encana natural gas

Compliance Laboratory Data Spreadsheet

04/17/2017

				Organic Compounds in Soil (mg/kg [ppm])																					Inorganics in Soil			Metals in Soil (mg/kg [ppm])													
			Allowable Concentration -->	500			0.17	85	100	175	1000	1000	NA	0.22	0.22	2.2	0.022	NA	22	0.022	1000	1000	0.22	23	1000		(<12)	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000
Location	Sample Date:	Sample Matrix	Matrix Notes	TPH (total volatile and extractable petroleum hydrocarbons) (TPH-GRO + TPH-DRO)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total	Anthracene	Acenaphthene	Acenaphthylene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,C,D)pyrene	Napthalene	Pyrene	EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH	Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead (inorganic)	Mercury	Nickel (soluble salts)	Selenium	Silver	Zinc
A28	12/01/10	Pit	Spoil being remediated onsite with Mi	70	BDL	70	BDL	BDL	BDL	BDL																			16											
A28	07/14/09	Pit	pit bottom	77.996			BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL	BDL	BDL		BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.66	20	8.7	24.5		0.91	10.7	16.8	30.2	16	0.035	19.3	1.1	0.26	39.80000
A28	07/05/12	Pit	composite 2	110	BDL	110	BDL	BDL	BDL	BDL																														
A28	07/05/12	Pit	composite 1	120	BDL	120	BDL	BDL	BDL	BDL																														
A28	09/13/11	Pit	spoil 4	150	BDL	150	BDL	BDL	BDL	BDL																														
A28	07/05/12	Pit	composite 3	200	BDL	200	BDL	BDL	BDL	BDL																														
A28	09/13/11	Pit	spoil 6	220	BDL	220	BDL	BDL	BDL	BDL																														
A28	06/15/12	Pit	NODE 11 SW	260	BDL	260	BDL	BDL	BDL	BDL																														
A28	11/15/16	Pit	A28(SBE01) 21-23'	270.7	83.7	187	0.0119	0.00781	0.014	0.085																														
A28	09/13/11	Pit	spoil 5	280	BDL	280	BDL	BDL	BDL	BDL																														
A28	10/19/11	Pit	spoil 1	280	BDL	280	BDL	BDL	BDL	BDL																														
A28	09/13/11	Pit	spoil 2	320	BDL	320	BDL	BDL	BDL	BDL																														
A28	09/13/11	Pit	spoil 3	340	BDL	340	BDL	BDL	BDL	BDL																														
A28	06/15/12	Pit	NODE 9 NW	350	BDL	350	BDL	BDL	BDL	BDL																														
A28	11/05/09	Pit	pit bottom	396.3	15.3	381					ND	ND		ND	ND	ND	ND		ND	ND	0.0038	ND	ND	0.009	0.0141	1.22		9.2	26.7		1	24.5	1	30.4	15.9	0.033	17.7	0.16	0.21	61.80000
A28	06/15/12	Pit	NODE 8 E	400	BDL	400	BDL	BDL	BDL	BDL																														
A28	11/15/16	Pit	A28(SBW01) 15-17'	408	105	303	0.00498	<0.005	0.0132	0.0851																														
A28	06/15/12	Pit	NODE 10 S	460	BDL	460	BDL	BDL	BDL	BDL																														
A28	11/15/16	Pit	A28(SBW01) 13-15'	468.2	10.2	458	0.00973	0.00606	0.00633	0.0228																														
A28	10/19/11	Pit	spoil 7	480	BDL	480	BDL	BDL	BDL	BDL																														
A28	09/13/11	Pit	spoil 1	510	BDL	510	BDL	BDL	BDL	BDL																														
A28	05/02/12	Pit	Node 10	530	BDL	530																																		
A28	05/02/12	Pit	Node 11	530	BDL	530																																		
A28	05/13/11	Pit	NE pit spoil stockpile (imported from G	540.66	0.66	540	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL	BDL	BDL		BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.65	13	7.9	8.2	2000	0.56	14	BDL	24	11	0.057	10	BDL	BDL	67.00000
A28	10/19/11	Pit	spoil 11	560.6	0.6	560	BDL	BDL	BDL	BDL																														
A28	05/02/12	Pit	Node 9	570	BDL	570																																		
A28	11/15/16	Pit	A28(SBE01) 15-17'	632	143	489	0.00851	<0.005	0.0102	0.0587																														
