

August 16, 2002

LICENSE SUA-1341 DOCKET NO. 40-8502

Mr. Dan Gillen, Chief Fuel Cycle Licensing Branch, FCSS c/o Document Control Desk U. S. Nuclear Regulatory Commission Washington, D.C. 20555

RE: Annual Surety Bond Update

Dear Mr. Gillen:

Pursuant to License Section 9.5, COGEMA Mining Inc. submits the attached annual bond update for the reclamation and restoration of the Irigaray and Christensen Ranch Projects. Changes are described in the text and detailed worksheets are included.

Please contact me if you have any questions regarding the bond report. Your timely review and approval of the updated (reduced) amount will be appreciated.

Sincerely,

John Vaselin Radiation Safety Officer

cc: Donna Wichers - COGEMA

WP\2002MEMO\NRC-BOND

MM250/LI

COGEMA Mining, Inc. - Irigaray and Christensen Ranch Projects

Summary of the Updated Bond Estimate for 2002 -2003

The updated bond estimate consists of changes resulting from work completed during the annual report period of August 2001 to August 2002. The changes (reductions) affected three bond worksheets and Table 1 as described below.

Worksheet 1 – Groundwater Restoration

The first phase of restoration, one pore volume displacement of groundwater sweep, has been completed for all of the Irigaray wellfields, as well as Mine Units 2, 3, 4 and 5 at Christensen. In fact, all phases of restoration have been completed at Irigaray and final stabilization monitoring will be completed in the last wellfield in August 2002. If after review of the final report additional restoration were deemed necessary by the regulatory agencies, the remaining bonded level for the second phase of restoration, five pore volumes of reverse osmosis, should be plenty of surety for any remaining work. We are therefore requesting that the dollars for groundwater sweep be deleted from the Irigaray and Christensen Units 2, 3, 4 and 5 restoration bond amount as this work has been accomplished. This is a bond reduction of \$277,623.

An additional year of labor has been expended for the groundwater restoration since last year's bond estimate. This brings the remaining labor for restoration down from 3.6 years to 2.6 years. This is a bond reduction of \$351,520.

Worksheet 4 – Pond Reclamation

Reclamation of the 5I7 ponds has progressed through radiation surveys, soil sampling and removal of the leak detection systems. In Worksheet 4, the dollars for radiation surveys for the 5I7 ponds (\$1,055) have been removed. Additionally, \$44,984 had been included for the removal of Pond 1 leak detection system and transportation to Shirley Basin for disposal. This was due to a prior leak in the pond and the assumption that contamination may be found under the pond. The result of the radiation surveys, however, showed that the area within the leak detection system was not contaminated in Pond I, nor in any of the other 5I7 ponds, and the systems have been removed. Accordingly, the \$44,984 in the bond for Pond 1 leak detection system removal can be deleted.

Worksheet 5 – Well Plugging and Abandonment

At Irigaray, a total of 14 wells were plugged and abandoned at the 517 site (13 wellfield wells and 1 monitor well). Accordingly, Worksheet 5 has been adjusted by reducing the number of wells at the 517/USMT site to 11, and monitor/trend wells to 314. This provides a total reduction for the Irigaray site of \$2,614, bringing the Irigaray sub-total to \$259,317.

At Christensen, a total of 32 injection and recovery wells were plugged and abandoned as a result of MIT failures. This provides a reduction for the Christensen site of \$6,346 bringing the Christensen sub-total to \$500,954. The grand total for well plugging and abandonment is now \$760,271, a reduction of \$8,960.

<u>Table 1 – Summary of Reclamation/Restoration Bond Estimate 2002 – 2003</u> As a result of the above changes to Worksheets 1, 4 and 5, changes to Table 1 have been made. The new subtotal for restoration and reclamation is 9,408,962, or a 684,142 reduction in direct costs. A +1.35% adjustment for inflation from last year has been added (CPI base of August 2001 = 177.5 and current CPI for June 2002 = 179.5). Additionally, the 34.5% contingency remains unchanged to provide a new Grand Total restoration and reclamation cost of 12,825,898. This is an overall 749,326 reduction from last year's estimate. We respectfully request that DEQ approve the bond reduction.

COGEMA Mining, Inc. SUMMARY OF RECLAMATION/RESTORATION BOND ESTIMATE, 2002 - 2003 WDEQ PERMIT NO. 478/USNRC LICENSE SUA-1341 TABLE 1

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	GROUNDWATER RESTORATION - Wor	ksheet 1:	\$4,842,891
	DECOMMISSIONING AND SURFACE R A. Process Plant(s) Equipment Remove		\$212,109
	Worksheet 2 B. Plant Building(s) Demolition and Disp	oosal	\$587,632
	Worksheet 3 C. Process Pond Sludge and Liner Han		\$1,259,496
	Worksheet 4	Ū	
	D. Well Abandonment		\$760,261
	Worksheet 5	ionocol	\$832,873
	E. Wellfield Equipment Removal and D Worksheet 6	Isposal	\$002,070
	F. Topsoil Replacement and Revegatio	n	\$757,774
	Worksheet 7 G. Miscellaneous Reclamation Activities	c	\$155,926
	G. Miscellaneous Reclamation Activities Worksheet 8		\$100,020
	Sub Total - Decommissioning and Surface	e Reclamation	\$4,566,071
	TOTAL RESTORATION AND RECLAMA	TION	\$9,408,962
	Add for Inflation: CPI Base of August 20	01= 177.5	1.35% \$127,021
	Current CPI for June 2002 = 179.5		F
		SUBTOTAL	\$9,535,983
	Miscellaneous Costs Associated with Thi	rd Party Contractors	5
	Project Design	2%	
	Contractor Profit & Mobilization	8%	
	Pre-construction Investigation	1%	
	Project Management	5%	
	On-site monitoring	0.5%	
	Site Security & Liability Assurance	1%	
	Longterm Administration	2%	
	Contingency	<u>15%</u>	
	TOTAL CONTINGENCY	34.5%	\$3,289,914
	AND TOTAL RESTORATION AND RECL		\$12,825,898
11-1-	AND IOTAL REGIORATION AND REOL		

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ORKSHEET 1									
	Ingaray	ingaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christense
ROUNDWATER RESTORATION	#1 Thru #5	Mine Unit(s) #6 Thru #9	Mine Unit #2	Mine Unit #3	Mine Unit #4	Mine Unit #5	Mine Unit #6	Mine Unit #7	Mine Unit
				"V					*0
echnical Assumptions									
Wellfield Area (Ft ²)	522720			798944	510088	1210968	2021243	1332936	160000
Weilfield Area (Acres)	12 00	18 00	20 43	18 34	11.71	27 80	46 40	30 6	36 1
Affected Ore Zone Area (Ft ²)	522720	784080	890000 11 0	798944 10 0	550193 12 7	1346004 19 9	2058344 21 8		
Avg Completed Thickness (Ft)	150	180		100	127	19.9	218		
Affected Volume: Factor For Vertical Flare	20%	20%	20%	20%	20%	20%	20%		
Factor For Honzontal Flare	20%	20%	20%	20%	20%	20%	20%		
Total Volume (Fl ³)	11290752						64615534 85		
Porosity	26 0%	26 0%	26 0%	28 0%	26 0%	26 0%	26 0%		
Gallons Per Cubic Foot	7 48	7.48	7 48	7 48	7 48	7 48	7 48		
Galions Per Pore Volume	21958254 49						125664292 2		
Number of Weils in Unit(s)	2100020440	000000000							
Production Wells	150	274	153	185	105	217	202	155	
Injection Wells	310			277	128	277	244	170	
Monitor Wells	150					70		66	
Average Welt Spacing (Ft)	35			70		85	100		
Average Well Depth (Ft)	250			300	430	450	520	550	
A. PLANT & OFFICE		1	· · · · · · · · · · · · · · · · · · ·						r
Operating Assumptions		1	1	1					1
Flowrate (gpm)	200	200	200	200	200	200	200		
PV's Required			1	1	1	1	1 1		
Total Gallons For Treatment		i i	l i	l i	0	l o	125664292 2		
Total KGais for Treatment	õ	0	ه ا	Ō	0	0	125664		
Cost Assumptions:	, v	Ů	Ĭ	Ĭ	Ť	-			
Power									
Avg Connected Hp	51.30	51.30	40.00	40.00	40.00	40.00	40.00		
Kwh's/Hp	1 00	1.00	075	0 75	075	075	075		
\$/Kwh	\$0 051	\$0 051	\$0.038	\$0 038	\$0 038	\$0.038	\$0 038		
Gallons Per Minute	200			200		200	100		
Gallons Per Hour	12000								
Cost Per Hour	2 62	2 62	1.14	1.14	1.14	1.14	1.14		
Cost Per Gallon	0 00022	0 00022	0 00010	0 00010	0 00010	0 00010	0 00019		
Cost Per KGal (\$)	\$0 218	\$0 218	\$0 095	\$0 095	\$0.095	\$0 095	\$0 190	1	
Chemicals		1		1					1
Barlum Chloride (\$/KGals)	\$0 041	\$0 041	\$0 041	\$0 041	\$0 041	\$0 041	\$0 000		
Antiscalent (\$/Kgals)	1		\$0 108	\$0 108	\$0 108	\$0 108	\$0 108		I
Elution (\$/KGais)	\$0 099	\$0 099	\$0 099	\$0 099	\$0 099	\$0 099	\$0 099		l
Repair & Maintenance (\$/KGais)	\$0 061	\$0.061	\$0 061	\$0.061	\$0.061	\$0.061	\$0.061		1
Analysis (\$/KGals)	\$0 164	\$0 091	\$0 091	\$0 161	\$0 092	\$0 094	\$0 094	ł	
Total Cost Per KGal	\$0 583	\$0 510	\$0 495	\$0 565	\$0 496	\$0 498	\$0 552		1
Total Treatment Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$69,367		1
Utilities		1	1						l
Power (\$/Month)	\$1,840	\$1,840	\$200	\$200	\$200	\$200	\$200		
Propane (\$/Month	\$1,000	\$1,000	\$200	\$200	\$200	\$200	\$200		ł
Time For Treatment			1		1			}	
Minutes For Treatment	0	-	0	0	0	0	628321		
Hours For Treatment	0		1	0	0	0	10472		
Days For Treatment	0			0	0	0	438		1
Average Days Per Month	30 4	30.4	30 4	30.4	30 4	304	30 4		
Months For Treatment	00			00	00	00	14 3		
Utilities Cost (\$)	\$0			\$0	\$0	\$0	\$5,738		ļ
TOTAL PLANT & OFFICE COST	\$0	\$0	\$0	\$0	\$0	\$0	\$75,105	\$0	1 5

