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RECLAMATION SECURITY DEPOSITS IN ALBERTA

N. Chymko[1] and L. Brocke[2]

Abstract

Alberta regulations require mining operators to post security deposits for reclamation. After fifteen years of administering the collection and refunding of security, the Land Conservation and Reclamation Council recognized the need to review procedures for security deposits. The key element is a "partial return" of security for reclamation work conducted prior to issuance of a final reclamation certificate for the site. The system is based on maintaining sufficient security to equal the remaining reclamation costs, returning "excess" security, removing security inequities between mines, providing a financial return and credit for reclamation work, limiting government liability, and functioning within existing legislation. The system was developed in conjunction with the mining industry, ensuring a cooperative, workable approach.

Introduction

In Alberta, coal mining operations are subject to a comprehensive, integrated review and approval process (Figure 1). This regulatory process for coal mining operations is described in detail by Brocke (1990). The main stages of the process are:

1. a preliminary disclosure to review the project in principle.

2. public disclosure to involve the public in the approval process.

3. an Environmental Impact Assessment (EIA) which is linked with a Mine Permit and Processing Plant Application to the Energy Resources Conservation Board (ERCB).

4. a Development and Reclamation Approval from the Land Conservation and Reclamation Council (the Council), which is linked with an ERCB Mine Licence Application.

5. reclamation certification from the Council and abandonment approval from the ERCB.

The Land Conservation and Reclamation Act, through the Security Deposit Ministerial Regulations, requires the holder of a Development and Reclamation Approval (Stage 3) to post a security deposit for reclamation purposes. The intent of the security deposit is to provide an incentive for reclamation, as well as to cover the costs of reclamation in the event that an operator fails to reclaim disturbed land. The basis for giving security is as follows:

1 Review Coordinator, Land Reclamation Division, Alberta Environment, 9820 - 106 Street, Edmonton, Alberta, T5K 2J6.

2 Chairman, Development and Reclamation Review Committee, Land Reclamation Division, Alberta Environment, 9820 - 106 Street, Edmonton, Alberta, T5K 2J6.

