SI Table 4. Summary of light hydrocarbons and isotopic data for dissolved, gas phase, and headspace analysis

Sample (matrix)		Date	C_1 (ug/l)	C_2 (ug/l)	C_3 (ug/l)	C_4 (ug/l)	C_1 (%)	C_2 (%)	C_2H_4 (%)	C_3 (%)	iC_4 (%)	nC_4 (%)	iC_5 (%)	nC_5 (%)	C_6+ (%)	$\delta^{13}C$-C_1 (‰)	δD-C_1 (‰)	$\delta^{13}C$-C_2 (‰)	δD-C_2 (‰)	$\delta^{13}C$-C_3 (‰)	δD-C_3 (‰)	$\delta^{13}C$-iC_4 (‰)	δD-iC_4 (‰)	$\delta^{13}C$-nC_4 (‰)	δD-nC_4 (‰)	$\delta^{13}C$-iC_5 (‰)	$\delta^{13}C$-nC_5 (‰)	$^{14}C_1$ (pMC)	$\delta^{13}C$ DIC (‰)	$\delta^{18}O$ H_2O (‰)	δD H_2O (‰)
Tribal Pavillion 14-6(g) (WR)	----	Johnson and Rice (1993)	------	-----	------	------	95.28	2.83	nr	0.3	0.11	0.18	0.05	0.02	nr	-39.24	-----	------	-----	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Govt 21-5(g) (WR)	----	Johnson and Rice (1993)	------	-----	------	------	93.24	3.75	nr	0.73	0.33	0.22	0.16	0.09	nr	-40.2	-----	------	-----	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Tribal Pavillion 41-09(g) (FU)	----	Johnson and Rice (1993)	------	-----	------	------	88.17	3.35	nr	0.36	0.14	0.09	nd	nd	nr	-38.04	-----	------	-----	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Tribal Pavillion 14-11(g) (FU)	----	Johnson and Rice (1993)	------	-----	------	------	66.00	1.96	nr	0.06	0.054	0.006	0.006	0.002	nr	-38.4	-----	------	-----	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Blankenship 4-8(g) (FU)	----	Johnson and Rice (1993)	------	-----	------	------	93.38	4.00	nr	0.41	0.05	0.06	0.07	0.01	nr	-38.08	-----	------	-----	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Tribal Pavillion 14-10(g) (WR)(PGPP01)	II	01/21/10	------	-----	------	------	92.47	4.04	0.001	1.21	0.415	0.372	0.183	0.114	0.486	-38.75	-203.4	-26.93	-162.5	-24.93	-147.2	-25.83	-152.4	-25.26	-151.3	------	------	------	-----	-----	-----
Tribal Pavillion 43-10(g) (FU)(PGPP02)	II	01/21/10	------	-----	------	------	94.86	3.48	0.0001	0.356	0.143	0.0618	0.0501	0.0194	0.18	-39.07	-212.9	-25.99	-157.5	-19.4	------	------	------	-23.87	------	------	------	------	-----	-----	-----
Tribal Pavillion 24-2(g) (WR)(PGPP04)	II	01/21/10	------	-----	------	------	90.16	4.64	0.0017	1.46	0.581	0.512	0.335	0.211	1.39	-39.26	-204.9	-26.79	-166.2	-25.33	-148.0	-25.66	-155.5	-25.05	-154	------	------	------	-----	-----	-----
Tribal Pavillion 33-10(g) (FU)(PGPP05)	II	01/21/10	------	-----	------	------	94.68	3.64	nd	0.373	0.131	0.055	0.0427	0.014	0.107	-39.05	-207.3	-26.21	-161.1	-18.46	-101.7	-23.96	-----	-23.64	------	------	------	------	-----	-----	-----
Tribal Pavillion 14-2(g) (FU)(PGPP06)	II	01/21/10	------	-----	------	------	93.23	3.93	0.0012	0.903	0.321	0.25	0.151	0.0905	0.506	-39.28	-215.3	-26.42	-162.3	-24.01	-145.2	-25.33	-150.1	-24.87	-152	------	------	------	-----	-----	-----
MW01(g)	III	9/23/2010	------	-----	------	------	84.22	3.43	0.0007	0.791	0.327	0.191	0.143	0.0632	0.111	-39.44	-209.1	-26.63	-165.0	-23.76	-143.7	-----	------	------	------	-----	-----	<0.2	-----	-----	-----
MW01(w)	III	10/6/2010	15950	2230	790	158	35.11	2.02	0.0008	0.414	0.114	0.0871	0.0499	0.0241	0.0539	-38.89	-191.3	-26.55	-----	-23.85	------	------	------	-----	-----	-----	-----	-----	-12.18	-13.77	-113.77
MW01(g)	IV	4/18/2011	------	-----	------	------	89.43	3.92	0.0013	0.907	0.298	0.211	0.109	0.0574	0.0972	-39.25	-211.2	-26.67	-166.8	-23.74	-146.1	------	------	-----	-----	-----	-----	-----	-----	-----	-----
MW01(g)-dup	IV	4/18/2011	------	-----	------	------	89.49	3.91	0.0013	0.902	0.295	0.206	0.103	0.0533	0.0804	-39.28	-210.1	-26.67	-167.4	-23.91	-146.6	------	------	-----	-----	-----	-----	-----	-----	-----	-----
MW01(w)	IV	4/20/2011	17930	2950	1250	172	38.33	2.46	0.0016	0.504	0.113	0.101	0.0422	0.0229	0.0566	-38.88	-211.6	-26.70	------	-24.40	------	-25.3	------	-24.4	-----	-25.0	-24.7	-----	-12.01	-13.26	-109.53
