Tota	Restoration and Reclamation Cost Estimate	
I.	GROUNDWATER RESTORATION COST	\$10,117,329
II.	EQUIPMENT REMOVAL & DISPOSAL COST	\$103,633
III.	BUILDING DEMOLITION AND DISPOSAL COST	\$1,011,992
IV.	WELLFIELD BUILDINGS & EQUIPMENT REMOVAL & DISPOSAL COST	\$1,194,007
V.	WELL ABANDONMENT COST	\$1,415,815
VI.	WELLFIELD AND SATELLITE SURFACE RECLAMATION COST	\$95,739
VII.	TOTAL MISCELLANEOUS RECLAMATION COST	\$695,734
	SUBTOTAL RECLAMATION AND RESTORATION COST ESTIMATE	\$14,634,249
	CPI ESCALATOR- July 1998 to May 31, 2005 (19.1%)	\$2,795,142
	SUBTOTAL	\$17,429,391
	ADMINISTRATIVE, OVERHEAD, AND CONTINGENCY ITEMS (25%)	\$4,357,348
	TOTAL	\$21,786,739
	TOTAL CALCULATED SURETY (IN 2004 DOLLARS)	\$21,786,700

Revised June 2005

Ground Water Restoration	Mine Unit-A	Mine Unit-B	Mine Unit-C	C-19N Pattern	C.Haul Drifts	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-D Ext.	Mine Unit-I	Mine Unit-J
		Chine Chine D	Mille Chill C	C-I)III attein	C-Haut Dino	Marcolat-D	Milit Onit-E	Mine Onter	Mille Olden	L'AL	Millie Chiller	Mille Olde-5
PV Assumptions												
Wellfield Area (ft2)	· 151900	690900	1274000	32500		279500	994500	3348000	1116000	216000	891231	1200000
Wellfield Area (acres)	3.49	15.86	29.25	0.75	0.00	6.42	22.83	76.86	25.62	4.96		
Affected Ore Zone Area (ft2)	151900	690900	1274000	32500	0	279500	994500	3348000	1116000			1200000
Avg. Completed Thickness	15	15	15	15		15	15	15				
Porosity	0.27	0.27	0.27	0.27	/	0.27	0.27	0.27	0.27			
Perimeter Injection Wells/ ft2			2.05E-04			2.54E-04	2.63E-04	2.00E-04	2.43E-04			
Flare Factor	2.94	2.94	2	2		2.5	2.6	2	2.4			
Affected Volume (ft3)	6698790	30468690	38220000	975000	1360000	10481250	38785500	100440000	40176000			
Kgallons per Pore Volume	. 13529	61535	77189	1969		21168	78331	202849	81139			121176
Number of Patterns in Unit(s)												
Current	31	141	196	5	0	43	153	465	155	30		
Estimated next report period	0	0	. 0	. 0	0	0	0	0	0		· · · · · · · · · · · · · · · · · · ·	120
Total Estimated	31	141	196	5	0	43	153	465	. 155	30	124	120
Number of Wells in Unit(s)							·		-			· · · · · ·
Production Wells	• • • •											
Current	27	141	192			45	143	465	155	30	125	
Estimated next report period	0	0	172				145		100			
Total Estimated	27	141	192			. 45	143	465	155	•		
Injection Wells		141				. 45		403	135	30	123	120
Current	50	319	343		-	91		903	327	67	236	
Estimated next report period		0	545	We	1.		0		<u></u>			240
Total Estimated	50	319	343	inclu		91	307	903	327			
Monitor Wells			545	und		- 71		905	321	07	230	240
Current	18	67	78	C-Wel		38	86	134	81	20	39	41
Estimated next report period	0		/8	C-Wei			0		0			41
Total Estimated	18	67	78		łł	38	86	134	81	·		41
Restoration Wells		0/	/0	·····	ł			134	61	20		41
Current	13	30	. 19				0	15	0	0	0	
Estimated next report period	- 15	0	. 19				0	13	0	· · · · · · · · · · · · · · · · · · ·	0	
Total Estimated	13	30	19					15	0		0	
Number of Wells per Wellfield	108	557	632		0	174	536	15	563	· · · · · · · · · · · · · · · · · · ·	400	401
Total Number of Wells	4087		032	0		1/4	330	1517	203	<u> </u>	400	401
Average Well Depth (ft)	4087	450	550	550	550	. 600	550	650	. 500	600	650	540
I. Restoration Well Installation Costs												
Number of Restoration Wells		0		. 0		0	0	0	0	0	0	
Well Installation Unit Cost (\$/Well)	\$4.000	\$4,000	\$4,000	\$4.000	\$4.000	\$4.000	\$4,000	\$4,000	\$4,000	0	v	\$4,000
Subtotal Restoration Well Installation Costs per Wellf		\$1,000	\$0	\$0		\$0	\$94,000	\$0	\$4,000 \$0			
Total Restoration Well Installation Costs	50		a 0		30	30	30	30	30	30	30	

GW REST

Gro	und Water Restoration			Mine Unit-A	Mine Unit-B	Mine Unit-C	C-19N Pattern	C-Haul. Drifts	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-D Ext.		Mine Unit-J
Π.	Ground Water Sweep Costs	s					-								
	PV's Required			0	1	1	1	1	1	1	1	1	1	1	1
	Total Kgals for Treatmen	nt		0	61535	77189	1969	10173	21168	78331	202849	81139	16359	67497	121176
	Ground Water Sweep Un	it Cost (\$/K	gal)	\$0.77	\$0.77	\$0.77	\$0.77	\$0.77	\$0.77	\$0.77	\$0.77	\$0.77	\$0.77	\$0.77	\$0.77
	Subtotal Ground Water Swee	ep Costs per	Wellfield	\$0	\$47,114	\$59,100	\$1,508	\$7,789	\$16,207	\$59,974	\$155,311	\$62,124	\$12,525	\$51,679	\$92,778
	Total Ground Water Sweer	Costs		\$566,109											
ш	Reverse Osmosis Costs				·····					```				1	
	PV's Required			0	5	5	5	5	5	5	5	5	5	5	5
	Total Kgals for Treatmen	ıt		. 0	307673	385946	9846	50864	105840	391656	1014243	405697	81794	337487	605880
	Reverse Osmosis Unit C	ost (\$/Kgal)		\$1.33	\$1.33	\$1.33	\$1.33	\$1.33	\$1.33	\$1.33	\$1.33	\$1.33	\$1.33	\$1.33	\$1.33
	Subtotal Reverse Osmosis C		lfield	\$0	\$407,851	\$511,609	\$13,051	\$67,425	\$140,301	\$519,179	\$1,344,481	\$537,792	\$108,426	\$447,373	\$803,155
	Total Reverse Osmosis Cos	ts		\$4,900,643		• • • •									
īV.	Bioremediation/Chemical F	advatant (
14.	Total Kgals for Treatmen				123069	154378	3938	20346	42336	156662	405697	162279	32718	134995	242352
	Chemical Reductant Uni			\$0.29	\$0.29	\$0.29	\$0.29			\$0.29	\$0.29				
	Subtotal Chemical Reduc			\$0.29	\$35.690	\$44.770	\$1.142			\$45,432	\$117.652	\$47.061			
	Total Chemical Reductant			\$428,842	\$33,070		ψι,ι ι 2	40,700	\$12,277	\$45,152	\$111,052	\$11,001			
		Ç U JU		5420;042											
<u>v.</u>	Elution Costs								· .						
	A. Elution Processing Costs														
	Kgals/Elution Require	ed		35000	35000	35000	35000			35000	35000	35000			
	Number of Elutions			0	11	13	1	2		13	35			12	
	Processing Unit Cost			· \$525	\$525	\$525	\$525			\$525	\$525	\$525			
	Subtotal Processing Cost			\$0	\$5,775	\$6,825	\$525	\$1,050	\$2,100	\$6,825	\$18,375	\$7,350	\$1,575	\$6,300	\$11,025
	B. Deep Well Injection Cos				•										
	Deep Well Injection		als/Elution)	12	12	12	12			12	. 12				
	Total Kgals for Injecti			0	132	156	12			156	420				
	Deep Well Injection U		Kgals)	\$4.60	\$4.60	\$4.60	\$4.60			\$4.60	\$4.60	\$4.60			
	Subtotal Deep Well Inject			\$0	\$607	\$718	\$55			\$718	\$1,933	\$773			
	Subtotal Elution Costs per W	/ellfield		\$0	\$6,382	\$7,543	\$580	\$1,160	\$2,321	\$7,543	\$20,308	\$8,123	\$1,741	\$6,963	\$12,185
	Total Elution Costs			\$74,849				······					1		┥────┤
<u>vi.</u>	Monitoring and Sampling C							l					· .		<u> </u>
	A. Restoration Well Sampli					<u>_</u>	·		-		-		<u> </u>		<u> </u>
	Estimated Restoration Pe			5		5	5	2	5	5	. 5	5	5		<u> </u>
	1. Well Sampling prior t	o restoration	i start					<u>_</u>					<u> </u>	ļ	<u> </u>
	# of Wells			0	20	31		7	9	31	21	12		\$150	\$150
	\$/sample			\$150	\$ 150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150

.

				1									Mine Unit-D		
Ground Water Restoration	-			Mine Unit-A	Mine Unit-B	Mine Unit-C	C-19N Pattern	C-Haul. Drifts	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	Ext.	Mine Unit-I	Mine Unit-J
2. Restoration Progress	s Sampling			· · · · · · · · · · · · · · · · · · ·				<u> </u>							
# of Wells	1			0	20	. 31	5	7	9	31	21	12	4	6	12
\$/sample	1			\$34			\$34	\$34	\$34		\$34	\$34		\$34	\$34
Samples/Year				6	6		6	6	6	6	6	6	. 6	6	6
3. UCL Sampling															
# of Wells				0	70	78	5	20	29	55	89	69	16	33	69
\$/sample				\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19
Samples/Year				. 6	6	6	6	. 6	6	6	6	6	6	6	6
Sub-total Restoration A	analyses			\$0	\$63,300	\$80,730	\$8,700	\$8,466	\$27,060	\$67,620	\$75,300	\$53,370	\$13,800	\$25,830	\$52,470
B. Short-term Stability							•								
Estimated Stabilizat	ion Period (M	fonths)		12			12	12	12	12	12	12	12		
# of Wells				6	· 56	44	6	2	19	28	89	69	16	. 33	33
Samples/Year				6	6		6	6		6		6		, ,	6
\$/sample				\$19	\$19		\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19	\$19
# of Wells	· .			5	20	31	6	2	9	31	21	12	4	6	6
Samples/Year				6	6		6	. 6	6	6	6	6	6	6	6
\$/sample				\$34	\$34		\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34
# of Wells				5	20	31	6	2	9	31	21	12	4	6	6
Samples/Year				2	2	2	2	2	2	2	2	2	2	2	2
\$/sample		1		\$150	\$150	\$150	\$150				\$150	\$150			
Sub-total Short-term St				\$3,204	\$16,464	\$20,640	\$3,708				\$20,730	\$13,914			
Subtotal Monitoring and Sa			d	\$3,204	\$79,764	\$101,370	\$12,408	\$9,702	\$33,762	\$86,436	\$96,030	\$67,284	\$17,640	\$32,616	\$59,256
Total Monitoring and San	npling Costs			\$599,472											
VII. Mechanical Integrity Test	(MIT) Costs				· · ·										
Five Year MIT Unit Co		í		\$71	\$71	\$71	\$71	\$71	\$71	\$71	\$71	\$71	\$71	\$71	\$71
Number of Wells (30%		est Wells)		0	0	109	0,1				275	98			72
Subtotal Mechanical Integr			field	\$0			\$0			\$6,539	\$19,553	\$6,965			
Total Mechanical Integrit				\$54,272	"				•.,,50	40,557		•0,705		40,027	
	T														
TOTAL RESTORATION COST				\$3,204	\$576,801	\$732,103	\$28,689	\$91,976	\$206,806	\$725,103	\$1,753,335	\$729,349	\$151,247	\$582,806	\$1,042,768
TOTAL WELLFIELD RESTO	RATION CO	DST		\$6,624,187									ļ	1	· · · · ·
VIII. Building Utility Costs				Central Plant	Main Office	Satellite No.1	Satellite No.2	Satellite No.3			-				
Electricity (\$/Month)	1			\$0			\$1,190		·.· .						
Propane (\$/Month)	1			\$0			\$0				-				
Natural Gas (\$/Month)				\$0			\$520								
Number of Months				0	60	6	48	48						1	
Subtotal Utility Costs per E				\$0	\$0	\$10,380	\$82,080	\$136,080							
Total Building Utility Cos	ts			\$228,540											

GW REST

Ground Water Restoration				1				
				<u> -</u> -· · · · ·		 		
IX. Irrigation Maintenance and Monitoring Costs	Irrigator No.1	Irrigator No.2						
A. Irrigation Maintenance and Repair								
Irrigation Operation Months/Year	6	6					 -	
Cost per Month	\$667	\$667						
Total Number of Years	5	5						
Subtotal Maintenance and Repair Costs	\$20,010	\$20,010				 		
B. Irrigation Monitoring and Sampling						 	 	
# of Irrigation Fluid Samples/Year		6			······································	 	 	
Cost/sample	\$121	\$121		· · · · · · · · · · · · · · · · · · ·		 		
# of Vegetation Samples/Year	4121	J121				 -	 	
Cost/sample	\$165	\$165					 	
# of Soil Samples/Year	28	3103				 	 	
Cost/sample		\$174				 	 ·	
# of Soil Water Samples/Year	<u>\$174</u> 12						 	
Cost/sample	<u>\$12</u>	2 \$121				 	 	
Total Number of Years						 ,	 	
Subtotal Sampling Costs	5	5				 	 	
	\$38,550	\$35,980		·		 		
Subtotal Maintenance and Monitoring Costs per Irrigator	\$58,560	\$55,990					 	
Total Irrigation Maintenance and Monitoring Costs	\$114,550					 		
X. Capital Costs (RO Purchase)						 		
Purchase/Installation Costs for 500 gpm RO Capacity	\$500,000					 		
Total Capital Costs	\$500,000							
XI. Vehicle Operation Costs						 	 	
Number of Pickup Trucks/Pulling Units (Gas)	10					 •	 	
Unit Cost in \$/hr (WDEQ Guideline No.12, Table D-1)	\$10.13			·		 	 	
Unit Cost in \$/hr (July 1998 dollars w/o escalator)	\$8.80		·			•		
Average Operating Time (Hrs/Year)	1000					 •	 -	
Total Number of Years (Average)						 ·		
Total Vehicle Operation Costs	\$440,052		·					
XII. Labor Costs								
Number of Environmental Managers/RSOs	. 1					 · · ·	 	
S/Year	\$60.000			· · · ·			 	
Number of Restoration Managers	#00,000					 	 	
S/Year	\$50,000					 	 	
Number of Environmental Technicians	2					 	 	
S/Year	\$28,000					 	 	
Number of Operators/Laborers	323,000						 ·	
S/Year	\$28,000			<u>}−</u>		 	 	
Number of Maintenance Technicians	320,000			<u>+</u>			 	
S/Year	\$28,000			<u>+</u>		 	 	
Number of Years	\$20,000						 	
Total Labor Costs	\$2,090,000					 	 	
XIII.Capital Costs	\$2,090,000					 	 	
Purchase RO Units (2X800 gpm Units)	\$120,000					 	 	
Total Labor Costs	\$120,000					 	 	
TOTAL GROUND WATER RESTORATION COSTS	\$10,117,329							

