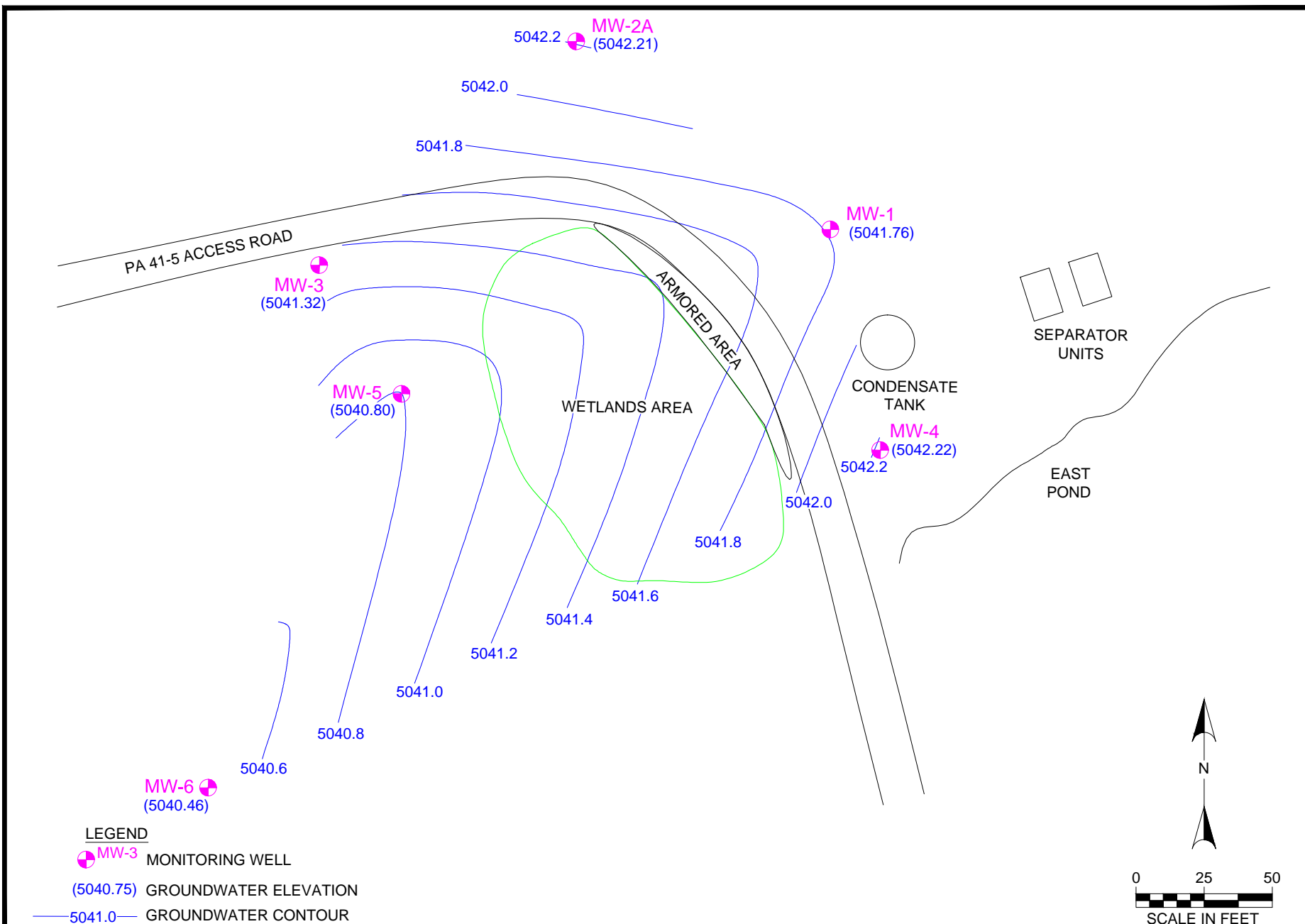

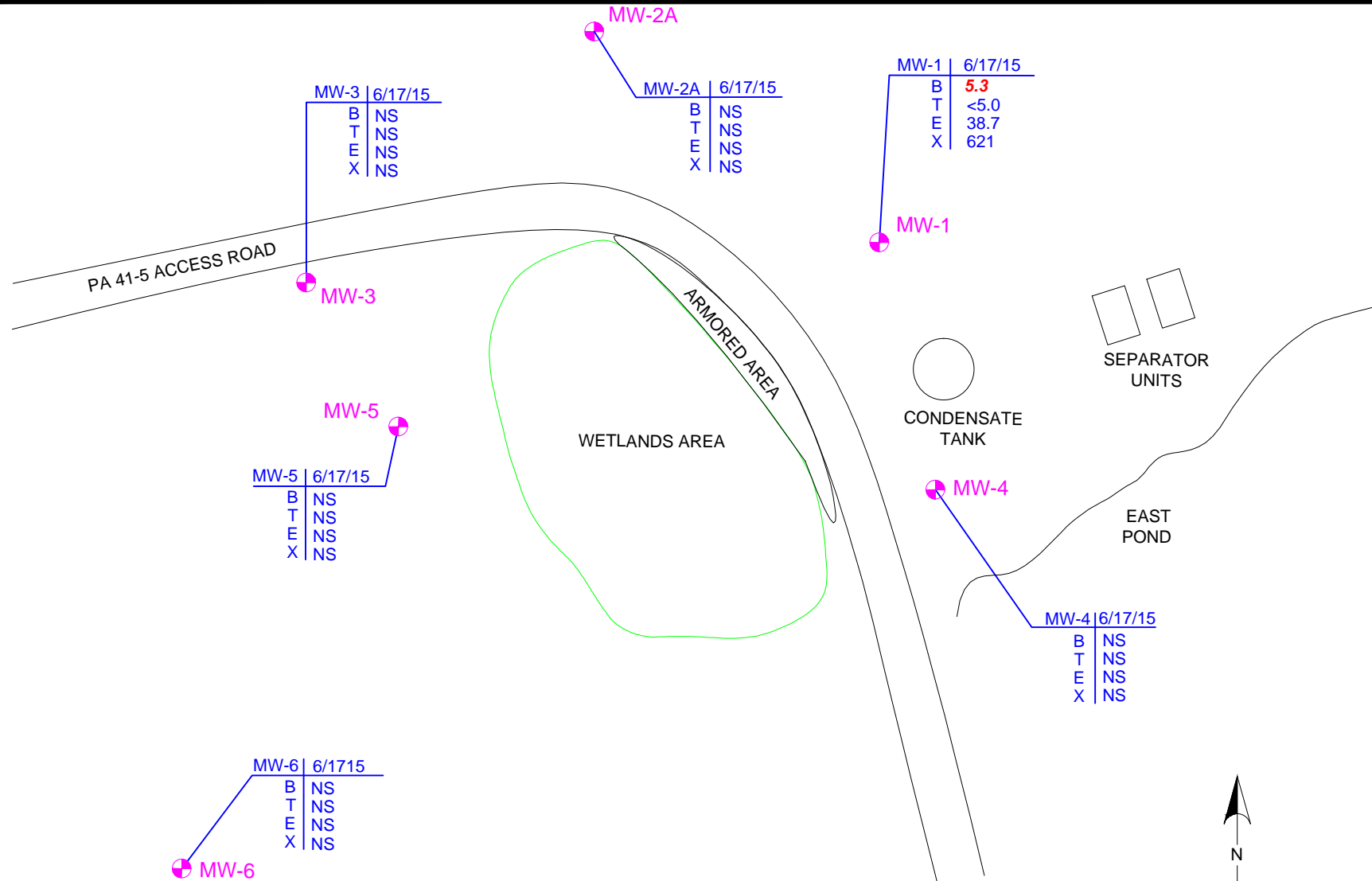


F:\Projects\013-3235\2015 Quarterly Sampling\02 Knight GW-02-2015.dwg Layout: GW



PROJECT NO: 013-3235	GROUNDWATER - PIEZOMETRIC SURFACE MAP - JUNE 2015 KNIGHT PA 311-4 SEC 4, T7S, R95W PARACHUTE, COLORADO	 <div> 760 Horizon Drive; Suite 102 Grand Junction, CO 81506 TEL 970.263.7800 FAX 970.263.7456 </div>	FIGURE
DRAWN BY: abl			2
DATE: 07.08.2015			

F:\Projects\013-3235\2015 Quarterly Sampling\02 Knight CWA-02-2015.dwg Layout: CWA



LEGEND



EXISTING MONITORING WELL

B

= BENZENE (ug/L)

T

= TOLUENE (ug/L)

E

= ETHYLBENZENE (ug/L)

X

= XYLENES (ug/L)

