

**OHIO DEPARTMENT OF NATURAL RESOURCES**  
**DIVISION OF MINERAL RESOURCES MANAGEMENT**

**\*\*PROCEDURE DIRECTIVE\*\***

**PERMITTING 2016-03**

**SUBJECT:** Calculation of Estimated Reclamation Costs

**EFFECTIVE:** TBD

**PURPOSE:** To establish a standard procedure for estimating reclamation costs associated with coal mining operations

**General Discussion**

In 2007, a workgroup made up of both Division of Mineral Resources Management (DMRM or Division) and industry leaders formed to help decide how to calculate performance security estimates. The workgroup researched other state's estimating methods to get ideas on how to get an accurate assessment of reclamation costs. After many months of research and meetings, it was decided that unit costs for reclamation items would be developed by averaging actual costs from Abandoned Mine Land (AML) projects from the previous three (3) years. Any other costs not covered from AML projects will be determined from standard estimation practices, specifically use of the current year's RS Means Building Construction Cost Data. All unit costs are tabulated into a spreadsheet where the DMRM engineer inputs data based on the permit. The spreadsheet calculates the Performance Security Estimate (PSE) based on the engineering data.

The workgroup wanted to provide operators the flexibility to be able to operate anywhere within the permit boundaries without unnecessarily changing the PSE. The Mine Plan Summary (MPS) was developed to be included within the permit. The MPS is a summary of the entire permit's disturbances. Once the applicant/permittee completes a MPS, the DMRM engineer inputs the MPS data into the PSE spreadsheet to calculate an estimate. This provides a timely, conservative estimate and flexibility for the operator.

After years of using this method of calculation, the Division noticed estimates were overly conservative for actual field reclamation liability. The main reason for these overly conservative estimates is field operations typically do not affect the total proposed disturbance or permit area. In addition, the current PSE method does not

give credit for reclamation performed prior to Phase II bond releases. This gives inflated numbers that do not truly reflect reclamation liability.

A new workgroup made up of individuals from permitting, inspection, AML and industry was formed to develop procedures for industry and DMRM to calculate accurate estimates based on field conditions. The procedures included herein do not take the place of sound engineering judgement.

## **Performance Security Estimate Procedures**

### **General**

The Division is required to have the PSE as accurate as possible. Estimates need to be reviewed more in depth to accomplish this task. In addition, information companies provide needs to be more detailed and complete.

Standards included herein are intended to provide a more accurate estimate. These standards shall be used both by the applicant/permittee and the DMRM engineer calculating the estimate.

All permits are required to have a MPS. The MPS shall show the maximum amount of disturbance a particular mine proposes. Every pit, stream disturbance, pond constructed, etc., shall be listed. The MPS will be used to assure the permittee is disturbing only what is prescribed in the permit. It will also be used in the manner described in this document.

All estimates for permits fall into two categories, Initial Estimates and Estimate Adjustments. The Initial Estimate is the first or initial PSE calculated for a permit. Estimate Adjustments are changes in the PSE due to annual updates, permit changes or field conditions.

The initial estimate is calculated using the MPS for the entire permit. This estimate will be provided to the company to elect dependence on the Reclamation Forfeiture Fund (RFF) or to provide the full amount of reclamation costs.

After disturbance has been made, the estimate adjustments will capture field conditions which affect the true liability. For permits which rely on the RFF, the PSE will be reviewed annually, at a minimum, and adjusted throughout the life of the permit. Permits which do not rely on the bond pool shall be reviewed at least every six (6) months based on the annual date of the permit after disturbance due to the fast pace nature of mining. This will keep the estimate as accurate as possible.

Permits which have no surface affected prior to the first Estimate Adjustment, or permits which have less than ten thousand dollars (\$10,000) in reclamation liability will have the minimum ten thousand dollars (\$10,000) applied to the permit in accordance with 1501:13-7-02(C).

The PSE will be reviewed and adjusted to field conditions at the time of forfeiture. This estimate will provide DMRM a better estimate to apply for funds from the RFF.

### **Adjustments to the PSE**

Adjustments can be made at any time during the life of the permit according to OAC 1501:13-7-02(E)(3). The rule prescribes minimum times when the estimate must be reviewed. They include:

- a) When a permittee files an annual report and annual map with the chief;
- b) When a permittee files an application for revision of a permit which contains information that affects the estimated cost of reclamation;
- c) When a permittee files an application for renewal of a permit;
- d) When a permittee files additional performance security;
- e) When a permittee's operation advances into any succeeding incremental area or incremental mining unit, or begins any new operational stage;
- f) When any event occurs on or results from a mining reclamation operation, including subsidence, discharges, or contamination, diminution or interruption of a water supply, that affects the estimated cost of reclamation;
- g) When the chief issues a cessation order for failure to abate a violation for non-contemporaneous reclamation, and;
- h) When the chief issues a show cause order to a permittee to show cause why the performance security should not be forfeited.

When one of these events happens, the DMRM engineer will review the estimate. Inspection staff will be consulted and/or site reviews will be made at the discretion of the DMRM engineer. The engineer will update the estimate based on the following criteria:

1. If there are reclamation cost changes (i.e. unit cost updates), or;
2. The length of time between estimates is greater than six (6) months, or;
3. Field conditions have changed (i.e. pit sizes, ponds constructed, etc.), or;
4. The operator requests a new PSE, or;
5. At the request of the chief, inspection staff or Permitting Manager.

