

# CROW BUTTE RESOURCES, INC.

86 Crow Butte Road  
P.O. Box 169  
Crawford, Nebraska 69339-0169



(308) 665-2215  
(308) 665-2341 – FAX

March 22, 2001

Mr. Philip Ting, Chief  
Fuel Cycle Licensing Branch, FCSS  
c/o Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Re: Source Materials License SUA-1534  
Docket No. 40-8943  
SM7-23 Monitor Well Excursion Quarterly Report

Dear Mr. Ting:

On April 27, 2000 during routine biweekly water sampling of Crow Butte Resources, Inc. (CBR) shallow monitor well SM7-23, the single parameter upper control limit (UCL) was exceeded for sulfate. As required by SUA-1534, a second sample was collected within 48 hours and analyzed for the five excursion indicator parameters. The results of the second sample (and a third sample taken on April 28) also exceeded the single UCL for sulfate. Based upon these results, monitor well SM7-23 was placed on excursion status. This report is the third quarterly report submitted to NRC to provide an update on the status of SM7-23.

As required by License Condition 11.2, CBR increased the sampling frequency for SM7-23 to weekly. Laboratory results for the analysis of weekly samples from December 26, 2000 through March 20, 2001 are attached. In addition, graphs are attached for each excursion parameter and water level for SM7-23 for the period from August 5, 1999 through March 20, 2001. The data indicates that sulfate concentrations have continued to exceed the single UCL of 62 mg/l since April 27. All other excursion monitoring parameters have remained stable at levels that are well below their respective UCLs.

CBR believes that the exceedance of the sulfate UCL in SM7-23 is not due to the migration of mining solutions. SM7-23 is located in a new area of Mine Unit 7 where mining activities have not begun. The nearest active mining well is approximately 800 feet from SM7-23. In addition, several other shallow monitor wells are located between SM7-23 and these active mining wells. If the excursion were due to mining solutions, it would be reasonable to expect that these wells would also be affected.

*NMSSO Public*

# CROW BUTTE RESOURCES, INC.



Mr. Philip Ting  
March 22, 2001  
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The conclusion that this UCL exceedance is not caused by a migration of mining solutions is further supported by the trends for the other four excursion parameters. If the exceedance were due to mining solutions, it is certain that some of the other parameter concentrations would be affected.

As shown in the trending graphs, the sulfate concentrations in SM7-23 appear stable at the current levels. Since it is apparent that mining activities have not affected the sulfate concentrations, CBR believes that it may be necessary to propose new multiple and single UCLs for sulfate in SM7-23. In the meantime, CBR plans to continue to sample SM7-23 on a weekly basis. If three consecutive weekly samples are below the exceeded UCL, the well will be returned to normal status.

If you have any questions or require any further information, please do not hesitate to call me at (308) 665-2215.

Sincerely,  
CROW BUTTE RESOURCES, INC.

A handwritten signature in black ink, appearing to read 'M. Griffin'. The signature is stylized and overlaps the printed name below it.

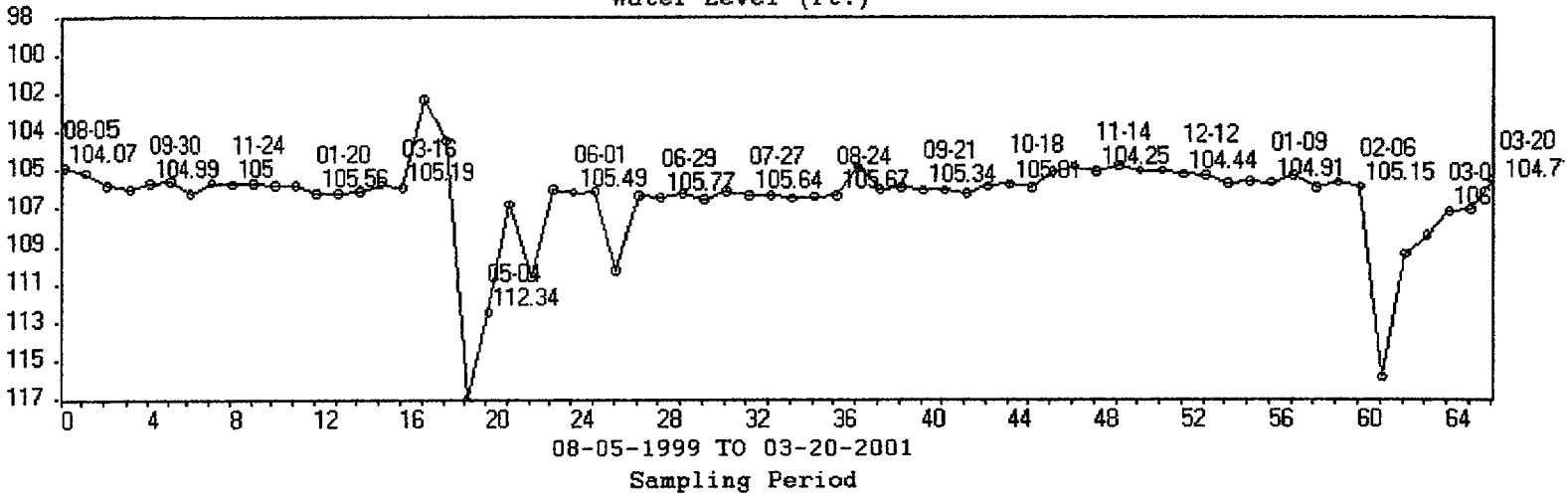
Michael Griffin  
Manager of Environmental and Regulatory Affairs