ug/L

= MICROGRAMS PER LITER

NS

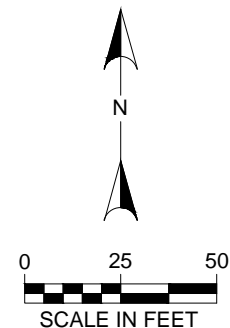
= NOT SAMPLED

BOLD

= ABOVE COGCC TABLE 910-1 MAXIMUM CONTAMINANT LEVEL

<

= NOT DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT



PROJECT NO: 013-3235

DRAWN BY: abl

DATE: 07.08.2015

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - JUNE 2015
KNIGHT PA 311-4
SEC 4, T7S, R95W
PARACHUTE, COLORADO

OLSSON
ASSOCIATES

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FIGURE

3

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
Sampling Period			4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
Depth to Water (feet)			5.57	5.52	5.28	5.52	6.78	6.00	5.16
Sample Date			11/18/2011	2/14/2012	5/8/2012	8/29/2012	11/26/2012	3/6/2013	5/30/2013
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	1.68	1.56	5.62	2.92	2.01	3.59	2.41
TPH Diesel Range Organics	NA	mg/l	0.596	0.412	0.996	0.886	0.518	0.405	0.361
BTEX									
Benzene	5	µg/l	7.9	1.2	<0.20	15.9	7.6	9.8	9.7
Toluene	560 to 1000	µg/l	1.4	< 1.0	<1.0	7.2 J	<5.0	<1.0	2.3
Ethylbenzene	700	µg/l	24.3	< 1.0	<1.0	65.9	37.7	72.4	49.7
Xylene (total)	1400 to 10000	µg/l	477	227	26.7	517	421	772	658
PAHs									
Acenaphthene	NA	µg/l	< 0.2	< 0.60	<0.48	<0.48	<0.48	NT	NT
Acenaphthylene	NA	µg/l	< 0.2	< 0.60	<0.48	<0.48	<0.48	NT	NT
Anthracene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	NT
Benzo(a)anthracene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	NT
Benzo(a)pyrene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	NT
Benzo(b)fluoranthene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	NT
Benzo(g,h,i)perylene	NA	µg/l	< 0.2	< 0.54	<0.48	<0.48	<0.48	NT	NT
Benzo(k)fluoranthene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	NT
Chrysene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	NT
Dibenzo(a,h)anthracene	NA	µg/l	< 0.2	< 0.78	<0.48	<0.48	<0.48	NT	NT
Fluoranthene	NA	µg/l	< 0.2	< 0.71	<0.48	<0.48	<0.48	NT	NT
Fluorene	NA	µg/l	< 0.2	< 0.55	<0.48	<0.48	<0.48	NT	NT
Indeno(1,2,3-cd)pyrene	NA	µg/l	< 0.2	< 1.5	<0.48	<0.48	<0.48	NT	NT
1-Methylnapthalene	NA	µg/l	1.1	< 0.68	1.1 J	0.67 J	0.50 J	NT	NT
2-Methylnapthalene	NA	µg/l	1.6	0.83 J	2.0 J	1.0 J	<0.48	NT	NT
Naphthalene	NA	µg/l	2.9	1.2 J	3.6 J	2.0 J	<0.48	NT	NT
Phenanthrene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	NT
Pyrene	NA	µg/l	< 0.2	< 0.47	<0.48	<0.48	<0.48	NT	NT
Metals									
Calcium	NA	mg/l	173	88.3	138	170	147	116	114
Iron	NA	mg/l	26.5	5.32	11.6	17.7	19.5	10.6	12.0
Magnesium	NA	mg/l	36.7	58.6	54.7	72.5	63.6	82.7	60.6
Manganese	NA	mg/l	1.13	0.418	0.653	0.947	0.748	0.709	0.650
Potassium	NA	mg/l	< 10	3.64	4.63	7.7	6.15	5.42	5.75
Selenium	NA	mg/l	< 0.01	< 0.05	<0.050	<0.050	<0.05	<0.05	<0.05
Sodium	NA	mg/l	50.2	63.8	64.7	104	80	101	86
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	260	488	498	667	746	618	484
Alkalinity, Carbonate	NA	mg/l	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	264	488	497	667	746	618	484
Biological Oxygen Demand, 5 Day	NA	mg/l	10.5	10.9	22.6	21	28.4	15.4	11.8
Bromide	NA	mg/l	< 0.50	< 0.20	1.3	2.8	<0.25	0.16	<0.10 ^a
Chemical Oxygen Demand	NA	mg/l	31.6	18.4	62.3	79.6	21.7	45.9	21.2
Chloride	1.25 x bkgd	mg/l	16.0	11.5	9.0	139	39.2	12.3	9.7
Hydroxide Alkalinity	NA	mg/l	< 5.0	NT	NT	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	0.66	< 0.23	<0.23	0.077	<0.050	0.26	0.88
Nitrogen, Nitrite	NA	mg/l	< 0.50	< 0.061	0.010	0.064	0.015	0.064	0.052
Phosphate, Ortho	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Phosphorus, Total	NA	mg/l	3.5	0.59	1.1	NT	2.0	0.95	0.63
Plate Count, Total	NA	CFU/ml	1590000	110000	300000	360000	150000	NT	NT
Total Dissolved Solids	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Sulfate	1.25 x bkgd	mg/l	16.8	10.9	5.7	66.2	13.4	117	51.9
Total Organic Carbon	NA	mg/l	13.2	8.8	10.4	18.5	10.2	9.3	8.9
pH	NA	su	8.34	7.76	7.67	7.38	7.48	7.56	7.53
Field Readings									
Temperature	NA	deg. C	14.6	6.82	13.89	21.20	14.49	7.80	12.60
Specific Conductivity	NA	mS/cm	0.511	0.837	0.789	1.234	1.227	1.319	0.958
Dissolved Oxygen	NA	mg/l	6.55	2.25	3.25	1.51	0.95	1.34	0.28
pH	NA	su	9.05	7.37	7.71	7.49	7.7	7.3	7.8
Solids, Total Dissolved	NA	mg/l	0.3	0.5	0.5	0.8	NT	NT	0.6
Turbidity	NA	NTU	264	117	538	386	117	59.9	NT
µg/l -micrograms per liter									
a - Dilution required due to matrix interference									
mg/l -milligrams per liter									
b - Elevated detection limit due to matrix interference									
J - indicates an estimated value									
c - Elevated detection limit due to dilution required for possible matrix interference									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
Sampling Period			3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
Depth to Water (feet)			6.15	6.20	5.57	5.26	5.82	6.08	6.02
Sample Date			9/19/2013	12/17/2013	2/20/2014	5/5/2014	10/9/2014	11/13/2014	2/16/2015
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	0.443	3.20	0.29	3.07	4.23	3.63	2.77
TPH Diesel Range Organics	NA	mg/l	0.283	0.336	0.429	0.2	0.436	0.543	<0.28
BTEX									
Benzene	5	µg/l	3.4	13.1	<0.20	8.4	19.8	10.2	7.0
Toluene	560 to 1000	µg/l	1.3J	4.8	3.1	5.1	<5.0	10.4	<5.0
Ethylbenzene	700	µg/l	4.8	18.7	<1.0	<2.0	54.1	49.3	47.6
Xylene (total)	1400 to 10000	µg/l	101	585	<2.0	917 ^a	1350	1280	818
PAHs									
Acenaphthene	NA	µg/l	<0.49	<0.48	<0.48	<0.48	NT	NT	NT
Acenaphthylene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Anthracene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Benzo(a)anthracene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Benzo(a)pyrene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Benzo(b)fluoranthene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Benzo(g,h,i)perylene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Benzo(k)fluoranthene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Chrysene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Dibenzo(a,h)anthracene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Fluoranthene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Fluorene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Indeno(1,2,3-cd)pyrene	NA	µg/l	<0.55	<0.47	<0.54	<0.47	NT	NT	NT
1-Methylnapthalene	NA	µg/l	<0.48	1.0 J	0.67 J	0.81	NT	NT	NT
2-Methylnapthalene	NA	µg/l	<0.48	1.0 J	1.0 J	1.2	NT	NT	NT
Naphthalene	NA	µg/l	0.69J	2.6 J	2.3 J	2.6	NT	NT	NT
Phenanthrene	NA	µg/l	<0.48	<0.47	<0.47	ND	NT	NT	NT
Pyrene	NA	µg/l	<0.48	<0.47	<0.47	<0.47	NT	NT	NT
Metals									
Calcium	NA	mg/l	238	102	162	257	NT	NT	NT
Iron	NA	mg/l	6.1	5.5	7.5	13.8	17.4	4.4	5.75
Magnesium	NA	mg/l	64.3	64.9	66.2	58.8	44.0	40.2	61.0
Manganese	NA	mg/l	0.658	0.646	1.020	1.500	1.890	0.616	0.800
Potassium	NA	mg/l	6.79	5.57	4.11	4.79	NT	NT	NT
Selenium	NA	mg/l	<0.05	<0.05	<0.05	<0.05	NT	NT	NT
Sodium	NA	mg/l	118	93.8	99.3	83.8	NT	NT	NT
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	492	635	697	773	517	383	490
Alkalinity, Carbonate	NA	mg/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	492	635	697	773	517	383	490
Biological Oxygen Demand, 5 Day	NA	mg/l	12.7	20.4	18.5	14	NT	NT	NT
Bromide	NA	mg/l	0.17	0.10	<0.10	<0.10 ^a	NT	NT	NT
Chemical Oxygen Demand	NA	mg/l	31.6	35.9	48.3	36.3	NT	NT	NT
Chloride	1.25 x bkgd	mg/l	163.0	13.2	12.0	9.6	NT	NT	NT
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	0.24	0.22	3	2.2	0.086	<0.010	<0.02
Nitrogen, Nitrite	NA	mg/l	0.280	0.076	0.270	0.098	<0.0040	<0.0040	<0.008
Phosphate, Ortho	NA	mg/l	NT	1.500	0.600	0.330	<0.050	<0.050	<0.01
Phosphorus, Total	NA	mg/l	10.40	5.0	46.1	40.80	26.8	3.5	4.6
Plate Count, Total	NA	CFU/ml	NT	NT	620000	NT	NT	NT	NT
Total Dissolved Solids	NA	mg/l	NT	684	674	636	494	470	572
Sulfate	1.25 x bkgd	mg/l	43.2	25.1	16.3	17.4	11.3	25	11.8
Total Organic Carbon	NA	mg/l	14.2	10.2	10.9	12.2	NT	NT	NT
pH	NA	su	7.87	7.63	7.4	7.38	NT	NT	NT
Field Readings									
Temperature	NA	deg. C	20.20	10.00	5.30	10.60	16.39	12.70	7.40
Specific Conductivity	NA	mS/cm	1.364	1.101	1.1	1.103	0.809	0.906	0.991
Dissolved Oxygen	NA	mg/l	6.5	0.27	0.29	0.08	1.03	0.77	0.5
pH	NA	su	8.75	8.19	NT	7.54	7.53	7.58	7.75
Solids, Total Dissolved	NA	mg/l	0.9	0.7150	0.7150	0.7	0.5	591.5	0.5
Turbidity	NA	NTU	NT	NT	NT	NT	700	NT	NT
µg/l -micrograms per liter									
a - Dilution required due to matrix interfere									
mg/l -milligrams per liter									
b - Elevated detection limit due to matrix ir									
J - indicates an estimated value									
c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-1	MW-2A	MW-2A	MW-2A	MW-2A	MW-2A	MW-2A
Sampling Period			2nd Quarter	4th Quarter	1st Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
Depth to Water (feet)			4.68	4.93	5.04	4.72	5.65	5.50	4.44
Sample Date			6/17/2015	11/18/2011	2/14/2012	8/29/2012	11/26/2012	3/6/2013	5/30/2013
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	2.15	< 0.050	< 0.10	<0.10	<0.10	<0.10	<0.10
TPH Diesel Range Organics	NA	mg/l	<0.17	<0.10	< 0.30	<0.25	<0.17	<0.17	<0.17
BTEX									
Benzene	5	µg/l	5.3	< 1.0	< 0.20	< 0.20	<0.20	<0.20	<0.20
Toluene	560 to 1000	µg/l	<5.0	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0
Ethylbenzene	700	µg/l	38.7	< 1.0	< 1.0	< 1.0	<1.0	<1.0	<1.0
Xylene (total)	1400 to 10000	µg/l	621	< 3.0	< 2.0	< 2.0	<2.0	<2.0	<2.0
PAHs									
Acenaphthene	NA	µg/l	NT	< 0.2	< 0.60	<0.47	<0.48	NT	NT
Acenaphthylene	NA	µg/l	NT	< 0.2	< 0.60	<0.47	<0.48	NT	NT
Anthracene	NA	µg/l	NT	< 0.2	< 0.47	<0.47	<0.48	NT	NT
Benzo(a)anthracene	NA	µg/l	NT	< 0.2	< 0.47	<0.47	<0.48	NT	NT
Benzo(a)pyrene	NA	µg/l	NT	< 0.2	< 0.47	<0.47	<0.48	NT	NT