_	_	t Removal and Loading	· · · · · · · · · · · · · · · · · · ·		Central Plant	Satellite No.1	Satellite No.2	Satellite No.3
_		wal and Loading Costs		· · · · · · · · · · · · · · · · · · ·	· · ·		-	
A.	Т	ankage						
		Number of Tanks			26	8	14	18
		Volume of Tank Construct	tion Material (ft ³)		1028	162	. 290	. 391
	1	. Labor		· · ·				
		Number of Persons			3	3	3	
		Ft ³ /Day			25	25	25	2:
+	+-	Number of Days	· · · · · · · · · · · · · · · · · · ·		· 41		12	
	+	\$/Day/Person	+ +		\$112		\$112	\$112
-	+	Subtotal Labor Costs	+		\$13,776			\$5,37
	12	. Equipment	+	•		φ2,010	\$4,052	
-		Number of Days		· · · ·	41	6	12	10
		\$/Day	f		\$338			
	+-	Subtotal Equipment Costs	<u> </u>		\$338			
-	e	ubtotal Tankage Removal a	nd Londing Coata					
B.		VC Pipe			\$27,634	\$4,044	\$8,088	\$10,78
<u>р.</u>	+r	PVC Pipe Footage			5000	1000	4000	400
	+	Average PVC Pipe Diame	•		5000			400
		Average PVC Pipe Diame	ter (inches)		3		3	
	+	Shredded PVC Pipe Volu	me Reduction (ff /ff)		0.016			
		Volume of Shredded PVC	Pipe (ff)		. 80	16	64	64
	1.	. Labor			-	•		
	1	Number of Persons	<u> </u>		. 2		2	
	·	Ft/Day	<u> </u>		200		200	20
-		Number of Days	·	· · · · · · · · · · · · · · · · · · ·	25		20	20
	_	\$/Day/Person	·		\$112		\$112	\$11
		Subtotal Labor Costs			\$5,600		\$4,480	\$4,48
	_	ubtotal PVC Pipe Removal	and Loading Costs		\$5,600	\$1,120	\$4,480	\$4,48
<u>C</u> .	P	umps						
	Ì	Number of Pumps	·		50			· 1.
	· ·	Average Volume (ft ³ /pum	p)		4.93		4.93	4.9
_		Volume of Pumps (ft ³)			246.5	49.3	69.02	64.09
_	1.	. Labor						
		Number of Persons			1	. 1	1	*
		Pumps/Day			2	2	2	
		Number of Days		- · ·	- 25	. 5	7	
		\$/Day/Person			\$112	\$112	\$112	\$112
		Subtotal Labor Costs			\$2,800	\$560	\$784	\$784
	S	ubtotal Pump Removal and	Loading Costs		\$2,800	\$560	\$784	\$784
D.		bryer						
	D	bryer Volume (ft ³)			885	0	0	(
	1.	. Labor						
	T	Number of Persons			5	0	0	(
I		Ft ³ /Day	1		175	0	. 0	(
		Number of Days			5	. 0	0	(
		\$/Day/Person			\$112	\$112	\$112	\$11
1	Τ	Total Labor Cost	1		\$2,800			\$
	T	otal Dryer Dismantling and	Loading Cost		\$2,800			S
E.		O Units	T					¥
1	+-	Number of RO Units	<u>∤</u>			·. ·.		

Revised June 2005

EQUIP

nuiom	ent Removal and Loa	ding .			Central Plant	Satellite No.1	Satellite No.2	Satellite No.3
	Current				0		0	(
	Planned				0		1	
	Average Volume (A ³ /RO Unit)			250	250	250	250
	1. Labor				250	250	250	
	Number of Per				2	2	2	
	Number of Day				0		0.5	0.
		/s		· · ·	\$112	1.5 \$112	\$112	0. ↓ \$11
+-	\$/Day/Person							+
	Subtotal Labor Co				\$0		\$112	\$11
-	Subtotal RO Unit Rer				\$0		\$112	\$11
	btotal Equipment Remo				\$38,834	\$6,060	\$13,464	\$16,16
	tal Equipment Remov				\$74,518			
	ansportation and Disp	osal Costs (NI	RC-Licensed Facilit	y)		•		
A.	Tankage		l <u>.</u>					
	Volume of Tank C				1028	162	290	39
	Volume for Dispos	al Assuming 1	0% Void Space (ft3)		1131	178	319	43
	Transportation and	Disposal Unit	Cost (\$/ft ³)		\$5.62	\$5.62	\$5.62	\$5.6
	Subtotal Tankage Tra	nsportation and	d Disposal Costs		\$6,356	\$1,000	\$1,793	\$2,45
B.	PVC Pipe	-	•					
	Volume of Shredd	ed PVC Pipe (ft ³)		80	16	. 64	6
			0% Void Space (ft3)		88	18	70	7
-	Transportation and	Disposal Unit	Cost (\$/ft ³)	: .	\$5.62	\$5.62	\$5.62	\$5.6
-	Subtotal PVC Pipe Tr				\$495	\$101	\$393	\$39
C	Pumps				•000			
	Volume of Pumps	(ft ³)			246.5	49.3	69.02	64.0
			0% Void Space (ft3)		271	54	76	7
	Transportation and				\$5.62	\$5.62	\$5.62	\$5.6
	Subtotal Pump Transp				\$1,523	\$303	\$3.02	\$39
	Dryer Dryer		risposal Cosis		\$1,323	3303		
- D.	Dryer Volume (ft ³				005		0	
			Dryer Remains Intact	(03)	885	0	0	
	Volume for Dispos	al Assuming L	Tyer Remains Intact	(11)				
	Transportation and				\$5.62	\$5.62	\$5.62	\$5.6
	Total Dryer Transport	auon and Disp	osal Costs		\$4,974	\$0	\$0	\$
<u> </u>	RO Units					· · · · · · · · · · · · · · · · · · ·		
	Volume of RO Un				0	750	250	25
			0% Volume Reducti	on (ft [*])	. 0	375	125	12
_	Transportation and	Disposal Unit	Cost (\$/ft')		\$5.62	\$5.62	\$5.62	\$5.6
	Subtotal RO Unit Tra				\$0	\$2,108	\$703	\$70
	ototal Equipment Trans			cility	\$13,348	\$3,512	\$3,316	\$3,93
Tot	tal Equipment Transp	ortation and I	Disposal Costs		\$24,115			
. He	alth and Safety Costs							
	Radiation Safety Equi	pment			\$1,250	\$1,250	\$1,250	\$1,25
Tot	tal Health and Safety				\$5,000			
IBTO	TAL EQUIPMENT RE	MOVAL ANT	DISPOSAL COSTS	PER FACILITY	\$53,432	\$10,822	\$18,030	\$21,34
	L EQUIPMENT REM				\$103,633	φ10,022	\$10,000	94,124
71 AL	DOUTIMENT REM	UTAL AND	131 USAL CUSIS		\$103,033			

EQUIP

	Central	Dryer	Satellite	Satellite	Satellite	Sat. No.3	Yellow Cake	South	Suspended
Building Demolition and Disposal	Plant	Building	No. 1	No. 2	No. 3	Fab. Shop	Warehouse	Warehouse	Walkway
I. Decontamination Costs		·							· · · · · · · · · · · · · · · · · · ·
A. Wall Decontamination									
Area to be Decontaminated (ft ²)	131000	. 0	0	0	0	0	0	0	
Application Rate (Gallons/ft ²)	151000				0	1	0	0	1
HCl Acid Wash, including labor (\$/Gallon)	\$0.50	1	1 60.60	\$0.50	1	1	\$0.50	\$0.50	\$0.50
Subtotal Wall Decontamination Costs	\$65,500	\$0.50	\$0.50	<u>\$0.50</u> \$0	\$0.50	\$0.50		\$0.50	\$0.50
	303,300	\$0	\$0	20	\$0	\$0		<u>30</u>	<u> </u>
	17020		(000		0.000			0	
Area to be Decontaminated (ft ²)	17820	0	6000	9600	9600	0 4	0	4	
Application Rate (Gallons/ft ²)	4	4	4	4	4				\$0.50
HCl Acid Wash, including labor (\$/Gallon)	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50		\$0.50	
Subtotal Concrete Floor Decontamination Costs	\$35,640	\$0	\$12,000	\$19,200	\$19,200	\$0	\$0	\$0	\$0
C. Deep Well Injection Costs								0	0
Total Kgals for Injection	202.28	0	24	38.4	38.4	0		-	0
Deep Well Injection Unit Cost (\$/Kgals)	\$4.60	\$4.60	\$4.60	\$4.60	\$4.60	\$4.60		\$4.60	\$4.60
Subtotal Deep Well Injection Costs	\$931	\$0	\$110	\$177	\$177	\$0			<u>\$0</u>
Subtotal Decontamination Costs per Building	\$102,071	\$0	\$12,110	\$19,377	\$19,377	\$0	\$0	· \$0	\$0
Total Decontamination Costs	\$158,021								· · · · ·
II. Demolition Costs									
A. Building									
Assumptions:						, · · ·			
Dryer bldg. demolition unit cost of \$0.73/ft ³ for additional								······	
radiation safety equipment			·						
Volume of Building (ft ³)	794000	30720	192000	320000	320000	37560	91000	333000	5600
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft ³)	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171
Unit Cost in \$/ft ³ (July 1998 dollars w/o escalator)	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15		\$0.15	\$0.15
Subtotal Building Demolition Costs	\$117,962	\$4,564	\$28,525	\$47,541	\$47,541	\$5,580		\$49,473	\$832
B. Concrete Floor	\$117,502	<u></u>		ψ-1,5+1	ψτ7,5+1		415,520	<u></u>	
Area of Concrete Floor (ft ²)	23760	Ő	8000	12800	12800	· 0	6500	18000	0
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft ²)	\$3.17	\$3.17	. \$3.17	\$3.17	\$3.17	\$3.17		\$3.17	\$3.17
Unit Cost in \$/ft ² (July 1998 dollars w/o escalator)	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75		\$2.75	\$2.75
Subtotal Concrete Floor Demolition Costs	\$65,438	\$0	\$22,033	\$35,253	\$35,253	\$0		\$49,574	\$0
C. Concrete Footing				\$55,255	\$55,255		417,502		
Length of Concrete Footing (ft)	- 622	0		480	480	0	360	580	0
Demolition Unit Cost per WDEQ Guide. No.12,App.K (\$/lin. ft)	\$11.45	\$11.45	\$11.45		\$11.45	\$11.45		\$11.45	\$11.45
Unit Cost in \$/lin. ft (July 1998 dollars w/o escalator)	\$9.95	\$9.95	\$9.95	\$9.95	\$9.95	\$9.95		\$9.95	\$9.95
Subtotal Concrete Footing Demolition Costs	\$6,188	\$9.95	\$3,581	\$4,775	\$4,775	\$0		\$5,770	\$0
Subtotal Demolition Costs per Building	\$189,588	\$4,564	\$54,139	\$87,569	\$87,569	\$5,580		\$104,817	\$832
Total Demolition Costs	\$696,995	\$4,004		00,00	Ψ07,009	40,000		\$10 1 ,017	2002
	3070,775								
III. Disposal Costs						<u>.</u>			
A. Building									
Volume of Building (cy)	29407	1138	7111	11852	11852	1391	3370	12333	207
1. On-Site									
Assumptions:									
On-site disposal cost of \$0.54/cy									
Percentage (%)	100	0	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	29407	0	7111	11852	11852	1391	3370		207
Disposal Unit Cost (\$/cy)	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54

			Central	Dryer	Satellite	Satellite	Satellite	Sat. No.3	Yellow Cake	South	Suspended
Building	ng Demolition and Disposal		Plant	Building	No. 1	No. 2	No. 3	Fab. Shop	Warehouse	Warehouse	Walkway
	Subtotal On-Site Disposal Costs		\$15,880		\$3,840	\$6,400	\$6,400	\$751	\$1,820	\$6,660	\$112
	2. NRC-Licensed Facility					,					
	Percentage (%)		0	100	0	0	0	0	0	. 0	0
	Volume for Disposal (ft ³)		0		0	0	0	0	0	0	0
	Volume for Disposal Assuming 10% Void S	nace (ft ³)	0		0	0	0	0	0	0	0
	Transportation and Disposal Unit Cost (\$/ft ³		\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62
·	Subtotal NRC-Licensed Facility Disposal Costs	·	\$0	\$16,219	\$0	\$0	\$0	\$0		\$0	\$0
	Subtotal Building Disposal Costs		\$15,880	\$16,219	\$3,840	\$6,400	\$6,400	\$751	\$1,820	\$6,660	\$112
В.		· · · ·	0.0,000	410,217						\$0,000	
	Area of Concrete Floor (ft ²)		23760	0	8000	12800	12800	0	6500	18000	0
	Average Thickness of Concrete Floor (ft)		0.75		0.67	0.67	0.67	0		0.5	
	Volume of Concrete Floor (ft ³)		17820	0	5360	8576	8576	0		9000	
	Volume of Concrete Floor (cv)		660	0	199	318	318	0		333	
	1. On-Site								120		
	Percentage (%)		75	0	- 75	75	75	0	100	100	
	Volume for Disposal (cy)		495	0	149	238	238	0		333	
	Disposal Unit Cost per WDEQ Guideline No	12 App K (\$/au)	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69		\$4.69	\$4.69
	Unit Cost in \$/cy (July 1998 dollars w/o esca	lator)	\$4.09	\$4.09	\$4.09 \$4.07	\$4.09	\$4.07	\$4.09	\$4.07	\$4.09	\$4.07
	Subtotal On-Site Disposal Costs		\$2,017	\$4.07	\$4.07	\$4.07	\$971	\$4.07		\$1,358	\$4.07
	2. NRC-Licensed Facility		\$2,017		3007	39/1	\$971	\$0	\$490	\$1,336	
	Assumptions:				·						
	Additional \$2.00/ft ³ for segregation of c								· .		
		oncrete				25	25	0			
	Percentage (%)		. 25	0	25	25	25	0		0	
	Volume for Disposal (ft ³)		4455	0	1340	2144		•		-	<u> </u>
	Segregation and Loading Unit Cost (\$/ft ³)		\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00		\$2.00	\$2.00
	Transportation and Disposal Unit Cost (\$/ft ³	····	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62
	Subtotal NRC-Licensed Facility Disposal Costs		\$33,947	\$0	\$10,211	\$16,337	\$16,337	\$0		\$0	
	Subtotal Concrete Floor Disposal Costs		\$35,964	\$0	\$10,818	\$17,308	\$17,308	\$0	\$490	\$1,358	\$0
<u> </u>	Concrete Footing										
	Length of Concrete Footing (ft)		622	0	360	480	480	0	360	580	
	Average Depth of Concrete Footing (ft)		. 4	• 4	4	4	4	4	4	4	0
	Average Width of Concrete Footing (ft)		1	1	1	1	1	1	1	1	0
	Volume of Concrete Footing (ft ³)		2488	0	1440	1920	1920	0		2320	0
	Volume of Concrete Footing (cy)		92	0	53	71	71	0		86	0
	Disposal Unit Cost per WDEQ Guideline No.12		\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69		\$4.69	\$4.69
	Unit Cost in \$/cy (July 1998 dollars w/o escalato	r)	\$4.07	\$4.07	\$4.07	\$4.07	\$4.07	\$4.07	\$4.07	\$4.07	\$4.07
	Subtotal Concrete Footing Disposal Costs		\$375	\$0	\$217	\$290	\$290	\$0		\$350	\$0
	ibtotal Disposal Costs per Building		\$52,219	\$16,219	\$14,875	\$23,998	\$23,998	\$751	\$2,527	\$8,368	\$112
Tot	otal Disposal Costs	· · · · · · · · · · · · · · · · · · ·	\$151,976								
III Hee	ealth and Safety Costs										
	Radiation Safety Equipment		\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$0	\$0	\$0	\$0
	otal Health and Safety Costs		\$1,000		\$1,000	\$1,000	31,000	30		30	
1			33,000								
	DTAL BUILDING DEMOLITION AND DISPOSAL O		\$344,878	\$21,783	\$82,124	\$131,944	\$131,944	\$6,331	\$37,530	\$113,185	\$944
TOTAL	L BUILDING DEMOLITION AND DISPOSAL C	OSTS	\$1,011,992								

