

POLICY MEMORANDUM NO. 16 TO MINE OPERATORS
RECLAMATION COST ESTIMATING GUIDELINE
VARIABLE COSTS
APPENDIX
July 2004 Data

Per Cubic Yard Earth-moving Cost for Small Mines

Costs for backfilling and grading and suitable plant growth material respread where the total quantity to be moved is 500,000 cubic yards or less will be calculated at a rate of \$0.69 per yard. (This rate will be reviewed and updated on July 1 of each year.)

Equipment Prices and Replacement Tire Prices

The following equipment prices were furnished on July 26, 2004, by Brian Rebel of Butler Machinery as the current list price delivered as commonly equipped for reclamation work. These prices include a 10% discount and no taxes. (777D discounted 15% for current market)

<u>Item</u>	<u>List Price Discounted</u>
D11R Tractor w/U Dozer & Ripper	\$1,397,970.00
D10R Tractor w/U Dozer & Ripper	898,830.00
D9R Tractor w/U Dozer & Ripper	668,700.00
657E Scraper w/Push-Pull	1,256,400.00
637F Scraper w/Push-Pull	947,340.00
992G Wheel Loader with 15 CY Bucket	1,454,130.00
777D End Dump Truck	1,207,850.00
16H Motor Grader w/Ripper	545,760.00

The following average current tire prices were furnished by Lignite Tire, Beulah, and OK Tire, Bismarck.

<u>Equipment</u>	<u>Tire Size</u>	<u>Price Each</u>
657E Scraper	40.5/75 R39 (E-3)	\$ 7,650.00
637F Scraper	37.25-35, 30 PR (E-3)	5,600.00
16H Motor Grader	23.5 R25 (E-4)	2,000.00
992G Wheel Loader	45/65-45 (L-5)	10,600.00
777D End Dump Truck	27.00R49 (E-4)	6,650.00

Residual Values for Reclamation Equipment

The following are the residual percentages and values to be used for determining the cost per hour of reclamation equipment. Values shown are from contact and discussion with Brian Rebel of Butler Machinery and information retrieved from the internet by the Reclamation Division.

<u>Item</u>	<u>Percentage of Original Cost</u>	<u>Residual Value</u>
D11R Tractor w/U Dozer & Ripper	26	\$363,472
D10R Tractor w/U Dozer & Ripper	29	260,661
D9R Tractor w/U Dozer & Ripper	31	207,297
657E Scraper w/Push-Pull	25	314,100
637F Scraper w/Push-Pull	24	227,362
16H Motor Grader w/Ripper	32	174,643
992G Wheel Loader W/15 CY Bucket	24	348,991
777D End Dump Truck	28	338,198

Prime Interest Rate

The prime interest rate to be used for the calculation of interest on reclamation equipment is 4.25% for July 1, 2004, to July 1, 2005. Therefore, the total interest rate to be used for calculations is 6.25% as determined according to item III(A) on page 5 of this guideline.

Fuel Cost

The cost of fuel for reclamation equipment, based on the wholesale price obtained from Fleet Services Division of the ND Department of Transportation for July 1, 2004, to July 1, 2005, is \$1.201 per gallon. Price includes cost of fuel, 2% special fuels tax, \$0.01 per gallon township fund, \$0.00225 per gallon state inspection fee for ND State Consolidated Lab and \$0.0348 per gallon (including fuel surcharge) for transportation.

Wages and Benefits

The revised wage rates were obtained from the Operating Engineers Local in July 2004 for Group 3 operators for Heavy Industrial. The updated base rates for workers compensation, unemployment benefits and social security were obtained from the respective agencies.

