APPENDIX I

BASELINE GROUNDWATER QUALITY DATA
CORDEILLERAN COMPLIANCE SERVICES, INC.

Table I-1
Leon Lake Area
Baseline Groundwater Quality Data

Location	Section		11	11	26	11	26	11	3
	Township		13S	13S	12S	13S	12S	13S	13S
	Range		95W	95W	94W	95W	94W	95W	94W
	Qtr./Qtr.		SE/SW	SE/SW	NW/NE	NW/NW	NW/NW	NW/SE	NW/NE
	Latitude		38°55' 53"	38°55' 53"	38°59' 4"	38°56' 40.3"	38°59' 3.5"	38°56' 13.3"	38°57' 23.1"
	Longitude		107°58' 54"	107°58' 54"	107°51'44.8"	107°59'12.5"	107°52' 5.7"	107°58'36.0"	107°53.1' 3.9"
Sample	Sample ID #		4-26-02-L-1	4-26-02-L-2	4-26-02-C-1	050702-M	050702-H	051602-F-1	060402-L-1
	Well ID		SP-DW1	SP-DW2	SP-DW3	SP-DW4	SP-DW5	SP-DW6	SP-DW7
	Sample Date		4/26/2002	4/26/2002	4/26/2002	5/7/2002	5/7/2002	5/16/2002	6/4/2002
	Sample Source		well (211' total depth)	well (211' total depth)	well (247' total depth)	well (150' total depth)	well (157' total depth)	well (132' total depth)	well (150' total depth)
	Water Well Flow Rate (gpm)						16.7		
Water Sample Analytical Results		**Standards**							
	Benzene (µg/l)	500 [A]	<1	<1	<1	<1	<1	<1	<2
	Toluene (µg/l)	1,000 [A]	<2 (1)	<2	<2	<2	<2	<2	<2
	Ethylbenzene (µg/l)	680 [A]	<2	<2	<2	<2	<2	<2	<3
	m,p-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<5	<2
	o-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<5	<2
	MTBE (µg/l)	NA	<4	<8	<8	<8	<8	<4	<4
	Methane (mg/l)	NA	0.0017	0.0021	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
	TDS (mg/l)	400[B]	395	397	556	290	359	346	427
	Nitrate + Nitrite (mg/l)	10.0[C]	*	*	*	0.15	0.27	*	0.84
	Nitrate (mg/l)	10.0[C]	0.16	<0.01	1.29	*	*	0.27	*
	Nitrite (mg/l)	1.0[C]	<0.01	<0.01	<0.01	*	*	0.00	*
	Ammonia-N (mg/l)	NA	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	absent	absent	absent	absent	absent	absent	absent
	Iron Bacteria (approx. CFU/ml)	NA	absent	100	50	5,000	100	100,000	100
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cations	Aluminum (mg/l)	NA	NT(3)	0.13	0.0279	0.04	0.028	<0.025	0.028
	Arsenic (mg/l)	0.05[C]	NT(3)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Boron (mg.l)	NA	NT(3)	0.446	<0.3	<0.3	<0.3	<0.3	<0.3
	Barium (mg.l)	2.0[C]	NT(3)	1.08	0.213	0.12	0.17	0.43	0.19
	Calcium (mg/l)	NA	34	29.6	112	61	77	75	93
	Copper (mg/l)	1[D]	NT(3)	0.313	0.0627	<0.025	0.57	<0.025	0.27
	Iron (mg/l)	0.3[D]	0.23 B	0.247 B	<0.2	0.32 B	0.44 B	<0.2	0.52
	Potassium (mg/l)	NA	3.8	3.76	8.58	2.4	4	6.8	6.5
	Magnesium (mg/l)	NA	27	27.4	37.6	21	27	27	32
	Manganese (mg/l)	0.05[D]	0.025	0.0247	<0.01	<0.01	0.015	<0.01	<0.01
	Sodium (mg/l)	NA	100	99.8	30	15	14	22	22
	Nickel (mg/l)	0.1[C]	NT(3)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
	Lead (mg/l)	0.05[C]	NT(3)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Selenium (mg/l)	0.05[C]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0066
	Strontium (mg/l)	NA	NT(3)	1.06	0.98	0.36	0.51	0.52	0.58
	Zinc (mg/l)	5[D]	NT(3)	<0.01	0.0652	<0.01	0.074	0.033	<0.01
Anions	Bromide (mg/l)	NA	NT(3)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Chloride (mg/l)	250[D]	4	5.9	27.1	1.3	2.2	2.3	9.6
	Fluoride (mg/l)	4.0[D]	1.4	1.4	<0.40	<0.40	>0.40	<0.40	0.45
	Sulfate (mg/l)	250[D]	20.7	20.4	44.9	8.1	7.1	8.7	31
	Bicarbonate (mg/l CaCO3)	NA	337	339	391	236	306	NT (3)	325
	Carbonate (mg/l CaCO3)	NA	**	**	**	**	**	NT (3)	**
	Alkalinity (mg/l $CaCO_3$)	NA	337	339	391	236	306	NT (3)	325
WQ Parameters	pH	6.5-8.5[D]	7.43f	7.51f	7.55f	7.7f	7.42f	7.3f	7.1f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	543	571	706	393	475	465	574
	Conductivity (field) (mS/cm)	NA	NT (2)	NT (2)	0.630	0.340	0.421	0.444	0.540
	Turbidity (NTU)	NA	52.0	15.0	12.0	0.8	4.3	1.4	NT (4)
	Dissolved Oxygen (mg/l)	NA	9.78	9.51	10.5	7.11	16.2	1.54	1.85
	Temperature (°C)	NA	14.3	14.6	9.7	13.3	16.2	13.8	16
	Salinity (%)	NA	0.00	0.00	0.02	0.01	0.00	0.00	0.00

Table I-1 (Continued)