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192,540

UNDWATER RESTORATION	trigaray Mine Unit(s)	frigaray Mine Unit(s)	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Mine Unit	Mine Unit
ONDWATER RESTONATION	#1 Thru #5	#6 Thru #9	#2	#3	#4	#5	#6	#7	#8
GROUNDWATER SWEEP (Continued)					· · · · · · · · · · · · · · · · · · ·			·	
B WELLFIELD	-4								
Cost Assumptions.									1
Power	3 86	3 86	20	20	20	20	20		1
Avg Flow/Pump (gpm)	1 50	150	5 00	5 00	5 00	5 00	5 00		
Avg Hp/Pump Avg # of Pumps Required	519	519	50	50	50	5.0	50	1	
Avg Connected Hp	77 8	778	25	25	25	25	25		
Kwh's/Hp	1 000	1 000	0 750	0 750	0 750	0 750	0 750		
s/Kwh	\$0 051	\$0 051	\$0 038	\$0 038	\$0 038	\$0 038	\$0 038		
Gations Per Minute	200		200	200	200	200	200		1
Gations Per Hour	12000		12000	12000	12000	12000	12000	ł	
Cost Per Hour (\$)	\$3 97	\$3 97	\$0 71	\$0 71	\$0 71	\$0 71	\$0.71		
Cost Per Gallon (\$)	\$0 0003	\$0 0003	\$0 0001	\$0 0001	\$0 0001	\$0 0001	\$0 0001	1	
Cost Per KGal (\$)	0 331	0 331	0 059	0 059	0 059	0 059	0 059		1
Repair & Maintenance (\$/KGals)	\$0 018	\$0 016	\$0 224	\$0.224	\$0 224	\$0 224	\$0 224		
Total Cost Per KGal	\$0 347	\$0 347	\$0 283	\$0 283	\$0 283	\$0 283	\$0 283		
TOTAL WELLFIELD COST	\$0	\$0	\$0	\$0	\$0	\$0	\$35,610	\$0	\$
TOTAL GROUND WATER SWEEP COST	\$0		\$0	\$0	\$0	\$0	\$110,715	\$0	\$
A PLANT & OFFICE		r		1	<u> </u>			1	1
Operating Assumptions	-1	1		ł	ł			1	1
Flowrate (gpm)	300	300	500	500	500	500	500		1
PV's Required	30		50	50	5.0	50	5.0		1
Total Gallons For Treatment	65874763 47		137085062			375285000	628321460 9		1
Total KGals for Treatment	65875	197624	137085	111873	97842	375285	628321		
Feed to RO (gpm)	300					500	500		
	240							5	1
Permeate Flow (gpm)	60					125		5	
Brine Flow (gpm)	80 0%				L				
Average RO Recovery								1	
Cost Assumptions	1		1	l				1	
Power	120 00	120 00	560 00	560 00	560 00	560 00	560 00		1
Avg Connected Hp	1 000		0 750	0 750	0 750	0.750	0.750		
Kwh's/Hp	\$0.051	\$0 051	\$0 038	\$0 038	\$0 038	\$0 038	\$0 038		1
\$/Kwh	300								
Gallons Per Minute	18000						- · · ·		
Gallons Per Hour			\$15.96	\$15 96		\$15 96	\$15 96		
Cost Per Hour (\$)	\$8 12		\$0 00053	\$0 00053		\$0 00053	\$0 00053		1
Cost Per Gallon (\$)	\$0 00034		\$0 00053	\$0 532		\$0 532	\$0 532		
Cost Per KGal (\$)	\$0 340	\$0 340	\$0.552	\$0.552	30 332	40.002			1
Chemicals	*0.070	\$0 076	\$0 000	\$0 000	\$0 000	\$0 000	\$0 000		1
Sulfuric Acid (\$/KGals)	\$0 076		\$0 000	\$0 000		\$0 015	\$0 015		1
Caustic Soda (\$/KGals)	\$0 111 \$0 009		\$0 000		1	\$0 000	\$0 000		
Hydrochloric Acid (\$/KGals)			\$0 000			\$0 000	\$0 000		1
Hydrogen Sulfide (\$/KGals)	\$0 304	30.304	\$0 000			\$0 092	\$0 092		1
Sodium Sulfate (\$/Kgals)		1	\$0 108			\$0 108	\$0 108		1
Antiscalent (\$/Kgals)		1	\$0 108			\$0 099	\$0 099		1
Elution (\$/Kgals)	\$0 279	\$0 279	\$0 099				\$0.120		
Repair & Maintenance (\$/KGals)	\$0 279		\$0 091				\$0 094		1
Sampling & Analysis (\$/KGals)	\$0 164		1				\$1 060		
Total Cost Per KGal (\$)	\$1203						\$666.021		1
Total Pumping Cost (\$)	\$04,31/	+**39,125	\$144,000	4,20,000	1	1	1	1	1
Utilities		\$1,840	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000		
Power (\$/Month)	\$1,840								1
Propane (\$/Month	\$1,000	\$1,000		1	1 *****	1	1	1	1
Time For Treatment	0.000	658748	274170	223745	195684	750570	1256643	1	1
Minutes For Treatment	219583								1
Hours For Treatment	3660								1
Days For Treatment	152								1
Average Days Per Month	30 4								1
Months For Treatment	50							1	1
Utilities Cost (\$)	\$14,200	\$42,600	\$11,340	\$9,180	\$8,100	\$30,780	\$51,660	· 1	5

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	Irigaray	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christenser
OUNDWATER RESTORATION	Mine Unit(s)	Mine Unit(s)	Mine Unit						
		#6 Thru #9		#3	#4	#5	#6	#7	#8
REVERSE OSMOSIS (Continued)									
B WELLFIELD									
Cost Assumptions.									
Power]]
Avg Flow/Pump (gpm)	3 86	3 86	20 00	20 00	20 00	20 00	20 00		1
Avg Hp/Pump	1 50	1.50	5 00	5 00	5 00	5 00	5 00	1	
Avg # of Pumps Required	77.8	778	62 4	62 4	62 4	62 4	62 4		
Avg Connected Hp	118.7	1167	187.1	187.1	187.1	187 1	187.1		1
Kwh's/Hp	1 000	1 000	0 750	0.750	0 750	0 750	0.750		
\$/Kwh	\$0 051	\$0 051	\$0 038	\$0 038	\$0 038	\$0 038	\$0 038		
Gallons Per Minute	300	300	500	500	500	500			
Gallons Per Hour	18000	18000	30000	30000	30000	30000	30000		
Cost Per Hour (\$)	\$5 95	\$5 95	\$5 33	\$5 33	\$5 33	\$5 33	\$5 33		1
Cost Per Gallon (\$)	\$0 0003	\$0 0003	\$0 0002	\$0 0002	\$0 0002	\$0 0002	\$0 0002		
Cost Per KGal (\$)	\$0 331	\$0 331	\$0 178	\$0 178	\$0 178	\$0.178	\$0 178	ļ	
Repair & Maintenance (\$/KGals)	\$0 016	\$0 016	\$0 224	\$0 224	\$0.224	\$0 224	\$0 224	1	
Total Cost Per KGal	\$0 347	\$0 347	\$0 402	\$0 402	\$0 402	\$0 402			
TOTAL WELLFIELD COST	\$22,835	\$68,506	\$55,073	\$44,944	\$39,308	\$150,769			
TOTAL REVERSE OSMOSIS COST	\$121,553	\$350,232	\$211,312	\$180,205	\$150,925	\$579,351	\$970,108	\$0	\$

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CROUNDWAILH RESTORATION

WORKSHEET 1									
CROUNDWATEH RESTORATION	Iriguray Mine Unil(s)	Ingatay Ingatay Mine Unit(s) Mine Unit(s)	Critistensan Mina Unit	Christonsan Mine Unit	Critistensen Christensen Christensen Mine Unit Mino Unit Mine Unit Mine Unit	Christensen Mine Unit		Chustensen Christensen Christensen Mine U13 Mine Unit Mine Unit	Chrisk issun Mine Unit
	41 Thru #5	#G [hru #9	#2	61	#4	#5	#6	£4	61
LI WASTE DISPOSAL WELL									
Operating Assumptions									
Annual Evaporation Capacity (Gals)			1917,612	1 917,612	1,917,612	1,917,612	1.917,612		
Avg Munthly Evap. Capacity (Gats)			159,801	159,801	159,801	159 801	159,801		
Total Dispusal Hequirement									
RO Brine Total Galloris			34,271,266	27,968,153	24,460,551	93 821,250	157,080,365		
RO Brno Total KGallons			34,271	27,968					
Brine Concentration Factor	_		60%	60%					
fotal Concentrated Britio (Gals)			20 562,759	16,780,892	14 676 330	56,292,750	94 24		
Months of RO Operation			69	51		1.11			
Average Monthly Reqm't (Galkins)			3,263,930	3,290,371	3.261.407	3291.974	326		
Monthly Balance for DDW (Gals)			3,104,129	3,130,570	3,101,606				
Total WDW Disposel (Gatons)			19,556,013	15,965,907	13,957,226	ŝ			
Total WDW Disposal (KGals)			19556	15 966		53 560		_	
Cost Assumptions									
Power									
Avg Connocted Hp			100 001	100 001	100 00	100 00	100 00		
WDW Avg Connected Hp	_		180 00	180.00	•	190 00			
Kwrts/Hp			0 750	0.750					
SKwh			\$0.038	\$0 038					
Galtoris Por Minute			150	150	150	150		~	
Gallons Per Hour			0006	8008	0006	0006	0006		
Cost Per Hour (\$)			\$7.98	86 72	96/3	\$7.98	86 25		
Cost Per Gailon (\$)			\$0000	6000 05	6000 n\$	6000 0 \$	6000 D\$		
Cost Per KUal (\$)			\$0.887	\$0 687	\$0.687	\$0.887	\$0.887		
Chemicals (\$/Kgals)									
PO Antiscalent (\$%gats)			\$0 192	\$0 192	\$0 192	\$0.192	\$0 192		
WDW Antiscalont (\$/Kgals)			SO 226	\$0 226	\$0 226	\$0 226	\$0 226		_
Sulfuric Acid (\$Kgais)			SO 280	\$0 280	\$0 280	\$0 280	\$0 280		
Corrosion Inhibitor			\$0217	\$021/	\$0217	\$0217	\$0217	_	
Algacide			\$0 052	\$0 052	\$0 052	\$0 052			
Other			\$0 080	\$0 080		\$0 080			
Hepair & Maint (\$/Kgals)			\$0230	\$0 230	\$0.230	\$0 230			
Total Cost Per KGal			\$2 164	\$2 164	\$2164	\$2164	\$2,164		
FOULAL WASTE DISPOSAL WELL COST			\$42 313	\$34,545	\$30,199	\$115 896	\$193 999	0\$	\$0
	F								
Crevelor Assumptions		_							

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2	SI ABILIZATION MONITORING									
	Operating Assumptions									
	Time of Stabilization (mos)	0	8	6	6	0	0	0		
	Frequency of Analysis (mos)	S.	e	0	8	6	e	n		
	Total Sets of Analysis	n	e	9	9	e	со Г	-m		
	Cost Assumptions									
	Power (\$Month)	\$0	\$1,000	\$1,000	\$1,000	\$1,000	\$1.000	\$1,000		
	Total Power Cost	\$0	000,63	000'6\$	000'6\$	\$0,000	20 000	29,000		
	Sampling & Analysis (each set)	\$3,600	\$3,600	\$3,600	\$3,600	\$3,600	\$3 600	\$3,600		
	Total Sampling & Analysis Cost (\$)	\$10,800	\$10,800	\$10,800	\$10,800	\$10,800	\$10 800	\$10,800		
	Utilities (\$/Month)	\$0	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000		
	Total Utilities Cost (\$)	20	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000		
	TOTAL STABILIZATION COST	\$10,800	\$37 800	\$37,800	\$37,800	\$37,800	\$37,800	\$37,800	\$0	9