A28	09/13/11	Pit	spoil 7	670	BDL	670	BDL	BDL	BDL	BDL																														
A28	06/15/12	Pit	NODE 12 W	670	BDL	670	BDL	BDL	BDL	BDL																														
A28	10/19/11	Pit	spoil 10	680	BDL	680	BDL	BDL	BDL	BDL																														
A28	05/02/12	Pit	Node 8	730	BDL	730																																		
A28	06/15/12	Pit	NODE 12 W DRO RE-RUN	790		790																																		
A28	10/21/09	Pit	pit bottom	793.3	7.3	786	ND	ND	ND	ND	ND	ND		0.0014	ND	ND	ND		0.0065	ND	0.0045	ND	ND	0.005	0.0124	1.73	38.5	8.8	26.8		0.53	27.1	1.6	37.8	19	0.032	21.5	0.4	0.29	60.80000
A28	10/19/11	Pit	spoil 12	910	BDL	910	BDL	BDL	BDL	BDL																														
A28	08/02/11	Pit	spoil 6	960	BDL	960	BDL	BDL	BDL	BDL																														
A28	10/19/11	Pit	spoil 8	1000	BDL	1000	BDL	BDL	BDL	BDL																														
A28	11/15/16	Pit	A28(SBMIDSVE01) 11-13'	1014	106	908	0.00787	0.00591	0.00989	0.062																														
A28	08/02/11	Pit	spoil 1	1300	BDL	1300	BDL	BDL	BDL	BDL																														
A28	08/02/11	Pit	spoil 2	1300	BDL	1300	BDL	BDL	BDL	BDL																														
A28	09/13/11	Pit	spoil 10	1300	BDL	1300	BDL	BDL	BDL	BDL																														
A28	11/15/16	Pit	A28(SBW01) 25-27'	1375.64	5.64	1370	0.00755	0.00525	0.00185	0.00824																														
A28	05/13/11	Pit	W pit spoil (on top of native fill)	1401.2	1.2	1400	BDL	BDL	BDL	BDL	BDL	BDL		BDL	BDL	BDL	BDL		BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.3	12	8.4	16	4200	1	25	BDL	29	16	0.21	19	7.8	BDL	51.00000
A28	09/13/11	Pit	spoil 9	1500	BDL	1500	BDL	BDL	BDL	BDL																														
A28	09/13/11	Pit	spoil 12	1500	BDL	1500	BDL	BDL	BDL	BDL																														
A28	08/02/11	Pit	spoil 3	1600	BDL	1600	BDL	BDL	BDL	BDL																														
A28	08/02/11	Pit	spoil 4	1600	BDL	1600	BDL	BDL	BDL	BDL																														
A28	09/13/11	Pit	spoil 8	1600	BDL	1600	BDL	BDL	BDL	BDL																														
A28	11/15/16	Pit	A28(SBMIDSVE01) 19-21'	1729.7	9.7	1720	0.00707	0.00527	0.00465	0.0245																														
A28	07/15/11	Pit	W spoil 6	1850	750	1100	0.38	1	3.3	19																														
A28	09/13/11	Pit	spoil 11	2000	BDL	2000	BDL	BDL	BDL	BDL																														
A28	08/26/10	Pit	pit spoil - onsite remediation	2200	100	2100	0.27	0.52	0.28	2	BDL	0.3		BDL	BDL	BDL	BDL		BDL	BDL	BDL	0.37	BDL	0.36	BDL	2.8	24	7.3	19	5100	0.62	27	BDL	39	18	0.11	19	BDL	BDL	64.00000
A28	05/02/12	Pit	Node 12	2200	BDL	2200																																		
A28	07/15/11	Pit	W soil 5	2517	17	2500	0.013	BDL	0.043	0.5																														
A28	10/19/11	Pit	spoil 9	3600	BDL	3600	BDL	BDL	BDL	BDL																														
A28	07/15/11	Pit	W spoil 4	3720	720	3000	0.9	BDL	3.7	31																														
A28	08/02/11	Pit	spoil 11	3815	15	3800	0.0033	BDL	0.0028	0.043																														
A28	07/15/11	Pit	Center spoil	3908.2	8.2	3900	0.024	BDL	0.028	0.47																														
A28	08/02/11	Pit	spoil 5	4401.8	1.8	4400	0.0035	BDL	BDL	0.023																														
A28	07/15/11	Pit	S spoil	4711	11	4700	0.016	BDL	0.047	0.24																														
A28	07/15/11	Pit	W spoil 9	4970	770	4200	1.2	BDL	4	32																														
A28	08/02/11	Pit	spoil 7	5005.4	5.4	5000	BDL	BDL	BDL	0.017	0.088	0.11	0.16	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.71	BDL	0.45	BDL	3.2	17	7.9	15	5300	BDL	28	BDL	41	18	0.32	29	9.1	BDL	75.00000
A28	07/15/11	Pit	N spoil	5080	380	4700	0.81	0.95	2	20																														
A28	08/02/11	Pit	spoil 8	6007.8	7.8	6000	0.0054	BDL	0.006	0.064																														

