

**REVIEW AND REVISION OF LEGISLATED REQUIREMENTS
FOR MAINTAINING MINERAL RIGHTS
IN THE NORTHWEST TERRITORIES**

By
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A Practicum Submitted
In Partial Fulfilment of the
Requirements for the Degree,
Master of Natural Resources Management

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*REVIEW AND REVISION OF LEGISLATED REQUIREMENTS FOR
MAINTAINING MINERAL RIGHTS IN THE NORTHWEST
TERRITORIES*

*A practicum submitted to the Faculty of Graduate Studies of the University
of Manitoba in partial fulfillment of the requirements of the degree of
Master of Natural Resources Management.*

By

Ms. Kate Hearn

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ABSTRACT

The federal Department of Indian Affairs and Northern Development's (DIAND) 1986 Northern Mineral Policy proposed modernizing mineral management legislation by developing a Northwest Territories Mining Act. This policy statement, the need to harmonize mining legislation with new legislation from settlement of native land claims, and the prospect of devolution, has prompted DIAND and the Government of the Northwest Territories' department of Energy, Mines and Petroleum Resources (EMPR) to review the Canada Mining Regulations to prepare for development of a mining act and eventual transfer of mineral management responsibilities to EMPR. The review presents an opportunity to investigate industry and government concerns about mining legislation including concerns about sections of the Canada Mining Regulations governing mineral rights maintenance.

There have been three main concerns associated with mineral rights maintenance and representation work requirements:

1. Required work expenditures are too low and fail to promote development of mineral interests.
2. Work and rent requirements for mineral leases are too low, and a large area of leases are not being actively explored.
3. The geoscience database is not being enhanced by exploration activity, as only a small portion of work carried out on mineral interests is filed with the government.

The three concerns were investigated by compiling statistics on exploration expenditures, value of work filed, and disposition of mineral interests in the Northwest Territories. Investigations indicated concerns (2) and (3) should be addressed by amending the Canada Mining Regulations to capture more geoscience information and promote sustained work on mineral leases.

Legislative options for amendments were developed by examining mining legislation in Canada, holding workshops with mineral administrators and mining industry representatives, and surveying industry stakeholders. No clear conclusion can be made about the best combination of options for amendments to address concerns (2) and (3). Different options may be combined in different ways to correct the problems. However, to provide EMPR and DIAND with a basis for discussion, one schedule of options has been proposed for implementing a recommendation that the regulations should be amended to: require all work on mineral rights be filed; eliminate mandatory leasing, and; require work on mineral leases.

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TABLE OF CONTENTS

CHAPTER I - INTRODUCTION	1
1.0 Background	1
1.1 Statement of Problem	2
1.2 Objectives	3
1.3 Methods	4
1.4 Native Land Claims and Scope of Study	4
1.5 Definition of Terms and Acronyms	7
CHAPTER II - METHODS	8
2.0 Introduction	8
2.1 Legislation Review and Analysis	8
2.2 Hypotheses	9
2.3 Workshop	11
2.4 Questionnaire Survey	11
2.6 Synthesis	13
CHAPTER III - LEGISLATION REVIEW	13
3.0 Introduction	13
3.1 Representation work	14
3.1.1 Allowable Expenses	16
3.1.2 Prior Work	17
3.1.3 Deposits On Work Commitments and Cash-in-Lieu	18
3.1.4 Excess Work, Grouping and Transferable Work Accounts (PAC)	19
3.1.5 Representation Work Expenditures for Mineral Interests	20
3.1.5i Permits and Agreements	21
3.1.5ii Claims	21
3.1.5iii Mineral Leases	24
3.2 Reports of Work	29
3.2.1 Distribution of Exploration Information	30
3.2.2 Filing Requirements	31
3.2.3 Prospecting and Prospecting Reports	32
3.2.4 Reporting Requirements in Addition to Representation Work Reports	34
3.3 Discussion	35

CHAPTER IV - RESULTS AND DISCUSSION	36
4.0 Introduction	36
4.1 Respondents' Profile	37
4.2 General Comments on the CMR	38
4.3 Level of Work Expenditures	39
4.3.1 Options	39
4.3.2 Response to Options	40
4.3.3 Discussion	45
4.4 Geoscience Database Acquisition	46
4.4.1 Options	49
4.4.2 Response to Options	50
4.4.3 Discussion	53
4.5 Mineral Leases and the Long Term Maintenance of Mineral Rights	56
4.5.1 Options	57
4.5.2 Response to Options	58
4.5.3 Discussion	58
4.6 Surveys	59
4.7 Ministerial Discretion	61
4.8 Role of Prospectors	61
4.8.1 Discussion of the Role of Prospectors and Juniors	62
OVERVIEW, RECOMMENDATIONS AND CONCLUSIONS	65
5.0 Overview	65
5.1 Recommendations	67
5.1.1 Recommendation I	68
5.1.2 Recommendation II	73
5.1.3 Discussion	76
5.2 Conclusions and Remarks	76
BIBLIOGRAPHY	78
APPENDICES	
Appendix 1: Provincial/Territorial Contacts	84
Appendix 2: Workshop Participants and Listing of Objectives	86
Appendix 3: Sample Questionnaire	90
Appendix 4: Spreadsheet of Questionnaire Results	103

TABLES

Table 3.1: Cash Payments for Work Requirements	19
Table 3.2: Assessment Work Expenditures	21
Table 3.3: Required Work Expenditures on Claims	23
Table 3.4: Assessment Credit for 'Typical Exploration Program'	24
Table 3.5: Work Required for Lease Application	26
Table 3.6: Assessment Work Requirements to Maintain Leases	28
Table 3.7: Confidentiality Period	31

FIGURES

Figure 1.1: Aboriginal Land Claims and Economic Geology of the Northwest Territories.	5
Figure 4.1: Total Yearly Expenditures on Mineral Exploration Compared to the Total Area of Mineral Rights	40
Figure 4.2: Comparison of Total Yearly Expenditures on Exploration with the Total Value of Work Filed Each Year	47
Figure 4.3: Disposition of Northwest Territories' Mineral Leases, by Area and Activity	57

CHAPTER I INTRODUCTION

1.0 Background

The federal government 'owns' minerals on Crown lands in the Northwest Territories (NWT). Mineral management responsibility is delegated to the Department of Indian Affairs and Northern Development (DIAND) who administer mineral resources under the authority of the *Canada Mining Regulations (CMR)* of the *Territorial Lands Act*. In their 1986 *Northern Mineral Policy*, DIAND questioned "*the propriety of using general enabling legislation to support a complex regulatory system*"¹ and contemplated modernizing the legislative base by developing an NWT Mining Act.

Mining legislation provides the means to transfer limited rights, such as rights to explore for, prospect or develop Crown-owned-minerals, from the Crown to individuals or companies. A common feature of Canadian mining legislation is the requirement to evaluate the mineral potential of properties by carrying out work, referred to as 'assessment' or 'representation work', as a condition for maintaining mineral rights. Proof of work, commonly a representation work report, must be filed with the Crown. The fundamental purpose of representation work requirements is to provide a means for maintaining or losing mineral rights.

Representation work requirements have implications in terms of benefits that may

¹Mining Management and Infrastructure Directorate, Natural Resources and Economic Development Branch. 1986. The Northern Mineral Policy, Ottawa: DIAND, p.11.

be realized by the Crown, mineral industry, and public. They are designed to promote mineral exploration and development which leads to increased economic activity, benefiting the public and the government. They also prevent companies and individuals from holding mineral rights they do not intend to develop, which influences turnover of mineral lands, an important factor in a competitive mining industry. Representation work reports are a significant component of the regional geoscience database which is a primary research tool for mineral exploration. Through access to representation work reports, the mineral industry can avoid duplicating efforts. In light of these benefits, as well as others that can be realized through instituting and administering representation work requirements, the requirements are an important part of mining legislation.