ORKSHEET 1										
	Irigaray	trigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	
ROUNDWATER RESTORATION	Mine Unit(s)	Mine Unit(s)	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	
	#1 Thru #5	#6 Thru #9	#2	#3	#4	#5	#6	#7	#8	
LABOR (Ingaray and Christensen Combined)										
Cost Assumptions	Cost/Hour_	Hours/Year	Cost							
Crew ⁻			-	_						
1 Supervisor	\$25 00	2080	\$52,000	1						
4 Operators	\$20.00	2080	\$166,400	Į						
2 Maintenance	\$20.00	2080	\$83,200	1						
2 Vehicles	\$12.00	2080	\$49,920	}						
Cost per Year			\$351,520]						
Time Required - Years (See Figure 1)	26	1								
TOTAL RESTORATION LABOR COST	\$913,952									
	Irigaray	Christensen	Total	1						
	Mine Unit(s)		Christensen							
	#1 Thru #9	#2 Thru #4		1						
			***-							
RESTORATION CAPITAL REQUIREMENTS										
I Deep Disposal Well(s)		\$0	\$0	1						
II Plug and Abandon DDW (2)		\$200,000	\$200,000							
III 500 GPM Reverse Osmosis Unit		\$0	\$0							
Total	\$0	\$200,000	\$200,000	1						
1000	¥*		1 4200,000	1						
	Irigaray	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	
	Mine Unit(s)	Mine Unit(s)	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	TOTAL
	#1 Thru #5	#6 Thru #9	#2	#3	#4	#5	#6	#7	#8	
JMMARY										
I GROUNDWATER SWEEP	\$0	\$0	\$0	\$0	\$0	\$0	\$110,715	\$0		
II REVERSE OSMOSIS	\$121,553	\$350,232	\$211,312	\$180,205	\$150,925	\$579,351	\$970,106	\$0		
III WASTE DISPOSAL WELL	\$0	\$0	\$42,313	\$34,545	\$30,199	\$115,886	\$193,999	\$0		
IV STABILIZATION	\$10,800	\$37,800	\$37,800	\$37,800	\$37,800	\$37,800	\$37,800	\$0		
SUB TOTAL	\$132,353	\$388,032	\$291,425	\$252,550	\$218,923	\$733,037	\$1,312,619	so		\$3,328.9
V LABOR									•	\$913.9
VI CAPITAL										\$200.00
DTAL GROUNDWATER RESTORATION COST										\$4,442,89
ZING GROUND WATCH DEGTORATION COOL				WDEO Maa	deted Estime		Ion Walt Class	ovo (Andi 20	202	\$400.00

GRAND TOTAL

WDEQ Mandated Estimate for Excursion Well Cleanup (April 2000)

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\$3,328,939 \$913,952 \$200,000 \$4,442,891 \$400,000 \$4,842,891

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				Ingaray						Christensen		
	Maint Area &	Main Process	Expansion		Dry Pack	Restoration		Satellite	Resin + Sand		Wellfield	
LANT EQUIPMENT REMOVAL AND DISPOSAL	Laboratory	Building	Building	Filter Media	Area	Building	Sub Total	Plant	Filter Media	Extension	Modules	Sub Tota
	1		456			40		91	197	42	55	
olume (Yds3)	40	200									20	
Quantity Per Truck Load (Yds ^a)	20	20			20	20 20		20 4 55	99	20	28	
lumber of Truck Loads	20	10 0	90	55	20	20		4 30	88	21	20	
E Decontamination Cost								\$550	\$550	\$550	\$550	
Decontamination Cost (\$/Load)	\$550	\$550	\$550	\$550	\$550	\$550				100 0%	100 0%	
Percent Requiring Decontamination	20 0%	100 0%	100 0%		100 0%	100 0%		100 0%				\$5,1
Total Cost	\$220	\$5,500	\$4,950	\$0	\$1,100	\$1,100	\$12,870	\$2,503	\$0	\$1,155	\$1,513	
I Dismantle and Loading Cost						· · · · ·						
Cost Per Truck Load (\$)	\$715	\$715	\$715	\$715	\$715	\$715		\$715	\$715	\$715	\$715	
Total Cost	\$1,430	\$7,150	\$6,435	\$3,933	\$1,430	\$1,430	\$21,808	\$3,253	\$7,043	\$1,502	\$1,966	\$13,7
III Oversize Charges	1								1			
Percent Requiring Permits	40 0%		40 0%		60 0%	40 0%	1	40 0%		40 0%	0 0%	
Cost Per Truck Load (\$)	\$326	\$326	\$326	\$326	\$326	\$326		\$326	\$326	\$326	\$326	
Total Cost	\$261	\$1,304	\$1,174	\$0	\$391	\$261	\$3,390	\$593	\$0	\$274	\$0	\$8
V Transportation & Disposal												
A. Landfill												
Percent To Be Shipped	80 0%	80 0%	80 0%	0 0%	50 0%	80 0%		80 0%			80 0%	
Distance (Miles)	48	48	48	48	48	48		48			48	
Cost Per Mile (\$)	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58		\$2 58	\$2 58	\$2 58	\$2 58	
Transportation Cost	\$198	\$991	\$892	\$0	\$124	\$198		\$451	\$0	\$208	\$272	
Disposal Fee Per Cubic Yard	\$12.00	\$12.00	\$12.00	\$12.00	\$12.00	\$12.00		\$12.00	\$12.00	\$12.00	\$12 00	
Disposal Cost (\$)	\$384	\$1,920	\$1,728	\$0	\$240	\$384	1	\$874	\$0	\$403	\$528	
Total Cost	\$582	\$2,911	\$2,620	\$0	\$364	\$582	l	\$1,324	\$0	\$611	\$800	
8 Licensed Site												
Percent To Be Shipped	20 0%	20 0%	20.0%	100 0%	50 0%	20 0%		20 0%	100 0%	20 0%	20 0%	
Distance (Miles)	150			150	150	150		150	150	150	150	
Cost Per Mile (\$)	\$2.58	\$2 58	\$2 58	\$2 58	\$2.58	\$2 58	1	\$2 58	\$2 58	\$2 58	\$2 58	
Transportation Cost	\$155	\$774	\$697	\$2,129	\$387	\$155		\$352	\$3,812	\$163	\$213	
Disposal Cost Per Cubic Foot (\$)	\$11.00	\$11.00	\$11 00	\$11.00	\$11.00	\$11.00	1	\$11 00		\$11.00	\$11.00	
Quantity Per Truck Load (Yds ³)	20 0	20 0	200	20 0	20 0	20.0	1	20 0		20 0	20 0	
Quantity Per Truck Load (Fts)	540						1	540		540	540	
Disposal Cost	\$2.376	\$11,880	\$10,692		\$5,940			\$5,405			\$3,267	
Total Cost Licensed Site	\$2,570	\$12,654	\$11,389	\$34,799	\$6,327	\$2,531	1	\$5,758		\$2,657	\$3,480	
Total Cost Licensed Site Total Cost Transportation & Disposal	\$3,113	\$15,565	\$14,008	\$34,799	\$6,691	\$3,113	\$77,288	\$7,082		\$3,269	\$4,280	\$76,9
		••••••••••••••••••••••••••••••••••••••	.		·····							
OTAL COST	\$5,024	\$29,519	\$26,567	\$38,731	\$9,612	\$5,904	\$115,356	\$13,431	\$69,364	\$6,199	\$7,759	\$96,7 \$212,1
TOTAL COST - IRIGARAY AND CHRISTENSEN	1											-\$212,1

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	Irigaray						Christensen				
Maint Area & Warehouse Main Process Laboratory & Offices Building	Expansion Building	Dry Pack Area	Restoration Building	Sub Total	Satellite Plant	Wellfield Modules	Booster Pump Bidgs	Restoration		Warehouse	Sub Total
Laboratory & Offices Building	Dunung	Mea	Dunung	Sub Total	Fiant	NIQUIDa	Ti unip bioga	Levicination	Dunding	Tratonouou	000 .0.0.

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BUILDING DEMOLITION AND DISPOSAL

	L & Class	1 Story	1 Story	1 Story	3 Story	1 Story		2 Story	1 Story	1 Story	2 Story	1 Story	1 Story	
Structural Character	1 Story				Steel/Masonry				Pre Fab (22)				Steel Frame	
								192000	95040				11000	
Demolition Volume (Ft*)	179400							\$0,1310	\$0 1310	\$0 1310	\$0 1310	\$0,1310	\$0 1310	
Cost of Demointion Per Ft ^a	\$0.1310	\$0 1310		\$0 1310						•••••				\$63,089
Demolition Cost (\$)	\$23,503	\$14,243	\$56,387	\$50,622	\$16,507	\$9,124	\$170,386	\$25,154	\$12,451	\$6,121	\$9,433	\$8,489	\$1,441	202,069
Factor For Gutting	15 0%	10 0%	30 0%	10 0%	20 0%	10 0%		20 0%	0.0%	0 0%				
Cost For Gutting (\$)	\$3,525	\$1,424	\$16,916	\$5,062	\$3,301	\$912	\$31,142	\$5,031	\$0	\$0	\$1,887	\$849	\$144	\$7,910
Weight (pounds)	158761	96212	380885	341947	111504	61628		169912	66660	28032	63717	38802	9735	
Weight per Truckload	40000	40000	40000	40000	40000	40000		40000	40000	40000		40000	40000	
Number of Truckloads	40	24	95	85	28	15		42	17		16	10	02	
Distance to Landfill	48	48	48	48	48	48		48	48	48		48	48	2
Cost per Mile	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58		\$2 58	\$2 58	\$2 58		\$2 58	\$2 58	~
Transportation Cost	\$492	\$298	\$1,179	\$1,059	\$345	\$191	\$3,563	\$526	\$206	\$87	\$197	\$120	\$30	\$1,167
Disposal Cost per Ton	\$35.70	\$35 70	\$35 70	\$35.70	\$35 70	\$35 70		\$35 70	\$35 70	\$35.70	\$35 70	\$35 70		^^
Disposal Cost	\$2,834			\$6,104	\$1,990	\$1,100	\$20,544	\$3,033	\$1,190	\$500		\$693	\$174	\$6,727
TOTAL COST	\$30,354	\$17,683	\$81,281	\$62,847	\$22,144	\$11,327	\$225,636	\$33,744	\$13,847	\$6,708	\$12,654	\$10,151	\$1,789	\$78,893
TOTAL COST IRIGARAY AND CHRISTENSEN		<u>. </u>											I	\$304,529