	Changehouse	Maintenance	Main	Office	Process/Fire	Potable	Potable Water	Central Plant
Building Demolition and Disposal	and Lab Bldg.	Building	Office	Trailers	Water Bldg.	Water Bldg.	Tank Slab	Tank Slabs
	and Dab Didg.	Dunding	Onice	Trancis	Water Diug.	Water Diug.		T ank Diady
I. Decontamination Costs								
A. Wall Decontamination								
Area to be Decontaminated (ft ²)	0			0	.0	0		0
Application Rate (Gallons/ft ²)	1	1	1	1	1	1	1	1
HCl Acid Wash, including labor (\$/Gallon)	\$0.50		\$0.50	\$0.50	\$0.50			\$0.50
Subtotal Wall Decontamination Costs	\$0	\$0	\$0	\$0	\$0	\$0	<u>\$0</u>	\$0
B. Concrete Floor Decontamination							·	
Area to be Decontaminated (ft ²)	0				0			0
Application Rate (Gallons/ft ²)	4			4	4			4
HCl Acid Wash, including labor (\$/Gallon)	\$0.50		\$0.50	\$0.50	\$0.50	\$0.50		\$0.50
Subtotal Concrete Floor Decontamination Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	- \$0
C. Deep Well Injection Costs								
Total Kgals for Injection	0		0	0	0	0	-	0
Deep Well Injection Unit Cost (\$/Kgals)	\$4.60		\$4.60	\$4.60	\$4.60	\$4.60		\$4.60
Subtotal Deep Well Injection Costs	\$0			\$0	\$0			\$0
Subtotal Decontamination Costs per Building	\$0	\$0	\$0	\$0	\$0	· \$0	\$0	\$0
Total Decontamination Costs								
II. Demolition Costs		~						
A. Building								
Assumptions:								
Dryer bldg. demolition unit cost of \$0.73/ft ³ for additional							· · · · · ·	
radiation safety equipment			-				:	· ·
Volume of Building (ft ³)	73000	27000	72000	20000	16500	6300		0
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft ³)	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	. \$0.171	\$0.171
Unit Cost in \$/ft ³ (July 1998 dollars w/o escalator)	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15
Subtotal Building Demolition Costs	\$10,845	\$4,011	\$10,697	\$2,971	\$2,451	\$936		\$0.19
B. Concrete Floor	\$10,045		\$10,077			\$750	4 0	
Area of Concrete Floor (ft ²)	. 5400	2100	6000	0	800	180	1256	7854
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft ²)	\$3.17	\$3.17	\$3.17	\$3.17	. \$3.17	\$3.17		\$3.17
Unit Cost in \$/ft ² (July 1998 dollars w/o escalator)	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75			\$2.75
Subtotal Concrete Floor Demolition Costs	\$14,872	\$5,784	\$16,525	\$0	\$2,203	\$496		\$21,631
C. Concrete Footing	\$14,072		\$10,525	Ψ0		\$170	45,452	
Length of Concrete Footing (ft)	300	200	340	0	120	54	0	
Demolition Unit Cost per WDEQ Guide. No.12, App.K (\$/lin. ft)	\$11.45	\$11.45	\$11.45	\$11.45	\$11.45	\$11.45		\$11.45
Unit Cost in \$/lin. ft (July 1998 dollars w/o escalator)	\$9.95	\$9.95	\$9.95	\$9.95	\$9.95	\$9.95		\$9.95
Subtotal Concrete Footing Demolition Costs	\$2,984	\$1,990	\$3,382	\$0	\$1,194	\$537		\$0
Subtotal Demolition Costs per Building	\$28,701	\$11,785	\$30,604	\$2,971	\$5,848	\$1,969		\$21,631
Total Demolition Costs	420,701					• 1,7 05	45,152	,
III. Disposal Costs								
A. Building								
Volume of Building (cy)	2704	1000	2667	741	611	233	0	0
1. On-Site								
Assumptions:					:			
On-site disposal cost of \$0.54/cy								
Percentage (%)	100	100	100	100	100	100		0
Volume for Disposal (cubic yards)	2704	1000	2667	741	611	233	0	0
Disposal Unit Cost (\$/cy)	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54

Revised June 2005

	Changehouse	Maintenance	Main	Office	Process/Fire	Potable	Potable Water	Central Plant
Building Demolition and Disposal	and Lab Bldg.	Building	Office	Trailers	Water Bldg.	Water Bldg.	Tank Slab	Tank Slabs
Subtotal On-Site Disposal Costs	\$1,460	\$540	\$1,440	\$400	\$330			\$0
2. NRC-Licensed Facility								
Percentage (%)	0	0	0	0	0	0	0	0
Volume for Disposal (ft ³)	0	0	0	0	0		0	0
Volume for Disposal Assuming 10% Void Space (ft ³)	0	0	0	· 0	0		0	0
Transportation and Disposal Unit Cost (\$/ft ³)	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62
Subtotal NRC-Licensed Facility Disposal Costs	\$0	\$0	\$0	\$0	\$0		\$0	\$0
Subtotal Building Disposal Costs	\$1,460	\$540	\$1,440	\$400	\$330		\$0	\$0
B. Concrete Floor		\$510		\$100	\$550	\$120	ψν	φ0
Area of Concrete Floor (ft ²)	5400	2100	6000	0	800	180	1256	7854
Average Thickness of Concrete Floor (ft)	0.5	0.5	0.5	0	0.5			1004
Volume of Concrete Floor (ft ³)	2700	1050	3000	0	400			7854
Volume of Concrete Floor (cr)	100	39	111	0			47	291
1. On-Site	100				15			291
Percentage (%)	100	100	100	0	100	100	100	100
Volume for Disposal (cy)	100	39	111	0	100		47	.291
Disposal Unit Cost per WDEQ Guideline No.12,App.K (\$/cy)	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	-		\$4.69
Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$4.09	\$4.09	\$4.09	\$4.09	\$4.09	\$4.09	\$4.09	\$4.09
Subtotal On-Site Disposal Costs	\$407		\$4.07	\$4.07 \$0	\$4.07			
2. NRC-Licensed Facility	\$407	\$158	\$433	20		\$14	\$130	\$1,185
Assumptions:								
Additional \$2.00/ft ³ for segregation of concrete								
Percentage (%)								
Volume for Disposal (ft ³)	0	0	· 0	. 0	0		0	0
		-	0	0				0
Segregation and Loading Unit Cost (\$/ft ³)	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00	\$2.00
Transportation and Disposal Unit Cost (\$/ft ³)	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62
Subtotal NRC-Licensed Facility Disposal Costs	\$0	\$0	- \$0	\$0	\$0		\$0	\$0
Subtotal Concrete Floor Disposal Costs	\$407	\$158	\$453	\$0	\$60	\$14	\$190	\$1,185
C. Concrete Footing								
Length of Concrete Footing (ft)	300	200	340	0	120	54	0	0
Average Depth of Concrete Footing (ft)	4	4	4	0	4	4	4	4
. Average Width of Concrete Footing (ft)	1	1	1	0	1	1	1	1
Volume of Concrete Footing (ft ³)	1200	800	1360	0	480	216		0
Volume of Concrete Footing (cy)	.44	· 30	50	· 0	18	8	0	0
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/cy)	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69	\$4.69
Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$4.07	\$4.07	\$4.07	\$4.07	\$4.07	\$4.07	\$4.07	\$4.07
Subtotal Concrete Footing Disposal Costs	\$181	\$121	\$205	\$0	\$72	\$33	\$0	\$0
Subtotal Disposal Costs per Building	\$2,048	\$819	\$2,098	\$400	\$462	\$173	\$190	\$1,185
Total Disposal Costs			•					
III. Health and Safety Costs	1				·····			
Radiation Safety Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Health and Safety Costs				06	JU	J C		¢0
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$30,749	\$12,604	\$32,702	\$3,371	\$6,310	\$2,142	\$3,649	\$22,816
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS								
							•	

						-		Exxon R&D	Exxon R&D	D, E-Wellfield	Morton No.
Buildin	ıg D	emolition	and	Disposal				RO Bldg.	Process Bldg.	Booster Stat.	1-20 Bdlg.
	i econ	taminatio		ete							
		all Decon									
				contaminated	μ(θ ²)			0	0	0	0
-	-			ate (Gallons/	<u> </u>						
					labor (\$/Gallor	l		\$0.50	\$0.50	\$0.50	\$0.50
	S			contaminatio		,		\$0.50	\$0.50	\$0.50	\$0
В.	_			econtaminati		· · ·	1				00
	Ť			contaminated				1260	1260	0	0
	+			ate (Gallons/	~ ~			4	4	4	
					labor (\$/Gallor	i)		\$0.50	\$0.50	\$0.50	\$0.50
	S				ntamination Co			\$2,520	\$2,520	\$0	\$0
C.		eep Well]				· · · · -					
		Total Kg	als fo	r Injection				5.04	5.04	0	0
					Cost (\$/Kgals)			\$4.60	\$4.60	\$4.60	\$4.60
		ubtotal De	ep W	ell Injection (Costs			\$23	\$23	\$0	\$0
Su	ibtot	tal Decont	amina	ation Costs pe	er Building			\$2,543	\$2,543	\$0	50
To	otal	Decontan	inati	on Costs							
I. De	mo	lition Cos	+c								·
		uilding	15								
		Assumpt	ione				+				
	+-	Drve	r blde	demolition	unit cost of \$0	73/ft ³ for ad	ditional				
	+-			afety equipm							
	+			ilding (ft ³)				15120	15120	8640	14400
	┿	Demoliti	on Lh	nit Cost per V	VDEQ Guideli	ne No 12 An	$K (\$/ft^3)$	\$0.171	\$0.171	\$0.171	\$0.171
. .	-	Unit Cos	t in \$	$/ft^3$ (July 199	8 dollars w/o e	scalator)		\$0.15	\$0.15	\$0.15	\$0.15
	Si			Demolition		Scalator)		\$2,246	\$2,246	\$1,284	\$2,139
B.	_	oncrete Fl	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					\$2,210			
	-			ete Floor (ft ²))			1260	1260	0	600
					VDEQ Guideli	ne No.12.Ap	p.K (\$/ft ²)	\$3.17	\$3.17	\$3.17	\$3.17
		Unit Cos	t in \$	/ft ² (July 199	8 dollars w/o e	scalator)		\$2.75	\$2.75	\$2.75	\$2.75
	Sı	ubtotal Co	ncrete	Floor Demo	lition Costs	/		\$3,470	\$3,470	\$0	\$1,652
C.		oncrete Fo									
				crete Footing	; (ft)			144	144	0	100
		Demoliti	on Ur	nit Cost per V	VDEQ Guide. 1	No.12,App.K	(\$/lin. ft)	\$11.45	\$11.45	\$11.45	\$11.45
		Unit Cos	t in \$	/lin. ft (July 1	998 dollars w/	o escalator)		\$9.95	\$9.95	\$9.95	\$9.95
	Sı	ubtotal Co	ncrete	e Footing Der	nolition Costs			\$1,432	\$1,432	\$0	\$995
Su	btot	al Demoli	tion C	Costs per Buil	ding			\$7,148	\$7,148	\$1,284	\$4,786
To	otal	Demolitio	n Co	sts						k .	
II D:		sal Costs									
		uilding									
A .		olume of I	2014	ng (cu)	· · · ·			560	. 560	320	533
	$\frac{1}{1}$	On-Site	Junul		· · · ·			500	500		
-	+		mptic	ns.							
	+				ost of \$0.54/cy						
	+	Perce	entage	(%)	·	···· ,·		100	100	100	
	+			or Disposal (c	ubic vards)			560	560	320	533
				Jnit Cost (\$/c				\$0.54	\$0.54	\$0.54	\$0.54

