

THE REYNOLDS CUP COMPETITION X-RAY DIFFRACTION

REYNOLDS CUP BACKGROUND

The Reynolds Cup competition in clay mineralogy analysis is the most demanding in the world, challenging experts in cutting edge research laboratories in universities, government agencies, and specialist analytical companies.

Only subject matter experts employing top-of-the line instrumentation are invited to participate, and the samples are designed to challenge the world's leading authorities in mineralogy.

Top placing laboratories are usually academic and government research institutions. The 2020 competition included 76 laboratories from 23 countries.

Analytical techniques used by various laboratories in the competition include XRD, XRF, FTIR, and QEMSCAN.

RESULTS

Stratum Reservoir's X-ray Diffraction team placed #1 in the North American oil and gas service sector and 15th out of 76 participants in the extremely challenging and prestigious Reynolds Cup 2020.

Stratum Reservoir's total error across three samples was 107, whereas the average and median errors of all 76 participants were 178.3 and 166.6 respectively. Stratum Reservoir also had zero misidentified phases.

STRATUM RESERVOIR'S XRD LOCATIONS



HIGHLIGHTS

1ST PLACE

**NORTH AMERICAN
OIL & GAS SERVICE
SECTOR**

15TH PLACE

OUT OF 76 ENTRIES



HYDROTHERMALLY ALTERED SHALE

The host of the 2020 competition, James Hutton Institute, prepared mixtures of pure mineral standards meant to mimic samples that might be found in nature. This table shows the composition of one sample meant to resemble a hydrothermally altered shale. Stratum's XRD submission and error (bias) are also shown in the table.

Mineral	RC 10-1 (m%)		
	Actual %	Submitted%	Δ
Quartz	15.3	15.2	0.1
K-Feldspar group	8.6	10.9	2.3
Plagioclase group	10.9	8.1	2.8
Calcite	10.6	9.8	0.8
Pyrite	3.9	4.0	0.1
Rutile	3.0	3.8	0.8
Anatase	1.3	0.5	0.8
Amphibole	0.1		0.1
Chloritoid	0.3		0.3
Zircon	0.1		0.1
Total Non-Clay	54.1	52.3	8.2
Kaolinite	21.6	24.7	3.1
Mica (dioctahedral)	4.9	5.4	0.5
Smectite (dioctahedral)	9.8	13.2	3.4
Pyrophyllite	9.6	4.4	5.2
Total Clay	45.9	47.7	12.2
		Total Bias:	20.4

CONTACT US

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