Enclosures: As Stated

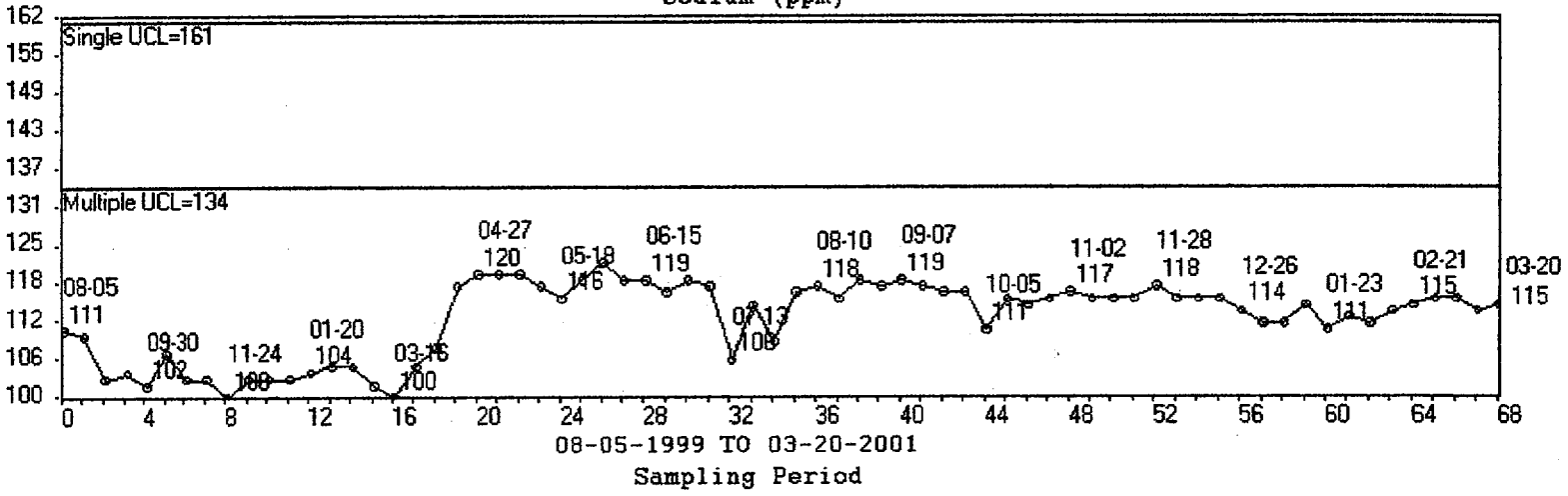
cc: Mr. Steve Collings - CBR, Denver

Mr. Mike Layton - ADDRESSEE ONLY  
U.S. Nuclear Regulatory Commission  
Fuel Cycle Licensing Branch  
Mail Stop T-8A33  
Washington, DC 20555

