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The Firm of Choice

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June 22, 2009

Nelson L. Kidder, P.E.
Chair – Ohio Reclamation Forfeiture Advisory Board
155 West Nationwide Blvd
Columbus, Ohio 43215

Dear Mr. Kidder:

Enclosed is our report summarizing the recently completed analysis of the Reclamation Forfeiture Fund's financial soundness. Our opinion includes both the ability of the Fund to provide capital for the current forfeiture inventory, but more importantly, regarding the ability to meet the potential future capital needs for the sites currently in various stages of the reclamation process.

During the course of our engagement, we were able to identify areas for potential future review and analysis by the Advisory Board. These areas are listed in Appendix A of the report.

I have enjoyed working with you, the other members of the Advisory Board and the staff of the Ohio Department of Natural Resources – Division of Mineral Resources Management on this assignment.

I am available to answer any questions or concerns you may have with our report.

Best regards,

Christopher S. Carlson, FCAS, MAAA
Consulting Actuary

cc: **John F. Husted, Chief ODNR- DMRM**

Analysis of the
RECLAMATION FORFEITURE FUND

Oversight by the
Reclamation Forfeiture Fund Advisory Board of Ohio

Maintained by the
Ohio Department of Natural Resources
Division of Mineral Resources Management

June 2009

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Purpose

Pinnacle Actuarial Resources, Inc. (Pinnacle) has been retained by the Reclamation Forfeiture Fund Advisory Board of the State of Ohio (the Advisory Board) to review the Fund's financial soundness with additional comments and recommendations.

Distribution and Use

This report and conclusions contained herein are being provided to the Reclamation Forfeiture Fund Advisory Board for its use in connection with our actuarial analysis of the current and estimated future Fund's liability in comparison with the current and estimated future assets. This report has been prepared to support the Advisory Board in complying with the Ohio legislation which established the Board as advisory oversight organization with respect to the Fund. The legislation also required a report be made to the Governor of the State of Ohio by the Advisory Board on a biennial basis.

We understand that copies of this report may be provided to the state auditors and other regulatory authorities along with other parties in compliance with Ohio's open records policies. Permission is hereby granted for this distribution on the condition that the entire report, including all exhibits and appendices, is distributed rather than any excerpt. These third parties should recognize that the furnishing of this report is not a substitute for their own due diligence and should place no reliance on this report or the data contained herein that would result in the creation of any duty or liability by Pinnacle to the third party.

The exhibits attached in support of our findings are an integral part of this report. These sections have been prepared so they document our actuarial assumptions and judgments. Judgments about the conclusions drawn in this report should be made only after considering the report in its entirety. We remain available to answer any questions that may arise regarding this report. We assume that the user of this report will seek such explanation on any matter in question.

Our conclusions are predicated on a number of assumptions as to future conditions and events. Those assumptions, which are documented in subsequent sections of this report, must be understood in order to place our conclusions in their appropriate context. In addition, our work is subject to inherent limitations, which are also further outlined and discussed later in this report.

Reliances and Limitations

We have prepared this report in conformity with its intended use by persons technically competent in the areas addressed and for the stated purposes only. Judgments as to conclusions, methods, and data contained in this report should be made only after studying the report in its entirety. Furthermore, we are available to explain any matter presented herein, and it is assumed that the user of this report will seek such explanation as to any matter in question.

We have relied upon data and information supplied by members of the Ohio Department of Natural Resources (ODNR) – Division of Mineral Resources Management staff including Ron Kolbash, Gregg Miller, Sue Grant, Richard Warden and Rose Mitrone.

There is a limitation upon the accuracy of these estimates in that there is an inherent uncertainty in any actuarial estimate of future costs. This is due to the fact that the ultimate liability for claims is subject to the outcome of events yet to occur, e.g., the likelihood of permit holders running into financial difficulty and default, the size and cost of reclamation, changes in the standards of reclamation and desired speed of reclamation. While there are no standard techniques for which to develop estimates for these specific issues, in our judgment, we have employed techniques and assumptions that are appropriate and the conclusions presented herein are reasonable, given the information currently available. However, it should be recognized that future loss emergence will likely deviate, perhaps materially, from our estimates.

We have relied on the data provided without independent audit or verification on the part of Pinnacle to develop our estimates of potential future reclamation cost. We also worked with the ODNR - Division of Mineral Resources Management staff to understand the operation of the Fund, the reclamation process and the underlying data provided but only to the extent such information may have affected our analysis. Due to the limited volume of data and historical information specific to the Fund, we also relied on one primary methodology to develop our estimates for the Fund. We have not anticipated any extraordinary changes to the economic, legal, or social environment which might affect the cost and frequency of default.

Our estimates are provided on net of underlying performance security (also known as performance bonds or bonds). Other than to review the ratings assigned by one of the foremost insurance company rating agencies- A.M. Best, of the providers of the performance security, we have made no attempt to evaluate the quality of security provided. Should such providers also be unable to fulfill their obligations, the Fund would be responsible for this additional reclamation cost.

Please note that for the purposes of this report, the collection dates of the various pieces are from the latest available files. While each file may have different collection dates, we did not feel that it made a material impact to cause the need to recollect as of a common point in time.

Further reliances and limitations are contained in the subsequent text, and in the exhibits accompanying the text.

Executive Summary

Based upon our analysis and use of the solvency criteria described in the actuarial report to the Fund by Milliman & Robertson in 1992, we find that the Fund is solvent on a short term basis as the current Fund assets exceed the current Fund outstanding liabilities and obligations for forfeited reclamation projects. For longer-term solvency, the measurement compares the current available Fund assets with the Fund's exposure to potential liability. However, on a long term solvency basis, we do not see the Fund as meeting that standard currently nor does our projection of revenues place it in a compliant basis for some period of time into the future. There is currently a tremendous miss match between the revenues collected and the future exposure to reclamation forfeiture for which this revenue and accumulated capital is needed. Much of the collected revenues to date have been used to cover the reclamation cost of prior forfeitures.

To further describe the situation, - if the Ohio law was changed, closing the Fund at this time to any new permits, the future expected revenues from severance tax from the operating permits currently covered by the Fund for future forfeiture potential plus the current Fund balance would not provide sufficient capital to finance the estimated reclamation cost from the 261 permits in the Fund today. In other words, the revenues collected recently have primarily been used to cover the cost of exposures created in the past and the revenues collected in the future will cover the exposures created today. Our long term solvency measure is intended to compare the current balance with the exposures currently in place in a fashion similar to the method used to judge the solvency of insurance or bonding companies.

Through the efforts of the engineers with the Ohio Department of Natural Resources (ODNR) – Division of Mineral Resources Management, we have developed an estimate of the total potential cost to reclaim all of the subject mining operations covered by the Fund. This effort had historically only been undertaken once a site had been forfeited. In

general, it should be noted that the underlying Performance Security provided through the private insurer/bonding community reduces the potential liability of the Reclamation Forfeiture Fund.

Thus, the total potential cost to the Fund is the total potential cost for all reclamation efforts less the underlying performance security. This potential Fund figure should be viewed as the maximum possible cost or the worst case scenario (although should a provider of the performance security also default, the Fund would also be obligated for the reclamation cost covered by that provider).

The Fund is involved in assuming financial risk in a type of business that is typically categorized as low frequency but very high severity when an event (default) does occur. There are 45 mining companies with permits in the state of Ohio and included in our study. Some of the operators have a single permit while other larger firms have a dozen or more permits. The largest operator has 45 coal mining permits included in the analysis. The small number of operators and the tremendous potential liability from a few of the larger operators create a significant risk to the Fund from a concentration of risk perspective. For example, should one of the single permit holders become financially unable to meet their reclamation obligations, the cost to the Fund might fall anywhere from no cost to over $1 million. On the other side of the spectrum, should one of the permit holders with a large number of sites or the operator of one of the larger slurry and coarse refuse areas become financially troubled, the cost to the Fund for reclamation could approach or exceed $5 million, with the largest potentially exceeding $100 million.

Our analysis includes the development of the Expected Cost to the Fund which is a long run average that considers both the potential of a permit holder's forfeiture along with the potential cost of that forfeiture. If the Fund was collecting "premium" from the operators for providing this financial security as do insurance and bonding companies, this Expected Cost (along with any operating expenses) would be the basis for the "premium" required from each site and operator.

Based on our analysis, we have developed a Fund Expected Cost estimate for the permits currently included in the Fund of $42.8 million. Since this estimate is significantly impacted by the probability of forfeiture assumption, for sensitivity testing purposes, if we vary that assumption by plus or minus 50 percent (for example if the probability of forfeiture is currently 1.25 the resultant adjusted probabilities would be 0.6625 and 1.875), we create a range around our estimate of $21.4 million to $64.2 million.

There are advantages that insurers have that are not available to the Fund. The most obvious advantages include the spread of risk across insureds, locations, industries and lines of business, the ability to individually underwrite and price each risk and maybe most importantly, a level of surplus (available capital) in addition to the collected premium which allows an insurer to survive years and periods where the actual costs exceed (and sometimes greatly so) the expected long run costs. In this case of actual annual costs exceeding long-term expected annual costs, the insurers have this operating capital where the Fund has been using recent proceeds to pay for the current reclamation projects that they have responsibility for before being able to begin and continue the capital accumulation process.

