

Table 2. Quantitative mineralogy (wt.%) by XRD analyses for mudstone samples from the Smoking Hills Formation. Note: samples in grey were freeze-dried prior to analyses; sample numbers in italics are weathered mudstone samples; samples labelled with * were from select layers with identifiable features; all samples were pulverized using the McCrone micronizing mill.

<i>Mineral Groups</i>	<i>Silicates</i>					<i>Phyllosilicates</i>					<i>Elemental</i>	<i>Sulphates</i>							<i>Oxides</i>	<i>GoF</i>	<i>%XL</i>	
Sample ID	Qtz	Crs	Pl	Kfs	Hul-Ca	Ms	Chl	Kln	Sm	ML	S	Alg	Brt	Gp	Htr	Jrs	Jrs-H	Jrs-N	Tmg	F-Hdr		
<i>GQA 18-29</i>	15		tr		tr									28		55			2		1.70	10%
<i>GQA 18-30</i>	30				22	17			tr					10			11		10		1.81	12%
<i>SUV 18-527</i>	11		tr		35	8								4		43					1.64	10%
<i>SUV 18-532</i>	4													5	35	6			50		1.68	13%
GTA 18-135	27		tr		1	6					2			7		55			2		2.18	39%
GTA 18-135*	17	1	tr			3					2	7		15		53			2		2.66	38%
GTA 18-138	18				29	10			10			9		2		22					3.18	48%
GTA 18-138*	3		11			tr			67			9		5			5				2.73	54%
GTA 18-141	12		2	tr	46	8			5			6	1	2			17			1	2.54	55%
GTA 18-144	17	1	3		12	6	tr		2			7		4			48				2.01	35%
GTA 18-147	34		1		2	33		3		tr		4		3			18	2			2.18	49%
GTA 18-150	38		tr		1	18	tr	2	4			4		2			29	2			2.36	53%
GTA 18-153	34	tr				21			13			9		10		13					3.35	53%
GTA 18-156	3		12			8			60			11		4		2					2.37	56%
GTA 18-159	16	1		tr	44							5		3		31					2.32	65%
GTA 18-162	20		1		45	12		tr						3		19					2.75	55%
GTA 18-165	35		tr		44	20	tr	1		tr				tr							2.85	65%
GTA 18-168	22		tr	6	40	13	2	4		tr				3		10					2.68	60%
GTA 18-171	18		9		29	10	9	tr	8	tr				4		13					2.66	54%
GTA 18-174	12		34		tr	12	tr		15			11		7		9					4.04	53%
GTA 18-177	28		1		34	18		3		tr		5		1		10					2.29	59%
GTA 18-180	43	2	tr		7	22			tr	tr		9		3		14					3.45	53%
GTA 18-183	36		8			19	4	tr	9			9		9			6				3.28	50%
GTA 18-183*	8		37						12			27		4			12				2.77	33%

Qtz: quartz, Crs: cristobalite, Pl: plagioclase, Kfs: K-feldspar, Hul-Ca: heulandite-Ca, Ms: muscovite, Chl: chlorite, Kln: kaolinite, Sm: smectite, ML: mixed-layer clay minerals, S: elemental S, Alg: alunogen, Brt: barite, Gp: gypsum, Htr: halotrichite-pickeringite, Jrs: jarosite, Jrs-H hydronium jarosite, Jrs-N: natrojarosite, Tmg: tamarugite, F-Hdr: ferrihydrate, GoF: goodness of fit, %XL: percent crystallinity, tr: trace