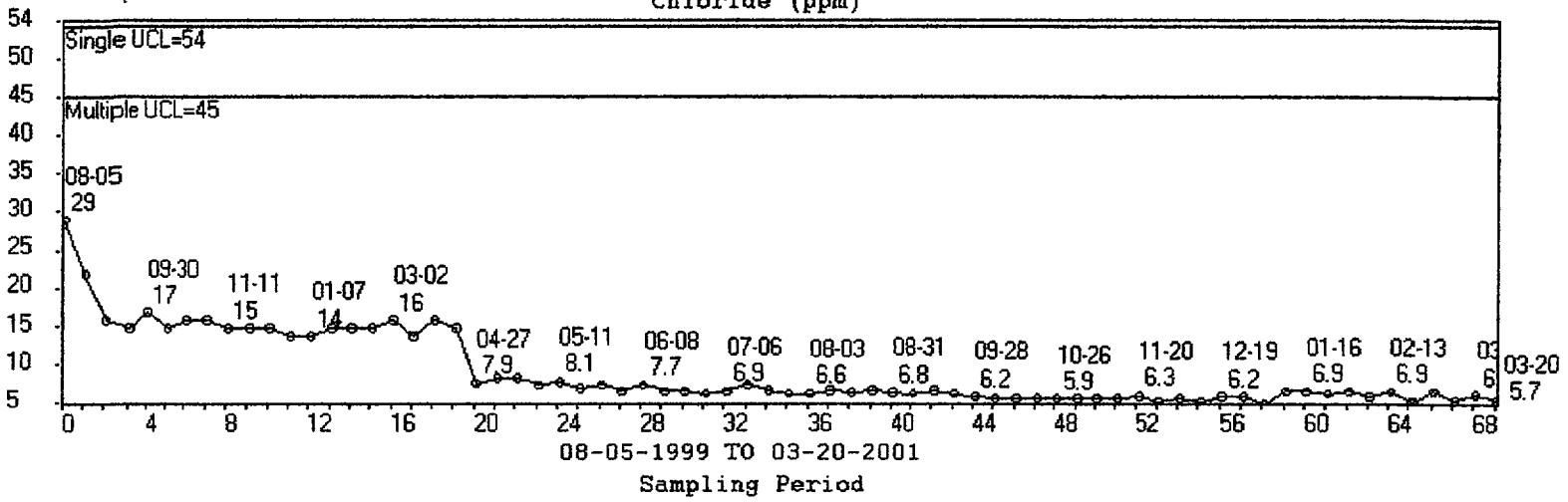
SM7-23  
Water Level (ft.)



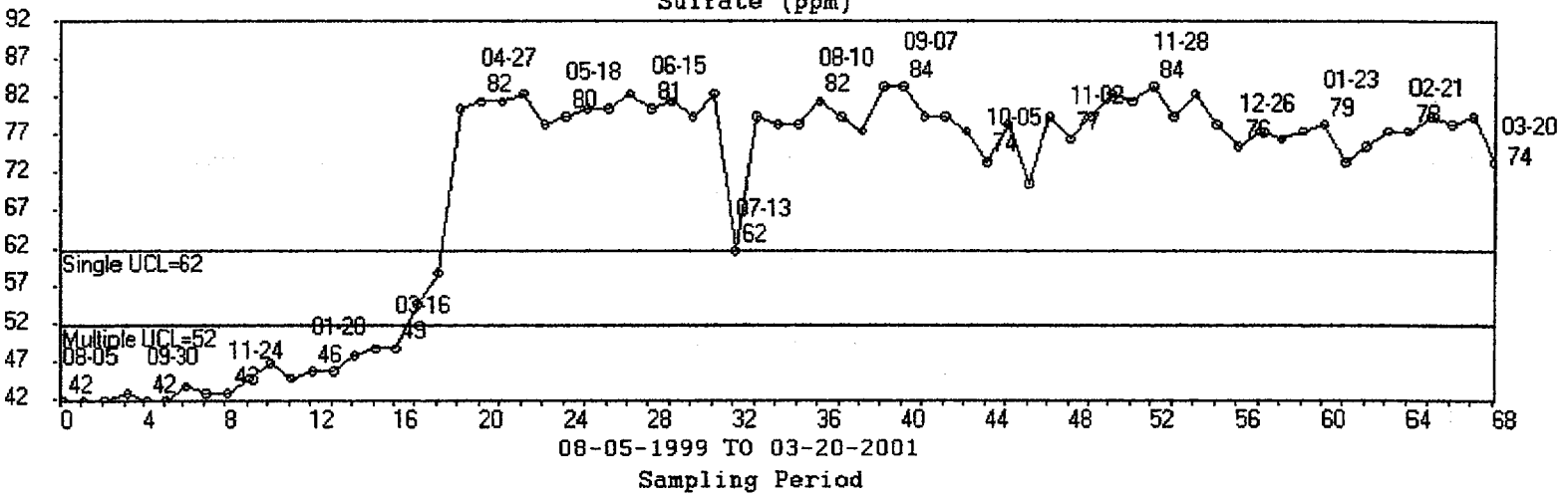
SM7-23  
Sodium (ppm)