Ohio Reclamation Forfeiture Fund Background

The current Ohio Coal Mine Reclamation Forfeiture Fund ("the Fund") was significantly revised in 2007 by the State Legislature to provide reclamation coverage to eligible coal mine operators within the State of Ohio in addition to the required private performance security for each site. This coverage is designed to step in to provide for funding of the costs of completing the reclamation efforts at coal mining sites in the event of financial default of the permit holder. The mechanisms prior to House Bill 443 did not include a significant amount of capital or revenue for its operations but did include the responsibility for the on-going cost associated with the prior operator defaults not yet fully reclaimed. Fortunately, there were no forfeitures requiring Fund support during the 2006, 2007 and 2008 years and so far in 2009. As of the end of October 2008, there were 14 permits/sites on the list to be, or in the process of being, reclaimed under the direction of the Fund through the efforts and oversight of the Ohio Department of Natural Resources (ODNR) - Division of Mineral Resources Management.

The Fund provides additional forfeiture coverage for reclamation efforts on both underground mines and surface mines. The mine permit holders must maintain Performance Security (Bonding) coverage in the amount of $2,500 per acre of land based upon the acreage designated to be affected in the given year as allowed on the permit. The performance security can be obtained from the private insurance market or financed by some other means such as cash, self-bonding or trust agreements. The eligible mine operators who select to be reliant on the Fund pay a severance tax which varies from $0.12 to $0.16 per ton of coal extracted based upon the Fund's balance. The amount of required private performance security is determined based upon the affected acreage included on the permit issued by the Ohio Department of Natural Resources (ODNR) - Division of Mineral Resources Management. Many operators have permits that include a significant amount of land that is not currently affected by mining but the land has been included within the permit and performance security up front to eliminate the need to reapply each time mining operations commence on another parcel of land. Also, some

eligible operations, by choice or requirement, are fully covered by private performance security and not part of the "pool" operated by the Fund.

The total potential reclamation cost estimate is based upon the ODNR engineer's assessment of the approved mining and reclamation plan on the permit including any on-site processing facilities covered by the Fund. This cost estimate, commonly referred to as the Performance Security Estimate (PSE), uses unit costs derived from the historical reclamation costs of the Division of Mineral Resources Management, based on the data found in R.S. Means and yearly direct inquiries for quotes. These unit costs are applied to the approved mining and reclamation plans to assess the total potential cost in the event of forfeiture. This type of information has not previously been routinely established at the beginning of each permit operation nor reviewed annually to assess the potential cost to the Fund. It should be noted that the forfeiture coverage is provided by the Fund during the operation period of the mine and during the reclamation process.

The amount of the required Performance Security on a permit is adjusted during the reclamation process based upon the acreage affected and the underlying reclamation costs. The amount of the private Performance Security required on any given affected acre is decreased by 50 percent upon satisfactory completion of the procedure to backfill and re-grade the land (Phase 1). Another 35 percent decrease in required Performance Security is made when the land is re-planted and re-growth or re-vegetation has been satisfactorily completed in accordance with the requirements set forth in the Ohio Revised Code and Ohio Administrative Code (law and rule) (Phase 2) . The final 15 percent of the required performance security amount is typically released five years following the date of planting, if no additional action was necessary by the operator to achieve satisfactory reclamation. It should be noted that the private performance security is not related to the estimated reclamation cost but rather a fixed amount of coverage per acre affected ($2,500). As noted previously, at any site, the operator may elect not to rely upon the Fund and choose to provide complete performance security in the full amount of the estimated reclamation cost (using the same estimation methodology and unit cost values as the permits which are eligible and choose to rely upon the Fund).

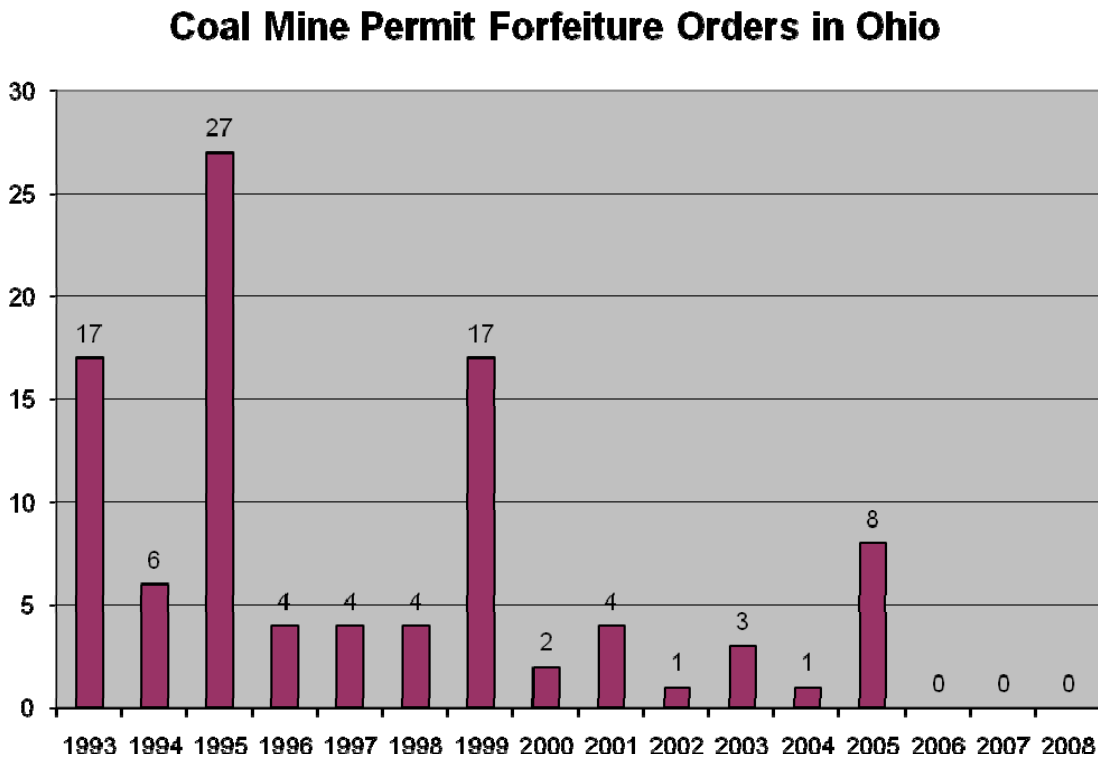
In the case of default by the operator, the private bonding company may elect to reclaim all or a portion of the site based upon the amount of performance security. The remainder of the site reclamation effort would be turned over to the Fund possibly with the performance security payment of up to $2,500 per acre depending upon the amount previously released. Each coal mine operator may have multiple active sites (permits) with affected acres at various phases at any time. This multiple permits situation is the cause of the concentration risk.

As of January 12, 2009, there were 132 active permits for coal mining operations in Ohio – all but 6 of these operations were part of the Reclamation Forfeiture Fund "Pool". There were also 144 permits with their final maps submitted to the Ohio Department of Natural Resources – Division of Mineral Resources Management - all of which are covered by the Fund.

From the data available to be included in the analysis, we had ODNR engineer's performance security estimates on 236 permits from 45 different operators of which 164 permits create potential exposure to the Fund as the PSE exceeds the performance security from bonding, letters of credits, deposits or other instruments. The operator counts have been adjusted to reflect the fact that some permit holders are subsidiaries of companies with other permit holding subsidiaries as part of one umbrella company structure. This issue is noted due to the impact this organizational structure has upon the concentration of risk influence on our estimates. If a corporation should run into sufficient financial difficulty that they default on their performance security, we have assumed that all permits under that umbrella corporation are impacted.

