Appendix 3-12

Bond Estimate

EarthFax Engineering, Inc.
Engineers/Scientists

COST ESTIMATE

CRANDALL CANYON MINE RECLAMATION

PROJECT DESCRIPTION: STRUCTURE REMOVAL PROJECT No.: C-27 ESTIMATOR: KTK DATE: 11-30-89

ITEM No.	DESCRIPTION	EQUIPMENT	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
1	OFFICE DEMOLITION (FOUNDATION CONC. 6") (WALLS, ROOF STEEL OR MASONRY)	NA	FT^2 FT^3	532 10640	3.12 0.18	1659.84 1915.20
2	GENERATOR/FUEL STORAGE (FDN. 6") (BLOCK WALL)	NA	FT^2 FT^3	500 1500	3.12 0.18	1560.00 270.00
3	CONTROL BLDG. (FDN - 6" CONC.) (WALLS/ROOF - STEEL OR MASON)	NA	FT^2 FT^3	96 960	3.12 0.18	299.52 172.80
4	SUBSTATION STRUCTURE - STEEL FENCE - CHAIN LINK	NA	FT^3 LF	9000 120	0.18 1.31	1620.00 157.20
5	EXPLOSIVES STORAGE BLDGS - 2 CONC.	NA	FT^3	320	0.24	76.80
6	PORTALS (3 EA.)	NA	EA	3	2700.00 *	8100.00
7	CULVERTS - 42" CMP (UD-1)	NA	LF	295	1.60	472.00
8	" 24" " (C-2, C-4)	NA	LF	195	1.60	312.00
9	" 18" CMP & PVC (C-1, UD-3)	NA	LF	495	1.60	792.00
10	" 12" CMP (SED. TRAP OUTLET, C-5)	NA	LF	140	1.60	224.00
11	VENTILATION FAN (FDN. CONC. 6") (STRUCT. - STEEL)	NA	FT^2 FT^3	600 10,000	3.12 0.18	1872.00 1800.00
12	GUARD RAIL REMOVAL	NA	FT	150	4.78	717.00
13	CONVEYOR BELT (SURFACE - STEEL & BELTING)	NA	FT^3	1200	0.18	216.00

* AML COST DATA

EarthFax Engineering, Inc.
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COST ESTIMATE

PROJECT DESCRIPTION: CRANDALL CANYON MINE RECLAMATION STRUCTURE REMOVAL PROJECT No.: C-27 ESTIMATOR: KTK DATE: 11-30-89

ITEM No.	DESCRIPTION	EQUIPMENT	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
14	SEDIMENT TRAP REMOVAL	NA	EA	1	210.00	210.00
15	SEDIMENT POND RISER SPILLWAY REMOVAL	NA	LF	110	1.60	176.00
	TOTAL STRUCTURE REMOVAL COST	—	—	—	—	22,622.36

EarthFax Engineering, Inc.
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COST ESTIMATE

PROJECT DESCRIPTION: CRANDALL CANYON MINE RECLAMATION CUT & FILL PROJECT No.: C-27 ESTIMATOR: KTK DATE: 11-30-83

ITEM No.	DESCRIPTION	CREW ~~EQUIPMENT~~	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
1	CUT (EXCAVATE), "COMMON EARTH"	B-10T	YD^3	6197	5.20	32,224.40
2	FILL, 150' HAUL, "COMMON EARTH"	B-10B	YD^3	6197	1.15	7126.55
3	POND RECLAMATION	B-10B	HR	16	96.90	1550.40
	TOTAL CUT & FILL COST	—	—	—	—	40,901.35

EarthFax Engineering, Inc.
Engineers/Scientists

COST ESTIMATE

PROJECT DESCRIPTION: CRANDALL CANYON MINE RECLAMATION TOPSOIL REPLACE/REVEG. PROJECT No.: C-27 ESTIMATOR: KTK DATE: 11-30-89

ITEM No.	DESCRIPTION	EQUIPMENT	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
1	TOPSOIL LOAD & HAUL, 1 MI. R.T.	5 CY LOADER DUMP TRLRS	YD^3	3701	3.16	11,695.16
2	TOPSOIL GRADING @ DUMP LOCATION	CREW B-10B	YD^3	3701	1.34	4959.34
3	SCARIFICATION	FARM TRACTOR	YD^2	21780	0.01	217.80
4	FERTILIZATION	CREW B-66	MSF	224	4.20	940.80
5	SOIL TESTING	SAMPLER LAB SUBCONTRACT	LS	1	1000.00	1000.00
6	SEEDING - SLOPE ≤ 30%	CREW B-66	MSF	86	25.00	2150.00
7	MULCHING - SLOPE ≤ 30%	CREW B-66	MSF	86	26.58	2285.88
8	SEEDING - SLOPE ≤ 30%	CREW B-66	MSF	101	25.00	2525.00
9	MULCHING - SLOPE > 30%	CREW B-65	MSF	101	26.58	2684.58
10	SEEDING - WOODED AREA	CREW B-66	MSF	37	25.00	925.00
11	PLANTING - WOODED AREA	NA	EA	512	1.00	512.00
12	PLANTING - WOODED AREA	COMMON LABOR	HR.	4.5	25.00	112.50
13	MULCHING - WOODED AREA	CREW B-66	MSF	37	26.58	983.46

