

## Guidelines for Bond Calculation

New Mexico Mining and Minerals Division  
Energy Minerals and Natural resources Department

CSMC Rule 19.8.2.1404.A NMAC requires that the Director shall determine the bond amount based on, but not limited to, the estimated cost submitted by the permit applicant. The following guidelines are intended to provide consistent, defensible and accurate bond determinations.

- 1) The bond amount should be calculated for the worst case scenario, based on the approved reclamation and mine plan, during the permit term.
- 2) The OSM *Handbook for Calculation of Reclamation Bond Amounts* should be used as the guideline for the bond amount determination.
- 3) The *Cost Reference Guide for Construction Equipment* should be used to calculate equipment costs.
- 4) The *Caterpillar Performance Handbook* should be used for the determination of equipment productivity.
- 5) It should be assumed that earth-moving equipment will only be used one or two shifts per day. Overhead and CFC (cost of facilities capital) should not be adjusted for more than two shifts per day usage. Depreciation should not be adjusted.
- 6) Unless the mine currently uses scrapers to move spoil material, it must be assumed that scrapers can only be utilized to move 75% of the material in overburden dumps that cannot be moved economically by dozers. It must be assumed that trucks and loaders handle the remaining 25%. This assumption must be made because if the material in the overburden dumps was shot to be handled by large loaders, shovels or draglines, then a portion of this material will likely be too large to be handled with scrapers.
- 7) A cost of \$0.65/BCY should be used for drilling and blasting. This cost was the low-end estimate derived from two major, independent drilling and blasting companies in New Mexico for very large projects (one million CY +). As an alternative, the operator can use the *RSMMeans Building Construction Cost Data* manuals under the heading of bulk drilling and blasting (item #022 234 0300) to determine this cost.
- 8) Fuel costs should not be adjusted. It cannot be assumed that a third party contractor can get the same bulk rate on fuel as the mine. Although costs may vary locally, it cannot be assumed that at the time of bidding the reclamation work that fuel costs will vary significantly from

the national average used at the time the bond calculations were done.

- 9) Unless reclaimed areas have received Phase III (final) bond release, it should be assumed that 50% of seeded areas will require reseeding and mulching. This is equivalent to a 5% failure rate per year over the ten-year liability period that would otherwise be required. If a mine has adequate supporting data, a lower failure rate may be used if approved first by MMD.
- 10) The bond AOC (topography) should have positive drainage and maintain similar slopes and watersheds as the original topography. Details and costs must be provided for terraces and down drain construction and riprap material and placement costs where appropriate.
- 11) If the mine plan calls for acid and toxic material mitigation, then the bond must address the associated costs for sampling, analysis and material handling in accordance with the approved mine plan.
- 12) Provide all necessary maps and cross-sections to document material volumes and haul/push distances.
- 13) There is about a 20% difference in volume between rock fill in a dump (compacted cubic yards, CCY) and loose material. Dozer productivity is calculated on the basis of **loose cubic yards(LCY)**, and therefore the amount of dozer push material needs to be increased by 20%. (Example: It will take 120 loose cubic yards of material to fill a 100 cubic yard hole.)
- 14) Use equipment normally available to contractors. The following equipment is the **largest** equipment that will be allowed for bond determination:

Dozers - Caterpillar - D10 with a Semi-U Blade  
Loaders - Caterpillar - 992  
Haul Trucks - Caterpillar - 777  
Scrapers - Caterpillar - 637E  
Motor Graders - Caterpillar - 16G

The Mining and Minerals Division will update this list if larger equipment becomes more widely used by contractors.

- 15) Add Gross Receipts Tax to the final total cost.
- 16) Paginate and date all pages.