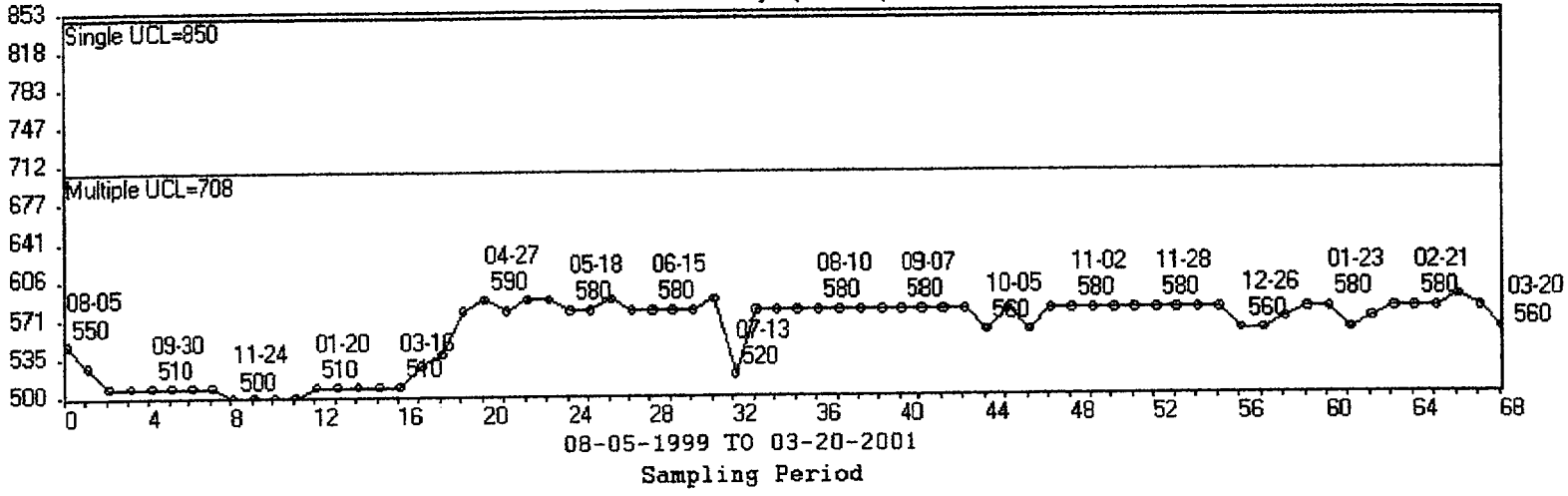
SM7-23  
Chloride (ppm)



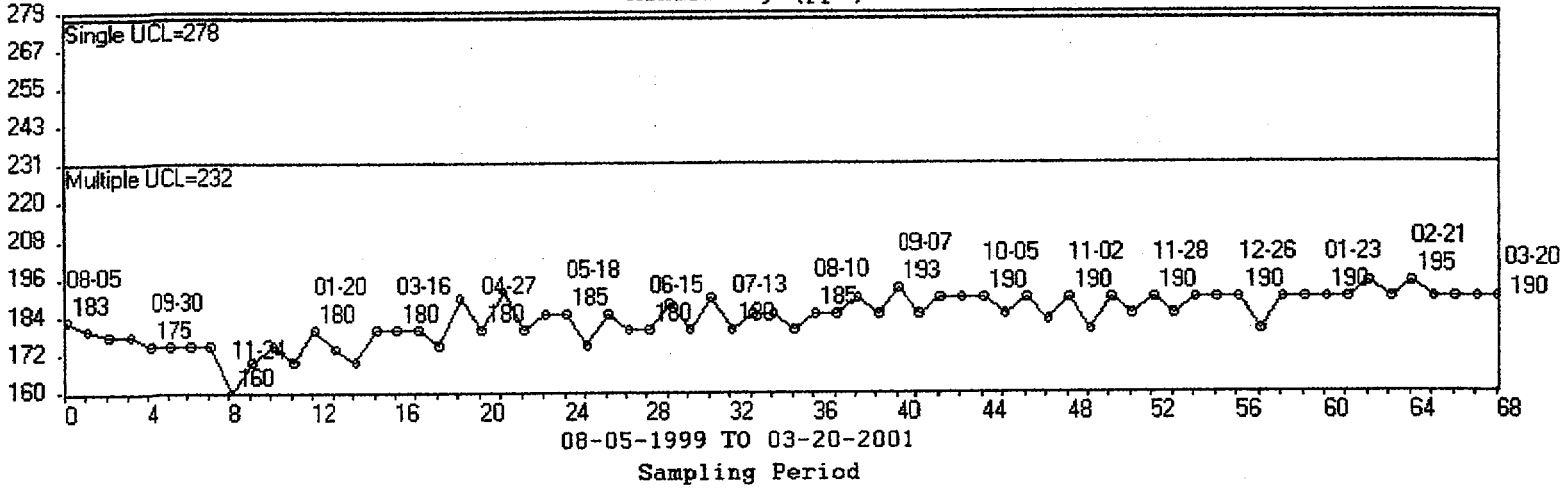
SM7-23  
Sulfate (ppm)