Hourly Rate for Labor - Group III	\$21.85
Health, Welfare, & Apprenticeship/Hour - Group III	10.05
Insurance - Assumed 1% of Hr. Labor Rate	0.22
Social Security - 7.65% of Hr. Labor	1.67
*Workers Compensation – 3.41% of Hr. Labor [$(\$1,145.15) / (\$21.85 \times 2080 \text{ Hr.} \times 0.75) = 0.034064$ or 3.41%]	0.74
*Unemployment – 5.48% of Hr. Labor [$(\$1,866.65 / (\$21.85 \times 2080 \text{ Hr.} \times 0.75) = 0.054763$ or 5.48%]	1.20
Total Hourly Operator Cost	\$35.73

*Based on 40 hour week for 9 months of the year

Custom Farm Work Rates

The following custom farm rates are taken from the publication "Custom Farm Work Rates, North Dakota, 2001" published by the North Dakota Agricultural Statistics Service.

<u>Item</u>	<u>Rate/Acre</u>
Deep Chiseling	\$5.47
Small Grain Seeding	6.38
Application of Dry Fertilizer	3.64

Fertilizer

The cost of 18-46-0 fertilizer for use in reclamation is \$0.1525 per pound for July 1, 2004. This price is based on rates from Agrilience-Agronomy Center for bagged fertilizer.

Seed Prices

The average seed prices on the following page were determined based on quotes from Hubbard Feeds (formerly Heartland) in July 2004. (Seed prices are highly variable and may not reflect prices of seed later this year or next spring.)

2004 – 2005 AVERAGE SEED PRICES

<u>Native Grasses</u>	<u>Cost/lb PLS</u>	<u>Introduced Grasses</u>	<u>Cost/lb PLS</u>
Big bluestem	<u>4.00</u>	Crested wheatgrass	<u>1.15</u>
Blue grama	<u>7.00</u>	Intermediate wheatgrass	<u>1.45</u>
Canada Wildrye	<u>8.05</u>	Pubescent wheatgrass	<u>1.95</u>
Green needlegrass	<u>3.00</u>	Reed canarygrass	<u>2.72</u>
Indian Grass	<u>10.62</u>	Russian wildrye	<u>4.50</u>
Little bluestem	<u>10.00</u>	Smooth bromegrass	<u>0.90</u>
Prairie sandreed	<u>9.00</u>	Tall wheatgrass	<u>1.45</u>
Sand bluestem	<u>9.20</u>	Legumes	
Sideoats grama	<u>5.00</u>	Alfalfa	<u>1.00</u>
Slender wheatgrass	<u>1.75</u>	Sweetclover yellow-flowered	<u>0.65</u>
Switchgrass	<u>3.85</u>	white-flowered	
Thickspike wheatgrass	<u>3.68</u>		
Western wheatgrass	<u>3.05</u>		
Prairie junegrass	<u>38.75</u>		