EarthFax Engineering, Inc.
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COST ESTIMATE

PROJECT DESCRIPTION: CRANDALL CANYON MINE RECLAMATION TOPSOIL REPLACE/REVEG. PROJECT No.: C-27 ESTIMATOR: KTK DATE: 11-30-99

ITEM No.	DESCRIPTION	EQUIPMENT	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
14	MONITORING REVEGETATION SUCCESS	INSPECTOR	YR	10	2000.00	20,000.00
15	RESEEDING (20%)	CREW B-65	AC	1.03	500.00	515.00
16	REPAIR RILLS & GULLIES	FARM TRACTOR	HR	20	39.00	780.00
	TOTAL TOPSOIL REPLACEMENT &	REVEGETATION	—	—	—	52,286.52

EarthFax Engineering, Inc.
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COST ESTIMATE

PROJECT DESCRIPTION: CRANDALL CANYON MINE RECLAMATION LANDFILL RECLAMATION PROJECT No.: C-27 ESTIMATOR: KTK DATE: 11-30-89

ITEM No.	DESCRIPTION	EQUIPMENT	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
1	BACKFILL & GRADE	CREW B-10B	HR	16	96.90	1550.40
2	DITCH CONSTRUCTION	CREW B-6	HR	4	35.10	140.40
	TOTAL LANDFILL RECLAMATION	—	—	—	—	1690.80

Earthfax Engineering, Inc.
Engineers/Scientists

COST ESTIMATE

PROJECT DESCRIPTION: CRANDALL CANYON MINE RECLAMATION COST SUMMARY PROJECT No.: C-27 ESTIMATOR: KTK DATE: 11-30-89

ITEM No.	DESCRIPTION	EQUIPMENT	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
1	STRUCTURE REMOVAL	—	—	—	—	22,622.36
2	CUT & FILL	—	—	—	—	40,901.35
3	TOPSOIL REPLACE & REVEG.	—	—	—	—	52,286.52
4	LANDFILL RECLAMATION	—	—	—	—	1690.80
	SUBTOTAL					117,501.03
	10% CONTIGENCY & ENGINEERING COST					11,750.10
	TOTAL					129,251.13
	ROUNDED BOND REQUIREMENT					$130,000

CUT AND FILL CALCULATIONS
PHASE 1 & PHASE 2

Cross Section	Planimeter Readings Beg.	End	Change	Areas (sq ft) Cut (+) Fill (-)
A	9.09	9.08	0.01	16.
A	-2.22	-2.21	-0.01	-16.
A	2.40	2.35	0.05	80.
A	-4.33	-4.27	-0.06	-96.
B	-9.64	-9.61	-0.03	-48.
B	9.71	9.65	0.06	96.
B	-9.41	-9.28	-0.13	-208.
C	-7.84	-7.82	-0.02	-32.
C	1.14	0.57	0.57	912.
C	-8.41	-8.13	-0.28	-448.
C	6.19	6.10	0.09	144.
D	-2.26	-1.98	-0.28	-448.
D	-6.40	-6.38	-0.02	-32.
E	-9.12	-9.11	-0.01	-16.
E	7.29	7.14	0.15	240.
E	-4.13	-4.10	-0.03	-48.
F	-7.60	-7.45	-0.15	-240.
F	-4.14	-3.99	-0.15	-240.
G	-7.20	-7.17	-0.03	-48.
G	7.05	6.98	0.07	112.
G	-5.78	-5.60	-0.18	-288.
G	-7.15	-7.13	-0.02	-32.
H	-1.26	-1.24	-0.02	-32.
I	-3.64	-3.39	-0.25	-400.
I	1.36	1.33	0.03	48.
J	-8.42	-8.08	-0.34	-544.
J	7.80	7.52	0.28	448.
K	1.36	0.84	0.52	832.
L	3.91	3.72	0.19	304.

CUT AND FILL CALCULATIONS
PHASE 1 & PHASE 2

Cross Section	Total XS Cut / Fill (sq ft) Cut (+) Fill (-)	Average Area of Two XS (sq ft)	Width Between XS (ft)	Volume (cubic ft)
A				
	-16.	-8.	0.	0.
B				
	-160.	-88.	75.	-6600.
C				
	576.	208.	150.	31200.
D				
	-480.	48.	150.	7200.
E				
	176.	-152.	150.	-22800.
F				
	-480.	-152.	150.	-22800.
G				
	-256.	-368.	150.	-55200.
H				
	-32.	-144.	150.	-21600.
I				
	-352.	-192.	150.	-28800.
J				
	-96.	-224.	35.	-7840.
K				
	832.	368.	35.	12880.
L				
	304.	568.	30.	17040.

Total Cut/Fill (cu. ft)	-97320.
Total Cut/Fill (cu. yd)	- 3604.
Still Basin Fill needed (cu. yd)	- 28.
Existing Stockpile (cu. yd)	3701.
Total (cu. yd)	69.

Note: XS = Cross Section
Total Cut = 2530 cu yd
Total Fill = 6163 cu yd