CONCRETE DECONTAMINATION, DEMOLITION & DISPOSAL

													1000	_
Area (Ft ²)	8020	7100	17600	18400	5600			9600	0	1440	3600	0	1000	
Average Thickness (Ft)	· 05	0.5	0 5	05	1	05	1	05	00	05	05	00	05	
Volume (Ft ^a)	4010	3550	8800	9200	5600	1800		4800	이	720	1800	0	500	
Percent Requiring Decontamination	0 0%	0 0%	100 0%	100 0%	100 0%	100 0%		100 0%	0 0%	100 0%	100 0%	0 0%	0 0%	
Percent Decontaminated	0 0%	0 0%	75 0%	75 0%	40 0%	75 0%		75 0%	0 0%	100 0%	100 0%	0 0%	0 0%	
Decontamination (\$/Ft ²)	\$0 170	\$0.170	\$0.170	\$0 170	\$0.170	\$0.170		\$0 170	\$0 170	\$0 170	\$0 170	\$0 170	\$0 170	
Decontamination Cost	\$0	\$0	\$2,248	\$2,350	\$382	\$460	\$5,440	\$1,226	\$0	\$245	\$613	\$0	\$0	\$2,085
Demolition (\$/Fi2)	\$1 887	\$1 887	\$1.887	\$1 887	\$1 887	\$1 887		\$1 887	\$1 687	\$1 887	\$1 887	\$1 887	\$1,687	
Demolition Cost	\$15,130	\$13,394	\$33,203	\$34,712	\$10,565	\$6,792	\$113,796	\$18,111	\$0	\$2,717	\$6,792	\$0	\$1,887	\$29,506
Transportation & Disposal		1	1											
A. Onsite Disposal		i							1					
Percent to be Disposed Onsite	100%	100%	75%	75%	40%	75%		75%	0%	100%	100%	0%	100%	
Transportation Cost	\$0	\$0	\$0	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0	
Disposal Cost per Cubic Foot	\$0 049	\$0 049	\$0 049	\$0 049	\$0 049	\$0 049		\$0 049	\$0 049	\$0 049	\$0 049	\$0 049	\$0 049	
Disposal Cost (\$)	\$196	\$174	\$323	\$338	\$110	\$66	\$1,208	\$176	\$0	\$35	\$88	\$0	\$25	\$324
B. Licensed Site		1	1											
Percent to be Shipped	0%	0%	25%	25%	60%	25%		25%	100%	0%	0%	100%		
Distance (Miles)	150	150	150]	150	150	150		150	150	150	150	150		
Cost per Mile (\$)	\$2.58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58		\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	
Transportation Cost	\$0	\$0	\$1,577	\$1,648	\$2,408	\$323	\$5,956	\$860	\$0	\$0	\$0	\$0	\$0	\$860
Disposal Cost per Cubic Foot	\$3.70	\$3 70	\$3 70	\$3.70	\$3 70	\$3 70		\$3 70	\$3 70	\$3.70		\$3 70		
Quantity Per Truck Load (Yds ³)	20	20	20	20	20	20		20	20	20		20		1
Quantity Per Truck Load (Ft ^a)	540	540	540	540	540	540		540	540	540	540	540		
Disposal Cost (\$)	\$0	\$0	\$8,140	\$8,510	\$12,432	\$1,665	\$30,747	\$4,440	\$0	\$0	\$0	\$0	\$0	\$4,440
TOTAL COST	\$15,327	\$13,568	\$45,491	\$47,559	\$25,898	\$9,305	\$157,148	\$24,813	\$0	\$2,997	\$7,493	\$0	\$1,911	\$37,215
TOTAL COST IBIGARAY AND CHRISTENSEN														\$194,361

TOTAL COST IRIGARAY AND CHRISTENSEN

	[······		ingaray						Christensen				
			Main Process	Expansion	Dry Pack	Restoration		Satellite	Wellfield	Booster	Restoration	Office		
	Laboratory	& Offices	Building	Building	Area	Building	Sub Total	Plant	Modules	Pump Bldgs	Extension	Building	Warehouse	Sub Total
SOIL REMOVAL & DISPOSAL	ר													
SOLE REMOVAL & DISPOSAL	J													
Assume removal of 3" of Contaminated Soil under	ר													
Primary Areas, Disposal at a Licensed facility														
Removal, Front End Loader (\$50/hr)	\$0	\$0	\$815	\$852	\$259	\$167	\$2,093	\$444	\$0	\$0	\$0	\$0	\$0	\$444
Quantity to be Shipped (FI ³)	0	0	4400	4600	1400	900		2400	0	0	0	0	0	
Distance (Miles)	150	150	150	150	150	150		150	150	150	150	150	150	
Cost Per Mile (\$)	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58		\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	
Transportation Cost (\$)	\$0	\$0	\$3,153	\$3,297	\$1,003	\$645	\$8,098	\$1,720	\$0	\$0	\$0	\$0	\$0	\$1,720
Disposal fee Per Cubic Foot(\$)	\$3 70	\$3 70	\$3 70	\$3.70	\$3 70	\$3 70		\$3 70	\$3 70	\$3 70	\$3 70	\$3 70	\$3 70	
Quantity per Truckload (Ft ³)	540	540	540	540	540	540		540	540	540	540	540	540	
Disposal Cost (\$)	\$0	\$0	\$16,280	\$17,020	\$5,180	\$3,330	\$41,810	\$8,880	\$0	\$0	\$0	\$0	\$0	\$8,880
Removal, NPDES Pts			1							ł				
Quantity to be Shipped (Ft ^a)			559					5,030		1			1	
Distance (Miles)	150	150	150	150	150	150		150	150	150	150	150	150	
Cost Per Mile (\$)	\$2 58	\$2 58	\$2 58	\$2 58	\$2.58	\$2 58		\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	
Transportation Cost (\$)	\$0	\$0	\$401	\$0	\$0	\$0	\$401	\$3,605	\$0	\$0	\$0	\$0	\$0	\$3,605
Disposal fee Per Cubic Foot(\$)	\$3 70	\$3 70	\$3 70	\$3 70	\$3 70	\$3 70		\$3 70	\$3 70	\$3 70	\$3 70	\$3 70	\$3 70	
Quantity per Truckload (Ft ³)	540	540	540	540	540	540		540	540	540	540	540	540	
Disposal Cost (\$)	\$0	\$0	\$2,068	\$0	\$0	\$0	\$2,068	\$18,611	\$0	\$0	\$0	\$0	\$0	\$18,611
Total Cost	\$0	\$ 0	\$22,717	\$21,169	\$6,442	\$4,142	\$54,470	\$33,260	\$0	so	\$0	\$0	\$0	\$33,260
TOTAL COST	\$0	\$0	\$22,717	\$21,169	\$6,442	\$4,142	\$54,470	\$33,260	\$0	\$0	\$0	\$0	\$0	\$33,260
TOTAL COST IRIGARAY AND CHRISTENSEN														\$87,730
	-													
RADIATION SURVEY	T				·····	F				r				1
Area required (acres)	0 18	0 16	0 40	0 42	0 13	0.08		0 22	0 00	0 03	0 08	0 00	0 02	
Survey Cost (\$/acre)	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00		\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	
TOTAL SURVEY COST (\$)	\$107	\$95	\$234	\$245	\$75	\$48	\$804	\$128	\$0	\$19	\$48	\$0	\$13	\$208
TOTAL COST	\$45,788	\$31,346	\$149,723	\$131,820	\$54,558	\$24,822	\$438,056	\$91,945	\$13,847	\$9,724	\$20,195	\$10,151	\$3,713	\$149,576
TOTAL COST IRIGARAY AND CHRISTENSEN	1													\$587,632
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WORKSHEET 4											Г			Christensen			
				Irigaray						517		Brine	Brine	Brine	Brine	Permeate	
OND RECLAMATION COST	Pond A	Pond B	Pond C	Pond D	Pond E	Pond RA	Pond RB	Pond 1	Pond 2A	Pond 2B	Pond 3	Pond 1	Pond 2	Pond 3	Pond 4	Pond	
													······		r		
POND SLUDGE					0.007	0.400						0.166	0 222	0 143	0 068	0 000	
Average Sludge Depth (Ft)	0 188	0 158	0 123	0.135	0 227 29,583	0 188 50.845	0 158 50,604					20,909	20,909	20,909	20,909		
Average Area of Sludge (Ft ²)	50,845	50,604	62,291	62,291								3,466	4,651	2,983	1,414		
Volume of Sludge (Ft ^a)	9,583	7,907	7,683	8,435	6,729 249	9,583	7,907	0	0	0	0	128	172	2,503	52	أه	
Volume of Sludge (Yds3)	355	293 20 0	285 20 0	312 20 0	200	355 20 0	293 20 0	20 0	20 0	20 0	20 0	200	20.0	20.0	200	20 0	
Volume of Sludge Per Truck Load (Yds ³)	20 0 17 8	20.0	14 3	15.6	12 5	178	200	200	200	200	200	64	86	55	26	00	
# of Truck Loads of Sludge		\$238.00	\$238.00	\$238 00	\$238.00	\$238.00	\$238 00	\$238 00	\$238 00	\$238 00	\$238.00	\$238.00	\$238.00	\$238.00	\$238 00	\$238 00	
Sludge Handling Cost Per Load (\$)	\$238 00 \$4,236	\$238.00	\$238.00	\$3,713	\$2.975	\$4,236	\$3,499	\$230 00	\$230 00	\$200 \$0	\$0	\$1.523	\$2.047	\$1,309	\$619	\$0	
Total Sludge Handling Cost (\$) Transportation & Disposal	34,230	\$3,489	\$3,403	- 33,713	\$2,975	97,200	40,400			¥ÿ.							
Percent To Be Shipped	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	
Distance (Miles)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	
Cost Per Mile (\$)	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2.58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	
Transportation Cost (\$)	\$6,889	\$5,689	\$5,534	\$6.037	\$4,838	\$6,889	\$5,689	\$0	\$0	\$0	\$0	\$2,477	\$3,328	\$2,129	\$1,006	\$0	
Disposal Cost Per Cubic Foot (\$)	\$11 00	\$11 00	\$11.00	\$11 00	\$11 00	\$11.00	\$11 00	\$11.00	\$11 00	\$11 00	\$11 00	\$11 00	\$11 00	\$11.00	\$11.00	\$11.00	~ ⊔
Quantity Per Truck Load (Yds ³)	20 0	20 0	20 0	20 0	20 0	20.0	20 0	20 0	20 0	20 0	20 0	20 0	20 0	20 0	20 0	20.0	
Quantity Per Truck Load (FUs)	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	
Disposal Cost (\$)	\$105,732	\$87,318	\$84,942	\$92,664	\$74,250	\$105,732	\$87,318	\$0	\$0	\$0	\$0	\$38,016	\$51,084	\$32,670	\$15,444	\$0	`
Total Transportation & Disposal (\$)	\$112,621	\$93,007	\$90,476	\$98,701	\$79,088	\$112,621	\$93,007	\$0	\$0	\$0	\$0	\$40,493	\$54,412	\$34,799	\$16,450	\$0	
TOTAL SLUDGE COST (\$)	\$116,857	\$96,506	\$93,879	\$102,414	\$82,063	\$116,857	\$96,506	\$0	\$0	\$0	\$0	\$42,016	\$56,459	\$36,108	\$17,069	\$0	
POND LINER															1.10	0 00	
Total Pond Area (Acres)	1.75	1.72	1 75	1 72	0.78	2 17	2 17	_	_			1.10	1.10	1 10 47916	47916	000	
Total Pond Area (Ft ²)	76230	74923 2	76230	74923 2	33976 B	94525 2	94525 2	0	0	0		47916	47916	20 0%	20 0%	0 0%	
Factor For Sloping Sides	20 0%	20 0%	20.0%	20 0%	20 0%	20 0%	20 0%	20 0%	20 0%	20 0%	20 0%	20 0%	20 0%		57499		
Total Liner Area (Ft*)	91476	89908	91476	89908	40772	113430	113430	0	0	0		57499	57499	57499 30	5/499		
Liner Thickness (Millimeters)	30	30		30	30	30	30	30		30		30	30 0 1181	0 1181	0.1181	ő	
Liner Thickness (Inches)	0 1181	0 1181	0 1181	0.1181	0 1181	0 1181	0 1181	0.1181	0 1181	0 1181	0 1181	0.1181 0.0098	0 0098	0 0098	0 0098	ŏ	
Liner Thickness (Ft)	0 0098	0 0098	0 0098	0 0098	0 0098	0 0098	0 0098	0 0098	0 0098	0 0098	0 0098		25 0%	25 0%	25 0%	0 0%	
"Swell" Factor	25 0%	25 0%	25 0%	25 0%	25 0%	25 0%	25 0%	25 0%	25 0%	25 0%	25 0%	25 0% 704	25 0%	250%	704	000	
Liner Volume (FP)	1121	1101	1121	1101	499	1390	1390	0	0		00	13	13	13	13	00	
Truck Loads of Liner	21	20	21	20	09	26	26	00	00	00	00	13	13	13			
Liner Handling Cost (\$)	1											\$120	\$120	\$120	\$120	so	
Labor Crew Cost per Hour (\$)	\$120	\$120	\$120	\$120	\$120	\$120	\$120	\$120	\$120	\$120	\$120	20	\$120	\$120	20	001	
Hours per Load	20	20	2.0	2.0	20	20	20	20	20	20	2 0 \$240 00	\$240.00	2 0 \$240 00	2 0 \$240 00	\$240.00	\$0.00	
Liner Handling Cost Per Load (\$)	\$240.00	\$240.00	\$240.00	\$240.00	\$240 00	\$240.00	\$240.00	\$240 00	\$240 00	\$240.00	\$240.00	\$240.00 \$312	\$240 00 \$312	\$240.00	\$240.00	\$0 00	
Total Liner Handling Cost (\$)	\$504	\$480	\$504	\$480	\$216	\$624	\$624	\$0	\$0	\$0		3312	əJ12				
Transportation & Disposal	-				100.00	100 0%	100 0%	100 0%	100 0%	100 0%	100.0%	100 0%	100 0%	100 0%	100 0%	100 0%	*
Percent To Be Shipped	100 0%	100 0%	100 0%	100 0%	100 0%		100 0%					150	100 0 %	150	150	150	
Distance (Miles)	150	150	150	150	150 \$2 58	150 \$2 58	\$2.58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	
Cost Per Mile (\$)	\$2 58	\$2 58	\$2 58 \$813	\$2 58 \$774	\$2 58	\$2 58	\$2.58	\$2.50	\$2.50	\$2.50	\$2.50	\$503	\$503	\$503	\$503	\$0	
Transportation Cost (\$)	\$813	\$774	\$11 00	\$11 00	\$11.00	\$1,000	\$1,000	\$11 00	\$11 00	\$11 00	\$11 00	\$11.00	\$11 00	\$11.00	\$11.00	\$11 00	
Disposal Cost Per Cubic Foot (\$)	\$11 00	\$11.00		540	540	540	\$11.00	540				540	540	540	540	540	
Quantity Per Truck Load (Ft ³)	540 \$12,474	540 \$11,880	\$12,474	\$11,880	\$5,346	\$15,444	\$15,444	\$0	\$0	\$0	\$0	\$7,722	\$7,722	\$7,722	\$7,722	\$0	
Disposal Cost (\$)	\$12,474	\$11,880	\$12,474	\$11,660	\$5,694	\$15,444	\$16,450	\$0		so		\$8,225	\$8,225	\$8,225	\$8,225	\$0	
Total Transportation & Disposal (\$) TOTAL LINER COST (\$)	\$13,287	\$13,134	\$13,791	\$13,134	\$5,910	\$17,074	\$17,074	\$0				\$8.537	\$8,537	\$8,537	\$8,537	\$0	-
IUTAL LINEH CUST (\$)	1 913,791	a 13,134	1 913191	313,134		<u>φ[7]014</u>				. 40							
POND BACKFILL	1	1				l	1	1		1							
Backfill required (Yds ³)	8740	8580	8740	8580	2517	14617	16319	2345	1837	1537	163	9048	9048	9048	9048	18070	1
Backfill Cost (\$/Yd*)	\$1.00	\$1 00	\$1 00	\$1.00	\$1 00	\$1.00	\$1 00	\$1.00	\$1 00	\$1.00	\$1 00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	
TOTAL BACKFILL COST (\$)	\$8,740	\$8,580	\$8,740	\$8,580	\$2.517	\$14,617	\$18,319	\$2,345	\$1,837	\$1,537	\$163	\$9,048	\$9,048	\$9,048	\$9,048	\$18,070	
ITOTAL BACKHILL COST (\$)	38,740	086,86	<u>i 98,740</u>	08C,86	ją2,51/	<u> </u>	910,319	<u></u> ₩2,343	1,03/	1. 41,007	1 9100		0 040				