Benzo(b)fluoranthene	NA	µg/l	NT	< 0.2	< 0.47	<0.47	<0.48	NT	NT
Benzo(g,h,i)perylene	NA	µg/l	NT	< 0.2	< 0.54	<0.47	<0.48	NT	NT
Benzo(k)fluoranthene	NA	µg/l	NT	< 0.2	< 0.47	<0.47	<0.48	NT	NT
Chrysene	NA	µg/l	NT	< 0.2	< 0.47	<0.47	<0.48	NT	NT
Dibenzo(a,h)anthracene	NA	µg/l	NT	< 0.2	< 0.78	<0.47	<0.48	NT	NT
Fluoranthene	NA	µg/l	NT	< 0.2	< 0.71	<0.47	<0.48	NT	NT
Fluorene	NA	µg/l	NT	< 0.2	< 0.55	<0.47	<0.48	NT	NT
Indeno(1,2,3-cd)pyrene	NA	µg/l	NT	< 0.2	< 1.5	<0.47	<0.48	NT	NT
1-Methylnapthalene	NA	µg/l	NT	< 0.2	< 0.68	<0.47	<0.48	NT	NT
2-Methylnapthalene	NA	µg/l	NT	< 0.2	< 0.68	<0.47	<0.48	NT	NT
Naphthalene	NA	µg/l	NT	< 0.2	< 0.73	<0.47	<0.48	NT	NT
Phenanthrene	NA	µg/l	NT	< 0.2	< 0.47	<0.47	<0.48	NT	NT
Pyrene	NA	µg/l	NT	< 0.2	< 0.47	<0.47	<0.48	NT	NT
Metals									
Calcium	NA	mg/l	NT	129	109	94.6	208	107	102
Iron	NA	mg/l	4.62	14	4.77	10.1	33.5	15.7	15.0
Magnesium	NA	mg/l	49.0	51.4	55.4	61.6	81.6	65.2	64.7
Manganese	NA	mg/l	0.582	1.72	2.03	1.64	3.37	3.93	2.62
Potassium	NA	mg/l	NT	< 10	3.19	6.54	8.6	6.06	5.93
Selenium	NA	mg/l	NT	< 0.01	< 0.05	< 0.05	<0.05	<0.05	<0.05
Sodium	NA	mg/l	NT	60.4	59.4	96.7	97.8	95.6	90.2
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	489	372	440	364	299	382	483
Alkalinity, Carbonate	NA	mg/l	<5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	489	374	440	364	299	382	483
Biological Oxygen Demand, 5 Day	NA	mg/l	NT	< 15	< 10	< 10	<10	<10	1.4
Bromide	NA	mg/l	NT	< 0.50	< 0.20	<0.10	0.11	<0.10 ^a	<0.10 ^a
Chemical Oxygen Demand	NA	mg/l	NT	66.9	20.4	49	<10	<10	71.3
Chloride	1.25 x bkgd	mg/l	NT	15.4	13.2	151	206	96.4	16.8
Hydroxide Alkalinity	NA	mg/l	NT	< 5.0	NT	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	0.25	0.57	< 0.23	0.063	0.031	0.22	0.035
Nitrogen, Nitrite	NA	mg/l	0.038	< 0.50	< 0.061	0.04	<0.0080	0.0080 ^a	<0.0080 ^a
Phosphate, Ortho	NA	mg/l	<0.10	NT	NT	NT	NT	NT	NT
Phosphorus, Total	NA	mg/l	1.8	0.89	1.3	NT	1.4	0.44	0.05
Plate Count, Total	NA	CFU/ml	NT	70000	6900	5600	8100	NT	NT
Total Dissolved Solids	NA	mg/l	577	NT	NT	NT	NT	NT	NT
Sulfate	1.25 x bkgd	mg/l	26.3	16.8	44.2	108	155	98.5	98.5
Total Organic Carbon	NA	mg/l	NT	4.5	3.9	5.6	4.9	4	5.3
pH	NA	su	NT	7.14	7.58	7.51	7.49	7.64	7.66
Field Readings									
Temperature	NA	deg. C	14.68	13.2	8.3	20.9	13.1	9.98	11.50
Specific Conductivity	NA	mS/cm	1.032	0.651	0.77	1.132	1.34	1.195	1.037
Dissolved Oxygen	NA	mg/l	0.5	0.24	1.22	1.73	1.22	0.86	0.17
pH	NA	su	7.57	7.50	7.25	7.56	7.75	7.31	7.7
Solids, Total Dissolved	NA	mg/l	0.7	0.4	0.5	0.7	NT	NT	0.7
Turbidity	NA	NTU	136	653	766	1997	345	96.3	NT
µg/l -micrograms per liter									
a - Dilution required due to matrix interfere									
mg/l -milligrams per liter									
b - Elevated detection limit due to matrix ir									
J - indicates an estimated value									
c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-2A	MW-2A	MW-2A	MW-2A	MW-2A	MW-2A	MW-2A
Sampling Period			3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
Depth to Water (feet)			5.16	5.44	4.91	4.35	5.01	5.31	5.43
Sample Date			9/19/2013	12/17/2013	2/20/2014	5/5/2014	10/9/2014	11/13/2014	2/16/2015
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	<0.10	<0.10	<0.050	<0.050	NT	NT	NT
TPH Diesel Range Organics	NA	mg/l	<0.17	.175 J	<0.17	<0.17	NT	NT	NT
BTEX									
Benzene	5	µg/l	<0.20	<0.20	<0.20	<0.20	NT	NT	NT
Toluene	560 to 1000	µg/l	<1.0	<1.0	<1.0	<1.0	NT	NT	NT
Ethylbenzene	700	µg/l	<1.0	<1.0	<1.0	<1.0	NT	NT	NT
Xylene (total)	1400 to 10000	µg/l	<2.0	<2.0	<2.0	<2.0	NT	NT	NT
PAHs									
Acenaphthene	NA	µg/l	<0.49	<0.48	<0.49	<0.49	NT	NT	NT
Acenaphthylene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Anthracene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Benzo(a)anthracene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Benzo(a)pyrene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Benzo(b)fluoranthene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Benzo(g,h,i)perylene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Benzo(k)fluoranthene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Chrysene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Dibenzo(a,h)anthracene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Fluoranthene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Fluorene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Indeno(1,2,3-cd)pyrene	NA	µg/l	<0.55	<0.54	<0.54	<0.48	NT	NT	NT
1-Methylnapthalene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
2-Methylnapthalene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Naphthalene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Phenanthrene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Pyrene	NA	µg/l	<0.48	<0.47	<0.48	<0.48	NT	NT	NT
Metals									
Calcium	NA	mg/l	123	134	84.6	154	NT	NT	NT
Iron	NA	mg/l	25.0	26.7	5.3	18.7	NT	NT	NT
Magnesium	NA	mg/l	67.2	68.4	64.4	68.5	NT	NT	NT
Manganese	NA	mg/l	1.61	2.57	1.25	1.72	NT	NT	NT
Potassium	NA	mg/l	6.84	6.43	6.22	5.99	NT	NT	NT
Selenium	NA	mg/l	<0.05	<0.05	<0.05	<0.05	NT	NT	NT
Sodium	NA	mg/l	122.0	120.0	106.0	98.2	NT	NT	NT
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	354	414	512	509	NT	NT	NT
Alkalinity, Carbonate	NA	mg/l	<5.0	<5.0	<5.0	<5.0	NT	NT	NT
Alkalinity, Total as CaCO3	NA	mg/l	354	414	512	509	NT	NT	NT
Biological Oxygen Demand, 5 Day	NA	mg/l	<1.0	1.0	15.8	3.1	NT	NT	NT
Bromide	NA	mg/l	<0.10 ^a	<0.10	<0.10	<0.10 ^a	NT	NT	NT
Chemical Oxygen Demand	NA	mg/l	24.3	14.7	23.7	14.6	NT	NT	NT
Chloride	1.25 x bkgd	mg/l	149	109	53	20.7	NT	NT	NT
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	<0.020 ^a	0.081	0.079	0.042	NT	NT	NT
Nitrogen, Nitrite	NA	mg/l	<0.0080 ^a	<0.0080 ^a	0.049	<0.0080 ^a	NT	NT	NT
Phosphate, Ortho	NA	mg/l	NT	<0.13 ^a	<0.10	<0.10 ^a	NT	NT	NT
Phosphorus, Total	NA	mg/l	0.22	0.74	0.38	0.85	NT	NT	NT
Plate Count, Total	NA	CFU/ml	NT	NT	110000	NT	NT	NT	NT
Total Dissolved Solids	NA	mg/l	NT	772	740	692	NT	NT	NT
Sulfate	1.25 x bkgd	mg/l	112	110	69.7	78.8	NT	NT	NT
Total Organic Carbon	NA	mg/l	5.2	5	11.4	4.3	NT	NT	NT
pH	NA	su	7.7	7.63	7.42	7.58	NT	NT	NT
Field Readings									
Temperature	NA	deg. C	17.50	10.10	5.70	9.90	NT	NT	NT
Specific Conductivity	NA	mS/cm	1.319	1.209	1.252	1.144	NT	NT	NT
Dissolved Oxygen	NA	mg/l	0.1	0.40	0.41	0.3	NT	NT	NT
pH	NA	su	7.83	8.90	NT	7.59	NT	NT	NT
Solids, Total Dissolved	NA	mg/l	0.9	0.7865	0.8125	741.0	NT	NT	NT
Turbidity	NA	NTU	NT	NT	NT	NT	NT	NT	NT
µg/l -micrograms per liter									
a - Dilution required due to matrix interfere									
mg/l -milligrams per liter									
b - Elevated detection limit due to matrix ir									
J - indicates an estimated value									
c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-2A	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
Sampling Period			2nd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
Depth to Water (feet)			3.56	5.68	5.77	5.67	5.56	6.45	6.11
Sample Date			6/17/2015	11/18/2011	2/14/2012	5/8/2012	8/29/2012	11/26/2012	3/6/2013
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	NT	< 0.050	< 0.10	<0.10	<0.10	<0.10	<0.10
TPH Diesel Range Organics	NA	mg/l	NT	25.1	< 0.30	<0.25	<0.25	<0.17	<0.17
BTEX									
Benzene	5	µg/l	NT	< 1.0	< 0.20	<0.20	<0.20	<0.20	<0.20
Toluene	560 to 1000	µg/l	NT	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	700	µg/l	NT	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0
Xylene (total)	1400 to 10000	µg/l	NT	< 3.0	< 2.0	<2.0	<2.0	<2.0	<2.0
PAHs									
Acenaphthene	NA	µg/l	NT	< 0.2	< 0.60	<0.48	<0.48	<0.49	NT
Acenaphthylene	NA	µg/l	NT	< 0.2	< 0.60	<0.48	<0.48	<0.49	NT
Anthracene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT
Benzo(a)anthracene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT
Benzo(a)pyrene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT
Benzo(b)fluoranthene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT
Benzo(g,h,i)perylene	NA	µg/l	NT	< 0.2	< 0.54	<0.48	<0.48	<0.49	NT
Benzo(k)fluoranthene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT
Chrysene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT
Dibenzo(a,h)anthracene	NA	µg/l	NT	< 0.2	< 0.78	<0.48	<0.48	<0.49	NT
Fluoranthene	NA	µg/l	NT	< 0.2	< 0.71	<0.48	<0.48	<0.49	NT
Fluorene	NA	µg/l	NT	< 0.2	< 0.55	<0.48	<0.48	<0.49	NT
Indeno(1,2,3-cd)pyrene	NA	µg/l	NT	< 0.2	< 1.5	<0.48	<0.48	<0.49	NT
1-Methylnapthalene	NA	µg/l	NT	< 0.2	< 0.68	<0.48	<0.48	<0.49	NT
2-Methylnapthalene	NA	µg/l	NT	< 0.2	< 0.68	<0.48	<0.48	<0.49	NT
Naphthalene	NA	µg/l	NT	< 0.2	< 0.73	<0.48	<0.48	<0.49	NT
Phenanthrene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT
Pyrene	NA	µg/l	NT	< 0.2	< 0.47	<0.48	<0.48	<0.49	NT
Metals									
Calcium	NA	mg/l	NT	76.7	151	157	133	218	117
Iron	NA	mg/l	NT	4.8	6.79	26.8	16.3	35.4	12.7
Magnesium	NA	mg/l	NT	37.2	50.3	57.8	62.8	75.1	65.5
Manganese	NA	mg/l	NT	0.718	1.43	1.71	1.32	2.31	1.18
Potassium	NA	mg/l	NT	< 10	2.95	6.88	7.87	9.53	5.43
Selenium	NA	mg/l	NT	< 0.01	< 0.05	<0.050	<0.050	<0.05	<0.05
Sodium	NA	mg/l	NT	56.1	61.4	61.0	92.9	93.9	89.2
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	NT	384	462	427	396	309	333
Alkalinity, Carbonate	NA	mg/l	NT	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	NT	386	462	427	396	309	333
Biological Oxygen Demand, 5 Day	NA	mg/l	NT	11.1	< 10	<10	<10	<10	<10
Bromide	NA	mg/l	NT	< 0.50	< 0.20	<0.20	<0.10	<0.10	0.13
Chemical Oxygen Demand	NA	mg/l	NT	21	< 10	<10	49	<10	15.7
Chloride	1.25 x bkgd	mg/l	NT	16.7	14.5	12.9	151	210	161
Hydroxide Alkalinity	NA	mg/l	NT	< 5.0	NT	NT	NT	NT	NT

