experiment results. **Table 3** shows play, well, rock sample depth and reservoir temperature for tested samples.

Table 3. ULR rock sample sources and depths. Reprinted with permission from Alvarez and Schechter (2016c)

ULR	Well	Sample	Depth (ft)	ULR	Well	Sample	Depth (ft)
Bakken **Reservoir Temperature (220 °F)**	Bk-1	1	9620	Barnett **Reservoir Temperature (165 °F)**	Br-1	1	6060
		2	9630			2	8018
		3	9635			3	8582
		4	9640			4	8700
	Bk-2	1	10765		Br-2	1	6896
		2	10770			2	7017
		3	10775			3	7030
		4	10780			4	7616
Eagle Ford **Reservoir Temperature (218 °F)**	EF-1	1	13030	Wolfcamp **Reservoir Temperature (165 °F)**	W-1	1	7790
		2	13040			2	7830
		3	13125			3	7835
		4	13135			4	7880
	EF-2	1	14185			5	7910
		2	14220		W-2	1	8335
		3	14245			2	8370
		4	14250			3	8385
						4	8425

X-ray diffraction and total organic carbon analysis

X-ray diffraction and total organic carbon analysis experiments are conducted to evaluate the nature of the rocks analyzed as well as the lithological variability of ULR with depth. Determine the mineralogical composition of ULR pay zones is critical to select completion fluids that improve water imbibition and favor oil recovering when fracturing the formation (Alvarez and Schechter 2016a). XRD and TOC results for Bakken and Eagle Ford are in **Table 4**.

XRD results for Bakken wells show different lithologies from the two wells analyzed. Well Bk-1 is more siliceous with higher content of quartz whereas well Bk-2