Variable Bond costs

HOURLY EQUIPMENT COST ESTIMATING FORM - LARGE MINE FLEET		July 27, 2004									eqcomp727
***This information to be used in bond cost estimating calculations and can be inserted into a spread sheet to calculate the bond amount.											
OWNERSHIP ASSUMPTIONS, INTEREST AND INSURANCE RATES:											
Estimated Ownership Period (yrs)	7			Annual Use-hr	3,000			Total Life-hr	20,000		
				Interest-%	6.25			Insurance-%	0.75		
				Sales Tax-%	5			Fuel Cost/gal	\$1.2010		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Machine designation.....	DOZER-D11R	DOZER-D10R	DOZER-D9R	SCRAPER-657E	SCRAPER-637F	GRADER-16H	WATER-WAGON	LOADER-992G	TRUCK-777D		
OWNING COSTS:											
Delivered price (list - 10%).(777 -15%).....	\$1,397,970	\$898,830	\$668,700	\$1,256,400	\$947,340	\$545,760	\$545,760	\$1,454,130	\$1,207,850		
Tire replacement cost.....	\$0	\$0	\$0	\$30,600	\$22,400	\$12,000	\$12,000	\$42,400	\$39,900		
Adjusted price.....=	\$1,397,970	\$898,830	\$668,700	\$1,225,800	\$924,940	\$533,760	\$533,760	\$1,411,730	\$1,167,950		
Residual value at replacement (%).....	26	29	31	25	24	32	32	24	28		
...Calculated Value.....=	\$363,472	\$260,661	\$207,297	\$314,100	\$227,362	\$174,643	\$174,643	\$348,991	\$338,198		
Value to be recovered through work =	\$1,034,498	\$638,169	\$461,403	\$911,700	\$697,578	\$359,117	\$359,117	\$1,062,739	\$829,752		
Cost per hour (value/total hours).....+	\$51.72	\$31.91	\$23.07	\$45.59	\$34.88	\$17.96	\$17.96	\$53.14	\$41.49		
Interest costs per hour.....+	\$16.64	\$10.70	\$7.96	\$14.96	\$11.28	\$6.50	\$6.50	\$17.31	\$14.38		
Insurance costs per hour.....+	\$2.00	\$1.28	\$0.96	\$1.79	\$1.35	\$0.78	\$0.78	\$2.08	\$1.73		
Sales tax cost per hour.....+	\$3.49	\$2.25	\$1.67	\$3.14	\$2.37	\$1.36	\$1.36	\$3.64	\$3.02		
>>>>>>HOURLY OWNING COST:	\$73.86	\$46.14	\$33.66	\$65.48	\$49.88	\$26.60	\$26.60	\$76.16	\$60.61		
OPERATING COSTS:											
Fuel consumption (gal/hr).....	23	15.5	12.5	30.5	23	6.5	6.5	22	14		
Fuel cost per hour.....	\$27.62	\$18.62	\$15.01	\$36.63	\$27.62	\$7.81	\$7.81	\$26.42	\$16.81		
Lube oil, filter, grease w/labor (/hr).+	\$2.76	\$1.88	\$1.69	\$2.48	\$1.69	\$1.48	\$1.48	\$2.57	\$3.04		
Tire life (hours).....				5,000	2,600	10,000	10,000	10,000	10,000		
Tire cost per hour.....+	\$0.00	\$0.00	\$0.00	\$6.12	\$8.62	\$1.20	\$1.20	\$4.24	\$3.99		
Impact.....(1), (2) & (3):	0.20										
Abrasiveness...(1), (2) & (3):	0.20										
Z factor.....(1), (2) & (3):	0.30										
Basic factor...(1), (2) & (3):	0.70	\$18.00	\$13.30	\$10.60							
Undercarriage cost per hour.....+	\$12.60	\$9.31	\$7.42	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		
Extended use multiplier.....	1.3	1.3	1.3	1.24	1.24	1.33	1.33	1.1	1		
Basic repair factor.....	\$21.80	\$11.00	\$13.00	\$19.75	\$16.00	\$7.50	\$7.50	\$21.50	\$12.00		
Repair reserve cost per hour.....+	\$28.34	\$14.30	\$16.90	\$24.49	\$19.84	\$9.98	\$9.98	\$23.65	\$12.00		
Special wear items (cost per hour)....+	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50		
>>>>>HOURLY OPERATING COST:	\$71.82	\$44.61	\$41.52	\$70.22	\$58.27	\$20.96	\$20.96	\$57.38	\$36.34		
Operators hourly wage.....+	\$35.73	\$35.73	\$35.73	\$35.73	\$35.73	\$35.73	\$35.73	\$35.73	\$35.73		
Total hourly rate.....=	\$181.41	\$126.48	\$110.91	\$171.43	\$143.88	\$83.29	\$83.29	\$169.27	\$132.69		
Overhead and profit @ 15%.....+	\$27.21	\$18.97	\$16.64	\$25.71	\$21.58	\$12.49	\$12.49	\$25.39	\$19.90		
>>>>>TOTAL ESTIMATED HOURLY COST:	\$208.62	\$145.45	\$127.55	\$197.14	\$165.46	\$95.78	\$95.78	\$194.66	\$152.59		
FOR:	DOZER-D11R	DOZER-D10R	DOZER-D9R	SCRAPER-657E	SCRAPER-637F	GRADER-16H	WATER-WAGON	LOADER-992G	TRUCK-777D		

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