1.1 Statement of Problem

DIAND's policy statement, and the need to harmonize mining legislation with new legislation emerging from settlement of land claims, has prompted DIAND and the Government of the Northwest Territories (GNWT) department of Energy, Mines and Petroleum Resources (EMPR) to review the CMR. Although the GNWT does not have a legislative role in mineral management, it acts in an advisory and administrative capacity to ensure Northerners' interests are represented. In future, this role will be expanded to include mineral management, as the federal government fulfils its commitment to devolve remaining 'provincial-type' responsibilities to the GNWT². Consequently, EMPR has an active interest in mining legislation.

²Constitutional Development and Strategic Planning Directorate. 1988. A Northern Political and Economic Framework, Ottawa: DIAND.

Although it has been stated the CMR have worked well³ and could be incorporated into the new NWT Mining Act without drastic revisions, proposal of a new act presents an opportunity to investigate concerns about the regulations, and if indicated, make improvements. This research project was undertaken for EMPR, to assist in preparing part of the background information necessary to develop the new NWT Mining Act. Research focused on the CMR's requirements for maintaining mineral permits, claims and leases, and centred on the question: what, if any, are the weaknesses of the requirements, are modifications needed, and what should they be?

1.2 Objectives

Research objectives were:

- 1) to identify regulatory approaches to promoting exploration and development of mineral properties and maximizing acquisition of geoscience information;
- 2) to investigate the relationship between requirements for maintaining mineral permits, claims and leases under the CMR and the consequent disposition of mineral rights;
- 3) to identify the 'mission' of NWT mineral administrators' in implementing requirements for mineral rights maintenance;
- 4) to investigate stakeholder response to regulatory options, and;
- 5) to make recommendations to regulators on modifications to existing legislated requirements.

³R. Hornal, D. Mackinnon, and E. Cotterill. 1991. Draft Discussion Paper on a Northwest Territories Mining Act, Yellowknife: DIAND. George Patterson, personal communication, July 1991.

1.3 Methods

Information was gathered through a review of legislation, collection of statistical information on mineral exploration expenditures and work filed, conducting workshops and a questionnaire survey. The entire process was supplemented by informal interviews and correspondence with mineral administrators from the NWT and other Canadian jurisdictions as well as members of the mining industry. Details of methods are described in Chapter II.

1.4 Native Land Claims and Scope of Study

Devolution, settlement of land claims and division will be catalysts for broad changes in the regulatory and jurisdictional framework for both non-renewable and renewable resource management in the NWT. Three land claim regions cover the NWT (Figure 1.1). Settlement of the Tungavik Federation of Nunavut (TFN) claim will trigger division of the NWT into two territories with two territorial governments: an eastern Arctic territory named Nunavut, and a western Arctic territory.

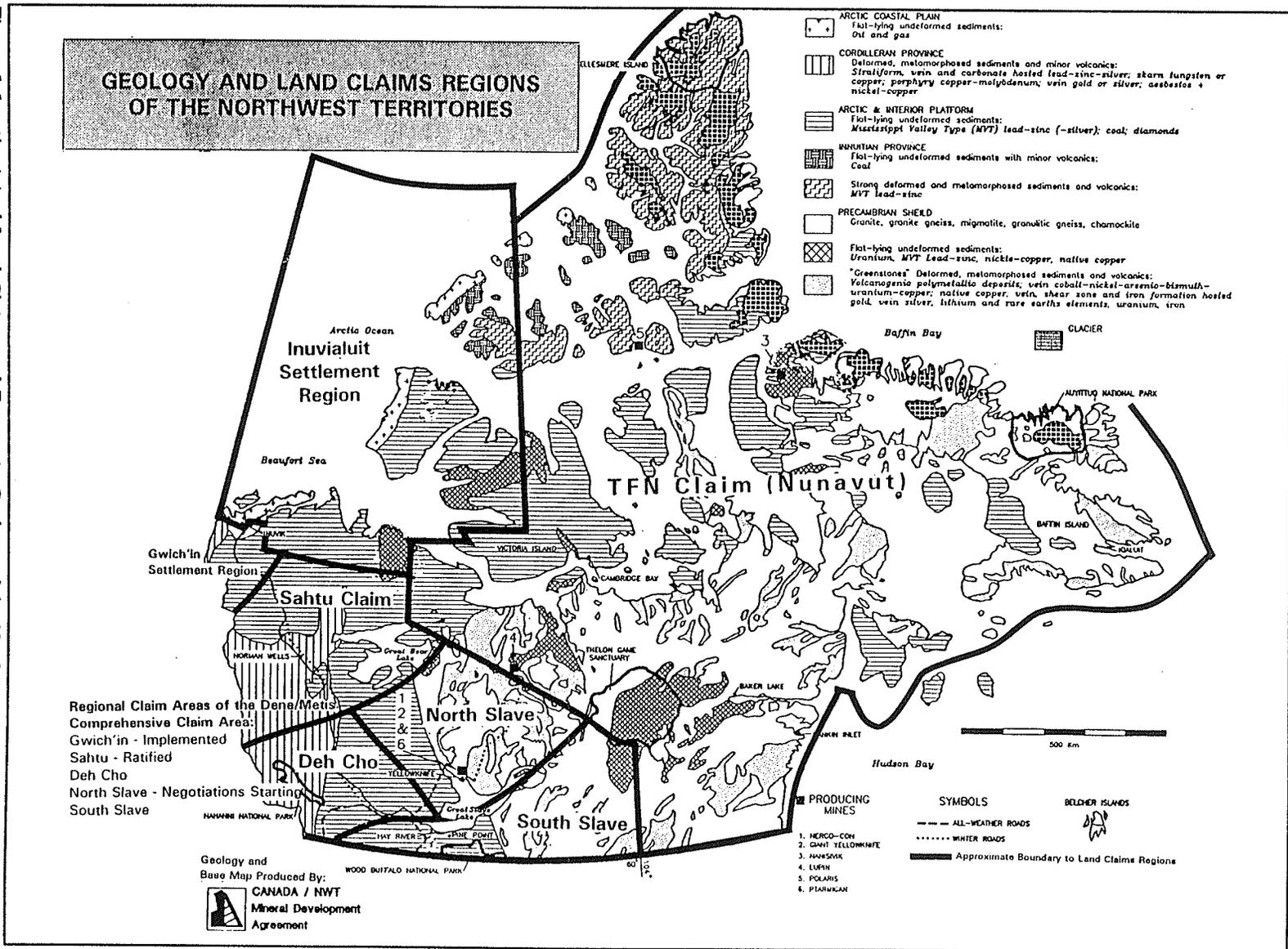
Four land ownership regimes will be created:

- (1) Crown lands;
- (2) private lands which aboriginal groups hold in fee simple, saving or excepting mines and minerals which are owned by the Crown;
- (3) private lands which aboriginal groups hold in fee simple including mines and minerals, and;
- (4) Crown lands where the Gwich'in own mineral rights⁴.

Regimes (3) and (4) are analogous to 'patents' or privately owned mineral rights

⁴The 'Aklavik' lands in the Gwich'in Land Claim Agreement, s. 18.1.2(cii), are the only instance of this type of regime.