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VORKSHEET 4											F			Christensen			
1				Irigaray			T			517		Brine	Brine	Brine	Brine	Permeate	
OND RECLAMATION COST	Pond A	Pond B	Pond C	Pond D	Pond E	Pond RA	Pond RB	Pond 1	Pond 2A	Pond 2B	Pond 3	Pond 1	Pond 2	Pond 3	Pond 4	Pond	
ADIATION SURVEY	r								1					Ī			
Areal required (acres)	1.75	1 72	1 75	1.72	078	2.17	2.17	0 00	0.00	0 00	0 00	1 10	1.10	1 10	1.10	0	
Survey Cost (\$/acre)	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$580.00	\$1.00	
OTAL SURVEY COST (\$)	\$1,015	\$998	\$1,015	\$998	\$452	\$1,259	\$1,259	\$0	\$0	\$0	\$0	\$638	\$638	\$638	\$638	\$0	\$9,548
EAK DETECTION SYSTEM REMOVAL					. <u></u>											<u> </u>	
Volume of Gravel and Piping (Ft*) (Assume 3*)			14337	13851				0									
Quantity per Truckload (Ft ^a)			540	540				540			1						
Quantity to be Shipped (Loads)			26 6	25 7	1		1	00			1						
Distance (Miles)			150	150			1	150									
Cost per Mile (\$)			\$2 58	\$2 58				\$2 58			1						
Transportation Cost (\$)			\$10,275	\$9,927				\$0			i						
Handling Cost (\$238/Load)			\$6,319	\$6,105				\$0									
Disposal Fee per Cubic Foot (\$)			\$3 70	\$3 70				\$3 70									٠,
Disposal Cost (\$)			\$53,047	\$51,249		\$0	\$ 0	\$0	\$0	\$0	\$0	s o	\$0	\$0	\$0	\$0	\$136,921
OTAL LEAK DETECTION SYSTEM REMOVAL	\$0	\$0	\$69,641	\$67,280	\$0					40	40]		40		- 40		
OTAL POND RECLAMATION COST	\$140,403	\$119,218	\$187,068	\$192,406	\$90,942	\$149,808		\$2,345	\$1,837	\$1,537	\$163	\$60,239	\$74.682	\$54.331	\$35,292	£19.070	\$1,259,496

SUMMARY - IRIGARAY:

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TOTAL SLUDGE COST (\$)	\$705,082
TOTAL LINER COST (\$)	\$93,908
TOTAL BACKFILL COST (\$)	\$73,975
TOTAL RADIATION SURVEY COST (\$)	\$6,996
LEAK DETECTION SYSTEM REMOVAL	\$136,921
TOTAL POND RECLAMATION COST	\$1,016,882

SUMMARY - CHRISTENSEN:

TOTAL SLUDGE COST (\$)	\$151,652
TOTAL LINER COST (\$)	\$34,148
TOTAL BACKFILL COST (\$)	\$54,262
TOTAL RADIATION SURVEY COST (\$)	\$2,552
LEAK DETECTION SYSTEM REMOVAL	\$0
TOTAL POND RECLAMATION COST	\$242,614
TOTAL PROJECT COST - CR and IR (\$)	\$1,259,496

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WORKSHEETS	<u> </u>	Irigarav			Christensen					
WELL PLUGGING AND ABANDONMENT	Mine Units	517 USMT	Monitor/		Mine Units	Monitor/	Misc.			
	_#1 Thru #9	Test Sites	Trend	Sub Total	#2 Thru #7	Trend	Regional	Sub Total		
Number of Wells	1064	11	314	1389	2062	327	137	2526		
Average Depth	250	250			410	410	410			
Average Diameter	4 5	4 5	4 5		4 5	4 5	4 5			
Materials	- <u>r</u>									
Bentonite Chips Required (Ft*/Weil)	11.6	11 6	11.6		11.6	11.6	11 6			
Bags of Chips Required/Well	15 0	15 0	15 0		150	15 0	15 0			
Cost Per Bag (\$)	\$4 50	\$4 50	\$4 50		\$4 50	\$4 50	\$4 50			
Cost/Well Bentonite Chips (\$)	\$67 50	\$67 50	\$67.50		\$67.50	\$67 50	\$87.50			
Gravel Fill Required (Ft ^a /Well)	157	15.7	157		33 6	33 6	33 6			
Gravel Fill Required (Yd%Well)	06	06	06		12	12	1.2			
Cost of Gravel/Yd ³ (\$)	\$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 Reg'd/Well	10	10	10		10	10	10			
Cost of Cement Cones/Markers (\$)	\$4 00	\$4 00	\$4 00		\$4 00	\$4 00	\$4.00			
Total Materials Cost per Well	\$81.69	\$81 69	\$81 69		\$93 32	\$93 32	\$93 32			
Labor										
Hours Required per Well	10	10	10		1.0	1.0	10			
Labor Cost per Hour	\$70.00	\$70 00	\$70.00		\$70.00	\$70 00	\$70 00			
Total Labor Cost per Weil (\$)	\$70.00	\$70 00	\$70.00		\$70.00	\$70.00	\$70.00			
Equipment Rental										
Hours Required per Well	10	10	10		1.0	10	10			
Backhoe w/Operator Cost/Hr (\$)	\$35 00	\$35 00	\$35 00		\$35.00	\$35 00	\$35 00			
Total Equipment Cost per Well (\$)	\$35.00	\$35 00	\$35.00		\$35.00	\$35.00	\$35.00			
Total Cost per Well (\$)	\$186 69	\$186 69	\$186 69		\$198 32	\$198 32	\$198 32			
TOTAL WELL ABANDONMENT COST (\$)	\$198,642	\$2,054	\$58,622	\$259,317	\$408,926	\$64,849	\$27,169	\$500,		