Revised June 2005

Page 12 of 36

		Exxon R&D	Exxon R&D	D, E-Wellfield	Morton No.
uilding	ng Demolition and Disposal	RO Bldg.	Process Bldg.	Booster Stat.	1-20 Bdlg.
	Subtotal On-Site Disposal Costs	\$302	\$302	\$173	\$28
	2. NRC-Licensed Facility				
	Percentage (%)	0	0	0	
	Volume for Disposal (ft ³)	0	0	0	(
	Volume for Disposal Assuming 10% Void Space (ft ³)	0	0	0	(
	Transportation and Disposal Unit Cost (\$/ft ³)	\$5.62	\$5.62	\$5.62	\$5.6
	Subtotal NRC-Licensed Facility Disposal Costs	\$0	\$0	\$0	\$
	Subtotal Building Disposal Costs	\$302	\$302	\$173	\$28
B.		4502			\$20
	Area of Concrete Floor (ft ²)	1260	1260	0	60
_	Average Thickness of Concrete Floor (ft)	0.5	0.5	0	0.
. –	Volume of Concrete Floor (ft ³)	630	630	0	30
	Volume of Concrete Floor (cy)	23	23	0	
-	1. On-Site	. 23		U	
	Percentage (%)	100	100	· 0	10
	Volume for Disposal (cy)	23	23	- 0	10
-					1
_	Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/cy)	\$4.69	\$4.69	\$4.69	\$4.6
	Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$4.07	\$4.07	\$4.07	\$4.0
	Subtotal On-Site Disposal Costs	\$95	\$95	. \$0	\$4
	2. NRC-Licensed Facility				
	Assumptions:				
	Additional \$2.00/ft ³ for segregation of concrete				
	Percentage (%)	0	0	0	
	Volume for Disposal (ft ³)	. 0	. 0	. 0	
	Segregation and Loading Unit Cost (\$/ft ³)	\$2.00	\$2.00	\$2.00	\$2.0
	Transportation and Disposal Unit Cost (\$/ft ³)	\$5.62	\$5.62	\$5.62	\$5.6
	Subtotal NRC-Licensed Facility Disposal Costs	\$0	\$0	\$0	\$
	Subtotal Concrete Floor Disposal Costs	\$95	\$95	\$0	\$4
C.					
	Length of Concrete Footing (ft)	144	144	0	10
	Average Depth of Concrete Footing (ft)	4	4	• 4	
	Average Width of Concrete Footing (ft)	1	1	1	
	Volume of Concrete Footing (ft ³)	. 576	576	0	40
	Volume of Concrete Footing (cy)	21	21	0	1
_	Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/cy)	\$4.69	\$4.69	\$4.69	\$4.6
	Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$4.07	\$4.07	\$4.07	\$4.0
	Subtotal Concrete Footing Disposal Costs	\$87	\$87	\$0	\$6
Sub	btotal Disposal Costs per Building	\$484	\$484	\$173	\$39
	tal Disposal Costs				
	ealth and Safety Costs				
	Radiation Safety Equipment	\$0	- \$ 0	\$0	\$
Tot	tal Health and Safety Costs				-
IPTO	DTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$10,176	¢10.175	\$1 157	\$5,17
	L BUILDING DEMOLITION AND DISPOSAL COSTS	\$10,175	\$10,175	. \$1,457	\$3,17
UIAL	L DUILDING DEMOLITION AND DISPOSAL COSTS				

Revised June 2005

Page 13 of 36

	iin ak in			· · ·			· · · ·						Mine Unit-		
ellti	eld Buildings and Ec	uipment Rer	noval and L	Disposal		Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	D Ext.	Mine Unit-I	Mine Unit-
V	Wellfield Piping	t													
	Assumptions:														
	Number of Head					5			4	15			3	6	
	Length of Pipin	g per Header I	House (ft)			15000	15000	15000	15000	15000	15000	15000	15000	15000	1500
	Total Length of					75000	270000	300000	60000	225000	645000	150000	45000	90000	9000
1	A. Removal and Load									-					
	Wellfield Piping	g Removal Un	it Cost (\$/ft	of pipe)		\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.3
	Subtotal Wellfield	Piping Remov	al and Load	ing Cost	s	\$23,250	\$83,700	\$93,000	\$18,600	\$69,750	\$199,950	\$46,500	\$13,950	\$27,900	\$27,9
I	B. Transport and Disp	osal Costs (N	RC-Licensed	d Facility	/)										
	Average Diame					2	.2	2	2	2	2	2	2	2	
	Chipped Volum					0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.0
	Chipped Volum					375	1350	1500	300	1125	3225	750	225		
	Volume for Dis	posal Assumir	ng 10% Void	I Space (ft ³)	413	1485	- 1650	330	1238	3548	825	248	495	49
	Transportation a	nd Disposal U	Jnit Cost (\$/	ft³)		\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62	\$5.62		\$5.0
	Subtotal Wellfield			osal Cos	sts	\$2,321	\$8,346		\$1,855		\$19,940	\$4,637	\$1,394	\$2,782	\$2,78
	Wellfield Piping Costs	per Wellfield				\$25,571	\$92,046	\$102,273	\$20,455	\$76,708	\$219,890	\$51,137	\$15,344	\$30,682	\$30,6
0	C. Capitol Costs														
	PVC Pipe Shree					\$40,000									
]	Fotal Wellfield Pipin	g Costs				\$704,788									
1	Well Pumps and Tub	ing									·				
	Assumptions:														
+	Pump and tubin	removal cos	te included y	under oro	und water rest	aration labor on			· · · · · · · · · · · · · · · · · · ·						
	60% of producti						515								
	A. Pump and Tubing										<u> </u>				
Ť		oduction Wel				27	141	192	45	143	465	155	30	125	12
+	Number of In				· · · · · · · · · · · · · · · · · · ·	50			91		903	327	67		
+	1. Pump Volume						517	545	71	307	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	521	. 07	230	
	Number of Pi	oduction Wel	ls with Pum	L		16	85	. 115	27	86	279	93	. 18	75	
-+-		p Volume (ft ³				10	1	113	2/				10		
	Pump Volum					16		115	27	_		93			
+	2. Tubing Volume					10	00						10		
	Assumptions			1	•						~				
+			ellfield base	d on ave	rage well dept	h minus 25 ft									
		oduction Wel				16	85	115	27	86	279	93	18	75	
		jection Wells				30		206	55		542				
		ng Length per				475	425	525	575		625		575		
		h per Wellfiel				21850	117300		47150		513125				
		roduction We		Tubing	(inches)	21050	2		2						-
	Diameter of I	njection Well	HDPE Tubi	ng (inche	es)	1.25	1.25	1.25	1.25		1.25				
	Chipped Volu	me Reduction	1 (ft ³ /ft)		<u> </u>	0.005	0.005	0.005	0.005		0.005			0.005	
	Chipped Volu	me per Wellfi	ield (ft ³)	1		109	587	843	236		2566				
-	Volume of Pum	and Tubing	(ft ³)	1		125	672	958	263		2845				
	Volume for Disp			Space (ft ³)	138	739	1054	289		3130			a second se	-
	Transportation a				ſ	\$5.62	\$5.62	\$5.62	\$5.62		\$5.62				\$5.
+	Subtotal Pump and				osts	\$776	\$4,153	\$5,923	\$1,624	\$4,918	\$17,591	\$4,816			\$3,8
P	ump and Tubing Cost					\$776	\$4,153	\$5,923	\$1,624	\$4,918	\$17,591	\$4,816	· · · · · · · · · · · · · · · · · · ·		
1 Π	fotal Pump and Tub	ng Costs		1	i	\$49,483	ψ 1,200			\$ 1,510		<u>+.,</u>			40,00

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit- D Ext.	Mine Unit-I	Mine Unit-J
III. Buried Trunkline	A/B-Wellfield							2 2.44		
Assumptions:	A/B-Welitield	15		D/E-Wellfield	<u>s</u>				1	} • ···
A/B-Wellfields use the same trunkline				·····						
D/E-Wellfields use the same trunkline									ļ	
	(500			10000				5500	10750	1000
Length of Trunkline Trench (ft)	6500		5900	12000		11700	13200	5500	10750	4000
A. Removal and Loading								-	0.05	-
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$0.85		\$0.85			\$0.85	\$0.85	\$0.85		
Subtotal Trunkline Removal and Loading Costs	\$5,525		\$5,015	\$10,200		\$9,945	\$11,220	\$4,675	\$9,138	\$3,400
B. Transport and Disposal Costs (NRC-Licensed Facility)				· · ·						
1. 3" HDPE Trunkline										
Piping Length (ft)	6500	-	5900			11700	13200	5500		
Chipped Volume Reduction (ft ³ /ft)	0.022		0.022			0.022	0.022	0.022		
Chipped Volume (ft ³)	143		129.8	264		257.4	290.4	121	236.5	88
2. 6" HDPE Trunkline						ļ	L			
Piping Length (ft)	• 0		0			0		1.000		
Chipped Volume Reduction (ft ³ /ft)	0.078		0.078			0.078	0.078			
Chipped Volume (ft ³)	0		0	0		0	0	858	234	624
3. 10" HDPE Trunkline									_	
Piping Length (ft)	13000		0	0		0	0	C	750	·0
Chipped Volume Reduction (ft ³ /ft)	0.277		0.277	0.277		0.277	0.277	0.277	0.277	0.277
Chipped Volume (ft ³)	3601		0	0		0	0	0	207.75	C
4. 12" HDPE Trunkline										
Piping Length (ft)	.0		11800	24000		0	0	0	0	C
Chipped Volume Reduction (ft ³ /ft)	0.293		0.293	. 0.293		0.293	0.293	0.293	0.293	0.293
Chipped Volume (ft ³)	0		· 3457.4	7032	· · · · · · · · · · · · · · · · · · ·	0	0	0	0	C
5. 14" HDPE Trunkline										, .
Piping Length (ft)	0		0	0		23400	26400	0	8500	C
Chipped Volume Reduction (ft ³ /ft)	0.359		0.359	0.359		0.359	0.359	0.359	0.359	0.359
Chipped Volume (ft ³)	0		0			8400.6	9477.6			. (
6 18" HDPE Trunkline										
Piping Length (ft)	0	0	. 0	0	0	0	0	0	0	8000
Chipped Volume Reduction (ft ³ /ft)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	
Chipped Volume (ft ³)	.0	0								
Total Trunkline Chipped Volume (ft ³)	3744	0	3587.2	7296		8658	9768	979	3729.75	
Volume for Disposal Assuming 10% Void Space (ft ³)	4118		3946			9524	10745	1077	4103	783
Transportation and Disposal Unit Cost (\$/ft ³)	\$5.62	•	\$5.62			\$5.62	\$5.62			\$5.62
Subtotal Trunkline Transport and Disposal Costs	\$23,143		\$22,177			\$53,525	\$60,387		· · · · · · · · · · · · · · · · · · ·	
Trunkline Decommissioning Costs per Wellfield	\$28,668		\$27,192	the second s		\$63,470				
Total Trunkline Decommissioning Costs	\$296,968			000,000		000,000		410,120		
V. Well Houses									ļ	·
Total Quantity	90	490	554			1383	482			360
Average Well House Volume (ft ³)	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	. 12.:
A. Removal									ļ	
Total Volume (ft ³)	1125	6125	6925			17287.5	6025			4500
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft ³)	\$0.171	\$0.171	\$0.171		\$0.171	\$0.171	\$0.171			\$0.17
Unit Cost in \$/ft ³ (July 1998 dollars w/o escalator)	\$0.15	\$0.15	\$0.15		\$0.15	\$0.15	\$0.15			
Subtotal Well House Demolition Costs	\$167	\$910	\$1,029	\$253	\$836	\$2,568	\$895	\$180	\$670	\$669

Revised June 2005

	· .			• •					Mine Unit-		
Wellfield Buildings and Equipment Removal and Disposal B. Survey and Decontamination		Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	D Ext.	Mine Unit-I	Mine Unit-J
								•			
Assumptions:											
Cost per Well House		\$5							· · · ·		
Subtotal Survey and Decontamination Costs		\$450	\$2,450	\$2,770	\$680	\$2,250	\$6,915	\$2,410	\$485	\$1,805	\$1,800
C. Disposal											
Total Volume (cy)	L., `	42		256					45		167
Volume for Disposal Assuming 10% Void Space (cy)	46							49		
Disposal Unit Cost per WDEQ Guideline No.12,A	pp.K (\$/cy)	\$5.98	\$5.98						\$5.98		
Unit Cost in \$/cy (July 1998 dollars w/o escalator)		\$5.20	- \$5.20						\$5.20		
Subtotal On-Site Disposal Costs		\$239	\$1,299						\$255		
Well House Removal and Disposal Costs per Wellfield		\$856	\$4,659	\$5,264	\$1,291	\$4,276	\$13,141	\$4,578	\$920	\$3,431	\$3,420
Total Well House Removal and Disposal Costs	· · · ·	\$41,836			·		,				
VI. Header Houses										1	
Total Quantity		5	18	20	4	15	43	10	. 3	6	6
Average Header House Volume (ft ³)		: 1600	1600	1600				1600	1600	1600	
A. Removal					- 1000	1000					1000
Total Volume (ft ³)		8000	28800	32000	6400	24000	68800	16000	4800	9600	9600
Demolition Unit Cost per WDEQ Guideline No.12.	App.K $(\$/ft^3)$	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0.171	\$0,171
Unit Cost in \$/ft ³ (July 1998 dollars w/o escalator)		\$0.15	\$0.15	\$0.15				\$0.15	\$0.15	\$0.15	\$0.15
Subtotal Building Demolition Costs		\$1,189	\$4,279	\$4,754		\$3,566		\$2,377	\$713		
B. Survey and Decontamination			¢ , <u>,</u> _,,	\$ 1,751		\$5,500	010,221	42,377			\$1,120
Assumptions:											
Cost per Header House		\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200
Subtotal Survey and Decontamination Costs		\$1,000	\$3,600	\$4,000	\$800		\$8,600	\$2,000	\$600		\$1,200
C. Disposal											
Total Volume (cy)		296	1067	1185	237	889	2548	593	178	356	· 356
Volume for Disposal Assuming 10% Void Space (cy)	326	1173	1304	261		2803	652	196		391
Disposal Unit Cost per WDEQ Guideline No.12,Ar		\$5.98	\$5.98	\$5.98	\$5.98			\$5.98	\$5.98	\$5.98	
Unit Cost in \$/cy (July 1998 dollars w/o escalator)		\$5.20	\$5.20	\$5.20					\$5.20		
Subtotal On-Site Disposal Costs		\$1,694	\$6.094	\$6,775	\$1,356		\$14,563	\$3,387	\$1,018		\$2,031
Header House Removal and Disposal Costs per Wellfield		\$3,883	\$13,973	\$15,529	\$3,107	\$11,647	\$33,384	\$7,764	\$2,331	\$4,657	\$4,657
Total Header House Removal and Disposal Costs		\$100,932	4,						,		
				· · · · · · ·			· · · ·				
TOTAL DEVOLUT AND DUDDON AL COOPE		• • • • • •								+_:-	-
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIE		\$59,754	\$114,831	\$156,181	. \$81,783	\$97,549	\$347,476	\$139,902	\$30,469	\$75,620	\$50,442
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT	REMOVAL							· · · ·			
AND DISPOSAL COSTS		\$1,194,007									