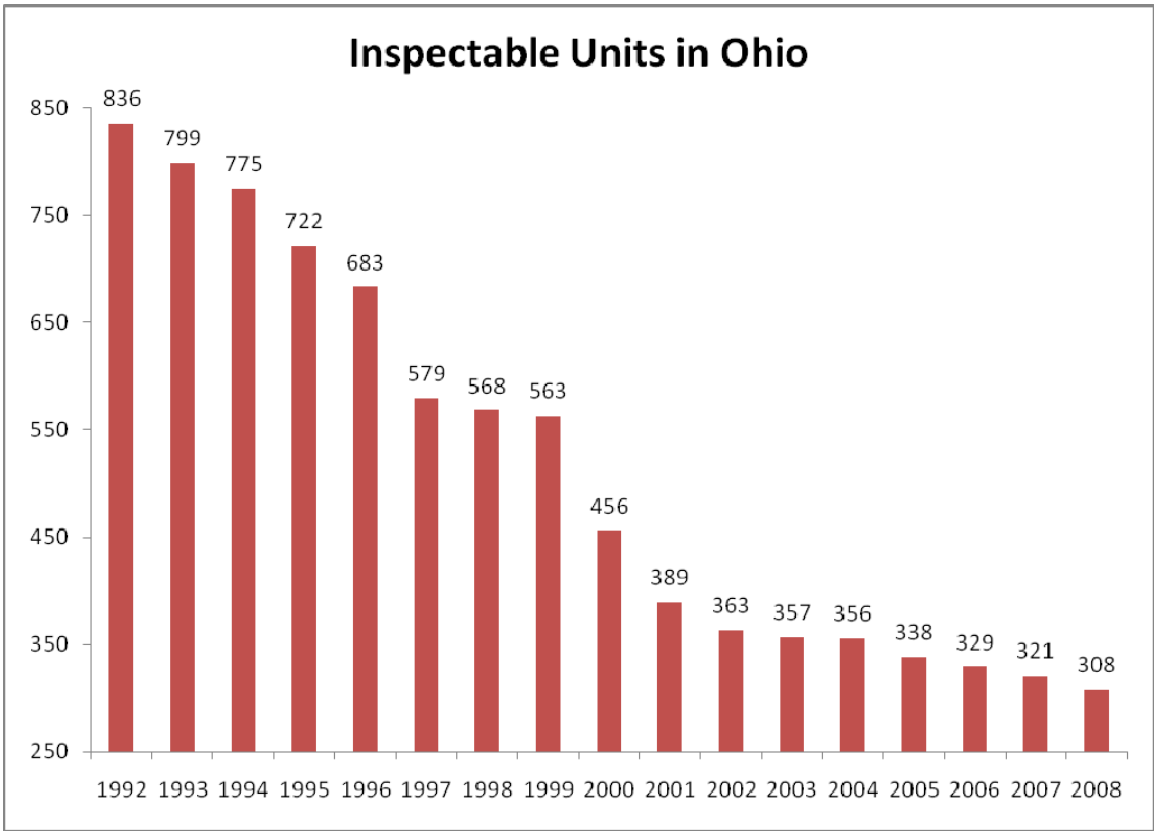
Historical Forfeitures

As background information, the ODNR has provided us with the historical forfeiture order information available from the US Department of the Interior's Office of Surface Mining (OSM); covering the past sixteen years by the year in which the order was made. From this information, we see that since 1993, there have been a total 32 permit holder forfeiture orders in Ohio on a total of 98 permits – an average of 3 permits per permit holder. The actual number of forfeiture orders per permit holder has ranged from 1 to 21 locations. Very fortunately, there have been no forfeiture orders in the past three plus years, which has allowed the Fund to cover the cost of the reclamation of these previously forfeited locations as well as to begin the process of accumulating operating capital to cover potential future forfeitures. A complicating issue with this capital accumulation process has been the insolvency of one of the performance security providers for two of the permit holders – one of which had a large number of permits.



From this historical forfeiture order data, we see that over the available sixteen year period, the forfeiture order annual frequency on a permit holder basis has been roughly two per year. The permit forfeiture annual frequency over the sixteen year available period has been roughly six. We note that since 2000 the annual frequency has declined to slightly more than two. We also note that although forfeiture orders have been made on eight permits in 2005, the Fund has not been called upon to provide capital on seven of the eight sites as of this report.

Over the period of time 1992 through 2008, there have been anywhere from 836 to 308 inspectable units in Ohio from the data and number of years available from Office of Surface Mining records. The number of inspectable units in Ohio over the seventeen year period is displayed in the chart below.



In any one calendar year, the forfeiture data combined with the inspectable unit data would show that the annual rate of forfeiture per unit is 1.2 percent, with most falling within the range of 0 to 3.7 percent.

While previous to the period of time with available data on forfeiture order and inspectable units from the OSM, we were also provided with forfeiture information compiled by the ODNR back to 1989 which showed activity during 1989 to 1992 at the same levels as the 1993 to 1995 period.

The Fund not only has exposure to potential forfeiture during the specific year in which the permit is issued, as is the case with an annual insurance policy, but that exposure continues until the completion of the full reclamation process. If we assume that the life span of a permit from issuance to completion of Phase 3 of the reclamation process is 10 years, this would result in forfeiture rate per permit of more than 10%. This is the case if we assume that in each year the probability of forfeiture is one percent. A one percent probability compounded over 10 years (1.01 to the 10^{th} power = 1.1046) would be slightly more than 10 percent.

These are very rough frequency calculations and should not be taken as solid or absolute estimates of the past or future rates, but they do provide a relative frame of reference. Estimating frequencies from the available permit and forfeiture data is equivalent to attempting to estimate the school drop-out rate by comparing the annual number of drop-outs with the annual enrollment figures. Many students would be included in the enrollment numbers in each of the 12 years they attend school but each student is really one exposure over many years.

We note that the historical forfeiture information was not specifically relied upon as the analysis has attempted to reflect the current financial situation of the current permit holders which may be significantly different from the operators in the past – especially those operators which have forfeited.

Analysis Overview and General Comments

For the current 261 permits covered by the Fund, we have developed estimates of:

- **the total *potential* cost to reclaim all of the subject mining operations** and
- **the total *expected* (or long term average) costs**

by using site specific reclamation estimates by the engineers with the Ohio Department of Natural Resources– Division of Mineral Resources Management in combination with available financial information regarding the current permit holders to estimate the probability of forfeiture over the lifetime of the permit. The engineering estimation effort had historically only been undertaken by the ODNR-DMRM once a site had been forfeited in preparation for the reclamation of that forfeited site. The estimates are adjusted within the analysis to reflect the reported site operating situation with respect to the various stages of mining and reclamation.

In our estimation, we have reflected that underlying performance security provided through the private insurer/bonding community reduces the potential liability of the Reclamation Forfeiture Fund. Thus, the total potential cost to the Fund is the total potential cost for all reclamation less the underlying performance security. This Fund potential cost figure should be viewed as the maximum possible cost or the worst case scenario (although should a provider of the performance security also default, the Fund would be obligated for the reclamation cost covered by that provider).

Our analysis begins with the estimates of total reclamation cost per site for a large majority of the 261 permits in the Fund along with the performance security available for those sites. For the 236 permits included in the analysis, the total engineer estimated reclamation cost of $548.5 million is reduced by $145 million to reflect the permitted acres not yet affected and over $47.4 million from available performance security resulting in a total potential Fund liability of $356.1 million. These figures would be considered worst case scenario if each and every operator would forfeit their permits.

In order to reflect that likelihood of forfeiture by the permit holder, we have obtained some publically available financial information about the firms holding mining permits through sources such as Standard & Poors and Dun and Bradstreet. This information was used to estimate the probability that operator would encounter financial difficulties such that the Fund would be called upon to assume their covered cost of the reclamation projects for each site and firm. The combination of the potential cost and probability that the Fund will be called upon assists in the development of the *Expected* Cost to the Fund. This Expected Cost being a combination of the possible cost and the long run probability of default or forfeiture could be considered the long run average cost of future forfeitures to the Fund. If the Fund was collecting "premium" from the operators for providing this financial security as do insurance and bonding companies, this Expected Cost (along with any operating expenses) would be the basis for the "premium" required from each site and operator.

Based on a number of estimates and assumptions along with the information from 236 permits within the Fund (including 10 slurry and coarse refuse area permits), we have developed an estimate of the Expected Cost for those sites of $40.0 million. Expanding this estimate to reflect the estimated cost for all of the 261 sites currently in the Forfeiture Program, we have developed a total Fund Expected Cost estimate of $42.8 million.

Actuarial Analysis

As described briefly above, the objective of our analysis is to measure the Expected Cost to the Fund of the current operating mines and all facilities currently in various phases of reclamation, whether currently in forfeiture or not.

Data

We have been provided with the following information by permit for a subset of all permits in an Excel spreadsheet format:

1. The Performance Security Estimate which is the ODNR engineer's assessment of the cost to reclaim the site based upon the approved mining and reclamation plan (described more fully later in this report)

2. The Performance Security on-hand in total for each site along with the amounts separated into the three phases of the reclamation process (also described more fully in a later portion of the report)
3. The distribution of acres on the permitted site between the three Phases of operation.
4. The Operator name by permit
5. The provider of the performance security by permit.

It should be noted that of the 261 permits covered by the Fund, we were provided with completed estimates on 226 mining permits with an additional 10 estimates for large slurry and coarse refuse permitted areas. Therefore, there are only twenty-five permits of any type not included in the underlying analysis data or less than 10 percent of the total number of permits.

For each operator included in the study data, we have attempted to reflect their current financial situation in the estimation of the probability of forfeiture. This financial information plays a role in assigning the probability of default/forfeiture - both in the next year and into the future. We have relied upon data from Dun and Bradstreet (DnB) and Standard & Poors (S&P) as described in more detail later in the report. For the sites not included in the study, we have assumed an average default rate similar to the rates in the study sample.

Thus, we have performed our analysis on a subset or sample of all of the permits and sites for which the Fund is obligated to respond if forfeiture should occur prior to completion of the reclamation of a site.

Performance Security Estimate Groupings

We had PS estimates provided by the ODNR engineers in the following two categories:

A. Permits that have an approved Final Map and coal extraction is completed
B. Permits that do not have an approved Final Map and may still be extracting coal.

The first category, permits with Final Maps, requires no additional adjustment prior to application of the default probabilities in the development of the estimated exposure assumed by the Fund. The second category requires an additional adjustment to account for the typical situation where the PS estimate has assumed all acres proposed to be affected on the permit will require reclamation when, in some cases, only a portion of the land proposed to be affected has been disturbed during the mining process. We have utilized the historic relationship of affected-to-permitted supplied by the ODNR engineers from their work on PSE development of each of the Performance Security Estimates in Category B as an estimate of the affected–to-permitted relationship of our study sample. The following displays the distribution of affected-to-permitted acres used in the study.

Affected-to-Permitted	
Ratio	Permits
0 to 24%	12
25 to 49%	18
50 to 60%	20
60 to 70%	14
70 to 80%	59
80 to 90%	18
90 to 99%	4
100%	2
Total No Final Map	147

Performance Security (Bond) from Insurers

We then compared the estimated total cost of site reclamation developed in the prior step against the amount of performance security on hand and available if a forfeiture should occur as provided from the ODNR- Division of Mineral Resources Management data base (Central Tracking System - CTS) files. The amount by which the estimated total site cost exceeds the performance security for the site is the amount of potential cost to the Fund. In some cases, the Fund has no additional liability. These cases are either sites that are truly not included in the Fund or sites where the permitted acres and the subsequent performance security required exceeds the reclamation cost estimate. In other cases, the Fund retains a very significant amount of potential reclamation cost.

Based upon the amount of Performance Security on hand from the ODNR data base (CTS) for each site in each of the three phases, we have allocated the total estimated reclamation cost to each of the reclamation phases. This step is necessary to reflect the fact that the probability of default increases with the passage of time. For example, if a portion of the site is in the 5-year maintenance period, there may be roughly five years left of potential failure until full release of the permit and performance security is likely. It may be 15 or more years for a newly opened mining operation (at the start of Phase 1) to reach the fully completed reclamation process and the exposure to the Fund declines to zero and the private performance security is also released.

