



October 21, 1999

U.S. Nuclear Regulatory Commission  
ATTN: Director  
Division of Nuclear Material Safety, Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, Texas 76011

**LICENSE SUA-1341**  
**DOCKET NO. 40-8502**

**RE: Revised Pages to Irigaray/Christensen Ranch Annual Report for 1998-1999**

Dear Sir:

Enclosed please find two sets of revised pages to the referenced annual report which is included with the semi-annual monitoring report submitted on August 18, 1999. The revisions are limited to Appendix 5, the decommissioning and reclamation cost estimate. The changes reflect the inclusion of the plugging and abandonment of an additional deep disposal well and twelve additional wells that exist in the general area of Christensen Mine Unit 8. These modifications were discussed with Mr. Glenn Mooney, DEQ/LQD, during his site inspection on October 19, 1999. Please call me if you have any questions.

Sincerely,

T. W. Hardgrove  
Manager, Environmental and Regulatory Services

Enclosure

cc: USNRC/Headquarters (2 copies)  
WDEQ - District III, Sheridan (cover letter only)  
COGEMA-D. L. Wichers, C. W. Toal, J. M. Vaselein

DED-TEP

**COGEMA Mining, Inc.**  
**1999 - 2000**  
**Decommissioning and Reclamation Cost Estimate**  
**Irigaray and Christensen Ranch Projects**

**A. Cost Estimate Assumptions**

The 1999-2000 decommissioning and reclamation cost estimate is based on the estimate provided in the last annual surety update submitted August 18, 1998, with changes made to reflect as-built conditions and next year's planned operations. The assumptions which have been used to prepare this year's update are as follows:

1. Irigaray Project

- No changes to the Irigaray estimate have been made.
- Plans for the 1999-2000 year are to continue with the groundwater restoration efforts in Production Units 6 through 9, and to receive approval from the WDEQ and NRC for the completion of restoration in Units 1 through 5.

2. Christensen Ranch Project

- Production operations will continue in Mine Units 5 and 6 until operations enter full restoration in latter 2000. No further development of Mine Unit 7 is currently planned. With no mining of Mine Unit 7 anticipated, the bond estimate has been revised to limit reclamation in Mine Unit 7 to well plugging and abandonment, and surface reclamation. The number of wells in all well fields subject to abandonment has been revised to reflect the actual number of wells present since no additional wells are anticipated.
- No development of Mine Unit 8 is planned. Drill holes already have been plugged in Mine Unit 8, and surface reclamation with the interim seed mix has been completed. The bond estimate reflects the plugging and abandonment of a limited number of existing older wells in the area and the accomplishment of final seeding in Mine Unit 8.
- With the planned re-completion of the 18-3 deep disposal well in the Lance formation and the startup of the use of the 18-3 well (in addition to the existing DW-1), the plugging and abandonment of two deep disposal wells is included.

## **B. Updated Cost Estimate**

The decommissioning and reclamation cost estimate is comprised of eight worksheets and a summary table. The worksheets underwent significant revisions as discussed in Appendix E of the 1997-1998 Annual Report. Those revisions have been maintained in the current estimate (recognizing, however, the changes in status for Christensen Ranch Mine Units 7 and 8).

Table 1 - Summary Reclamation/Restoration Bond Estimate

1. Worksheet costs have been incorporated into the summary.
2. Contingencies: A contingency of 20% is utilized as discussed in the 1997-1998 Annual Report.
3. An 11.5% inflation factor has been added to update the estimate for inflation from August, 1994 through June, 1999 (1999\$). This is based on the Consumer Price Index (CPI - all urban consumers, all items) of 149.0 in August, 1994 and the CPI index of 166.2 in June, 1999.
4. With all adjustments the 1999-2000 restoration/reclamation surety estimate is now \$14,101,166, as compared with the present in-place surety of \$16,868,937. This represents a \$2,767,771 (16.4%) decrease.

COGEMA Mining, Inc.  
SUMMARY OF RECLAMATION/RESTORATION BOND ESTIMATE  
WDEQ PERMIT NO. 478/USNRC LICENSE SUA-1341  
TABLE 1

<b>I GROUNDWATER RESTORATION - Worksheet 1:</b>		<b>\$5,385,661</b>
<b>II DECOMMISSIONING AND SURFACE RECLAMATION:</b>		
A. Process Plant(s) Equipment Removal and Disposal Worksheet 2		\$262,060
B. Plant Building(s) Demolition and Disposal Worksheet 3		\$524,967
C. Process Pond Sludge and Liner Handling Worksheet 4		\$2,069,181
D. Well Abandonment Worksheet 5		\$680,098
E. Wellfield Equipment Removal and Disposal Worksheet 6		\$923,817
F. Topsoil Replacement and Revegetation Worksheet 7		\$568,868
G. Miscellaneous Reclamation Activities Worksheet 8		\$124,336
Sub Total - Decommissioning and Surface Reclamation		<b>\$5,153,327</b>
<b>SUBTOTAL RESTORATION AND RECLAMATION</b>		<b>\$10,538,988</b>
Contingency		
Project Design	2%	
Contractor Profit & Mobilization	8%	
Project Management	3%	
Site Security & Liability Assurance	1%	
Longterm Administration	1%	
Unknowns	5%	
TOTAL CONTINGENCY	20%	\$2,107,798
SUBTOTAL		<b>\$12,646,786</b>
11.5% Inflation Factor from August, 1994 through June, 1999		\$1,454,380
<b>TOTAL RESTORATION AND RECLAMATION</b>		<b>\$14,101,166</b>