Figure 1.1: Aboriginal Land Claims and Economic Geology of the Northwest Territories.



in the provinces, with the difference that land claims agreements prohibit transfer of title to minerals except to the federal government or a designated aboriginal organization. Generally, owners of mineral rights are subject to laws of general application but are exempt from requirements under mining legislation dealing with maintenance, leasing and transfer of mineral rights⁵ and are entitled to administer and develop their minerals as well as collect resource revenues. Aboriginal organizations are currently working toward developing administrative regimes to manage their mineral rights following transfer of title under settlement legislation⁶.

Despite emerging complexities of land management, many general principles persist. A developer wishing to access and exploit minerals must deal with the owner of surface rights and owner of mineral rights, whether this be the Crown or a private owner. The owner may define rights and obligations of developers in legislation, rules and regulations, or contractual agreements. Therefore, this research report may be relevant to any owner of mineral rights who is interested in setting conditions for maintenance of mineral rights, regardless of the overall framework for mineral management. Further specific consideration of impacts of future regulatory changes would be largely speculative and will not be included in this study.

Other factors not included in the study are administration of options, and post-implementation monitoring. Options are proposed simply on the basis of their potential for correcting some of the problems associated mineral rights maintenance. No studies

⁵W.G. Jeffery. 1981. Mining Legislation and Administration in Canada. EMR Canada Mineral Policy Sector Internal Report, MRI/5.

⁶George Patterson, personal communication, March 1993.

have been carried out on the feasibility or cost of administering options. Also, although this type of research should include post-implementation monitoring of any recommendations implemented, it was not feasible within the time frame of this project.

1.5 Definition of Terms and Acronyms

"Representation work" or "assessment work": *bona fide* work carried out in conformance with regulations, to assess mineral potential. In this document, "representation" and "assessment" are synonymous.

"Mineral rights": exclusive rights to explore for, develop and, in some circumstances, mine minerals. Also forms of tenure (see following).

"Mineral interests" or "mineral rights": mineral claims, permits and leases.

"Assessment credit" or "credit": dollar value of accepted work expenditures.

"Assessment work reports" or "reports": technical reports filed with the Crown as proof of work.

CMR	Canada Mining Regulations
DIAND	Federal Department of Indian Affairs and Northern Development
EMPR	Energy, Mines and Petroleum Resources
EMR	Federal Department of Energy, Mines and Resources
GIS	Geographic Information System
GNWT	Government of the Northwest Territories
GPS	Global Positioning System
GSC	Geological Survey of Canada
IP	Induced Polarity
MDA	Mineral Development Agreement
MIO	Mineral Initiatives Office
MIR	NWT Mineral Industry Report
NMI	National Mineral Inventory
PAC	Portable Assessment Credits

CHAPTER II METHODS

2.0 Introduction

Research comprised;

- review and analysis of Canadian mining legislation;
- identification and definition of problems perceived by DIAND, EMPR and mining industry representatives;
- consultation with DIAND, EMPR and mining industry representatives for advice on legislative approaches to deal with perceived problems, and;
- consultation with companies and individuals active in NWT mineral exploration, about their response to possible changes in legislation.

Research procedures are detailed in this chapter.

2.1 Legislation Review and Analysis

In the absence of related literature⁷, it is not uncommon, in this type of research, to refer to legislation from other jurisdictions because collectively,

...these statutes embody countless years of experience in the management of Canada's mineral resources (to say nothing of the work of dozens of consultative committees and Royal Commissions) and provide a rich pool of precedents from which to draw⁸.

The legislation review (Chapter III) summarizes Canadian regulatory approaches to mineral rights maintenance. Mineral administrators from each province and territory

⁷Based on a literature search, and correspondence with: Susan Blackman, Research Associate, Canadian Mining Law Project, Canadian Institute of Resources Law, November 7, 1991; George Miller, President, Mining Association of Canada, February 24, 1992; and Anthony Andrews, Managing Director, Prospectors' and Developers' Association of Canada, March 9, 1992; and informal telephone interviews with mineral administrators in the provinces and Yukon Territory.

⁸Manitoba Energy and Mines, 1989: Green Paper on a New Mines Act, p 2.

(listed in Appendix 1), excepting Prince Edward Island, were asked to review an early draft of Chapter III and in most cases, provided written or verbal comments. Follow-up telephone interviews helped to determine causal linkages and outcomes related to variables.

2.2 Hypotheses

During informal interviews, DIAND, EMPR and industry representatives expressed concerns which were grouped into three perceived problems, or 'hypotheses'. Statistics from the DIAND Mining Recorders' office; Energy, Mines and Resources (EMR) Canada; the NWT Chamber of Mines; and provincial mineral administrators, were compiled and used to analyze hypotheses. To facilitate comparison and identify trends, data was adjusted to constant 1986 dollars using an implicit index for Canadian services incidental to mining⁹.

Hypothesis One - Low Expenditure Requirements: *The level of work expenditures required by the CMR is too low and fails to promote development of mineral interests.*

To evaluate, data on yearly mineral exploration expenditures was compiled and plotted. Although data was from three different sources¹⁰, there was good correspondence in overlap years. The slope of the trend for expenditures was compared to the trend of a plot of the area of mineral rights held in good standing each year.

⁹Provided by Roy Ellis, Territorial Statistician, Bureau of Statistics, Government of the Northwest Territories, January 14, 1993.

¹⁰Northwest Territories' Chamber of Mines unpublished mineral industry surveys, for years 1987-1991; EMR Canada Mineral Yearbooks, for years 1983-1987; Dr. D.A. Cranstone, Energy, Mines and Resources Canada, for years 1973-1983, unpublished data.

Hypothesis Two - Failure to Capture Geoscience Data: *As a result of the low requirements for work expenditures, only a small portion of work carried out on mineral interests is filed with the government.*

Total value of work filed each year with the DIAND Mining Recorder¹¹, was plotted on a graph of yearly exploration expenditures, to demonstrate the ratio of work filed to work conducted.

Hypothesis Three - Management of Mineral Rights in the Long Term: *Work and rental requirements for leases are too low, and consequently, areas of high mineral potential are being 'banked', not actively explored.*

The exploration and development history of all NWT mineral leases in good standing as of June 4, 1992¹² was researched¹³. Leases were subjectively grouped into five categories:

- producing and past-producing leases where royalties have been paid;
- past producing leases where no royalties were paid;
- leases that may or may not cover known mineral deposits and were subject to advanced exploration as indicated by underground exploration, engineering, feasibility, metallurgical or environmental studies but not large scale diamond-drilling programs;
- leases protecting deposits¹⁴ that had not been subject to advanced exploration, and:

¹¹M.A. Weirmeir. April 1992. "A Statistical Report of Current and Historical Mining Lands Activity in the Northwest Territories" compiled by: Mining Lands Division, DIAND, Yellowknife.

¹²Listing of the 827 leases in good standing was provided by DIAND Mining Recorders' Office, Yellowknife.

¹³Sources of information included Northwest Territories' Mineral Industry Reports, EMR Canada's Canadian Mineral Deposits Not Being Mined in... series, the National Mineral Inventory, listing of present and past producers in the Northwest Territories that have paid royalties provided by Doug Camilucci, Senior Mining Royalties Advisor, DIAND Mining Legislation and Resource Management, Unpublished data from Carol Ellis, Staff Geologist, DIAND on past producers in the Northwest Territories, and EMPR's in-house compilation of mineral deposits.

¹⁴Deposits according to Canadian Mineral Deposits not being Mined in 1989, EMR Canada, and EMPR's in-house mineral deposit compilation.

- leases of properties that are of no apparent geological or economic interest.