								Mine Unit-D		
Well Abandonment	Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	Ext.	Mine Unit-I	Mine Unit-
I. Well Abandonment (Wellfields)										1
# of Production Wells	. 0	141	192	45	143	465	155	30	125	120
# of Injection Wells	. 0	319	343	91	307	903	327	67	236	240
# of Monitoring Wells	. 0	67	78	38	86	134	81	· 20	39	41
#of Restoration Wells	0	30	19	· 0	0	15	0	0	0	0
Total Number of Wells	0	557	632	174	536	1517	563	117	400	401
Average Diameter of Casing (inches)	5	. 5	5	5	5	5	5	5	5	5
Average Depth (ft)	500	450	550	600	550	650	500	600	650	540
Well Abandonment Unit Cost (\$/well)	\$280	\$277	\$284	\$287	\$284	\$290	\$280	\$287	\$290	\$284
Subtotal Abandonment Cost per Wellfield	\$0	\$154,233	\$179,235	\$49,929	\$152,010	\$440,385	\$157,781	\$33,573	\$116,120	\$113,724
Total Wellfield Abandonment Costs	\$1,396,990									
II. Waste Disposal Well Abandonment	Morton No.1-20	Vollman No.33-27	(Construction not	anticipated)	-	-			•	
A. Well Plugging										í
Drill Rig Operation (\$/hr)	150	0								í
Number of Hours	31	0				· · · · · ·				
Drill Rig Operating Costs	\$4,650	· \$0	•			•	,			1
Cementing Costs	\$7,500	\$0								
Equipment Transport Costs	\$1,000	\$0								
Well Cap Welding Costs	\$1,000	\$0								ſ
Brine Makeup and Injection Costs	\$1,500	\$0								· · · · ·
Subtotal Well Plugging Costs per Well	\$15,650	\$0								
B. Pump Dismantling and Decontamination										
Number of Persons	2	0								
Number of Pumps	2	0								1
Pumps/Day	0.5	0								
Number of Days	4	0								
\$/Day/Person	\$112	\$0								
Subtotal Dismantling and Decon Costs per Well	\$896	\$0								
C. Tubing String Disposal (NRC-Licensed Facility)										· ·
Length of Tubing String (ft)	9000	. 0								1
Diameter of Tubing String (inches)	2.875	0								
Volume of Tubing String (ft ³)	406	0								
Transportation and Disposal Unit Cost (\$/ft ³)	\$5.62	\$0.00								
Subtotal Tubing String Disposal Costs per Well	\$2,279	\$0								
Subtotal Waste Disposal Well Abandonment Costs per Well	\$18,825	\$0								1
Total Waste Disposal Well Abandonment Costs	\$18,825				-		· · · · · ·			<u> </u>
TOTAL WELL ABANDONMENT COSTS	\$1,415,815									1

I. Welli P E Subto Total II. Welli A. R S S	nd Satellite Surface Reclamation Pattern Area Reclamation Pattern Area (acres) Disking/Seeding Unit Cost (\$/acre) otal Pattern Area Reclamation Costs per Wellfield I Wellfield Pattern Area Reclamation Costs field Road Reclamation Road Construction Before January 1, 1997		Mine Unit-A/B	\$200			Mine Unit-F	Mine Unit-H	Ext.	Mine Unit-I	Mine Unit-J
II. Wellf	Pattern Area (acres) Disking/Seeding Unit Cost (\$/acre) otal Pattern Area Reclamation Costs per Wellfield I Wellfield Pattern Area Reclamation Costs field Road Reclamation	· · · · · · · · · · · · · · · · · · ·	\$200 \$4,000	\$200							
II. Wellf	Pattern Area (acres) Disking/Seeding Unit Cost (\$/acre) otal Pattern Area Reclamation Costs per Wellfield I Wellfield Pattern Area Reclamation Costs field Road Reclamation	······································	\$200 \$4,000	\$200							
II. Well A. R	Disking/Seeding Unit Cost (\$/acre) tal Pattern Area Reclamation Costs per Wellfield I Wellfield Pattern Area Reclamation Costs field Road Reclamation	· · · · · · · · · · · · · · · · · · ·	\$200 \$4,000	\$200				26	5	21	20
Subto	otal Pattern Area Reclamation Costs per Wellfield I Wellfield Pattern Area Reclamation Costs field Road Reclamation		\$4,000		enon		· 77 \$200		5	21	
II. Welli A. R	I Wellfield Pattern Area Reclamation Costs field Road Reclamation				+			\$200	\$200	\$200	
II. Wellf A. R	field Road Reclamation				\$1,300	\$4,600	\$15,400	\$5,200	\$1,000	\$4,200	\$5,600
A. R											
S	Road Construction Before January 1, 1997					•					
	Length of Wellfield Roads (1000 ft)		12.2	11.3	2.4	13.3	15	0	0	0	0
	Wellfield Road Reclamation Unit Cost (\$/1000	t) ·	\$586	\$586	\$586	\$586	\$586	\$586	\$586	. \$586	\$586
B. R	Subtotal Pre-1997 Wellfield Road Reclamation Co	ts	\$7,149	\$6,622	\$1,406	\$7,794	\$8,790	\$0	\$0	\$0	\$0
	Road Construction After January 1, 1997										
	Length of Wellfield Roads (1000 ft)		0.6	0	0	0	• 3	15.7	5	. 5	10
	Wellfield Road Reclamation Unit Cost (\$/1000	t)	\$305	\$305	\$305	\$305	\$305	\$305	\$305	\$305	\$305
	Subtotal Post-1997 Wellfield Road Reclamation Co	sts	\$183	\$0	\$0	\$0	\$915	\$4,789	\$1,525	\$1,525	\$3,050
Subto	otal Road Reclamation Costs per Wellfield		\$7,332	\$6,622	* \$1,406	\$7,794	\$9,705	\$4,789	\$1,525	\$1,525	\$3,050
	I Wellfield Road Reclamation Costs		\$43,748								
SUPTOTAL	SURFACE RECLAMATION COSTS PER WELL		\$11,332	£10.000	£0.70(£12.204	£25.105	#0.000	\$0.505	65 705	£0.(50
	ELLFIELD SURFACE RECLAMATION COSTS PER WEL		\$11,332	\$12,822	\$2,706	\$12,394	\$25,105	\$9,989	\$2,525	\$5,725	\$8,650
IOTAL WI	ELEFIELD SURFACE RECLAMATION COS	3	391,248								
	lite Area Reclamation		Satellite No.1	Satellite No.2	Satellite No.3						
A	Assumptions:				•						
	Area of Disturbance (acres)		1	1	1						
	Average Depth of Stripped Topsoil (ft)		1	0.67	0.67						
	Surface Grade: Level Ground										
	Average Length of Topsoil Haul (ft)		1000	500	500						
A	A. Ripping Overburden with Dozer		1				•				
	Ripping Unit Cost per WDEQ Guideline N		\$679.37	\$679.37	\$679.37	-					1
	Unit Cost in \$/acre (July 1998 dollars w/o e	calator)	\$590.24	\$590.24	\$590.24		•.				
	Subtotal Ripping Costs		\$590	\$590	\$590						
B	B. Topsoil Application with Scraper										
	Volume of Topsoil Removed (cy)		. 1613	1081	1081						
	Application Unit Cost per WDEQ Guidelin		\$0.71	\$0.60	\$0.60		·				
	Unit Cost in \$/cy (July 1998 dollars w/o eso	alator)	\$0.62	\$0.52	\$0.52						
	Subtotal Topsoil Application Costs		\$995	\$563	\$563						
C	C. Discing and Seeding	· · ·									
	Discing/Seeding Unit Cost (\$/acre)		\$200	\$200	\$200						
	Subtotal Discing/Seeding Costs		\$200	\$200	\$200						
	Subtotal Surface Reclamation Costs per Satellite		\$1,785	\$1,353	\$1,353						
Total	Satellite Building Area Reclamation Costs		\$4,491								
TOTAL	ELLFIELD AND SATELLITE SURFACE REC	AMATION COSTS	\$95,739								

liscella	aneous Reclamation					
CP	PF/Office Area Reclamation					
	Assumptions					
	Concrete, asphalt, and building material used to backfill low areas					
	No topsoil salvaged or applied (area is pre-law)					
	CPF/Office area = 10 acres					
<u> </u>	Ripping and Hauling Asphalt			• · · · · ·		
	Assumptions	500		,		
	Average haul distance (ft) Surface grade (%)	500 0%			·····	
	Average Thickness of Asphalt (ft)	0.5				·····
	Surface Area (acres)	3.4				
	Ripping Unit Cost per WDEQ Guideline No.12, App.I (\$/acre)	\$474.92				· · · · · · · · · · · · · · · · · · ·
	Volume of Asphalt (cy)	2743		4		
	Hauling Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$0.60				
	Total Asphalt Ripping and Hauling Cost	\$3,260				
	1. Topsoil Removal/Replacement					
	Assumptions					
	Surface area of borrow area (acres)	3				
	Six inches of topsoil removed and replaced at borrow area Volume of topsoil (cy)	2420				
-+	Topsoil Removal/Replacement Unit Cost (\$/cy)	\$1.00	·····			
-+-1	Total Topsoil Removal/Replacement Cost	\$2,420				
	2. Borrow Application					
	Assumptions					
	Final borrow cover depth will range from 0 to 4 ft, average = 1 ft					
	Average haul distance = 1000 ft					
	Surface grade (%)	0%				
	Borrow Volume (cy)	16133				
	Borrow Cover Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$0.70				······································
	Total Borrow Application Cost	\$11,293				
	Total Borrow Cover Cost Discing/Seeding	\$13,713				<u>.</u>
	Assumptions				· · · · · · · · · · · · · · · · · · ·	
	Includes discing/seeding of borrow area (3 acres)		·····	· · · · · ·		
	Surface Area (acres)	13				
	Discing/Seeding Unit Cost (\$/acre)	\$200				
	Total Discing/Seeding Costs	\$2,600				• • • • • • • • • • • • • • • • • • • •
Tot	tal CPF/Office Area Reclamation	\$19,573				
. Acc	ccess Road Reclamation	CPF/Office Area	Sat No. 1	Sat No. 3	Connecting Road	
	Assumptions	in onder met	Durito. 1	Dut I to. 5	Connecting Road	
	CPF/Office Area Road is pre-law (no topsoil applied)		· _			
	Surface grade	5%	0%	0%	0%	
	Length of road (miles)	2.5	3	1	2	
	Average road width (ft)	25	30	30	30	
B.						· · · ·
	Assumptions					
	Average haul distance (miles)	1.25	0	0	0	
	Average Thickness of Asphalt (ft)	0.5	0	0		
	Asphalt Surface Area (acres)	7.6	0.0	0.0		
	Ripping Unit Cost per WDEQ Guideline No.12, App.I (\$/acre) Unit Cost in \$/acre (July 1998 dollars w/o escalator)	\$474.92	\$474.92	\$474.92	\$474.92	
	Volume of Asphalt (cy)	\$412.62 6111	\$412.62	\$412.62 0	\$412.62	
	Hauling Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.91	\$1.91	\$1.91	\$1.91	
	Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$1.91	\$1.91	\$1.91	\$1.91	
	Subtotal Asphalt Ripping and Hauling Costs	\$13,267	\$1.00	\$1.00	\$1.00	
	Gravel Road Base Removal	415,207				
	Assumptions					
	Average haul distance (ft)	0	1000	1000	1000	
	Gravel Road Base Width (ft)	0	14	14	14	
	Gravel Road Base Area (acres)	. 0.0	5.1	1.7	3.4	
	Average Road Base Depth (ft)	0	0.5	0.5	0.5	
	Volume of Road Base (cy)	0	4107	1369	2738	
	Removal Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$0.00	\$0.71	\$0.71	\$0.71	
	Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$0.00	\$0.62	\$0.62	\$0.62	
	Subtotal Gravel Road Base Removal Costs	\$0	\$2,533	\$844	\$1,689	
C:						
	Overburden Surface Area (acres)	0.0	10.9	3.6	7.3	
	Ripping Unit Cost per WDEQ Guideline No.12, App.11 (\$/acre) Unit Cost in \$/acre (July 1998 dollars w/o escalator)	\$663.93	\$663.93 \$576.83	\$663.93	\$663.93	
		\$576.83		\$576.83	\$576.83	
	Subtotal Ripping Overburden Costs	\$0	\$6,293	\$2,098	\$4,195	

