

Well name	Label	API number	Operator	Year Drilled	Latitude N	Longitude W	Gas Hydrate Presence	Thermogenic Gas Present	Estimated Depth Horizons			GHSZ Thickness ft.	GHSZ Thickness 2 ft.	
									Top GHSZ ft.	Bottom GHSZ ft.	Permafrost Base ft.			
<b>STAGE 1</b>														
Kuparuk River Unit 2B-10	KRU 2B-10	50029210840000	Arco Alaska, Inc.	1984	70.28937	-149.93751	evidence	evidence	705	2,432	1,523	1,727	1,728	
Kuparuk River Unit 2D-15	KRU 2D-15	50029211840000	Arco Alaska, Inc.	1984	70.28401	-149.76165	evidence	evidence	702	2,504	1,554	1,802	1,807	
Kuparuk River Unit 3A-9	KRU 3A-9	50029206990000	Arco Alaska, Inc.	1982	70.40330	-149.93776	evidence	evidence	697	2,644	1,578	1,947	1,867	
Kuparuk River Unit 3H-9	KRU 3H-9	50103200860000	Arco Alaska, Inc.	1987	70.41181	-150.01174	limited	evidence	700	2,640	1,582	1,941	1,806	
Kuparuk River Unit 3K-9	KRU 3K-9	50029216560000	Arco Alaska, Inc.	1986	70.43321	-149.76079	limited	evidence	690	2,772	1,791	2,082	2,079	
Milne Point Unit E-4	MPU E-4	50029219970000	Conocophillips Ak	1990	70.45542	-149.43674	evidence	evidence	695	2,821	1,848	2,127	2,133	
Prudhoe Bay Unit R-1	PBU R-1	50029203530000	Sohio Petroleum Co.	1979	70.34547	-148.91084	limited	evidence	680	3,400	2,000	2,720	2,895	
Prudhoe Bay Unit S-26	PBU S-26	50029220470000	BP Expl Alaska, Inc.	1990	70.35359	-149.03021	limited	evidence	679	3,263	1,998	2,584	2,587	
Prudhoe Bay Unit Z-7	PBU Z-7	50029220460000	BP Expl Alaska, Inc.	1990	70.29769	-149.19553	evidence	evidence	689	3,015	1,909	2,325	2,300	
Prudhoe Bay Unit Z-8	PBU Z-8	50029217870000	BP Expl Alaska, Inc.	1988	70.29777	-149.19959	evidence	evidence	690	3,010	1,908	2,320	2,297	
<b>STAGE 2</b>														
Aklaq 6	AKLA 6	50279200190000	Fex LP	2007	70.71232	-154.60767	limited	no evidence	794	1,638	994	844	768	
Aklaqyaaq 1	AKLA 1	50279200180000	Fex LP	2007	70.55727	-155.42036	limited	limited	788	1,724	1,009	935	998	
Amaguq 2	AMAG 2	50279200170000	Fex LP	2007	70.39315	-155.80656	evidence	evidence	795	1,658	927	864	783	
Antigua 1	ANTI 1	50029232990000	Conocophillips Ak	2006	70.18088	-149.52665	evidence	evidence	707	2,658	1,542	1,951	1,883	
Atlas 1	ATLA 1	50103203600000	Phillips Alaska, Inc.	2001	70.15183	-150.55046	evidence	evidence	743	2,445	1,273	1,702	1,549	
Carbon 1	CARB 1	50103204770000	Conocophillips Ak	2004	70.24785	-151.88878	evidence	evidence	814	1,389	960	575	51	
Caribou 26-11 1	CARI 26-11	50279200090000	Total E&P USA, Inc.	2004	70.18979	-153.08764	limited	limited	796	1,654	943	859	648	
Iapetus	IAPE 2	50103205060000	Conocophillips Ak	2005	70.40790	-151.18305	evidence	evidence	750	2,213	1,353	1,463	1,210	
Kokoda 1	KOKO 1	50279200110000	Conocophillips Ak	2005	70.28495	-153.13746	evidence	evidence	811	1,492	944	681	486	
Kokoda 5	KOKO 5	50279200120000	Conocophillips Ak	2005	70.33439	-153.20463	evidence	evidence	814	1,472	948	658	424	
Kuparuk River Unit 1H-South	KRU 1H-S	50029232960000	Conocophillips Ak	2006	70.39486	-149.55789	evidence	evidence	686	2,737	1,845	2,051	2,006	
Kuparuk River Unit 1R-East	KRU 1R-E	50029232950000	Conocophillips Ak	2006	70.39541	-149.55907	evidence	evidence	686	2,737	1,845	2,051	2,007	
Kuparuk River Unit Tarn 2N-305	KRU 2N-305	50103203490000	Phillips Alaska, Inc.	2000	70.17132	-150.31427	evidence	evidence	729	2,430	1,334	1,702	1,610	
Milne Pt Unit SB I-16	MPU I-16	50029232210000	Conocophillips Ak	2004	70.43653	-149.57800	evidence	evidence	690	2,768	1,842	2,078	2,057	
Milne Pt Unit SB S-15	MPU S-15	50029230610000	BP Expl. Alaska, Inc.	2002	70.40972	-149.46630	evidence	evidence	686	2,804	1,869	2,118	2,070	
Mount Elbert 1	MTEL 1	50029233020000	BP Expl. Alaska, Inc.	2007	70.45559	-149.41321	evidence	evidence	694	2,843	1,851	2,149	2,151	
Noatak 1	NOAT 1	50279200130000	Conocophillips Ak	2007	70.38020	-153.13346	limited	limited	822	1,391	936	569	274	
Pioneer 1	PION 1	50103205950000	Conocophillips Ak	2009	70.14205	-151.48645	evidence	evidence	802	1,516	1,006	714	517	
Placer 1	PLAC 1	50103204810000	Conocophillips Ak	2004	70.34671	-150.39832	evidence	evidence	723	2,447	1,546	1,724	1,615	
Scout 1	SCOU 1	50103204790000	Conocophillips Ak	2004	70.28673	-151.95708	no evidence	evidence	0	0	955	0	0	
Spark 4	SPAR 4	50103204800000	Conocophillips Ak	2004	70.28837	-151.79243	evidence	evidence	810	1,463	1,025	653	147	
Spark DD9	SPRK DD9	50103205690000	Conocophillips Ak	2008	70.20406	-151.64643	evidence	evidence	807	1,424	1,007	617	375	
Thetis Island 1	THET 1	50103201900000	Exxon Co. USA	1993	70.55393	-150.15224	limited	evidence	711	2,654	1,587	1,943	1,871	
Wainwright 1	WAIN 1	50301200030000	DOI	2007	70.64409	-160.02374	limited	no evidence	838	1,488	1,004	650	287	
Wainwright W-OC1-08	W-OC1-08	50301200100000	DOI	2008	70.64364	-160.02386	limited	limited	838	1,488	1,004	649	288	

KRU 2B-10 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
300	91.5	21446	216	183	14	27	114	53.7	0.5
390	118.9	30557	288	114	16	32	142	76.0	0.5
480	146.3	20811	180	70	10	23	101	83.2	0.4
570	173.8	26259	158	63	10	22	92	118.8	0.5
660	201.2	7513	72	26	6	10	19	76.7	0.6
750	228.7	31531	299	260	16	37	114	56.4	0.4
840	256.1	6054	58	26	5	10	158	72.1	0.5
930	283.5	18010	174	64	9	19	112	75.7	0.5
1020	311.0	19459	244	84	12	20	58	59.3	0.6
1110	338.4	9214	164	55	10	16	77	42.1	0.6
1200	365.9	30049	351	125	17	31	137	63.1	0.5
1290	393.3	8906	140	47	7	14	114	47.6	0.5
1350	411.6	11590	168	57	8	15	118	51.5	0.5
1380	420.7	9364	221	85	8	18	108	30.6	0.4
1470	448.2	11142	155	56	9	19	48	52.8	0.5
1560	475.6	11190	158	48	7	14	66	54.3	0.5
1650	503.0	20905	491	151	17	27	57	32.6	0.6
1740	530.5	11598	156	55	6	14	39	55.0	0.4
1830	557.9	15628	182	76	16	21	55	60.6	0.8
1920	585.4	14481	180	62	10	18	39	59.8	0.6
2010	612.8	16319	95	29	4	7	15	131.6	0.6
2100	640.2	18666	272	91	10	18	31	51.4	0.6
2160	658.5	18378	408	118	15	25	59	34.9	0.6
2250	686.0	16429	378	132	15	33	67	32.2	0.5
2340	713.4	15694	224	78	14	26	91	52.0	0.5
2430	740.9	21699	439	193	31	54	196	34.3	0.6
2550	777.4	50843	327	99	16	29	108	119.3	0.6
2610	795.7	14747	223	111	57	40	1479	44.2	1.4
2670	814.0	30327	479	275	257	135	1393	40.2	1.9
2820	859.8	12136	382	453	1052	1116	37023	14.5	0.9
2970	905.5	17787	290	141	35	82	3121	41.3	0.4
3060	932.9	12339	202	105	28	89	14392	40.2	0.3
3180	969.5	4916	99	54	8	24	2455	32.1	0.3
3270	997.0	4090	79	46	18	48	6973	32.7	0.4
3360	1024.4	5606	271	181	85	235	14838	12.4	0.4