Contiguous leases with the same owner and on the same geological trend as producing leases were assigned to the producer category, which may suggest more productive leasing than was actually the case. The total area of leased claims in each category was calculated and compared.

2.3 Workshop

Workshops held in Yellowknife in June, 1992, capitalized on DIAND, EMPR and mining industry representatives' experience and background to: generate objectives to be achieved by legislation; suggest possible improvements in regulatory approaches to help achieve objectives, and; develop options to strengthen the CMR. Participants (listed in Appendix 2) were provided with background information on mining legislation in general, and led through steps of a decision analysis exercise¹⁵.

2.4 Questionnaire Survey

Suggestions and options developed during workshops were incorporated into a questionnaire survey. The questionnaire (Appendix 3) was designed to determine stakeholders' general opinions about strengths and weaknesses of the CMR and response to proposed changes.

Mailing lists from the Geoscience Forum Committee¹⁶; NWT Chamber of

¹⁵C.H. Kepner and B.B. Tregoe. 1981. The New Rational Manager, New Jersey: Princeton University Press.

¹⁶List of registrants at 1991 Geoscience Forum.

Mines¹⁷; EMPR,¹⁸ and DIAND's Mining Recorders' office¹⁹ and Geology Division Archives²⁰ were obtained. A sample population of individuals and organizations with the most knowledge of, and experience with the CMR, and the most at stake if regulations were changed, were selected from the lists with advice from DIAND and EMPR. Selection criteria was recent or long-term exploration experience in the NWT, either as an individual or a company. Therefore, one or more questionnaires may have been sent to any one company. The sample population is summarized below:

GROUP	Number of Individuals that Received Questionnaires	Number of Companies Represented by Individuals that Received Questionnaires
Majors	39	25
Juniors	28	28
Consultants	10	8
Independents	33	-
NWT Chamber of Mines	1	1
Total	111	62

Respondents were asked to indicate whether they were self-employed (independents) or working for junior or major mining companies and answers were grouped depending on the affiliation they indicated. However, caution should be used

¹⁷Membership list and list of exploration companies active in the Northwest Territories developed during the Chamber's 1991 survey of activity.

¹⁸Mailing for EMPR's 1990 Guide to Legislation Affecting Exploration and Mining in the Northwest Territories.

¹⁹List of Northwest Territories' Prospectors' Licence holders and corporate claim holders.

²⁰List of clients who are interested in receiving DIAND publications or notices of release of assessment report information.

in ascribing particular characteristics to groups as respondents' work histories usually included work experience with all groups. Individual answers are likely based on the sum of this experience.

Response frequencies for majors, juniors and independents were tabulated in a Lotus 1-2-3 spread sheet (Appendix 4). The spreadsheet was used to generate relative response frequencies (*rf*) and 'weighted' relative response frequencies (*wrf*) which were an average of the relative response frequency for the three groups and allowed each group to be weighted equally. For ranked questions, a 'weighted mean' was calculated from the average of each group's mean rank of a particular response.

2.6 Synthesis

A synthesis of results from these approaches is presented in Chapter IV. The synthesis forms the basis for the rationale behind recommendations developed in Chapter V.

CHAPTER III LEGISLATION REVIEW

3.0 Introduction

Exclusive exploration rights, granted by the Crown, are conditional on the performance of geological investigations. Regulatory approaches to induce investigations include: prescribing yearly work requirements measured by expenditures; issuing short term permits or exploration licences; requiring deposits on work commitments; or reducing areas covered by licences or permits as exploration progresses²¹. It has been stated if legislation is effective, it "*will motivate individuals [or corporations] to enhance the public interest*" by exploring and developing mineral resources²². This is the principal role of assessment work requirements.

The *Green Paper on Ontario's Mines and Minerals Policy and Legislation*²³ contends,

[an] *effective assessment work system should:*

- *be simple to interpret and easy to administer;*
- *stimulate the exploration and development of Crown lands;*
- *encourage the active exploration of claims;*
- *encourage claim holders to submit high quality data to the Crown on the work conducted and mineralization discovered;*

²¹Northcutt Ely. 1970. "Policy Considerations in the Development of Mineral Laws"; Natural Resources Lawyer, 3(2):281-297.

²²Michael Crommelin & Andrew R. Thompson. 1974. "Introduction" in Mineral Leasing as an Instrument of Public Policy Ed. Michael Crommelin & Andrew Thompson, Vancouver: UBC Press, p. xiii.

²³Ontario Ministry of Northern Development and Mines (MDNM). 1988. Ontario's Mines and Minerals Policy and Legislation: A Green Paper, Toronto: Mineral Development and Lands Branch, p. 11.

- *encourage claim holders to submit as much data as possible, over and above the minimum required to maintain the claim in good standing; [and]*
- *encourage active exploration to continue after the stage at which a lease is currently issued.*

This chapter summarizes some of the legislated requirements in the provinces and territories that direct mineral exploration and development. Information is based on mining legislation in force in June 1992, and generally does not consider transitional requirements or mineral rights that are maintained in good standing under earlier legislation.

3.1 Representation work

Canadian mining legislation defines representation work in broad terms encompassing virtually all mineral exploration activities. For example, the *Metallic Minerals Regulation of Alberta* defines assessment work as:

*a geological, geochemical, geophysical or geotechnical study, investigation, reconnaissance or survey undertaken to establish the geology of a given area or to ascertain the nature, quality or extent of metallic minerals in the area and includes any work leading to the commercial development of a metallic mineral.*²⁴

Necessary environmental work may also be accepted as assessment work. For example, Nova Scotia accepts water monitoring surveys²⁵ and New Brunswick accepts

²⁴Alberta Reg. 246/84, s.1(b).

²⁵NS Reg. 30/91, s.36(1)(l).

reclamation and environmental rehabilitation²⁶. Rehabilitation work in Ontario is only accepted if given previous approval²⁷.

In general, to maintain a mineral interest, the holder must:

- complete a minimum amount of work, measured by prescribed expenditures per unit area, within a specified time period;
- submit a statement of work-related expenditures to the Crown, and;
- support the statement of expenditures by also submitting a report on work.

In most jurisdictions, reports need only represent the minimum expenditures required. Excess work can be filed for additional credit (details in Section 3.1.4), or may not be filed at all. Manitoba and New Brunswick require submission of reports on all work performed, regardless of whether it is submitted for credit²⁸. Although the CMR have a similar provision²⁹ the interpretation is not clear and it is not enforced.

Once a report is accepted, the holder is given credit for work, equal to total allowed expenses. The Crown has considerable latitude in deciding whether certain types of work should be allowed or accepted, and amount of credit that should be given, based on standard costs. Ontario and Saskatchewan allow credit for application of new methodologies or reinterpretation of previously submitted data. Ontario may refuse compilations of publications or reports that have already been filed with the Crown³⁰ and other jurisdictions specify reported work must provide new or additional data contributing to geoscientific knowledge of the area. Yukon stipulates preliminary work,

²⁶B.C. Reg. 297/88, s.12(n).

²⁷O. Reg. 116/91, s.19(1).

²⁸SNB Chap. M-14.1, s.56(1)(a)(i); S.M. 1991-92, c.9, s.80(1).

²⁹s.41(1)(a).

³⁰O. Reg. 116/91, s.6(2)(h).

such as aerial reconnaissance or specified geological or geophysical investigations, may only be filed for credit during the first three years of the claim's life, and may not count toward excess credit beyond the first three years³¹. Subsequently, work is expected to progress to more advanced exploration methods such as diamond-drilling.