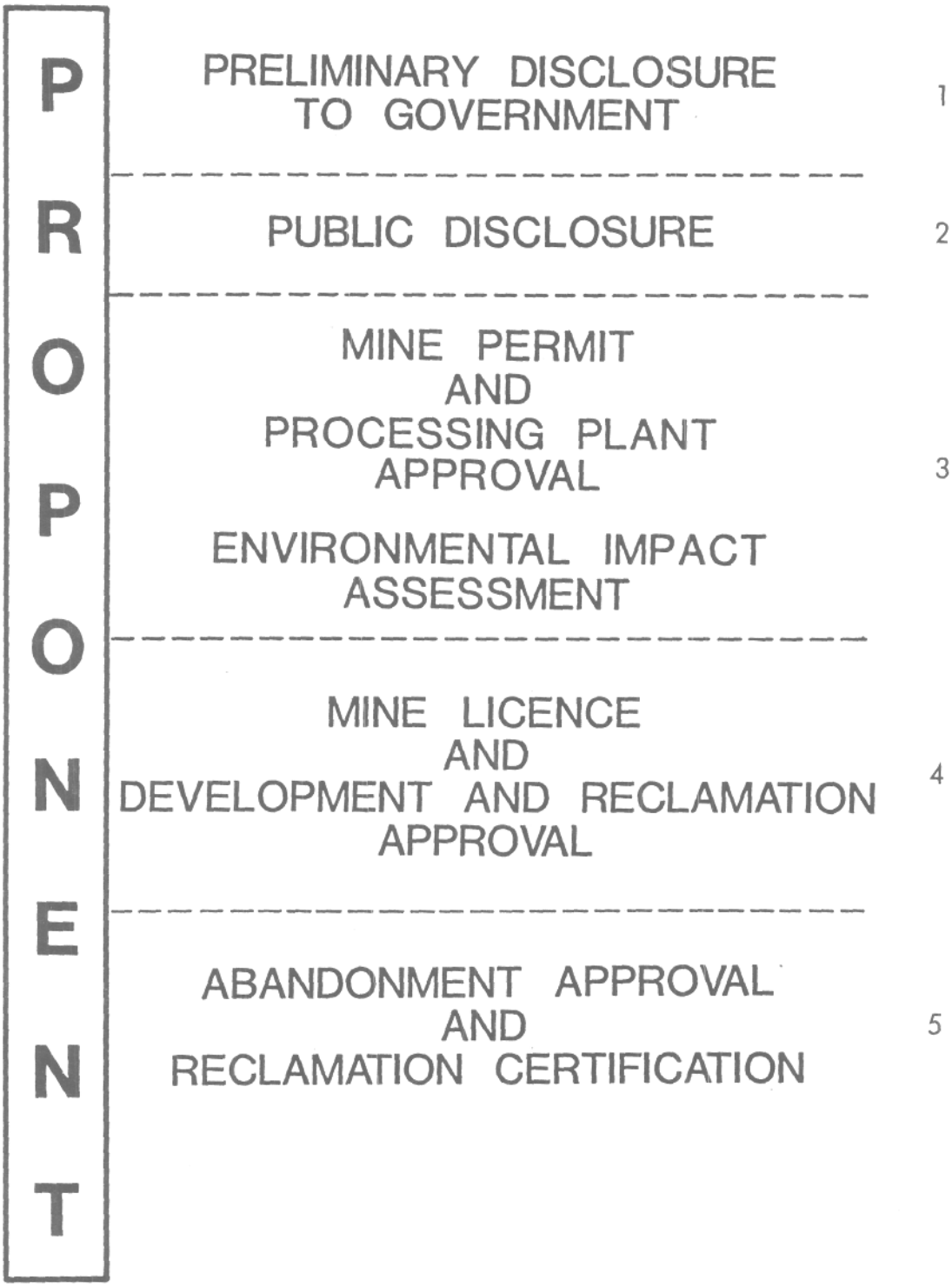

Fig. 1 OVERALL APPROVAL PROCESS.

1. base security of $5,000.00 for a small coal mine (defined as less than 90 tonnes/day, equivalent to 32,850 tonnes on an annual basis).

2. base security of $25,000.00 for any other coal mine.

3. additional security of not less than 25 cents per ton of clean coal produced by the mine, as determined by the Minister of Environment.

An operator can be exempted from giving base security or additional security and this is normally the case for small mines. All other mines in the province post the base security plus additional security as prescribed in the Development and Reclamation Approval.

Security and additional security must be provided within 30 days of a request and can be in the form of cash, negotiable bearer bonds, term saving certificates, term deposits, or a letter of guarantee from a bank. Where cash is given, any interest accrues to and forms part of the deposit.

For the larger mines, the rate of additional security , as well as the total security in place as of year end 1985, are included in Table 1. The 1985 figures are used since they were the basis for initial evaluation of the collection and return of security deposits. As of year end 1985, total security in place for major surface coal mines in Alberta was about 49.1 million dollars. As of the end of 1989, about 75.1 million dollars was on deposit. Although the 1989 data include two new mines, their contribution to total security is minor (about $325,000.00).

With respect to the return of security, the sections of the Act that deal most directly with security refunds link the return to completion of reclamation, as verified by a reclamation certificate (Stage 5 in Figure 1). This can apply to all or part of the land to which a Development and Reclamation Approval pertains.

What Was the Problem?

Discussions among Government administrators and coal industry representatives had identified several disadvantages of the previous security system. The main concerns were as follows:

1. The amount of security was poorly related to the area of land disturbed or the cost of reclamation. This simply reflects that security in Alberta is collected on a coal production basis rather than an area disturbed basis. There is some degree of correlation since the greater the production the greater the area disturbed. However, there is large variability among mines in the amount of coal produced per unit area of disturbance. Highly "productive" mines will generate large security deposits on a per unit area basis. In addition, there is little accounting for differences in reclamation costs in different physiographic settings, that is, plains vs., foothills vs. mountains. Reclamation costs in different settings are loosely factored in by collecting additional security at a higher rate in the mountains/foothills vs. the plains, that is, 50 cents/ton vs. 25 cents/ton, respectively.