Location	Section		26	26	12		29	2	1
	Township		12S	12S	13S	duplicate	12S	13S	12S
	Range		94W	94W	95W	of 071702-G-1	94W	94W	94W
	Qtr./Qtr.		SW/SW	SW/NW	SW/NE		NE/NE	SW/SW	SW/NW
	Latitude		38°58' 30.7"	38°58' 49.2"	38°56' 17.1"		38°53' 58.8"	38°56' 47.4"	39°2' 27.2"
	Longitude		107°52' 14.2	107°52' 11.4"	107°57' 35.6"		107°55' 3.9"	107°52' 33.2"	107°51' 11.2"
Sample	Sample ID #		060402-L-3	060402-C1	071702-G-1	071702-G-2	070302-H-2	060402-L-2	061902-SPS-1
	Well ID		SP-DW8	SP-DW9	SP-DW10	SP-DW11	SP-PDS1	SP-SG2	SP-SG3
	Sample Date		6/4/2002	6/4/2002	7/17/2002	7/17/2002	7/3/2002	6/4/2002	6/19/2002
	Sample Source		well (328' total depth)	well (190' total depth)	well (150' total depth)	well (150' total depth)	pond (spring fed)	spring	spring
	Water Well Flow Rate (gpm)	**Standards**		11.5					
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1	<1	<1	<1	<1	<1	<1
	Toluene (µg/l)	1,000 [A]	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene (µg/l)	680 [A]	<2	<2	<2	<2	<2	<2	<2
	m,p-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<2	<2
	o-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<2	<2
	MTBE (µg/l)	NA	<8	<8	<8	<8	<8	<8	<8
	Methane (mg/l)	NA	<0.0008	<0.0008	1.2	0.88	0.19	<0.0008	0.0034
	TDS (mg/l)	400[B]	542	224	345	339	278	404	62
	Nitrate + Nitrite (mg/l)	10.0[C]	0.87	1.88	<0.076	<0.076	0.57 (9)	0.46	<0.25
	Nitrate (mg/l)	10.0[C]	*	*	*	*	*	*	*
	Nitrite (mg/l)	1.0[C]	*	*	*	*	*	*	*
	Ammonia-N (mg/l)	NA	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	absent	absent	absent	absent	100,000	100,000	1,000
	Iron Bacteria (approx. CFU/ml)	NA	5,000	100,000	100	100	100	100	100
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cations	Aluminun (mg/l)	NA	0.043	0.031	NT(3)	NT(3)	NT(3)	1.3	NT(3)
	Arsenic (mg/l)	0.05[C]	<0.01	<0.01	NT(3)	NT(3)	NT(3)	<0.01	NT(3)
	Boron (mg.l)	NA	<0.3	<0.3	NT(3)	NT(3)	NT(3)	<0.3	NT(3)
	Barium (mg.l)	2.0[C]	0.34	0.091	NT(3)	NT(3)	NT(3)	0.21	NT(3)
	Calcium (mg/l)	NA	120	25	18	18	36	89	10
	Copper (mg/l)	1[D]	0.07	<0.025	NT(3)	NT(3)	NT(3)	<0.025	NT(3)
	Iron (mg/l)	0.3[D]	0.31	0.24	1 B	1 B	1.6 B	2.7	0.87 B
	Potassium (mg/l)	NA	8.6	5.4	4.1	4.4	5.8	3.1	1.8
	Magnesium (mg/l)	NA	43	10	8.5	9.2	33	30	2.6
	Manganese (mg/l)	0.05[D]	<0.01	0.071	0.022	0.022	0.39	1.3	0.021
	Sodium (mg/l)	NA	40	49	95	110	15	14	1.8
	Nickel (mg/l)	0.1[C]	<0.06	<0.06	NT(3)	NT(3)	NT(3)	<0.06	NT(3)
	Lead (mg/l)	0.05[C]	<0.01	<0.01	NT(3)	NT(3)	NT(3)	<0.01	NT(3)
	Selenium (mg/l)	0.05[C]	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Strontium (mg/l)	NA	0.83	0.23	NT(3)	NT(3)	NT(3)	0.55	NT(3)
	Zinc (mg/l)	5[D]	<0.01	0.016	NT(3)	NT(3)	NT(3)	0.011	NT(3)
Anions	Bromide (mg/l)	NA	<0.05	<0.05	<0.05	NT(3)	NT(3)	NT(3)	NT(3)
	Chloride (mg/l)	250[D]	7.3	3.9	8.1	8.1	2.3	4.4	<0.5
	Fluoride (mg/l)	4.0[D]	0.41	1.1	0.56	0.56	0.70	0.85	<0.40
	Sulfate (mg/l)	250[D]	19.9	5.1	0.83	0.57	4.6	7.8	1.6
	Bicarbonate (mg/l CaCO3)	NA	369	180	292	298	251	341	36.6
	Carbonate (mg/l CaCO3)	NA	**	**	**	**	**	**	**
	Alkalinity (mg/l $CaCO_3$)	NA	369	180	292	298	251	341	36.6
WQ Parameters	pH	6.5-8.5[D]	7.5f	7.3f	8.4f	NT (6)	7.57f	7.51f	7.31f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	712	324	505	507	363	529	51.1
	Conductivity (field) (mS/cm)	NA	0.710	NT (2)	0.580	NT (6)	0.672	NT (2)	0.800
	Turbidity (NTU)	NA	NT (4)	0.2	7.2	NT (6)	71.5	16.1	10.6
	Dissolved Oxygen (mg/l)	NA	2.2	2.6	3.37	NT (6)	6.2	9.51	7.61
	Temperature (°C)	NA	16	12	20.4	NT (6)	15.82	14.6	20.55
	Salinity (%)	NA	0.00	0.00	NT (5)	NT (6)	NT (5)	0.00	NT (5)

Table I-1 (Continued)

Location	Section		4	3	4	4	GMNF	GMNF	GMNF
	Township		12S	12S	12S	12S	11S	11S	11S
	Range		93W	93W	93W	93W	93W	93W	93W
	Qtr./Qtr.		SE/NE	NE/SW	SW/NE	SW/NE			
	Latitude		39°2' 25.8"	39°2' 13.5"	39°2' 22.2"	39°2' 30.7"	39°2' 56.2"	39°2' 48.1"	39°3' 31.3"
	Longitude		107°47' .03"	107°46' 27.7	107°47' 15.3"	107°47' 10.33"	107°47' 17.0"	107°47' 0.4"	107°50' 17.7"
Sample	Sample ID #		062402-A8	062402-A7	062402-A5	062402-A4	062402-A6	062402-A1	062602-456SPR
	Well ID		SP-SG4	SP-SG5	SP-SG6	SP-SG7	SP-SG8	SP-SG9	SP-SG25
	Sample Date		6/24/2002	6/24/2002	6/24/2002	6/24/2002	6/24/2002	6/24/2002	6/26/2002
	Sample Source		spring	spring	spring	spring	spring	spring	springs
	Water Well Flow Rate (gpm)	**Standards**							
Water Sample Analytical Results	Benzene (µg/l)	500 ^	<1	<1	<1	<1	<1	<1	<1
	Toluene (µg/l)	1,000 ^	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene (µg/l)	680 ^	<2	<2	<2	<2	<2	<2	<2
	m,p-Xylene (µg/l)	10,000 ^	<2	<2	<2	<2	<2	<2	<2
	o-Xylene (µg/l)	10,000 ^	<2	<2	<2	<2	<2	<2	<2
	MTBE (µg/l)	NA	<8	<8	<8	<8	<8	<8	<8
	Methane (mg/l)	NA	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
	TDS (mg/l)	400[B]	46	57	57	62	50	46	77
	Nitrate + Nitrite (mg/l)	10.0[C]	0.26	<0.76	0.31	0.26	0.37	0.39	<0.076 (9)
	Nitrate (mg/l)	10.0[C]	*	*	*	*	*	*	*
	Nitrite (mg/l)	1.0[C]	*	*	*	*	*	*	*
	Ammonia-N (mg/l)	NA	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	absent	10,000	absent	absent	absent	absent	10,000
	Iron Bacteria (approx. CFU/ml)	NA	100	100	absent	absent	100	100	5,000
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5
Cations	Aluminun (mg/l)	NA	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
	Arsenic (mg/l)	0.05[C]	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
	Boron (mg.l)	NA	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
	Barium (mg.l)	2.0[C]	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
	Calcium (mg/l)	NA	4.3	6.8	5.6	6.8	5.1	4.8	12
	Copper (mg/l)	1[D]	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
	Iron (mg/l)	0.3[D]	<0.2	0.36 B	<0.2	0.2 B	0.81 B	<0.2	<0.2
	Potassium (mg/l)	NA	1.3	1.4	1.6	1.5	1.5	1.4	1.6
	Magnesium (mg/l)	NA	1.5	2	2.1	2.1	1.7	1.5	3
	Manganese (mg/l)	0.05[D]	<0.01	0.012	<0.01	<0.01	0.03	<0.01	<0.01
	Sodium (mg/l)	NA	1.5	2	2.1	1.7	1.3	1.4	2.2
	Nickel (mg/l)	0.1[C]	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
	Lead (mg/l)	0.05[C]	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
	Selenium (mg/l)	0.05[C]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Strontium (mg/l)	NA	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
	Zinc (mg/l)	5[D]	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
Anions	Bromide (mg/l)	NA	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)	NT (3)
	Chloride (mg/l)	250[D]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Fluoride (mg/l)	4.0[D]	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
	Sulfate (mg/l)	250[D]	1.3	1.9	2.3	1.3	1.3	1.2	1.4
	Bicarbonate (mg/l CaCO3)	NA	17.4	27.4	24.2	27.7	19.9	19.2	46.5
	Carbonate (mg/l CaCO3)	NA	**	**	**	**	**	**	**
	Alkalinity (mg/l $CaCO_3$)	NA	17.4	27.4	24.2	27.7	19.9	19.2	46.5
WQ Parameters	pH	6.5-8.5[D]	7.00f	6.60f	6.45f	6.85f	7.06f	7.31f	7.90f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	28.9	42.1	41.3	43.8	32.6	31.4	72.2
	Conductivity (field) (mS/cm)	NA	0.030	NT (2)	0.034	0.044	0.030	0.031	0.089
	Turbidity (NTU)	NA	1.8	6.2	1.1	56.0	48.0	250.0	0.7
	Dissolved Oxygen (mg/l)	NA	8.18	0.7	3.35	2.1	2.2	5.74	13.3
	Temperature (°C)	NA	4	13	3.9	5.7	4.1	3.4	8.76
	Salinity (%)	NA	0.00	0.00	NT (5)	0.00	0.00	0.00	NT (5)