SM7-23  
Conductivity (umhos)



SM7-23  
Alkalinity (ppm)



Crow Butte Project  
Monitor Well Laboratory Report

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Sample Date: 12-26-2000  
Analysis Date: 12-27-2000

Analyst: LG/TF

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM2-5	406	332	185	1920	305
Multiple	535	421	320	2828	408
Single	642	505	384	3394	490
CM2-6	398	328	181	1890	308
Multiple	484	425	246	2621	360
Single	580	510	295	3145	432
CM2-7	403	336	177	1900	300
Multiple	486	442	239	2549	364
Single	583	530	287	3059	436
CM5-1	417	342	181	1970	300
Multiple	482	456	253	2404	385
Single	579	547	304	2884	462
CM5-2	422	360	185	2020	305
Multiple	481	446	247	2383	373
Single	577	536	297	2860	448
CM5-3	392	316	177	1890	305
Multiple	479	428	270	2458	374
Single	575	514	324	2949	449
CM5-4	401	315	177	1890	305
Multiple	476	430	254	2413	378
Single	572	516	305	2896	454
CM5-5	400	327	177	1890	305
Multiple	476	430	247	2400	379
Single	572	516	297	2880	455
CM7-1	393	350	166	1890	295
Multiple	440	402	199	2136	342
Single	528	482	239	2563	410
SM7-23	114	76	6.2	560	190
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.

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Sample Date: 01-02-2001  
Analysis Date: 01-03-2001

Analyst: LG/TF

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM5-8 Multiple	475	449	241	2396	373
Single	570	539	289	2876	448
CM5-9 Multiple	475	446	241	2387	361
Single	570	536	289	2864	433
CM5-10 Multiple	480	460	277	2453	336
Single	576	552	333	2943	403
CM5-11 Multiple	478	443	256	2414	365
Single	573	531	307	2897	438
CM5-12 Multiple	494	452	269	2485	380
Single	593	543	323	2982	456
CM6-1 Multiple	510	460	278	2640	360
Single	612	552	334	3168	432
CM6-2 Multiple	485	461	233	2352	364
Single	582	553	279	2822	436
CM6-3 Multiple	488	454	224	2340	367
Single	586	544	269	2808	441
SM6-12 Multiple	24	13*	5.8*	520	245
Single	30	16	6	613	290
SM7-23 Multiple	112	78	5.2*	560	180*
Single	134	52	45	708	232
	161	62	54	850	278

\* - Denotes 5% change from previous sample.

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Sample Date: 01-09-2001  
Analysis Date: 01-10-2001

Analyst: LG/TF

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM4-4	382	309	177	1840	310
Multiple	491	390	258	2502	361
Single	589	468	310	3002	433
CM4-5	382	321	173	1850	295
Multiple	493	395	280	2642	344
Single	592	474	336	3171	413
CM4-6	385	316	173	1860	298
Multiple	445	402	220	2344	337
Single	534	482	264	2812	405
CM4-7	390	321	173	1850	305
Multiple	514	394	341	2777	348
Single	616	472	409	3332	418
CM6-4	413	365	177	1940	300
Multiple	480	450	241	2364	367
Single	576	540	289	2837	441
CM7-2	382	324	177	1820	300
Multiple	492	408	296	2448	354
Single	590	490	356	2938	425
CM7-3	389	320	177	1850	300
Multiple	524	409	317	2544	372
Single	629	491	380	3053	446
CM7-4	385	322	175	1840	300
Multiple	463	379	241	2257	359
Single	556	455	289	2709	431
CM7-5	389	317	179	1860	305
Multiple	484	391	277	2368	366
Single	580	469	333	2841	439
CM7-6	399	321	179	1880	300
Multiple	484	397	263	2356	362
Single	580	477	315	2827	435
SM7-23	112	77	6.9*	570	190*
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.