		······································		· • •			
liscella	anec	ous Reclamation					
		opsoil Application					
		Assumptions		· · · ·			
	+	Average haul distance (ft)	0	5000	1500	1500	
	+						
		Topsoil Surface Area (ft ²)	0		158400	316800	
	_	Depth of Topsoil (ft)	0		0.5	0.5	
	_	Volume of Topsoil (cy)	0		2933	5867	
		Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$0.00		\$0.82	\$0.82	
\rightarrow		Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$0.00		\$0.71	\$0.71	
		ubtotal Topsoil Application Costs	\$0	\$11,468	\$2,090	\$4,180	
<u> </u>	Di	iscing/Seeding			<i></i>		
\rightarrow	1	Assumptions					
		Surface Area (acres)	7.6	10.9	3.6	. 7.3	
		Discing/Seeding Unit Cost (\$/acre)	\$200		\$200	\$200	
		ubtotal Discing/Seeding Costs	\$1,515	\$2,182	\$727	\$1,455	
		tal Reclamation Costs per Access Road	\$14,782	\$22,476	\$5,759	\$11,519	· · ·
Te	otal	Access Road Reclamation Costs	\$54,536				
			SAT2 to SAT1	SAT3 to SAT2	H-WF Rest.		
w	aste	ewater Pipeline Reclamation	WW Pipeline	PSR	Bypass		
		ipeline Removal and Loading	www.ripenne	1.51	Dypass		
- <u>^</u> .	- fri	Length of HDPE Pipe Trench (ft)	24000	22000	2200	·	
-+	+	Main Pipeline Removal Unit Cost (\$/ft of trench)	\$0.85		\$0.85		
- -	0.						
<u> </u>		ubtotal Pipeline Removal Costs	\$20,400	\$18,700	\$1,870		
B ;	P1	ipeline Transportation and Disposal (NRC-Licensed Facility)					
		Pipe Diameter (inches)	3	4	3		
		Chipped Volume Reduction (ft ³ /ft)	0.022	0.032	0.022	•	
\rightarrow	+	Subtotal Volume of Shredded PVC Pipe (ft ³)	528		48.4		
	_	Transportation and Disposal Unit Cost (\$/ft ³)	\$5.62		\$5.62		
		ubtotal Pipeline Disposal Costs	\$2,967	\$3,956	\$272		
<u> </u>	. Di	iscing/Seeding					
		Assumptions:					
		Width of Pipeline Trench (ft)	10		8	<u></u>	
		Area of Pipeline Trench (acres)	5.5		0.4		
		Discing/Seeding Unit Cost (\$/acre)	\$200		\$200		
		ubtotal Discing/Seeding Costs	\$1,102		\$81		
Su	ibtot	tal Reclamation Costs per Pipeline	\$24,469	\$23,666	\$2,223		
Ta	otal	Wastewater Pipeline Reclamation Costs	\$50,358				
		um Settling Basin Reclamation	E D. P. D	W. Radium Pon		· · ·	
			E. Kadium Pon	w. Radium Pon	a		
A.		- I Counting and Manitaning					
	. Sc	oil Sampling and Monitoring		10			
\rightarrow	. 50	Number of Soil Samples	10				
		Number of Soil Samples \$/Sample	\$60	\$60			·····
	Su	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs		\$60			
C.	Su	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour	\$60 \$600	\$60 \$600			· · · · · · · · · · · · · · · · · · ·
C.	Su	Number of Soil Samples \$/Sample \$/Sample	\$60 \$600 	\$60 \$600 			
C.	Su	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%)	\$60 \$600 6,400 0	\$60 \$600 6,400 0			
C.	Su	Number of Soil Samples \$/Sample \$/Sample	\$60 \$600 6,400 0 50	\$60 \$600 6,400 0 50	· · · · · · · · · · · · · · · · · · ·		
C.	Su	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy	\$60 \$600 6,400 0 50 \$0,092	\$60 \$600 6,400 0 50 \$0.092			· · · · · · · · · · · · · · · · · · ·
C.	Su	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$60 \$600 0 6,400 0 50 50 \$0.092 \$0.08	\$60 \$600 6,400 0 50 \$0.092 \$0.08			· · · · · · · · · · · · · · · · · · ·
	Su Gi	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs	\$60 \$600 6,400 0 50 \$0,092	\$60 \$600 6,400 0 50 \$0.092 \$0.08	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
	Su Gi	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$60 \$600 0 6,400 0 50 50 \$0.092 \$0.08	\$60 \$600 6,400 0 50 \$0.092 \$0.08			· · · · · · · · · · · · · · · · · · ·
	Su Gi	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs	\$60 \$600 0 6,400 0 50 50 \$0.092 \$0.08	\$60 \$600 6,400 0 50 \$0.092 \$0.08			
	Su Gi	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions:	\$60 \$600 0 50 \$0.092 \$0.08 \$512	\$60 \$600 6,400 0 \$0 \$0 \$0 \$0.092 \$0.08 \$512			
	Su Gi	Number of Soil Samples \$/Sample \$/Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²)	\$60 \$600 0 6,400 0 50 50 \$0.092 \$0.08	\$600 \$6000 0 \$0.092 \$0.08 \$512			
	Su Gi	Number of Soil Samples \$/Sample \$\screwtlimestriant Stremtly and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft)	\$60 \$600 0 500 \$0.092 \$0.08 \$512 37500 1	\$600 \$600 0 \$0.092 \$0.08 \$512 			
	Su Gi	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average haul distance (ft)	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000			· · · · · · · · · · · · · · · · · · ·
	Su Gi	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average haul distance (ft) Surface grade (%)	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0%	\$60 \$600 6,400 50 \$0.092 \$0.08 \$512 37500 1 2000 0%			
	Su Gi	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No. 12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Area of surface disturbance (ft ²) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy)	\$60 \$600 6,400 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389			
	Su Gi	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average hul distance (ft) Surface grade (%) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 1 2000 0% 1,389 \$0.92	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92			
	Su Gi	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average thickness of topsoil (ft) Sufface grade (%) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator)	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0,0% 1,389 \$0.92 \$0.80	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80			
C.	Su Su Gi - - - - - - - - - - - - - - - - - -	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No. 12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) Ubtotal Topsoil Application Costs	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 1 2000 0% 1,389 \$0.92	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80			
C.	Su Su Gi - - - - - - - - - - - - - - - - - -	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs bitotal Topsoil Application Costs	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0,0% 1,389 \$0.92 \$0.80	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80			
C.	Su Su Gi - - - - - - - - - - - - - - - - - -	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No. 12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Average thickness of topsoil (ft) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No. 12, App.C (\$/cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs Jostiance (ft) Surface grade (%) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No. 12, App.C (\$/cy) Ubtotal Topsoil Application Costs Joscing/Seeding Assumptions:	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110			
C.	Su Su Gi - - - - - - - - - - - - - - - - - -	Number of Soil Samples \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Average thickness of topsoil (ft) Average haul distance (ft ²) Surface grade (%) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) Ubtotal Topsoil Application Costs iscing/Seeding Assumptions: Area of surface disturbance (acres)	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110			
C.	Su Gi Tr Tr Su Su Su Su	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average thickness of topsoil (ft) Average thickness of topsoil (ft) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs iscing/Seeding Assumptions: Assumptions: Assumptions: Sufface disturbance (acres) Discing/Seeding Unit Cost (\$/acre)	\$60 \$600 0 0 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$2000	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 2020 0%			
C.	Su Su Su Su Su Su Su	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average thickness of topsoil (ft) Average thickness of topsoil (ft) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs iscing/Seeding Area of surface disturbance (acres) Discing/Seeding Unit Cost (\$/acre) ubtotal Discing/Seeding Costs	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$2000 \$1,200 \$0.80 \$1,110	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$200 \$200			
C.	Su Gi Tro Su Su Su Su Su Su	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No. 12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs iscing/Seeding Area of surface disturbance (acres) Discing/Seeding Unit Cost (\$/acre) ubtotal Topscil Quit Cost (\$/acre) ubtotal Discing/Seeding Costs tal Reclamation Costs per Radium Pond	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$200 \$2,200 \$2,422	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 2020 0%			
C.	Su Gi Tro Su Su Su Su Su Su	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average thickness of topsoil (ft) Average thickness of topsoil (ft) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs iscing/Seeding Area of surface disturbance (acres) Discing/Seeding Unit Cost (\$/acre) ubtotal Discing/Seeding Costs	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$200 \$1,110 \$200 \$200	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$200 \$200			
C.	Su Su Su Su Su Su Su Su Su Su	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs iscing/Seeding Area of surface disturbance (acres) Discing/Seeding Unit Cost (\$/acre) ubtotal Discing/Seeding Costs tal Reclamation Costs per Radium Pond Radium Settling Basin Reclamation Costs	\$60 \$600 0 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$200 \$2,422 \$2,422 \$4,843	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$200 \$1,110 1 \$200 \$2,422			
C. C	Su Gi Tr Su Su Su Su Su Su btot	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs iscing/Seeding Area of surface disturbance (acres) Discing/Seeding Unit Cost (\$/acre) ubtotal Discing/Seeding Costs tal Reclamation Costs per Radium Pond Radium Settling Basin Reclamation Costs L L e Storage Reservoir Reclamation	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$200 \$2,422 \$4,843 PSR-1	\$600 \$6000 0 \$0.092 \$0.08 \$512 37500 1 20000 0% (1,389 \$0.92 \$0.80 \$1,110 1 \$2000 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,422 \$2,800 \$2,800 \$2,422 \$2,800 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2,9000 \$2			
C	Su Gi Tr Su Su Su Su Su Su Su Su Su Su Su Su Su	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No. 12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs tiscing/Seeding Area of surface disturbance (acres) Discing/Seeding Unit Cost (\$/acre) ubtotal Topsoil Application Costs tiscing/Seeding Unit Cost (\$/acre) ubtotal Discing/Seeding Costs tal Reclamation Costs per Radium Pond Radium Settling Basin Reclamation Costs tal Reclamation Costs per Radium Pond Radium Settling Basin Reclamation Costs	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.99 \$0.99 \$0.80 \$1,110 1 \$2000 \$2,422 \$4,843 PSR-1 \$3,000	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.92 \$0.92 \$0.80 \$1,110 1 \$2000 \$2,422 \$2,422 \$3,000			
C. C. D. D. Su Su T. C. C. C. C. C. C. C. C. C. C. C. C. C.	Su Gi TC Su Su Su Su Su Su Su Su Su Su Later	Number of Soil Samples \$/Sample \$/Sample ubtotal Soil Sampling and Monitoring Costs rade and Contour Volume of Embankment Material (CY) Average Grade (%) Distance (ft) Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy Unit Cost in \$/cy (July 1998 dollars w/o escalator) Subtotal Grade and Contour Costs opsoil Application Assumptions: Area of surface disturbance (ft ²) Average thickness of topsoil (ft) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) Unit Cost in \$/cy (July 1998 dollars w/o escalator) ubtotal Topsoil Application Costs iscing/Seeding Area of surface disturbance (acres) Discing/Seeding Unit Cost (\$/acre) ubtotal Discing/Seeding Costs tal Reclamation Costs per Radium Pond Radium Settling Basin Reclamation Costs L L e Storage Reservoir Reclamation	\$60 \$600 0 50 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.80 \$1,110 1 \$200 \$2,422 \$4,843 PSR-1	\$600 \$600 0 500 \$0.092 \$0.08 \$512 37500 1 2000 0% 1,389 \$0.92 \$0.92 \$0.92 \$0.80 \$1,110 1 \$2000 \$2,422 \$2,422 \$3,000			

	· · · · · · · · · · · · · · · · · · ·				•		
discollana	ous Reclamation						
viiscenane	Average haul distance (ft)	·		1000	150		
	Surface grade (%)		····· ·· ··	0%	0%		
					74000		
	Volume of Topsoil/Subsoil (cy		1-10 A. O. (6/-)	83000			
	Topsoil/Subsoil Unit Cost per			\$0.71	\$0.71		
	Unit Cost in \$/cy (July 19			\$0.62	\$0.62		
	Topsoil/Subsoil Unit Cost per			\$0.194	\$0.194		
	Unit Cost in \$/cy (July 19			\$0.17	\$0.17		
	ubtotal Topsoil/Subsoil Applicat	tion Costs per Reser	voir	\$65,189	\$58,120		
D. D	Discing/Seeding						
	Surface Area (acres)			, 6	. 32		
	Discing/Seeding Unit Cost (\$/	acre)		\$200	\$200	•	
S	ubtotal Discing/Seeding Costs			\$1,200	\$6,400		
Subto	otal Reclamation Costs per Reser	rvoir		\$74,389	\$67,520		
Total	Purge Storage Reservoir Rec	lamation Costs		\$141,909			
	ation Area Reclamation			Irrigator No. 1A			
	rrigation Equipment Removal Co	osts		\$2,000	\$2,000		
B. P	lowing						
	Assumptions:				•		
	Plowing Unit Cost (\$/acre	;)		\$30	\$30	•	
	Irrigation Area (acres)			55	116		
	Number of Cultivations			2	2		
	Subtotal Plowing Costs			\$3,300	\$6,960		
	Discing/Seeding		· · · · · · · · · · · · · · · · · · ·				
- <u> ~</u> , -	Discing/Seeding Unit Cost (\$/	acre)		\$200	\$200		
	Subtotal Discing/Seeding Costs			\$11,000	\$23,200		
	otal Reclamation Costs per Irriga	tion Area		\$16,300	\$32,160		
	I Irrigation Area Reclamation			\$48,460	\$52,100		
			<u>`````````````````````````````````````</u>	340,400			
II. Drilli	ing Fluid Storage Cell Reclama	ation					
	Assumptions:					,	
	Each cell is 100 ft (width) by	100 ft (length) by 10) ft (depth)				
	Volume of each cell, discount			3704			,
	Surface area disturbance assoc			1			
	Average haul distance (ft)			500		· · · · · · · · · · · · · · · · · · ·	
	Surface grade (%)			0			
	Topsoil/Subsoil Application			v			
A. 1	Topsoil/Subsoil Unit Cost per	WDEO Cuidalina)		¢0.60			
				\$0.60		·	
	Unit Cost in \$/cy (July 1998 d)	\$0.52	· · · · · · · · · · · ·		
	Copsoil/Subsoil Application Cost	s per Storage Cell		\$1,931			
<u> </u>	Discing/Seeding						
	Discing/Seeding Unit Cost (\$/	acre)		\$200			
	Subtotal Discing/Seeding Costs			\$200			
Subto	otal Reclamation Costs per Stora	ge Cell	·	\$2,131			
Total	Number of Storage Cells			. 5			
Total	I Drilling Fluid Storage Cell Ro	eclamation Costs		\$10,655			
	getation of Exxon Reclaimed L	ands		· . · · · · · · · · · · · · · · · · · ·			
A	Assumptions:						
	Reseeding potential areas of e	rosion (\$/acre)		\$200			
	Surface Area (acres)			217			
Tota	Exxon Reclaimed Lands Revo	egetation Costs	,	\$43,400		· · · · · · · · · · · · · · · · · · ·	
K Poter	ntial Mitigation Plan For Irrig	ator No.14 (Reque	sted by WDFO-LOD				
	Assumptions:					······································	
	Harvesting grass for 2 years w	vill further reduce Se	levels in vegetation	+			
_ <u> </u>	Harvest grass for 2 years @ \$2		iereis in regetation.	\$4,000		·····	
	Analyze Se in grass for 2 years (0, 5.		A samples V 2	\$4,000			
	Analyze Se in soil for 2 years	(0)\$1/4/sample X 20	8 samples X 2 yrs.	\$9,744			
_	Add 1 ft. of Se free water to 5			\$6,000			
	If desired, plow, disk and rese		(a) cost of \$4400.	\$4,400		· · · · · · · · · · · · · · · · · · ·	
	Potential Mitigation Plan Cos			\$30,000			
Poter	ntial Mitigation Plan For Irrig	ator No.2 (Request	ed by WDEO-LOD)				
	Assumptions:			· · · ·			
<u></u>	Harvesting grass for 2 years w	vill further reduce Se	e levels in vegetation	†			
+ +	Harvest grass for 2 years (a) \$		ie, eis in regetation.	\$8,000			
			A complex V 2	· · · · · · · · · · · · · · · · · · ·			
	Analyze Se in grass for 2 year			\$1,320			
	Analyze Se in soil for 2 years	(us1/4/sample X 3)	2 samples X 2 yrs.	\$11,136			
	Add 1 ft. of Se free water to 1	16 acre irrigation ar	ea @ cost of \$12000.	\$12,000		· · · · · · · · · · · · · · · · · · ·	
	If desired, plow, disk and rese		(a) cost of \$8800.	\$8,800		· · · · ·	
	Potential Mitigation Plan Cos	sts- Call \$42,000		\$42,000			
Iota				1			
	ntial Mitigation Plan for Shallo	w Well Costna I a	ak Investigation				

									-					
						-		1.					1	
				_				1					1	
IMis	scell	and	eoi	is R	eclam	ation		1				'		
								1	1					
		1	- 1	Inve	ntianti	on and	notantial.	mitigation .	olan as of Ju	ma 2002				
				mve	sugau	un anu	potentiar	nnugation	nall as of J	ine 2002.			1	
							250 000	1	1					
			1	Ass	ume co	st of 3	250,000.	1						
	-	_	_						· · · ·					
	- iTa	nfa	I P	reli	minar	v Cast	•				\$250,000			
		JIA		101	minai	$j \subset 031$					\$2,50,000			
								1						
		_			_									
ITO	TAT	N	411	CC L		IFOI	C DECI A	MATION	COSTS	1	\$695;734		1	I I
10	1.41	L 17	a re	3 U E		LOU	SKEULA	MATION	COSIS		3023,734			

RADIU	M TREATMENT		
Assum	ptions:		
1.	Based on actual 1998 operating costs from Satellite No.	2	
•			
Radiur	n Treatment Costs per 1000 Gallons		
	Chemical	= \$	0.177
-	Filtration	= \$	0.021
	Electricity	= \$	0.019
	By Product Disposal of Sludge	= \$	0.097
	· · · · · · · · · · · · · · · · · · ·		
	RADIUM TREATMENT COSTS PER 1000 GALLONS		0.31