GRAND TOTAL IRIGARAY AND CHRISTENSEN

\$760,261

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RKSHEET 6	·						
	trigaray	Christensen	Christensen	Christensen	Christensen		Total
	Mine Unit(s)	Mine Units	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Christenser
LLFIELD EQUIPMENT REMOVAL & DISPOSAL	#1 Thru #9	#2 Thru #4	#5	#6	#7	#8	& Irigaray
Wellfield Piping							
A. Removal			•				
Length/Weil (Ft)	100	300				1	
Total Number of Wells	1064	1021	494				ļ
Total Quantity (Ft)	106400	306300	148200	133800			ł
Cost of Removal (\$/Ft)	\$0,193	\$0 193	\$0 193	\$0 193			
Cost of Removal (\$)	\$20,535	\$59,116	\$28,603	\$25,823			\$134,077
Average OD (Inches)	30	30	30	30			1
Chipped Volume Reduction (Ft*/Ft)	0 0 16	0 0 16	0 0 16	0 016			
Chipped Volume (Ft ^a)	1,702	4,901	2,371	2,141		1	
Quantity Per Truck Load (Ft*)	540	540	540	540			ł
Total Number of Truck Loads	32	91	44	40		l	
B Survey & Decontamination							
Percent Requiring Decontamination	0%	0%	0%	0%	,		
Loads for Decontamination	00	00	. 00	00	1	1	
Cost for Decontamination (\$/Load)	\$550 00	\$550.00	\$550.00	\$550.00			
Cost for Decontamination (\$)	\$0	\$0	\$0	\$0			\$
C Transport & Disposal						i i	1
1) Landfilt					1		
a Transportation							
Percent To Be Shipped	00%	00%	00%	0 0%			
Loads To Be Shipped	00	00	00	00		1	
Distance (Miles)	48	48	48	48			}
Transportation Cost (\$/mile)	\$2 58	\$2.58	\$2 58	\$2.58		1	1
Transportation Cost (\$)	\$0	\$0	\$0	\$0			\$
b. Disposal				1	1	1	
Disposal Fee Per Yd ^a	\$12.00	\$12.00	\$12.00	\$12.00			
Yds ^a Per Load	20	20	20	20			
Disposal Cost (\$)	\$0	\$0 SO	\$0	\$0	1		
Total Cost - Landfill	50	i so	\$0	\$0			\$
2) Licensed Site							
a Transportation					1	1	1
Percent To Be Shipped	100 0%	100 0%	100 0%	100 0%	6	1	
Loads To Be Shipped	32	9.1	44	40			
Distance (Miles)	150	150	150		- 1		
Cost Per Mile (\$/mile)	\$2 58	\$2 58	\$2 58	\$2 58			
Transportation Cost (\$)	\$1,238	\$3,522	\$1,703	\$1,548		1	\$8,01
b. Disposal					1		
Disposal Cost Per Ft ^a	\$11.00						1
Disposal Fee Per Yd ^a	\$297.00	\$297 00	\$297.00				1
Quantity Per Truck Load (Yds*)	20					1	
Disposal Cost (\$)	\$19,008	\$54,054	\$26,136				\$122,95
Total Cost - Licensed Site	\$20,246	\$57,576					\$130,96
Total Cost - Transport & Disposal	\$20,246	\$57,576	\$27,839	\$25,308			\$130,96
Total Cost - WF Piping Removal & Disposal	\$40,782	\$116,692	\$56,441	\$51,131	\$0	\$0	\$265,04

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RKSHEET 6	r						
	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Total
LLFIELD EQUIPMENT REMOVAL & DISPOSAL	Mine Unit(s)	Mine Units	Mine Unit #5	Mine Unit #6	Mine Unit #7	Mine Unit #8	Christense
Production Well Pumps	#1 Thru #9	#2 Thru #4	#5	10	•/	#8	& Irigaray
A. Pump and Tubing Removal						I	
Number of Production Wells	424	443	217	202	1	1	
Cost of Removal (\$/well)	\$21.44	\$21,44	\$21.44	\$21 44		1	
Cost of Removal (\$)	\$9.091	\$21.44	\$4,652	\$4,331			\$27,57
Number of Pumps Per Truck Load	180			34,331 180			\$21,37.
Number of Truck Loads (Pumps)	24	25	12	11		1	
B Survey & Decontamination (Pumps)		23	12				
Percent Requiring Decontamination	50 0%	50 0%	50 0%	50 0%			
Loads for Decontamination	12	13	06	06			
Cost for Decontamination (\$/Load)	\$550.00	\$550.00	\$550.00	\$550.00	ļ		
Cost for Decontamination (\$)	\$660	\$715	\$330	\$330			\$2,03
C Tubing Volume Reduction & Loading		-					
Length per Well (Ft)	100	300	300	450			
Total Quantity (Ft)	42,400	132,900	65,100	90,900			•
Cost of Removal (\$/Ft)	\$0 024	\$0 024	\$0 024	\$0 024	1		
Cost of Removal (\$)	\$1,018	\$3,190	\$1,562	\$2,182			\$7,95
Average OD (inches)	30	30	30	30			
Chipped Volume Reduction (Ft ³ /Ft)	0 016	0 016	0 0 16	0 016			
Chipped Volume (Ft ³)	678	2,126	1,042	1,454	t	1	
Quantity per Truckload (Ft ^a)	540	540	540	540			
Number of Truck Loads	13	39	19	27			
D Transport & Disposal					1		
1) Landfill					1		
a Transportation	50 0%	50 0%	50 0%	50 0%	i		
Percent To Be Shipped (Pumps)	12	1.3	06	06	1		
Loads To Be Shipped	48			48			ł
Distance (Miles)	-	\$2.58		\$2 58			1
Cost Per Mile (S/mile)	\$2 58		\$2 58 \$74	\$2 50			\$45
Transportation Cost (\$) b Disposal	\$149	\$161	3/4	\$/4			343
Disposal Fee Per Yda	\$12.00	\$12.00	\$12.00	\$12.00		1	
Yds ³ Per Load	\$12.00						ļ
Disposal Cost (\$)	\$288	\$312	\$144	\$144	1		\$88
Total Cost - Landfill	\$437	\$473	\$218	\$218			\$1.34
2) Licensed Site	4407	4413	\$210	\$210			\$1,04
a. Transportation	1						
Percent To Be Shipped (Pumps)	50 0%	50 0%	50 0%	50 0%			1
Percent To Be Shipped (Tubing)	100 0%			100 0%		1	ļ
Loads To Be Shipped	25	52	25	32	1		ſ
Distance (Miles)	150						
Cost Per Mile (\$/mile)	\$2 58	\$2 58	\$2 58	\$2 58			
Transportation Cost (\$)	\$951	\$2,008	\$979	\$1,255	1	1	\$5,19
b Disposal	1			1	1	1	
Disposal Cost Per Ft ^a	\$11.00	\$11.00	\$11.00	\$11.00	1	1	ł
Disposal Fee Per Yd ^a	\$297 00	\$297.00	\$297 00	\$297 00	1	1	ł
Quantity Per Truck Load (Yds ^a)	20	20	20	20	1	1	1
Disposal Cost (\$)	\$14,590	\$30,815	\$15,022	\$19,265	1	1	\$79,69
Total Cost - Licensed Site	\$15,541	\$32,823	\$16,000	\$20,521	1		\$84,88
Total Cost - Transport & Disposal	\$15,978	\$33,296	\$16,219	\$20,739			\$86,23
Total Cost - Pump Removal & Disposal	\$26,746	\$46,699	\$22,763	\$27,581	\$0	\$0	\$123,78

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HNSHEET 0	Lucase -	Chalatana	Charatterson	Chasteres	Obstates	Obviotore	Total
	Irigaray	Christensen	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Christense
LLFIELD EQUIPMENT REMOVAL & DISPOSAL	Mine Unit(s) #1 Thru #9	Mine Units #2 Thru #4	mine Unit #5	Mine Unit #6	Mane Unit #7	#8	& trigaray
	#1 11/1 #9	#2 Inru #4	#5		•/		a ingaray
Surface Trunkline Piping							
	44700						
Total Quantity (Ft)		\$0 143	0 \$0 143	\$0 143	\$0 143	\$0 143	
Cost of Removal (\$/Ft)	\$0 143						eo 00
Cost of Removal (\$)	\$6,392	\$0	\$0	\$0	\$0	\$0	\$6,39
Average OD (Inches)	8 750	8 750	0 000	0 000	0 000	0 000	
Chipped Volume Reduction (Ft ³ /Ft)	0 088	0 088	0 088	0 088	0 088	0 088	
Chipped Volume (Fl ³)	3934	0	0	-	-	0	
Quantity Per Truck Load (FI ³)	540	540		540		0	
Total Number of Truck Loads	7.3	00	00	00	00	00	
B Survey & Decontamination							
Percent Requiring Decontamination	0.0%		0 0%				
Loads for Decontamination	00	00	00	00	00	00	
Cost for Decontamination (\$/Load)	\$550.00	\$550.00	\$550.00	\$550.00	\$0.00	\$0.00	
Cost for Decontamination (\$)	\$0	\$0	\$0	\$0	\$0	\$0	
C Transport & Disposal							1
1) Landfill					1		1
a Transportation					0.0%	0.0%	
Percent To Be Shipped	00%				00%	00%	
Loads To Be Shipped	00	00	00	00		00	
Distance (Miles)	48		48	48			
Cost Per Mile (\$/mile)	\$2 58	\$2 58	\$2 58	\$2 58	\$0.00	\$0.00	,
Transportation Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	'
b Disposal					\$0 00	\$0 00	
Disposal Fee Per Yd ^a	\$12 00	\$12.00	\$12.00	\$12 00		\$0.00	
Yds ³ Per Load	20						
Disposal Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	
Total Cost - Landfill	\$0	\$0	\$0	\$0	\$0	\$0	•
2) Licensed Site						i	1
a. Transportation		1					1
Percent To Be Shipped	100 0%						
Loads To Be Shipped	73	00	00	00	00	00	
Distance (Miles)	150		150			0	
Cost Per Mile (\$/mile)	\$2 58	\$2 58	\$2 58	\$2 58	\$0.00	\$0.00	
Transportation Cost (\$)	\$2,819	\$0	\$0	\$0	\$0	\$0	\$2,81
b Disposal	1						
Disposal Cost Per Ft ^a	\$11.00	\$11.00	\$11.00	\$11.00	\$0.00	\$0.00	
Disposal Fee Per Yd ^a	\$297 00	\$297.00	\$297 00	\$297 00	\$0.00	\$0.00	
Quantity Per Truck Load (Yds ³)	20					0	
Disposal Cost (\$)	\$43,270	\$0	\$0	\$0	\$0	\$0	\$43,2
Total Cost - Licensed Site	\$46,089	\$0	\$0	\$0	\$0	\$0	\$46,08
Total Cost - Transport & Disposal	\$48,089	\$0	\$0	\$0	\$0	\$0	\$46,08
Total Cost - Surface Trunkline Removal & Disposa	1 \$52,481	\$0	\$0	\$0	\$0	\$0	\$52,48