As noted previously, when comparing the Performance Security Estimate with the actual Performance Security on hand, there are a number of sites where the Performance Security on hand is greater than the Performance Security Estimate. Of the 236 permits in the analysis, 72 permits or slightly more than 30 percent fall into this category and contribute zero dollars to our estimated potential and estimated expected Fund costs. In these cases, the Fund would have no reclamation liability in the case of operator default (and may even benefit should the provider pay the full Performance Security to the Fund). But we understand that the Fund still could have some potential liability, if the provider of the Performance Security should become insolvent prior to fulfilling their obligation. This situation has recently occurred on a number of forfeited sites in Ohio.

The following table provides the five largest permit holders along with the total of all permits included in the study, based on the estimate of the potential reclamation cost:

Estimated Performance Security and POTENTIAL Fund Cost by Permit Holder				
Rank based on Potential Fund Cost	**Performance Security Estimate**	**Estimated Potential Fund Cost**	**Potential Fund Cost** % of Sample	**Potential Fund Cost** % of Est. Total
Largest	$114,761,000	$111,101,600	31.2.	29.4
Second Largest	79,016,000	62,739,800	17.6	16.6
Third Largest	141,996,500	61,776,000	17.3	16.3
Fourth Largest	33,695,000	32,358,500	9.1	8.6
Fifth Largest	27,421,000	16,583,600	4.7	4.4
Total of Top Five	396,889,500	$284,559,500	79.9	75.3
Rest of Study Group	151,365,000	71,566,100	20.1	18.9
Study Total	**548,494,600**	**$ 356,125,600**	100.0%	94.1
Non Study Estimate	*43,432,600*	*$22,152,800*		*5.9*
Est. Fund Total	**591,927,200**	**$378,278,400**		100.0%

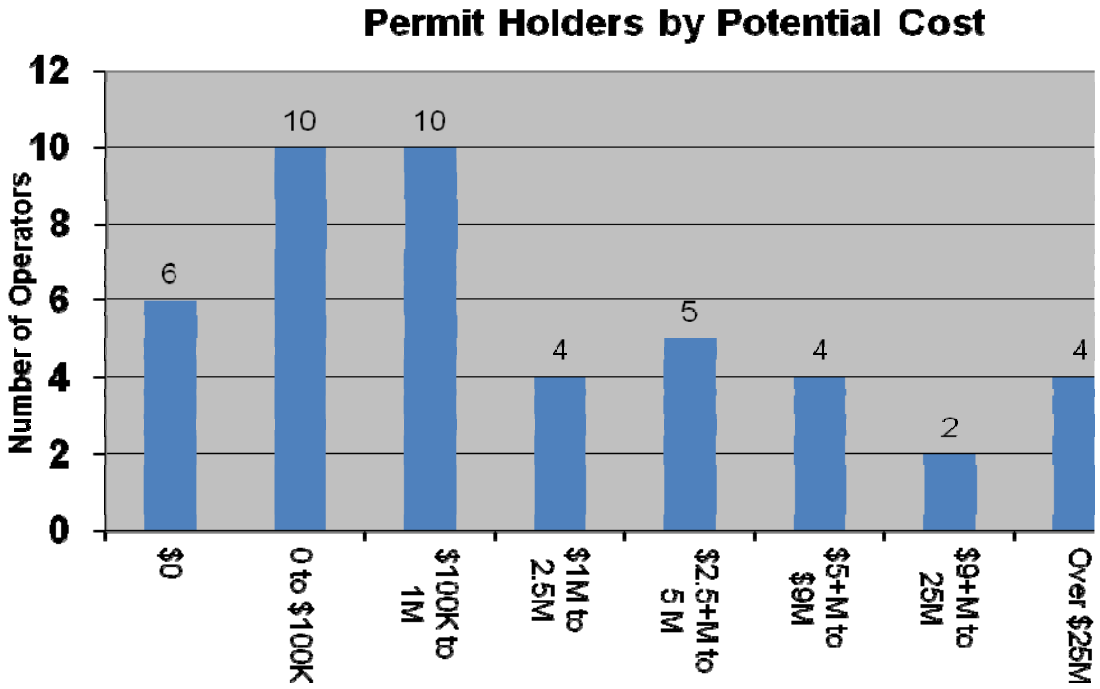
There are 6 permit holders (and a total of 72 permits) with performance security (bond, letter of credit, deposit, etc.) in excess of the PSE and thus currently present no net liability to the Fund. The average potential cost of a permit holder forfeiture of the operators and sites included in the study is over $9 million ($351 million divided by 39 operators with exposure to the Fund). As can be seen in the following chart, a majority of the operators have potential costs less than the average of $9 million. Comparing the potential cost as obtained from the engineers at the ODNR and adjusted for the available performance security with the number of permits included in our analysis with potential cost to the Fund (164), we develop the average potential cost of a forfeited permit of approximately $2.1 million. While this average may seem somewhat high, there are 6 permits for which the potential cost from forfeiture would exceed $10 million with two of those permits exceeding $25 million. These permits contribute over $100 million to the $351 million total for all permits in the analysis. Also worthy of mention, in the 226 permits there are three permits from underground mines with the remainder being surface

mining operations. The total PSE costs excluding any associated slurry and coarse refuse areas estimated separately from the three underground sites is $2.3 million with the potential cost to the Fund from the extracting areas only estimated to be slightly less than $1 million

The $356.1 million in potential cost from the permits in the study are spread across the three phases of reclamation as follows:

- Phase 1 $87.6 million
- Phase 2 $71.1 million
- Phase 3 $41.6 million
- Slurry and Coarse Refuse $155.9 million

These figures have significance as the permitted acres in phases 2 and 3 are no longer contributing revenue to the Fund but will continue to be an exposed potential cost to the Fund. We acknowledge that there may be sections with the permitted area which are still extracting coal and thus the permit is contributing to the Fund but we have separated each permit into these sections for analysis purposes.



Estimated Operator Financial Strength – Potential for Future Default

Since the Fund will only be called into to financially support a reclamation effort if the permit holder should no longer have the financial resources to complete the effort, we need to consider the probability of forfeiture or financial default of the permit holder/operator. To reflect this financial capacity of the permit holder, we have obtained information from the financial rating agencies of Standard & Poors (S&P) and Dun and Bradstreet (DnB). We found a majority of the information for the smaller permit holders on the DnB site with the information on the larger parent companies available through S&P. From these services we have obtained the rating assignments and the rating agency's probability estimates of default/forfeiture by these firms in the near future. We have relied upon these probabilities as developed by Standard & Poors and displayed in their report - *S&P Annual Global Corporate Default Study and Rating Transitions.* The time horizon for potential forfeiture varies based upon the reclamation phase determined by the ODNR – Division of Mineral Resources Management. For the sections of the permits currently within Phase 1, we used the longest period available – fifteen years. For the sections of the permits currently within Phase 2, we used an eight year time horizon and for the sections of the permits currently within Phase 3, we have used five years as the appropriate time horizon. Please note that the underlying exposure to the Fund declines when a section goes from one Phase to the next. For example, Fund exposure for the sections currently in Phase 1 declines by 50 percent after seven years and by 35 percent (to 15 percent of the initial exposure) after another 3 years.

Based upon the financial information available and the financial rating of the operators, a majority of the operators fell into one group (Group 1 below).

There were a limited number of operations/sites which fell into Groups 2 and 3. We have used the following annual (percentage) probabilities of default in developing the estimated expected cost to the Fund:

Annual Probability of Forfeiture			
Year	**Group 1**	**Group 2**	**Group 3**
1	1.25	0.23	2.53
2	2.38	0.31	4.33
3	2.56	0.31	3.97
4	2.42	0.54	3.33
5	2.07	0.55	2.38
6	1.94	0.51	1.78
7	1.52	0.47	1.59
8	1.44	0.51	1.36
9	1.18	0.43	1.14
10	0.89	0.49	1.13
11	0.80	0.54	0.96
12	0.63	0.42	0.76
13	0.64	0.46	0.78
14	0.43	0.18	0.79
15	0.39	0.36	0.68

The Group 1 default probabilities are an average of the S&P cumulative average default rates for the BB and BB- categories which matches well with the DnB single year probability of default for a Financial Stress Class 1 firm with a low probability of default. The Group 2 figures are based on an S&P rating of BBB while the Group 3 annual probability figures are based upon an S&P rating of B+.

Development of the Estimated Expected Cost – Study Group of Permits

By combining the potential cost to the Fund information with the probability of forfeiture by permit and operator parent company over the entire exposure period based upon the current distribution by Phase, we develop an estimate of the expected cost for each permit. This expected long run cost estimate by permit is then summed by parent company and for the Fund in total as summarized in the chart below. An example of the data and the calculation from performance security estimate through the adjustment for performance security to the estimation of the exposure by Phase and the application of the forfeiture probabilities and the resultant expected cost of the permit is displayed in Attachment C.

Reflection of Slurry and Coarse Refuse Areas with the Study Data

For the 10 slurry and coarse refuse area permits, we were provided the estimates fairly well along in the analysis but due to the relative size of the potential cost of these sites, we felt the need to include a reflection of this exposure within the estimates. We have assumed that the relationship between the potential cost of forfeited permits as reflected in the PSEs minus the performance security and the expected cost as developed from the application of the probabilities of default for the portions of the 226 permits in the course of phases 2 and 3 of reclamation apply to the slurry and coarse refuse estimates. As such, we compared the estimated expected cost for the 226 sites in phases 2 and 3 of roughly $10.9 million with the potential Fund cost for the portion of the sites in those phases of $112.7 million which is a 9.6 percent relationship. When this relationship is applied to the PSE of $155 million plus for the 10 slurry and coarse refuse areas, the estimated long term expected cost is slightly less than $15.0 million.

