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TO: Internal File

THRU: Mary Ann Wright, Associate Director

THRU: Daron Haddock, Permit Supervisor

THRU: Pam Grubaugh-Littig, Permit Supervisor

FROM: Wayne H. Western, Reclamation Specialist III

RE: Evaluation of the Environmental Subcommittee's Request to Use Local Unit Costs for Determining Reclamation Bond Amounts with Emphasis on the Cottonwood/Wilberg Mine, ACT/015/019

## SUMMARY:

The Division reviewed the bond calculations for the Cottonwood/Wilberg Mine submitted by the PacifiCorp as a result of the Coal Environmental Subcommittee's presentation to the Division. The Subcommittee requested that the Division use local costs instead of the published rates that the Division currently uses for reclamation bond calculations. The Division has reviewed the bond calculations and assumptions used in the presentation by the PacifiCorp to the Division. The Division found errors in the bond calculations submitted by PacifiCorp and the Division have concerns about the assumptions made by the PacifiCorp.

## BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

### Analysis:

#### Determination of Bond Amount

Background on Local Contractors

The Environmental Subcommittee requested that the Division use local unit costs instead of national unit costs, such as those published in *Blue Book* and *Means*. Specifically the Division was asked to review bond calculations for the Cottonwood/Wilberg Mine based on unit costs from Nielson Construction Company, a local contractor. The Division decided to review the PacifiCorp's bond calculations and compared the results with other local costs.

The Division survied the contractors in the Carbon and Emery county areas and found only two that are successfully bidding on large reclamation projects. Those contractors are Nielson Construction Company and Minchey Digging. The other local contractors were eliminated from this study because they do not have either the reclamation equipment or the ability to bond for a large project.

While Nielson is the largest contractor in the area, they usually do not bid on state contracted mine reclamation projects. For example, Nielson did not attend the pre bid meeting for the Sunnyside project. According to AML, Nielson has been awarded the bid for only one AML reclamation project.

Nielson does not have published rates. However, they do have contract rates with some coal operators and state agencies. PacifiCorp used contract rates negotiated between themselves and Nielson. The Division used the UDOT contract prices with Nielson.

Minchey does not have published rates. Therefore, the Division did not use Minchey as a source for local rates.

Concerns About Local Contractors

The State requires a contractor to post a performance bond. The surety, which issues the bond, limits the coverage on several factors including the finacial resources of the contractor and the work in progress. If both Nielson and Minchey had significant work in progress at the time of bond forfeiture, then neither could receive the bid because of bond limitations. For large projects the contract amount could exceed the bonding limit of Minchey.

Another problem with limiting the contractor pool to two contractors is that contractor can and do go out of business. If one or two of the local contractors were to go out of business then the local rates would no longer be valid.

At the Sunnyside pre bid meeting sixteen contractors from two states attended. Of those sixteen contractors, five contractors from two states submitted bids. They were Minchey Digging from Cleveland, Utah; Kim MacKay from Salt Lake City, Utah; Ned Mitchell from Altamont, Utah; Gerber Construction from Draper, Utah and OHM Remediation from Denver, Colorado. Minchey, the only contractor from the Carbon and Emery County area to bid, was awarded the Sunnyside project.

The Division had limited funds to reclaim the Sunnyside site and therefore developed two options. Option A was based on an optimistic projection of reclamation costs and would be awarded if the bid amount did not exceed the funds available. Option B involved a more conservative cost projection that would only address safety and most important environmental concerns.

Minchey Digging was awarded the bid for option A. The next lower bidder for option A was Gerber Construction from Draper. If the Division had gone with option B then the contract would have been awarded to Kim MacKay from Salt Lake City.

Since the Division believes there is a reasonable likelihood that a major reclamation project would be awarded to a contractor from the Wasatch Front, the Division choose to calculate the reclamation costs based on a typical Wasatch Front contractor's unit costs. The Division used published rates from Wheeler Machinery Company for most equipment. If Wheeler did not have the equipment then the Division used rates from ICM and Hertz. Equipment operating costs were from *Blue Book* because the vendors do not have published operating costs. Labor rates were based on Davis-Bacon wage rates for the Wasatch Front.

