



Public Service Commission

State of North Dakota

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MEMORANDUM

TO: Mine Operators and Lignite Council

FROM: Jim Deutsch, Director – Reclamation Division

DATE: August 13, 2007

SUBJECT: Annual update of variable costs contained in Policy Memorandum No. 16 to Mine Operators – Reclamation Cost Estimating Guidelines

Attached is the July 2007 update to the Reclamation Division's Reclamation Cost Estimating Guidelines used for calculating bond amounts for mining permits. This annual update contains the variable costs as of July 1, 2007. Many of the variable costs were affected by this year's update. However, on the average, the hourly equipment rates for the large mines increased by less than 5%. Therefore, mining companies will not be required to update the current worst-case reclamation cost estimates using the new rates unless other updates to the cost estimate are needed, or the worst-case reclamation condition has changed.

The list prices for equipment and suggested residual values were obtained from Butler Machinery in July. The fuel cost was obtained from Fleet Services with the ND Department of Transportation, with transportation costs added. Fleet Services has a direct source for the wholesale cost of fuel for the region. The tire prices were obtained from Lignite Tire of Beulah and GRC Tire of Bismarck. Seed prices were obtained from Hubbard Feeds Inc. and Chesak Seed House, both of Bismarck.

For small mines, the \$1.00 per cubic yard rate is increased to \$1.20 per cubic yard based on the bids the Commission's AML Division received over the past year or so. Due to this increase, the worst-case reclamation cost estimates for the small mines will need to be re-calculated.

Attachment

m\Memo Industry\2007bond_update.doc

POLICY MEMORANDUM NO. 16 TO MINE OPERATORS
RECLAMATION COST ESTIMATING GUIDELINE
VARIABLE COSTS
APPENDIX
July 2007 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 \$1.20 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 30, 2007, 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.

<u>Item</u>	<u>List Price Discounted</u>
D11R Tractor w/U Dozer & Ripper	\$1,600,000.00
D10T Tractor w/U Dozer & Ripper	1,150,000.00
D9T Tractor w/U Dozer & Ripper	825,000.00
657G Scraper w/Push-Pull	1,500,000.00
637G Scraper w/Push-Pull	1,100,000.00
992G Wheel Loader with 15 CY Bucket	1,700,000.00
777F End Dump Truck	1,500,000.00
16M Motor Grader w/Ripper	700,000.00

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

<u>Equipment</u>	<u>Tire Size</u>	<u>Price Each</u>
657E Scraper	40.5/75 R39 (E-3)	\$13,447.00
637F Scraper	37.25R35 (E-3)	10,580.00
16H Motor Grader	23.5 R25 (E-4)	3,492.00
992G Wheel Loader	45/65-45 (L-5)	20,956.00
777D End Dump Truck	27.00R49 (E-4)	11,338.00

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.

<u>Item</u>	<u>Percentage of Original Cost</u>	<u>Residual Value</u>
D11R Tractor w/U Dozer & Ripper	26	\$416,000
D10T Tractor w/U Dozer & Ripper	25	287,500
D9T Tractor w/U Dozer & Ripper	28	231,000
657E Scraper w/Push-Pull	28	420,000
637G Scraper w/Push-Pull	32	352,000
16H Motor Grader w/Ripper	34	238,000
992G Wheel Loader W/15 CY Bucket	26	442,000
777D End Dump Truck	32	480,000

Prime Interest Rate

The prime interest rate to be used for the calculation of interest on reclamation equipment is 8.25% for July 1, 2007, to July 1, 2008. Therefore, the total interest rate to be used for calculations is 10.25% as determined according to item III(A) on page 6 of this guideline.

Fuel Cost

The cost of fuel for reclamation equipment, based on the average retail price obtained from Fleet Services Division of the ND Department of Transportation for July 1, 2006, to May 30, 2007 is \$2.60 per gallon. Price includes cost of fuel, an administrative fee of \$0.0195 per gallon and an oil fuel spill fee of \$0.0012 per gallon. Federal and state taxes are excluded from this price.

Wages and Benefits

The revised wage rates were obtained from the Operating Engineers Local in July 2007 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	\$23.80
Health, Welfare, & Apprenticeship/Hour - Group III	12.90
Insurance - Assumed 1% of Hr. Labor Rate	0.24
Social Security - 7.65% of Hr. Labor	1.82
*Workers Compensation – 1.74% of Hr. Labor [$(\$647.52) / (\$23.80 \times 2080 \text{ Hr.} \times 0.75) = 0.0174$ or 1.74%]	0.42
*Unemployment – 4.64% of Hr. Labor [$(\$1723.17 / (\$23.80 \times 2080 \text{ Hr.} \times 0.75) = 0.04641$ or 4.64%]	1.10
Total Hourly Operator Cost	\$40.28

*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, 2004" published by the North Dakota Agricultural Statistics Service.

<u>Item</u>	<u>Rate/Acre</u>
Deep Chiseling	\$5.99
Small Grain Seeding	7.18
Application of Dry Fertilizer	3.87

Fertilizer

The cost of 11-52-0 fertilizer for use in reclamation is \$0.215 per pound on June 28, 2007. 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 June 2007. (Seed prices are highly variable and may not reflect prices of seed later this year or next spring.)

