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Mime file

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Vice President and
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Subsidiary of
Coastal States
Energy Company

DIVISION OF
OIL, GAS & MINING

*ACT/007/005
#9*

April 22, 1986

Lowell P. Braxton, Administrator
Mineral Resource Development & Reclamation Program
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

RE: Modification of the Aquatic Monitoring Program

Dear Mr. Braxton:

In preparation for the Skyline M&RP five year renewal, discussions were held with DWR personnel concerning future aquatic monitoring. After reviewing the data accumulated to date, both Larry Dalton and Walt Donaldson of the DWR staff indicated that the baseline data are sufficient and that they could see no purpose in continuing this program other than on an as needed basis.

Therefore, we are requesting that the attached modified pages be incorporated into the M&RP and that this modification be made effective immediately. To assist you in evaluating this proposal, we have attached summary documents of aquatic monitoring data gathered to date.

Please call if you have questions.

Sincerely,

Glen A. Zumwalt
Glen A. Zumwalt
V.P. & General Manager

attachments

cc: Vernal Mortensen
John M. Garr
Keith Welch
Keith Zobell

Eccles Creek between the National Forest boundary and the surface coal handling facilities should not be directly impacted since road and conveyor plans have been developed to mitigate degradation.

* There should be no immediate impacts on Huntington Creek above Electric Lake. Mining activities will not reach the channel area for several years. If any impacts occur, they will be related to intersection of groundwater before it reaches the stream or subsidence of the actual stream channel. Subsidence of the stream channel may occur. Since subsidence will correspond with mine expansions, the effects of subsidence will be monitored as mining progresses toward Huntington Creek. The early detection of the mining effects will allow the fish and wildlife protection plan to be modified and implemented, if necessary, before the stream is impacted. The monitoring program has provided adequate baseline data of existing conditions so that any project impacts can be detected and mitigated.

* Future aquatic monitoring is planned only on an as needed basis. Need will be established in conjunction with UDWR personnel and will be required only in case of a major perturbation in fish populations or other anomalous conditions. The applicant will cooperate with UDWR in this investigation of any such condition. This approach to future monitoring is consistent with the requirements recommended by the UDWR, Price office.

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!	REPLACES	!!	TEXT	!
!		!!		!
!		!!		!
!	Section 2.8 Page 2-59 Date 11/16/79	!!	Section 2.8 Page 2-59 Date 4/22/86	!
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* Denotes change or addition

Middle Creek

The portion of Eccles Creek downstream from the portal facilities to the coal load-out facilities is expected to remain unaffected by construction, operation and reclamation activities.

Lower Creek

Approximately 1,570 feet of lower Eccles Creek in the area of coal storage and loading facilities will be relocated into a new channel designed to provide quality trout habitat. The new channel will be constructed with numerous meanders which will provide eddies, pools and riffles. Log deflectors and log dams will be used to provide spawning gravel beds and will be designed to maintain the structural integrity of the beds during high flow events. The Applicant plans to establish riparian vegetation on soil covered banks which will blend aesthetically with the natural surrounding. Details of the above described structures are presented in the Aquatic Ecology Report of Volume A-5, Appendices.

Road crossings to the coal storage and load-out facilities will be over open bottom culverts with five foot minimum widths and rock bottoms to ensure free passage of migrating fish. At the conclusion of mining, it is anticipated that the stream channel diversion at the load-out facilities area will be an equal or better trout habitat than the existing channel. Therefore, the Applicant proposes to leave the stream in the new channel rather than restore it to its premining location in order to avoid redistributing the fish habitat.

4.18.2 Huntington Creek

The Skyline project will have no surface related activities beyond exploratory activities and environmental monitoring in the Huntington Creek drainage area. There may however be subsidence related effects to the creek from underground mining activities. The Applicant will request a modification of the

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!	Section 4.18 Page 4-63 Date 11/16/79	!!	Section 4.18 Page 4-63 Date 4/22/86	!
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* Denotes change or addition

AQUATIC MONITORING SUMMARY

Aquatic monitoring data have been accumulated for a period of six years. Summaries of these data are presented in Tables 2 and 3. Backup data for these summaries, including break down by species, are available for review at the Coastal States Energy Company office.

Table 2. Descriptors of the benthic communities at seven stations on Eccles Creek and its major tributaries, Carbon County, Utah.