Review of the Environmental Subcommitte's Methods:

PacifiCorp used unit costs from Nielson Construction if they owned the equipment listed in the reclamation plan. If Nielson did not own the equipment then the PacifiCorp used rates from Wheeler Machinery and ICM. Both the Division's Title IV and Title V sections reviewed the calculations and made the following findings:

- The Nielson unit costs are contract prices between Nielson and PacifiCorp. Therefore the Division, or another third party, will be unable to verify those costs.

- The unit costs from Wheeler and ICM are published rental rates for equipment. The rental rates do not include operational costs, operator costs (wage and benefits), taxes, insurance, overhead and profit. PacifiCorp did not include operational costs or operator costs with rental rates from Wheeler or ICM. That oversight was one reason that PacifiCorp's reclamation cost estimate is lower than the Division's.

- A direct comparison between Nielson's unit costs and other sources such as Wheeler, IMC, Hertz, *BlueBook* or *Means* unit costs many not be valid since Nielson uses older equipment and the others use new equipment. Older equipment is usually less productive than newer equipment. For example older equipment usually has more down time than newer equipment.

- The Division was not able to verify the productivity calculations or material volumes. This issue is discussed in another memo about the Cottonwood/Wilberg bond calculations.

- PacifiCorp did not include equipment that will be needed such as hydraulic hammers for concrete demolition and water trucks.

- PacifiCorp did not submit debris volumes for several structures.

- PacifiCorp did not submit disposal costs for salt contaminated soils associated with the salt shed demolition.

Review of the Division Estimates from Wasatch Front-based Contractors, and Carbon and Emery County-based Contractors

The Division calculated the reclamation costs for the Cottonwood/Wilberg mine based on contractor costs from the Carbon and Emery County area and from the Wasatch Front. For the Carbon and Emery County areas the Division used contract rates between UDOT and Nielson when possible. If Nielson did not have equipment called for in the reclamation plan, then the Division used published rates from Wheeler, ICM or Hertz.

The Division calculated the unit costs for a Wasatch front contractor based on published rates from Wheeler Machinery whenever possible. The Division also used rates from ICM and Hertz for cranes and light vehicles. Equipment operating costs were from *Blue Book*, because no local sources for that information were found. Labor rates were based on Davis-Bacon wage rates and labor factors from *Means*. Revegetation costs were based on bids submitted for the Sunnyside reclamation project. The local revegetetion costs used by the Division were verified by AML staff.

Comparison of Direct Costs

The following is a comparison of the direct reclamation costs. Indirect costs will be discussed later. Although the purpose of this exercise was to compare what the bond amount would be if calculated by different local sources, the Division included bond calculations based on *Blue Book* and *Means* for reference only.

| Source | Amount of Direct Costs | % Change from PacifiCorp |
|---|---|---|
| PacifiCorp | $1,260,864 | 0% |
| Division (Nielson) | $1,527,744 | 21% |
| Division (*Blue Book*) | $1,727,993 | 37% |
| Division (Wheeler) | $1,799,788 | 43% |
| Division (*Means*) | $1,745,254 | 38% |

Although not part of the assignment, the Division compared local and national costs for construction work. The *Means Heavy Construction* Cost Data 2000 list the construction costs index for Salt Lake City and Provo. Compared with the national average the local costs in Salt Lake City for site work is 100% of the national average. Local prices in the Provo area are 98.1% of the national average. Local prices for the Price area were not broken down into site work.

The demolition costs were similar for the four methods used by the Division.

| Source | Amount of Direct Demo. Costs | % Change from PacifiCorp |
|---|---|---|
| Division (Nielson) | $979,257 | 0% |
| Division (*Blue Book*) | $1,057,392 | 8% |
| Division (Wheeler) | $1,096,823 | 12% |
| Division (*Means*) | $1,095,675 | 12% |

One reason the demolition costs between Nielson and Wheeler are so close is that Nielson did not have some of the equipment needed for demolition. Both the PacifiCorp and the Division assumed that the equipment would be rented from Wheeler.