Estimated Expected Cost – All Permits in the Study

Accumulating the expected cost estimates for all of the sites included within the sample results in our total estimated expected cost to the Fund for the sample. Since there are a number of sites that would be potentially impacted by a single large company becoming financially troubled, we have also developed estimates by permit holder as well as individual permit. Again, we are reflecting the assumption that if a permit holder should forfeit one permit that all permits for that entity would simultaneously be forfeited.

Thus, in the case of the forfeiture risk borne by the Fund, there is significant correlation between the default probabilities of various permits. On the other hand, it should be noted that we have not made any adjustment for any spread of risk between the various permit holders as the concentration risk is much more significant.

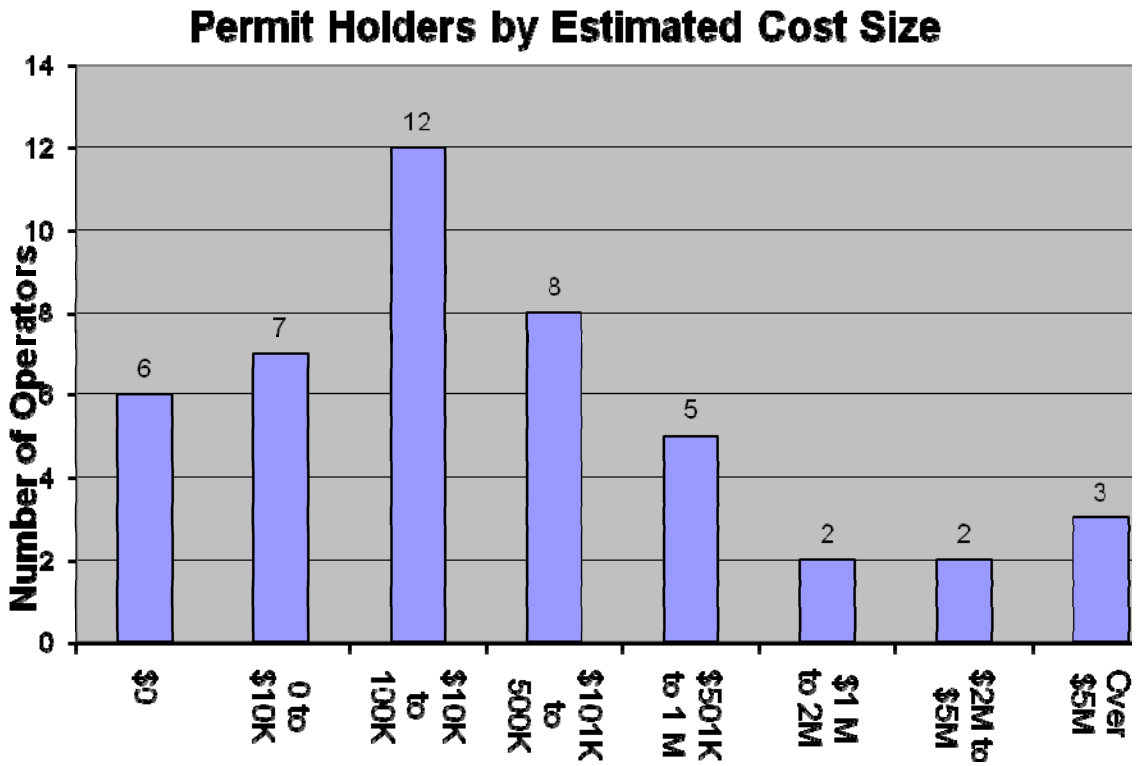
Below, we provide the estimated expected cost for the top five permit holders in terms of total expected cost to the Fund:

Estimated *EXPECTED* Fund Cost by Permit Holder			
Rank		% of Sample	% of Est. Total
Largest	$10,512,100	26.2	24.5
Second Largest	7,796,100	19.5	18.2
Third Largest	7,775,800	19.4	18.2
Fourth Largest	3,162,300	7.9	7.4
Fifth Largest	2,083,700	5.2	4.9
Total of Top Five	$31,330,000	78.2	73.1
Rest of Study Group	$8,734,500	21.8	20.4
Study Total	**$ 40,064,500**	100.0%	93.5
Non Study Estimate	*$2,776,700*		*6.5*
Est. Fund Total	**$ 42,841,200**		100.0%

As can be seen, the estimated expected Fund cost at the permit holder level for those permits in the study ($40.1 million) is significantly less than the estimated potential Fund cost from the permit holder forfeiture ($356.1 million) as shown in a previous chart. This difference in these figures can be thought of as being similar to the difference between the insured value of a home (potential cost) and the annual premium to insure the home against a multitude of potential losses over the many years of occupancy (expected cost).

The $40.1 million in expected cost form the study group is also spread across the three operational phases as follows:

- Phase 1 $14.2 million
- Phase 2 $6.4 million
- Phase 3 $4.5 million
- Slurry and Coarse Refuse $15.0 million



From the Sample's Estimate to the Total Fund Estimate

In order to move from our estimate of expected cost of our study sample to the complete exposure of the Reclamation Forfeiture Fund, we need to reflect the expected cost from the limited number of permits not included within the study data. Our study sample included 226 permits with exposure to the Fund (excluding the 10 slurry and coarse refuse area permits). Using the number of permits and our estimated expected cost from the study sample, we get an average estimated expected cost per permit of roughly $111,000. There are 25 additional permits included in the Reclamation Forfeiture Fund Program. If we use the average estimated expected cost per permit from the study and combine that cost with the number of additional sites, we can develop an estimate of the expected cost of the Fund from active permits. This figure is roughly $2.8 million.

Cost of Forfeited Sites Currently in Reclamation Forfeiture Fund

An additional step is required when reviewing the financial condition of the Fund. We need to account for the sites included in the inventory of forfeited permits that are currently the responsibility of the Fund.

There are presently 14 reclamation projects in the inventory for which the reclamation cost as estimated by the ODNR engineers totals $1.675 million. To assist in offsetting the reclamation cost, the Fund has been able to collect $193,000 in performance security bond on these permits, leaving a liability of $1.48 million for the Fund. This amount of performance security collection would have exceeded $1.255 million if not for the insolvency of Frontier Insurance Company which provided performance security for six of the 14 sites with protection exceeding $1 million.

Potential Cost to the Fund from Bond Company Default

Since the Fund would be responsible for the full cost reclamation of forfeited sites in the case of an insolvency of a performance security provider, we have attempted to roughly estimate the potential long term cost of this exposure to the Fund. As this is the case with a number of sites currently in the reclamation inventory, this possibility is not as unrealistic as might have been imagined previously. In order for the Fund to be obligated to provide reclamation coverage, there would need to be forfeiture by the permit holder and an insolvency of the bonding company for that permit holder. Since the Performance Security provided by the bonding company needs to be renewed on an annual basis, the Fund's exposure is contained to a period of roughly 12 months rather than across the full life of the permit. The Fund management can require the replacement of a PS provider in the event of an interim insolvency or ratings change. The Ohio Revised Code allows up to 12 months for the operator to replace the coverage provided by an insolvent surety.

If we assume the probability of forfeiture by a permit operator in any one year is the average of the Group 1 default rates listed previously (1.37 percent) and the probability of the insolvency of a performance security provider is equal to the default rate for a company with a Standard & Poors Rating of A over a two year time horizon (0.18

percent), the combined probability of default of both the permit holder and the provider of performance security is 1.37 times 0.18, or .0025 percent. When compared with the Bond on Hand from CTS for the sites in the Study ($54.5 million), we develop an expected cost of a little more than $1,300. Grossed up for the sites not included in the study (roughly $1,500), this figure does not appear to be necessarily very material to the total Fund expected cost.

But it should be noted that as has actually been seen in the event of an actual situation where both the permit holder AND the performance security provider are unable to meet their obligations with respect to the completion of the reclamation, the actual cost of a provider of performance security to the Fund can be significant and material.

Total Reclamation Forfeiture Fund Estimated Expected Cost

Combining the estimated expected cost from the permitted sites including the slurry and coarse refuse areas of $42.8 million with the estimated net cost for the reclamation cost of the sites already in forfeiture of $1.5 million, we calculate a future estimated cost for the Reclamation Forfeiture Fund of $44.3 million.

Reclamation Forfeiture Fund Operating Expenses

There are various expenses related to the Fund operation including services provided by ODNR personnel, travel cost reimbursements of Advisory Board members, external consulting costs, etc. The ODNR has provided an estimate of the annual Fund operating expenses of around $400,000. This estimate assumes the cost to the ODNR related to Fund operation both in the forfeited reclamation and regular oversight, the need for a periodic update to this type of analysis, the need to update the PSEs on a routine on-going basis, and the need for the Advisory Board to meet periodically to discuss critical issues related to the financial operation of the Fund.

Financial Capacity of the Fund

The capital available to operate the Fund is generated revenues from the severance tax on the covered permit holders based upon their coal production. As explained in other sections of the report, this revenue is not directly related to the liability assumed / forfeiture protection provided by the Fund to the operators nor does it reflect the different financial capacity of each permit holder to fulfill their obligations to complete the land reclamation process. As opposed to an up-front premium payment required by the providers of the underlying performance security, the Fund is charging the operators to build capital on an as-you-go basis. The collections from today need to cover the exposure from the past as well as provide some capital accumulation for covering current sites in the future.