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
Sampling Period			2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Depth to Water (feet)			5.25	5.83	6.03	5.6	5.22	5.69	5.94
Sample Date			5/30/2013	9/19/2013	12/17/2013	2/20/2014	5/5/2014	10/9/2014	11/13/2014
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	<0.10	<0.10	<0.10	<0.050	<0.050	NT	NT
TPH Diesel Range Organics	NA	mg/l	<0.17	0.284	<0.17	<0.17	<0.17	NT	NT
BTEX									
Benzene	5	µg/l	<0.20	<0.20	<0.20	<0.20	<0.20	NT	NT
Toluene	560 to 1000	µg/l	<1.0	<1.0	<10	<10	<10	NT	NT
Ethylbenzene	700	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	NT	NT
Xylene (total)	1400 to 10000	µg/l	<2.0	<2.0	<2.0	<2.0	<2.0	NT	NT
PAHs									
Acenaphthene	NA	µg/l	NT	<0.49	<0.49	<0.50	<0.49	NT	NT
Acenaphthylene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Anthracene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Benzo(a)anthracene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Benzo(a)pyrene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Benzo(b)fluoranthene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Benzo(g,h,i)perylene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Benzo(k)fluoranthene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Chrysene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Dibenzo(a,h)anthracene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Fluoranthene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Fluorene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Indeno(1,2,3-cd)pyrene	NA	µg/l	NT	<0.55	<0.54	<0.55	<0.48	NT	NT
1-Methylnapthalene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
2-Methylnapthalene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Naphthalene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Phenanthrene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Pyrene	NA	µg/l	NT	<0.48	<0.48	<0.49	<0.48	NT	NT
Metals									
Calcium	NA	mg/l	111	106	109	105	119	NT	NT
Iron	NA	mg/l	10.4	6.1	12.3	11.8	13.9	NT	NT
Magnesium	NA	mg/l	59.0	59.3	60.6	59.8	53.1	NT	NT
Manganese	NA	mg/l	1.01	0.77	1.08	1.18	1.43	NT	NT
Potassium	NA	mg/l	4.79	5.43	5.68	4.28	4.8	NT	NT
Selenium	NA	mg/l	<0.05	<0.05	<0.050	<0.050	<0.050	NT	NT
Sodium	NA	mg/l	92.4	125.0	120.0	104.0	102.0	NT	NT
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	465	380	394	423	463	NT	NT
Alkalinity, Carbonate	NA	mg/l	<5.0	<5.0	<5.0	<5.0	<5.0	NT	NT
Alkalinity, Total as CaCO3	NA	mg/l	465	380	394	423	463	NT	NT
Biological Oxygen Demand, 5 Day	NA	mg/l	<1.0	<1.0	<1.0	1.1	1.9	NT	NT
Bromide	NA	mg/l	0.13	<0.10 ^a	<0.10 ^a	0.11	0.11	NT	NT
Chemical Oxygen Demand	NA	mg/l	25.3	21.1	10.3	19.3	12.8	NT	NT
Chloride	1.25 x bkgd	mg/l	49.5	163	126	84	36.5	NT	NT
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	0.04	0.12	0.093	0.031	<0.020 ^a	NT	NT
Nitrogen, Nitrite	NA	mg/l	<0.020 ^a	<0.0080 ^a	<0.0080 ^a	<0.0080 ^a	<0.0080 ^a	NT	NT
Phosphate, Ortho	NA	mg/l	NT	NT	<0.13	<0.10	<0.10 ^a	NT	NT
Phosphorus, Total	NA	mg/l	3.3	0.13	0.21	0.42	0.47	NT	NT
Plate Count, Total	NA	CFU/ml	NT	NT	NT	42000	NT	NT	NT
Total Dissolved Solids	NA	mg/l	NT	NT	788	728	690	NT	NT
Sulfate	1.25 x bkgd	mg/l	170	134	120	105	89.1	NT	NT
Total Organic Carbon	NA	mg/l	6.1	4.6	3.6	4.6	4.5	NT	NT
pH	NA	su	7.63	7.66	7.66	7.56	7.66	NT	NT
Field Readings									
Temperature	NA	deg. C	13.60	20.50	10.00	5.40	10.30	NT	NT
Specific Conductivity	NA	mS/cm	1.278	1.527	1.248	1.157	1.127	NT	NT
Dissolved Oxygen	NA	mg/l	0.71	0.34	0.44	0.68	0.2	NT	NT
pH	NA	su	7.61	7.36	7.92	NT	7.71	NT	NT
Solids, Total Dissolved	NA	mg/l	0.8	1.0	0.8125	0.7540	734.5	NT	NT
Turbidity	NA	NTU	NT	NT	NT	NT	NT	NT	NT
µg/l -micrograms per liter									
a - Dilution required due to matrix interfere									
mg/l -milligrams per liter									
b - Elevated detection limit due to matrix ir									
J - indicates an estimated value									
c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-3	MW-3	MW-4	MW-4	MW-4	MW-4	MW-4
Sampling Period			1st Quarter	2nd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Depth to Water (feet)			6.1	4.53	10.64	10.34	10.63	11.31	11.64
Sample Date			2/16/2015	6/17/2015	11/18/2011	2/14/2012	5/8/2012	8/29/2012	11/26/2012
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	NT	NT	< 0.050	< 0.10	<0.10	<0.10	<0.10
TPH Diesel Range Organics	NA	mg/l	NT	NT	<0.10	< 0.30	<0.25	<0.25	<0.17
BTEX									
Benzene	5	µg/l	NT	NT	< 1.0	< 0.20	<0.20	<0.20	<0.20
Toluene	560 to 1000	µg/l	NT	NT	< 1.0	< 1.0	<1.0	<1.0	<1.0
Ethylbenzene	700	µg/l	NT	NT	< 1.0	< 1.0	<1.0	<1.0	<1.0
Xylene (total)	1400 to 10000	µg/l	NT	NT	< 3.0	< 2.0	<2.0	<2.0	<2.0
PAHs									
Acenaphthene	NA	µg/l	NT	NT	< 0.2	< 0.60	<0.47	<0.48	<0.48
Acenaphthylene	NA	µg/l	NT	NT	< 0.2	< 0.60	<0.47	<0.48	<0.48
Anthracene	NA	µg/l	NT	NT	< 0.2	< 0.47	<0.47	<0.48	<0.48
Benzo(a)anthracene	NA	µg/l	NT	NT	< 0.2	< 0.47	<0.47	<0.48	<0.48
Benzo(a)pyrene	NA	µg/l	NT	NT	< 0.2	< 0.47	<0.47	<0.48	<0.48
Benzo(b)fluoranthene	NA	µg/l	NT	NT	< 0.2	< 0.47	<0.47	<0.48	<0.48
Benzo(g,h,i)perylene	NA	µg/l	NT	NT	< 0.2	< 0.54	<0.47	<0.48	<0.48
Benzo(k)fluoranthene	NA	µg/l	NT	NT	< 0.2	< 0.47	<0.47	<0.48	<0.48
Chrysene	NA	µg/l	NT	NT	< 0.2	< 0.47	<0.47	<0.48	<0.48
Dibenzo(a,h)anthracene	NA	µg/l	NT	NT	< 0.2	< 0.78	<0.47	<0.48	<0.48
Fluoranthene	NA	µg/l	NT	NT	< 0.2	< 0.71	<0.47	<0.48	<0.48
Fluorene	NA	µg/l	NT	NT	< 0.2	< 0.55	<0.47	<0.48	<0.48
Indeno(1,2,3-cd)pyrene	NA	µg/l	NT	NT	< 0.2	< 1.5	<0.47	<0.48	<0.48
1-Methylnapthalene	NA	µg/l	NT	NT	< 0.2	< 0.68	<0.47	<0.48	<0.48
2-Methylnapthalene	NA	µg/l	NT	NT	< 0.2	< 0.68	<0.47	<0.48	<0.48
Naphthalene	NA	µg/l	NT	NT	< 0.2	< 0.73	<0.47	<0.48	<0.48
Phenanthrene	NA	µg/l	NT	NT	< 0.2	< 0.47	<0.47	<0.48	<0.48
Pyrene	NA	µg/l	NT	NT	< 0.2	< 0.47	<0.47	<0.48	<0.48
Metals									
Calcium	NA	mg/l	NT	NT	73.9	126	107	121	238
Iron	NA	mg/l	NT	NT	3.52	6.71	18.1	19.7	47.5
Magnesium	NA	mg/l	NT	NT	40.6	48.6	55.4	71.5	104
Manganese	NA	mg/l	NT	NT	1.74	1.71	1.91	4.4	2.16
Potassium	NA	mg/l	NT	NT	< 10	2.89	5.9	8.73	12.2
Selenium	NA	mg/l	NT	NT	< 0.01	< 0.05	<0.050	<0.050	<0.05
Sodium	NA	mg/l	NT	NT	62.1	58.3	71.8	99.1	110.0
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	NT	NT	392	364	452	616	618
Alkalinity, Carbonate	NA	mg/l	NT	NT	< 5.0	< 5.0	<5.0	<5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	NT	NT	396	364	452	616	618
Biological Oxygen Demand, 5 Day	NA	mg/l	NT	NT	8.1	< 10	<10	10.7	<10
Bromide	NA	mg/l	NT	NT	< 0.50	< 0.20	<0.40	0.19	0.26
Chemical Oxygen Demand	NA	mg/l	NT	NT	28.1	< 10	<10	57	20.3
Chloride	1.25 x bkgd	mg/l	NT	NT	14.1	6.9	7.2	13.1	16.4
Hydroxide Alkalinity	NA	mg/l	NT	NT	< 5.0	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	NT	NT	< 0.50	< 0.23	<0.090	<0.020	<0.050
Nitrogen, Nitrite	NA	mg/l	NT	NT	< 0.50	< 0.061	<0.010	0.008	<0.0080
Phosphate, Ortho	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Phosphorus, Total	NA	mg/l	NT	NT	0.14	1.4	1.1	NT	1.2
Plate Count, Total	NA	CFU/ml	NT	NT	120000	4600	5400	3800	13000
Total Dissolved Solids	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Sulfate	1.25 x bkgd	mg/l	NT	NT	36.2	40.8	34.2	13	110
Total Organic Carbon	NA	mg/l	NT	NT	4.8	3.6	4.5	8.5	10.3
pH	NA	su	NT	NT	7.18	7.73	7.65	7.64	7.69
Field Readings									
Temperature	NA	deg. C	NT	NT	14.2	6.5	13.23	19.42	14.68
Specific Conductivity	NA	mS/cm	NT	NT	0.713	0.682	0.814	1.02	1.371
Dissolved Oxygen	NA	mg/l	NT	NT	0.15	2.34	2.74	1.67	1.96
pH	NA	su	NT	NT	7.5	7.38	7.93	7.6	7.85
Solids, Total Dissolved	NA	mg/l	NT	NT	0.5	0.4	0.5	0.7	NT
Turbidity	NA	NTU	NT	NT	62.7	443	930	1572	554
µg/l -micrograms per liter									
a - Dilution required due to matrix interfere									
mg/l -milligrams per liter									
b - Elevated detection limit due to matrix ir									
J - indicates an estimated value									
c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sampling Period			1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
Depth to Water (feet)			10.77	10.7	11.9	11.27	10.49	10.32	11.04
Sample Date			3/6/2013	5/30/2013	9/19/2013	12/17/2013	2/20/2014	5/5/2014	10/9/2014
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	<0.10	<0.10	<0.10	<0.10	<0.050	<0.050	NT
TPH Diesel Range Organics	NA	mg/l	<0.17	<0.17	2.34	<0.17	<0.17	<0.17	NT
BTEX									
Benzene	5	µg/l	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NT
Toluene	560 to 1000	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NT
Ethylbenzene	700	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NT
Xylene (total)	1400 to 10000	µg/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NT
PAHs									
Acenaphthene	NA	µg/l	NT	NT	<0.48	<0.48	<0.50	<0.49	NT
Acenaphthylene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Anthracene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Benzo(a)anthracene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Benzo(a)pyrene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Benzo(b)fluoranthene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Benzo(g,h,i)perylene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Benzo(k)fluoranthene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Chrysene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Dibenzo(a,h)anthracene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Fluoranthene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Fluorene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Indeno(1,2,3-cd)pyrene	NA	µg/l	NT	NT	<0.54	<0.54	<0.55	<0.48	NT