Earthwork costs were more variable for the four methods used by the Division.

| Source | Amount of Direct Earthwork Costs | % Change from PacifiCorp |
|---|---|---|
| Division (Nielson) | $339,257 | 0% |
| Division (*Blue Book*) | $441,871 | 30% |
| Division (Wheeler) | $463,453 | 37% |
| Division (*Means*) | $407,409 | 20% |

*Means* did not have some of the larger earth moving equipment. In such cases the Division used the largest piece of equipment listed in *Means*. Since the smaller equipment does not have the same productivity as the larger equipment as direct comparison is misleading.

The percentage difference between *Blue Book* and Wheeler is 5%. Note: that does not mean that a unit price for each piece of equipment listed in Wheeler's and *Blue Book*'s differs by 5%. The individual unit prices from Wheeler and *Blue Book* do vary more than 5%.

The Division reviewed the earthwork calculations to find the reason that the earthwork cost calculated by using the unit costs from *Blue Book*, *Means* and Wheeler were higher than those using data from Nielson. One area where the unit costs from *Blue Book*, *Means* and Wheeler were much higher than from Nielson is for a 988F Series II front end loader.

988F Series II Front End Loader

| Source | Hourly Cost | % Difference |
|---|---|---|
| Division (Nielson) | | |
| Base Rate | $125.57/hr | 0% |
| | | |
| Division (Wheeler) | | |
| Rental Rate | $122.72/hr | |
| Operating Cost | $53.64/hr | |
| Operator | $33.59/hr | |
| Total | $209.95/hr | 67% |
| | | |
| Division (*Blue Book*) | | |
| Rental Rate | $85.22/hr | |
| Operating Cost | $53.64/hr | |
| Operator | $35.95/hr | |
| Total | $172.45/hr | 37% |
| | | |
| Division (*Means*) | | |
| Rental Rate | $87.95/hr | |
| Operating Cost | $54.78/hr | |
| Operator | $43.80/hr | |
| Total | $186.53/hr | 49% |

If the operator costs are subtracted from the equipment costs the data is as follows:

988F Series II Front End Loader

| Source | Hourly Cost | % Difference |
|---|---|---|

| | | |
|---|---|---|
| Division (Nielson) | | |
| Base Rate | $100.57/hr | 0% |
| | | |
| Division (Wheeler) | | |
| Rental Rate | $122.72/hr | |
| Operating Cost | $53.64/hr | |
| Total | $176.36/hr | 75% |
| | | |
| Division (*Blue Book*) | | |
| Rental Rate | $85.22/hr | |
| Operating Cost | $53.64/hr | |
| Total | $138.86/hr | 38% |
| | | |
| Division (*Means*) | | |
| Rental Rate | $87.95/hr | |
| Operating Cost | $54.78/hr | |
| Total | $142.73/hr | 42% |

Local costs for operating expenses will not be much less in the Carbon and Emery County areas. For example fuel and part prices in Carbon and Emery County will most likely be more than if purchased along the Wasatch Front.

Wheeler is the only *Caterpillar* dealer in Utah. Therefore, *Caterpillar* equipment purchase prices will not be lower in Carbon and Emery County than along the Wasatch Front. There are no companies in the Carbon and Emery County that rent large equipment. If a contractor needed to rent large equipment, he would have to rent the equipment from a Wasatch Front dealer. The only local depreciation factor is the construction season, which is determined by weather. Since contractors in the Carbon and Emery County do not have longer construction seasons than contractors along the Wasatch Front, depreciation for the two areas is the same.

Another local factor that might help Nielson lower unit costs is their lower overhead and profit. The Division compared the unit cost for a 988F Series II Front End Loader using the base rate for rental and operating costs. For a rough comparison the Division subtracted the overhead and profit and labor from the unit costs for Wheeler, *Blue Book* and *Means*. Nielson does not state the overhead and profit costs in their unit costs. Nielson does not report their overhead and profit so the Division can only subtract labor from Nielson's unit cost.