Table I-1 (Continued)

Location	Section		GMNF	GMNF	12	22	29	16	15
	Township		11S	11S	13S	12S	12S	12S	12S
	Range		93W	93W	94W	95W	94W	95W	95W
	Qtr./Qtr.				SE/NW	SE/SE	NE/NE	SE/NE	SW/SW
	Latitude		39°3' 20.1"	39°2' 54.2"	38°56' 22.5"	38°59' 44.1"	38°53' 55.6	39°0' 24.5"	39°0' 19.9"
	Longitude		107°50' 4.3"	107°50' 42.5"	107°57' 44.2"	108°0' 2.7"	107°55' 9.7"	108°0' 31.5"	107°59' 50.8"
Sample	Sample ID #		062602-KSPR	062602-SPR3	070202-S-1	070202-CDC	070302-H-1	072402-BSpr	072402-PSpr
	Well ID		SP-SG10	SP-SG11	SP-SG12	SP-SG26	SP-SG13	SP-SG16	SP-SG17
	Sample Date		6/26/2002	6/26/2002	7/2/2002	7/2/2002	7/3/2002	7/24/2002	7/24/2002
	Sample Source		spring	spring	spring	springs	spring	spring	spring
	Water Well Flow Rate (gpm)	**Standards**							
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1	<1	<1	<1	<1	<1	<1
	Toluene (µg/l)	1,000 [A]	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene (µg/l)	680 [A]	<2	<2	<2	<2	<2	<2	<2
	m,p-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<2	<2
	o-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<2	<2
	MTBE (µg/l)	NA	<8	<8	<8	<8	<8	<8	<8
	Methane (mg/l)	NA	<0.0008	<0.0008	<0.0008	0.0096	0.0078	<0.0008	<0.0008
	TDS (mg/l)	400[B]	46	74	368	84	394	93.0	108
	Nitrate + Nitrite (mg/l)	10.0[C]	0.084 (9)	0.17 (9)	0.27	0.27	0.28 (9)	0.22	0.24
	Nitrate (mg/l)	10.0[C]	*	*	*	*	*	*	*
	Nitrite (mg/l)	1.0[C]	*	*	*	*	*	*	*
	Ammonia-N (mg/l)	NA	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	10,000	absent	100	absent	100,000	absent	absent
	Iron Bacteria (approx. CFU/ml)	NA	100	absent	100	100	100,000	absent	100
	Hydrogen Sulfide (mg/l)	NA	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Cations	Aluminun (mg/l)	NA	NT (3)	NT (3)	<0.025	NT (3)	NT (3)	NT (3)	NT (3)
	Arsenic (mg/l)	0.05[C]	NT (3)	NT (3)	<0.01	NT (3)	NT (3)	NT (3)	NT (3)
	Boron (mg.l)	NA	NT (3)	NT (3)	<0.3	NT (3)	NT (3)	NT (3)	NT (3)
	Barium (mg.l)	2.0[C]	NT (3)	NT (3)	0.22	NT (3)	NT (3)	NT (3)	NT (3)
	Calcium (mg/l)	NA	7.8	12	65	14	77	13	17
	Copper (mg/l)	1[D]	NT (3)	NT (3)	0.12	NT (3)	NT (3)	NT (3)	NT (3)
	Iron (mg/l)	0.3[D]	0.29 B	<0.2	<0.2	0.21 B	0.35 B	0.29 B	0.32 B
	Potassium (mg/l)	NA	1.7	1.7	5.3	1.5	6	2.3	2.2
	Magnesium (mg/l)	NA	2.2	2.4	39	4.8	34	6	7.4
	Manganese (mg/l)	0.05[D]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Sodium (mg/l)	NA	1.6	2	17	2.9	16	2.5	3.2
	Nickel (mg/l)	0.1[C]	NT (3)	NT (3)	<0.06	NT (3)	NT (3)	NT (3)	NT (3)
	Lead (mg/l)	0.05[C]	NT (3)	NT (3)	<0.01	NT (3)	NT (3)	NT (3)	NT (3)
	Selenium (mg/l)	0.05[C]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Strontium (mg/l)	NA	NT (3)	NT (3)	0.56	NT (3)	NT (3)	NT (3)	NT (3)
	Zinc (mg/l)	5[D]	NT (3)	NT (3)	0.018	NT(3)	NT(3)	NT(3)	NT(3)
Anions	Bromide (mg/l)	NA	NT (3)	NT (3)	<0.05	NT (3)	NT (3)	NT (3)	NT (3)
	Chloride (mg/l)	250[D]	<0.5	<0.5	5.3	<0.5	3.4	<0.5	<0.5
	Fluoride (mg/l)	4.0[D]	<0.40	<0.40	<0.40	<0.40	0.68	<0.40	<0.40
	Sulfate (mg/l)	250[D]	1.2	1.8	21.2	1.5	13.1	1.7	1.4
	Bicarbonate (mg/l CaCO3)	NA	30	43.2	324	56.3	351	60.2	76.5
	Carbonate (mg/l CaCO3)	NA	**	**	**	**	**	**	**
	Alkalinity (mg/l $CaCO_3$)	NA	30	43.2	324	56.3	351	60.2	76.5
WQ Parameters	pH	6.5-8.5[D]	7.83f	7.55f	7.39f	7.02f	7.50f	7.40f	7.56f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	43.3	67.2	499	86.3	524	105	131
	Conductivity (field) (mS/cm)	NA	0.065	0.091	0.052	0.130	0.692	0.131	0.060
	Turbidity (NTU)	NA	1.9	16.6	0.5	0.2	7.7	16.6	3.4
	Dissolved Oxygen (mg/l)	NA	8.9	14.2	8.6	10.8	6.11	9.22	127
	Temperature (°C)	NA	15.2	3.8	19.05	6.18	16.6	6.54	7.44
	Salinity (%)	NA	NT (5)	NT (5)	NT (5)	NT (5)	NT (5)	NT (5)	NT (5)

Table I-1 (Continued)