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	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Total
	Mine Unit(s)	Mine Units	Mine Unit	Mine Unit	Mine Unit	Mine Unit #8	Christense
LLFIELD EQUIPMENT REMOVAL & DISPOSAL	#1 Thru #9	#2 Thru #4	#5	#6	#7	78	& Irigaray
Buried Trunkline							
A. Removal		*****	24500	47000	<u>ہ</u> ا		
Total Quantity (Ft)	7300	11565 \$2 80	\$2 80	\$2.80	\$2.80	\$2 80	
Cost of Removal (\$/Ft)	\$2 80		\$2 80 \$68,600	\$131,600	\$2.00	\$2.00 \$0	\$253.02
Cost of Removal (\$)	\$20,440	\$32,382		12 000	12 000	12 000	\$203,02
Average OD (inches)	8 750	8 750	8 750		0 130	0 130	
Chipped Volume Reduction (Ft%Ft)	0 088	0 088	0 088	0 130			
Chipped Volume (Ft*)	642	1018	2156			· ·	
Quantity Per Truck Load (Ft ³)	540				00	00	
Number of Truck Loads	12	19	40	11.3	00	00	
B. Survey & Decontamination						1	
Percent Requiring Decontamination	0 0%						
Loads for Decontamination	00	00	00	00	00	00	
Cost for Decontamination (\$/Load)	\$550.00	\$550 00	\$550.00	\$550.00		\$0.00	
Cost for Decontamination (\$)	\$0	\$0	\$0	\$0	\$0	\$0	
C. Transport & Disposal			1	1		1	
1) Landfill			ł	ł			
a Transportation				I			1
Percent To Be Shipped	00%					00%	
Loads To Be Shipped	00	00	00	00			
Distance (Miles)	48	48	48	48		0	
Cost Per Mile (\$/mile)	\$2 58	\$2 58	\$2 58	\$2 58	\$0 00	\$0.00	I .
Transportation Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	:
b. Disposal			1]
Disposal Fee Per Yd ^a	\$12.00	\$12.00	\$12.00	\$12.00			1
Yds ^a Per Load	20						
Disposal Cost (\$)	\$0		\$0				
Total Cost - Landfill	\$0	\$0	\$0	\$0	\$0	\$0	
2) Licensed Site						1	1
a Transportation							1
Percent To Be Shipped	100 0%						
Loads To Be Shipped	1.2						
Distance (Miles)	150					0	
Cost Per Mile (\$/mile)	\$2 58	\$2.58	\$2 58				
Transportation Cost (\$)	\$464	\$735	\$1,548	\$4,373	\$0	\$0	\$7,1
b Disposal							
Disposal Cost Per Ft ³	\$11.00						
Disposal Fee Per Yd ^a	\$297.00						1
Quantity Per Truck Load (Yds ³)	20				-		
Disposal Cost (\$)	\$7,128						
Total Cost - Licensed Site	\$7,592						
Total Cost - Transport & Disposal	\$7,592						
Total Cost - Burled Trunkline Removal & Disposal	\$28,032	\$44,403	\$93,908	\$203,095	\$0	\$0	\$369,4

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	Ingaray	Christensen	Christensen	Christensen	Christensen	Christensen	Total
	Mine Unit(s)	Mine Units	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Christense
ELLFIELD EQUIPMENT REMOVAL & DISPOSAL	#1 Thru #9	#2 Thru #4	#5	#6	#7	#8	& Irigaray
Manholes							
A Removal	1						
Total Quantity	5	8	5	11	0	0	
Cost of Removal (\$ Each)	\$130 00	\$130.00	\$130.00	\$130.00	\$130.00	\$130.00	
Cost of Removal (\$)	\$650	\$1,040	\$650	\$1,430	\$0	\$0	\$3,77
Quantity Per Truck Load	10						
Number of Truck Loads	05	08	05	1.1	00	00	
8 Survey & Decontamination							
Percent Requiring Decontamination	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	
Loads for Decontamination	00	00	00	00	00	00	
Cost for Decontamination (\$/Load)	\$550.00	\$550.00	\$550.00	\$550.00	\$0.00	\$0.00	
Cost for Decontamination (\$)	\$0	\$0	\$0	\$0	\$0	\$0	9
C. Transport & Disposal		1					
1.) Landfill		1					
a. Transportation						1	1
Percent To Be Shipped	0 0%	00%	00%	00%	00%	00%	
Loads To Be Shipped	00	00	00	00	00	00	
Distance (Miles)	48	48	48	48	0	0	
Cost Per Mile (\$/mile)	\$2 58	\$2 58	\$2 58	\$2 58	\$0.00	\$0.00	
Transportation Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	
b Disposal		i i				1	1
Disposal Fee Per Yd ³ (\$)	\$12 00	\$12.00	\$12.00	\$12.00	\$0.00	\$0.00	
Yds ³ Per Load	20			20	0	0	
Disposal Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	
Total Cost - Landfill	\$0	\$0	\$0	\$0	\$0	\$0	
2.) Licensed Site				ł			
a Transportation			1	1]	
Percent To Be Shipped	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	
Loads To Be Shipped	05	08	05	1.1	00	00	
Distance (Miles)	150	150	150	150	0	0	
Cost Per Mile (\$/mile)	\$2 58	\$2 58	\$2 58	\$2 58	\$0.00	\$0.00	
Transportation Cost (\$)	\$194	\$310	\$194	\$426	\$0	\$0	\$1,12
b. Disposai			1				
Disposal Cost Per Ft ³	\$11.00	\$11.00	\$11.00	\$11.00	\$0.00	\$0.00	
Disposal Fee Per Yd ^a	\$297.00	\$297.00	\$297 00	\$297.00	\$0.00	\$0.00	
Quantity Per Truck Load (Yds ³)	20	20	20	20	0	0	
Disposal Cost (\$)	\$2,970	\$4,752	\$2,970	\$6,534	\$0	\$0	\$17,22
Total Cost - Licensed Site	\$3,164	\$5,062	\$3,164	\$6,960	\$0	\$0	\$18,34
Total Cost - Transport & Disposal	\$3,164	\$5,062	\$3,164	\$8,960	\$0	\$0	\$18,34
Total Cost Manhole Removal & Disposal	\$3,814	\$6,102	\$3,814	\$8,390	\$0	\$0	\$22,11
DTAL COST • WELLFIELD EQUIP REMOVAL & DIS	P \$151,854	\$213,895	\$176,926	\$290,198	\$0	\$0	\$832,87

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ARONEET /	Luna and	Christensen	Christensen	Christensen	Christensen	Christensen	Total
	trigaray	- · · ·	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Christensen
	Mine Unit(s)	Mine Units #2 Thru #4	Mine Unit #5	#6	#7	#8	& Irigaray
PSOIL REPLACEMENT & REVEGETATION	#1 Thru #9	#2 Inru #4_	#5	#0		,	angalay
Process Plant and Office Building	1						
A. Topsoil Handling & Grading							
Affected Area (Acres)	50	25	00	00	00		
Average Affected Thickness (ins)	12 0	12 0	00	00	1		
Topsoil Volume (Yds ^a)	8067	4033	0	0	0	0	
Unit Cost - Haul/Place (\$/Yd3)	\$1.00	\$1.00	\$1.00	\$1.00			
Topsoil Handling Cost (\$)	\$8,067	\$4,033	\$0	\$0			
Unit Cost - Grading (\$/Ac)	\$50.00	\$50.00	\$50.00	\$50 00			
Grading Cost (\$)	\$250	\$125	\$0	\$0			
Sub Total - Topsoil	\$8,317	\$4,158	\$0	\$0	\$0	\$0	\$12,47
B Radiation Survey & Soil Analysis						• • • • • • •	
Unit Cost (\$/Ac)	\$580.00	\$580.00	\$580.00	\$580.00			
Sub Total - Survey & Analysis	\$2,900	\$1,450	\$0	\$0	\$0	\$0	\$4,35
C Revegetation	1				•	1	1
Fertilizer (\$/Ac)	\$46 49	\$48 49	\$46 49	\$46 49			
Seeding Prep & Seeding (\$/Ac)	\$168 68	\$168 68	\$168 68	\$168 68			
Mulching & Crimping (\$/Ac)	\$276 54	\$276 54	\$276 54	\$276 54			1
Sub Total Cost/Acre	\$491.71	\$491.71	\$491 71	\$491 71			
Sub Total - Revegation	\$2,459	\$1,229	\$0				\$3,6
Sub Total - Process Plant and Office Bidg	\$13,675	\$6,838	\$0	\$0	\$0	\$0	\$20,5
Ponds			·		1	T	·
A. Topsoil Handling & Grading	1				00	00	
Affected Area (Acres)	20 0	120	00	00]
Average Affected Thickness (Ins)	12				- I	• I · · ·	
Topsoil Volume (Yds ³)	32267		0	0	-	-	
Unit Cost - Haul/Place (\$/Yd3)	\$1.00		\$1 00	\$1.00			
Topsoil Handling Cost (\$)	\$32,267	\$19,360	\$0				ł
Unit Cost - Grading (\$/Ac)	\$50.00		\$50.00				1
Grading Cost (\$)	\$1,000		\$0				
Sub Total - Topsoil	\$33,267	\$19,960	\$0	\$0	\$0	\$0	\$53,2
B. Radiation Survey & Soil Analysis							
Unit Cost (\$/Ac)	\$580.00						
Sub Total - Survey & Analysis	\$11,600	\$6,960	\$0	\$	\$0	\$0	\$18,5
C Revegation			1		م منه ا		
Fentilizer (\$/Ac)	\$46 49		\$46 49				
Seeding Prep & Seeding (\$/Ac)	\$168 68		\$168 68				1
Mulching & Crimping (\$/Ac)	\$276 54		\$276 54				1
Sub Total Cost/Acre	\$491.71		\$491.71				\$15,7
Sub Total - Revegation	\$9,834		\$0				
Sub Total - Ponds	\$54,701	\$32,821	\$0	\$(<u>\$0</u>	1 20	1 <u> </u>