1-Methylnapthalene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
2-Methylnapthalene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Naphthalene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Phenanthrene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Pyrene	NA	µg/l	NT	NT	<0.47	<0.47	<0.49	<0.48	NT
Metals									
Calcium	NA	mg/l	60.4	74.3	119.0	171.0	96.7	139.0	NT
Iron	NA	mg/l	2.63	7.26	9.34	2.88	0.86	1.38	NT
Magnesium	NA	mg/l	64.5	64.9	84.1	55.9	53.1	59.7	NT
Manganese	NA	mg/l	0.316	0.533	0.48	0.29	0.198	0.327	NT
Potassium	NA	mg/l	5	5.6	6.78	5.76	3.55	4.01	NT
Selenium	NA	mg/l	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	NT
Sodium	NA	mg/l	99.2	85.0	118.0	109.0	83.6	69.5	NT
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	489	482	309	399	332	458	NT
Alkalinity, Carbonate	NA	mg/l	<5.0	<5.0	346	203	85.8	43.1	NT
Alkalinity, Total as CaCO3	NA	mg/l	489	482	665	602	418	501	NT
Biological Oxygen Demand, 5 Day	NA	mg/l	<10	2.4	<1.0	<1.0	<1.0	<1.0	NT
Bromide	NA	mg/l	<0.10 ^a	<0.10 ^a	<0.25 ^a	0.34	0.09	<0.10 ^a	NT
Chemical Oxygen Demand	NA	mg/l	23.7	12.4	245	45.5	30.1	16	NT
Chloride	1.25 x bkgd	mg/l	8	12	12.1	8.5	6.5	5.7	NT
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	<0.020 ^a	1.7	0.056	0.55	1.3	0.18	NT
Nitrogen, Nitrite	NA	mg/l	<0.0080 ^a	0.02	2.5	0.034	0.046	0.015	NT
Phosphate, Ortho	NA	mg/l	NT	NT	NT	0.77	1.1	0.41	NT
Phosphorus, Total	NA	mg/l	0.10	0.16	80.30	134	12	12	NT
Plate Count, Total	NA	CFU/ml	NT	NT	NT	NT	5600	NT	NT
Total Dissolved Solids	NA	mg/l	NT	NT	NT	464	504	538	NT
Sulfate	1.25 x bkgd	mg/l	113	74.9	70.7	108	91.2	55.8	NT
Total Organic Carbon	NA	mg/l	3.8	4.4	25.3	8.1	6.2	4.8	NT
pH	NA	su	7.81	7.81	11.4	11.31	9.02	8.56	NT
Field Readings									
Temperature	NA	deg. C	6.83	12.20	19.20	11.00	5.70	10.50	NT
Specific Conductivity	NA	mS/cm	1.15	0.983	1.736	0.920	0.799	0.912	NT
Dissolved Oxygen	NA	mg/l	1.24	1.01	18.24	4.59	4.99	5.23	NT
pH	NA	su	7.42	7.82	12.23	9.54	NT	8.65	NT
Solids, Total Dissolved	NA	mg/l	NT	0.6	1.1	0.8045	0.5200	591.5	NT
Turbidity	NA	NTU	26.5	Nt	NT	NT	NT	NT	NT
µg/l -micrograms per liter									
a - Dilution required due to matrix interfere									
mg/l -milligrams per liter									
b - Elevated detection limit due to matrix in									
J - indicates an estimated value									
c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5	MW-5
Sampling Period			4th Quarter	1st Quarter	2nd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
Depth to Water (feet)			11.23	11.06	10	5.63	6.06	6.11	6.12
Sample Date			11/13/2014	2/16/2015	6/17/2015	11/18/2011	2/14/2012	5/8/2012	8/29/2012
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	NT	NT	NT	< 0.050	< 0.10	<0.10	<0.10
TPH Diesel Range Organics	NA	mg/l	NT	NT	NT	<0.10	< 0.30	<0.25	<0.25
BTEX									
Benzene	5	µg/l	NT	NT	NT	< 1.0	< 0.20	<0.20	<0.20
Toluene	560 to 1000	µg/l	NT	NT	NT	< 1.0	< 1.0	<1.0	<1.0
Ethylbenzene	700	µg/l	NT	NT	NT	< 1.0	< 1.0	<1.0	<1.0
Xylene (total)	1400 to 10000	µg/l	NT	NT	NT	< 3.0	< 2.0	<2.0	<2.0
PAHs									
Acenaphthene	NA	µg/l	NT	NT	NT	< 0.2	< 0.60	<0.48	<0.48
Acenaphthylene	NA	µg/l	NT	NT	NT	< 0.2	< 0.60	<0.48	<0.48
Anthracene	NA	µg/l	NT	NT	NT	< 0.2	< 0.47	<0.48	<0.48
Benzo(a)anthracene	NA	µg/l	NT	NT	NT	< 0.2	< 0.47	<0.48	<0.48
Benzo(a)pyrene	NA	µg/l	NT	NT	NT	< 0.2	< 0.47	<0.48	<0.48
Benzo(b)fluoranthene	NA	µg/l	NT	NT	NT	< 0.2	< 0.47	<0.48	<0.48
Benzo(g,h,i)perylene	NA	µg/l	NT	NT	NT	< 0.2	< 0.54	<0.48	<0.48
Benzo(k)fluoranthene	NA	µg/l	NT	NT	NT	< 0.2	< 0.47	<0.48	<0.48
Chrysene	NA	µg/l	NT	NT	NT	< 0.2	< 0.47	<0.48	<0.48
Dibenzo(a,h)anthracene	NA	µg/l	NT	NT	NT	< 0.2	< 0.78	<0.48	<0.48
Fluoranthene	NA	µg/l	NT	NT	NT	< 0.2	< 0.71	<0.48	<0.48
Fluorene	NA	µg/l	NT	NT	NT	< 0.2	< 0.55	<0.48	<0.48
Indeno(1,2,3-cd)pyrene	NA	µg/l	NT	NT	NT	< 0.2	< 1.5	<0.48	<0.48
1-Methylnapthalene	NA	µg/l	NT	NT	NT	< 0.2	< 0.68	<0.48	<0.48
2-Methylnapthalene	NA	µg/l	NT	NT	NT	< 0.2	< 0.68	<0.48	<0.48
Naphthalene	NA	µg/l	NT	NT	NT	< 0.2	< 0.73	<0.48	<0.48
Phenanthrene	NA	µg/l	NT	NT	NT	< 0.2	< 0.47	<0.48	<0.48
Pyrene	NA	µg/l	NT	NT	NT	< 0.2	< 0.47	<0.48	<0.48
Metals									
Calcium	NA	mg/l	NT	NT	NT	119	198	157	99.9
Iron	NA	mg/l	NT	NT	NT	18.9	18.2	33.3	11.4
Magnesium	NA	mg/l	NT	NT	NT	45.6	62.2	60.8	56.0
Manganese	NA	mg/l	NT	NT	NT	0.977	1.56	1.33	0.808
Potassium	NA	mg/l	NT	NT	NT	< 10	3.22	6.71	5.69
Selenium	NA	mg/l	NT	NT	NT	< 0.01	< 0.05	<0.050	<0.050
Sodium	NA	mg/l	NT	NT	NT	55.8	56.4	58.9	8.0
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	NT	NT	NT	364	540	481	429
Alkalinity, Carbonate	NA	mg/l	NT	NT	NT	< 5.0	< 5.0	<5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	NT	NT	NT	366	540	481	429
Biological Oxygen Demand, 5 Day	NA	mg/l	NT	NT	NT	< 15	< 10	<10	<10
Bromide	NA	mg/l	NT	NT	NT	< 0.50	< 4.0	<0.40	<0.10
Chemical Oxygen Demand	NA	mg/l	NT	NT	NT	40.4	18.1	<10	75.5
Chloride	1.25 x bkgd	mg/l	NT	NT	NT	18.1	20	10.6	133
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	< 5.0	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	NT	NT	NT	0.51	< 0.45	<0.090	0.039
Nitrogen, Nitrite	NA	mg/l	NT	NT	NT	< 0.50	< 0.061	<0.010	0.052
Phosphate, Ortho	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Phosphorus, Total	NA	mg/l	NT	NT	NT	1.2	2	1.6	NT
Plate Count, Total	NA	CFU/ml	NT	NT	NT	180000	3300	1900	63000
Total Dissolved Solids	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Sulfate	1.25 x bkgd	mg/l	NT	NT	NT	16.2	19	27.8	101
Total Organic Carbon	NA	mg/l	NT	NT	NT	6.1	10.9	5.0	6.4
pH	NA	su	NT	NT	NT	7.22	7.62	7.65	7.47
Field Readings									
Temperature	NA	deg. C	NT	NT	NT	12.7	5.77	13.89	20.67
Specific Conductivity	NA	mS/cm	NT	NT	NT	0.667	0.798	0.727	1.116
Dissolved Oxygen	NA	mg/l	NT	NT	NT	0.13	1.75	2.24	1.15
pH	NA	su	NT	NT	NT	7.47	7.22	7.85	7.51
Solids, Total Dissolved	NA	mg/l	NT	NT	NT	0.4	0.5	0.5	0.7
Turbidity	NA	NTU	NT	NT	NT	896	2000	2000	2000
µg/l -micrograms per liter									
a - Dilution required due to matrix interfere									
mg/l -milligrams per liter									
b - Elevated detection limit due to matrix ir									
J - indicates an estimated value									
c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5
Sampling Period			4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
Depth to Water (feet)			6.8	6.6	5.81	6.38	6.59	5.99	5.85
Sample Date			11/26/2012	3/6/2013	5/30/2013	9/19/2013	12/17/2013	2/20/2014	5/5/2014
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.050	<0.050
TPH Diesel Range Organics	NA	mg/l	<0.17	<0.17	<0.17	<0.17	<0.17	0.42	<0.17
BTEX									
Benzene	5	µg/l	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	560 to 1000	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	700	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene (total)	1400 to 10000	µg/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
PAHs									
Acenaphthene	NA	µg/l	<0.47	NT	NT	<0.49	<0.48	<0.51	<0.49
Acenaphthylene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Anthracene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Benzo(a)anthracene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Benzo(a)pyrene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Benzo(b)fluoranthene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Benzo(g,h,i)perylene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Benzo(k)fluoranthene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Chrysene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Dibenzo(a,h)anthracene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Fluoranthene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Fluorene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Indeno(1,2,3-cd)pyrene	NA	µg/l	<0.47	NT	NT	<0.54	<0.54	<0.57	<0.48
1-Methylnapthalene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
2-Methylnapthalene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Naphthalene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Phenanthrene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Pyrene	NA	µg/l	<0.47	NT	NT	<0.48	<0.47	<0.50	<0.48
Metals									
Calcium	NA	mg/l	333	103	84	107	99.6	90.1	112.0
Iron	NA	mg/l	83.1	15.6	10.8	6.1	13.7	17.9	12.6
Magnesium	NA	mg/l	108	71.4	52.2	57.6	62.8	56.5	50.5
Manganese	NA	mg/l	2.81	0.849	0.587	0.67	0.721	0.692	0.754
Potassium	NA	mg/l	12.6	4.34	4.2	5.2	4.85	3.73	4.12
Selenium	NA	mg/l	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Sodium	NA	mg/l	85.1	97.9	88.4	116.0	122.0	92.7	89.4
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	452	512	495	390	474	439	457
Alkalinity, Carbonate	NA	mg/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	63.1
Alkalinity, Total as CaCO3	NA	mg/l	452	512	496	390	474	439	457
Biological Oxygen Demand, 5 Day	NA	mg/l	<10	<10	1.8	<1.0	1.3	38.6	4.5
Bromide	NA	mg/l	0.1	0.16	0.25	<0.10 ^a	0.12	<0.10	<0.10 ^a
Chemical Oxygen Demand	NA	mg/l	10.8	20	12.7	18.3	17.0	74.0	11.8
Chloride	1.25 x bkgd	mg/l	198	78	15	150	72.2	41.4	12.6
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	<0.050	0.022	<0.020 ^a	<0.020 ^a	<0.020 ^a	0.14	<0.020 ^a
Nitrogen, Nitrite	NA	mg/l	0.011	<0.0080 ^a	<0.0080 ^a	<0.0080 ^a	0.0099	<0.0080 ^a	0.023 ^a
Phosphate, Ortho	NA	mg/l	NT	NT	NT	NT	<0.13	<0.10	<0.10
Phosphorus, Total	NA	mg/l	1.8	0.53	0.15	0.093	0.33	0.27	0.37
Plate Count, Total	NA	CFU/ml	16000	NT	NT	NT	NT	16000	NT