2007 -2008 AVERAGE SEED PRICES

<u>Native Grasses</u>	<u>Cost/lb PLS</u>	<u>Introduced Grasses</u>	<u>Cost/lb PLS</u>
Big bluestem	<u>12.00</u>	Crested wheatgrass	<u>2.00</u>
Blue grama	<u>9.65</u>	Intermediate wheatgrass	<u>3.65</u>
Canada Wildrye	<u>6.50</u>	Pubescent wheatgrass	<u>3.65</u>
Green needlegrass	<u>3.65</u>	Reed canarygrass	<u>2.40</u>
Indian Grass	<u>8.28</u>	Russian wildrye	<u>3.25</u>
Little bluestem	<u>10.25</u>	Smooth bromegrass	<u>1.68</u>
Prairie sandreed	<u>8.50</u>	Tall wheatgrass	<u>2.65</u>
Sand bluestem	<u>15.50</u>	Legumes	
Sideoats grama	<u>12.15</u>	Alfalfa	<u>1.53</u>
Slender wheatgrass	<u>1.80</u>	Sweetclover yellow-flowered	<u>0.88</u>
Switchgrass	<u>2.90</u>		
Thickspike wheatgrass	<u>6.78</u>		
Western wheatgrass	<u>8.00</u>		
Prairie junegrass	<u>18.50</u>		

HOURLY EQUIPMENT COST ESTIMATING FORM - LARGE MINE FLEET

July 30, 2007

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***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:

July 30, 2007

Estimated Ownership Period (yrs)	7	Annual Use-hr	3,000	Total Life-hr	20,000
		Interest-%	10.25	Insurance-%	0.75
		Sales Tax-%	5	Fuel Cost/gal	\$2.6000

Machine designation.....	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	DOZER-D11R	DOZER-D10T	DOZER-D9T	SCRAPER-657G	SCRAPER-637G	GRADER-16H	WATER-WAGON	LOADER-992G	TRUCK-777F

OWNING COSTS:

Delivered price (list - 10%).....	\$1,600,000	\$1,150,000	\$825,000	\$1,500,000	\$1,100,000	\$700,000	\$700,000	\$1,700,000	\$1,500,000
Tire replacement cost.....	\$0	\$0	\$0	\$53,788	\$42,320	\$20,952	\$20,952	\$83,824	\$68,028
Adjusted price.....=	\$1,600,000	\$1,150,000	\$825,000	\$1,446,212	\$1,057,680	\$679,048	\$679,048	\$1,616,176	\$1,431,972
Residual value at replacement (%).....	26	25	28	28	32	34	34	26	32
...Calculated Value.....=	\$416,000	\$287,500	\$231,000	\$420,000	\$352,000	\$238,000	\$238,000	\$442,000	\$480,000
Value to be recovered through work =	\$1,184,000	\$862,500	\$594,000	\$1,026,212	\$705,680	\$441,048	\$441,048	\$1,174,176	\$951,972
Cost per hour (value/total hours).....+	\$59.20	\$43.13	\$29.70	\$51.31	\$35.28	\$22.05	\$22.05	\$58.71	\$47.60
Interest costs per hour.....+	\$31.24	\$22.45	\$16.11	\$29.29	\$21.48	\$13.67	\$13.67	\$33.19	\$29.29
Insurance costs per hour.....+	\$2.29	\$1.64	\$1.18	\$2.14	\$1.57	\$1.00	\$1.00	\$2.43	\$2.14
Sales tax cost per hour.....+	\$4.00	\$2.88	\$2.06	\$3.75	\$2.75	\$1.75	\$1.75	\$4.25	\$3.75
>>>>>>HOURLY OWNING COST:	\$96.72	\$70.10	\$49.05	\$86.49	\$61.08	\$38.47	\$38.47	\$98.58	\$82.78

OPERATING COSTS:

Fuel consumption (gal/hr).....	23	15.5	12.5	30.5	23	6.5	6.5	22	14
Fuel cost per hour.....	\$59.80	\$40.30	\$32.50	\$79.30	\$59.80	\$16.90	\$16.90	\$57.20	\$36.40
Lube oil, filter, grease w/labor (/hr).+	\$8.74	\$5.59	\$4.02	\$9.50	\$7.06	\$2.60	\$2.60	\$7.66	\$6.34
Tire life (hours).....				5,000	5,000	10,000	10,000	10,000	10,000
Tire cost per hour.....+	\$0.00	\$0.00	\$0.00	\$10.76	\$8.46	\$2.10	\$2.10	\$8.38	\$6.80
Overhaul/repair reserve.....+	\$26.74	\$18.11	\$14.18	\$22.41	\$19.47	\$6.50	\$6.50	\$10.32	\$17.15
Repair &/or maintenance.....+	\$25.88	\$18.44	\$14.61	\$25.51	\$22.55	\$6.06	\$6.06	\$11.68	\$10.55
Wear Items, GEC.....+	\$3.68	\$2.28	\$1.64	\$0.70	\$0.53	\$0.38	\$0.38	\$1.18	
>>>>>HOURLY OPERATING COST:	\$125.84	\$84.72	\$66.95	\$148.18	\$117.87	\$34.54	\$34.54	\$96.42	\$77.24
Operators hourly wage.....+	\$40.28	\$40.28	\$40.28	\$40.28	\$40.28	\$40.28	\$40.28	\$40.28	\$40.28
Total hourly rate.....=	\$262.84	\$195.10	\$156.28	\$274.95	\$219.24	\$113.28	\$113.28	\$235.28	\$200.30
Overhead and profit @ 15%.....+	\$39.43	\$29.26	\$23.44	\$41.24	\$32.89	\$16.99	\$16.99	\$35.29	\$30.04
>>>>>TOTAL ESTIMATED HOURLY COST:	\$302.27	\$224.36	\$179.72	\$316.19	\$252.12	\$130.28	\$130.28	\$270.57	\$230.34
FOR:	DOZER-D11R	DOZER-D10T	DOZER-D9T	SCRAPER-657G	SCRAPER-637G	GRADER-16H	WATER-WAGON	LOADER-992G	TRUCK-777F