GROUNDWATER RESTORATION

V LABOR (Irigaray and Christensen Combined)			
Cost Assumptions	Cost/Hour	Hours/Year	Cost
Crew:			
1 Supervisor	\$20.00	2080	\$41,600
4 Operators	\$15.00	2080	\$124,800
2 Maintenance	\$15.00	2080	\$62,400
2 Vehicles	\$10.00	2080	\$41,600
Cost per Year			\$270,400
Time Required - Years (See Figure 1)		6.7	
TOTAL RESTORATION LABOR COST			\$1,811,680

Irigaray	Christensen	Total
Mine Unit(s)	Mine Unit	Christensen
#1 Thru #9	#2 Thru #4	& Irigaray

VI RESTORATION CAPITAL REQUIREMENTS			
I Deep Disposal Well(s)		\$0	\$0
II Plug and Abandon 2 DDW's		\$200,000	\$200,000
III 500 GPM Reverse Osmosis Unit		\$0	\$0
Total		\$0	\$200,000

	Irigaray Mine Unit(s) #1 Thru #5	Irigaray Mine Unit(s) #6 Thru #9	Christensen Mine Unit #2	Christensen Mine Unit #3	Christensen Mine Unit #4	Christensen Mine Unit #5	Christensen Mine Unit #6	Christensen Mine Unit #7	Christensen Mine Unit #8	TOTAL
SUMMARY:										
I GROUNDWATER SWEEP	\$110,132	\$46,674	\$31,173	\$27,006	\$22,269	\$55,864	\$143,232	\$0		
II REVERSE OSMOSIS	\$121,553	\$350,232	\$219,868	\$187,144	\$157,035	\$393,542	\$1,009,137	\$0		
III WASTE DISPOSAL WELL	\$0	\$0	\$29,377	\$23,981	\$20,967	\$52,517	\$134,679	\$0		
IV STABILIZATION	\$10,800	\$37,800	\$37,800	\$37,800	\$37,800	\$37,800	\$37,800	\$0		
SUB TOTAL	\$242,485	\$434,706	\$318,218	\$275,931	\$238,070	\$539,724	\$1,324,848	\$0		\$3,373,981
V LABOR										\$1,811,680
VI CAPITAL										\$200,000
TOTAL GROUNDWATER RESTORATION COST										\$5,385,661

COGEMA Mining, Inc.  
Restoration and Reclamation Costs  
Wyoming Operations  
WORKSHEET 5

	Irigaray				Christensen			
	Mine Units #1 Thru #9	517 USMT Test Sites	Monitor/ Trend	Sub Total	Mine Units #2 Thru #8	Monitor/ Trend	Misc. Regional	Sub Total
Number of Wells	1064	24	315	1403	2094	327	137	2558
Average Depth	250	250	250		410	410	410	
Average Diameter	4.5	4.5	4.5		4.5	4.5	4.5	
<b>Materials</b>								
Bentonite Chips Required (Ft³/Well)	11.6	11.6	11.6		11.6	11.6	11.6	
Bags of Chips Required/Well	15.0	15.0	15.0		15.0	15.0	15.0	
Cost Per Bag (\$)	\$4.00	\$4.00	\$4.00		\$4.00	\$4.00	\$4.00	
Cost/Well Bentonite Chips (\$)	\$60.00	\$60.00	\$60.00		\$60.00	\$60.00	\$60.00	
Gravel Fill Required (Ft³/Well)	15.7	15.7	15.7		33.6	33.6	33.6	
Gravel Fill Required (Yd³/Well)	0.6	0.6	0.6		1.2	1.2	1.2	
Cost of Gravel/Yd³ (\$)	\$17.53	\$17.53	\$17.53		\$17.53	\$17.53	\$17.53	
Cost/Well Gravel Fill (\$)	\$10.19	\$10.19	\$10.19		\$21.82	\$21.82	\$21.82	
Cement Cone/Markers Req'd/Well	1.0	1.0	1.0		1.0	1.0	1.0	
Cost of Cement Cones/Markers (\$)	\$4.00	\$4.00	\$4.00		\$4.00	\$4.00	\$4.00	
Total Materials Cost per Well	\$74.19	\$74.19	\$74.19		\$85.82	\$85.82	\$85.82	
<b>Labor</b>								
Hours Required per Well	1.0	1.0	1.0		1.0	1.0	1.0	
Labor Cost per Hour	\$60.00	\$60.00	\$60.00		\$60.00	\$60.00	\$60.00	
Total Labor Cost per Well (\$)	\$60.00	\$60.00	\$60.00		\$60.00	\$60.00	\$60.00	
<b>Equipment Rental</b>								
Hours Required per Well	1.0	1.0	1.0		1.0	1.0	1.0	
Backhoe w/Operator Cost/Hr (\$)	\$30.00	\$30.00	\$30.00		\$30.00	\$30.00	\$30.00	
Total Equipment Cost per Well (\$)	\$30.00	\$30.00	\$30.00		\$30.00	\$30.00	\$30.00	
Total Cost per Well (\$)	\$164.19	\$164.19	\$164.19		\$175.82	\$175.82	\$175.82	
<b>TOTAL WELL ABANDONMENT COST (\$)</b>	<b>\$174,702</b>	<b>\$3,941</b>	<b>\$51,721</b>	<b>\$230,363</b>	<b>\$368,157</b>	<b>\$57,492</b>	<b>\$24,087</b>	<b>\$449,735</b>
<b>GRAND TOTAL IRIGARAY AND CHRISTENSEN</b>								<b>\$680,098</b>



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Irigaray Mine Unit(s) #1 Thru #9	Christensen Mine Unit #2 Thru #4	Total Christensen & Irigaray
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II Plug and Abandon 2 DDW's		\$200,000	\$200,000
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Total	\$0	\$200,000	\$200,000

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