3.1.1 Allowable Expenses

Expenditures on reported work may qualify for full or partial credit. In general, acceptance of expenses is discretionary and work programs are expected to be substantial in relation to indirect costs. Some jurisdictions restrict credit for indirect expenses such as transportation, freight, camp and road construction, capital depreciation on equipment purchased for work, and some types of office or overhead expenses, to a certain percentage of overall costs. Examples are New Brunswick and Nova Scotia, where credit for indirect expenses is limited to 10% of overall costs, and Ontario where credit is limited to 20%. In Ontario, Yukon and British Columbia, credit for transportation of personnel is limited to expenditures incurred within the jurisdiction. In the NWT, legal surveys or construction of airstrips and roads are only allowed a maximum of \$2./acre credit for each type of work, toward total expenditures necessary to apply for a lease of a claim. In some jurisdictions, such as Ontario, expenses for certain types of physical work³² are only allowed if submitted along with a report on technical investigations

³¹Cons. 1989 R.S., c.Y-4, s.54(4), Roland Ronaghan, personal communication, June 5, 1992.

³²Physical work that is preparatory work for technical investigations, such as line cutting, or ground control surveys.

facilitated by the physical work. British Columbia allows credit for physical work submitted separately from associated technical work.

Most legislation allows claim holders to group contiguous claims for the purpose of spreading credit for work done on one claim to adjacent claims not explored³³. Work is either applied as needed throughout the claim group, or on a *pro rata* basis. In some jurisdictions, a common anniversary date for claims is required. Groups may be terminated when one or more claims in the group lapse, or are leased, transferred or surrendered and remaining claims are no longer contiguous. In British Columbia, Nova Scotia and Yukon the group size may be restricted by number of claims or units. Manitoba, NWT and Saskatchewan limit the total area of the group. Quebec states the group must fit into an area of 3.2 km². Manitoba, NWT, Nova Scotia and Saskatchewan only allow any one claim to be included in any one group once per year.

3.1.2 Prior Work

Most jurisdictions allow credit for work carried out before a claim is recorded. Regional surveys and prospecting performed prior to recording a claim and submitted within one year of the recording date, are eligible for credit in Ontario³⁴. British Columbia, Newfoundland, the NWT and Manitoba allow credit for work carried out after

³³SBC Chap. 5, s.26 to s.28; B.C. Reg. 297/88; S.M. 1991-92, c.9, s.81; SNB Chap. M-14.1, s.56(5), s.58.1; Nfld. Reg. 132/83, s.5, s.28; Cons. C.R.C. 1977, c.1516, s.37, s. 39(1); SNS 1990, C.18, s.37, s.51, s.54; O. Reg. 116/91, s.7; SPEI 1978, Cap. 15, s.28(7); RSQ 1989, c.M-13.1, s.76; SR 30/86, s.40; Cons. 1989 R.S., c.Y-4,S.1, s.53.

³⁴O. Reg. 116/91, s.8(1a,b).

staking and before recording a claim³⁵. Nova Scotia and New Brunswick credit airborne and ground surveys completed over open ground before submitting an application to acquire ground³⁶. In Quebec³⁷, expenditures on work carried out within one year prior to staking a claim or filing a map designation are accepted, but only credited at 50% toward work requirements. Saskatchewan³⁸ credits certain types of work completed prior to registering a permit or claim: reconnaissance surveys completed within one year prior to registration; and trenching and stripping work completed within six months prior to registration.

3.1.3 Deposits On Work Commitments and Cash-in-Lieu

In some jurisdictions, a refundable performance bond may be required as a deposit on work commitments when a non-ground-staked mineral interest is registered. Cash may be submitted in lieu of meeting work requirements, or as a means of extending the deadline for filing work. Some jurisdictions feel cash-in-lieu may favour larger companies but retain it as a safeguard for claim holders whose claims are in jeopardy when, under certain circumstances, credit for work is cut back³⁹. In some cases, deposits may be refunded if work is completed at a later date. If work is not completed, the deposit is forfeit to the Crown. Specific requirements in each jurisdiction are summarized in Table 3.1.

³⁵Mineral Disposition and Mineral Lease Regulation, 1992 S.M.; Cons. C.R.C. 1977, c.1516, s.40(1); Cons. Mineral Act, 1976, Condition 5; B.C. Reg. 297/88, s.1(1).

³⁶SNS 1990, C.18, s.37(1)(2); SNB Chap. M-14.1, s.62(1b).

³⁷RSQ 1989, c.M-13.1, s. 80, s.81.

³⁸SR 30/86, s.70(1).

³⁹Blair Kite, personal communication, June 1992.

TABLE 3.1: CASH PAYMENTS FOR WORK REQUIREMENTS⁴⁰

	Deposit on Work Requirements	Cash in Lieu of Work
Ab	\$10./ha, refundable	
BC		Allowed
Mb	\$25,000 deposit for work on permits, refundable	Allowed for permits and claims, cash forfeit if work is not performed by 5th anniversary
NB		1st year \$20. acceptable 1st year expenditures must be submitted along with and in addition to 2nd year expenditures
Nf	\$50./claim deposit for map staked licences, refundable	Allowed to gain extension of time, refundable when work is completed
NT	Deposit on proposed work for permits and extension on work requirements, refundable	Must pay .10/acre for 1 yr extension. Only 3 extensions are allowed
NS	Deposit on proposed work required if competing for same area	Allowed once in a 5 year period, twice the work must be done in the following year or deposit is forfeit
On		Allowed if it is discovered claims exceed the size recorded and representation work is needed on the additional area to keep claims in good standing
Qu		Allowed for claims and permits
Sk	Performance bond for permits, refundable	Allowed for permits. No more than 3 years allowed on claims. Cash-in-lieu, refundable the following year if 2 year's work is submitted
Yk		Allowed

3.1.4 Excess Work, Grouping and Transferable Work Accounts (PAC)

Excess work may be credited against representation work requirements for subsequent terms of the mineral interest. New Brunswick and British Columbia restrict

⁴⁰Alberta Reg. 246/84, s.6(1); SBC Chap. 5, s.25(b); Mineral Disposition and Mineral Lease Regulation, 1992, S.M. 1991-92, c.9, Schedule B, s.6(b); S.M. 1991-92, c.9, s.53, s.84; Nfld. Reg. 132/83, s.37, s.40(1)(2); Mineral Act, Schedule A, Condition 2; Cons. C.R.C. 1977, c.1516, s.29(5.2a); SNS 1990, c.18, s.34; O. Reg. 116/91, s.20(2); SPEI 1978, Cap. 15, s.24; RSQ 1989, c.M-13.1, s.73, s.95(2); SR 30/86, s.6(1d), s.14, s.39(1); Cons. 1989 R.S., c.Y-4,S.1, s.57(1).

application of excess work to a maximum of ten-years credit⁴¹. In Yukon⁴², no more than \$400. worth of excess work per claim can be recorded in a given year. In some jurisdictions, the amount of credit allowed may decline if work is filed one or more years after completion.

Transferable work accounts allow excess work to be banked, and when needed, applied as a portion of work requirements on non-contiguous claims. British Columbia has implemented this type of system. Up to 30% of the total value of work on a property may be withdrawn from a claimholder's Portable Assessment Credit (PAC) account and added to the work filed. For example, if the value of work on a property is \$22,500, an additional \$6,750 of credit can be withdrawn from the PAC account, and both amounts, totalling \$29,250 credit, can be applied against work requirements.