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UHKSHEET 7	Le name	Chalatagaaa	Characteria	Obsistences			=
	Ingaray Mine Unit(s)	Christensen Mine Units	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Total Christense
DPSOIL REPLACEMENT & REVEGETATION	#1 Thru #9	#2 Thru #4	#5	#6	#7	#8	& ingaray
Wellfields		*2 1100 **			* /	* 0	a ingalay
A. Topsoil Handling & Grading							[
Affected Area (Acres)	40 0	55 0	300	50 0	35 0	40 0	
Average Affected Thickness (Ins)	35	00	00	00	00	00	
Topsoil Volume (Yds ³)	18822	0	Ō	Ō	Ō	Ő	
Unit Cost - Haul/Piace (\$/Yd ^a)	\$1 00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	
Topsoil Handling Cost (\$)	\$16,822	\$0	\$0	\$0	\$0	\$0	
Unit Cost - Grading (\$/Ac)	\$50.00	\$50 00	\$50.00	\$50.00	\$50.00	\$0.00	
Grading Cost (\$)	\$2,000	\$2,750	\$1,500	\$2,500	\$1,750	\$0	
Sub Total - Topsoil	\$20,822	\$2,750	\$1,500	\$2,500	\$1,750	\$0	\$29,3
B Radiation Survey & Soil Analysis							
Unit Cost (\$/Ac)	\$580.00	\$580.00	\$580.00	\$580.00	\$0.00	\$0 00	
Sub Total - Survey & Analysis	\$23,200	\$31,900	\$17,400	\$29,000	\$0	\$0	\$101,5
C. Spill Cleanup							
Affected Area (Acres)	0 054	0 036	0	0	0	0	
Affected Area (ft ²)	2,352	1,568	0	0	0	0	
Average Affected Thickness (ft)	0 25	0 25	0	0	0	0	
Affected Volume (It ³)	588	392	0	0	0	0	
Quantity per Truckload (ft ³)	540	540	540	540	540	540	
Quantity to be Shipped (Loads)	1.1	07	00	00	00	00	
Distance (Miles)	150	150	150	150	150	150	
Cost per Mile (\$)	\$2 58	\$2 58	\$2 58	\$2 58	\$2 58	\$2,58	
Transportation Cost (\$)	\$421	\$281	\$0	\$0	\$0	\$0	
Handling Cost (\$200/Load)	\$259	\$173	\$0	\$0	\$0	\$0	
Disposal Fee per Cubic Foot (\$)	\$3 70	\$3 70	\$3 70	\$3 70	\$3 70	\$3 70	
Disposal Cost (\$)	\$2,176	\$1,450	\$0	\$0	\$0	\$0	
Sub Total - Spill Cleanup D Revegation	\$2,597	\$1,731	\$0	\$0	\$0	\$0	\$4,3
	\$46 49	\$46 49	\$46 49	\$46 49	\$46 49	* / * / *	
Fertilizer (\$/Ac) Seeding Prep & Seeding (\$/Ac)	\$168 68	\$168 68	\$168 68	\$168 68	\$168 68	\$46 49 \$168 68	
Mulching & Crimping (\$/Ac)	\$278 54	\$276 54	\$276 54		\$278 54		
Sub Total Cost/Acre	\$491.71	\$491.71	\$491.71	\$276 54 \$491.71	\$491.71	\$276 54 \$491 71	
Sub Total - Revegation	\$19,668	\$27.044	\$14,751	\$491.71	\$17,210	\$19,668	\$122,9
Sub Total - Wellfields (\$)	\$66,288	\$83,425	\$33,651	\$56,086	\$18,960	\$19,668	\$258,0
Roads	400,200	400,420	400,001	\$30,000	1. 310,300	\$13,000	9230,0
A. Topsoil Handling & Grading	1	ſ	· · · · · · · · · · · · · · · · · · ·	······		·	
Affected Area (Acres)	25 0	20 0	15 0	210	00	00	
Average Affected Thickness (Ins)	12	12	12	12			
Topsoil Volume (Yds3)	40333	32267	24200	33880	Ö	0	
Unit Cost - Haul/Place (\$/YdP)	\$1 00	\$1.00	\$1 00	\$1.00	\$1 00	\$1 00	
Topsoil Handling Cost (\$)	\$40,333	\$32,267	\$24,200	\$33,880	\$0	\$0	
Unit Cost - Grading (\$/Ac)	\$50.00	\$50 00	\$50 00	\$50 00	\$50.00	\$50 00	
Grading Cost (\$)	\$1,250	\$1,000	\$750	\$1,050	\$0	\$0	
Sub Total - Topsoil	\$41,583	\$33,267	\$24,950	\$34,930	\$0	\$0	\$134,7
B Radiation Survey & Soil Analysis							
Unit Cost (\$/Ac)	\$580.00	\$580.00	\$580 00	\$580 00			
Sub Total - Survey & Analysis	\$14,500	\$11,600	\$8,700	\$12,180	\$0	\$0	\$46,9
C Revegation	1						
Fertilizer (\$/Ac)	\$46.49	\$46 49	\$46.49	\$46 49			
Seeding Prep & Seeding (\$/Ac)	\$168 68	\$168 68	\$168 68	\$168 68			
Mulching & Crimping (\$/Ac)	\$276 54	\$276 54	\$276 54	\$276 54			
Sub Total Cost/Acre	\$491.71	\$491.71	\$491.71	\$491.71			
Sub Total - Revegation	\$12,293	\$9,834	\$7,376	\$10,326	\$0	\$0	\$39,8
Sub Total - Roads (\$)	\$68,376	\$54,701	\$41,026	\$57,436	\$0	\$0	\$221,5

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	Irigaray Mine Unit(s)	Christensen Mine Units	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Total Christensei
OPSOIL REPLACEMENT & REVEGETATION	#1 Thru #9	#2 Thru #4	#5	#6	#7	#8	& trigaray
/ Other						*0	d ingalay
A Topsoil Handling & Grading							
Affected Area (Acres)	410	19 0	50	50	00	00	
Average Affected Thickness (Ins)	00	00	0	0	0		
Topsoil Volume (Yds ³)	1 00	0	0	0	0		
Unit Cost - Hau/Place (\$/Yd*)	\$1 00	\$1 00	\$1 00	\$100	\$1 00	\$1 00	
Topsoil Handling Cost (\$)	so	\$100	\$100	\$100	\$100	\$100	
Unit Cost - Grading (\$/Ac)	\$50 00	\$50 00	\$50 00	\$50.00	\$50 00	\$0.00	
Grading Cost (\$)	\$2,050	\$950	\$250	\$250	\$30.00	\$0 50	
Sub Total - Topsoil	\$2,050	\$950	\$250	\$250	\$0 \$0	\$0 \$0	\$3,50
B Radiation Survey & Soit Analysis	#2,030		\$2.JU				\$3,50
Unit Cost (\$/Ac)	\$580.00	\$580.00	\$580.00	\$580.00	\$0.00	\$0.00	
Sub Total - Survey & Analysis	\$23,780				\$000 \$0		• • • •
C Revegation	\$23,780	\$11,020	\$2,900	\$2,900	\$0	\$0	\$40,60
		e 10 10	6 40 40	* 40.40			
Fertilizer (\$/Ac)	\$46 49	\$46 49	\$46 49	\$48 49	\$0 00	\$0.00	
Seeding Prep & Seeding (\$/Ac)	\$168 68	\$168 68	\$168 68	\$168 68	\$0.00	\$0.00	
Mulching & Crimping (\$/Ac)	\$276 54	\$276 54	\$276 54	\$276 54	\$0.00	\$0.00	
Sub Total Cost/Acre	\$491.71	\$491.71	\$491 71	\$491 71	\$0 00	\$0.00	
Sub Total - Revegation	\$20,160	\$9,342	\$2,459	\$2,459	\$0	\$0	\$34,4
Sub Total - Other	\$45,990	\$21,312	\$5,809	\$5,609	\$0	\$0	\$78,5
/I Remedial Action							
A. Topsoll Handling & Grading							
Affected Area (Acres)	65 5	54 3	25 0	38 0	17 5	20 0	
Average Affected Thickness (Ins)	00	00	00	00	00	00	
Topsoil Volume (Yds3)	0	0	0	0	0	0	
Unit Cost - Haul/Place (\$/Yd3)	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	
Topsoil Handling Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	
Unit Cost - Grading (\$/Ac)	\$0.00	\$0.00	\$0.00	\$0 00	\$0.00	\$0.00	
Grading Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	
Sub Total - Topsoil	\$0	\$0	\$0	\$0	\$0	\$0	
8 Radiation Survey & Soil Analysis							
Unit Cost (\$/Ac)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Sub Total - Survey & Analysis	\$0	\$0	\$0	\$0	\$0	\$0	
C. Revegation							
Fertilizer (\$/Ac)	\$46 49	\$46 49	\$46 49	\$46 49	\$46 49	\$46 49	
Seeding Prep & Seeding (\$/Ac)	\$168 68	\$168 68	\$168 68	\$168 68	\$0.00	\$0.00	
Mulching & Crimping (\$/Ac)	\$276 54	\$278 54	\$278 54	\$276 54	\$0.00	\$0.00	
Sub Total Cost/Acre	\$491.71	\$491 71	\$491.71	\$491.71	\$48 49	\$46 49	
Sub Total - Revegation	\$32,207	\$26,675	\$12,293	\$18,685	\$814	\$930	\$91,60
Sub Total - Remedial Action	\$32,207	\$26,675	\$12,293	\$18,685	\$814	\$930	\$91,6
		<u></u>					
DTAL COST - TOPSOIL & REVEGETATION	\$281,237	\$205,772	\$92,578	\$137,815	\$19,773	\$20,598	\$757.7

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	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Total
	Mine Unit(s)	Mine Units	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Christenser
MISCELLANEOUS RECLAMATION	#1 Thru #9	#2 Thru #4	#5	#6	#7	#8	& Irigaray
I Fence Removal & Disposal]						
Quantity (Feet)	15240	35260	20000	9000	0	0	
Cost of Removal/Disposal (\$/Ft)	\$0.68	\$0 68	\$0 68	\$0 68	\$0 68	\$0 68	
Cost of Removal/Disposal (\$)	\$10,363	\$23,977	\$13,600	\$8,120	\$0	\$0	\$54,060
II Powerline Removal & Disposal	· · · · · · · · · · · · · · · · · · ·						
Quantity (Feet)	9450	10565	18000	18000	0	0	
Cost of Removal/Disposal (\$/Ft)	\$0 00	\$0 00	\$0 00	\$0 00	\$0.00	\$0.00	
Cost of Removal/Disposal (\$)	\$0	\$0	\$0	\$0	\$0	\$0	5
III Powerpole Removal & Disposal						L	
Quantity	25	30	60	60	0	0	
Cost of Removal/Disposal (\$/Each)	\$0 00	\$0.00	\$0.00	\$0.00	\$0 00	\$0 00	
Cost of Removal/Disposal (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$
IV Transformer Removal & Disposal							Ť
Quantity	3	1	0	18	0	0	-
Cost of Removal/Disposal (\$/Each)	\$2,428	\$2,428	\$2.428	\$595	\$595	\$595	
Cost of Removal/Disposal (\$)	\$7,283	\$2,428	\$0	\$10,710	\$0	\$0	\$20,42
V Booster Pump Assembly Removal 8				\$10,710		40	420,42
Quantity	0	6	5	5	0	0	
Cost of Removal/Disposal (\$/Each)	\$298	\$298	\$298	\$298	\$298	\$298	
Cost of Removal/Disposal (\$)	\$0	\$1,785	\$1,488	\$1,488	\$0	\$0	\$4,76
VI Culvert Removal & Disposal		φ1,703	ψι,400			ψυ	φ , ,,ο
Quantity (Feet)	150	1200	1000	1000	0	0	
Cost of Removal/Disposal (\$/Ft)	\$3 48	\$3 48	\$3 48	\$3 48	\$3 48	\$3 48	
Cost of Removal/Disposal (\$)	\$522	\$4,176	\$3,480	\$3,480	\$0	so	\$11,65
Vill Guardrail Removal	\$366	44,170	43,400		30	10	311,00
Quantity (Feet)	200	3000	0	0	0	0	· · · · · · · · · · · · · · · · · · ·
Cost of Removal/Disposal (\$/Ft)	\$6,19	\$6 19	\$6 19	\$6 19	\$6 19	\$6 19	
Cost of Removal/Disposal (\$)	\$1,238	\$18,570	\$013	\$0 \$0	\$019	\$019	\$19,80
VIII Low Water Stream Crossing	\$1,230	\$10,570					aia'oo
Quantity			1		0		
		\$8,330	\$8,330	0 \$8,330	\$8,330	\$8,330	
Cost of Removal/Disposal (\$/Each)	\$8,330						
Cost of Removal/Disposal (\$)	\$0	\$8,330	\$8,330	\$0	\$0	\$0	\$16,66
IX Utilities Cost							
Quantity (Mos)	4	8	4	4	0		
Cost Per Month (\$/Month)	\$2,380	\$1,190	\$1,190	\$1,190	\$1,190	\$1,190	
Total Cost (\$)	\$9,520	\$9,520	\$4,760	\$4,760	\$0	\$0	\$28,56
TOTAL MISCELLANEOUS COST	\$28,926	\$68,785	\$31,658	\$26,558	. \$0	\$0	\$155,92

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