

SCAR

Contaminant-free, representative single-phase reservoir fluid samples

APPLICATIONS

- Advanced or routine PVT and compositional analysis
- Flow-assurance measurement acquisition (e.g., asphaltene, wax, and paraffin)
- Heavy oil sampling
- Near-saturated reservoir sampling
- Sulfur- and mercury-species analysis
- Routine, HPHT, high-H₂S, deepwater, and arctic downhole reservoir sampling

BENEFITS

- Saves rig time for more cost-effective operation
- Enables safer, more efficient handling
- Samples reservoir fluid directly in flow stream
- Delivers contamination-free, reservoir-representative fluid samples
- Retrieves samples in single-phase condition, above reservoir pressure, and above asphaltene-onset pressure without phase split
- Representatively samples trace elements
- Allows sampling during different flow periods
- Independently activates samplers via pressure or wireless commands

FEATURES

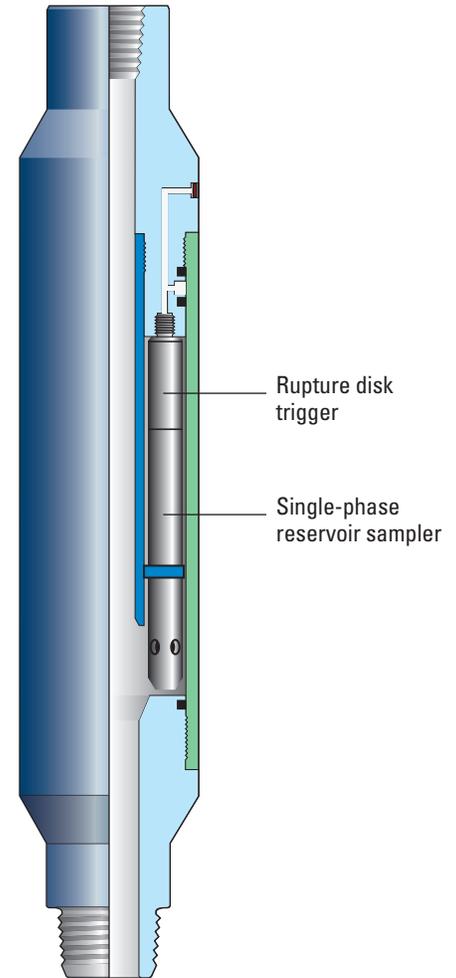
- Independent nitrogen gas charge
- Simultaneous or selective sampler activation
- Downhole sampler self-closure
- No sample flashing
- Inconel® samplers
- Dursan™ nonreactive coating
- Chain-of-custody sample-management tracking
- Dangerous goods and hazardous material labeling and packaging service

SCAR* inline independent reservoir fluid sampling delivers contaminant-free, reservoir representative fluid samples from deep within the reservoir. Samples are collected without flashing directly in the flow stream to eliminate contamination caused by dead volumes. In addition, SCAR sampling enables faster handling at the wellsite with its shorter length.

The system has five sample carrier choices to accommodate up to 10 samplers with options to select from a broad range of size, rating, and activation specifications. Each sampler used in SCAR sampling has its own small, independent gas charge to ensure each individual sample remains at or above reservoir pressure. Nonreactive sample chamber options ensure H₂S, mercaptans, and trace elements are retained so that the sampling system delivers the most representative reservoir fluid samples. Monophasic sampling avoids partitioning of trace components between phases, reducing uncertainty related to trace elements.

As part of the Quartet* downhole reservoir testing system enabled by Muzic* wireless telemetry, samplers are activated using wireless commands or annulus pressure, so samples can be collected at any time during the flow period.

When using annulus pressure to activate samplers, a single rupture disk can simultaneously activate all samplers, or each sampler can have its own rupture disk trigger for selective firing. Rupture disks are set at an annulus pressure operating range between the tester valve and the reversing valve.



SCAR inline independent reservoir fluid sampling.