Estimate adjustments shall be based on field disturbances within affected areas at the time of the estimate. Other proposed disturbances that have not yet occurred will not be reflected within the PSE.

### ***Annual Permit Updates***

The PSE will be reviewed by a DMRM engineer once a year during the month of the permit's anniversary date for permits which rely on the RFF. Permits which do not rely on the RFF will be reviewed once every six (6) months based on the permit's anniversary date. (For example, a permit's anniversary is within January, the PSE will be reviewed in January and June.) The engineer will determine if a new estimate will be required based on the criteria mentioned above.

### ***Applications to Revise a Permit (ARP)***

The DMRM engineer will review the application to determine if the MPS submitted covers all information to be added or deleted. After reviewing the application, the engineer will determine if a new estimate will be required based on the criteria mentioned above.

### ***Permit Renewals, Adjacent Area Applications (AAA) and Incidental Boundary Revisions (IBR)***

Upon receipt of Permit Renewals, AAAs and IBRs, the DMRM engineer will review the application to determine if the MPS submitted covers all information to be added or deleted. After reviewing the application, the engineer will determine if a new estimate will be required based on the criteria mentioned above.

### **Line Items**

#### ***Affected Acres***

All PSEs may remove acreage that has not been affected after the first estimate adjustment. This applies to all permits whether they rely on the RFF or not.

### ***Revegetated Areas***

Areas which have been revegetated and show successful growth prior to a Phase II release shall be removed from Standard Revegetation in an estimate adjustment. Success and acreage will be determined by DMRM. If a previously approved area becomes unsuccessful and is within a yearly segment that does not have Phase III bond release, said acreage shall be added back into the PSE.

### ***Pits***

All pits proposed in the first year shall be included within the initial PSE. Pits may be removed or added to the PSE after the first estimate adjustment based on field conditions. This applies to all permits whether they rely on the RFF or not. When a PSE requires adjustment, the estimated pit size must be determined by either mapping or field measurement.

In addition to pit sizes, location of the material for backfill will be noted. Additional costs to earthwork will be added for backfill material greater than five hundred feet (500') from the center of the pit.

### ***Impoundments***

All constructed temporary impoundments or proposed impoundments to be constructed within the first year shall be included within the initial estimate. An earthwork estimate will replace the set cost per impoundment. For impoundments which have an embankment height of less than twenty feet (20') (measured from the emergency spillway to upstream toe of slope), the earthwork estimate will be calculated based on the volume of the impoundment at the principal spillway. Impoundments with embankment height of twenty feet (20') feet or greater should be evaluated on a case-by-case basis. The DMRM engineer may ask the applicant/permittee for a reclamation plan including but not limited to earthwork volumes.

Permanent impoundments may be removed from the estimate during an estimate adjustment as long as the impoundment meets the following criteria:

1. The impoundment is certified by a registered professional engineer, and;
2. The impoundment embankment has stable vegetative cover, and;
3. The impoundment is functioning as designed, and;
4. The impoundment is being maintained as planned.

If any of the criteria are not met, the permittee will have the option to correct the situation or have the estimate adjustment include reclamation of the permanent impoundment. If the permittee chooses the option to correct the situation, then the estimate adjustment shall not be finalized until work has been completed and certified by an engineer.

Any impoundment included within a Phase III bond release or which has been reclaimed shall be removed from the estimate.

### ***Streams, Wetlands, and Prime Farmland***

All stream lengths, wetlands and prime farmland acreages proposed to be disturbed in the first year disturbance shall be included within the initial estimate. Any of these items may be removed after the first estimate adjustment if not affected. This applies to all permits whether they rely on the RFF or not. The DMRM engineer will contact inspection staff and/or perform a site visit to verify field conditions. All other estimate adjustments can add or remove items based on field situations and mitigation.

Successful restoration/mitigation for streams and wetlands and replacement of prime farmland will be determined by DMRM. Any successful restoration/mitigation which becomes noncompliant at a later date and still within a yearly segment that has not been Phase III released shall be added back into the PSE.

### ***Utilities, Buildings, Roads and other Structures***

Structures (including roads) proposed to be built or utilities proposed to be affected within the first year of disturbance shall be included within the initial estimate. After the first estimate adjustment, structures not built or utilities not affected may be removed from the PSE. Permanent roads and other permanent structures may be removed from the PSE if they are in good working order and well maintained. Maintenance and function will be determined by DMRM. The permittee will have the opportunity to either fix the issue or have the structure added to the PSE. If the permittee chooses to fix the issue, then the estimate adjustment will not be finalized until the repair is completed and certified by an engineer.

## **Summary**

The procedures included herein is to provide an accurate cost estimate of the State's cost of what is disturbed in the field in the event of a forfeiture. The nature of mining requires this estimate to be conservative, but not too conservative. The workgroup decided it would be best to limit a permit's initial Performance Security Estimate based on the proposed first year's disturbance and adjust the PSE on a routine basis. For operations not relying on said fund, the procedures will provide an accurate estimate. It is up to the discretion of the DMRM engineer to adjust these procedures when circumstances arise when sound engineering judgement is required to provide better results.

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