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Sample Date: 01-16-2001  
Analysis Date: 01-17-2001

Analyst: SM/TF

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM5-8	401	343	179	1920	300
Multiple	475	449	241	2396	373
Single	570	539	289	2876	448
CM5-9	404	347	178	1900	310
Multiple	475	446	241	2387	361
Single	570	536	289	2864	433
CM5-10	409	354	181	1940	305
Multiple	480	460	277	2453	336
Single	576	552	333	2943	403
CM5-11	438	374	197	2070	310
Multiple	478	443	256	2414	365
Single	573	531	307	2897	438
CM5-12	403	353	179	1920	298
Multiple	494	452	269	2485	380
Single	593	543	323	2982	456
CM6-1	402	362	189	1960	285
Multiple	510	460	278	2640	360
Single	612	552	334	3168	432
CM6-2	399	364	178	1940	290
Multiple	485	461	233	2352	364
Single	582	553	279	2822	436
CM6-3	404	352	178	1940	300
Multiple	488	454	224	2340	367
Single	586	544	269	2808	441
SM6-12	22*	14*	5.8	520	238
Multiple	30	16	6	613	290
Single	36	19	7	736	348
SM7-23	115	78	6.9	580	190
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.

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Sample Date: 01-23-2001  
Analysis Date: 01-24-2001

Analyst:

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM4-4	385	311	177	1850	305
Multiple	491	390	258	2502	361
Single	589	468	310	3002	433
CM4-5	387	313	173	1840	300
Multiple	493	395	280	2642	344
Single	592	474	336	3171	413
CM4-6	384	326	173	1860	300
Multiple	445	402	220	2344	337
Single	534	482	264	2812	405
CM4-7	391	327	173	1850	300
Multiple	514	394	341	2777	348
Single	616	472	409	3332	418
CM6-4	407	365	177	1940	300
Multiple	480	450	241	2364	367
Single	576	540	289	2837	441
CM7-2	386	322	177	1830	300
Multiple	492	408	296	2448	354
Single	590	490	356	2938	425
CM7-3	388	316	175	1870	300
Multiple	524	409	317	2544	372
Single	629	491	380	3053	446
CM7-4	389	319	175	1840	300
Multiple	463	379	241	2257	359
Single	556	455	289	2709	431
CM7-5	391	315	181	1860	300
Multiple	484	391	277	2368	366
Single	580	469	333	2841	439
CM7-6	398	324	179	1880	300
Multiple	484	397	263	2356	362
Single	580	477	315	2827	435
SM7-23	111	79	6.6	580	190
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.

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Sample Date: 01-30-2001  
Analysis Date: 01-31-2001

Analyst: LG/TF

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM5-8	403	349	179	1910	310
Multiple	475	449	241	2396	373
Single	570	539	289	2876	448
CM5-9	401	343	175	1910	308
Multiple	475	446	241	2387	361
Single	570	536	289	2864	433
CM5-10	410	356	181	1960	300
Multiple	480	460	277	2453	336
Single	576	552	333	2943	403
CM5-11	436	382	197	2030	310
Multiple	478	443	256	2414	365
Single	573	531	307	2897	438
CM5-12	404	358	178	1930	300
Multiple	494	452	269	2485	380
Single	593	543	323	2982	456
CM6-1	404	372	187	1960	285
Multiple	510	460	278	2640	360
Single	612	552	334	3168	432
CM6-2	401	363	178	1940	290
Multiple	485	461	233	2352	364
Single	582	553	279	2822	436
CM6-3	406	347	179	1940	305
Multiple	488	454	224	2340	367
Single	586	544	269	2808	441
SM6-12	24*	13*	5.7	520	240
Multiple	30	16	6	613	290
Single	36	19	7	736	348
SM7-23	113	74*	6.9	560	190
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.