3.1.5 Representation Work Expenditures for Mineral Interests

It has been stated required expenditures on assessment work should be set:

*high enough to require a holder to work a claim to satisfy the concept of 'use it or lose it', but not so high that a holder has to plan work just to fulfil the assessment work requirements. The objectives should be to find mines not to do assessment work.*⁴³

Different approaches have been used to establish levels including comparison with other provinces and costing out different exploration scenarios from the viewpoint of majors, juniors and independents.

⁴¹SNB Chap. M-14.1, s.56(6); SBC Chap. 5, s.26(a).

⁴²Cons. 1989 R.S., c.Y-4,S.1, s.54(3).

⁴³R.H. Tays, representative of the PDAC, 1990. In Correspondence to J. Mason, Ontario Ministry of Northern Development and Mines.

3.1.5i Permits and Agreements

Permits are a means of encouraging exploration in remote areas, or areas where mineral potential is not well known or documented. They are generally issued for large areas and have low expenditures requirements. Permits are held for two to five years and may not be renewed. NWT, Manitoba and Saskatchewan permits grant exclusive rights to explore for minerals and stake claims⁴⁴.

Table 3.2 summarizes representation work expenditures per hectare (ha) per year, required to maintain a permit.

**TABLE 3.2: ASSESSMENT WORK EXPENDITURES
REQUIRED TO MAINTAIN PERMITS (\$/ha)⁴⁵**

	3 yr Σ	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7-8	Yr 9-10
Mb	13.75	1.25	5.00	7.50					
NWT N of 68°	0.75	0.25		0.49		0.99			
NWT S of 68°	1.73	0.25	0.49	0.99					
Qu	8.00	1.00	2.00	5.00	5.00	10.00	permit renewal:		
							10.00	15.00/yr	20.00/yr
Sk*	10.00	2.00	4.00						

* Current regulations only allow permit terms of 2 years. Permits outstanding in 1986 can be renewed in accordance with earlier regulations.

3.1.5ii Claims

Claims may be acquired through map staking, usually in surveyed areas, and ground staking. Claims generally confer similar rights as permits but have longer tenure to accommodate exploration and small-scale development. In Ontario, permission to mine or to extract minerals for testing purposes is at the Minister's discretion⁴⁶. Claim

⁴⁴s.52(2) Sask Reg 30/86, s.5, s. 18.

⁴⁵Cons. C.R.C. 1977, c.1516, s.31(1ab); RSQ 1988, c.M13-1, r.2, s.15; SR 30/86, s.1.

⁴⁶RSO 1990, Chap. M.14, s.52(1).

holders in Yukon⁴⁷ are granted exclusive rights to produce minerals. In the remaining jurisdictions, claims confer exclusive rights to prospect or explore for minerals and to mine for the purpose of testing or sampling, but not to mine more than a specified amount for mineral production⁴⁸. In most jurisdictions, excepting Alberta, Newfoundland, and the NWT, claims may be renewed indefinitely, subject to yearly work requirements.

Table 3.3 compares required representation work expenditures for both map staked and ground staked claims. Expenditures prescribed by legislation as a dollar value per unit area or per claim were converted to a value per hectare by using the claim or unit size specified in legislation, or an assumed 16 ha claim size.

⁴⁷RSC 1970, c.Y-4, s.48.

⁴⁸SPEI 1978, c.15, s.26 S.M. 1991-92, c.9, s.61(1); SR 30/86, s.35; Consolidation, Mineral Act, 1976, s.19; SNB Chap. M-14.1, s. 53(1)(b), s.67; SBC Chap. 5, s.24(1), s.36(1); Hudson, Manager of Mineral Agreements. 1992. Alberta.

TABLE 3.3: REQUIRED WORK EXPENDITURES ON CLAIMS (\$/ha)⁴⁹

	5 year Total	10 year Total	YEAR														
			1	2	3	4	5	6	7	8	9	10	11	12	13-15	16-25	25+
			\$/ha/Yr														
Ab _m	35.00	NA	10.00			20.00			15.00/yr			Claims must be taken to lease					
BC	28.00	68.00	4.00/yr			8.00/yr											
MB	50.00	112.50	0	12.50/yr						25.00							
NB	62.47	156.22	6.25	9.35	12.50	15.62	18.75/yr					31.25		37.50	50.00		
Nf	93.97	296.24	12.50	15.63	18.75	21.86	25.00	37.50/yr + one time 25.00 renewal fee									
Nf _m	90.00	285.00	12.00	15.00	18.00	21.00	24.00	36.00/yr + one time 25.00 renewal fee									
NT	24.70	49.40	9.88			4.94/yr											
NS	62.50	125.00	12.50/yr						25.00		50.00						
On	100.00	225.00	0	25.00/yr													
*Qu	78.12	281.24	31.25/two year period					46.87/two year period					62.50/two year period				
Sk	48.00	108.00	0	12.00/yr						25.00							
*Yk	31.25	62.50	6.25/yr														

m-map staked

* Claims assumed to be 16 ha.

An alternate means of comparison was to estimate costs for an exploration program 'typical' for the NWT⁵⁰, using industry standards⁵¹ for each jurisdiction, and

⁴⁹Alberta Reg. 246/84, s.10(1); B.C. Reg. 297/88, s.19(1); S.M. 1991-92, c.9; NB Reg. 86/98, s.11(1); Nfld. Reg. 132/83, s.30; s.42; Cons. C.R.C. 1977, c.1516, s.38(2); NS Reg. 30/91, s.34; RSO 1990, Chap. M.14; RSQ 1989, c.M-13.1; R.S.PEI 1988, C.M-7, s.5(1); SR 30/86, Appendix 1; Cons. 1989 R.S., c.Y-4, S.1, s.54(1).

⁵⁰The 'typical' program, suggested by John Brophy, DIAND District Geologist, is: a 2-month-long summer exploration program that covers a property/claim group of 5,000 ha. The crew consists of four geologists: two senior and two junior; and two field hands. Line cutting, geophysics and drilling are done by contractors. Work comprises cutting a 20-line-km grid, magnetometer and VLF-EM surveys on the grid, grid and reconnaissance mapping, 1000 m of diamond drilling (BQ) and collecting 1000 geochemical samples which are analyzed for Pb, Cu, Ag, and Au.

⁵¹Industry standard costs provided by administrators listed in Appendix 2.

contrast results based on the number of years claims would remain in good standing (Table 3.4). For this example, higher costs in the NWT, coupled with low expenditure requirements, mean claims are maintained in good standing for a longer period than in any other Canadian jurisdiction.

TABLE 3.4: ASSESSMENT CREDIT FOR 'TYPICAL EXPLORATION PROGRAM'

	Total Cost for 'Typical Program'	\$/ha	Years Work Credit	Years Work Credit at NWT Costs
Qu	\$285,950	57.19	3	3
Ab	\$278,000	55.60	6	6
NT	\$282,200	54.44	> 10 (to lease)	> 10 (to lease)
Sk	\$241,000	48.20	5	5
Nf	\$224,600	44.92	3	3
BC	\$209,620	41.92	3	8
Yk	\$200,500	40.10	6	8
NB	\$154,000	30.88	3	4
Mb	\$137,840	27.56	3	5
On	\$132,416	27.48	2	3

3.1.5iii Mineral Leases

Mineral leases are viewed as authorization or required tenure to proceed into production; or a means of protecting exploration improvements which represent an asset

to shareholders, lending institutions and companies⁵². To ensure a minimum amount of work has taken place to develop a claim before it is leased, jurisdictions may require:

- a specified number of years of representation work or expenditures on representation work be completed;
- submission of proof a workable deposit has been outlined, or;
- an expressed intention to proceed to mineral production.