MW02(g)	III	9/24/2010	------	-----	------	------	1.05	0.048	nd	0.022	0.0089	0.0053	0.0020	0.0008	0.0012	-41.85	-209.4	------	------	-----	-----	------	------	-----	-----	-----	-----	< 0.2	-----	-----	-----
MW02(g)-dup	III	9/24/2010	------	-----	------	------	1.04	0.048	nd	0.022	0.0089	0.0053	0.0020	0.0008	0.0009	-41.72	-209.2	------	------	-----	-----	------	------	-----	-----	-----	-----	< 0.2	-----	-----	-----
MW02(w)	III	10/6/2010	18990	3290	1820	355	28.03	2.16	nd	0.693	0.128	0.101	0.0185	0.0067	0.0174	-41.83	-203.8	-26.4	-----	-24.28	------	------	------	-----	-----	-----	-----	-----	Low DIC	-15.55	-117.41
MW02(g)	IV	4/18/2011	------	-----	------	------	6.74	0.383	nd	0.142	0.0401	0.026	0.0070	0.0025	0.0034	-41.05	-208.9	-26.10	-170.5	-24.05	-----	------	------	-----	-----	-----	-----	-----	-----	-----	-----
MW02(g)-dup	IV	4/18/2011	------	-----	------	------	7.41	0.422	nd	0.156	0.0439	0.0284	0.0077	0.0027	0.0035	-41.01	-210.8	-26.09	-171.4	-24.06	------	------	------	-----	-----	-----	-----	-----	-----	-----	-----
MW02(w)	IV	4/19/2011	18820	2550	2260	276	26.17	1.80	nd	0.765	0.259	0.147	0.0416	0.0141	0.0237	-41.30	-210.7	-26.25	-----	-24.29	-----	-25.3	-----	-24.3	-----	-----	-----	-----	Low DIC	-14.24	-113.42
MW02(w)-dup	IV	4/19/2011	22620	3120	2770	356	21.32	1.49	nd	0.623	0.204	0.118	0.0324	0.011	0.018	-41.37	-208.2	-26.28	------	-24.28	------	-25.3	------	-24.5	------	------	------	------	Low DIC	-14.27	-113.46
PGMW01(w)	II	01/21/10	474	nd(10.0)	nd(15.0)	------	2.47	nd	nd	nd	0.0054	0.005	0.0287	0.0092	0.537	-47.81	------	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
PGMW02(w)	II	01/21/10	361	299	43.8	------	3.57	1.13	nd	0.103	0.402	0.0134	0.13	0.0003	0.398	-105.2	-385.6	-----	------	------	------	------	------	------	------	------	------	------	-----	-----	-----
PGMW03(w)	II	01/21/10	528	nd(10.0)	nd(15.0)	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW03(w)	II	01/20/10	nd(5.0)	nd(10.0)	nd(15.0)	------	0.0122	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW04(w)	I	03/03/09	nd(5.0)	------	------	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW04(w)	II	01/21/10	nd(5.0)	nd(10.0)	nd(15.0)	------	0.0036	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW05(w)	I	03/03/09	16.6	------	------	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW05(w)	II	01/18/10	5.44	nd(10.0)	nd(15.0)	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW05(w)	IV	04/19/11	65.0	nd(5.7)	nd(6.6)	nd(6.9)	0.0966	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-15.12	-13.11	-109.64
PGDW07(w)	I	03/03/09	nd(5.0)	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW10(w)	I	03/03/09	nd(5.0)	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW10(w)	II	01/18/10	nd(5.0)	nd(10.0)	nd(15.0)	na	0.0266	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW14(w)	IV	04/20/11	nd(2.2)	nd(5.7)	nd(6.6)	nd(6.9)	0.0005	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-11.94	-15.79	-126.04

PGDW17(w)	I	03/04/09	10.6	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW20(w)	I	03/04/09	137	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW20 (w)	III	10/06/10	189	24.3	nd(0.22)	nd(0.21)	0.191	0.007	nd	6E-04	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-16.04	-13.22	-107.70
PGDW20(w)-dup	III	10/06/10	168	17.4	nd(0.22)	nd(0.21)	0.134	0.005	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-15.91	-13.18	-107.38
PGDW20(w)	IV	04/18/11	137	-----	nd(1.43)	2.93	0.221	0.007	nd	7E-04	nd	nd	nd	nd	nd	-33.1	-175	------	------	------	------	------	-----	------	------	------	------	------	-16.24	-13.31	-108.35