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Monitor Well Laboratory Report

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Sample Date: 02-06-2001  
Analysis Date: 02-07-2001

Analyst: LG/TF

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM4-4	390	313	177	1850	305
Multiple	491	390	258	2502	361
Single	589	468	310	3002	433
CM4-5	388	311	173	1840	300
Multiple	493	395	280	2642	344
Single	592	474	336	3171	413
CM4-6	388	321	173	1860	305
Multiple	445	402	220	2344	337
Single	534	482	264	2812	405
CM4-7	393	322	173	1850	300
Multiple	514	394	341	2777	348
Single	616	472	409	3332	418
CM6-4	409	353	177	1950	300
Multiple	480	450	241	2364	367
Single	576	540	289	2837	441
CM7-2	383	317	176	1840	300
Multiple	492	408	296	2448	354
Single	590	490	356	2938	425
CM7-3	384	315	177	1850	300
Multiple	524	409	317	2544	372
Single	629	491	380	3053	446
CM7-4	387	313	173	1840	303
Multiple	463	379	241	2257	359
Single	556	455	289	2709	431
CM7-5	388	318	181	1850	305
Multiple	484	391	277	2368	366
Single	580	469	333	2841	439
CM7-6	399	322	181	1880	300
Multiple	484	397	263	2356	362
Single	580	477	315	2827	435
SM7-23	112	76	6.2*	570	195
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.

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Monitor Well Laboratory Report

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Sample Date: 02-13-2001  
Analysis Date: 02-14-2001

Analyst: LG/TF

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM5-8	400	346	179	1920	310
Multiple	475	449	241	2396	373
Single	570	539	289	2876	448
CM5-9	406	350	177	1910	305
Multiple	475	446	241	2387	361
Single	570	536	289	2864	433
CM5-10	408	353	183	1950	310
Multiple	480	460	277	2453	336
Single	576	552	333	2943	403
CM5-11	440	383	197	2080	310
Multiple	478	443	256	2414	365
Single	573	531	307	2897	438
CM5-12	407	354	177	1930	305
Multiple	494	452	269	2485	380
Single	593	543	323	2982	456
CM6-1	401	375	188	1960	285
Multiple	510	460	278	2640	360
Single	612	552	334	3168	432
CM6-2	404	363	177	1950	295
Multiple	485	461	233	2352	364
Single	582	553	279	2822	436
CM6-3	406	347	179	1940	298
Multiple	488	454	224	2340	367
Single	586	544	269	2808	441
SM6-12	24	13	5.4*	520	240
Multiple	30	16	6	613	290
Single	36	19	7	736	348
SM7-23	114	78	6.9*	580	190
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.

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Monitor Well Laboratory Report

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Sample Date: 02-21-2001  
Analysis Date: 02-21-2001

Analyst: SM/LG

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM4-4 Multiple	491	390	258	2502	361
Single	589	468	310	3002	433
CM4-5 Multiple	493	395	280	2642	344
Single	592	474	336	3171	413
CM4-6 Multiple	445	402	220	2344	337
Single	534	482	264	2812	405
CM4-7 Multiple	514	394	341	2777	348
Single	616	472	409	3332	418
CM6-4 Multiple	480	450	241	2364	367
Single	576	540	289	2837	441
CM7-2 Multiple	492	408	296	2448	354
Single	590	490	356	2938	425
CM7-3 Multiple	524	409	317	2544	372
Single	629	491	380	3053	446
CM7-4 Multiple	463	379	241	2257	359
Single	556	455	289	2709	431
CM7-5 Multiple	484	391	277	2368	366
Single	580	469	333	2841	439
CM7-6 Multiple	484	397	263	2356	362
Single	580	477	315	2827	435
SM7-23 Multiple	115	78	5.4*	580	195
Single	134	52	45	708	232
	161	62	54	850	278

\* - Denotes 5% change from previous sample.

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Sample Date: 02-27-2001  
Analysis Date: 02-28-2001

Analyst: LG/TF

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM5-8	396	344	179	1920	310
Multiple	475	449	241	2396	373
Single	570	539	289	2876	448
CM5-9	396	347	175	1910	300
Multiple	475	446	241	2387	361
Single	570	536	289	2864	433
CM5-10	399	357	181	1940	305
Multiple	480	460	277	2453	336
Single	576	552	333	2943	403
CM5-11	421	363*	194	2020	315
Multiple	478	443	256	2414	365
Single	573	531	307	2897	438
CM5-12	398	360	179	1920	300
Multiple	494	452	269	2485	380
Single	593	543	323	2982	456
CM6-1	395	358	186	1960	285
Multiple	510	460	278	2640	360
Single	612	552	334	3168	432
CM6-2	399	372	175	1960	295
Multiple	485	461	233	2352	364
Single	582	553	279	2822	436
CM6-3	405	348	179	1950	300
Multiple	488	454	224	2340	367
Single	586	544	269	2808	441
SM6-12	24	14*	5.7*	520	243
Multiple	30	16	6	613	290
Single	36	19	7	736	348
SM7-23	116	80	6.9*	580	190
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.