KRU 2B-10 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	N <sub>2</sub> ppm	CO <sub>2</sub> ppm	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	C <sub>1</sub> /CO <sub>2</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰	δDC <sub>1</sub> ‰	δ <sup>13</sup> C <sub>2</sub> ‰	δ <sup>13</sup> CO <sub>2</sub> ‰
300	91.5	980900	15600	3500								0.2				
345	105.2	998400	1000	600								0.6	-62.7			-16.7
390	118.9			197	7	14	10	19	334	9	0.5					
480	146.3			126	1	14	3	7	263	8	0.4					
570	173.8			389	5	29	10	14	434	11	0.7					
660	201.2			192	2	23	5	9	316	8	0.6					
675	205.8	991700	8000	300									-65.1			-15.2
690	210.4	985800	10200	3900								0.4				
750	228.7			3874	26	26	25	52	2509	75	0.5					
840	256.1			113952	96	24	12	24	1752	950	0.5					
930	283.5			2753	32	16	30	30	2190	57	1.0					
1020	311.0	974200	25100	600												
1020	311.0			1099	11	12			91	48						
1065	324.7	984900	15000	100									-56.3			-13.3
1110	338.4			12357	15	10	5	10	495	494	0.5					
1140	347.6	998600	100													
1200	365.9			2890	14	14	10	14	662	103	0.7					
1215	370.4	985900	13000	1100									-64.6			-14.5
1217	371.0	999900														
1290	393.3			45878	35	8	8	12	607	1067	0.7					
1305	397.9	979700	18000	2300								0.1	-56.4			-15.6
1340	408.5	998500	1000	500								0.5	-53.6			-20.4
1350	411.6			6619	11	6			67	389						
1380	420.7	957400	36300	6300								0.2				
1380	420.7			50999	24					2125						
1470	448.2			638	12	7	3	3	53		1.0					
1560	475.6			384	1											
1650	503.0			372375	4											
1695	516.8	977600	14000	8400								0.6	-49.0	-242		-16.2
1740	530.5			411385	6	1				58769						
1755	535.1	975300	16000	8700								0.5	-50.9	-248		-16.2
1770	539.6	989100	4600	6300								1.4				
1830	557.9			476126	59	4	1	11	0	7558	0.1					
1920	585.4			229536	18	3	0	1	12	10930						
1935	589.9	745100	2000	252900								126.5	-51.6	-317		-14.7
2010	612.8			1129324	84	5	1	2	17	12689	0.5					
2100	640.2			605565	38	2	1	2	6	15139	0.5					
2160	658.5			731714	49	5		5	18	13550						
2175	663.1	925000	4000	71000								17.8	-50.2	-316		-12.8
2180	664.6	996100	1500	2400								1.6	-51.1	-273		-21.2
2250	686.0			382476	25	2		2	5	14166						
2340	713.4	916000	1900	82000								43.2	-43.7	-208		
2340	713.4			1004450	57	3			20	16741			-43.7			
2375	724.1	915500	2400	82100								34.2	-48.0	-256		
2430	740.9			226142	29	2	1	1	12	7295	1.0					
2505	763.7	995400	2000	2600								1.3	-25.6	-145		-7.1
2520	768.3	994000	2000	4000								2.0	-49.0	-272		-20.7
2550	777.4			5206	5	4	2	4	18	578	0.5					
2610	795.7	928400	2000	68100	300	500	400	300		85	1.3	34.1	-46.6	-187		
2610	795.7			806368	1148	675	1901	233	5427	442	8.2					
2670	814.0	980600	2400	17000								7.1				
2670	814.0			826841	974	899	3510	488	11126	441	7.2		-46.6			
2820	859.8			953781	35492	25335	32653	17138	87012	16	1.9					
2835	864.3	946800	1000	45200								45.2	-45.9	-302	-25.4	-11.6
2970	905.5			48944	2977	2842	1996	2281	6210	8	0.9					
3060	932.9			3495	413	356	283	602	7763	5	0.5					
3180	969.5			1204	385	116	39	83	1311	2	0.5					
3270	997.0			3520	827	685	271	476	6331	2	0.6					
3360	1024.4			20328	3224	1647	752	1038	8353	4	0.7					

KRU 2D-15 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
270	82.3	3835	99	45	10	19	222	26.6	0.5
1830	557.9	4162	168	78	15	30	113	16.9	0.5
2400	731.7	4330	262	118	19	36	116	11.4	0.5
1350	411.6	4706	192	92	10	29	420	16.6	0.3
1890	576.2	5936	229	107	19	43	129	17.7	0.4
2220	676.8	6227	246	110	26	53	216	17.5	0.5
2280	695.1	6303	265	113	27	49	319	16.7	0.6
1110	338.4	6683	148	66	13	26	693	31.2	0.5
2860	872.0	6851	208	95	21	33	155	22.6	0.6
2100	640.2	7464	246	126	25	53	150	20.1	0.5
2920	890.2	7600	297	141	33	48	120	17.4	0.7
360	109.8	8185	252	123	25	48	328	21.8	0.5
1170	356.7	8283	126	54	13	20	744	46.0	0.7
450	137.2	8310	241	145	27	69	427	21.5	0.4
1590	484.8	8542	369	181	35	70	278	15.5	0.5
2160	658.5	8571	314	150	33	60	209	18.5	0.6
2560	780.5	8654	309	133	26	42	176	19.6	0.6
1950	594.5	9136	472	233	58	92	309	13.0	0.6
2340	713.4	9170	209	86	16	31	251	31.1	0.5
1650	503.0	9351	311	153	32	60	252	20.2	0.5
1230	375.0	9563	195	79	14	22	108	34.9	0.6
2980	908.5	9965	445	67	49	62	151	19.5	0.8
540	164.6	10164	225	102	22	41	786	31.1	0.5
1530	466.5	10424	367	179	38	70	274	19.1	0.5
2620	798.8	10974	334	151	32	53	187	22.6	0.6
3100	945.1	11072	335	159	85	112	750	22.4	0.8
1050	320.1	11117	274	141	27	62	576	26.8	0.4
1770	539.6	11846	496	233	55	90	396	16.2	0.6
2740	835.4	11907	253	101	24	33	177	33.6	0.7
2500	762.2	12013	353	156	34	55	174	23.6	0.6
2680	817.1	12141	298	133	28	46	216	28.2	0.6
990	301.8	12673	333	174	36	75	287	25.0	0.5
3160	963.4	12754	432	211	117	156	894	19.8	0.8
1470	448.2	13069	438	214	46	82	297	20.0	0.6
3040	926.8	13085	418	213	65	97	400	20.7	0.7
1290	393.3	14204	303	127	19	35	132	33.0	0.5
810	247.0	14742	363	165	34	64	328	27.9	0.5
900	274.4	17008	361	158	35	61	209	32.8	0.6
630	192.1	19984	396	185	38	71	227	34.4	0.5
720	219.5	22167	459	228	44	88	247	32.3	0.5

KRU 2D-15 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	N <sub>2</sub> ppm	CO <sub>2</sub> ppm	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>2</sub> H <sub>4</sub> ppm	C <sub>3</sub> ppm	C <sub>3</sub> H <sub>6</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	iC <sub>5</sub> ppm	nC <sub>5</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	C <sub>1</sub> /CO <sub>2</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰	δDC <sub>1</sub> ‰	δ <sup>13</sup> C <sub>2</sub> ‰	δ <sup>13</sup> CO <sub>2</sub> ‰
270	82.3			423	8		7			2			118	28						
360	109.8			2595	15		17		6	6			142	81	1.0					
450	137.2			49	1		1			1			115	25						
465	141.8	996900	3000	100													0.0	-70.30	-409	-15.7
540	164.6			6757	21		7		3	5			359	241	0.6					
630	192.1			28030	38		8		3	3			61	609	1.0					
720	219.5			28362	44		30		11	14			98	383	0.8					
810	247.0			12031	20		5		3	2			66	481	1.5					
855	260.7	925700	2000	72300													36.2	-62.50	-294	-20.9
900	274.4			11487	13		4		2	2			32	676	1.0					
990	301.8			13032	15		1		1	1			47	815	1.0					
1050	320.1			7720	5		1		1	1			8	1287	1.0					
1065	324.7	775500	15000	209500													14.0	-49.80		-21.8
1110	338.4	825400	6000	167700			900										28.0	-39.27		
1110	338.4			17356	5		1		1				44	2893						
1150	350.6	723600	1700	274700													161.6	-49.63		
1170	356.7			47188	10		3		1	1			140	3630	1.0			-39.27		
1200	365.9	666300	2100	331600													157.9	-50.10	-261	-26.0
1230	375.0	751700	9400	238900													25.4	-48.89		
1230	375.0			71768	13		4		2	1			70	4222	2.0			-49.63		
1290	393.3	605500	3600	390900													108.6	-49.95		
1290	393.3			71223	10		2		1	1			11	5935	1.0			-48.89		
1300	396.3	559400	2100	438500													208.8	-50.60	-271	-24.5
1305	397.9	726900	16000	257100													16.1	-47.10	-276	-15.6
1350	411.6	929800	2200	68000														-49.13		
1350	411.6	971300	15900	12800													0.8			
1350	411.6			58856	9		1			1			21	5886				-49.95		
1400	426.8	990400	300	9200													30.7	-49.70	-275	-25.0
1425	434.5	929300	13000	57700													4.4	-40.10	-217	-18.2
1470	448.2	875700	7900	116500													14.7	-46.62		
1470	448.2			14579	1								25	14579				-49.13		
1530	466.5			12733	1								8	12733				-46.16		
1545	471.0	868800	7000	124200													17.7	-45.50	-258	-16.0
1590	484.8			163	0								8							
1650	503.0			14119	2								12	7060						
1680	512.2	922700	5200	72100													13.9	-41.16		
1770	539.6			22279	4		1						36	4456						
1785	544.2	932600	2000	65400													32.7	-48.90	-278	
1830	557.9			2816	2		2						30	704						
1890	576.2	996000	4000	-																
1890	576.2			4926	1								10	4926						
1950	594.5			10764	2		1			1			20	3588						
2100	640.2	982200	2900	14700	100												5.1			
2100	640.2	995700	3000	1200													0.4			
2100	640.2			11									11							
2150	655.5	961100	2100	36700													17.5	-50.00	-264	-27.2
2160	658.5			47	1		1						37	24						
2220	676.8			122	1		1		1	1			49	61	1.0					
2235	681.4	999800	-	200														-63.90		
2280	695.1			8492	4		2		1	2			30	1415	0.5					
2340	713.4			114									18							
2400	731.7			25	1		1		1				11	13						
2500	762.2	808500	700	190800													272.6	-38.64		
2500	762.2			30431	8		1		1				11	3381				-38.64		
2560	780.5			322	1								7	322						
2620	798.8			4									0							
2650	807.9	984800	2000	13100													6.6			
2680	817.1			838	1								14	838						
2725	830.8	990500	2400	7100													3.0	-49.90	-280	-26.7
2740	835.4			6760	4		1						18	1352						
2800	853.7	988900	1400	8400													6.0			
2815	858.2	990400	6000	3600													0.6			
2860	872.0			4958	4		2		1	1			22	826	1.0					
2920	890.2			37	1		1		1				24	19	0.0					
2980	908.5			134	8		9		6	2			35	8	3.0					
3040	926.8	976900	100	16100													161.0			
3040	926.8			10	1		1		9	3			52	5	3.0					
3055	931.4	977900	22000	100													157.9	-51.30		-10.7
3100	945.1	977600	5700	14900	600		900		100	100							157.9			
3100	945.1			27	2		3		9	8			37	5	1.1					
3150	960.4	960900	4000	32600	900		400		400	400	400	100					157.9	-47.70	-286	-26.6
3160	963.4			8511	214		150		177	143			356	23	1.2					