Location	Section		15	10	10	10	3	3	3
	Township		12S	12S	12S	12S	12S	12S	12S
	Range		95W	95W	95W	95W	95W	95W	95W
	Qtr./Qtr.		SW/NW	SW/SE	NE/NE	NE/NE	SE/SW	NE/SW	NE/SW
	Latitude		39°0' 41.4"	39°1' 1.8"	39°1' 37.4"	39°1' 37.4"	39°1' 54.1	39°2' 5.3"	39° 2' 6.1"
	Longitude		107°59' 50.7"	107°59' 38.4"	108°0' 2.9"	108°0' 2.9"	107°59' 45.7"	107°59' 39.3"	107° 59' 36.6"
Sample	Sample ID #		072402-NYSpr	072402-KSpr	072402-TSpr-1	072402-TSpr-2	072402-DSpr	072402-STSpr-1	072402-STSpr-2
	Well ID		SP-SG18	SP-SG19	SP-SG20	SP-SG21	SP-SG22	SP-SG23	SP-SG24
	Sample Date		7/24/2002	7/24/2002	7/24/2002	7/24/2002	7/24/2002	7/24/2002	7/24/2002
	Sample Source		spring	spring	spring	spring	spring	spring	spring
	Water Well Flow rate (gpm)	**Standards**				duplicate sample			
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1	<1	<1	<1	<1	<1	<1
	Toluene (µg/l)	1,000 [A]	<2	<2	<2	<2	<2	<2	<2
	Ethyl benzene (µg/l)	680 [A]	<2	<2	<2	<2	<2	<2	<2
	m,p-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<2	<2
	o-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<2	<2
	MTBE (µg/l)	NA	<8	<8	<8	<8	<8	<8	<8
	Methane (mg/l)	NA	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
	TDS (mg/l)	400[B]	75.0	115	68.0	68.0	38.0	37.0	37.0
	Nitrate + Nitrite (mg/l)	10.0[C]	0.29	0.18	0.19	0.19	0.22	0.22	0.2
	Nitrate (mg/l)	10.0[C]	*	*	*	*	*	*	*
	Nitrite (mg/l)	1.0[C]	*	*	*	*	*	*	*
	Ammonia-N (mg/l)	NA	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	absent	absent	absent	absent	absent	absent	absent
	Iron Bacteria (approx. CFU/ml)	NA	absent	absent	absent	100	100	100	100
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cations	Aluminun (mg/l)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Arsenic (mg/l)	0.05[C]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Boron (mg.l)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Barium (mg.l)	2.0[C]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Calcium (mg/l)	NA	13	19	12	12	7.4	7.6	7.4
	Copper (mg/l)	1[D]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Iron (mg/l)	0.3[D]	0.37 B	0.34 B	0.38 B	0.27 B	0.35 B	0.44 B	0.37 B
	Potassium (mg/l)	NA	2	3	2.4	2.5	2.2	2.3	2.2
	Magnesium (mg/l)	NA	3.7	9.2	2.7	2.6	2.1	2.1	2
	Manganese (mg/l)	0.05[D]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014
	Sodium (mg/l)	NA	2.1	3.7	1.7	1.8	1.4	1.5	1.3
	Nickel (mg/l)	0.1[C]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Lead (mg/l)	0.05[C]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Selenium (mg/l)	0.05[C]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Strontium (mg/l)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Zinc (mg/l)	5[D]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
Anions	Bromide (mg/l)		NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Chloride (mg/l)	250[D]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Fluoride (mg/l)	4.0[D]	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
	Sulfate (mg/l)	250[D]	1.9	1.5	1.6	1.5	1.3	1.3	1.3
	Bicarbonate (mg/l CaCO3)	NA	47.7	90.0	44.8	44.0	29.7	29.8	29.6
	Carbonate (mg/l CaCO3)	NA	**	**	**	**	**	**	**
	Alkalinity (mg/l $CaCO_3$)	NA	47.7	90.0	44.8	44.0	29.7	29.8	29.6
WQ Parameters	pH	6.5-8.5[D]	7.67f	7.88f	8.26f	NT (6)	7.58f	7.51f	7.74f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	82.7	157	77.2	77.1	51.7	52.6	53.1
	Conductivity (field) (mS/cm)	NA	0.104	0.180	0.930	NT(6)	0.640	0.064	0.064
	Turbidity (NTU)	NA	3.4	3.4	5.2	NT(6)	5.1	10.3	3.2
	Dissolved Oxygen (mg/l)	NA	10.04	8.79	11.09	NT(6)	8.21	11.30	9.30
	Temperature (°C)	NA	4.63	5.26	4.8	NT(6)	6.27	7.22	8.96
	Salinity (%)	NA	NT (5)	NT (5)	NT (5)	NT (6)	NT (5)	NT (5)	NT (6)

Table I-1 (Continued)

Location	Section		10	10	10	9	9	13	
	Township		12S	12S	12S	12S	12S	13S	
	Range		95W	95W	95W	95W	95W	95W	
	Qtr./Qtr.		NW/SW	NW/SW	NW/SW	SE/SW	NE/NE	NE/NE	
	Latitude		39°1'17.6"	39°1'18.4"	39°1'22"	39°1'14.1"	39°1'39.2"	38°55' 44.6"	
	Longitude		108°0'13.2"	108°0'12.6"	108°0'10.7"	108°0'57.5"	108°0'28.1"	107°57'27.8"	
Sample	Sample ID #		100202-FR-1	100202-FR-2	100202-P Spr	100202-MH Spr	1100202-LJ Spr	051602-F-2	
	Well ID		SP-SG27	SP-SG28	SP-SG29	SP-SG30	SP-SG31	SP-CD1	
	Sample Date		10/2/2002	10/2/2002	10/2/2002	10/2/2002	10/2/2002	5/16/2002	
	Sample Source		Spring	Spring	Spring	Spring	Spring	mine drainage	
	Water Well Flow rate (gpm)	**Standards**							
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1	<1	<1	<1	<1	<1	
	Toluene (µg/l)	1,000 [A]	<2	<2	<2	<2	<2	<2	
	Ethyl benzene (µg/l)	680 [A]	<2	<2	<2	<2	<2	<2	
	m,p-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<2	
	o-Xylene (µg/l)	10,000 [A]	<2	<2	<2	<2	<2	<5	
	MTBE (µg/l)	NA	<8	<8	<8	<8	<8	<4	
	Methane (mg/l)	NA	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	0.093	
	TDS (mg/l)	400[B]	86	79	86	71	94	520	
	Nitrate + Nitrite (mg/l)	10.0[C]	*	*	*	*	*	NT (11)	
	Nitrate (mg/l)	10.0[C]	0.83	0.95	0.65	1	0.64	NT (11)	
	Nitrite (mg/l)	1.0[C]	<0.25	<0.25	<0.25	<0.25	<0.25	NT (11)	
	Ammonia-N (mg/l)	NA	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	absent	absent	absent	absent	absent	100,000	
	Iron Bacteria (approx. CFU/ml)	NA	100	100	100	100	100	absent	
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Cations	Aluminun (mg/l)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	<0.025	
	Arsenic (mg/l)	0.05[C]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	<0.01	
	Boron (mg.l)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	0.49	
	Barium (mg.l)	2.0[C]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	0.88	
	Calcium (mg/l)	NA	15	15	17	13	16	67	
	Copper (mg/l)	1[D]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	<0.025	
	Iron (mg/l)	0.3[D]	<0.20	0.32	0.2	<0.20	<0.20	<0.2	
	Potassium (mg/l)	NA	2.1	2.2	2.3	1.9	2.2	5.3	
	Magnesium (mg/l)	NA	3.7	3.7	3.6	2.3	3.5	45	
	Manganese (mg/l)	0.05[D]	<0.01	0.013	<0.01	<0.01	<0.01	0.059	
	Sodium (mg/l)	NA	2.4	2.4	2.5	1.9	2.4	89	
	Nickel (mg/l)	0.1[C]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	<0.06	
	Lead (mg/l)	0.05[C]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	<0.01	
	Selenium (mg/l)	0.05[C]	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
	Strontium (mg/l)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	0.81	
	Zinc (mg/l)	5[D]	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	<0.01	
Anions	Bromide (mg/l)		NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	<0.05	
	Chloride (mg/l)	250[D]	<0.50	<0.50	<0.50	<0.50	<0.50	6.4	
	Fluoride (mg/l)	4.0[D]	<0.40	<0.40	<0.40	<0.40	<0.40	1.5	
	Sulfate (mg/l)	250[D]	1.7	7.3	1.4	1.8	1.4	62.8	
	Bicarbonate (mg/l CaCO3)	NA	57.9	43.7	57.8	42.8	58	NT (3)	
	Carbonate (mg/l CaCO3)	NA	**	**	**	**	**	NT (3)	
	Alkalinity (mg/l $CaCO_3$)	NA	57.9	43.7	57.8	42.8	58	NT (3)	
WQ Parameters	pH	6.5-8.5[D]	8.66f	7.99f	7.67f	8.40f	NT (24)	7.74f	
	Specific Conductance (µmho's/cm @ 25 °C)	NA	95.8	94.8	104	77.6	102	711	
	Conductivity (field) (mS/cm)	NA	0.121	0.115	0.101	0.097	NT (24)	NT (2)	
	Turbidity (NTU)	NA	0.0	0.0	0.0	0.0	NT (24)	38.9	
	Dissolved Oxygen (mg/l)	NA	17.01	11.35	32.87	32.87	NT (24)	1.43	
	Temperature (°C)	NA	4.60	5.31	5.07	3.18	NT (24)	15.1	
	Salinity (%)	NA	NT (6)	NT (6)	NT (6)	NT (6)	NT (5)	0.00	