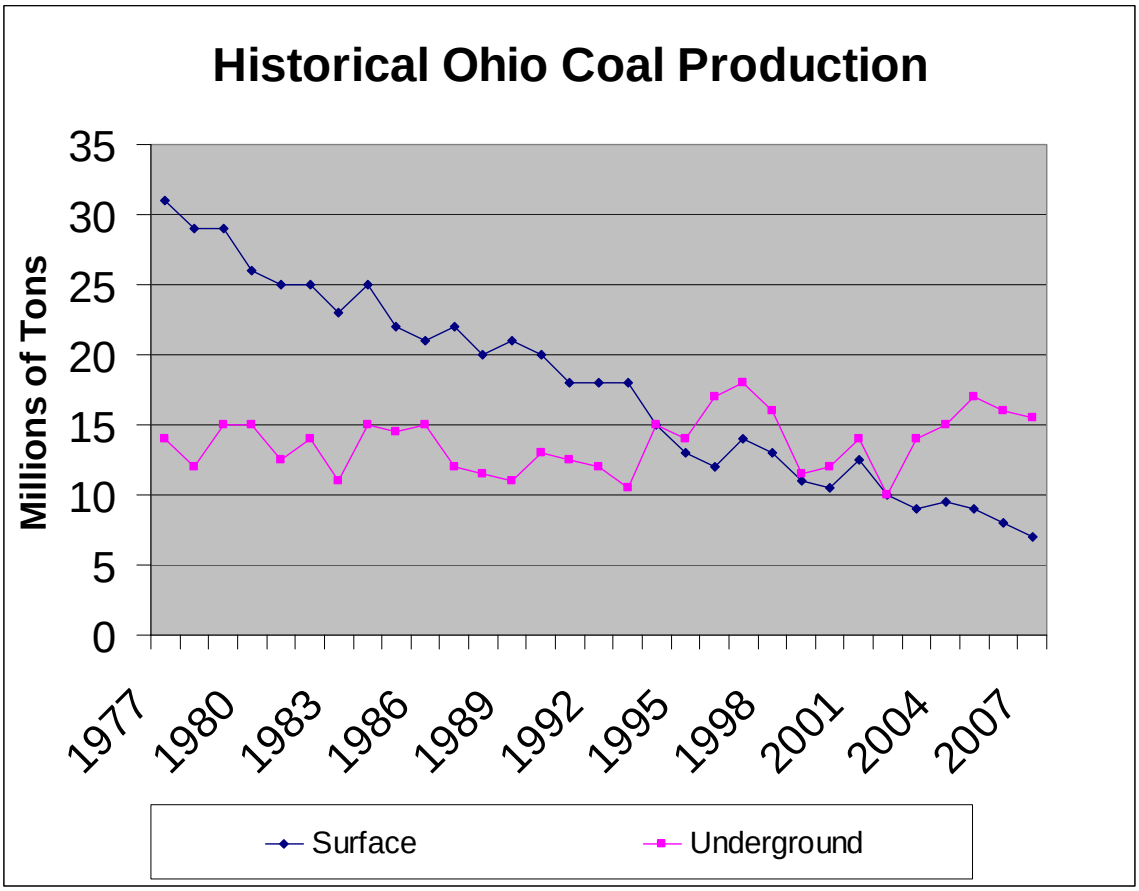
The dynamic nature of the process whereby portions of the permitted sites move from Phase 1 to Phase 2 to Phase 3 over time add a complicating feature to any analysis or comparison of future revenue with either future expected or future potential costs. Any increase in mining operations will result in both an increase in revenue and an increase in potential cost to the Fund. Similarly, declines in mining operations will result in decreased revenue and decreased exposure to the Fund. Since the Fund retains responsibility for forfeited reclamation projects in the years following the cessation of mining operations, the exposure to the Fund remains after the revenue to the Fund has ceased.

Future Coal Production Projection

Based upon historical coal production figures developed by the US Department of Interior – Office of Surface Mining (OSM) provided to us by the Ohio Department of Natural Resources, we have reviewed the statistics in order to project the future coal production and thus the severance tax revenues that could be anticipated by the Fund. The long term coal production over the past thirty years in the State has been declining at a somewhat steady rate. In total, the amount of coal extracted in 2007 was roughly half the amount in 1977. This production decline is primarily due to the amount of coal

extracted from surface mines which has dropped from 31 million tons in 1977 to 7 million in 2007. This decline in surface mine coal extraction has been fairly steady over the period.

In contrast, the coal extraction from underground mines has been steadily but very gradually increasing. Currently, the coal production from the smaller number of underground mining permits is roughly 15.5 million tons or roughly twice the amount extracted from surface operations annually.



Based upon the historical production levels shown in the graph above and the recent annual rates of change in production, one might anticipate, in the short term, a 10 percent annual decline in surface mine production and a 0.5 percent annual increase in extraction from underground mines. Using these changes in production over a 20 year time horizon, we might anticipate future annual coal production to decline from about 22 million tons

to about 18 in the coming years or roughly 19 percent in total during a 20 year time horizon. This is close to a 1 percent annual compounded rate of decline. (18 divided by 22 to the 20th root).

Ohio Coal Production (Scenario 1)

Projected Production (in millions of tons)			
Year	**Surface**	**Underground**	**Total**
2009	5.7	15.7	21.4
2010	5.1	15.7	20.8
2011	4.6	15.8	20.4
2012	4.1	15.9	20.0
2013	3.7	16.0	19.7
2014	3.3	16.1	19.4
2015	3.0	16.1	19.1
2016	2.7	16.2	18.9
2017	2.4	16.3	18.7
2018	2.2	16.4	18.6
2019	2.0	16.5	18.5
2020	1.8	16.5	18.3
2021	1.6	16.6	18.2
2022	1.4	16.7	18.1
2023	1.3	16.8	18.1
2024	1.2	16.9	18.1
2025	1.1	17.0	18.1
2026	1.0	17.0	18.0
2027	0.9	17.1	18.0
2028	0.8	17.2	18.0
2029	0.7	17.3	18.0

The per ton based severance tax rate is predicated upon the Fund balance from the prior year-end according to the following chart:

Fund Balance	Rate per Ton of Coal
Less than $5 Million	$0.16
Between $5 and $10 Million	$0.14
In excess of $10 Million	$.012

The levels of estimated production along with the severance tax rates would generate between $2.1 and $3.4 million in annual operating capital for the Fund.

As attempting to project annual coal production over a 20 year period using one or two trend selections is subject to many possible issues from the time frame and other related impacts to the industry, in order to display the sensitivity of the estimated coal production and subsequently the potential future tax revenues, we have also created two additional scenarios at the request of the Fund's Advisory Board. Scenario 2 assumes that the current level of surface mine production (7.0 million tons) continues level over the next 20 years while the underground production increases by 0.5 percent annually.

Ohio Coal Production (Scenario 2)

Projected Production (in millions of tons)			
Year	**Surface**	**Underground**	**Total**
2009	7.0	15.7	22.7
2010	7.0	15.7	22.7
2011	7.0	15.8	22.8
2012	7.0	15.9	22.9
2013	7.0	16.0	23.0
2014	7.0	16.1	23.1
2015	7.0	16.1	23.1
2016	7.0	16.2	23.2
2017	7.0	16.3	23.3
2018	7.0	16.4	23.4
2019	7.0	16.5	23.5
2020	7.0	16.5	23.5
2021	7.0	16.6	23.6
2022	7.0	16.7	23.7
2023	7.0	16.8	23.8
2024	7.0	16.9	23.9
2025	7.0	17.0	24.0
2026	7.0	17.0	24.0
2027	7.0	17.1	24.1
2028	7.0	17.2	24.2
2029	7.0	17.3	24.3

Again, based upon the tax rates, future annual revenues from the severance tax would vary from $2.8 million to $3.6 million.

Production Scenario 3 assumes that the surface mine production decreases by 10 percent in 2008 and by 2009, 9 percent in 2010, by 8 percent in 2011 and by 7 percent in 2012,

by 6 in 2013 and so forth until 2019 and beyond where no further annual change is included.

Ohio Coal Production (Scenario 3)

Projected Production (in millions of tons)			
Year	**Surface**	**Underground**	**Total**
2009	5.7	15.7	21.4
2010	5.2	15.7	20.9
2011	4.8	15.8	20.6
2012	4.5	15.9	20.4
2013	4.2	16.0	20.2
2014	4.0	16.1	20.1
2015	3.8	16.1	19.9
2016	3.7	16.2	19.9
2017	3.6	16.3	19.9
2018	3.6	16.4	20.0
2019	3.6	16.5	20.1
2020	3.6	16.5	20.1
2021	3.6	16.6	20.2
2022	3.6	16.7	20.3
2023	3.6	16.8	20.4
2024	3.6	16.9	20.5
2025	3.6	17.0	20.6
2026	3.6	17.0	20.6
2027	3.6	17.1	20.7
2028	3.6	17.2	20.8
2029	3.6	17.3	20.9

With Scenario 3, based upon the tax rates, future annual revenues from the severance tax would vary from $2.4 million to $3.4 million.

Based upon the various projections of future coal production in the three scenarios provided, we have developed the following table that displays the estimated revenue from the severance tax that would be generated by these production levels with the added assumption that all coal producers would participate in the Fund. We provide the estimates at the three tax rates currently included in the statute.