988F Series II Front End Loader

| Source | Hourly Cost | % Difference |
|---|---|---|
| Division (Nielson) | | |
| Base Rate | $100.57/hr | 0% |
| Division (Wheeler) | | |
| Rental Rate | $102.27/hr | |
| Operating Cost | $44.70/hr | |
| Total | $146.97/hr | 46% |
| Division (*Blue Book*) | | |
| Rental Rate | $71.02/hr | |
| Operating Cost | $44.70/hr | |
| Total | $115.72/hr | 15% |
| Division (*Means*) | | |
| Rental Rate | $73.30/hr | |
| Operating Cost | $45.65/hr | |
| Total | $118.95/hr | 18% |

**One explanation for Nielson's lower equipment and operating costs is that Nielson has older equipment. The older equipment would have lower deprecation rates (rental costs). However, older equipment implies lower productivity and more machine time. *Blue Book's* equipment and operating costs are based on industrial surveys for equipment no older than two years. Therefore, comparing Nielson with Wheeler or *Blue Book* on an hourly basis may not be a fair comparison. PacifiCorp needs to show how the productivity of Nielson's equipment compares with new equipment.**

That explanation is supported by the rental equipment description on Page 362 of the *Means* 14 Annual Edition (2000). The editor states:

> Rental rates shown in the front of the book pertain to late model high quality machines in excellent working condition, rented from equipment dealers. Rental rates from contractors may be much lower that the rental rates from equipment dealers depending on economic conditions. For older, less productive machines, reduce rates by a maximum of 15%.

*Blue Book* also has rate adjustments for older equipment. The adjustment factor for each piece of equipment can be found at the front of each chapter where the equipment cost is found. Older equipment has a lower rental cost for several reason. One reason is that older equipment had a lower purchase price therefore a lower depreciation cost if straight line depreciation is used. Blue Book uses straight line depreciation.

If the Division allowed rate adjustments for older equipment then we would be making the assumption that the older equipment would still be in use when bond forfeiture occurred. Bond forfeiture can occur five to seven years after the bond amount was calculated. If the contractor replaced the equipment before reclamation then the depreciation would be increased as would be the equipment cost. The Division considers the assumption that local contractor will not replace older equipment with newer equipment invalid. Therefore, the unadjusted *Blue Book* rate should be used instead of the local contractor rates.

If Nielson's equipment could meet the production rate for new equipment and have a lower deprecation rate the Division still has concerns about basing the equipment costs on one contractor. If the Division were to use contractor costs for bond calculations, we would have to use a large contractor pool to ensure that a contractor would be available for reclamation.

**Findings:**

The Division made the following findings:

- The bond calculations submitted by the PacifiCorp do not contain the operational costs or operator costs (wages and benefits), taxes, overhead and profit for equipment rented from Wheeler or ICM. PacifiCorp should correct the errors and resubmit the bond calculations.

- The term local contractor needs to be defined. Does a local contractor mean someone from the Carbon and Emery County area or should contractors from the Wasatch Front be included?

- PacifiCorp needs to give the Division productivity calculations and other information for the Cottonwood/Wilberg Mine before the Division can approve the reclamation cost estimate. This issue will be discussed in another memo.

- PacifiCorp did not show that the productivity for Nielson's equipment is equal to the productivity of new equipment. One explanation for Nielson's lower unit costs could be that their equipment is older and possibly less productive than newer equipment. If Nielson's equipment is less productive then they will need to spend more hours than a contractor had new more productive equipment.

**RECOMMENDATIONS:**

- The geographic limits of a local contractor must be defined and agreed upon by both the Division and the Environmental Subcommittee.

- The errors in the bond calculations for the Cottonwood/Wilberg mine must be corrected by the PacifiCorp.

- PacifiCorp must show the productivity rates for Nielson's equipment if Nielson's rates are going to be used.

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