Table I-1 (Continued)

Location	Section		13	13	1	11	14	14
	Township		12S	12S	12S	12S	12S	12S
	Range		94W	94W	94W	94W	94W	94W
	Qtr./Qtr.		NE/NE	SE/SW	SW/NW	NESE	NWNE	NWNE
	Latitude		39°00.767'	39°00' 11.6"	39°2' 27.2"	N 39° 01.396'	N 39° 00.780'	N 39° 00.837'
	Longitude		107°50.401'	107°50' 50.6"	107°51' 11.2"	W 107° 51.367'	W 107° 51.592'	W 107° 51.635'
Sample	Sample ID #		101602-LL-UP3	050802-SPS-2	061902-SPS-1	100102-Spr	101002-LL-SPR	101002-LL-SPR2
	Well ID		LL-PDS1	SP-SG1	SP-SG3	LL-SG2	LL-SG1	LL-SG3
	Sample Date		10/16/2002	5/8/2002	6/19/2002	10/1/2002	10/10/2002	10/10/2002
	Sample Source		pond (spring fed)	spring	spring	spring	spring	spring
	Flow Rate (gpm)	**Standards**					0.7	~0.4
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Toluene (µg/l)	1,000 [A]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	Ethylbenzene (µg/l)	680 [A]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	m,p-Xylene (µg/l)	10,000 [A]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	o-Xylene (µg/l)	10,000 [A]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	MTBE (µg/l)	NA	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
	Methane (mg/l)	NA	0.075	<0.0008	0.0034	0.0053	0.026	0.0011
	TDS (mg/l)	400[B]	240	97	62	108	120	107
	Nitrates + Nitrites (mg/l)	10.0[C]	*	0.14	<0.25	*	*	*
	Nitrate (mg/l)	10.0[C]	<0.25	*	*	<0.25	0.05	0.20
	Nitrite (mg/l)	1.0[C]	<0.25	*	*	<0.25	0.00	0.00
	Ammonia-N (mg/l)	NA	<0.80	0.61	<0.80	<0.80	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	10,000	10,000	1,000	10,000	10,000	100,000
	Iron Bacteria (approx. CFU/ml)	NA	100	100	100	5,000	100	5,000
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cations	Calcium (mg/l)	NA	17	19	10	23	16	17
	Iron (mg/l)	0.3[D]	4.5B	0.37	0.87B	19	0.60	2.5
	Potassium (mg/l)	NA	8.5	2.5	1.8	4.6	2.7	3.2
	Magnesium (mg/l)	NA	4.1	7	2.6	8.3	6.9	6.5
	Manganese (mg/l)	0.05[D]	0.19	<0.01	0.021	1.9	0.031	0.065
	Sodium (mg/l)	NA	2.1	29.0	1.8	3.7	4.0	3.8
	Selenium (mg/l)	0.05[C]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anions	Chloride (mg/l)	250[D]	7.0	<0.5	<0.5	1.7	0.72	0.62
	Fluoride (mg/l)	4.0[D]	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
	Sulfate (mg/l)	250[D]	6.8	3.2	1.6	2.5	2.3	2.7
	Bicarbonate (mg/l CaCO3)	NA	49.1	73.8	36.6	57.1	72.6	59.2
	Carbonate (mg/l CaCO3)	NA	**	**	**	**	**	**
	Alkalinity (mg/l CaCO3)	NA	49.1	73.8	36.6	57.1	72.6	59.2
WQ Parameters	pH	6.5-8.5 [D]	5.85f	6.94f	7.31f	7.37f	7.08f	7.58f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	118	113	51.1	101	126	107
	Conductivity (field) (mS/cm)	NA	0.163	NT (2)	0.080	0.122	0.160	0.133
	Turbidity (NTU)	NA	30.2	2.64	10.6	60.7	0.0	14.0
	Dissolved Oxygen (mg/l)	NA	3.14	9.46	7.61	51.8	5.91	10.25
	Temperature (°C)	NA	6.81	10.2	20.55	9.91	9.96	12.65
	Salinity (%)	NA	NT (5)	0.00	NT (5)	NT (5)	NT (5)	NT (5)

Notes

General Notes

mg/l = milligrams per liter = ppm
mg/kg = milligrams per kiligram
µg/l = micrograms per liter
CFU/ml = bacterial colonies per milliliters
mS/cm = milliSiemens per centimeter
NTU = nephelolometric turbidity units
°C = degrees centigrade
* = result reported by alternate lab, see adjacent row
** = pH too low for Carbonate to be present
B = analyte detected in associated method blank
"f" next to pH value = field tested value
NA = no applicable standard
gpm = gallons per minute
µmho's/cm = micromho's per centimeters

Water Quality Standard/Allowable Soil Contaminant Concentration Notes

A - from Colorado Oil & Gas Conservation Commission, Rules and Regulations, Table 910-1, Allowable
B - from Colorado Department of Public Health and Environment, Water Quality Control Commission,
C - from Colorado Department of Public Health and Environment, Water Quality Control Commission,
D - from Colorado Department of Public Health and Environment, Water Quality Control Commission,

An expanded list of cation analyses was requested for selected samples in the Spaulding Peak vicinity.

