straddle or off bottom configurations to pre-condition or stimulate target formations with high pressure water.

Stimulations are usually planned after DFITs to increase productivity of target formations through controlled break down rock integrity.

Applications usually require large volume fluid mediums injected under high constant pressure for a pre-determine period of time as modelled by Reservoir and Mining Engineers.

Industry application: Coal Mining, Hard Rock Mining and Pre-Production Leech Mining.



Application summary table

Test Type / Industry Applications		Drill Stem Testing (DST)	Injection Fall Off Testing (IFOT)	Diagnostic Fracture Injection Testing (DFIT)	Hydro Stimulation (HS)
	Oil & Gas	<ul style="list-style-type: none"> Permeability Testing 	<ul style="list-style-type: none"> Permeability Testing 	<ul style="list-style-type: none"> Stimulation Testing 	
	Coal Mining	<ul style="list-style-type: none"> Water Drainage Testing Methane Emission Testing 	<ul style="list-style-type: none"> Interference Testing 		<ul style="list-style-type: none"> Coal Drainage Stimulation
	Hard Rock / Mineral Mining			<ul style="list-style-type: none"> Cap Rock Integrity Testing Rock Stress Testing 	<ul style="list-style-type: none"> Hydraulic Pre-Conditioning Rock Burst Mitigation
	Leech Mining		<ul style="list-style-type: none"> Propagation Fall Off Testing 		<ul style="list-style-type: none"> Hydraulic Formation Preconditioning
	Water Reservoirs	<ul style="list-style-type: none"> Production Testing (Pump Sizing) 		<ul style="list-style-type: none"> Water Dam Wall Stress Testing 	
	Construction			<ul style="list-style-type: none"> Rock Stress Testing (Foundation Testing) 	