KRU 3A-9 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
100	30.5	3421	79	54	20	34	7130	25.7	0.6
200	61.0	34037	596	184	47	88	10082	43.6	0.5
300	91.5	4820	49	17	5	10	8840	73.0	0.5
400	122.0	4271	32	10	3	6	10236	101.7	0.5
500	152.4	3189	19	10	10	22	6475	110.0	0.5
600	182.9	13497	152	60	12	31	9567	63.7	0.4
700	213.4	1839	15	44	1	21	6240	31.2	0.0
800	243.9	90339	310	93	17	37	11154	224.2	0.5
900	274.4	16523	29	10	3	6	5061	423.7	0.5
1000	304.9	55316	165	43	9	19	7141	265.9	0.5
1100	335.4	7626	108	68	22	36	2968	43.3	0.6
1200	365.9	7423	44	12	3	6	10120	132.6	0.5
1300	396.3	4297	44	38	2	6	7148	52.4	0.3
1400	426.8	11225	83	23	4	10	7206	105.9	0.4
1500	457.3	52906	154	42	9	17	7758	269.9	0.5
1600	487.8	40776	137	28	6	11	10110	247.1	0.5
1700	518.3	16973	94	30	8	14	6493	136.9	0.6
1800	548.8	21259	109	34	8	15	9340	148.7	0.5
1900	579.3	6972	105	30	7	14	4338	51.6	0.5
2000	609.8	6098	55	16	4	8	7667	85.9	0.5
2100	640.2	15330	55	15	4	9	6804	219.0	0.4
2160	658.5	1549	47	29	2	5	5619	20.4	0.4
2190	667.7	509	42	36	1	1	3794	6.5	1.0
2250	686.0	2970	56	18	7	11	9247	40.1	0.6
2310	704.3	17980	33	4	1	2	468	485.9	0.5
2370	722.6	50084	708	204	33	74	439	54.9	0.4
2430	740.9	28741	306	82	15	33	603	74.1	0.5
2490	759.1	6578	74	23	6	13	476	67.8	0.5
2550	777.4	30154	358	103	20	44	1393	65.4	0.5
2610	795.7	2497	30	9	3	6	326	64.0	0.5
2670	814.0	2785	24	8	2	5	237	87.0	0.4
2730	832.3	4237	44	14	3	7	278	73.1	0.4
2790	850.6	2283	26	8	2	5	563	67.1	0.4
2850	868.9	1637	44	36	16	23	510	20.5	0.7
2910	887.2	1143	35	24	2	4	414	19.4	0.5
2970	905.5	1869	61	28	3	5	589	21.0	0.6
3030	923.8	1976	110	50	35	44	2846	12.4	0.8
3090	942.1	2337	91	63	51	46	4148	15.2	1.1
3150	960.4	2190	122	30	30	18	2293	14.4	1.7
3210	978.7	1072	97	35	7	8	472	8.1	0.9
3270	997.0	1207	135	59	31	35	497	6.2	0.9
3330	1015.2	790	114	41	47	39	395	5.1	1.2
3390	1033.5	334	44	33	32	73	1839	4.3	0.4
3450	1051.8	2060	118	88	75	110	3962	10.0	0.7
3510	1070.1	1912	137	100	81	66	1517	8.1	1.2
3570	1088.4	1735	220	85	32	28	558	5.7	1.1
3630	1106.7	3162	233	101	32	47	296	9.5	0.7
3690	1125.0	2884	788	121	67	36	244	3.2	1.9
3750	1143.3	1438	132	81	53	29	179	6.8	1.8
3810	1161.6	2083	595	53	18	13	293	3.2	1.4

KRU 3A-9 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
3870	1179.9	1903	193	48	7	6	113	7.9	1.2
3930	1198.2	2914	290	40	16	14	232	8.8	1.1
3990	1216.5	2729	222	102	40	25	157	8.4	1.6
4050	1234.8	3126	168	90	46	31	185	12.1	1.5
4110	1253.0	3674	214	43	22	18	246	14.3	1.2
4170	1271.3	2590	116	59	27	27	298	14.8	1.0
4230	1289.6	1773	250	47	10	8	99	6.0	1.3
4290	1307.9	1132	258	48	11	9	116	3.7	1.2
4350	1326.2	988	301	82	48	29	146	2.6	1.7
4410	1344.5	1097	786	215	85	56	263	1.1	1.5
4470	1362.8	912	1888	414	140	92	363	0.4	1.5
4530	1381.1	1218	3130	650	178	100	262	0.3	1.8
4590	1399.4	972	3560	1208	462	284	436	0.2	1.6
4650	1417.7	2442	10379	3227	986	490	431	0.2	2.0
4710	1436.0	2709	10514	3224	1081	527	494	0.2	2.1
4770	1454.3	2328	6280	2149	657	345	452	0.3	1.9
4830	1472.6	4393	15467	5864	1221	547	581	0.2	2.2
4890	1490.9	5798	40796	20160	1308	784	403	0.1	1.7
4950	1509.1	4636	26203	19660	1418	1315	479	0.1	1.1
5010	1527.4	2345	15308	14931	1247	1161	389	0.1	1.1
5070	1545.7	3361	11303	9691	1060	1059	635	0.2	1.0
5130	1564.0	1959	9945	14605	1636	2268	1036	0.1	0.7
5190	1582.3	1425	3932	10437	1717	4765	6191	0.1	0.4
5250	1600.6	1308	6339	9900	1163	2117	1226	0.1	0.5
5310	1618.9	3799	8301	15290	2204	5708	6049	0.2	0.4
5370	1637.2	4122	7113	15541	2516	8728	14948	0.2	0.3
5430	1655.5	4736	9504	14557	2425	7853	14789	0.2	0.3
5490	1673.8	967	2206	11906	2434	10075	12742	0.1	0.2
5570	1698.2	2601	5317	21850	5052	19018	47755	0.1	0.3
5610	1710.4	4878	9006	44132	6732	25481	44370	0.1	0.3
5670	1728.7	1980	3933	34377	5529	21969	20761	0.1	0.3
5730	1747.0	5044	40991	140081	16124	51480	25416	0.0	0.3
5790	1765.2	5869	40448	127650	15594	45237	26534	0.0	0.3
5850	1783.5	3703	19315	111860	16242	47066	28421	0.0	0.3
5910	1801.8	3538	24934	83120	10288	26043	11216	0.0	0.4
5970	1820.1	2929	12252	36072	4097	11040	4227	0.1	0.4
6030	1838.4	4626	9126	34257	9131	30590	107016	0.1	0.3
6090	1856.7	2299	4142	19446	4399	14480	29228	0.1	0.3
6150	1875.0	2446	9851	56296	17722	51933	95888	0.0	0.3
6210	1893.3	1565	2534	23562	7162	22292	46214	0.1	0.3
6270	1911.6	1444	2292	17918	6662	19754	49423	0.1	0.3
6330	1929.9	2484	1871	18338	9148	24480	74388	0.1	0.4
6390	1948.2	3381	721	11668	6065	17158	45758	0.3	0.4

KRU 3A-9 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰
100	30.5	9850	3	1	1	2	4858	2463	0.5	
200	61.0	18636	22	2	0	1	1176	777		
300	91.5	12414	9	1	0	0	2703	1241		
400	122.0	14855	11	1	0	0	2049	1238		
500	152.4	510	0	0	0	0	174			
600	182.9	22904	5	1	0	0	2765	3817		
700	213.4	26797	10	6	1	1	2305	1675	1.0	
800	243.9	36486	10	1	0	1	1847	3317		
900	274.4	42565	17	1	0	0	1492	2365		
1000	304.9	29414	11	1	0	0	1975	2451		
1100	335.4	12546	9	1	0	0	1419	1255		
1200	365.9	8533	3	0	0	0	1140	2844		
1300	396.3	51620	7	0	0	0	1251	7374		
1400	426.8	52047	6	0	0	5	1034	8675		
1500	457.3	144351	11	0	0	0	1296	13123		
1600	487.8	153723	20	0	0	0	1209	7686		
1700	518.3	22528	5	0	0	0	1166	4506		
1800	548.8	20872	3	0	0	0	892	6957		
1900	579.3	22040	4	0	0	0	1067	5510		
2000	609.8	19139	4	0	0	0	1363	4785		
2100	640.2	14464	2	0	0	0	366	7232		
2160	658.5	2956	2	0	0	0	456	1478		
2190	667.7	7737	15	1	0	0	2065	484		
2250	686.0	21257	11	1	0	0	4110	1771		-39.64
2310	704.3	117643	41	2	0	1	310	2736		
2370	722.6	4556	2	9	12	2	525	414	6.0	
2430	740.9	30682	10	7	0	0	9822	1805		
2490	759.1	4998	3	1	0	0	294	1250		
2550	777.4	17310	4	2	0	0	607	2885		-52.48
2610	795.7	7164	6	0	0	0	25	1194		
2670	814.0	2214	2	1	0	0	96	738		
2730	832.3	4818	1	0	0	0	86	4818		
2790	850.6	8686	2	0	0	0	210	4343		
2850	868.9	4113	3	1	0	0	57	1028		
2910	887.2	3380	10	1	2	0	12	307		
2970	905.5	6461	268	5	4	1	96	24	4.0	
3030	923.8	5938	665	50	122	19	782	8	6.4	
3090	942.1	6055	640	66	191	26	1159	9	7.3	
3150	960.4	7472	1220	81	120	24	1007	6	5.0	
3210	978.7	8285	1415	73	60	15	407	6	4.0	
3270	997.0	13056	1143	108	85	27	323	10	3.1	
3330	1015.2	6411	1038	116	88	44	360	6	2.0	
3390	1033.5	2971	302	114	148	121	865	7	1.2	
3450	1051.8	5210	997	204	224	184	2046	4	1.2	
3510	1070.1	3666	832	154	133	90	778	4	1.5	
3570	1088.4	5724	1351	135	84	42	395	4	2.0	
3630	1106.7	6600	1942	90	61	34	378	3	1.8	
3690	1125.0	10008	2164	88	28	15	126	4	1.9	
3750	1143.3	9355	867	86	18	13	101	10	1.4	
3810	1161.6	8739	1084	26	9	4	114	8	2.3	