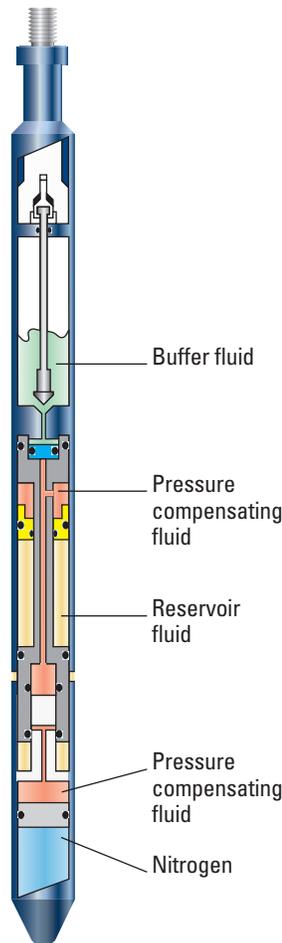
Carrier Specifications

Model	SCAR-A	SCAR-B	SCAR-C	SCAR-H	SCAR-M
Max. OD, in [mm]	7.75 [197]	5.5 [140]	5.25 [133]	7.75 [197]	5.5 [140]
Fishing neck OD, in [mm]	5 [127]	5 [127]	5 [127]	5 [127]	5 [127]
Tool ID, in [mm]	2.25 [57]	2.25 [57]	2.25 [57]	3.5 [89]	2.25 [57]
Pressure ratings					
Differential, psi [MPa]	10,000 [69]	15,000 [103]	10,000 [69]	10,000 [69]	15,000 [103]
Max. annular, psi [MPa]	15,000 [103]	20,000 [138]	20,000 [138]	20,000 [138]	20,000 [138]
Max. tubing, psi [MPa]	15,000 [103]	20,000 [138]	20,000 [138]	20,000 [138]	20,000 [138]
Temperature rating, degF [degC]	350 [177]	350 [177]	350 [177]	350 [177]	329 [165]
Length, ft [m]	22.5 [6.86]	18.8 [5.7]	18.8 [5.7]	21.6 [6.58]	25.9 [7.89]
Sampler	SRS	SLS	SLS	SLS	SLS
Number of samplers	Up to 6	Up to 8	Up to 8	Up to 10	Up to 8
Max. sample volume, galUS [L]	0.951 [3.6]	0.634 [2.4]	0.634 [2.4]	0.792 [3]	0.634 [2.4]
Service (NACE MR0175/ISO 15156)	H ₂ S, acid				
Connection	3½ IF or PH-6	3½ IF or PH-6	3½ IF or PH-6	4½ IF or PH-6	3½ IF or PH-6
Function enabled by Muzic wireless telemetry	na [†]	na	na	na	Selective or simultaneous wireless trigger
Interface with Muzic wireless telemetry	na	na	na	na	MZSM
Downhole to surface wireless transmission time, s	na	na	na	na	90

[†]Not applicable.

Sampler Specifications

Model	SRS	SLS
Max. OD, in [mm]	1.75 [44]	1.2 [30.5]
Pressure ratings		
Test, psi [MPa]	22,500 [155]	30,000 [207]
Working, psi [MPa]	15,000 [103]	20,000 [138]
Temperature rating, degF [degC]	392 [200]	354 [179]
Length, ft [m]	13.5 [4.1]	12.1 [3.7]
Weight, lbm [kg]	77 [35]	30.9 [14]
Sample capacity, in ³ [cm ³]	37 [600]	18.3 [300]
Material	17-4 SS or Inconel 725	Inconel 718
Service (NACE MR0175/ISO 15156)	H ₂ S, acid	H ₂ S, acid
Design code	API 6A, NACE MR0175/ISO 15156	API 6A, NACE MR0175/ISO 15156
Certifying authority	Bureau Veritas	Bureau Veritas



Single-phase reservoir sampler.

Perform SCAR sampling with the Quartet system enabled by Muzic telemetry. The system delivers the highest-quality pressure measurements and representative fluid samples with maximum safety and efficiency, for altogether better reservoir testing.

www.slb.com/SCAR