Table 1. Disturbance and Security Deposit Data for Alberta Coal Mines (Year End 1985)

	RANGE IN TOTAL DISTURBANCE (hectares)	RATE OF ADDITIONAL SECURITY (dollars/ton)	RANGE IN TOTAL SECURITY (dollars)	RANGE IN RATE OF SECURITY (dollars/ha)
PLAINS				
1. New Mines[1] -3 (Post 1974)	272 to 2,368	.25	308,396 to 14,537,491	710 to 6,140
2. Old Mines -3 (Pre-1974)	717 to 1,223	.25	777,005 to 3,745,528	1,085 to 3,825
FOOTHILLS/MOUNTAINS				
1. New Mines -3 (Post 1974)	244 to 866	.50	537,965 to 8,162,029	2,205 to 9,425
2. Old Mines -2 (Pre-1974)	1,051 to 1,114	.50	7,778,715 to 8,375,723	6,980 to 7,995
TOTAL	9,159		49,073,387	5,360 (mean)

[1] See text for definitions of "new" and "old" mines.

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Table 1 presents data on disturbance and security for "new" and "old" mines in the plains, foothills, and mountain regions. The terms "new" and "old" relate to when the mine opened in relation to the enactment of regulations respecting disturbance and reclamation. The regulations were implemented in mid 1974 and the terms relate to this date. Prior to 1974, security was not collected and the regulations were not applied retroactively.

The data demonstrate the variability of the amount of security collected when related to an areal basis. For example, in the case of new plains mines, security varies from $710/ha to $6,140/ha. For old plains mines, the range is $1,085/ha to $3,825/ha.

2. The security deposit, based on production, increases annually until it exceeds the estimated cost of reclamation. The reclamation deposit reaches parity with estimated reclamation costs in about 4 to 6 years of production from a new mine. After this, security deposits progressively exceed estimated reclamation costs. This imposes an unnecessary expense on the operator and unrealistically inflates the Surface Reclamation Fund for the province (i.e., an over-accrual at one mine cannot be used for reclamation at another mine).

   Table 2 provides data, as of the end of 1986, on the amount of security on deposit, the amount of security required for reclamation (based on $1,000, $2,000, and $3,000 per acre for plains, foothills and mountains respectively), and the difference between the two. Nine of the 11 mines that were used to generate the information in Table 2 were in a position of over-accrual.

3. In the initial years the accumulated security deposit is inadequate to cover the costs of reclamation of the area disturbed bv pre-production and early production activities. As a result, in the early years of development, the Government carries considerable risk should an operator fold and be unable to meet its reclamation obligation. The data in Table 2 show that deficit positions existed in new mines in the plains and foothills areas, reflecting two mines that in 1985 were only recently opened.

4. The security system lacked incentive for an operator to carry out progressive and continuous reclamation. For example, a major resloping project in a mountain mine would represent a major expenditure, perhaps in the millions of dollars. However, this did not incur any change or refund of the required security deposit. Refund was tied solely to reclamation certification, that is, complete and satisfactory reclamation. There was no provision for a "partial" return of security. Mines were conducting considerable reclamation even though few certificates and little security had been returned.