KRU 3A-9 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰
3870	1179.9	12341	1337	49	16	5	139	9	3.2	
3930	1198.2	7730	1281	30	15	6	190	6	2.5	
3990	1216.5	8506	1026	59	25	11	143	8	2.3	
4050	1234.8	8614	986	44	5	4	119	8	1.3	-68.45
4110	1253.0	8859	1100	78	18	16	164	8	1.1	
4170	1271.3	5879	866	50	37	21	205	6	1.8	
4230	1289.6	6877	1097	36	16	8	105	6	2.0	
4290	1307.9	6919	1317	31	9	4	159	5	2.3	
4350	1326.2	18570	1684	118	36	22	133	10	1.6	-67.89
4410	1344.5	22079	2189	132	40	23	126	10	1.7	
4470	1362.8	44692	4854	210	41	27	117	9	1.5	
4530	1381.1	68190	6751	248	101	73	55	10	1.4	
4590	1399.4	23125	3451	191	65	45	45	6	1.4	
4650	1417.7	154818	22048	908	89	64	125	7	1.4	-37.02
4710	1436.0	82460	12488	581	68	48	82	6	1.4	
4770	1454.3	36988	6245	333	14	19	51	6	0.7	
4830	1472.6	52574	9045	638	60	34	61	5	1.8	
4890	1490.9	118008	41455	4199	40	34	163	3	1.2	
4950	1509.1	85000	23758	3621	146	111	100	3	1.3	-40.88
5010	1527.4	43285	16854	3063	136	102	63	2	1.3	
5070	1545.7	80466	14748	2074	118	91	58	5	1.3	
5130	1564.0	61545	19438	4562	272	350	202	3	0.8	
5190	1582.3	37394	12876	5990	659	1501	1757	2	0.4	
5250	1600.6	66312	19170	5002	409	607	484	3	0.7	-42.55
5310	1618.9	31718	9592	4328	498	1213	1336	2	0.4	
5370	1637.2	41480	14748	9338	1266	3135	3004	2	0.4	
5430	1655.5	49741	13099	7092	982	2353	2118	2	0.4	
5490	1673.8	15738	10345	10965	1289	3951	2683	1	0.3	
5570	1698.2	16448	9138	9707	1446	3834	3228	1	0.4	-47.60
5610	1710.4	22128	11451	12655	1859	4733	3132	1	0.4	
5670	1728.7	33942	37230	48873	5237	15023	7655	0	0.3	
5730	1747.0	93639	76792	56913	4626	12531	4513	1	0.4	
5790	1765.2	102947	63658	47142	4336	9962	4225	1	0.4	
5850	1783.5	38908	49298	44046	3741	10030	4485	0	0.4	-40.37
5910	1801.8	45888	39693	27410	2372	5464	1980	1	0.4	
5970	1820.1	67414	30178	14018	1013	2046	770	2	0.5	
6030	1838.4	16253	6704	6719	1488	4719	14047	1	0.3	
6090	1856.7	6595	6541	7708	1342	3858	11436	0	0.3	
6150	1875.0	7268	10181	17317	4305	13123	26692	0	0.3	-36.74
6210	1893.3	12999	14371	19346	3630	10539	19898	0	0.3	
6270	1911.6	8303	6135	8815	2073	5053	8185	1	0.4	
6330	1929.9	4246	4822	9388	2892	7123	23171	0	0.4	
6390	1948.2	4231	5988	11812	3162	7404	15880	0	0.4	

KRU 3H-9 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	N <sub>2</sub> ppm	CO <sub>2</sub> ppm	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	C <sub>1</sub> /CO <sub>2</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰
760	231.7			710	280	430	530	600	2	1.0	0.9		
910	277.4			25000	18	12	2.2	4.0	430	833.3	0.6		
910	277.4	982400		17600									-51.54
1010	307.9			280	11	32	50	76	24	6.5	0.7		
1030	314.0			10000	29	6	1.0	2.0	2500	285.7	0.5		
1030	314.0	993300	2800	3300	500							1.2	-50.18
1035	315.5			310	24	0	6	7	19	12.9	0.9		
1220	372.0			1400	5	1	7	1	22	233.3	7.0		
1330	405.5			7200	7	8	9	13	75	480.0	0.7		
1340	408.5			51000	17	4	0.4	0.6	290	2428.6	0.7		
1340	408.5	931900	1200	66800								55.7	-48.72
1420	432.9			2900	4	1	1	1	79	580.0	1.0		
1565	477.1			1300	6	7	10	14	73	100.0	0.7		
1600	487.8			22000	8	1	0.2	0.3	880	2444.4	0.7		
2260	689.0			15000	1	2	0.6	1.0	4400	5000.0	0.6		
2260	689.0	989300	300	10400								34.7	-48.54
2390	728.7			600	220	280	210	220	62	1.2	1.0		
2440	743.9			15000	13	2	0.7	1.0	200	1000.0	0.7		
2440	743.9	982700	700	16600								23.7	-47.05
2470	753.0			25000	32	8	1.0	3.0	600	625.0	0.3		
2470	753.0	967400	500	31900								63.8	-47.57
2535	772.9			3800	5	2	2	3	75	542.9	0.7		
2575	785.1			180	4	2	1	1	72	30.0	1.0		
2650	807.9			500	4	2	2	2	73	83.3	1.0		
2770	844.5			12000	19	4	0.8	2.0	200	521.7	0.4		
2770	844.5	988200	4300	7500								1.7	-47.41
2870	875.0			1500	4	2	1	1	63	250.0	1.0		

KRU 3K-9 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
226	68.9	2808	44	13	2	3	157	49.3	0.7
270	82.3	405	11	3			16	28.9	
330	100.6	4093	76	25	4	6	147	40.5	0.7
390	118.9	3700	95	39	1	7	164	27.6	0.1
450	137.2	3444	62	23	4	5	95	40.5	0.8
510	155.5	3701	88	32	6	9	265	30.8	0.7
570	173.8	2332	34	14	2	3	72	48.6	0.7
630	192.1	4598	123	46	9	13	616	27.2	0.7
690	210.4	4425	90	34	6	9	320	35.7	0.7
750	228.7	3681	90	32	5	9	178	30.2	0.6
810	247.0	465					17		
870	265.2	5005	74	27	5	6	128	49.6	0.8
930	283.5	6187	101	40	7	10	115	43.9	0.7
990	301.8	5465	85	31	5	7	270	47.1	0.7
1050	320.1	6159	94	35	6	8	374	47.7	0.8
1110	338.4	3817	65	25	4	6	244	42.4	0.7
1170	356.7	5776	83	32	5	8	73	50.2	0.6
1230	375.0	5360	103	37	6	9	118	38.3	0.7
1290	393.3	5954	101	37	6	9	185	43.1	0.7
1350	411.6	5621	98	36	6	9	709	41.9	0.7
1410	429.9	7175	159	52	9	12	353	34.0	0.8
1470	448.2	5167	103	32	5	7	318	38.3	0.7
1530	466.5	5711	111	44	8	12	227	36.8	0.7
1590	484.8	5759	115	40	7	9	207	37.2	0.8
1650	503.0	5714	118	43	8	11	305	35.5	0.7
1710	521.3	5841	126	47	9	12	156	33.8	0.8
1770	539.6	4239	82	33	6	8	155	36.9	0.8
1830	557.9	5663	114	42	8	11	397	36.3	0.7
1890	576.2	4432	67	22	3	5	458	49.8	0.6
1950	594.5	2721	33	10	1	2	167	63.3	0.5
2040	622.0	5135	79	23	5	5	522	50.3	1.0
2070	631.1	6207	99	33	6	7	319	47.0	0.9
2130	649.4	5802	96	34	6	7	389	44.6	0.9
2190	667.7	5205	90	31	6	7	379	43.0	0.9
2280	695.1	2572	39	16	5	4	233	46.8	1.3
2310	704.3	299	10	6	2	2	110	18.7	1.0
2370	722.6	3185	51	18	3	4	258	46.2	0.8
2430	740.9	4040	61	21	3	4	401	49.3	0.8
2490	759.1	3971	63	23	4	5	232	46.2	0.8
2550	777.4	4481	77	27	5	6	245	43.1	0.8
2610	795.7	3456	68	29	4	8	8	35.6	0.5
2670	814.0	4288	78	29	6	7	219	40.1	0.9
2730	832.3	4437	75	25	4	5	230	44.4	0.8
2790	850.6	4897	179	54	12	11	203	21.0	1.1
2850	868.9	4115	66	24	4	5	94	45.7	0.8
2910	887.2	4309	50	16	2	2	49	65.3	1.0
2970	905.5	3354	68	25	5	6	54	36.1	0.8
3030	923.8	4450	89	32	2	5	43	36.8	0.4
3090	942.1	4461	88	33	6	8	49	36.9	0.8
3150	960.4	5248	119	42	8	10	59	32.6	0.8