Revised June 2005

				•													••
GROU	NDWA	TER	SV	VEEP	(GW	S)				2							
			ľ														
Assun	nptions	s:															
	All pur							5.0 gp	m								
2.	Cost o	f elec	tric	city =	\$0.03	/kv	vh										
3.	All wat	er pu	mp	bed is	treate	ed	for r	adiur	n re	emoval	at act	ua	l co	ost of \$	0.31/	1000 gallo	ns
4.	All wat	er pu	mp	oed is	dispo	se	d at	irriga	itio	n facility	y with	a 2	20	hp pum	р		
5.	Repair	and	ma	inten	ance	co	sts e	estima	ate	d at \$0.	03/10	00	ga	llons			
								costs	es	timated	at \$0	.03	3/1	000 gal	ons		
7.	Labor	costs	ar	e not	includ	dec	1			· .					· .		
·														ļ			· .
Wellfie	eld Pur	nping	j C	osts	per 1	00	0 Ga	allons	S								
	1000	gal	x	5	hp	x	1	hr	x	0.746	kwh	x	\$	0.03	- ¢	0.373	
2			1^	5	gpm	^	60	min	1^	h	. C	1^		kwh		0.373	
Radiu	m Trea	tmen	t C	osts	per 1	00	0 G	allon	S						= \$	0.31	
			Ľ													•	
Pumpi	ing to I	rrigat	tor	Cost	s per	· 1(000	Gallo	ns								
	1000	gal	X	20	hp	x	-1	hr	x	0.746	kwh	x	\$	0.03	- ¢	0.019	
			^	400	gpm	^	60	min]^	h	C]^		kwh	-φ	0.019	•
			[
Repair	r and N	lainte	ena	ince (Costs	; p	er 1	000 0	Sal	lons					= \$	0.03	
Proces	ss Sam	pling	, a	nd Ar	nalysi	s (Cost	ts pe	r 1(000 Ga	llons				= \$	0.03	
														·			
	-																
ΤΟΤΑΙ	L GWS	COS	TS	PER	1000) G		.ONS							= \$	0.77	

Ì)

			_					· · · · ·			
REVER	RSE OSMOS	SIS (RO)								
	ptions:										
1.	Based on a								ı	· ·	
	Hydranautic					vare, \	/ersion 6.0	(1995)			
	Cost of elec		_								
	80% perme										
	Membrane							ane elemer	nt		
	Includes co										
6.	The 20% re	ject is tr	eat	ted fo	r radium re	moval	prior to irri	gation at ac	tual cost of	\$0.31/1000	
	gallons										
7.	The 20% re	ject is d	isp	osed	at irrigatior	n facilit	y with a 20	hp pump at	actual cost	t of	
	\$0.019/100										
8.	The permea	ate is re	turr	ned to	the wellfie	ld with	a 20 hp pl	imp at actua	al cost of		
	\$0.019/100										
9.	Process sai	mpling a	and	analy	/sis costs e	stima	ed at \$0.03	3/1000 gallo	ns		
10.	Labor costs	are not	ind	cludeo	t						
Revers	e Osmosis	Costs	per	1000	Gallons						
	Electricity				1. 1.	. ·	0.17				
	Chemicals						0.26				
	Membrane	Replace	eme	ent		= \$	0.15				
•	Repair and					= \$	0.26				
	Pumping fro	om Well	fiel	d		= \$	0.37				
	Pumping to	Wellfiel	d			=\$	0.019				
	Radium Tre	eatment								· · ·	
	\$	0.31	Х	0.2		= \$	0.0628				
	Pumping to	Irrigato	r								
	\$	0.019	X	0.2		= \$	0.004				
	Process Sa	mpling a	and	Anal	ysis	= \$	0.03				
										1	
						1					
TOTAL	RO COSTS	SPER 1	00	0 GAI	LONS	=\$	1.33		-	·	

CHEM	ICAL R	EDU		NT												
Assun	nptions	:		<u> </u>												
1.	Biorem	ediat	ion	is utili	zed											,
2.	Based	on ac	tua	1 2003	3-200	4 0	perat	ing co	sta	during re	storat	ion	activ	ities		
															,	
ΤΟΤΑΙ		IICAL	. RI	EDUC	TAN	ГС	OST	S PEF	R R	gal					\$	0.33
											_					
			+			$\left - \right $				July 199	3 Doll	ars	_	=	\$	0.29

ELUTI	ON PR	OCESS	ING							
Assun	ptions	;							·····	
1.	Based	on actu	al ope	rating	COS	sts				
					-					
ΤΟΤΑΙ	_ PROC	CESSIN	G COS	STS P	ER	ELU	TION	=\$	525	

,

DEEP	WELL	INJE	СТ	ION	-													
																	-	
Assun	nptions	5:																
	Pump		p p	umpi	ng at	45	gpn	ייייי ו										
	Cost c																	
								ased	on	averag	e injed	tic	n '	volume	of 8	,000,000 g	allons p	er year
										at \$1.2								
															allon	s per year		
	Labor											<u> </u>		. 0				
												1						·····
Waste	Dispo	sal P	um	ping	Cost	s p	ber 1	000 0	Sal	lons								
	1000		x		hp	x	4	hr	x	0.746	kwh	x	\$	0.03		0.00		
					gpm	^		min	1	h		×		kwh	= ⊅	0.62		
																		`
Repair	r and N	lainte	ena	ince (Costs	s p	er 1	000 G	all	ons					= \$	1.25		
• • • •															-			
Chem	ical Co	sts p	er	1000	Gallo	ons	5								=\$	2.73		
	Scale	Inhibi	tor				= \$	1.20										
	Corros	sion Ir	hit	bitor			=\$	1.16				\square	[<u> </u>		-	
	Oxyge	n Sca	ve	nger			= \$	0.37	[.								-	
									1			1			-			•
	1					1		a										
ΤΟΤΑ	L DEEF	WEI	L	INJE	СТІО	N	cos	TS PE	ĒR	1000 G	ALLC)N	S		= \$	4.60		

			AFAIT					· · · ·	1	.	Ē		· · · · · · · · · · · · · · · · · · ·	<u></u>
WELL	ABAN	DONI	NENI			 				-				
Assum						<u> </u>	L	l <u>.</u>	l., .,	<u> </u>	1 5 4 5 6	<u> </u>		
											cost of \$50			
													cost of \$35/	hr.
												of \$45/hr.	<u>.</u>	
													Il at cost of	
							t \$1	.75 ai	nd one	sac	k of plug g	gel/100 ft of	f 5 inch well	casing.
	Cost o	of plug	gel is	<u>\$6.</u>	70/s	ack.				<u> </u>				
										ļ				· · ·
Nell Al	bando	nmen	it Cost	S										
	Fixed		<u> </u>						l					ļ
	Backh				· · · ·			L						
			hours			50	pei	<u>hour</u>		=\$	25.00			
	Hose		Tow Ve							<u> </u>				
			hours			35	pei	<u>hour</u>		=\$	70.00			
	Ceme		ow Ve	hicle										
		1	hours	X	\$	45	pei	' hour		=\$	45.00			
	Labor													
		7	man	Х	\$	15.00				=\$	105.00			
			hours				ho	ur						
	Mater	als												
		1	hole	Х	\$	1.75	реі	r hole		=\$	1.75			
		-	plug			_	plu							
						Total F	Fixe	d Cos	sts	=\$	246.75			
			-											
	Variat	ole Co	<u>sts</u>	(pe	r 10	0 ft of v	vell	depth)				· ·	
	Mater													
		1	sack p			X	\$	6.70		=\$	6.70			
			per 10	0 fe	et				sack					
	Cost	per W	ell per	Un	it of	f Avera	ge	Depth	ו					
					We	I Dept	h (fi	t)						
						450					277			
						500				=\$	280			
						550				=\$	284			
						600				=\$	287			
						650				=\$	290			

		MECH	ANICAL	INTE	GR		ESTS		،				
									/				
Assum	ption	s:		+									
		-	999 PRI (costs	5.								
2.	Use F	Pulling	Unit for ().25	hr/w	ell at o	cost d	of \$45	/hr.				
			hit for 1.5										
4.	Labor	for op	peration c	of pu	lling	unit w	ill rec	uire 2	2 wo	orke	ers at \$15/	hr	
5.	Labor	for op	peration c	of MI	T Ur	it will	requi	re 1 v	vork	(er a	at \$15/hr		
	<u> </u>												· .
MIT Co	osts p	er We	1										
Equipr													
	Pullin	g Unit								·			
		L	hours	X	\$	45	per	hour				=\$	11.25
	MIT L												
		1.5	hours	X	\$	20	per	hour				=\$	30.00
Labor:													
	Pullin	g Unit											
•			hours	X	\$	15	per	hour	Х	·2	workers	=\$	\$7.50
	MIT L				-		_						
		1.5	hours	X	\$	15	per	hour				=\$	22.50
				_									
				1						<u> </u>		ļ	
									OS'	ΓΡ	ER WELL	=\$	71

MAIN F	PIPELI		EMOV	AL			1						
Assum	ption	s:											-
1.	Trenc	hing v	vith tra	ckh	oe a	t 1500 ft/d	lay	-					
2.	Pipeli	ne ext	raction	an	d ba	ckfilling w	ith t	rackho	e at 1	500 1	t/day		3
			ental: \$								<i>.</i> .		
			9/oper										
5.	Track	hoe o	peratio	n re	quir	es 1 work	er a	t \$15/h	our				
6.	Pipeli	ne ext	raction	rec	quire	s 2 worke	rs a	it \$15/h	iour (ir	n ado	dition to tr	ackhoe ope	rator)
						neously							
			moval										
9.	Opera	ating s	chedu	le: 8	hrs	/day, 5 da	ys/v	veek					
Main P	Pipelin	e Ren	noval (Cos	ts p	er ft of Tr	enc	:h					
Equipr													
•	Track												
			1600	x		week	x		days	=\$	0.43		
		We	eek		· 5	days		1500	ft				
	Fuel		ļ										
			9	x	· · · ·	hrs	x		days	=\$	0.10		
· ·		h	our		1	day		1500	ft				
	· .												
Labor			·	<u> </u>									
	Track		Operat	ion									
			15	x		man hrs	x		days	=\$	0.16		
	'		in hr		1	day		1500	ft				
	Pipel		ctractio	<u>pn</u>							•		
			15	x		man hrs	x		day	=\$	0.16		
		ma	n hr		1	day		1500	ft				
										`			
		<u> </u>							•			ľ	
MAIN	PIPE	LINE F	REMO	VAL	. CO	ST PER F	FT (of tre	ENCH	=\$	0.85		

WELL	FIELD	PIPIN		101	/AL								
Assum													
1.	Trenc	hing v	vith bac	ckh	oe a	t 3000 ft/d	lay						
2.	Pipeli	ne ext	raction	ı an	d ba	ckfilling w	ith b	ackhoe	e at 300	0 ft/d	ay		
			ntal: \$7										
			9/oper										
						es 1 worke							
									our (in a	additi	on to tra	ackhoe op	erator)
7.	Opera	ating s	chedul	le: 8	hrs	/day, 5 da	ys/w	/eek					
Main P	ipelin	e Ren	noval (Cos	ts p	er ft of Pi	ре						
				ļ									
Equipr													·
	Back												
			750	x		week	х	2	days	=\$	0.10		
		We	eek		5	days		3000	ft				
	Fuel												
			9	x		hrs	х		days	=\$	0.05		
		ho	our		1	day		3000	ft				
				. 									
Labor			· .										
	Back		perati	on									
			15	X		man hrs	X		days	=\$	0.08		
	D' I		in hr		1	day		3000	tt				
•	Pipel		tractio	on			ļ				0.00		
		_	15	X		man hrs	Х		day	=\$	0.08	ļ.	
		ma	n hr		1	day		3000	π				
													ļ
											0.01		
	MAIN			KEľ	VUV	AL COST	PE	KFIC	PIPE	: =\$	0.31	<u> </u>	.
		· .											· · · · · · · · · · · · · · · · · · ·
ļ													
· · · · ·				<u> </u>									···
											ļ		
•													