Date	CTQa	CTQd	#taxa	H	#/m2	Standard Deviation	gm/m2
UPSF - Upper South Fork Eccles Creek above mine portal and culvert							
Jun 79	69	72	30	3.800	10,176	9,072	--
Jun 80	74	77	22	3.715	7,728	2,470	1.39
Aug 80	62	64	33	3.453	2,892	868	0.81
Nov 80	71	71	31	3.855	14,834	6,898	4.45
Jun 81	67	69	23	3.619	10,545	4,437	1.31
Sep 81	64	63	32	3.453	31,185	20,570	3.19
Nov 81	66	66	32	3.197	36,788	2,358	6.67
Jun 82	68	70	29	3.850	4,608	1,961	1.58
Aug 82	68	71	33	3.406	24,457	9,715	8.87
Oct 82	70	70	33	2.634	34,868	21,970	2.50
Oct 83	66	66	34	3.788	29,477	13,557	3.70
Jun 84	67	67	35	3.399	13,821	4,543	2.70
Sep 84	71	72	31	2.908	24,842	14,305	6.80
Oct 84	68	66	33	2.523	42,666	23,968	3.90
Jun 85	66	69	32	3.173	28,778	6,224	4.30
Jul 85	64	65	28	3.573	13,378	7,997	5.30
Oct 85	55	55	28	2.873	27,438	2,180	1.70
UPMF - Upper Middle Fork Eccles Creek above mine portal and culvert							
Jun 79	67	68	30	3.150	8,449	2,650	--
Jun 80	72	74	26	3.884	4,019	2,029	0.62
Aug 80	63	63	33	3.114	17,090	14,450	1.59
Nov 80	70	64	38	3.844	44,127	25,316	1.44
Jun 81	65	68	35	3.301	41,684	9,427	4.15
Sep 81	70	70	34	3.542	50,134	47,174	4.79
Nov 81	61	64	32	3.148	65,792	13,774	3.66
Jun 82	68	69	30	3.862	8,113	3,814	1.87
Aug 82	65	65	33	3.199	33,332	11,605	12.60
Oct 82	59	59	38	3.427	55,457	10,794	10.78
Oct 83	61	64	27	1.852	46,497	10,006	6.10
Jun 84	66	68	24	1.848	13,316	2,325	1.00
Sep 84	59	63	33	2.959	26,338	13,028	5.10
Oct 84	59	60	28	2.118	54,411	12,092	10.20
Jun 85	62	66	29	3.043	13,991	4,100	3.30
Jul 85	57	58	29	3.391	11,858	6,664	3.90
Oct 85	56	53	29	2.467	41,512	4,204	5.20

Date	CTQa	CTQd	#/taxa	H	#/m2	Standard Deviation	gm/m2
EC-02 - Eccles Creek immediately below mine portal and mouth of culvert							
May 79	66	66	36	3.510	12,339	5,138	--
Aug 79	65	65	42	1.964	73,181	22,640	3.26
Oct 79	64	66	32	2.534	17,761	11,601	2.61
Jun 80	64	63	27	3.389	4,350	1,874	1.57
Aug 80	68	69	31	3.468	5,232	1,253	0.44
Nov 80	66	69	30	3.020	9,745	2,414	0.54
Jun 81	64	63	21	2.173	11,274	4,645	2.20
Sep 81	71	73	30	2.554	19,077	19,191	1.09
Nov 81	80	84	24	3.970	2,370	1,418	0.51
Jun 82	72	71	30	2.411	6,053	4,898	1.18
Aug 82	64	69	26	2.514	7,798	4,659	1.75
Oct 82	70	72	30	1.838	28,718	16,615	6.37
Oct 83	70	74	23	3.746	2,556	917	3.30
Jun 84	67	71	21	1.040	14,843	6,779	2.80
Sep 84	70	73	29	2.923	4,070	719	1.70
Oct 84	66	69	28	2.142	11,190	2,263	3.80
Jun 85	71	74	22	2.849	5,544	1,845	1.70
Jul 85	65	67	24	2.770	13,758	5,891	3.90
Oct 85	65	69	23	2.037	13,391	1,040	1.60