KRU 3K-9 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	N <sub>2</sub> ppm	CO <sub>2</sub> ppm	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	C <sub>1</sub> /CO <sub>2</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰
226	68.9			9261					3362				
270	82.3			9619		2.0		1.0	2247	4810			
330	100.6			5687		5.0	2.0	2.0	25	1137	1.0		
390	118.9			11382		2.0		1.0	2733	5691			
450	137.2			6687		2.0			282	3344			
510	155.5			18860		2.0			3593	9430			
570	173.8			29954					3236				
630	192.1			131981					622				
690	210.4			132848					6355				
750	228.7			145859					43				
810	247.0			134426					3889				
870	265.2			135502					3546				
930	283.5			185280					7297				
990	301.8			179358					9572				
1050	320.1			267209		20.0			32798				
1110	338.4			243422					19643				
1115	339.9			690	0.4	0.3	0.1			932			
1140	347.6	970000	280	29900	0.3	0.3	0.1	0.2		49833	0.7	106.8	-50.18
1170	356.7			115487					7650				
1230	375.0			61595					3349				
1270	387.2												
1270	387.2	980300	1700	18000	0.5	0.8	0.1	0.4		14400	0.3	10.6	-50.74
1290	393.3			173111					4504				
1330	405.5			430	0.4	0.1	0.9	0.4		827	2.3		
1350	411.6			112721		7.0		6.0	6541	16103			
1360	414.6	971500	1000	27500	55.0	2.3	0.4	0.4		480	1.1	27.5	-53.79
1410	429.9			1200	0.9	0.1	0.1	0.0	4231	1290	2.0		
1410	429.9			151051									
1440	439.0												
1440	439.0	970900	280	29200	1.0					29495		104.3	-50.67
1440	439.0			26000	36.0	1.7	0.3	0.3		690	1.2		
1470	448.2			700	0.6	0.3	0.6	0.2		787	3.0		
1470	448.2			202320					4260				
1500	457.3			1200	0.9	0.2	0.3	0.3		1143	1.0		
1530	466.5			182340					4929				
1540	469.5			940	0.6	0.6	0.5	0.3		783	1.7		
1590	484.8	981700	280	18300					5620			65.4	-48.02
1650	503.0			359206					7290				
1675	510.7			21	0.3		0.3	0.1			3.0		
1680	512.2	964300	280	35700	22.0	2.7	0.9	0.9		1445	1.0	127.5	-48.79
1700	518.3			1400	0.6	0.2	0.1	0.1		1867	0.7		
1710	521.3			288789					12494				
1770	539.6			212321					6753				
1830	557.9			280220					7581				
1890	576.2			159952					879				
1950	594.5			102210					394				
2040	622.0			162997					2359				
2070	631.1			136737					2121				
2130	649.4			122813					1690				
2190	667.7			135346					3416				
2280	695.1			43879					1402				
2310	704.3			83169					2484				
2370	722.6			163295					4776				
2430	740.9			84006					208				
2490	759.1			104830					1410				
2550	777.4			1200	0.4	0.5	0.3	0.3		1333	1.0		

KRU 3K-9 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	N <sub>2</sub> ppm	CO <sub>2</sub> ppm	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	C <sub>1</sub> /CO <sub>2</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰
2550	777.4			21501					643				
2610	795.7			139232					1274				
2670	814.0			77672					870				
2730	832.3			86697					3278				
2790	850.6			172070		24.0	17.0		7295	7170			
2850	868.9			151740		22.0	15.0		5906	6897			
2910	887.2			165347					874				
2970	905.5			15870					1447				
2985	910.1			33700									
2985	910.1	966300	280	20000	4.7	0.6	0.1	0.1		3810	1.8	71.4	-46.52
2985	910.1			36000	32.0	9.3	2.1	3.0		872	0.7		
2990	911.6			10500									
2990	911.6	987000	2500	18000	5.5	0.6	0.2			2951		7.2	-48.18
3015	919.2			38500									
3015	919.2	961500	280	38000	12.0	1.0	0.2	0.1		2923	2.3	135.7	-49.78
3020	920.7			9									
3030	923.8	926400	280	73500		55.0		8.0	104	1336	0.0	262.5	-48.00
3090	942.1			177456					582				
3150	960.4			115486		7.0			337	16498			

MPU E-4 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	N <sub>2</sub> ppm	CO <sub>2</sub> ppm	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	C <sub>1</sub> /CO <sub>2</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰	δDC <sub>1</sub> ‰
340	103.7			5741	2.0	1.0			1914				
430	131.1			3539	2.0				1770				
490	149.4			3557	2.0				1779				
610	186.0			1278	3.0				426				
700	213.4			1845	8.0	2.0			185				
790	240.9		0	3020	12.3	1.5	0.2	0.3	219	0.7			
790	240.9		10900	29.9	0.1	0.0	0.0	0.0	598		0.0		
820	250.0			1870	9.0	2.0			170				
910	277.4			1911	9.0	2.0			174				
1000	304.9		13400	4070	7.2	1.0	1.0	0.2	498	6.1	0.3		
1030	314.0			8096	15.0	2.0			476				
1150	350.6			2365	10.0	1.0			215				
1240	378.0			1875	8.0	1.0			208				
1330	405.5			5772	9.0	1.0			577				
1420	432.9		6900	6930	13.2	1.4	0.6	0.6	475	0.9	16.1		
1420	432.9			11.2	0.0	0.0	0.0	0.0					
1420	432.9			5040	6.0				840			-47.45	-169
1510	460.4			9151	13.0	2.0			610				
1600	487.8			4122	7.0	2.0			458				
1690	515.2			13700	8.0	2.0			1370			-54.13	-226
1720	524.4		1100	5920	5.9	0.8	0.0	0.2	885	0.2	5.4		
1720	524.4		6600	24.3	0.0	0.0	0.0	0.0			0.0		
1780	542.7			3130	2.0				1565				
1810	551.8		2000	6130	7.9	0.8	0.1	0.4	704	0.3	3.1		
1900	579.3		1600	7240	9.6	1.0	0.0	0.1	684	0.3	4.5		
1960	597.6		0	7420	12.3	0.7	0.3	0.2	573	1.3		-53.10	-202
2080	634.1			4085	1.0				4085				
2170	661.6			13080	3.0				4360				
2260	689.0		1200	13000	9.2	1.1	0.3	0.2	1273	1.0	10.8	-50.42	-233
2350	716.5		0	9190	6.5	0.8	0.2	0.1	1252	1.6			
2410	734.8		1600	25700	12.1	1.4	0.4	0.2	1911	2.9	16.1		
2410	734.8			24120	5.0				4824			-49.20	-219
2500	762.2			18920	3.0				6307				
2560	780.5	973600	2900	23500	39.5	4.0	0.4	0.5	540	0.8	16.1	-47.51	
2590	789.6			194200	21.0				9248			-48.25	-237
2620	798.8	920500	4400	73600	37.5	3.6	0.7	0.5	1790	1.4	16.1	-46.64	
2620	798.8			103900	15.0				6927			-48.18	-241
2770	844.5	925000	2900	72100							24.9	-46.80	
2770	844.5		1700	73200	31.2	2.7	0.4	0.4	2158	1.1	43.1		
2800	853.7			4440	7.0				634			-48.04	-239
2860	872.0			64240	9.0				7138				
2950	899.4		7000	3980	24.0				166			-46.78	-204
3010	917.7			3976	7.0				568				
3070	936.0			48100	15.7	2.0	0.3	0.2	2725	1.6		-45.85	-221
3130	954.3	965600	3100	34300	14.2	1.8	0.2	0.2	2144	1.4	16.1	-46.45	
4000	1219.5			9139	2.0				4570			-48.06	-224

PBU R-1 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
180	54.9	5032	356	153	34	66	241	9.9	0.5
240	73.2	1431	82	33	7	14	83	12.4	0.5
300	91.5	4693	256	99	23	42	176	13.2	0.5
360	109.8	5708	397	184	42	84	293	9.8	0.5
420	128.0	2168	72	25	6	10	51	22.4	0.6
480	146.3	6095	553	235	54	95	241	7.7	0.6
540	164.6	4879	267	104	24	41	140	13.2	0.6
600	182.9	2539	60	19	4	7	40	32.1	0.6
660	201.2	4282	216	67	17	22	82	15.1	0.8
720	219.5	4687	169	58	13	22	93	20.6	0.6
780	237.8	1463	74	33	7	15	62	13.7	0.5
840	256.1	5058	336	165	35	78	230	10.1	0.4
900	274.4	2743	105	41	7	17	68	18.8	0.4
960	292.7	2785	102	36	9	14	43	20.2	0.6
1020	311.0	4618	200	77	16	28	88	16.7	0.6
1080	329.3	2478	68	25	5	10	40	26.6	0.5
1140	347.6	2238	103	35	7	14	46	16.2	0.5
1200	365.9	3724	123	39	9	16	35	23.0	0.6
1260	384.1	2921	78	25	5	9	27	28.4	0.6
1320	402.4	5160	273	109	25	43	107	13.5	0.6
1380	420.7	5697	149	56	10	20	40	27.8	0.5
1440	439.0	5850	631	284	63	114	238	6.4	0.6
1500	457.3	2540	104	40	8	15	45	17.6	0.5
1560	475.6	2093	105	43	9	17	33	14.1	0.5
1620	493.9	6115	351	132	32	52	188	12.7	0.6
1680	512.2	2709	154	67	16	27	73	12.3	0.6
1740	530.5	2400	133	56	15	23	71	12.7	0.7
1800	548.8	1285	48	18	3	7	24	19.5	0.4
1860	567.1	1657	65	19	5	6	17	19.7	0.8
1920	585.4	6379	676	263	50	89	149	6.8	0.6
1980	603.7	1346	50	19	3	7	52	19.5	0.4
2040	622.0	5898	484	177	41	61	132	8.9	0.7
2100	640.2	1989	55	20	3	7	38	26.5	0.4
2160	658.5	5847	360	129	27	40	71	12.0	0.7
2220	676.8	5292	261	99	21	37	124	14.7	0.6
2280	695.1	5575	396	146	34	50	101	10.3	0.7
2340	713.4	4512	181	70	16	27	68	18.0	0.6
2400	731.7	4319	186	79	18	33	114	16.3	0.5
2460	750.0	4267	155	62	13	25	75	19.7	0.5
2520	768.3	5293	176	65	16	25	73	22.0	0.6
2580	786.6	3361	106	43	6	13	33	22.6	0.5
2640	804.9	4417	103	40	9	17	78	30.9	0.5
2700	823.2	31	74	33	8	14	107	0.3	0.6
2760	841.5	2195	67	23	8	9	119	24.4	0.9
2820	859.8	819	102	28	9	8	112	6.3	1.1
2880	878.0	1228	49	19	8	7	125	18.1	1.1
2940	896.3	1125	39	17	5	7	85	20.1	0.7
3000	914.6	1734	19	7	2	3	71	66.7	0.7
3060	932.9	1973	63	24	7	9	59	22.7	0.8
3120	951.2	2145	58	23	7	9	96	26.5	0.8