Numbered Footnotes

(1) - Re-sampled 5/16; initial concentration of 2.2 µg/L suspected to be lab contamination; Not detected on
(2) - NT (not tested) - conductivity not measured in the field due to malfunctioning water quality meter; specific
(3) - NT (not tested) - analysis not marked on chain-of-custody/or not requested by client.
(4) - NT (not tested) - turbidity meter portion of water quality meter not working at time of this sample collection.
(5) - NT (not tested) - salinity parameter not measurable with new model of water quality meter.
(6) - NT (not tested) - field parameter recorded only once between duplicate sample collections within 30 minutes.
(7) - NT (not tested) - meter used by other sampling team did not measure dissolved oxygen.
(9) - Nitrate/nitritie re-sampled due to exceedance of nitrate/nitrite holding time.
(11) - NT (not tested) - due to lab miscommunication.
(24)- NT (not tested) - due to inclement weather conditions

Table I-2
Cedaredge Area
Baseline Groundwater Quality Data

Location	Section		12	13	13	15	17	5
	Township		13S	13S	13S	13S	13S	13S
	Range		95W	95W	95W	95W	93W	93W
	Qtr./Qtr.		SE/NE	NE/NE	NE/NE	NW/NW	NE/SW	SW/SE
	Latitude		N 38° 56' 25.3"	N 38° 55' 45.9"	N 38° 55' 44.6"	N 38° 55' 38.3"	N 38° 55' 16.7"	N 38° 56' 54.6"
	Longitude		W 107° 57' 16.2"	W 107° 57' 09.1"	W 107° 57' 10.9"	W 108° 00' 20.7"	W 107° 48' 39.5"	W 107° 48' 30.7"
Sample	Sample ID #		122002-BSpr	122002-KCrSpr	122002-ConSpr	122002-TM	122102-BgSpr	122102-DFSpr
	Well ID		SP-SG32	SP-SG33	SP-SG34	DC-SG5	DC-SG7	DC-SG8
	Sample Date		12/20/2002	12/20/2002	12/20/2002	12/20/2002	12/21/2002	12/21/2002
	Sample Source		spring	spring	spring	spring	spring	spring
	Flow Rate (gpm)	**Standards**						
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Toluene (µg/l)	1,000 [A]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	Ethylbenzene (µg/l)	680 [A]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	m,p-Xylene (µg/l)	10,000 [A]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	o-Xylene (µg/l)	10,000 [A]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	MTBE (µg/l)	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	Methane (mg/l)	NA	<0.0008	<0.0008	<0.0008	<0.0008	<0.0009	<0.0009
	TDS (mg/l)	400[B]	756	585	595	915	1580	6920
	Nitrate + Nitrite (mg/l)	10.0[C]	*	*	*	*	*	*
	Nitrate (mg/l)	10.0[C]	0.20	1.10	1.17	0.31	0.23	1.74
	Nitrite (mg/l)	1.0[C]	0.00	0.01	0.00	0.00	0.00	0.00
	Ammonia-N (mg/l)	NA	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Iron Bacteria (approx. CFU/ml)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cations	Aluminun (mg/l)	NA	1.2	0.48	0.037	<0.025	0.35	<0.025
	Arsenic (mg/l)	0.05[C]	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Barium (mg.l)	NA	<0.025	0.12	0.10	0.12	<0.025	0.033
	Boron (mg.l)	2.0[C]	<0.20	0.25	0.26	0.57	<0.20	<0.20
	Calcium (mg/l)	NA	14	75	76	48	200	230
	Copper (mg/l)	1[D]	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
	Iron (mg/l)	0.3[D]	0.99	0.85	<0.20	<0.20	2.3	0.29
	Potassium (mg/l)	NA	1.4	6.9	6.9	3.9	5.5	9.1
	Magnesium (mg/l)	NA	6.0	54	57	30	81	300
	Manganese (mg/l)	0.05[D]	0.011	0.022	<0.010	0.010	0.061	0.62
	Sodium (mg/l)	NA	280 B	45 B	49 B	310 B	180 B	1700 B
	Nickel (mg/l)	0.1[C]	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
	Lead (mg/l)	0.05[C]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Selenium (mg/l)	0.05[C]	<0.0050	<0.0050	0.0053	<0.0050	<0.0050	0.0066
	Silicon (mg/l)	NA	4.0	15	16	11	5.1	4.3
	Strontium (mg/l)	NA	0.26	0.67	0.67	0.92	1.8	8.7
	Zinc (mg/l)	5[D]	0.050	0.0078	<0.0050	0.0056	0.0088	0.016
Anions	Bromide (mg/l)	NA	0.060	0.060	0.060	0.190	<0.10	<0.25
	Chloride (mg/l)	250[D]	5.8	4.1	4.3	18.1	2.3	71.6
	Fluoride (mg/l)	4.0[D]	2.6	0.56	0.89	0.53	0.44	0.57
	Sulfate (mg/l)	250[D]	62.1	87.6	93.4	67.6	796	4290
	Bicarbonate (mg/l CaCO3)	NA	570	430	434	723	381	863
	Carbonate (mg/l CaCO3)	NA	**	**	**	**	**	**
	Alkalinity (mg/l $CaCO_3$)	NA	570	430	434	723	381	863
WQ Parameters	pH	6.5-8.5[D]	8.72f	7.62f	7.69f	8.51f	7.21f	8.44f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	1160	868	905	1360	1820	7470
	Conductivity (field) (mS/cm)	NA	1.297	1.003	1.034	1.54	2.06	8.45
	Turbidity (NTU)	NA	55.2	0.6	18.8	0.0	16.5	0.0
	Dissolved Oxygen (mg/l)	NA	47.13	35.50	12.36	18.31	31.44	49.30
	Temperature (°C)	NA	1.89	9.77	9.63	1.46	9.44	-0.46
	Salinity (%)	NA	NT (5)	NT (5)	NT (5)	NT (5)	NT (5)	NT (5)
Notes								

Table I-2 (Continued)