Table 3.5 summarizes the approaches taken in Canada.

⁵²Minutes from the February 22, 1990 meeting of the Assessment Regulation Drafting Committee, Ontario Ministry of Northern Development and Mines.

TABLE 3.5: WORK REQUIRED FOR LEASE APPLICATION⁷⁷

	Work Prerequisites for Lease Application	Minimum Required Expenditures for Lease Application (\$/ha)	Lease Required For Production	Size Limit for Lease Area
Ab	May apply at any time	None specified	Yes	None specified
BC	Lease required for production	None specified	Yes	None specified
Mb	Completed a specified amount of representation work, or proven up an economic deposit	6.25	Yes	800 ha
Nf	Specified number of years of representation work must be completed	46.88 -ground staked, 45.00 -map staked 2.20 -permit	Yes	None specified but this is under review
NT	Specified number of years of representation work must be completed or wish to begin production	24.70	Yes	None specified
NB	Proven the existence, extent and value of an orebody	None specified	Yes	Area necessary for planned mine or to cover extension of ore zone along strike and downdip
NS	Proven the existence, extent and value of an orebody	None specified	Yes	None specified
On	First unit of representation work (\$25./ha) must be completed	\$4,400. minus representation work expenditures	Yes	None specified
Qu	Proven the existence, extent and value of an orebody	None specified	Yes	Less than 100 ha, excess subject to Ministerial discretion
Sk	None specified	\$50. recording fee	Yes	No greater than 6000 ha
Yk	Completed a specified amount of representation work or proven up an economic deposit	31.25	No	1 Lease = 1 Claim

⁷⁷Alberta Reg. 246/84, s.15(1); SBC Chap. 5, s.36(1); S.M. 1991-92, c.9, s.102(1), s.104(b), Schedule B, Mineral; Personal communication, Ted Batchelor; Mineral Act, 1976, s.19(2), s.26(3); personal communication, Noel Gover; Cons. C.R.C. 1977, c.1516, s.58(1a); SNB Chap. M-14-1, s.67, s.68(1a)(1b); SNS 1990, c.18, s.56(1c), s.89, s.90(1c); RSO 1990, Chap. M.14, s.51(1), s.81(2); RSQ 1989, c.M-13.1, s.100, 101, 102; RSPEI 1978, Cap. 15, s.34, 35; SR 30/86, s.48(1), s.54; Cons. 1989 r.s., c.Y-4, s.68(1a).

Newfoundland and the NWT are the only jurisdictions that require mandatory leasing after ten-years-work on a claim⁷⁸. However Newfoundland's legislation states continuous production must commence within five years of leasing. The ten-year life for claims is currently under review in Newfoundland, where it is felt the time period is too short for geological evaluations, and an exploration period of twenty years is being considered⁷⁹.

A legal survey, which in some jurisdictions may be credited toward representation work expenditures, is a prerequisite for obtaining a lease in British Columbia, New Brunswick, the NWT, Quebec, Yukon, for ground staked licences in Newfoundland and for unsurveyed lands in Ontario⁸⁰. Manitoba⁸¹ requires a plan of a boundary survey be filed within two years of issuing a lease. In Saskatchewan⁸², the lease must be staked out, but not necessarily surveyed. In Ontario, a legal description of claims may be required⁸³ and surveys are required at the Minister's discretion, for claims on surveyed land in Ontario⁸⁴. Surveys are not required in Alberta, Nova Scotia, and for map staked claims in Newfoundland, but may be a condition before mineral production is permitted.

⁷⁸Under legislation in force prior to 1977, claims in the NWT could be retained indefinitely without going to lease. There are still some of these claims in good standing in the NWT.

⁷⁹Noel F. Gover, personal communication, May 1992.

⁸⁰SBC Chap. 5, s.37(a); Cons. C.R.C. 1977, c.1516, s.58(2); NB Reg 86/98, s.68(1e); SPEI 1978, Cap. 15, s.35(c); Cons. 1989 R.S., c.-4,S.1, s.68.; Nfld. Reg. 132/83, s.54(1); RSO 1990, Chap. M.14 s.96.

⁸¹Mineral Disposition and Mineral Lease Regulation, 1992, S.M. 1991-92, c.9, Schedule B, s.37(1).

⁸²SR 30/86, s.49.

⁸³RSO 1990, Chap. M.14, s.95.

⁸⁴RSO 1990, Chap. M.14, s.96.

TABLE 3.6: ASSESSMENT WORK REQUIREMENTS TO MAINTAIN LEASES⁸⁵

	Percent of Claim Area Held as Leased Claims	Work Requirements (\$/ha)	Rental (\$/ha)	Term
Ab	5.0	10.00 on primary lease	3.50 (subsurface)	1st term, 10 years, renewable for 15 year terms
BC	<1.0	no work required	5.00 on surveyed lease; 250. for each unsurveyed lease, surface rights attached on Crown lands at Minister's discretion	30 year terms, one renewal
Mb	15.2	1,250. on non-producing lease that are renewed for a second term	1st or producing lease, 8.00 (subsurface rights) or 13.00 (surface and subsurface rights); non producing lease, 12.00 (subsurface rights), 17.00 (surface and subsurface rights)	21 year terms, renewable only if producing or on submission of documents stating production is not warranted at time
NB	1.0 (formerly 10% before production requirements implemented)	60. on non-producing lease	5.00 (subsurface rights)-Also need lease of Crown land under Crown Lands Act	Maximum 4 20-year terms
Nf	0.01	production must commence within 5 years and continue without aggregate shut-downs exceeding 5 years	40.00 (includes surface rights on crown land)	Maximum 25 year term, renewable for 10 year terms
NT**	10	no work required	2.47 1st term, then 4.94 (subsurface rights)	21 year term, renewable
NS	43	no work required	5.00 (subsurface rights)	20 years with renewals contingent on bona fide working the lease
On	39	no work required	5.00 (subsurface and surface rights) 3.00 (subsurface rights)	21 years renewable if producing or making efforts to bring to production
Qu	0.1	must commence mining within 4 years	12.50 private land (subsurface rights) 25.00 public land (subsurface and surface rights) 62.50 mine waste dump (subsurface and surface)	Initial 20 year term, renewable at least 3 x 10 year terms if operating during at least 2 years of last 10 years of previous lease
Sk	22	If no mining operations: 1st term - 25.00; 2nd term - 50.00; 75.00 thereafter	Producing mine: 5.00 (subsurface only)	10 year terms, renewable
Yk	10	none required (Barton 1988)	3.12* 1st term of lease (subsurface rights) 12.50* renewals of lease (subsurface rights)	21 years, renewable

*A lease area of 16 ha was chosen to facilitate comparison with other jurisdictions.

**Average area between 1987 and 1991.

⁸⁵Alberta Reg. 246/84, s.17(3), s.18(2), s.19(1); SBC Chap. 5, s.37(1)(2), 45(1); S.M. 1991-92, c.9, Schedule B, Mineral Disposition and Mineral; SNB Chap. M-14.1, s.71(1)(2); NB Reg. 86/98, s.3(2), 11(2); Mineral Act, 1976, s.26(1.1), 26(4cii); Cons. C.R.C. 1977, c.1516, s.59, s.60(1); NS Reg. 30/91, s.56(2), s.60(1); RSO 1990, Chap. M.14, s.81(3), O. Reg. 113/91, s.4; R.S.PEI 1988, C.M-7, s.38(1)(2); RSQ 1988, c.M13-1, r.2, s.19, RSQ 1989, c.M-13.1, s.104.; SR 30/86, s.52, s.55(1), s.64(1); Cons. 1989 R.S., c.Y-4, Schedule II.