PBU R-1 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
3180	969.5	2089	53	20	5	7	77	28.6	0.7
3240	987.8	3190	67	26	5	10	57	34.3	0.5
3300	1006.1	4326	126	46	11	17	91	25.2	0.6
3360	1024.4	2997	36	13	3	5	50	61.2	0.6
3420	1042.7	2417	49	18	5	7	71	36.1	0.7
3480	1061.0	2065	65	19	5	7	56	24.6	0.7
3540	1079.3	4158	75	29	5	11	50	40.0	0.5
3600	1097.6	3021	75	26	6	10	60	29.9	0.6
3660	1115.9	2825	53	19	4	8	57	39.2	0.5
3720	1134.1	4898	58	19	6	7	60	63.6	0.9
3780	1152.4	4764	58	20	5	7	46	61.1	0.7
3840	1170.7	5277	171	63	14	24	77	22.6	0.6
3900	1189.0	6333	135	42	9	14	23	35.8	0.6
3960	1207.3	7338	147	18	3	4	13	44.5	0.8
4020	1225.6	27335	129	9	1	2	7	198.1	0.5
4080	1243.9	40034	258	39	3	7	12	134.8	0.4
4140	1262.2	19029	147	30	4	7		107.5	0.6
4200	1280.5	10529	126	39	8	12	17	63.8	0.7
4260	1298.8	25025	142	19	3	4	1	155.4	0.8
4320	1317.1	26330	264	35	8	8	36	88.1	1.0
4380	1335.4	18202	158	35	6	10	10	94.3	0.6
4440	1353.7	34843	162	23	4	5	20	188.3	0.8
4500	1372.0	39507	215	14	1	1		172.5	1.0
4560	1390.2	50574	429	34	3	5		109.2	0.6
4620	1408.5	46254	440	33	4	5	18	97.8	0.8
4680	1426.8	42030	228	21	3	4	23	168.8	0.8
4740	1445.1	42868	325	40	6	9	1	117.4	0.7
4800	1463.4	20105	102	15	2	4	22	171.8	0.5
5010	1527.4	33095	334	64	13	17	24	83.2	0.8
5070	1545.7	24489	128	14	2	3	23	172.5	0.7
5130	1564.0	16841	210	52	11	16	42	64.3	0.7
5190	1582.3	9605	130	38	9	13	63	57.2	0.7
5250	1600.6	9419	219	71	16	25	59	32.5	0.6
5310	1618.9	20860	156	19	3	4	34	119.2	0.8
5370	1637.2	16341	193	47	10	14	71	68.1	0.7
5430	1655.5	16145	124	16	2	4	41	115.3	0.5
5490	1673.8	646	13	4		1	8	38.0	
5550	1692.1	651	4	1		0	13	130.2	
5610	1710.4	563	7	2			16	62.6	
5670	1728.7	460	3				30	153.3	
5730	1747.0	726	9	2		1	64	66.0	
5790	1765.2	611	16	7	13	8	355	26.6	1.6
5850	1783.5	833	125	106	86	152	1011	3.6	0.6
5910	1801.8	1328	294	528	299	883	3187	1.6	0.3
5970	1820.1	1265	420	1037	625	1879	4774	0.9	0.3
6030	1838.4	5621	2190	5453	4932	8696	34450	0.7	0.6
6090	1856.7	3714	1120	2893	2026	5622	17686	0.9	0.4
6150	1875.0	8509	1861	3909	2341	8522	28857	1.5	0.3
6210	1893.3	5086	1631	3699	2654	8025	31029	1.0	0.3
6270	1911.6	8093	1514	3011	1913	6190	25942	1.8	0.3



PBU R-1 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
6330	1929.9	8826	2097	3851	2620	7183	2824	1.5	0.4
6390	1948.2	14652	1947	3394	2260	6458	29117	2.7	0.3
6450	1966.5	6192	1194	2597	1768	4667	20907	1.6	0.4
6510	1984.8	5656	265	960	1130	3864	25555	4.6	0.3
6570	2003.0	4450	1143	1829	1152	3334	19731	1.5	0.3
6630	2021.3	5256	1595	4333	2484	8023	26152	0.9	0.3
6690	2039.6	7261	1556	2799	1777	4903	21670	1.7	0.4
6750	2057.9	5310	938	1118	702	2274	14595	2.6	0.3
6810	2076.2	5007	861	1663	1044	3457	17886	2.0	0.3
6870	2094.5	5237	1512	3446	2122	6618	22366	1.1	0.3
6930	2112.8	4124	1406	2555	1328	4071	16341	1.0	0.3
6990	2131.1	7125	2867	6688	3269	9234	22593	0.7	0.4
7050	2149.4	5616	2470	5478	2738	8010	24899	0.7	0.3
7110	2167.7	12127	13291	28837	8953	23438	26251	0.3	0.4
7170	2186.0	6572	8498	21656	7702	20549	28544	0.2	0.4
7230	2204.3	6123	8346	24877	11258	28299	41262	0.2	0.4
7290	2222.6	1944	1758	6640	3075	9177	18755	0.2	0.3
7350	2240.9	3220	2096	6523	2884	8906	21425	0.4	0.3
7410	2259.1	2357	2384	7629	2698	7457	13117	0.2	0.4
7470	2277.4	3490	3424	10993	3547	8042	8774	0.2	0.4
7530	2295.7	2332	2584	8461	2978	6483	8706	0.2	0.5
7590	2314.0	4637	3411	8552	2518	4105	3536	0.4	0.6
7650	2332.3	4893	3229	8257	2613	4448	4284	0.4	0.6
7710	2350.6	3581	1890	5115	1795	3506	4758	0.5	0.5
7770	2368.9	3451	1456	4241	1845	4468	7219	0.6	0.4
7830	2387.2	1825	1671	5901	2411	4780	7488	0.2	0.5
7890	2405.5	4429	3748	10872	3405	6666	7449	0.3	0.5
7950	2423.8	2851	1173	3877	2123	5480	14953	0.6	0.4
8010	2442.1	6134	4516	11457	3345	5012	3671	0.4	0.7
8070	2460.4	3837	1589	10108	8237	21687	42774	0.3	0.4
8130	2478.7	1441	718	3084	1701	4981	15122	0.4	0.3
8190	2497.0	3932	2889	9476	3610	11733	20818	0.3	0.3
8250	2515.2	2036	2149	10203	3800	11536	13962	0.2	0.3
8310	2533.5	6224	3779	13543	3246	10973	8355	0.4	0.3
8370	2551.8	3098	3893	12828	2972	9468	7217	0.2	0.3
8430	2570.1	2179	2683	9731	2532	7932	6744	0.2	0.3
8490	2588.4	3721	3222	10921	2712	94599	3785	0.3	0.0
8550	2606.7	2448	2063	7325	2004	6892	8067	0.3	0.3
8610	2625.0	1848	1228	5887	2067	7239	8459	0.3	0.3
8670	2643.3	4388	2757	10861	2591	11515	889	0.3	0.2
8730	2661.6	3974	2815	10730	2575	11535	8844	0.3	0.2
8790	2679.9	3574	2290	8778		14799	10396	0.3	0.0
8850	2698.2	3504	3850	12073	2377	12460	10634	0.2	0.2
8900	2713.4	1618	5507	5879	692	2508	1749	0.1	0.3
8910	2716.5	2702	2186	6874		10445	10401	0.3	0.0
8931	2722.9	1011	152	161	48	133	416	3.2	0.4
8959	2731.4	2370	243	382	456	1443	7236	3.8	0.3
8970	2734.8	1604	1260	3663	723	4483	7072	0.3	0.2
8989	2740.5	1397	8865	12679	1526	5104	3684	0.1	0.3
9019	2749.7	6568	1551	3760	1329	5164	6784	1.2	0.3

PBU R-1 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
9049	2758.8	5649	228	225	80	299	2221	12.5	0.3
9079	2768.0	4722	217	210	79	221	2525	11.1	0.4
9109	2777.1	6283	145	57	15	38	2389	31.1	0.4
9139	2786.3	10022	240	85	19	42	3597	30.8	0.5
9169	2795.4	2835	81	40	10	24	1661	23.4	0.4
9199	2804.6	8551	261	171	70	132	1416	19.8	0.5
9332	2845.1	6916	155	48	21	46	1932	34.1	0.5
9362	2854.3	5147	118	45	73	232	6604	31.6	0.3
9392	2863.4	6322	112	60	210	720	8008	36.8	0.3
9422	2872.6	2390	72	23	8	23	898	25.2	0.3
9482	2890.9	5912	147	54	21	61	1269	29.4	0.3
9512	2900.0	7495	162	51	12	19	286	35.2	0.6
9542	2909.1	5635	101	42	9	21	132	39.4	0.4
9570	2917.7	2782	88	42	9	31	219	21.4	0.3
9600	2926.8	3369	98	47	12	41	215	23.2	0.3
9625	2934.5	3710	117	324	36	168	321	8.4	0.2
9670	2948.2	598	432	1655	383	1677	2618	0.3	0.2
9700	2957.3	7544	7497	9477	1368	6003	6290	0.4	0.2
9730	2966.5	302	329	857	144	558	932	0.3	0.3

PBU R-1 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
180	54.9	881	4	2		1	31	147	
240	73.2	2662	5	2		2	29	380	
300	91.5	4522		2			36	2261	
360	109.8	8428		2		1	43	4214	
420	128.0	4684		1			16	4684	
480	146.3	4821		1			21	4821	
540	164.6	4811		1			12	4811	
600	182.9	3843		1			13	3843	
660	201.2	4686		1			8	4686	
720	219.5	3915		1			16	3915	
780	237.8	4136	5	1			2	689	
840	256.1	2852	9	1			2	285	
900	274.4	3826	10	1				348	
960	292.7	3361	19	1			4	168	
1020	311.0	2457	9				3	273	
1080	329.3	2918	10				3	292	
1140	347.6	4435	15	1			2	277	
1200	365.9	2322	11	1				194	
1260	384.1	1496	9	1			1	150	
1320	402.4	1968	5					394	
1380	420.7	2056	16	1				121	
1440	439.0	2220	5	1			3	370	
1500	457.3	4021	14	1				268	
1560	475.6	5579	12	1			6	429	
1620	493.9	5504	20	2			5	250	
1680	512.2	3530	21	2			1	153	
1740	530.5	4271	27	2			1	147	
1800	548.8	6007	12	1			4	462	
1860	567.1	5825	90	2			9	63	
1920	585.4	7243	36	3			5	186	
1980	603.7	4797	16	1			17	282	
2040	622.0	5830	38	3			38	142	
2100	640.2	4967	25	2			12	184	
2160	658.5	4351	27	2			12	150	
2220	676.8	3835	16	2		1	6	213	
2280	695.1	4083	10	1			797	371	
2340	713.4	4802	9	1			3	480	
2400	731.7	4080	10	1			4	371	
2460	750.0	3143	5				3	629	
2520	768.3	3138	7	1			2	392	
2580	786.6	2687	8	1				299	
2640	804.9	1280							
2700	823.2	1287	3	1	2		16	322	
2760	841.5	1372		1	2		19	1372	
2820	859.8	1120	11	3	3	1	11	80	3.0
2880	878.0	1502	5	1	2		15	250	
2940	896.3	1106	4	1	1		6	221	
3000	914.6	2417	4	1	1		8	483	
3060	932.9	2906	8	1			8	323	
3120	951.2	2924	7	1	1		6	366	