Ohio Reclamation Forfeiture Fund

Potential Reclamation Fund Revenue Projection

Coal Production	Expected Severance Tax Rates		
millions of tons	$0.12 per ton	$0.14 per ton	$0.16 per ton
18.0	$ 2,160,000	$ 2,520,000	$ 2,880,000
18.3	$ 2,196,000	$ 2,562,000	$ 2,928,000
18.6	$ 2,232,000	$ 2,604,000	$ 2,976,000
18.9	$ 2,268,000	$ 2,646,000	$ 3,024,000
19.2	$ 2,304,000	$ 2,688,000	$ 3,072,000
19.5	$ 2,340,000	$ 2,730,000	$ 3,120,000
19.8	$ 2,376,000	$ 2,772,000	$ 3,168,000
20.1	$ 2,412,000	$ 2,814,000	$ 3,216,000
20.4	$ 2,448,000	$ 2,856,000	$ 3,264,000
20.7	$ 2,484,000	$ 2,898,000	$ 3,312,000
21.0	$ 2,520,000	$ 2,940,000	$ 3,360,000
21.3	$ 2,556,000	$ 2,982,000	$ 3,408,000
21.6	$ 2,592,000	$ 3,024,000	$ 3,456,000
21.9	$ 2,628,000	$ 3,066,000	$ 3,504,000
22.2	$ 2,664,000	$ 3,108,000	$ 3,552,000
22.5	$ 2,700,000	$ 3,150,000	$ 3,600,000
22.8	$ 2,736,000	$ 3,192,000	$ 3,648,000
23.1	$ 2,772,000	$ 3,234,000	$ 3,696,000
23.4	$ 2,808,000	$ 3,276,000	$ 3,744,000
23.7	$ 2,844,000	$ 3,318,000	$ 3,792,000
24.0	$ 2,880,000	$ 3,360,000	$ 3,840,000
24.3	$ 2,916,000	$ 3,402,000	$ 3,888,000

We caveat these estimates by stating that we assume the demand for coal from Ohio's mines continues at a level such that the cost of extracting the coal is economically advantageous to private entities. These assumptions are less certain the further out in the time horizon one goes. Another important assumption is that the supply of coal is more or less unlimited and thus the revenue to the Fund is not constrained or limited over the time horizon.

Current Fund Balance

The Fund, with the inventory of previously forfeited sites to reclaim, is in the process of collecting the revenue to slowly build up sufficient capital to provide for the costs of the forfeited reclamation projects underway in addition to providing for future potential reclamation projects. The balance in the Fund as of March 2009 was approximately $3.7 million. This capital is increased from $2.1 million as of June 2008. Tax collections and other transfers to the Fund over the past nine months have totaled $2.6 million while expenditures have been slightly more than $1 million. From the current Fund balance, we need to subtract the outstanding reclamation cost for the 14 sites currently the responsibility of the Fund to develop a capital value. Subtracting the previously mentioned $1.48 million in outstanding liability from the current $3.7 million Fund balance, we end up with an estimate of the current capital position of the Fund of roughly $2 million.

Investment Rate of Return

In addition to the revenue received from the "severance tax", the capital funds will be invested by the State Treasurer in conservative instruments. Based upon data during the current state fiscal year, the recent investment returns have been in the 3.5 percent range as the Fund's capital is invested along with all of the other State investments and the returns are allocated back to the Reclamation Forfeiture Fund's account. This investment income opportunity should be included in the projection of possible Fund financial levels. Based upon the current investment situation, we have assumed that the current returns are slightly less than those seen more historically and will continue for the next couple of years before rising gradually over time to reach a 5 percent long term expected return level.

The following table displays anticipated investment opportunities:

Year	Investment Return
2009	2.00%
2010	2.00%
2011	2.25%
2012	2.50%
2013	2.75%
2014	3.00%
2015	3.25%
2016	3.50%
2017	3.75%
2018	4.00%
2019	4.25%
2020	4.50%
2021	4.75%
2022 and Beyond	5.00%

Financial Picture – Current Permit Portfolio

One way to view the financial situation and outlook of a dynamic system is to such an analysis on a current portfolio run-off basis. While we understand that the system has operated on an approach where the revenues of present sites have funded the reclamation of previously forfeited sites, our assignment included the task of measuring the current solvency of the Fund. In most analyses of this type, it is not appropriate to only reflect future income without a reflection of the additional potential liabilities. The current permit portfolio approach attempts to match the current capital and expected revenue from the current sites with the potential and expected costs or future liabilities from those same sites. This view eliminates the burden of the past being placed upon the future operations.

In this view, we review the financial picture of the system without the complication of adding any new entrants with respect to permits beyond those currently in the Fund as time goes forward. This view allows us to compare the current Fund Balance and estimated future revenue from only the permits currently in the Fund with the estimated expected costs for the same permits over a time horizon from current until all of the permits are anticipated to have completed Phase 3 of the reclamation process. The addition of new permits would add both revenue and potential cost to the system – estimating the impact of that dynamic would rely upon the information in the current analysis – thus not providing additional information. Again, as with any estimation of the future, there are many assumptions made and actual results may vary from the estimated expected results. In the case of the Fund, as is shown, these projected financial results can vary significantly and the differences can be very material.

In our estimation of the expected costs, we have assumed that the active mining operations (Phase 1) continue fairly uniformly over a 7 year period of time. This is followed by a 3 year period within Phase 2 and then a 5 year observation period within Phase 3. Because the probability of forfeiture varies based upon the number of years into the future that we are projecting, the expected cost to the Fund from a site will vary even between years in the same Phase of reclamation.

With this projection, we provide three scenarios to outline some potential outcomes among the myriad of possible outcomes. The tax income is based on the current expected revenue for the first six years and in the seventh year and final year, we assume that coal extraction is half of the prior year. Over the seven year income generating period, this scenario would estimate $22.3 million in severance tax revenue. We have credited the Fund with investment income on the prior year surplus – this assumes the current revenue is not invested until after the annual costs are paid. Also, investment income is constrained to not less than zero. The reclamation costs are the expected reclamation costs from the analysis and the expenses vary by year in the same relationship as the performance security. For this scenario, the system appears to create a significant shortfall to the Fund. This shortfall would likely need to be covered by revenues from subsequent permits and no further forfeitures.

Financial Picture – Scenario 1						
Year	Tax Income	Investment Income	Expected Total Cost	Operating Expenses	Net Operation	Net "Capital"
						2,000,000
1	3,424,000	40,000	4,335,600	400,000	(1,271,600)	728,400
2	3,424,000	14,568	8,197,400	400,000	(5,158,832)	(4,430,432)
3	3,424,000	-	8,746,300	400,000	(5,722,300)	(10,152,732)
4	3,424,000	-	6,190,000	400,000	(3,166,000)	(13,318,732)
5	3,424,000	-	5,264,200	400,000	(2,240,200)	(15,558,932)
6	3,424,000	-	3,549,800	400,000	(525,800)	(16,084,732)
7	1,712,000	-	2,793,300	400,000	(1,481,300)	(17,566,032)
8		-	1,579,200	200,000	(1,779,200)	(19,345,232)
9		-	870,900	200,000	(1,070,900)	(20,416,132)
10		-	664,200	200,000	(864,200)	(21,280,332)
11		-	179,200	60,000	(239,200)	(21,519,532)
12		-	141,100	60,000	(201,100)	(21,720,632)
13		-	143,500	60,000	(203,500)	(21,924,132)
14		-	97,500	60,000	(157,500)	(22,081,632)
15		-	89,000	60,000	(149,000)	**(22,230,632)**
	22,256,000	54,568	42,841,200	3,700,000		

The second scenario attempts to measure the impact if the level of reclamation costs is twice the expected reclamation costs from the analysis. As should be expected, this scenario would create an even greater and significant short fall between the revenue from the permits and the forfeiture reclamation costs. This shortfall would likely need to be covered by revenues from subsequent permits and no further forfeitures.

Financial Picture – Scenario 2						
Year	**Tax Income**	**Investment Income**	**Twice the Expected Total Cost**	**Operating Expenses**	**Net Operation**	**Net "Capital"**
						2,000,000
1	3,424,000	40,000	8,671,200	400,000	(5,607,200)	(3,607,200)
2	3,424,000	-	16,394,800	400,000	(13,370,800)	(16,978,000)
3	3,424,000	-	17,492,600	400,000	(14,468,600)	(31,446,600)
4	3,424,000	-	12,380,000	400,000	(9,356,000)	(40,802,600)
5	3,424,000	-	10,528,400	400,000	(7,504,400)	(48,307,000)
6	3,424,000	-	7,099,600	400,000	(4,075,600)	(52,382,600)
7	1,712,000	-	5,586,600	400,000	(4,274,600)	(56,657,200)
8		-	3,158,400	200,000	(3,358,400)	(60,015,600)
9		-	1,741,800	200,000	(1,941,800)	(61,957,400)
10		-	1,328,400	200,000	(1,528,400)	(63,485,800)
11		-	358,400	60,000	(418,400)	(63,904,200)
12		-	282,200	60,000	(342,200)	(64,246,400)
13		-	287,000	60,000	(347,000)	(64,593,400)
14		-	195,000	60,000	(255,000)	(64,848,400)
15		-	178,000	60,000	(238,000)	**(65,086,400)**
	22,256,000	40,000	5,682,400	3,700,000		

The third scenario shows the impact if the level of reclamation costs is half the expected reclamation costs from the analysis. This scenario would still create a negative relationship between the revenue from the permits and the forfeiture reclamation costs roughly equal to the income expected in the largest revenue year.