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Sample Date: 03-06-2001  
Analysis Date: 03-07-2001

Analyst: SM/LG

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM4-4	382	310	179	1850	310
Multiple	491	390	258	2502	361
Single	589	468	310	3002	433
CM4-5	382	315	175	1840	303
Multiple	493	395	280	2642	344
Single	592	474	336	3171	413
CM4-6	384	322	173	1860	300
Multiple	445	402	220	2344	337
Single	534	482	264	2812	405
CM4-7	383	324	175	1850	305
Multiple	514	394	341	2777	348
Single	616	472	409	3332	418
CM6-4	400	359	177	1940	300
Multiple	480	450	241	2364	367
Single	576	540	289	2837	441
CM7-2	387	311	175	1840	300
Multiple	492	408	296	2448	354
Single	590	490	356	2938	425
CM7-3	384	313	179	1860	305
Multiple	524	409	317	2544	372
Single	629	491	380	3053	446
CM7-4	380	312	175	1840	295
Multiple	463	379	241	2257	359
Single	556	455	289	2709	431
CM7-5	380	315	181	1860	305
Multiple	484	391	277	2368	366
Single	580	469	333	2841	439
CM7-6	390	317	183	1880	300
Multiple	484	397	263	2356	362
Single	580	477	315	2827	435
SM7-23	116	79	5.7*	590	190
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.



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Monitor Well Laboratory Report

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Sample Date: 03-13-2001

Analyst: LG/TF

Analysis Date: 03-14-2001

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM5-8	396	345	179	1920	303
Multiple	475	449	241	2396	373
Single	570	539	289	2876	448
CM5-9	397	341	175	1910	300
Multiple	475	446	241	2387	361
Single	570	536	289	2864	433
CM5-10	399	344	181	1940	300
Multiple	480	460	277	2453	336
Single	576	552	333	2943	403
CM5-11	419	369	191	2040	310
Multiple	478	443	256	2414	365
Single	573	531	307	2897	438
CM5-12	399	351	179	1920	300
Multiple	494	452	269	2485	380
Single	593	543	323	2982	456
CM6-1	394	363	185	1940	280
Multiple	510	460	278	2640	360
Single	612	552	334	3168	432
CM6-2	399	369	175	1950	290
Multiple	485	461	233	2352	364
Single	582	553	279	2822	436
CM6-3	398	345	179	1940	310
Multiple	488	454	224	2340	367
Single	586	544	269	2808	441
SM6-12	22*	14	5.7	520	240
Multiple	30	16	6	613	290
Single	36	19	7	736	348
SM7-23	114	80	6.5*	580	190
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.

Crow Butte Project  
Monitor Well Laboratory Report

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Sample Date: 03-20-2001

Analyst: LG/TF

Analysis Date: 03-21-2001

Well Number	Sodium (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Conductivity (UMHOS)	Alkalinity (mg/L)
CM4-4	392	310	179	1840	310
Multiple	491	390	258	2502	361
Single	589	468	310	3002	433
CM4-5	390	314	175	1840	305
Multiple	493	395	280	2642	344
Single	592	474	336	3171	413
CM4-6	391	309	174	1850	305
Multiple	445	402	220	2344	337
Single	534	482	264	2812	405
CM4-7	391	321	175	1850	300
Multiple	514	394	341	2777	348
Single	616	472	409	3332	418
CM6-4	407	357	177	1930	298
Multiple	480	450	241	2364	367
Single	576	540	289	2837	441
CM7-2	388	301	175	1830	305
Multiple	492	408	296	2448	354
Single	590	490	356	2938	425
CM7-3	396	310	179	1850	300
Multiple	524	409	317	2544	372
Single	629	491	380	3053	446
CM7-4	389	307	175	1830	305
Multiple	463	379	241	2257	359
Single	556	455	289	2709	431
CM7-5	390	317	181	1860	303
Multiple	484	391	277	2368	366
Single	580	469	333	2841	439
CM7-6	399	317	183	1870	300
Multiple	484	397	263	2356	362
Single	580	477	315	2827	435
SM7-23	115	74*	5.7*	560	190
Multiple	134	52	45	708	232
Single	161	62	54	850	278

\* - Denotes 5% change from previous sample.