Total Dissolved Solids	NA	mg/l	NT	NT	NT	NT	776	677	612
Sulfate	1.25 x bkgd	mg/l	142	109	64.9	119	118	86.1	71.8
Total Organic Carbon	NA	mg/l	5.2	5.6	5.1	4.9	5.5	27.6	5.6
pH	NA	su	7.54	7.6	7.68	7.51	7.75	7.56	7.64
Field Readings									
Temperature	NA	deg. C	13.05	6.3	11.6	19.3	9.2	4.8	9.3
Specific Conductivity	NA	mS/cm	1.46	1.369	1.024	1.397	1.231	1.064	1.05
Dissolved Oxygen	NA	mg/l	1.2	0.85	0.23	0.09	0.08	0.25	0.12
pH	NA	su	7.76	7.3	7.67	7.71	8.13	NT	7.71
Solids, Total Dissolved	NA	mg/l	NT	NT	0.67	0.91	0.7930	0.6890	682.5
Turbidity	NA	NTU	465	227	NT	NT	NT	NT	NT
µg/l -micrograms per liter									
a - Dilution required due to matrix interfere									
mg/l -milligrams per liter									
b - Elevated detection limit due to matrix ir									
J - indicates an estimated value									
c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-5	MW-5	MW-5	MW-5	MW-6	MW-6	MW-6
Sampling Period			3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	4th Quarter	1st Quarter	2nd Quarter
Depth to Water (feet)			6.09	6.31	6.4	5.37	6.69	6.70	6.78
Sample Date			10/9/2014	11/13/2014	2/16/2015	6/17/2015	11/18/2011	2/14/2012	5/8/2012
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	NT	NT	NT	NT	< 0.050	< 0.10	<0.10
TPH Diesel Range Organics	NA	mg/l	NT	NT	NT	NT	0.213	< 0.30	0.261
BTEX									
Benzene	5	µg/l	NT	NT	NT	NT	< 1.0	< 0.20	<0.20
Toluene	560 to 1000	µg/l	NT	NT	NT	NT	< 1.0	< 1.0	<1.0
Ethylbenzene	700	µg/l	NT	NT	NT	NT	< 1.0	< 1.0	<1.0
Xylene (total)	1400 to 10000	µg/l	NT	NT	NT	NT	< 3.0	< 2.0	<2.0
PAHs									
Acenaphthene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.60	<0.48
Acenaphthylene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.60	<0.48
Anthracene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.47	<0.48
Benzo(a)anthracene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.47	<0.48
Benzo(a)pyrene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.47	<0.48
Benzo(b)fluoranthene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.47	<0.48
Benzo(g,h,i)perylene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.54	<0.48
Benzo(k)fluoranthene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.47	<0.48
Chrysene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.47	<0.48
Dibenzo(a,h)anthracene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.78	<0.48
Fluoranthene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.71	<0.48
Fluorene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.55	<0.48
Indeno(1,2,3-cd)pyrene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 1.5	<0.48
1-Methylnapthalene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.68	<0.48
2-Methylnapthalene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.68	<0.48
Naphthalene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.73	<0.48
Phenanthrene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.47	<0.48
Pyrene	NA	µg/l	NT	NT	NT	NT	< 0.2	< 0.47	<0.48
Metals									
Calcium	NA	mg/l	NT	NT	NT	NT	80.8	72.8	78.8
Iron	NA	mg/l	NT	NT	NT	NT	16.7	4.98	13.2
Magnesium	NA	mg/l	NT	NT	NT	NT	51	57.9	53.8
Manganese	NA	mg/l	NT	NT	NT	NT	3.25	1.59	1.17
Potassium	NA	mg/l	NT	NT	NT	NT	< 10	2.17	4.43
Selenium	NA	mg/l	NT	NT	NT	NT	< 0.01	< 0.05	<0.050
Sodium	NA	mg/l	NT	NT	NT	NT	53.7	59.0	63.9
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	NT	NT	NT	NT	388	435	438
Alkalinity, Carbonate	NA	mg/l	NT	NT	NT	NT	< 5.0	< 5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	NT	NT	NT	NT	390	435	438
Biological Oxygen Demand, 5 Day	NA	mg/l	NT	NT	NT	NT	6.8	< 10	<10
Bromide	NA	mg/l	NT	NT	NT	NT	< 0.50	< 4.0	1.0
Chemical Oxygen Demand	NA	mg/l	NT	NT	NT	NT	96.8	35.3	<10
Chloride	1.25 x bkgd	mg/l	NT	NT	NT	NT	21.1	31	11.8
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	NT	< 5.0	NT	NT
Nitrogen, Nitrate	NA	mg/l	NT	NT	NT	NT	0.56	< 0.45	<0.23
Nitrogen, Nitrite	NA	mg/l	NT	NT	NT	NT	< 0.50	< 0.061	<0.010
Phosphate, Ortho	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Phosphorus, Total	NA	mg/l	NT	NT	NT	NT	0.46	0.29	0.83
Plate Count, Total	NA	CFU/ml	NT	NT	NT	NT	2210000	81000	64000
Total Dissolved Solids	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Sulfate	1.25 x bkgd	mg/l	NT	NT	NT	NT	45.1	21.7	13.2
Total Organic Carbon	NA	mg/l	NT	NT	NT	NT	34.6	11.5	7.3
pH	NA	su	NT	NT	NT	NT	7.2	7.59	7.65
Field Readings									
Temperature	NA	deg. C	NT	NT	NT	NT	12.7	5.44	14.02
Specific Conductivity	NA	mS/cm	NT	NT	NT	NT	0.749	0.866	0.790
Dissolved Oxygen	NA	mg/l	NT	NT	NT	NT	0.27	1.4	2.40
pH	NA	su	NT	NT	NT	NT	7.52	7.17	NT
Solids, Total Dissolved	NA	mg/l	NT	NT	NT	NT	0.5	0.6	0.5
Turbidity	NA	NTU	NT	NT	NT	NT	478	248	576
µg/l -micrograms per liter a - Dilution required due to matrix interfere									
mg/l -milligrams per liter b - Elevated detection limit due to matrix ir									
J - indicates an estimated value c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6
Sampling Period			3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
Depth to Water (feet)			6.84	7.35	7.00	6.51	7.09	6.97	6.70
Sample Date			8/29/2012	11/26/2012	3/6/2013	5/30/2013	9/19/2013	12/17/2013	2/20/2014
Analytical Parameters									
TPH									
TPH Gasoline Range Organics	NA	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.050
TPH Diesel Range Organics	NA	mg/l	0.445	0.347	0.175 J	<0.17	<0.17	0.17	<0.17
BTEX									
Benzene	5	µg/l	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	560 to 1000	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	700	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene (total)	1400 to 10000	µg/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
PAHs									
Acenaphthene	NA	µg/l	<0.48	<0.48	NT	NT	<0.49	<0.48	<0.49
Acenaphthylene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Anthracene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Benzo(a)anthracene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Benzo(a)pyrene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Benzo(b)fluoranthene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Benzo(g,h,i)perylene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Benzo(k)fluoranthene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Chrysene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Dibenzo(a,h)anthracene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Fluoranthene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Fluorene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Indeno(1,2,3-cd)pyrene	NA	µg/l	<0.48	<0.48	NT	NT	<0.54	<0.54	<0.54
1-Methylnapthalene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
2-Methylnapthalene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Naphthalene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Phenanthrene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Pyrene	NA	µg/l	<0.48	<0.48	NT	NT	<0.48	<0.47	<0.48
Metals									
Calcium	NA	mg/l	114	229	103	66	111	82.8	76.7
Iron	NA	mg/l	6.90	46.60	14.50	8.70	5.01	6.49	9.12
Magnesium	NA	mg/l	57.4	92.7	86.7	55.7	58.3	69.9	65.1
Manganese	NA	mg/l	0.817	3.950	1.07	0.56	0.55	0.838	0.550
Potassium	NA	mg/l	6.43	9.82	5.24	4.01	6.08	4.11	3.07
Selenium	NA	mg/l	<0.050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050
Sodium	NA	mg/l	82.0	82.0	96.5	87.1	111.0	118.0	88.0
General Chemistry									
Alkalinity, Bicarbonate	NA	mg/l	352	356	574	466	394	558	488
Alkalinity, Carbonate	NA	mg/l		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity, Total as CaCO3	NA	mg/l	352	356	574	466	394	558	488
Biological Oxygen Demand, 5 Day	NA	mg/l	<10	<10	<10	2	<1.0	1.8	1.2
Bromide	NA	mg/l	0.063	0.100	0.270	<0.10a	0.100	<0.10 ^a	0.120
Chemical Oxygen Demand	NA	mg/l	47.4	10.8	21.3	11.5	13.2	36.6	21.9
Chloride	1.25 x bkgd	mg/l	136	198	57.8	13	129	37.7	16.6
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	<0.010	0.056	<0.020 ^a	0.021	<0.020 ^a	0.045	0.1
Nitrogen, Nitrite	NA	mg/l	0.04	<0.0080	<0.0080 ^a	<0.0080a	<0.0080 ^a	<0.0080 ^a	<0.0080 ^a
Phosphate, Ortho	NA	mg/l	NT	NT	NT	NT	NT	<0.13	<0.10
Phosphorus, Total	NA	mg/l	NT	1.6	0.32	0.22	2.5	0.59	0.33
Plate Count, Total	NA	CFU/ml	820000	420000	NT	NT	NT	NT	370000
Total Dissolved Solids	NA	mg/l	NT	NT	NT	NT	NT	708	648
Sulfate	1.25 x bkgd	mg/l	114	114	95.9	62.5	120	73.6	56.8
Total Organic Carbon	NA	mg/l	5.2	5.2	7	5.1	4.7	5.5	5.3
pH	NA	su	7.39	5.57	7.61	7.65	7.57	7.7	7.61
Field Readings									
Temperature	NA	deg. C	21.30	12.89	5.30	12.20	21.16	7.60	2.90
Specific Conductivity	NA	mS/cm	1.145	1.395	1.368	0.956	1.364	1.160	1.067
Dissolved Oxygen	NA	mg/l	2.30	1.35	2.59	5.00	1.45	0.71	2.78
pH	NA	su	7.49	7.72	7.35	7.78	7.71	8.25	NT
Solids, Total Dissolved	NA	mg/l	0.7	0.6	NT	0.6	0.9	0.7540	0.6890
Turbidity	NA	NTU	201	384	NT	NT	NT	NT	NT
µg/l - micrograms per liter									
a - Dilution required due to matrix interfere									
mg/l - milligrams per liter									
b - Elevated detection limit due to matrix ir									
J - indicates an estimated value									
c - Elevated detection limit due to dilution i									
µmhos/cm - micromhos per centimeter									
mS/cm - millisiemens per centimeter									
Over allowable limit									
su - standard units									
NA - not applicable									
NTU - nephelometric turbidity units									
CFU/ml - colony forming units per milliliter									
a -Elevated detection limit due to matrix interference									