PGDW21(w)	I	03/04/09	54.3	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW22(w)	I	03/04/09	nd(5.0)	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW22(w)	II	01/18/10	nd(5.0)	nd(10.0)	nd(15.0)	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW23(w)	I	03/04/09	146	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW23(w)	II	01/18/10	149	nd(10.0)	nd(15.0)	na	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW23(w)	IV	04/21/11	176	nd(5.7)	nd(6.6)	nd(6.9)	0.248	nd	nd	nd	nd	0.0015	nd	nd	0.0008			------	------	------	------	------	-----	------	------	------	------	------	-13.29	-12.40	-97.35
PGDW25(w)	II	01/19/10	nd(5.0)	nd(10.0)	nd(15.0)	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW26(w)	I	03/05/09	nd(5.0)	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW26(w)	IV	04/18/11	nd(2.2)	nd(5.7)	nd(6.6)	nd(6.9)	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW29(w)	I	03/05/09	nd(5.0)	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW30(w)	I	03/05/09	558	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW30(w)	II	01/19/10	808	nd(10.0)	nd(15.0)	-----	5.99	nd	nd	nd	nd	nd	nd	nd	nd	-28.77	-143.6	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW30(g)	III	09/23/10	-----	-----	-----	-----	0.0123	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW30(w)	III	10/05/10	762	nd(0.19)	nd(0.23)	nd(0.21)	1.19	nd	nd	nd	nd	nd	nd	nd	nd	-28.76	-145.8	------	------	------	------	------	-----	------	------	------	------	------	-12.18	-13.02	-109.78
PGDW30(w)	IV	04/18/11	644	-----	nd(1.46)	4.61	1.46	nd	nd	nd	nd	nd	nd	nd	nd	-27.8	-133	------	------	------	------	------	-----	------	------	------	------	------	-11.66	-13.23	-108.11
PGDW32(w)	I	03/05/09	21.4	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW32(w)	II	01/20/10	36.3	nd(10.0)	nd(15.0)	-----	0.197	nd	nd	nd	nd	nd	nd	nd	0.0085	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW32(w)	IV	04/18/11	nd(2.2)	nd(5.7)	nd(6.6)	nd(6.9)	0.0752	nd	nd	nd	nd	nd	nd	nd	0.0019	-34.2	-----	------	------	------	------	------	-----	------	------	------	------	------	-11.32	-13.33	-108.10
PGDW32(w)-dup	IV	04/18/11	nd(2.2)	nd(5.7)	nd(6.6)	nd(6.9)	0.0522	nd	nd	nd	nd	nd	nd	nd	0.0013	-34.0	-----	------	------	------	------	------	-----	------	------	------	------	------	-10.84	-13.28	-108.24
PGDW35(w)	I	03/05/09	21.6	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW38(w)	I	03/05/09	nd(5.0)	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW39(w)	II	01/19/10	nd(5.0)	nd(10.0)	nd(15.0)	------	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW40(w)	II	01/22/10	98.9	nd(10.0)	nd(15.0)	------	0.418	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW41(w)	II	01/21/10	nd(5.0)	nd(10.0)	nd(15.0)	-----	0.0091	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW41(w)	IV	04/20/11	385	142	nd(1.35)	2.74	0.0005	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-12.31	-15.91	-121.93
PGDW42(w)	II	01/19/10	60	nd(10.0)	nd(15.0)	------	0.291	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW43(w)	II	01/21/10	nd(5.0)	nd(10.0)	nd(15.0)	------	0.0016	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW44(w)	II	01/18/10	nd(5.0)	nd(10.0)	nd(15.0)	-----	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW44(w)	IV	4/21/2011	nd(2.2)	nd(5.7)	nd(6.6)	nd(6.9)	0.0022	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-10.35	-13.29	-100.29
PGDW45(w)	II	01/18/10	nd(5.0)	nd(10.0)	nd(15.0)	-----	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW45(w)	IV	04/19/11	nd(2.2)	nd(5.7)	nd(6.6)	nd(6.9)	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-14.18	-16.59	-128.18
PGDW46(w)	II	01/20/10	nd(5.0)	nd(10.0)	nd(15.0)	-----	0.0016	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW47(w)	II	01/19/10	nd(5.0)	nd(10.0)	nd(15.0)	-----	0.0428	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW47(w)-dup	II	01/19/10	------	-----	------	------	0.0365	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW48(w)	II	01/20/10	nd(5.0)	nd(10.0)	nd(15.0)	-----	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW49(w)	II	01/20/10	nd(5.0)	nd(10.0)	nd(15.0)	------	------	-----	------	------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGDW49(w)	IV	4/20/2011	nd(2.2)	nd(5.7)	nd(6.6)	nd(6.9)	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-11.05	-15.57	-122.19