PBU R-1 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
3180	969.5	3900	6	1			7	557	
3240	987.8	3792		1			4	3792	
3300	1006.1	3705	6	1			5	529	
3360	1024.4	2411	0				2		
3420	1042.7	1678	4				3	420	
3480	1061.0	59	1				2	59	
3540	1079.3	2402					1		
3600	1097.6	3980		1			6	3980	
3660	1115.9	1326	6				2	221	
3720	1134.1	7984	47	5	1	1	19	154	1.0
3780	1152.4	3833	7	1			5	479	
3840	1170.7	4585					3		
3900	1189.0	6310	42	3			3	140	
3960	1207.3	67218	0	13				5171	
4020	1225.6	21609	55	4				366	
4080	1243.9	26205	102	6				243	
4140	1262.2	12789	41	3				291	
4200	1280.5	26241	0	4				6560	
4260	1298.8	22423	150	7				143	
4320	1317.1	34664	164	10				199	
4380	1335.4	28022	105	6				252	
4440	1353.7	36981	203	14				170	
4500	1372.0	21125	174	10			7	115	
4560	1390.2	20448	202					101	
4620	1408.5	20625	173	8				114	
4680	1426.8	18371	258	12				68	
4740	1445.1	29704	375					79	
4800	1463.4	17532	116	6			5	144	
5010	1527.4	17770	94	4			6	181	
5070	1545.7	16934	70	4				229	
5130	1564.0	29599	39					759	
5190	1582.3	26189	66	4				374	
5250	1600.6	38113	100	7			29	356	
5310	1618.9	27309	168	8				155	
5370	1637.2	12742	40	2			3	303	
5430	1655.5	14514	60	4			5	227	
5490	1673.8	22779	46	3			71	465	
5550	1692.1	18070	52	2			188	335	
5610	1710.4	9366	22	1			44	407	
5670	1728.7	6099	15	1			75	381	
5730	1747.0	6985	30	2	1		64	218	
5790	1765.2	12858	200	45	65	28	863	52	2.3
5850	1783.5	15789	745	408	303	412	2639	14	0.7
5910	1801.8	10680	1524	1587	605	1393	3701	3	0.4
5970	1820.1	15749	2420	2939	1011	2294	5221	3	0.4
6030	1838.4	16050	2898	4308	1645	4111	8307	2	0.4
6090	1856.7	12642	1759	2439	985	2496	6574	3	0.4
6150	1875.0	8478	1605	1937	721	1693	3788	2	0.4
6210	1893.3	10811	1554	1815	790	1820	7385	3	0.4
6270	1911.6	6806	855	901	373	818	1853	4	0.5

PBU R-1 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
6330	1929.9	7624	1002	1087	498	1071	4786	4	0.5
6390	1948.2	8574	1042	1024	397	846	2471	4	0.5
6450	1966.5	14872	1401	1691	801	1609	5836	5	0.5
6510	1984.8	24070	3936	5982	3171	7081	33032	2	0.4
6570	2003.0	8751	1222	1095	389	855	3866	4	0.5
6630	2021.3	11599	2487	3921	1568	3264	7877	2	0.5
6690	2039.6	6494	871	1109	455	1109	3553	3	0.4
6750	2057.9	7193	841	890	346	921	3441	4	0.4
6810	2076.2	9262	1289	1659	674	1675	5072	3	0.4
6870	2094.5	9588	1346	1850	824	1964	5979	3	0.4
6930	2112.8	9980	1654	2009	695	1673	4435	3	0.4
6990	2131.1	8955	2111	2900	973	2167	4653	2	0.4
7050	2149.4	12638	3889	5127	1465	3306	6034	1	0.4
7110	2167.7	19600	9570	10154	2283	4551	5255	1	0.5
7170	2186.0	37334	16974	19741	4764	9809	14900	1	0.5
7230	2204.3	39281	12767	17206	4911	10354	17686	1	0.5
7290	2222.6	28795	7107	9696	2982	6738	13970	2	0.4
7350	2240.9	17468	6464	8819	2679	5718	10785	1	0.5
7410	2259.1	6594	2193	3108	878	1667	2910	1	0.5
7470	2277.4	4974	1980	2619	674	1161	1389	1	0.6
7530	2295.7	5269	1971	2731	748	1247	1695	1	0.6
7590	2314.0	5190	1495	1614	388	574	600	2	0.7
7650	2332.3	3780	978	1108	268	410	537	2	0.7
7710	2350.6	3425	819	1117	301	516	861	2	0.6
7770	2368.9	4640	803	1074	301	567	1017	2	0.5
7830	2387.2	3785	776	1217	398	827	1536	2	0.5
7890	2405.5	5412	1581	2130	574	945	1379	1	0.6
7950	2423.8	4149	1440	1971	536	934	1333	1	0.6
8010	2442.1	4976	1346	1622	421	655	923	2	0.6
8070	2460.4	8249	1824	5259	2408	5344	9320	1	0.5
8130	2478.7	13616	2922	5295	1935	4477	12657	2	0.4
8190	2497.0	7472	2308	3674	1149	2330	4040	1	0.5
8250	2515.2	12605	3663	6294	1579	3699	4970	1	0.4
8310	2533.5	11234	2328	3638	734	1866	1876	2	0.4
8370	2551.8	3758	1652	2331	411	1075	1032	1	0.4
8430	2570.1	3022	1537	2363	441	1203	1591	1	0.4
8490	2588.4	2021	817	1353	280	776	1056	1	0.4
8550	2606.7	3433	1170	1993	438	1190	1891	1	0.4
8610	2625.0	6166	1213	2166	501	1492	2529	2	0.3
8670	2643.3	6137	1249	2238	481	1685	2238	2	0.3
8730	2661.6	10032	2211	3400	609	2320	2783	2	0.3
8790	2679.9	7561	1841	2988	538	2181	2497	2	0.2
8850	2698.2	5710	2340	3181	495	1976	2188	1	0.3
8900	2713.4	732	490	491	414	665	184	1	0.6
8910	2716.5	27865	6691	6660	981	4116	4527	2	0.2
8931	2722.9	86	25	29	35	53	866	2	0.7
8959	2731.4	218	18	94	63	205	1203	2	0.3
8970	2734.8	9539	6073	6371	878	3733	5885	1	0.2
8989	2740.5	84	118	132	23	77	133	0	0.3
9019	2749.7	153	16	57	29	84	281	2	0.3

PBU R-1 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
9049	2758.8	165	11	24	40	86	4608	5	0.5
9079	2768.0	114	7	14	25	52	5564	5	0.5
9109	2777.1	578	297	322	399	546	6009	1	0.7
9139	2786.3	108	1	2	10	31	9804	36	0.3
9169	2795.4	281	149	156	166	222	1967	1	0.7
9199	2804.6	142	19	27	35	61	1871	3	0.6
9229	2813.7	6631	165	90	65	168	3015	26	0.4
9259	2822.9	130	14	22	37	72	51	4	0.5
9332	2845.1	46	5	77	61	182	2531	1	0.3
9362	2854.3	69	2	3	16	45	1339	14	0.4
9392	2863.4	186	5	11	20	63	1258	12	0.3
9422	2872.6	205	26	359	301	725	2228	1	0.4
9452	2881.7	666	28	155	193	604	2685	4	0.3
9482	2890.9	43	1	2	3	9	121	14	0.3
9512	2900.0	231	3	7	12	30	391	23	0.4
9542	2909.1	129	6	6	9	20	216	11	0.5
9570	2917.7	876	444	829	125	319	316	1	0.4
9600	2926.8	3796	718	722	106	268	250	3	0.4
9625	2934.5	148	34	78	11	36	124	1	0.3
9670	2948.2	9040	4719	4571	499	1606	1257	1	0.3
9700	2957.3	5561	1487	922	97	347	590	2	0.3
9730	2966.5	10343	4782	3337	325	772	527	1	0.4

PBU S-26 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	iC <sub>5</sub> ppm	nC <sub>5</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰	δDC <sub>1</sub> ‰
240	73.2	5334	7.0	4.0		6.0	8.0	9.0		485			
360	109.8	8601	2.0	6.0		11.0	6.0	10.0		1075			
480	146.3	4566	10.0	7.0		6.0	5.0	11.0		269		-85.59	-179
560	170.7	2680	6.8	1.5	0.3	0.5			1600.0	323	0.6		
560	170.7	52	0.3	0.3	0.1	0.1			1600.0	86	1.0		
600	182.9	4430	8.0	5.0		4.0		6.0		341			
720	219.5	6348	12.0							529			
840	256.1	3514											
960	292.7	7970	20.0							399			
990	301.8	2740	9.5	1.7	0.4	0.8			1370.0	245	0.5		
1110	338.4	6895	1.0							6895		-82.68	-189
1230	375.0	3961	3.0							1320			
1350	411.6	8168	2.0							4084			
1470	448.2	2562	4.0							641			
1590	484.8	8193	4.0							2048			
1680	512.2	6239											
1770	539.6	2724											
1890	576.2	1611										-64.17	-91
1980	603.7	9930	12.5	1.2	0.2	0.4			2600.0	725	0.5		
2010	612.8	5627	4.0							1407			
2160	658.5	4422										-78.74	-146
2250	686.0	8160	11.2	1.8	0.3	0.6			1360.0	628	0.5		
2280	695.1	14307	12.0	4.0						894			
2280	695.1	1940	1.8	0.4	0.1	0.1			237.0	882	1.0		
2400	731.7	10594	10.0	1.0						963		-71.36	-203
2520	768.3	17719											
2520	768.3	2440	0.7	0.3	0.0	0.0			156.0	2440			
2610	795.7	13227											
2670	814.0	22550	11.0	2.3	0.4	0.4			1920.0	1695	1.0		
2730	832.3	2853	2.0	14.0	10.0	19.0	10.0	8.0		178	0.5	-58.95	-149
2820	859.8	16821	77.0	5.0		26.0	17.0	18.0		205	0.0		
2880	878.0	14042	9.0	4.0		5.0	4.0	3.0		1080	0.0		
3000	914.6	14397	4.0							3599		-55.24	-240
3120	951.2	15046	5.0	3.0		4.0	3.0	3.0		1881	0.0		
3410	1039.6	23488	12.0							1957		-48.69	-233
4140	1262.2	114574	79.0	4.0						1380		-47.44	-291
4290	1307.9	89547	571.0	30.0						149			
4410	1344.5	21364	68.0	7.0						285		-46.66	-246