Water Analytical Data

Sample ID	COGCC Table 910-1 Standards	UNITS	MW-6	MW-6	MW-6	MW-6
Sampling Period			2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
Depth to Water (feet)			6.57	6.75	6.95	7.01
Sample Date			5/5/2014	10/9/2014	11/13/2014	2/16/2015
Analytical Parameters						
TPH						
TPH Gasoline Range Organics	NA	mg/l	<0.050	NT	NT	NT
TPH Diesel Range Organics	NA	mg/l	<0.17	NT	NT	NT
BTEX						
Benzene	5	µg/l	<0.20	NT	NT	NT
Toluene	560 to 1000	µg/l	<1.0	NT	NT	NT
Ethylbenzene	700	µg/l	<1.0	NT	NT	NT
Xylene (total)	1400 to 10000	µg/l	<2.0	NT	NT	NT
PAHs						
Acenaphthene	NA	µg/l	<0.49	NT	NT	NT
Acenaphthylene	NA	µg/l	<0.48	NT	NT	NT
Anthracene	NA	µg/l	<0.48	NT	NT	NT
Benzo(a)anthracene	NA	µg/l	<0.48	NT	NT	NT
Benzo(a)pyrene	NA	µg/l	<0.48	NT	NT	NT
Benzo(b)fluoranthene	NA	µg/l	<0.48	NT	NT	NT
Benzo(g,h,i)perylene	NA	µg/l	<0.48	NT	NT	NT
Benzo(k)fluoranthene	NA	µg/l	<0.48	NT	NT	NT
Chrysene	NA	µg/l	<0.48	NT	NT	NT
Dibenzo(a,h)anthracene	NA	µg/l	<0.48	NT	NT	NT
Fluoranthene	NA	µg/l	<0.48	NT	NT	NT
Fluorene	NA	µg/l	<0.48	NT	NT	NT
Indeno(1,2,3-cd)pyrene	NA	µg/l	<0.54	NT	NT	NT
1-Methylnapthalene	NA	µg/l	<0.48	NT	NT	NT
2-Methylnapthalene	NA	µg/l	<0.48	NT	NT	NT
Naphthalene	NA	µg/l	<0.48	NT	NT	NT
Phenanthrene	NA	µg/l	<0.48	NT	NT	NT
Pyrene	NA	µg/l	<0.48	NT	NT	NT
Metals						
Calcium	NA	mg/l	94.0	NT	NT	NT
Iron	NA	mg/l	14.50	NT	NT	NT
Magnesium	NA	mg/l	56.0	NT	NT	NT
Manganese	NA	mg/l	0.795	NT	NT	NT
Potassium	NA	mg/l	4.01	NT	NT	NT
Selenium	NA	mg/l	<0.050	NT	NT	NT
Sodium	NA	mg/l	85.5	NT	NT	NT
General Chemistry						
Alkalinity, Bicarbonate	NA	mg/l	478	NT	NT	NT
Alkalinity, Carbonate	NA	mg/l	<5.0	NT	NT	NT
Alkalinity, Total as CaCO3	NA	mg/l	478	NT	NT	NT
Biological Oxygen Demand, 5 Day	NA	mg/l	1.9	NT	NT	NT
Bromide	NA	mg/l	<0.10 ^a	NT	NT	NT
Chemical Oxygen Demand	NA	mg/l	18.5	NT	NT	NT
Chloride	1.25 x bkgd	mg/l	9.6	NT	NT	NT
Hydroxide Alkalinity	NA	mg/l	NT	NT	NT	NT
Nitrogen, Nitrate	NA	mg/l	0.024	NT	NT	NT
Nitrogen, Nitrite	NA	mg/l	<0.0080 ^a	NT	NT	NT
Phosphate, Ortho	NA	mg/l	<0.10 ^a	NT	NT	NT
Phosphorus, Total	NA	mg/l	0.22	NT	NT	NT
Plate Count, Total	NA	CFU/ml	NT	NT	NT	NT
Total Dissolved Solids	NA	mg/l	568	NT	NT	NT
Sulfate	1.25 x bkgd	mg/l	36.2	NT	NT	NT
Total Organic Carbon	NA	mg/l	4.3	NT	NT	NT
pH	NA	su	7.65	NT	NT	NT
Field Readings						
Temperature	NA	deg. C	9.60	NT	NT	NT
Specific Conductivity	NA	mS/cm	0.983	NT	NT	NT
Dissolved Oxygen	NA	mg/l	0.87	NT	NT	NT
pH	NA	su	7.7	NT	NT	NT
Solids, Total Dissolved	NA	mg/l	637	NT	NT	NT
Turbidity	NA	NTU	NT	NT	NT	NT
µg/l - micrograms per liter						
a - Dilution required due to matrix interfere						
mg/l -milligrams per liter						
b - Elevated detection limit due to matrix ir						
J - indicates an estimated value						
c - Elevated detection limit due to dilution i						
µmhos/cm - micromhos per centimeter						
mS/cm - millisiemens per centimeter						
Over allowable limit						
su - standard units						
NA - not applicable						
NTU - nephelometric turbidity units						
CFU/ml - colony forming units per milliiter						
a -Elevated detection limit due to matrix interference						



07/01/15

Technical Report for

WPX Energy Rocky Mountain, LLC

CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Accutest Job Number: D71985

Sampling Date: 06/17/15

Report to:

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Grand Junction, CO 81506
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ATTN: Tim Dobransky

Total number of pages in report: 41



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Scott Heideman'.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), LA (LA150028), TX (T104704511), WY

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Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D71985

CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D71985-1	06/17/15	15:50 JS	06/18/15	AQ	Ground Water	MW-1
D71985-2	06/17/15	00:00 JS	06/18/15	AQ	Trip Blank Water	TRIP BLANK

Summary of Hits

Page 1 of 1

Job Number: D71985
Account: WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)
Collected: 06/17/15

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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D71985-1 MW-1

TPH-GRO (C6-C10)	2.15	0.25	0.25	mg/l	SW846 8015B
Benzene	5.3	5.0	2.5	ug/l	SW846 8021B
Ethylbenzene	38.7	10	5.0	ug/l	SW846 8021B
Xylenes (total)	621	10	10	ug/l	SW846 8021B
Iron	4620	70		ug/l	SW846 6010C
Magnesium	49000	200		ug/l	SW846 6010C
Manganese	582	5.0		ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO3	489	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3	489	5.0		mg/l	SM 2320B-2011
Nitrogen, Nitrate	0.25	0.050		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrite	0.038	0.0080		mg/l	EPA 300.0/SW846 9056
Phosphorus, Total	1.8	0.20		mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	577	10		mg/l	SM 2540C-2011
Sulfate	26.3	1.0		mg/l	EPA 300.0/SW846 9056

D71985-2 TRIP BLANK

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	06/17/15
Lab Sample ID:	D71985-1	Date Received:	06/18/15
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA27593.D	5	06/23/15	KN	n/a	n/a	GGA1494
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	2.15	0.25	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	93%		60-140%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-1	
Lab Sample ID:	D71985-1	Date Sampled: 06/17/15
Matrix:	AQ - Ground Water	Date Received: 06/18/15
Method:	SW846 8021B	Percent Solids: n/a
Project:	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA27593.D	5	06/23/15	KN	n/a	n/a	GTA1494
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5.3	5.0	2.5	ug/l	
108-88-3	Toluene	ND	10	5.0	ug/l	
100-41-4	Ethylbenzene	38.7	10	5.0	ug/l	
1330-20-7	Xylenes (total)	621	10	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	105%		60-140%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	06/17/15
Lab Sample ID:	D71985-1	Date Received:	06/18/15
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI26531.D	1	06/23/15	GN	06/23/15	OP11937	GFI1317
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	84%		11-142%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	06/17/15
Lab Sample ID:	D71985-1	Date Received:	06/18/15
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	4620	70	ug/l	1	06/22/15	06/23/15 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	49000	200	ug/l	1	06/22/15	06/23/15 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	582	5.0	ug/l	1	06/22/15	06/23/15 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA6252

(2) Prep QC Batch: MP16248

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-1	Date Sampled: 06/17/15
Lab Sample ID: D71985-1	Date Received: 06/18/15
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	489	5.0	mg/l	1	06/23/15	TJ	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/23/15	TJ	SM 2320B-2011
Alkalinity, Total as CaCO ₃	489	5.0	mg/l	1	06/23/15	TJ	SM 2320B-2011
Nitrogen, Nitrate	0.25	0.050	mg/l	5	06/19/15 12:24	AS	EPA 300.0/SW846 9056
Nitrogen, Nitrite	0.038	0.0080	mg/l	2	06/19/15 11:14	AS	EPA 300.0/SW846 9056
Phosphate, Ortho ^a	< 0.10	0.10	mg/l	2	06/19/15 11:14	AS	EPA 300.0/SW846 9056
Phosphorus, Total	1.8	0.20	mg/l	20	06/30/15 08:00	TJ	HACH8190/SM4500P-B/E
Solids, Total Dissolved	577	10	mg/l	1	06/24/15	JF	SM 2540C-2011
Sulfate	26.3	1.0	mg/l	2	06/19/15 11:14	AS	EPA 300.0/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	06/17/15
Lab Sample ID:	D71985-2	Date Received:	06/18/15
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	CORCCOGJ: Knight Property Quarterly Sampling (011.1712)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA27594.D	1	06/23/15	KN	n/a	n/a	GTA1494
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	99%		60-140%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

4036 Youngfield St., Wheat Ridge, CO 80033; 303-425-6021; 303-425-6854

FED-EX Tracking #	Bottle Order Control #
Accutest Quote B58/2010-41	Accutest Job # D71985

Client / Reporting Information		Project Information		Requested Analyses												Matrix Codes			
Company Name Olsson Associates		Project Name / No. Knight Property (011.1712.100.100001)														DW - Drinking Water			
Project Contact Tim Dobransky		Bill to Olsson Associates														GW - Ground Water			
E-Mail tdobransky@olssonconsulting.com		Invoice Attn. Tim Dobransky														WW - Wastewater			
Address 826 21 1/2 Road		Address 826 21 1/2 Road														SO - Soil			
City CO	State CO	City CO	State CO													SL - Sludge			
Zip 81505		Zip 81505														OI - Oil			
Grand Junction		Grand Junction														LIQ - Liquid			
Phone No. 970-263-7800	Fax No.	Phone No. 970-263-7800	Fax No.													SOL - Other Solid			
Sampler's Name D. Dika		Client Purchase Order #																	
Accutest Sample #	Field ID / Point of Collection	Date	Time	Matrix	# of bottles	10	5	10	5	10	5	10	5	10	5	10	5	LAB USE ONLY	
	MW-1	6/17/15	1550	GW	14													01	
	TRIP BLANK																	02TB	
Turnaround Time (Business days)		Data Deliverable Information		Comments / Remarks															
<input checked="" type="checkbox"/> 10 Day STANDARD <input type="checkbox"/> 7 Day (per contract) <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> Other		Approved By/ Date: _____ Commercial "A" = Results Only Commercial "B" = Results & Standard QC		AMS FEDEX Account Number - 487721860 *Anions - NO2, NO3, PO4, SO4 **Metals - Fe, Mg, Mn															
Real time analytical data available via LabLink		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																	
Relinquished by: 1	Date Time: 6/17/15 10:45	Received By: Rifle Service Center	Date Time: 6/17/15 11:45	Relinquished By: 2	Date Time: 6/17/15 12:45	Received By: 3	Date Time: 6/17/15 13:45	Relinquished By: 4	Date Time: 6/17/15 14:45	Received By: 5	Date Time: 6/17/15 15:45	Relinquished By: 6	Date Time: 6/17/15 16:45	Received By: 7	Date Time: 6/17/15 17:45	Relinquished By: 8	Date Time: 6/17/15 18:45	Received By: 9	Date Time: 6/17/15 19:45
On Ice		Cooler Temp. 3.2																	

D71985: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D71985 **Client:** OLSSON ASSOCIATES **Project:** KNIGHT PROPERTY
Date / Time Received: 6/18/2015 2:45:00 PM **Delivery Method:** _____ **Airbill #'s:** hd/co
Cooler Temps (Initial/Adjusted): #1: (3.2/3.2):

Cooler Security
Y or N

- | | |
|--|---|
| 1. Custody Seals Present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | 3. COC Present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |
| 2. Custody Seals Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | 4. Smpl Dates/Time OK: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |

Cooler Temperature
Y or N

- | | |
|---|---|
| 1. Temp criteria achieved: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | 2. Cooler temp verification: <u>IR Gun;</u> |
| 3. Cooler media: <u>Ice (Bag)</u> | 4. No. Coolers: <u>1</u> |

Quality Control Preservation
Y or N N/A

- | | |
|---|--|
| 1. Trip Blank present / cooler: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A | 2. Trip Blank listed on COC: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A |
| 3. Samples preserved properly: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A | 4. VOCs headspace free: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A |

Comments

Sample Integrity - Documentation
Y or N

- | | |
|---|--|
| 1. Sample labels present on bottles: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | 2. Container labeling complete: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |
| 3. Sample container label / COC agree: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | |

Sample Integrity - Condition
Y or N

- | | |
|---|---|
| 1. Sample recvd within HT: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | 2. All containers accounted for: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |
| 3. Condition of sample: <u>Intact</u> | |

Sample Integrity - Instructions
Y or N N/A

- | | |
|---|--|
| 1. Analysis requested is clear: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | 2. Bottles received for unspecified tests: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N |
| 3. Sufficient volume recvd for analysis: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | 4. Compositing instructions clear: <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> N/A |
| 5. Filtering instructions clear: <input type="checkbox"/> Y <input type="checkbox"/> N | 5. Filtering instructions clear: <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> N/A |

GC Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D71985

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA1494-MB	GA27584.D	1	06/23/15	KN	n/a	n/a	GGA1494

The QC reported here applies to the following samples:

Method: SW846 8015B

D71985-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	87% 60-140%

Method Blank Summary

Page 1 of 1

Job Number: D71985

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1494-MB	TA27584.D	1	06/23/15	KN	n/a	n/a	GTA1494

The QC reported here applies to the following samples:

Method: SW846 8021B

D71985-1, D71985-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	98% 60-140%

Blank Spike Summary

Page 1 of 1

Job Number: D71985

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA1494-BS	GA27585.D	1	06/23/15	KN	n/a	n/a	GGA1494

The QC reported here applies to the following samples:

Method: SW846 8015B

D71985-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	2.35	107	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	60-140%

* = Outside of Control Limits.