EC-SF - South Fork Eccles Creek below EC-02 and above EC-03

May 79	59	60	36	3.510	9,321	7,243	--
Aug 79	64	66	35	3.322	17,773	10,151	1.53
Oct 79	68	65	37	3.289	10,453	4,180	1.51
Aug 80	69	68	38	3.134	6,994	4,681	1.87
Oct 80	61	69	33	2.634	17,243	17,178	0.73
May 81	66	69	29	3.408	3,532	1,539	0.47
Sep 81	62	65	40	2.681	39,070	26,699	7.68
Jun 82	64	62	24	2.939	6,136	2,394	2.58
Aug 82	61	63	29	2.811	20,460	8,987	6.59
Oct 82	63	64	33	2.572	38,228	15,785	11.83
Oct 83	64	64	36	2.607	14,276	15,120	3.70
Jun 84	62	61	29	2.483	13,278	5,901	2.10
Sep 84	59	59	38	2.808	27,739	9,145	11.20
Oct 84	58	59	32	1.900	71,992	35,479	10.50
Jun 85	66	65	35	2.699	15,852	3,160	5.30
Jul 85	58	57	30	2.942	17,567	11,776	10.80
Oct 85	52	53	29	2.445	34,540	3,327	5.10

Date	CTQa	CTQd	#taxa	H	#/m2	Standard Deviation	gm/m2
EC-03 - Eccles Creek below South Fork and above Whiskey Springs							
May 79	65	62	27	2.450	18,093	8,455	--
Aug 79	55	44	30	2.743	23,247	10,395	3.07
Oct 79	63	61	34	2.892	15,871	11,841	1.40
Apr 80	70	65	23	2.407	26,251	5,119	2.03
Aug 80	70	64	23	2.472	6,873	4,914	0.73
Oct 80	57	57	34	1.904	58,069	31,108	3.95
May 81	73	74	23	3.201	3,882	3,136	0.58
Sep 81	75	79	24	1.383	13,585	4,717	1.01
Jun 82	80	81	15	2.688	619	384	0.18
Aug 82	71	73	26	2.424	11,193	4,389	7.56
Oct 82	69	72	29	2.107	16,008	16,189	2.62
Oct 83	68	65	28	3.567	4,931	1,120	2.90
Jun 84	66	69	29	2.106	15,790	9,154	1.60
Sep 84	63	63	25	3.086	2,749	911	2.10
Oct 84	57	61	25	2.228	10,615	5,188	1.50
Jun 85	59	60	21	2.155	7,231	2,697	3.50
Jul 85	59	60	26	1.869	16,789	7,024	2.20
Oct 85	60	62	22	1.619	25,781	1,655	0.80

EC-04 - Eccles Creek below Whiskey Springs and Belina Road

May 79	63	62	35	2.450	11,634	7,222	--
Aug 79	61	62	37	3.060	25,273	10,619	2.29
Oct 79	60	62	39	2.227	34,233	22,843	2.16
Apr 80	61	61	28	2.301	13,420	11,040	2.25
Aug 80	70	67	29	2.676	5,130	2,319	1.32
Oct 80	62	65	37	0.973	46,338	15,816	1.20
May 81	74	74	23	0.973	6,607	2,162	1.76
Sep 81	72	75	29	1.291	31,347	12,003	1.87
Jun 82	83	86	14	2.292	683	436	0.62
Aug 82	67	71	21	1.927	13,520	5,937	2.40
Oct 82	66	71	26	1.678	11,207	5,382	1.37
Oct 83	60	63	28	1.645	18,908	10,402	4.30
Jun 84	67	72	18	0.579	13,969	4,259	1.80
Sep 84	59	69	27	3.002	5,159	1,104	4.80
Oct 84	56	57	30	2.689	11,621	1,828	5.60
Jun 85	74	74	23	2.008	4,939	715	5.00
Jul 85	69	69	25	2.366	5,204	1,505	4.20
Oct 85	57	61	27	2.037	4,288	572	0.50

Date	CTQa	CTQd	#taxa	H	#/m2	Standard Deviation	gm/m2
EC-05 - Eccles Creek at mouth of canyon (quantitative habitat study site)							
May 79	59	59	28	2.280	18,661	12,773	--
Aug 79	74	75	21	2.590	2,526	1,066	0.55
Oct 79	65	70	32	2.155	14,308	6,806	3.49
Apr 80	73	76	28	2.319	12,560	3,907	3.70
Aug 80	64	71	24	2.057	6,085	1,851	1.76
Oct 80	59	61	33	1.865	34,303	16,125	1.42
May 81	58	64	26	1.441	9,870	2,460	2.44
Sep 81	59	65	27	2.544	15,909	6,457	3.91
Jun 82	79	84	14	1.863	1,216	332	0.49
Aug 82	70	76	16	1.363	17,609	7,710	3.11
Oct 82	70	73	24	0.990	22,631	5,258	6.12
Oct 83	75	79	19	2.160	6,047	2,547	0.80
Jun 84	75	81	16	1.042	5,431	2,730	0.90
Sep 84	71	72	23	0.828	41,232	5,591	2.60
Oct 84	67	67	21	0.615	51,680	19,698	4.20
Jun 85	70	73	20	1.256	11,419	2,383	5.50
Jul 85	67	74	17	1.661	19,691	12,370	3.10
Oct 85	53	64	22	1.511	18,001	1,437	1.30