Location	Section		19	13	12	18	18
	Township		13S	13S	13S	13S	13S
	Range		93W	95W	95W	94W	94W
	Qtr./Qtr.		SW/SE	SE/NE	NE/SE	SW/NW	SE/NW
	Latitude		N 38° 54' 10.7"	N 38° 55'27.8"	N 38° 56'3.8"	N 38° 55'29.6"	N 38° 55'32.0"
	Longitude		W 107° 49' 25.4"	W 107° 57'12.2"	W 107° 57'21.4"	W 107° 57'0.36"	W 107° 56'32.9"
Sample	Sample ID #		122102-HSpr	122202-LSpr	122202-BSpr	122202-B1Spr	122202-B2Spr
	Well ID		DC-SG6	SP-SG38	SP-SG37	SP-CD2	SP-CD3
	Sample Date		12/21/2002	12/22/2002	12/22/2002	12/22/2002	12/22/2002
	Sample Source		spring	spring	spring	mine drainage	mine drainage
	Flow Rate (gpm)	**Standards**		3.6			
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1.0	<1.0	<1.0	<1.0	<1.0
	Toluene (µg/l)	1,000 [A]	<2.0	<2.0	<2.0	<2.0	<2.0
	Ethylbenzene (µg/l)	680 [A]	<2.0	<2.0	<2.0	<2.0	<2.0
	m,p-Xylene (µg/l)	10,000 [A]	<2.0	<2.0	<2.0	<2.0	<2.0
	o-Xylene (µg/l)	10,000 [A]	<2.0	<2.0	<2.0	<2.0	<2.0
	MTBE (µg/l)	NA	<5.0	<5.0	<5.0	<5.0	<5.0
	Methane (mg/l)	NA	<0.0009	<0.0008	0.010	<0.0008	<0.0008
	TDS (mg/l)	400[B]	7510	490	602	422	483
	Nitrate + Nitrite (mg/l)	10.0[C]	*	*	*	*	*
	Nitrate (mg/l)	10.0[C]	39.3	3.07	<0.25	4.33	2.94
	Nitrite (mg/l)	1.0[C]	0.06	<0.25	<0.25	<0.25	<0.25
	Ammonia-N (mg/l)	NA	<0.80	<0.80	<0.80	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Iron Bacteria (approx. CFU/ml)	NA	NT(3)	NT(3)	NT(3)	NT(3)	NT(3)
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50	<0.50	<0.50	<0.50
Cations	Aluminun (mg/l)	NA	<0.025	6.6	0.49	<0.025	<0.025
	Arsenic (mg/l)	0.05[C]	<0.0020	0.0054	<0.0020	<0.0020	<0.0020
	Barium (mg.l)	NA	<0.025	0.46	0.077	0.13	0.15
	Boron (mg.l)	2.0[C]	0.73	<0.20	0.30	<0.20	<0.20
	Calcium (mg/l)	NA	380	110	62	49	57
	Copper (mg/l)	1[D]	<0.025	0.047	<0.025	<0.025	<0.025
	Iron (mg/l)	0.3[D]	0.28	14	1.1	<0.20	<0.20
	Potassium (mg/l)	NA	13	5.9	6.1	5.2	6.3
	Magnesium (mg/l)	NA	610	46	44	48	57
	Manganese (mg/l)	0.05[D]	0.46	1.5	0.17	<0.010	<0.010
	Sodium (mg/l)	NA	780 B	31 B	94 B	38 B	43 B
	Nickel (mg/l)	0.1[C]	<0.060	<0.060	<0.060	<0.060	<0.060
	Lead (mg/l)	0.05[C]	<0.010	0.015	<0.010	<0.010	<0.010
	Selenium (mg/l)	0.05[C]	0.11	0.010	<0.0050	<0.0050	<0.0050
	Silicon (mg/l)	NA	4.0	18.0	7.1	21	18
	Strontium (mg/l)	NA	6.0	0.95	1.7	0.77	1.1
	Zinc (mg/l)	5[D]	0.025	0.050	0.0086	<0.0050	0.0073
Anions	Bromide (mg/l)	NA	0.350	0.080	0.1	0.05	0.05
	Chloride (mg/l)	250[D]	34.8	5.38	6.4	3.38	3.41
	Fluoride (mg/l)	4.0[D]	<0.40	0.58	1.2	0.85	0.85
	Sulfate (mg/l)	250[D]	4340	36.9	69.5	26.4	44.6
	Bicarbonate (mg/l CaCO3)	NA	494	401	466	356	403
	Carbonate (mg/l CaCO3)	NA	**	**	**	**	**
	Alkalinity (mg/l $CaCO_3$)	NA	494	401	466	356	403
WQ Parameters	pH	6.5-8.5[D]	7.61f	8.09f	7.49f	8.32f	7.56f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	6390	718	906	643	747
	Conductivity (field) (mS/cm)	NA	7.69	0.843	1.031	0.736	0.864
	Turbidity (NTU)	NA	0.0	0.0	0.0	0.5	0.0
	Dissolved Oxygen (mg/l)	NA	34.32	38.73	13.30	17.11	10.58
	Temperature (°C)	NA	6.69	8.80	9.38	9.98	9.58
	Salinity (%)	NA	NT (5)	NT (5)	NT (5)	NT (5)	NT (5)

Notes

General Notes
mg/l = milligrams per liter = ppm
mg/kg = milligrams per kiligrams
µg/l = micrograms per liter
CFU/ml = bacterial colonies per milliliters
mS/cm = milliSiemens per centimeter
NTU = nephelolometric turbidity units
°C = degrees centigrade
* = result reported by alternate lab, see adjacent row
** = pH too low for Carbonate to be present
B = analyte detected in associated method blank
"f" next to pH value = field tested value
GMNF= Grand Mesa National Forest
NA = no applicable standard
gpm = gallons per minute
µmho's/cm = micromho's per centimeters

Table I-3
Powerline Site
Baseline Groundwater Quality Data

Location	Section		20	29
	Township		11S	11W
	Range		91W	91W
	Qtr./Qtr.		SW/SW	NW/SW
	Latitude		N 39° 4' 41.76"	N 39° 4' 13.86"
	Longitude		W 107° 35' 5.52"	W 107° 35' 0.54"
Sample	Sample ID #		102202-EM-1	102202-EM-2
	Well ID		PL-SG1	PL-SG2
	Sample Date		10/22/2002	10/22/2002
	Sample Source		spring	spring
	Water Well/Spring Flow Rate (gpm)	**Standards**	est: 13 gals/min	est. 13 gals/min
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1.0	<1.0
	Toluene (µg/l)	1,000 [A]	<2.0	<2.0
	Ethylbenzene (µg/l)	680 [A]	<2.0	<2.0
	m,p-Xylene (µg/l)	10,000 [A]	<2.0	<2.0
	o-Xylene (µg/l)	10,000 [A]	<2.0	<2.0
	MTBE (µg/l)	NA	<8.0	<8.0
	Methane (mg/l)	NA	<0.0008	<0.0008
	TDS (mg/l)	400[B]	214	213
	Nitrates + Nitrites (mg/l)	10.0[C]	*	*
	Nitrate (mg/l)	10.0[C]	0.65	0.38
	Nitrite (mg/l)	1.0[C]	<0.25	<0.25
	Ammonia-N (mg/l)	NA	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	NA	NA
	Iron Bacteria (approx. CFU/ml)	NA	100	100
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50
Cations	Calcium (mg/l)	NA	54	52
	Iron (mg/l)	0.3[D]	<0.20	<0.20
	Potassium (mg/l)	NA	0.98	0.70
	Magnesium (mg/l)	NA	7.4	6.7
	Manganese (mg/l)	0.05[D]	<0.010	<0.010
	Sodium (mg/l)	NA	12 B	11 B
	Selenium (mg/l)	0.05[C]	<0.0050	<0.0050
Anions	Chloride (mg/l)	250[D]	0.81	1
	Fluoride (mg/l)	4.0[D]	<0.40	<0.40
	Sulfate (mg/l)	250[D]	15.4	16.5
	Bicarbonate (mg/l CaCO3)	NA	168	155
	Carbonate (mg/l CaCO3)	NA	<5.0	<5.0
	Alkalinity (mg/l CaCO3)	NA	168	155
WQ Parameters	pH	6.5-8.5[D]	7.46f	7.49f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	296	292
	Conductivity (field) (mS/cm)	NA	0.363	0.359
	Turbidity (NTU)	NA	0.0	0.0
	Dissolved Oxygen (mg/l)	NA	29.64	13.10
	Temperature (°C)	NA	9.29	7.97
	Salinity (%)	NA	NT (5)	NT (5)

Notes

General Notes
mg/l = milligrams per liter = ppm
mg/kg = milligrams per kiligram
µg/l = micrograms per liter
CFU/ml = bacterial colonies per milliliters
mS/cm = milliSiemens per centimeter
NTU = nephelolometric turbidity units
°C = degrees centigrade
* = result reported by alternate lab, see adjacent row
** = pH too low for Carbonate to be present
B = analyte detected in associated method blank
"f" next to pH value = field tested value
NA = no applicable standard
gpm = gallons per minute
µmho's/cm = micromho's per centimeters