5. A formula for calculating a partial return had not been developed.

Table 2. Required Security[1] Versus Actual Security On Deposit (Year End 1986)

	RANGE OF ACTUAL SECURITY ON DEPOSIT (dollars)	RANGE OF REQUIRED SECURITY (dollars)	RANGE IN DIFFERENCE (dollars)
PLAINS			
1. New Mines[2] -3 (Post 1974)	563,704 to 17,488,320	585,637 to 5,504,665	-272,652 to +11,983,655
2. Old Mines -3 (Pre-1974)	519,214 to 4,304,131	192,729 to 1,856,029	+326,485 to +2,448,102
FOOTHILLS/MOUNTAINS			
1. New Mines -3 (Post 1974)	925,818 to 8,946,779	1,773,598 to 4,379,236	-847,780 to +4,567,543
2. Old Mines -2 (Pre-1974)	7,554,228 to 8,929,588	3,795,517 to 6,548,016	+1,006,212 to +5,134,071

1 Required security based on $1,000, $2,000, and $3,000 per acre for plains, foothills, and mountains respectively.

2 See text for definition of "new" and "old" mines.

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What Was the Solution?

The major concerns with security related to the over accrual of security and the partial return of security (Points 1, 3, 4 and 5 in the previous discussion). This required an assessment of the whole concept of security collection and return. The assessment was done in the context of returning security to those operators in an over-accrual position. At the same time, partial return of security based on the amount of reclamation work done prior to certification could also be achieved in the sense that if security is maintained at the total cost of remaining reclamation, credit can be given for work accomplished at any point in time.

Three options were considered as a means to partially return the security:

1. partial refund of posted security.

2. waiver of all or a portion of the additional security on new coal production.

3. non-monetary credit (i.e., letter of acknowledgement).

These options were subjected to Decision Making Analysis (DMA) as outlined by Kepner and Tregoe (1981). This analysis revealed that the partial refund of posted security was the most favourable to government and industry. This option would:

1. provide a financial return to the operator for reclamation work, including credit on an annual basis.

2. provide an incentive to carry out progressive and continuous reclamation.

3. limit liability to the operator (i.e., minimize security deposit).

4. maintain sufficient security to complete reclamation.

5. function within existing legislation.

6. not compromise the ability to get reclamation done (i.e., would not interfere with the ability to issue a reclamation order at a later date).

7. limit security to the amount required to do reclamation work without appearing to reduce reclamation standards or requirements.

8. return excess security and remove inequities in the amount of security posted by different operators.

How is the Solution Implemented?

As previously noted, the sections of the Land Conservation and Reclamation Act that deal most directly with refunding of security do not provide for a return based on partial reclamation. They require a refund to be based on complete reclamation. However, through Sections 25(3) and 31 of the Act, and Section 37 of the Land Conservation Regulations, the Minister of Environment can enter into agreements with operators with respect to security deposits. Therefore, for operators in an over-accrual position, the Minister can establish an agreement with an operator that would provide for:

1. maintenance of security at a level equal to the outstanding cost of any work required to complete reclamation (including a contingency).

2. return of security in excess of the amount required to perform any outstanding reclamation work.

3. annual assessment, at the time of the annual report and annual renewal of security, accounting for security collected, reclamation expenditures, and cost of reclamation yet to be done.

How is the Solution Administered?

Administratively, the security deposit can be adjusted annually considering the estimated cost of reclamation of the net area of disturbance and the stage of reclamation attained. Information to determine the security deposit can be provided in the annual report for a mine. In the case of mines with distinct mining areas, area specific deposits would be calculated and then combined to form a single security deposit.

At the time of the annual report and annual renewal of security (March 31 of a given year), the operator can make an initial application to have security based on an estimate of the total cost of reclamation (TCR). This figure must be provided by the operator, with supporting documentation of costs (backfilling, contouring, soil replacement), and may be subject to an audit by government. The TCR will be the basis for establishing the security deposit and any excess security (i.e., over-accrual) will be refunded.

Subsequent applications to adjust security would normally be submitted at the time of the annual report/annual renewal of security. Security will be calculated on the following basis:

Security Required = TCR + DC - RC

where TCR = total cost of reclamation at previous year end
DC = disturbance cost for the current year (i.e., cost to reclaim new areas of development.
RC = reclamation cost for the current year (i.e., expenditures on backfilling, contouring, soil replacement).