LD02(w)	III	10/20/2010	229	21	nd(0.24)	nd(0.23)	0.12	0.007	nd	0.001	0.0008	0.0007	nd	0.0005	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-18.58	-13.22	-109.20
PGPW01(w)	II	01/20/10	nd(5.0)	nd(10.0)	nd(15.0)	-----	0.0253	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
PGPW02(w)	II	01/20/10	nd(5.0)	nd(10.0)	nd(15.0)	-----	0.0389	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
field blank(w)	II	01/21/10	-----	-----	-----	-----	0.0068	nd	nd	nd	nd	nd	nd	nd	0.0021	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
field blank(w)	II	01/22/10	-----	-----	-----	-----	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----

travel blank(g)	III	9/23/2010	-----	-----	-----	-----	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
equipment blank(g)	III	9/23/2010	-----	-----	-----	-----	0.0029	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
travel blank(g)	III	9/24/2010	-----	-----	-----	-----	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
equipment blank(g)	III	9/24/2010	-----	-----	-----	-----	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Travel Blank(w)	III	10/6/2010	23.3*	nd(2.0)	nd(0.24)	nd(0.23)	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Equipment Blank(w)	III	10/6/2010	23.0*	nd(2.0)	nd(0.29)	nd(0.27)	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Field Blank(w)	III	10/6/2010	76.4*	nd(2.0)	nd(0.28)	nd(0.26)	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Travel Blank(w)	IV	4/14/2011	18.5*	60*	nd(1.63)	nd(0.23)	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
Field Blank(w)	IV	4/18/2011	27.2*	81.3*	nd(1.36)	nd(1.66)	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
equipment blank(w) (on-site GC analysis)	IV	4/18/2011	nd(2.2)	-----	-----	-----	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
travel blank(g)	IV	4/18/2011	-----	-----	-----	-----	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
equipment blank(g)	IV	4/18/2011	-----	-----	-----	-----	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
equipment blank(g)	IV	4/18/2011	-----	-----	-----	-----	nd	nd	nd	nd	nd	nd	nd	nd	nd	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
equipment blank(w) (on-site GC analysis)	IV	4/19/2011	nd(2.2)	-----	-----	-----	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
equipment blank(w) (on-site GC analysis)	IV	4/20/2011	nd(2.2)	-----	-----	-----	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
equipment blank(w) (on-site GC analysis)	IV	4/20/2011	nd(2.2)	-----	------	------	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
field blank(w)	IV	4/21/2011	nd(0.32)	nd(1.18)	nd(1.27)	nd(1.54)	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----
equipment blank(w)	IV	4/21/2011	nd(0.35)	nd(1.18)	nd(1.27)	nd(1.54)	------	------	------	-----	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	------	------	------	------	------	-----	-----	-----

WR - Wind River Formation FU - Fort Union Formation ----- not analyzed nd () not dectected (detection limit)

*Detection of less than 100 ug/l methane in Phase III and Phase IV and ethane in Phase IV in samples discarded due to detection in blanks (non dectection retained). Cause of blank contamination unknown but elevated readings (10-50 ppmv) on portable FID observed in ambient air during health and safety monitoring while sampling near MW01 and MW02. Ultrapure nitrogen was used for equipment and travel blanks for on-site GC analysis and for gas samples submitted to Isotech.