PBU Z-7 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	CO <sub>2</sub> ppm	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	iC <sub>5</sub> ppm	nC <sub>5</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	C <sub>1</sub> /CO <sub>2</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰	δDC <sub>1</sub> ‰
350	106.7		3069	4							767				
440	134.1		1635												
590	179.9		555												
680	207.3		131	3							44				
770	234.8		1587	8							198			-85.34	-142
770	234.8	1700	2270	11	2	0.3	0.3			379	175	1.00	1.3		
860	262.2		33												
980	298.8		3010	10	3						232				
1100	335.4		314												
1220	372.0		53												
1310	399.4		19												
1430	436.0		44												
1550	472.6		128												
1740	530.5	940	8890	18	2	2	5			704	442	0.37	9.5	-66.08	-155
1790	545.7		177												
1910	582.3		5637	34							166				
2000	609.8		278	20	10						9				
2040	622.0	1500	37500	1010	86	11	260	68	43	640	34	0.04	25	-47.67	-216
2090	637.2	1700	47900	2400	60	8	308			493	19	0.03	28	-45.19	-210
2120	646.3		19200	537	14	1	47	47	30	206	35	0.03		-46.76	-221
2180	664.6		32403	264	5		24	14	15		120	0.00			
2230	679.9	5100	112400	970	35	15	165	68	42	909	112	0.09	22	-50.22	-261
2290	698.2	6300	214400	4550	33	16	156			998	47	0.10	34	-50.65	-266
2330	710.4	5800	173300	523	21	14	100	58	4	918	319	0.14	30	-50.53	-252
2390	728.7		69300	169	5	1	22			73	399	0.03		-48.83	-244
2450	747.0		197937	173	6	4	22	13	10		1106	0.18			
2540	774.4	940	213100	281	19	16	43			822	709	0.36	227	-49.86	-249
2630	801.8		10004	6							1667				
2690	820.1		60709	11							5519				
2750	838.4		13584	11							1235			-25.27	-108



PBU Z-8 blended headspace analysis (BHA, canned well cuttings)

Depth ft.	Depth m	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio
230	70.1	1278	49	22	5	9	219	18	0.6
320	97.6	1227	41	17	4	6	48	21	0.7
430	131.1	1003	44	22	5	9	54	15	0.6
520	158.5	1659	35	16	4	6	56	33	0.6
610	186.0	4516	71	32	8	12	119	44	0.7
700	213.4	2301	39	18	4	6	44	40	0.7
790	240.9	4789	97	45	11	18	85	34	0.6
940	286.6	2859	70	38	11	16	102	26	0.7
1000	304.9	2617	76	37	8	13	59	23	0.6
1300	396.3	2386	49	22	5	8	66	34	0.6
1390	423.8	2090	38	23	9	11	62	34	0.8
1510	460.4	1114	36	15	4	6	54	22	0.6
1600	487.8	1518	26	10	2	3	2	42	0.7
1690	515.2	3971	14	7	2	3	24	190	0.6
1780	542.7	5045	68	34	11	14	91	50	0.8
1900	579.3	6216	36	15	4	6	41	121	0.6
1990	606.7	3825	25	12	3	4	30	104	0.8
2050	625.0	3649	14	6	2	2	24	185	0.7
2170	661.6	6666	61	29	7	11	128	74	0.6
2260	689.0	4779	25	12	3	5	45	131	0.7
2320	707.3	5554	50	23	6	8	56	76	0.7
2410	734.8	5758	41	20	4	8	30	95	0.5
2500	762.2	3781	27	11	3	4	34	98	0.7
2590	789.6	4096	18	8	2	3	21	162	0.8
2730	832.3	4694	31	15	4	7	861	102	0.7
2820	859.8	982	13	5	2	2	69	56	1.0
2940	896.3	1120	19	9	2	4	2236	41	0.6
3030	923.8	1352	14	6	2	2	454	67	0.8
3120	951.2	2307	31	11	3	4	239	55	0.8
3180	969.5	5927	25	3	0	0	83	212	0.8
3270	997.0	1701	20	7	2	2	256	63	0.8
3390	1033.5	6094	36	10	3	3	42	132	0.9
3480	1061.0	1304	19	9	2	3	113	47	0.8
3600	1097.6	8890	63	18	4	5	79	109	0.9
3660	1115.9	2402	26	10	3	4	106	67	0.7
3750	1143.3	2667	34	11	3	4	150	60	0.7
3900	1189.0	14479	165	28	11	6	53	75	1.8
3990	1216.5	9324	342	54	39	20	117	24	1.9
4080	1243.9	5962	63	24	17	13	270	69	1.4
4140	1262.2	3978	27	10	3	4	38	108	0.9

PBU Z-8 headspace analysis (HS, free gas collected from the mud logger's gas trap)

Depth ft.	Depth m	N <sub>2</sub> ppm	CO <sub>2</sub> ppm	C <sub>1</sub> ppm	C <sub>2</sub> ppm	C <sub>3</sub> ppm	iC <sub>4</sub> ppm	nC <sub>4</sub> ppm	nC <sub>5-7</sub> ppm	C <sub>1</sub> /C <sub>2</sub> +C <sub>3</sub> ratio	iC <sub>4</sub> /nC <sub>4</sub> ratio	C <sub>1</sub> /CO <sub>2</sub> ratio	δ <sup>13</sup> C <sub>1</sub> ‰	δDC <sub>1</sub> ‰
230	70.1			465	9.9	3.6			1119.9	34				
320	97.6			524	9.2	3.0			928.9	43				
430	131.1			749	6.0	1.8			798.9	96				
520	158.5			1300	12.9	3.2			773.4	81				
605	184.5			163	4	1.0	5.0	1.0	83	33	5.0			
610	186.0			514	6.8	2.2			475.8	57				
645	196.6			165	4	1.2	1.4	1.0	77	32	1.4			
700	213.4			3114	43.4	13.7	7.3		184.0	55				
780	237.8			202	5	1.3	1.1	1.1	79	32	1.0			
790	240.9			2501	35.3	8.1			240.2	58				
880	268.3	991000		8900										
940	286.6			2587	13.0	2.9			71.0	163				
960	292.7			182	4	1.3	1.0	1.0	93	34	1.0			
1000	304.9			6162	12.6	2.7			144.9	403				
1300	396.3			1778	11.3	2.6			219.5	128				
1390	423.8			1762	9.2	1.5			173.3	165				
1510	460.4			6974	23.8	3.1			137.3	259				
1600	487.8			7567	16.5	1.5			0.0	420				
1660	506.1			3000	10	2	0.4	1	125	250	0.4			
1690	515.2			3842	14.5	1.8			248.3	236				
1780	542.7			2794	15.6	2.9			266.4	151				
1900	579.3			944	4.5	0.8			58.7	178				
1990	606.7			16935	33.4	4.0			328.4	453				
2050	625.0			5987	27.0	3.0			85.0	200				
2170	661.6			35689	66.5	5.1	12.6		222.0	498				
2240	682.9			79000	51	11	10	2	102	1274	5.0		-49.37	
2260	689.0			31367	60.8	4.7	8.5		61.0	479				
2320	707.3			16343	25.2	2.3	4.4			594				
2325	708.8			152000	52	14	8	1	120	2303	8.0			
2350	716.5	898700	1900	99300								52.3	-49.45	
2355	718.0	918500		81500	38	12	7	1	141	1630	7.0		-49.88	
2380	725.6			110000	2100	1400	410	680	1010	31	0.6		-50.69	-227
2410	734.8			191000	50	14	9	1	40	2984	9.0			
2440	743.9			253000	130	45	29	47	163	1446	0.6		-50.39	-263
2470	753.0	861300		138700	48	15	8	1	51	2202			-49.86	
2500	762.2			37043	31.3	3.0				1080				
2530	771.3			136000	100	54	29	64	201	883	0.5		-50.33	-263
2550	777.4			153000	45	10	6	1	37	2782	6.0			
2560	780.5	783500	1500	215000								143.3	-49.56	
2590	789.6			29929	38.5	3.2	5.8			718				
2730	832.3			8747	8.0	7.8	6.2	7.1	624.8	554	0.9			
2790	850.6	927100	900	71300	23	9	5	5	700	2228	1.0	79.2	-43.77	
2820	859.8			7960	8.2	0.5			32.0	915				
2880	878.0	929000		135000	0.3	15	5	3	1757	8824	1.7		-45.05	
2910	887.2			28500	42	45	19	56	209	328			-46.79	-255
2940	896.3			13675	4.0	11.2			1141.0	900				
3030	923.8			12397	12.0	3.6			364.7	795				
3120	951.2			11858	13.1	1.8			229.7	796				
3180	969.5			13578	34.6	1.6			0.0	375				
3270	997.0			49386	50.1	6.5			825.2	873				
3330	1015.2	889800	7100	109400								15.4	-44.95	
3390	1033.5			19986	33.4	1.1			73.3	579				
3480	1061.0			10700	15.4	3.3	1.6		127.6	572				
3600	1097.6			25316	36.2	0.0			195.0	699				
3660	1115.9			14898	15.9	1.9			168.5	837				
3750	1143.3			9019	50.3	3.3			114.9	168				
3840	1170.7	798200		201800										-44.79
3900	1189.0			14230	114.6	6.7	2.0		51.3	117				
3990	1216.5	781400	1600	215300	1700	116	104	41	206	119	2.5	134.6	-41.77	
4020	1225.6	889700		110300										-41.85
4080	1243.9			13325	231.2	22.4	19.2	7.4	77.9	53	2.6			
4110	1253.0			133000	11	115	83	43	138	1056	1.9			
4140	1262.2			118170	2351.1	215.0	177.9	60.8	499.6	46	2.9			
4170	1271.3	802200	5000	192200	600					320		38.4	-42.08	