Blank Spike Summary

Page 1 of 1

Job Number: D71985

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1494-BS	TA27585.D	1	06/23/15	KN	n/a	n/a	GTA1494

The QC reported here applies to the following samples:

Method: SW846 8021B

D71985-1, D71985-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	27.2	27.0	99	70-130
100-41-4	Ethylbenzene	45.6	43.9	96	70-130
108-88-3	Toluene	212	190	90	70-130
1330-20-7	Xylenes (total)	216	215	100	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	114%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D71985

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D71970-1MS	GA27587.D	1	06/23/15	KN	n/a	n/a	GGA1494
D71970-1MSD	GA27588.D	1	06/23/15	KN	n/a	n/a	GGA1494
D71970-1	GA27586.D	1	06/23/15	KN	n/a	n/a	GGA1494

The QC reported here applies to the following samples:

Method: SW846 8015B

D71985-1

CAS No.	Compound	D71970-1 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	2.28	104	2.2	2.25	102	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D71970-1	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	102%	91%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D71985

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D71930-23MS	TA27587.D	1	06/23/15	KN	n/a	n/a	GTA1494
D71930-23MSD	TA27588.D	1	06/23/15	KN	n/a	n/a	GTA1494
D71930-23	TA27586.D	1	06/23/15	KN	n/a	n/a	GTA1494

The QC reported here applies to the following samples:

Method: SW846 8021B

D71985-1, D71985-2

CAS No.	Compound	D71930-23 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	27.2	26.3	97	27.2	25.8	95	2	64-130/30
100-41-4	Ethylbenzene	ND	45.6	42.8	94	45.6	42.2	93	1	46-144/30
108-88-3	Toluene	ND	212	184	87	212	182	86	1	70-130/30
1330-20-7	Xylenes (total)	ND	216	210	97	216	207	96	1	59-143/30

CAS No.	Surrogate Recoveries	MS	MSD	D71930-23	Limits
120-82-1	1,2,4-Trichlorobenzene	113%	115%	103%	60-140%

* = Outside of Control Limits.

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D71985

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11937-MB	FI26517.D	1	06/23/15	GN	06/23/15	OP11937	GFI1317

The QC reported here applies to the following samples:

Method: SW846-8015B

D71985-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	45% 11-142%

Blank Spike Summary

Page 1 of 1

Job Number: D71985

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11937-BS	FI26519.D	1	06/23/15	GN	06/23/15	OP11937	GFI1317

The QC reported here applies to the following samples:

Method: SW846-8015B

D71985-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	2.47	49	22-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	67%	11-142%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D71985

Account: WILLCOP WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11937-MS	FI26521.D	1	06/23/15	GN	06/23/15	OP11937	GFI1317
OP11937-MSD	FI26523.D	1	06/23/15	GN	06/23/15	OP11937	GFI1317
D71930-8	FI26525.D	1	06/23/15	GN	06/23/15	OP11937	GFI1317

The QC reported here applies to the following samples:

Method: SW846-8015B

D71985-1

CAS No.	Compound	D71930-8 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	5	2.83	57	5	3.08	62	8	20-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D71930-8	Limits
84-15-1	o-Terphenyl	86%	88%	83%	11-142%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D71985
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/22/15

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	11	13		
Antimony	30	2.1	8.7		
Arsenic	25	3.8	12		
Barium	10	.2	.4		
Beryllium	10	.9	1.6		
Boron	50	.8	3.6		
Cadmium	10	.2	.8		
Calcium	400	2.4	10		
Chromium	10	.3	.7		
Cobalt	5.0	.5	1.2		
Copper	10	.8	3.8		
Iron	70	1.5	6.9	173	* (a)
Lead	50	2.1	4.9		
Lithium	5.0	.4	.7		
Magnesium	200	6.8	39	18.8	<200
Manganese	5.0	.5	.9	1.8	<5.0
Molybdenum	10	.4	3.6		
Nickel	30	.5	2.7		
Phosphorus	100	15	34		
Potassium	1000	99	71		
Selenium	50	7.1	10		
Silicon	50	4.7	8.4		
Silver	30	.3	.6		
Sodium	400	7.3	14		
Strontium	5.0	.01	.3		
Thallium	10	1.8	8		
Tin	50	12	12		
Titanium	10	.1	2.7		
Uranium	50	2.9	4.4		
Vanadium	10	.4	.6		
Zinc	30	.4	3.5		

Associated samples MP16248: D71985-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D71985
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/22/15

Metal	RL	IDL	MDL	MB raw	final
-------	----	-----	-----	-----------	-------

(anr) Analyte not requested

(a) All sample results >10x method blank concentration or <RL.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D71985

Account: WILLCOP - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248

Methods: SW846 6010C

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

06/22/15

Metal	D72016-1F Original MS	Spikelot ICPAL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium				
Cobalt				
Copper	anr			
Iron	443	5200	5000	95.1 75-125
Lead	anr			
Lithium				
Magnesium	2750	27600	25000	99.4 75-125
Manganese	19.5	528	500	101.7 75-125
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP16248: D71985-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D71985

Account: WILLCOF - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248

Methods: SW846 6010C

Matrix Type: AQUEOUS

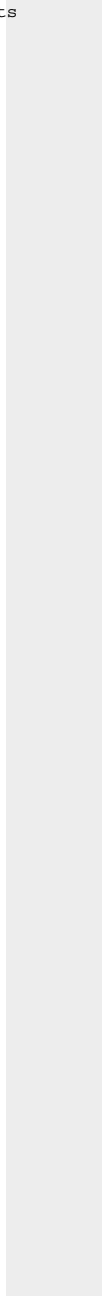
Units: ug/l

Prep Date:

06/22/15

Metal	D72016-1F Original MS	Spikelot ICPALL2	% Rec	QC Limits
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(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D71985

Account: WILLCOP - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248

Methods: SW846 6010C

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

06/22/15

Metal	D72016-1F Original MSD	Spikelot ICPALL2 % Rec		MSD RPD	QC Limit	
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium						
Cobalt						
Copper	anr					
Iron	443	5320	5000	97.5	2.3	20
Lead	anr					
Lithium						
Magnesium	2750	27800	25000	100.2	0.7	20
Manganese	19.5	535	500	103.1	1.3	20
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	anr					
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP16248: D71985-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D71985

Account: WILLCOF - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248

Methods: SW846 6010C

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

06/22/15

Metal	D72016-1F Original MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
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(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

7.1.2

7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D71985

Account: WILLCOP - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248

Methods: SW846 6010C

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

06/22/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium				
Cobalt				
Copper	anr			
Iron	5360	5000	107.2	80-120
Lead	anr			
Lithium				
Magnesium	25800	25000	103.2	80-120
Manganese	521	500	104.2	80-120
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP16248: D71985-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D71985

Account: WILLCOP - WPX Energy Rocky Mountain, LLC

Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248

Methods: SW846 6010C

Matrix Type: AQUEOUS

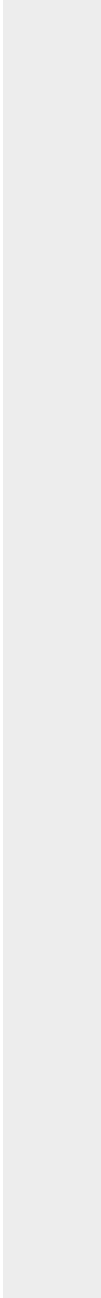
Units: ug/l

Prep Date:

06/22/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
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(anr) Analyte not requested



SERIAL DILUTION RESULTS SUMMARY

Login Number: D71985

Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/22/15

Metal	D72016-1F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium				
Cobalt				
Copper	anr			
Iron	443	428	3.4	0-10
Lead	anr			
Lithium				
Magnesium	2750	2860	4.2	0-10
Manganese	19.5	17.5	10.3 (a)	0-10
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP16248: D71985-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D71985
 Account: WILLCOP - WPX Energy Rocky Mountain, LLC
 Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

QC Batch ID: MP16248
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/22/15

	D72016-1F		QC
Metal	Original SDL 1:5	%DIF	Limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

7.1.4

7

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D71985
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN30471	5.0	0.0	mg/l	100	95.3	95.3	90-110%
Alkalinity, Carbonate	GN30472	5.0	0.0	mg/l	100	95.3	95.3	80-120%
Alkalinity, Total as CaCO3	GN30470	5.0	0.0	mg/l	100	95.3	95.3	90-110%
Bromide	GP15591/GN30425	0.050	0.0	mg/l	0.5	0.498	99.6	90-110%
Chloride	GP15591/GN30425	0.50	0.0	mg/l	5	4.94	98.8	90-110%
Nitrogen, Nitrate	GP15591/GN30425	0.010	0.0	mg/l	0.1	0.0999	99.9	90-110%
Nitrogen, Nitrite	GP15591/GN30425	0.0040	0.0	mg/l	0.05	0.0503	100.6	90-110%
Phosphate, Ortho	GP15591/GN30425	0.050	0.0	mg/l	0.5	0.516	103.2	90-110%
Phosphorus, Total	GP15656/GN30566	0.010	0.0	mg/l	0.38	0.36	95.3	80-120%
Solids, Total Dissolved	GN30480	10	5.0	mg/l	400	405	101.3	90-110%
Solids, Total Dissolved	GN30480	10	0.0	mg/l				
Sulfate	GP15591/GN30425	0.50	0.0	mg/l	5	4.93	98.6	90-110%

Associated Samples:

Batch GN30470: D71985-1
Batch GN30471: D71985-1
Batch GN30472: D71985-1
Batch GN30480: D71985-1
Batch GP15591: D71985-1
Batch GP15656: D71985-1
(*) Outside of QC limits

8.1

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D71985
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN30470	D71984-1	mg/l	75.9	76.1	0.2	0-20%
Phosphorus, Total	GP15656/GN30566	D72193-1	mg/l	0.047	0.048	2.1	0-20%
Solids, Total Dissolved	GN30480	D71970-1	mg/l	794	822	3.5	0-20%

Associated Samples:
Batch GN30470: D71985-1
Batch GN30480: D71985-1
Batch GP15656: D71985-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D71985
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO ₃	GN30470	D71984-1	mg/l	75.9	100	169	92.8	80-120%
Bromide	GP15591/GN30425	D72018-1	mg/l	0.0	0.5	0.51	102.0	80-120%
Chloride	GP15591/GN30425	D72018-1	mg/l	0.76	5	5.7	98.8	80-120%
Nitrogen, Nitrate	GP15591/GN30425	D72018-1	mg/l	0.033	0.1	0.13	97.0	80-120%
Nitrogen, Nitrite	GP15591/GN30425	D72018-1	mg/l	0.0	0.05	0.053	106.0	80-120%
Phosphate, Ortho	GP15591/GN30425	D72018-1	mg/l	0.0	0.5	0.56	112.0	80-120%
Phosphorus, Total	GP15656/GN30566	D72193-1	mg/l	0.047	0.40	0.50	113.0	80-120%
Sulfate	GP15591/GN30425	D72018-1	mg/l	2.5	5	7.6	102.0	80-120%

Associated Samples:

Batch GN30470: D71985-1

Batch GP15591: D71985-1

Batch GP15656: D71985-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D71985
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: CORCCOGJ: Knight Property Quarterly Sampling (011.1712)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO ₃	GN30470	D71984-1	mg/l	75.9	100	168	0.4	20%
Bromide	GP15591/GN30425	D72018-1	mg/l	0.0	0.5	0.51	0.0	20%
Chloride	GP15591/GN30425	D72018-1	mg/l	0.76	5	5.7	0.0	20%
Nitrogen, Nitrate	GP15591/GN30425	D72018-1	mg/l	0.033	0.1	0.13	0.0	20%
Nitrogen, Nitrite	GP15591/GN30425	D72018-1	mg/l	0.0	0.05	0.053	0.0	20%
Phosphate, Ortho	GP15591/GN30425	D72018-1	mg/l	0.0	0.5	0.55	1.8	20%
Phosphorus, Total	GP15656/GN30566	D72193-1	mg/l	0.047	0.40	0.50	0.0	20%
Sulfate	GP15591/GN30425	D72018-1	mg/l	2.5	5	7.5	1.3	20%

Associated Samples:

Batch GN30470: D71985-1

Batch GP15591: D71985-1

Batch GP15656: D71985-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

8.4

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