Table I-4
Powerline Site
Baseline Groundwater Quality Data

Location	Section		32
	Township		12S
	Range		91W
	Qtr./Qtr.		NE/SW
	Latitude		N 38° 58.047'
	Longitude		W 107° 34.856'
Sample	Sample ID #		110701-BP-Spr5
	Well ID		BP-SG1
	Sample Date		11/7/2002
	Sample Source		spring (damed in pond)
	Flow Rate (gpm)	**Standards**	not measurable
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1.0
	Toluene (µg/l)	1,000 [A]	3.0
	Ethylbenzene (µg/l)	680 [A]	<2.0
	m,p-Xylene (µg/l)	10,000 [A]	<2.0
	o-Xylene (µg/l)	10,000 [A]	<2.0
	MTBE (µg/l)	NA	<8.0
	Methane (mg/l)	NA	0.14
	TDS (mg/l)	400[B]	374
	Nitrates + Nitrites (mg/l)	10.0[C]	*
	Nitrate (mg/l)	10.0[C]	2.10
	Nitrite (mg/l)	1.0[C]	0.00
	Ammonia-N (mg/l)	NA	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	100,000
	Iron Bacteria (approx. CFU/ml)	NA	100
	Hydrogen Sulfide (mg/l)	NA	<0.50
Cations	Calcium (mg/l)	NA	34
	Iron (mg/l)	0.3[D]	1.8
	Potassium (mg/l)	NA	15
	Magnesium (mg/l)	NA	11
	Manganese (mg/l)	0.05[D]	0.23
	Sodium (mg/l)	NA	77
	Selenium (mg/l)	0.05[C]	<0.005
Anions	Chloride (mg/l)	250[D]	17.4
	Fluoride (mg/l)	4.0[D]	<0.40
	Sulfate (mg/l)	250[D]	41.5
	Bicarbonate (mg/l CaCO3)	NA	254
	Carbonate (mg/l CaCO3)	NA	<5.0
	Alkalinity (mg/l CaCO3)	NA	254
WQ Parameters	pH	6.5-8.5 [D]	8.86f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	493
	Conductivity (field) (mS/cm)	NA	0.637
	Turbidity (NTU)	NA	345
	Dissolved Oxygen (mg/l)	NA	16.71
	Temperature (°C)	NA	4.77
	Salinity (%)	NA	NT (5)

Notes

General Notes

mg/l = milligrams per liter = ppm

mg/kg = milligrams per kiligram

µg/l = micrograms per liter

CFU/ml = bacterial colonies per milliliters
mS/cm = milliSiemens per centimeter
NTU = nephelolometric turbidity units
°C = degrees centigrade
* = result reported by alternate lab, see adjacent row

** = pH too low for Carbonate to be present
B = analyte detected in associated method blank
"f" next to pH value = field tested value
NA = no applicable standard
gpm = gallons per minute
µmho's/cm = micromho's per centimeters

Water Quality Standard/Allowable Soil Contaminant Concentration Notes

A - from Colorado Oil & Gas Conservation Commission, Rules and Regulations, Table 910 1, Allowable Concentrations and Levels: Organics in Groundwater
B - from Colorado Department of Public Health and Environment, Water Quality Control Commission, Regulation No. 41, Table 4: TDS Water Quality Standards
C - from Colorado Department of Public Health and Environment, Water Quality Control Commission, Regulation No. 41, Table 1: Human Health Standards
D - from Colorado Department of Public Health and Environment, Water Quality Control Commission, Regulation No. 41, Table 2: Secondary Drinking Water Standards

Numbered Footnotes

(5) - NT (not tested) - salinity parameter not measurable with new model of water quality meter

Table I-5
Oakbrush and Hubbard Creek Sites
Baseline Groundwater Quality Data

Location	Section		1	13	12
	Township		12S	12S	12S
	Range		91W	91W	91W
	Qtr./Qtr.		SW/SW	NW/NW	NW/NW
	Latitude		39°2' 9.6"	39°1' 7.2"	39°1'56.4"
	Longitude		107°30' 31.2"	107°30' 28.8"	107°30' 43.2"
Sample	Sample ID #		053002-2B	053002-5B	053002-1B
	Well ID		LP-DW1	LP-DW2	LP-SG1
	Sample Date		5/30/2002	5/30/2002	5/30/2002
	Sample Source		spring (12)	spring (12)	spring
	Flow Rate (gpm)	**Standards**	unknown	unknown	
Water Sample Analytical Results	Benzene (µg/l)	500 [A]	<1	<1	<1
	Toluene (µg/l)	1,000 [A]	<2	<2	<2
	Ethylbenzene (µg/l)	680 [A]	<2	<2	<2
	m,p-Xylene (µg/l)	10,000 [A]	<2	<2	<2
	o-Xylene (µg/l)	10,000 [A]	<2	<2	<2
	MTBE (µg/l)	NA	<8	<8	<8
	Methane (mg/l)	NA	<0.0008	<0.0008	0.024
	TDS (mg/l)	400[B]	440	317	512
	Nitrates + Nitrites (mg/l)	10.0[C]	*	*	*
	Nitrate (mg/l)	10.0[C]	0.26	0.26	0.23
	Nitrite (mg/l)	1.0[C]	0.00	0.00	0.00
	Ammonia-N (mg/l)	NA	<0.80	<0.80	<0.80
	Sulphate Reducing Bacteria (approx. CFU/ml)	NA	100,000	10,000	100,000
	Iron Bacteria (approx. CFU/ml)	NA	5,000	5,000	5,000
	Hydrogen Sulfide (mg/l)	NA	<0.50	<0.50	<0.50
Cations	Calcium (mg/l)	NA	92	77	120
	Iron (mg/l)	0.3[D]	<0.2	<0.2	0.5
	Potassium (mg/l)	NA	1.9	2	1.8
	Magnesium (mg/l)	NA	24B	17B	22B
	Manganese (mg/l)	0.05[D]	0.075	<0.01	0.25
	Sodium (mg/l)	NA	52	26	57
	Selenium (mg/l)	0.05[C]	<0.005	0.0053	0.0056
Anions	Chloride (mg/l)	250[D]	5.7	4.4	12
	Fluoride (mg/l)	4.0[D]	0.27	0.21	0.41
	Sulfate (mg/l)	250[D]	30.5	10.8	67.7
	Bicarbonate (mg/l CaCO3)	NA	382	269	390
	Carbonate (mg/l CaCO3)	NA	**	**	**
	Alkalinity (mg/l CaCO3)	NA	382	269	390
WQ Parameters	pH	6.5-8.5 [D]	7.38f	7.30f	6.71f
	Specific Conductance (µmho's/cm @ 25 °C)	NA	NT (3)	NT (3)	NT (3)
	Conductivity (field) (mS/cm)	NA	0.703	0.210	0.892
	Turbidity (NTU)	NA	0.9 (13)	0.38 (13)	1.4 (13)
	Dissolved Oxygen (mg/l)	NA	NT (7)	NT (7)	NT (7)
	Temperature (°C)	NA	15.0	12.0	14.6
	Salinity (%)	NA	NT (14)	NT (14)	NT (14)

Notes

General Notes

mg/l = milligrams per liter = ppm
mg/kg = milligrams per kiligram
µg/l = micrograms per liter
CFU/ml = bacterial colonies per milliliters
mS/cm = milliSiemens per centimeter
NTU = nephelolometric turbidity units
°C = degrees centigrade
* = result reported by alternate lab, see adjacent row
** = pH too low for Carbonate to be present
B = analyte detected in associated method blank
"f" next to pH value = field tested value
NA = no applicable standard
gpm = gallons per minute
µmho's/cm = micromho's per centimeters

Water Quality Standard/Allowable Soil Contaminant Concentration Notes

A - from Colorado Oil & Gas Conservation Commission, Rules and Regulations,
B - from Colorado Department of Public Health and Environment, Water Quality
C - from Colorado Department of Public Health and Environment, Water Quality
D - from Colorado Department of Public Health and Environment, Water Quality

Numbered Footnotes

(2) - NT (not tested) - conductivity not measured in the field due to malfunctioning
(3) - NT (not tested) - analysis not marked on chain-of-custody.
(7) - NT (not tested) - meter used by other sampling team did not measure dissolved
(12) - developed spring for domestic use
(13) - turbidity measured by lab within 24 hours
(14) - NT (not tested) - meter used by other sampling team did not measure salinity
(15) - dual nitrate/nitrite analyses to evaluate quality control; numbers on left from