(E) I I											_						
	FIELD F	ROAD	RECL	AMA	TION									•			
																	-
	nptions																
													ideli	ne No. 12,	App. C, Level C	Fround, 500	ft haul)
												n = 10 ft			· ·		
															ine No. 12, App		i
4.	Gradin	g of sc	arifie	d road	ls prio	r to to	psoil a	эрр	licat	tion a	t c	ost of \$3	8.45	/acre (WD	EQ Guideline N	o. 12, Apper	ndix G)
													12, /	App. C, Le	vel Ground, 500	ft haul)	
6.	Strippe	d tops	oil: av	/erage	e deptl	n = 0.6	67 ft, a	ave	rage	e widt	h =	= 25 ft					
7.	Discing	g/seedi	ng co	st of §	\$200/a	acre is	base	d o	n ac	ctual of	cor	ntractor c	osts				
						T											
	Gravel	Road	Base	Remo	val C	osts p	er 100	00 f	ft of	Road					-		
		1000	ft	0.25	ft x	10	ft					\$0.60					
			Η×	·	⊢– ×		+	X	27	cy ft ³	X	су	= \$	56			
	Scarific	ration	Costs	per 1	000 ft	of Ro	ad										
		1000	ff	25	ft x							\$36.30					
		1000	Η×		<u></u> ×		lacre 356E+		6 42	X		acre	= \$	21			
	Gradin	a Cost		1000	t of E	000d			<u>n</u>		\vdash	acre					
	Graum	4000	s per	1000		Jau		┝─┤				\$20 AE					
		1000	Щ×	<u> 25</u>	ft		acre 356E+		<i>c</i> ₁ 2	X		\$38.45	= \$	22			
	-		I		1 1							acre		· · · · · · · · · · · · · · · · · · ·		······	
	Topsoi													<u></u>		i	
		1000	πx	0.67	ft	<u>(25</u>	5 ft	x	1	cy ft ³	x	\$0.60	= \$	372			
									27	ft		су		•••			
	Discing	g/Seed	ing C	osts p	er 100	<u>)0 ft o</u>											
		1000	ft v	, 25	ft x	, 1	acre			x		\$200	- c	115			
			\square^{\uparrow}	•	<u> </u>	4.3	356E+	04	ft ²	^		acre	– a	115		•	
			•	-			T										
	TOTAL	WEL	LFIEI	DRC	DAD R	ECLA	MATI	ON		STS	PF	ER					
		1000											= \$	586			
			<u> </u>	T			T					· /	· •		· · · · · · · · · · · · · · · · · · ·		
eenn	ptions	(Road	s cor	⊥ \struc	ted a	fter .l:	anuar	v 1	19	97).		· · · · · · · · · · · · · · · · · · ·					
	Gravel							\square	,	<u>.</u>							
									000	t of ¢'	26	30/2010		EO Guidal	ine No. 12, App		
									003	ιυιφ	50.	JUIALIE	. V V D		ine No. 12, App		
		g or so	anner	u roao					line	lion o	1 0			LOODO (VAID	EO Cuideline N		
4.	LIODSOL											ost of \$3	8.45		EQ Guideline N	o. 12, Appe	ndix G)
		applie	ed at o	cost of	f \$0.60	0/cy/1	000 ft	(W	DE	Q Gui	ide	ost of \$3 line No.	8.45		EQ Guideline N vel Ground, 500	o. 12, Appe	ndix G)
5.	Strippe	l applie d tops	ed at o oil: av	cost of /erage	f \$0.60 e depti	0/cy/1 h = 0.4	000 ft 4 ft, av	(W vera	DE age	Q Gui width	ide =	ost of \$3 line No. 20 ft	8.45 12, A			o. 12, Appe	ndix G)
5.	Strippe	l applie d tops	ed at o oil: av	cost of /erage	f \$0.60 e depti	0/cy/1 h = 0.4	000 ft 4 ft, av	(W vera	DE age	Q Gui width	ide =	ost of \$3 line No.	8.45 12, A			o. 12, Appe	ndix G)
5.	Strippe Discing	l applie d tops g/seedi	ed at o oil: av ng co	cost of verage st of \$	f \$0.60 e depti \$200/a	0/cy/1 h = 0.4 acre is	000 ft 4 ft, av base	(W vera	DE age	Q Gui width	ide =	ost of \$3 line No. 20 ft	8.45 12, A			o. 12, Appe	ndix G)
5.	Strippe	l applie d tops seedi	ed at o oil: av ng co Costs	cost of verage st of \$ per 1	f \$0.60 e depti \$200/a 000 ft	0/cy/1 h = 0.4 acre is of Ro	000 ft 4 ft, av base	(W vera d o	DE age	Q Gui width	ide =	ost of \$3 line No. 20 ft htractor c	8.45 12, A			o. 12, Appe	ndix G)
5.	Strippe Discing	l applie d tops g/seedi	ed at o oil: av ng co Costs	cost of verage st of \$ per 1	f \$0.60 e deptl \$200/a 000 ft	0/cy/1 h = 0.4 acre is of Ro	000 ft 4 ft, av base ad acre	(W vera d o	/DE age n ac	Q Gui width tual c	ide =	ost of \$3 line No. 20 ft	8.45 12, / osts	App. C, Le		o. 12, Appe	ndix G)
5.	Strippe Discing	l applie d tops seedi	ed at o oil: av ng co Costs	cost of verage st of \$ per 1	f \$0.60 e depti \$200/a 000 ft	0/cy/1 h = 0.4 acre is of Ro	000 ft 4 ft, av base	(W vera d o	/DE age n ac	Q Gui width	ide =	ost of \$3 line No. 20 ft htractor c	8.45 12, A	App. C, Le		o. 12, Appe	ndix G)
5.	Strippe Discing	l applie d tops g/seedi cation 1000	ed at o oil: av ng co Costs ft x	cost of verage st of \$ per 1 20	f \$0.60 e depti \$200/a 000 ft ft x	0/cy/1 h = 0.4 acre is of Ro (1 (4.3	000 ft 4 ft, av base ad acre	(W vera d o	/DE age n ac	Q Gui width tual c	ide =	ost of \$3 eline No. 20 ft htractor c \$36.30	8.45 12, / osts	App. C, Le		o. 12, Appe	ndix G)
5.	Strippe Discing Scarific	l applie d tops g/seedi cation 1000	ed at o oil: av ng co Costs ft X s per	cost of verage st of \$ per 1 20	f \$0.60 e depti \$200/a 000 ft ft ft of R	0/cy/1 h = 0.4 acre is of Ro (1 (4.3 Road	000 ft 4 ft, av base ad acre	(W vera d o 04	/DE age n ac	Q Gui width tual c	ide =	ost of \$3 eline No. 20 ft htractor c \$36.30	8.45 12, / osts = \$	App. C, Le [.]		o. 12, Appe	ndix G)
5.	Strippe Discing Scarific	l applie d tops g/seedi cation 1000 g Cost	ed at o oil: av ng co Costs ft X s per	cost of verage st of \$ per 1 20 1000	f \$0.60 e depti \$200/a 000 ft ft ft of R	0/cy/1 h = 0.4 acre is of Ro (1 (4.3 Road	000 ft 4 ft, av base ad acre 356E+ acre	(W vera d o 04	/DE age n ac ft ²	Q Gui width tual c	ide =	ost of \$3 line No. 20 ft htractor c \$36.30 acre \$38.45	8.45 12, / osts	App. C, Le [.]		o. 12, Appe	ndix G)
5.	Strippe Discing Scarific Gradin	l applie ed tops j/seedi cation 1000 g Cost 1000	ed at o oil: av ng co Costs ft X s per ft X	cost of verage st of \$ per 1 20 1000	f \$0.66 e depti \$200/a 000 ft ft ft of R ft of R	0/cy/1 h = 0.4 acre is of Ro of Ro (1 4.3 Road (1 4.3	000 ft 4 ft, av base ad acre 356E++ acre 356E++	(W vera d o 04 04	ft ²	Q Gui width tual c	ide =	ost of \$3 line No. 20 ft htractor c \$36.30 acre	8.45 12, / osts = \$	App. C, Le [.]		o. 12, Appe	ndix G)
5.	Strippe Discing Scarific	l applie ed tops s/seedi 2000 1000 g Cost 1000	ed at o oil: av ng co Costs ft X s per ft X cation	cost of verage st of \$ per 1 20 1000 20 Costs	f \$0.60 deptil \$200/a \$200/a 000 ft ft x ft of R ft x s per	0/cy/1 h = 0.4 acre is of Ro 4.3 Road 4.3 1000 f	000 ft 4 ft, av base ad acre 356E+ 356E+ 356E+ t of Re	(W vera d o 04 04	/DE age n ac ft ² ft ²	Q Gui width ttual c X		ost of \$3 eline No. 20 ft htractor c \$36.30 acre \$38.45 acre	8.45 12, / osts = \$	App. C, Le 17 18		o. 12, Appe	ndix G)
5.	Strippe Discing Scarific Gradin	l applie ed tops j/seedi cation 1000 g Cost 1000	ed at o oil: av ng co Costs ft X s per ft X cation	cost of verage st of \$ per 1 20 1000	f \$0.60 deptil \$200/a \$200/a 000 ft ft x ft of R ft x s per	0/cy/1 h = 0.4 acre is of Ro 4.3 Road 4.3 1000 f	000 ft 4 ft, av base ad acre 356E++ acre 356E++	(W vera d o 04 04	DE age n ac ft ² ft ² 1	Q Gui width tual c X X	ide =	ost of \$3 eline No. 20 ft htractor c \$36.30 acre \$38.45 acre \$0.60	8.45 12, / osts = \$	App. C, Le [.]		o. 12, Appe	ndix G)
5.	Strippe Discinc Scarific Gradin Topsoi	I applie d tops j/seedi cation (1000 g Cost 1000 I Applie 1000	ed at coil: av ng co Costs ft x s per ft x cation ft x	cost of verage st of \$ per 1 , 20 1000 , 20 , 20 , 20 , 20 , 20 , 20 , 20 ,	f \$0.60 deptl \$200/a \$200/a 000 ft ft x ft of R ft x s per ft x	0/cy/1 h = 0.4 acre is of Ro (1 4.3 Road (1 4.3 Road (1 4.3 Road (20 (20)	000 ft 4 ft, av base ad acre 356E+ acre 356E+ t of Ro ft	(W vera d o 04 04 04 04	/DE age n ac ft ² ft ²	Q Gui width tual c X X		ost of \$3 eline No. 20 ft htractor c \$36.30 acre \$38.45 acre	8.45 12, / osts = \$	App. C, Le 17 18		o. 12, Appe	ndix G)
5.	Strippe Discing Scarific Gradin	I applie d tops /seedi cation (1000 g Cost 1000 I Applie 1000	ed at c oil: av ng co Costs ft X s per ft X cation ft X	cost of verage st of \$ per 1 20 1000 20 Costs 0.40 costs p	f \$0.60 e deptl \$200/a 000 ft ft x ft of R ft of R ft x s per	0/cy/1 h = 0.4 acre is of Ro (1 4.3 coad (1 4.3 1000 f (20 00 ft o	000 ft 4 ft, av base ad acre 356E+ 1 acre 356E+ t of Rc 1 ft f Roac	(W vera d or 04 04 04 04 04 04	DE age n ac ft ² ft ² 1	Q Gui width tual c X X		ost of \$3 line No. 20 ft tractor c \$36.30 acre \$38.45 acre \$0.60 cy	8.45 12, / osts = \$	App. C, Le 17 18		o. 12, Appe	ndix G)
5.	Strippe Discinc Scarific Gradin Topsoi	I applie d tops j/seedi cation (1000 g Cost 1000 I Applie 1000	ed at c oil: av ng co Costs ft X s per ft X cation ft X	cost of verage st of \$ per 1 , 20 1000 , 20 , 20 , 20 , 20 , 20 , 20 , 20 ,	f \$0.60 e depth 200/a 000 ft ft ft of R ft of R ft x s per ft X s per ft X	0/cy/1 h = 0.4 acre is of Ro of Ro (1 4.3 Road (1 4.3 1000 ft (20 (20 (1 00 ft of) 1 (1 (1 (1 (1 (1 (1 (1 (000 ft 4 ft, av base ad acre 356E+ 1 acre 356E+ t of Rc 1 ft f Roac acre	(W vera d o 04 04 04 04 04 04 04 04 04	/DE age n ac ft ² ft ² 1 27	Q Gui width tual c X X cy ft ³		ost of \$3 eline No. 20 ft htractor c \$36.30 acre \$38.45 acre \$0.60	8.45 12, / osts = \$ = \$ = \$	App. C, Le 17 18 178		o. 12, Appe	ndix G)
5.	Strippe Discinc Scarific Gradin Topsoi	I applie d tops /seedi cation (1000 g Cost 1000 I Applie 1000	ed at c oil: av ng co Costs ft X s per ft X cation ft X	cost of verage st of \$ per 1 20 1000 20 Costs 0.40 costs p	f \$0.60 e deptl \$200/a 000 ft ft x ft of R ft of R ft x s per	0/cy/1 h = 0.4 acre is of Ro of Ro (1 4.3 Road (1 4.3 1000 ft (20 (20 (1 00 ft of) 1 (1 (1 (1 (1 (1 (1 (1 (000 ft 4 ft, av base ad acre 356E+ 1 acre 356E+ t of Rc 1 ft f Roac	(W vera d o 04 04 04 04 04 04 04 04 04	/DE age n ac ft ² ft ² 1 27	Q Gui width tual c X X		ost of \$3 line No. 20 ft tractor c \$36.30 acre \$38.45 acre \$0.60 cy	8.45 12, / osts = \$	App. C, Le 17 18 178		o. 12, Appe	ndix G)
5.	Strippe Discinc Scarific Gradin Topsoi	I applie d tops /seedi 2000 g Cost 1000 I Applie 1000 g/Seed	ed at c oil: av ng co Costs ft x s per ft x cation ft x ing C ft x	cost of verage st of \$ per 1 20 1000 20 Costs , 0.40 costs p	f \$0.60 e deptil \$200/a 000 ft ft ft of R ft of R ft x s per ft x ft of R ft x	0/cy/1 h = 0.4 acre is of Ro (1 4.3 00ad (1 4.3 1000 ft (20 00 ft o (1 4.3 1000 ft (1 4.3 1000 ft (1 4.3 1000 ft (1 (4.3 1000 ft (1 (1 (1 (1 (1 (1 (1 (1	000 ft 4 ft, av base ad acre 356E++ 356E++ t of Ro ft acre 356E++ t of Ro 56E++ t of Ro 56E++ 56E++ 1 acre 356E++ 1 acre 356E++ 356E++ 1 acre 356E+++ 356E+++ 356E++++ 356E++++++++++++++++++++++++++++++++++++	(W vera d o 04 04 04 04 04	rDE age n ac ft ² ft ² 1 27 ft ²	Q Gui width ttual c X X Cy ft ³ X		ost of \$3 line No. 20 ft tractor c \$36.30 acre \$38.45 acre \$0.60 cy \$200 acre	8.45 12, / osts = \$ = \$ = \$	App. C, Le 17 18 178		o. 12, Appe	ndix G)
5.	Strippe Discinc Scarific Gradin Topsoi	I applie d tops /seedi 2000 g Cost 1000 I Applie 1000 g/Seed	ed at c oil: av ng co Costs ft X s per ft X cation ft X Cation	cost of verage st of per 1 20 1000 20 Costs 0.40 costs p 20	f \$0.60 e deptil \$200/a 000 ft ft ft of R ft of R ft of R ft x s per ft x s per ft x	0/cy/1 h = 0.4 acre is of Ro (1 4.3 000 ft (20 (1 (4.3 000 ft o (1 4.3 1000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 10000 ft (1 4.3 100000 ft (1 4.3 1000000000000000000000000000000000000	000 ft 4 ft, av base ad acre 356E++ 356E++ t of Re 56E++ t of Re 56E++ t of Re 56E++ 1 acre 356E++ 1 acre 356E+++ 356E+++ 356E++++ 356E++++++++++++++++++++++++++++++++++++	(Wvera d oo 04 04 04 04 04 04 04 04	TDE age n ac ft ² ft ² 1 27 ft ²	Q Gui width ttual c X X Cy ft ³ X		ost of \$3 line No. 20 ft tractor c \$36.30 acre \$38.45 acre \$0.60 cy \$200 acre	8.45 12, / osts = \$ = \$ = \$ = \$	App. C, Le 17 18 178		o. 12, Appe	ndix G)

BYPR	ODUCT MA	TERIA	AL TR	ANSF	PORT	ATION	I AN	ID DISF	OSA	L			
		•											
Assum	nptions:												
1.	Based on a	actual	2001-2	2002	contra	acted c	costs	s for tra	nspor	tatio	n to and dis	posal at an	
	NRC-licens	sed dis	sposal	facili	ty.				•				
2.	Includes pr	ofit for	r trans	porte	r and	dispos	al fa	acility.					
3.	All types of	waste	shipp	ed vi	bulk	contair	ner ((30-yd ³	dump	ster	or 30-yd ³ du	ump truck).	
4.	Each shipn	nent c	ontains	s 30,0	000 lb	s of m	ater	ial.					
		Trans	sporta	tion	Cost		Di	sposal	<u>Cost</u>		<u>Total</u>		
			\$ 6	6.67	/yd ³	+	\$	85.00	/yd ³	=	\$ 151.67	/yd ³	
										=	\$ 5.62	/ft ³	

DISKING/	SEEDING						
Assumpti	ons:						
1.	Based on a	actual contra	actor costs				
TOTAL DI	SKING/SEE	EDING COS	TS PER AC	RE	= \$ 200		

J

Revised June 2005

Page 35 of 36

UC-DISK

			· · ·		T
Abbreviation	ns/Acronyms				
·				s	
\$	Dollars	· · · · · · · · · · · · · · · · · · ·			
\$/Kgal	Dollars per 1000 gallons				
avg	average				
ft	feet				
ft2	square feet				
ft3	cubic feet				
gal	gallon	• · ·		· · ·	
gpm	gallons per minute				
H&S	Health and Safety				
H2S	Hydrogen Sulfide				
H2SO4	Sulfuric Acid				
HCl	Hydrochloric Acid				
Нр	Horsepower				
Kgal	1000 gallons				
Kwh	Kilowatt-hours				
NaOH	Caustic Soda				
OD	Outside Diameter				
PPE	personal protective equipment				
PV	Pore Volume Estimate		· · ·		
reqm't	requirement				
RO	Reverse Osmosis				
WDW	Waste Disposal Well		· · ·	.*	
yd3	cubic yards				
yr	year				

DEFINS