Again, all costs may be subject to an audit. The annual report must discuss and illustrate the areas where reclamation work has been conducted (i.e., backfilling, contouring, soil replacement) and document that the activities comply with the Development and Reclamation Approval. The reclamation activities will be verified in the field by Reclamation Officers. Security will then be adjusted at the next annual renewal of security. Actual costs of reclamation will be compared with previous estimates to ensure that estimates of TCR are realistic.

Operators will have the option of applying to adjust security prior to the time of the annual report/annual renewal of security. In these instances, an application can be submitted based on reclamation activities that have been completed. Sufficient time must be available for the Reclamation Officers to verify the work (i.e., prior to winter). This procedure will allow security to be adjusted at the upcoming annual review of security.

How Are Reclamation Costs Estimated?

The estimated Total Reclamation Cost (TCR) and Disturbance Cost (DC) should consider:

1. the type of mining, i.e., open pit, strip, underground, etc. To some extent these are regionally specific (i.e., strip mines in the plains, open pit mines in the foothills/mountains).

2. the end land use. In a general sense these are also regionally specific (i.e., agriculture in the plains, forestry/wildlife in the foothills/mountains).

3. the stage of mine development (i.e., security deposit for initial pre-production development should be different than for a pit dump development).

4. the costs which the Government would reasonably assume in order to reclaim an area. These can only be determined on a case by case basis.

5. equipment costs for the various stages of reclamation.

What Was Industry's Involvement?

Beginning in the 1980's, the coal industry had raised their concern on the over accrual and partial return of security deposits. In late 1986, the Land Conservation and Reclamation Council evaluated the concern and determined that a direct return of part of the security was the best option to meet the concern. Throughout 1987 and early 1988, the legislative and administrative procedures were preliminarily developed by the Council. In mid-1988, the Coal Association of Canada was advised by the Minister of Environment that the concept of a partial return of security deposits had been approved in principle by Government.

The details of the proposed procedures were presented to the Coal Association in the fall of 1988 for its review and comment. The proposal was well received and only after this point was the procedure made available to individual operators at their request.

What is the Present Status?

To date, only one operator has pursued the partial return of security. This has resulted in the return of security in the amount of about $5.4 million dollars. The Council has been somewhat surprised that only one operator has chosen to pursue the recent revised procedures, particularly in view of the position of over-accrual of most coal mine operators in the province and the request by industry for provision of partial return.

What are the Remaining Issues?

The major remaining issue relates to the inadequate security deposit collected in pre-production and early production phases (Point 2 in the previous definition of the problem). This in turn re-emphasizes the issue of the basis of security collection.

The present system still collects security on a production basis but now makes allowance for a partial return based on cost of reclamation once an over-accrual position is reached. In early project stages, there can be considerable disturbance with little security in place (i.e., only the base security of $25,000.00 for a large mine).

A potential solution is to establish "initial security" based on estimated reclamation costs of the area disturbed by pre-production activities. The pre-production period, covered by the initial Development and Reclamation Approval, is commonly about two years. An initial deposit could be established by Government or alternatively there could be a review and adjustment on an annual basis. At present, the "initial security" concept is not provided for in present legislation, which can only collect security on a production basis.

In a revised security system, it would be desirable to collect all security (pre-production and production phase) based on the estimated cost of reclamation of the net area of disturbance and the stage of reclamation attained. This would maintain security at the level necessary to reclaim the land and would avoid over-accrual.

At present, Alberta Environment is undertaking a comprehensive review of its legislation and regulations. Care will be needed to ensure that the new system will help achieve reclamation and will be workable from both industry's and Government's perspectives. This will require thorough review of security systems, including those of other governments and agencies, as well as input from the coal industry.

Summary

There were disadvantages in the system of security collection and return in Alberta. Most mines in the province were in a position of over-accrual of security with little security returned despite considerable effort on reclamation activities. Through an agreement with the Minister of Environment, the option is now available for operators in a position of over-accrual, to have security calculated on the basis of reclamation costs. "Excess" security can then be returned while maintaining sufficient security for reclamation. This option, which was developed by Government in consultation with industry, is reasonable for both parties.

References

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