Encana Oil and Gas (USA) Inc.
Environmental Compliance Group
Parachute Field Office
143 Diamond Avenue
Parachute, CO 81635

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Allowable Concentration -->				500			0.17	85	100	175	1000	1000	NA	0.22	0.22	2.2	0.022	NA	22	0.022	1000	1000	0.22	23	1000		(<12)	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000
Location	**Sample Date:**	**Sample Matrix**	**Matrix Notes**	TPH (total volatile and extractable petroleum hydrocarbons) (TPH-GRO + TPH-DRO)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total	Anthracene	Acenaphthene	Acenapthylene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,C,D)pyrene	Napthalene	Pyrene	EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH	Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead (inorganic)	Mercury	Nickel (soluble salts)	Selenium	Silver	Zinc
A28	08/02/11	Pit	spoil 9	**6311**	**11**	**6300**	**0.0025**	*BDL*	**0.003**	**0.043**																																
A28	08/02/11	Pit	spoil 12	**6810**	**10**	**6800**	**0.0031**	*BDL*	*BDL*	**0.034**																																
A28	08/02/11	Pit	spoil 10	**7211**	**11**	**7200**	**0.0037**	*BDL*	*BDL*	**0.028**																																
A28	07/15/11	Pit	W spoil 11	**7510**	**910**	**6600**	**1.5**	*BDL*	**5**	**47**																																
A28	06/09/09	Pit	pit bottom	**8990**			**1.05**	**1.29**	**0.295**	**7.03**	*BDL*	BDL		*BDL*	*BDL*	*BDL*	*BDL*		*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	BDL	**2.14**	**79.2**	8.9	41.9		0.7	20.7	15.1	46.3	20.7	0.0097	19.5	1.4	0.051	72.70000
A28	06/08/09	Pit	pit spoil	**15746**	**946**	**14800**	**0.517**	**3.18**	**0.61**	**14.4**	*BDL*	BDL		*BDL*	*BDL*	*BDL*	*BDL*		*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	BDL	**1.36**	**20.5**	8.4	15.6		0.57	24.9	10.1	37.7	21.2	0.17	24.4	1.2	0.065	66.00000

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