Table 3. Sediment composition of gravel beds, at four stations on Eccles Creek, as percent of total mean weight for sediments passing through six USGS standard soil sieve sizes.

Sieve Opening (in mm)	Aug 1979	Aug 1980	Oct 1980	May 1981	Oct 1982	Oct 1983
<u>Station ECC-02</u>						
12.7	44.5	51.0	---	59.8	59.8	55.7
4.75	26.7	34.2	---	39.5	48.8	36.8
2.00	17.9	25.7	---	28.5	32.6	27.2
2.00	17.9	25.7	---	28.5	32.6	27.2
0.85	13.6	21.3	---	20.0	26.6	21.8
0.50	12.2	18.4	---	15.3	22.4	17.6
0.074	0.2	1.8	---	1.9	2.6	0.3
<u>Station ECC-03</u>						
12.7	---	55.2	58.1	73.2	65.9	59.2
4.75	---	38.8	45.8	53.9	40.9	44.8
2.00	---	29.5	39.5	40.9	31.8	37.5
0.85	---	25.3	35.1	35.0	28.8	32.5
0.50	---	22.7	29.5	31.8	26.0	23.8
0.074	---	1.8	0.4	1.9	1.6	0.7
<u>Station ECC-04</u>						
12.7	45.2	48.3	48.1	32.1	49.5	79.7
4.75	26.2	30.5	29.4	18.9	26.6	57.2
2.00	17.5	22.8	20.6	10.4	17.6	43.6
0.85	13.5	18.9	17.2	7.1	13.5	33.5
0.50	12.2	15.5	14.5	4.4	11.2	23.5
0.074	0.2	1.8	0.2	0.9	2.1	0.8
<u>Station ECC-05</u>						
12.7	50.4	43.9	41.7	38.9	46.2	53.3
4.75	29.4	28.1	21.8	19.5	33.9	31.2
2.00	20.3	22.1	16.7	13.2	28.6	20.2
0.85	15.9	18.9	14.3	10.4	24.5	14.3
0.50	14.1	14.9	12.2	7.8	20.7	9.1
0.074	0.2	1.4	0.2	1.0	2.0	0.3

Table 3 Sediment composition of gravel beds, at four stations on Eccles Creek, as percent of total mean weight for sediments passing through six USGS standard soil sieve sizes.

Sieve Opening (in mm)	June 1984	October 1984	June 1985	October 1985
Station ECC-02				
12.7	66.5	64.2	54.4	69.5
4.75	41.6	40.8	31.8	50.6
2.00	29.2	30.6	20.5	22.6
0.85	23.0	25.8	15.0	14.4
0.50	18.8	22.6	11.8	11.1
0.074	0.8	3.4	0.5	0.9
Station ECC-03				
12.7	67.2	58.1	75.7	74.0
4.75	47.8	39.6	47.0	51.3
2.00	41.7	29.6	33.2	28.5
0.85	39.3	24.1	26.0	18.1
0.50	36.9	20.4	21.1	13.3
0.074	1.7	2.6	1.2	2.0
Station ECC-04				
12.7	63.6	56.5	69.1	73.5
4.75	39.7	34.0	37.5	55.5
2.00	27.8	22.6	25.6	31.7
0.85	20.4	17.0	21.1	19.3
0.50	16.4	13.9	17.0	14.7
0.074	1.1	1.1	1.1	1.2
Station ECC-05				
12.7	57.4	55.6	62.1	62.5
4.75	35.4	32.0	32.3	39.5
2.00	25.5	22.7	21.6	32.9
0.85	21.2	18.4	17.5	23.9
0.50	18.8	15.1	14.4	19.6
0.074	1.4	1.5	1.1	1.6