Financial Picture – Scenario 3						
Year	Tax Income	Investment Income	Half the Expected Total Cost	Operating Expenses	Net Operation	Net "Capital"
						2,000,000
1	3,424,000	40,000	2,167,800	400,000	896,200	2,896,200
2	3,424,000	57,924	4,098,700	400,000	(1,016,776)	1,879,424
3	3,424,000	42,287	4,373,150	400,000	(1,306,863)	572,561
4	3,424,000	14,314	3,095,000	400,000	(56,686)	515,875
5	3,424,000	14,187	2,632,100	400,000	406,087	921,962
6	3,424,000	27,659	1,774,900	400,000	1,276,759	2,198,720
7	1,712,000	71,458	1,396,650	400,000	(13,192)	2,185,529
8		76,494	789,600	200,000	(913,106)	1,272,422
9		47,716	435,450	200,000	(587,734)	684,688
10		27,388	332,100	200,000	(504,712)	179,976
11		7,649	89,600	60,000	(141,951)	38,025
12		1,711	70,550	60,000	(128,839)	(90,814)
13		-	71,750	60,000	(131,750)	(222,564)
14		-	48,750	60,000	(108,750)	(331,314)
15		-	44,500	60,000	(104,500)	**(435,814)**
	22,256,000	428,786	21,420,600	3,700,000		

These scenarios should provide a better understanding of the financial operation of the Fund as well as potential variation of some possible outcomes. Another way of viewing this information would be to track the permits by year of issuance through the final Phase 3 closure of the last remaining site – in a permit year approach to better track the revenue and cost related to an even smaller set of permits.

One benefit of the scenario approach could be the identification of the need for additional capital to provide sufficient funds in the cases where the actual costs exceed the expected costs.

Summary of Findings

Based upon the methodology and assumptions described above, we have estimated the potential expected liability of the Fund to be $42.8 million. It should be noted that there is considerable variation around this estimate due to the limited number of coal operators within the state of Ohio, the number of operators with multiple permits, the relationship of the performance security provided by the private insurance market and estimated cost to reclaim the various sites along with the large size of some of the operators. For example, should one of the largest operators be unable to meet their obligations, the potential cost to the Fund from a single operator could easily approach $100 million.

In actuarial and insurance regulatory language, the Fund has significant risk of material adverse deviation from the estimated expected loss. This is easily seen in two contexts. The first would be in comparing the average potential cost with the largest single potential cost. On an operator basis, this is $9 million versus $108 million or a relationship of 1 to 12. The second context would be a comparison of the largest single potential loss with the current available capital in the Fund - $108 million to $2 million or a ratio of 54 to 1. Even the average potential cost of $9 million would easily eliminate the Fund's current capital.

Additional Recommendations for Consideration

As part of our effort to understand the operation of the Fund and perform this analysis, we also were asked to provide recommendations for future consideration. The attached list summarizes the issues we feel warrant additional consideration. We can provide additional details as to our ideas and rationale as desired.

A. Explore increasing the required amount of performance security per acre – at least by a constant annual percentage so that any inflation does not fall wholly upon the Fund. As reclamation costs increase through normal price inflation, the amount of the increase is fully borne by the Fund. The current $2,500 requirement has been in place since at least 1982. With even a 3% cost inflation rate, the purchasing power of $2,500 in 1982 is equivalent to about $1,125 in 2009 buying power terms. Conversely, the equivalent purchasing power of $2,500 from 1982 dollars would be in excess of $5,550 in 2009 terms – again only assuming a 3% cost inflation rate which is likely a little low.

B. Explore alternative means of determining the revenue to the Fund (for example , basing the severance tax on the projected reclamation cost (PSE) or even acreage affected rather than tons of coal extraction) - this effort should include a study of any processes in other large mining states.

C. Explore establishment of a short-term capital source (such as line of credit or some form of external reinsurance) should the Fund find itself unable to cover the forfeited site reclamation costs. The use of this capital source could be funded though additional collections/tax.

D. Develop a coordinated information system designed specifically for the operation of the Fund with the ability to easily monitor key information items. These items would at the very least include the potential reclamation cost (PSE), the acres permitted, the acres affected, the acres in each phase of reclamation, and the amount of performance security available and through which provider

E. Establish a process of measuring and monitoring (and possibly collecting revenue based upon) the financial capacity of the current and potential permit holders.

F. Establish a process to track forfeiture and permit data at the operating parent level (rather than individual permit) due to the very strong correlation of forfeitures of all permits for a common operator.

Difference in Fund Operation from Traditional Bonding

The Fund is financed by each mining operator through "tax" based upon the amount of coal extracted. The traditional bond provider collects premium in relationship to the amount of potential liability provided. The Fund's operation is unique in that the Fund does not directly determine the cost to the operators in relation to the amount of the potential cost assumed. There may be an indirect relationship between the amount of the potential cost assumed and the area affected by the mining operations (especially for surface mining). The program also does not reflect the financial situation of the operator which is the risk for which the Fund is providing protection. The typical philosophy used by insurers and providers of financial security/protection is to establish the premium collection on a basis that is in some direct relation to the amount of exposure assumed from the policyholder.

The protection provided by the companies issuing the performance security requires a premium for the term of the policy - which is typically one year. This premium is based upon a rate per $1,000 of performance security. Both the amount of performance security provided and the rate per $1,000 can vary by renewal.

The severance tax for the protection provided by the Fund is collected while the mining operation is extracting coal. Some of the reclamation efforts are undertaken during the extraction period when the majority of the Phase 1 efforts will likely take place. After the coal extraction ceases, there is no future revenue to the Fund to cover the on-going forfeiture exposure borne by the Fund. Unless assumed that mining operations will continue on a somewhat un-ending basis, the Fund might be prudent to establish as a goal – achieving a capital balance that would provide a reasonable amount of funding to cover future forfeited reclamations from current permits in case coal extraction in Ohio should cease.

Ohio Reclamation Forfeiture Fund Analysis
Estimated Expected Cost Example

	Permit Holder		***ABC MINING COMPANY***
	Parent Company		**XYZ MINING INDUSTRIES**
	Permit Number		99999
1	**Total PS Estimate**	**$**	**5,670,000**
2	PSE Constant	*$*	*2,178,102*
3	PSE excluding Constants	$	3,491,898
4	Affected Ratio		12.8%
5	Permit Status		No Final Maps
6	***Adjusted Site Exposure***	***$***	***2,624,911.95***
7	Bond on Hand	$	509,250
8	**Estimated Fund Exposure**	**$**	**2,115,662**
9	Phase 1 Bond Liability	$	208,793
10	Phase 2 Bond Liability	$	198,608
11	Phase 3 Bond Liability	$	101,850
12	Phase 1 Estimated Fund Exposure	$	867,421
13	Phase 2 Estimated Fund Exposure	$	825,108
14	Phase 3 Estimated Fund Exposure	$	423,132
15	Est Expected Cost Phase 1	$	141,637
16	Est Expected Cost Phase 2	$	74,317
17	Est Expected Cost Phase 3	$	45,191
18	**Total Est Expected Cost - All Phases**	***$***	***261,145***

Notes:

1,2,3,5	From ODNR MMRM Engineers
4, 7,9,10,11	From Central Tracking System ODNR
6	equals 2 + 3 times 4
12	equals 8 times 9 divided by 7
13	equals 8 times 10 divided by 7
14	equals 8 times 11 divided by 7
15, 16, 17	Page 2 of this exhibit
18	sum of 15, 16 and 17

Ohio Reclamation Forfeiture Fund Analysis

Estimated Expected Cost Example

Permit Holder *ABC MINING COMPANY*
Parent Company XYZ MINING INDUSTRIES
Permit Number 99999

	Portion of Permit Currently in Phase 1			Portion of Permit Currently in Phase 2			Portion of Permit Currently in Phase 3			Combined Total Expected Cost
Exposure Year	Potential Cost	Probability of Forfeiture	Expected Cost	Potential Cost	Probability of Forfeiture	Expected Cost	Potential Cost	Probability of Forfeiture	Expected Cost	
1	$ 867,421	1.25%	$ 10,843	$ 825,108	1.25%	$ 10,314	$ 423,132	1.25%	$ 5,289	$ 26,446
2	$ 867,421	2.38%	$ 20,645	$ 825,108	2.38%	$ 19,638	$ 423,132	2.38%	$ 10,071	$ 50,353
3	$ 867,421	2.56%	$ 22,206	$ 825,108	2.56%	$ 21,123	$ 423,132	2.56%	$ 10,832	$ 54,161
4	$ 867,421	2.42%	$ 20,992	$ 247,532	2.42%	$ 5,990	$ 423,132	2.42%	$ 10,240	$ 37,222
5	$ 867,421	2.07%	$ 17,956	$ 247,532	2.07%	$ 5,124	$ 423,132	2.07%	$ 8,759	$ 31,838
6	$ 867,421	1.94%	$ 16,828	$ 247,532	1.94%	$ 4,802				$ 21,630
7	$ 867,421	1.52%	$ 13,185	$ 247,532	1.52%	$ 3,762				$ 16,947
8	$ 433,711	1.44%	$ 6,245	$ 247,532	1.44%	$ 3,564				$ 9,810
9	$ 433,711	1.18%	$ 5,118							$ 5,118
10	$ 433,711	0.89%	$ 3,860							$ 3,860
11	$ 130,113	0.80%	$ 1,041							$ 1,041
12	$ 130,113	0.63%	$ 820							$ 820
13	$ 130,113	0.64%	$ 833							$ 833
14	$ 130,113	0.43%	$ 559							$ 559
15	$ 130,113	0.39%	$ 507							$ 507
Total			**$ 141,637**			**$ 74,317**			**$ 45,191**	**$ 261,145**

Potential Cost in year 1 from Page 1. Phase 2 costs equal 50 % of Phase 1 and Phase 3 costs equal 15 % of Phase 1
Probability of Forfeiture based upon default probabilites by year from S&P's Report
Annual Global Corporate Default Study and Rating Transitions