All jurisdictions require rent to maintain leases. Rent ranges from \$2.47-\$40./ha/year (Table 3.6). Exceptions are Quebec where \$62.70/ha/year⁸⁶ is charged for portions of a lease used as a mine waste dump, and British Columbia where rent for unsurveyed leases is \$250./lease/year. In addition to rent, jurisdictions may require assessment work or production. Required expenditures for certain non-producing leases range from \$25./ha/year for non-producing first term leases in Saskatchewan to \$60./ha/year in New Brunswick. To renew a non-producing lease in Manitoba, \$1250./ha must have been spent on approved work within the preceding term⁸⁷.

3.2 Reports of Work

In a discussion of the role of information submitted to the Crown, the following objectives were cited as principles which exemplify the view of many jurisdictions:

1. *The main objective (of the assessment file) is to obtain evidence of the existence of mineral deposits and of information to assist in the exploration, development and assessment of these deposits, rather than the establishment of arbitrary levels or amounts of work.*
2. *Regulations should encourage the expenditure of available money in exploration and development of mineral deposits rather than the acquisition of title.*
3. *The filing of work, whether for assessment or not, should be encouraged to add to the pool of knowledge of the mineral resources of the province.*⁸⁸

⁸⁶Marcel Tremblay, personal communication, June 1992.

⁸⁷S.M. Schedule B, Mineral Disposition and Mineral Lease Regulation, 1992, s.34(2).

⁸⁸Ontario Department of Natural Resources, Advisory Committee on the Revision of the Ontario Mining Act, in D.O. Downing & B.W. Mackenzie. 1979. Public Policy Aspects of Information Exchange in Canadian Mineral Exploration. Kingston: Centre for Resources Studies, p. 37.

The importance of filing reports cannot be understated. A review of reports is commonly the first stage of exploration. The prospector credited with the 1981 discovery that led to development of three major gold mines near Hemlo Ontario, attributed the discovery to his re-evaluation of a report filed in 1952 with the Ontario Government⁸⁹.

3.2.1 Distribution of Exploration Information

When a report is filed with the Crown, it is usually held confidential for a specified time period or as long as the claim is in good standing (Table 3.7). After this period, the report is 'released' to the public.

Several authors⁹⁰ have discussed the government's role in collecting and disseminating exploration information and associated impacts on exploration activities. Arguments against government intervention are that: companies may be reluctant to provide 'free' information to competitors; companies may provide incomplete or misleading information; information needs are company-specific, based on company needs and objectives; and exploration and associated economic activity may be reduced if another company's results are available. Arguments for the government's role are that: duplication of exploration efforts will be reduced and exploration will proceed more efficiently; it improves opportunities for smaller companies or individuals to

⁸⁹George Patterson, personal communication, August 1991.

⁹⁰D.O. Downing and B.W. Mackenzie; F.M. Peterson. 1977. *"The Government Role in Exploration"* in Mineral Leasing as an Instrument of Public Policy, British Columbia: University of British Columbia. Robert Anderson. 1977. *"Resource Conservation and Pricing"*, Resources Policy (3): 78-86. O.C. Herfindahl. 1969. Natural Resource Information for Economic Development. Maryland: John Hopkins Press.

participate competitively in mineral exploration; and as reports expand the geoscience database, individual risk in exploration is reduced.

TABLE 3.7: CONFIDENTIALITY PERIOD⁹¹

Period of Confidentiality	Jurisdiction
none	Quebec, Ontario
6 months following claim lapse	Yukon
1 year	Alberta*, BC
2 years	New Brunswick*, Nova Scotia*, PEI*
3 years	Newfoundland, NWT, Saskatchewan
Other	Manitoba, confidential unless claim holder agrees to release or claim lapses (currently under review), airborne surveys in Manitoba are held confidential for five years.

* Minister may extend period of confidentiality on request of holder if extension is warranted.

3.2.2 Filing Requirements

Requirements for acceptance of work and standards for submission of reports, ensure reports are of professional quality, and incorporate data, observations and conclusions necessary to document work carried out.

Report specifications are similar between jurisdictions, and include standards such as: typewritten, 8½" x 11" bound reports, and legible maps at specified scales. All jurisdictions require hard copies of reports and maps. Several jurisdictions have made provisions for accepting computerized information or information transmitted by fax

⁹¹E. Jackson, 1988. "Tables Summarizing Mining Rights Legislation in the Provinces and Territories", Provincial Geologists Journal, Vol. 6: Fig. 4.; Alberta Reg. 246/84, s.11(4)(6); B.C. Reg. 297/88, s.1(7); SNB Chap. M-14.1, s.52(1); SNS 1990, c.18, s.175(3)(4); SPEI 1978, Cap. 15, s.7; Cons. Mineral Act, 1976, s.12(3); Cons. C.R.C. 1977, c.1516, s.5(2a); SR 30/86, s.73(1).

machines. Along with hard copy reports on airborne geophysical surveys, Quebec requires submission of original tape or microfilm of instrument measurement recordings, accompanied by a digital recording of readings on computerized medium with a description of data format parameters. Manitoba requires submission of flight charts and tapes for airborne surveys. Ontario⁹² and British Columbia⁹³ decided against a requirement to submit airborne digital data because of practical difficulties associated with different formats used by airborne geophysical survey companies. Although no provinces accept computerized reports, Ontario is preparing to digitize all data filed and develop a Geographic Information System (GIS) to overlay information⁹⁴.

3.2.3 Prospecting and Prospecting Reports

Legislation may also specify that work must be done, or supervised by a member of a professional organization, such as associations of professional engineers, geologists and geophysicists. However, most jurisdictions have incorporated specific considerations in their legislation, to protect rights of those who make a living as a prospector.

⁹²Blair Kite, personal communication, June 1992.

⁹³Talis Kalnins, personal communication, June 1992.

⁹⁴Blair Kite, personal communication, June 1992.

Prospectors, or those receiving no remuneration for work, are credited a certain amount per day for their work. The amount varies considerably between provinces, for example:

New Brunswick	2 X minimum wage
Newfoundland	\$100 / 8 hour day
Nova Scotia	\$50 / 8 hour day
Manitoba	\$100 / day or an amount as approved
Ontario	\$150 / day

Technical and reporting standards are relaxed for prospectors. For example New Brunswick allows submission of handwritten prospecting reports. However, in some jurisdictions, there are restrictions on acceptance of prospectors' work. In the NWT and Yukon, prospecting work may only be accepted from people lacking relevant qualifications, if prior approval has been given by the Engineer of Mines. In British Columbia, reports may only be accepted from graduates of British Columbia's Mineral Exploration Course for Prospectors or a similar course, or have demonstrated training and experience relevant to the work reported. Without these qualifications, authors may be required to take a basic prospecting exam before reports are accepted.

Acceptance of prospectors' reports may be restricted to early in the claims' life to ensure work advances. Nova Scotia prospectors' statements may only be submitted for the first seven renewals of a mineral interest. British Columbia restricts acceptance of prospecting reports to the first three years of work on a claim and Manitoba will only accept one report on detailed prospecting⁹⁵.

⁹⁵S.M. c.9, Schedule B, Mineral Disposition and Mineral Lease Regulation, 1992, s.6(1)(b).

3.2.4 Reporting Requirements in Addition to Representation Work Reports

Information may be filed as a prerequisite for drilling authorization or airborne licences; to gain access to surface rights; and as summary statistics on exploration. In the NWT, Newfoundland and Nova Scotia, details on drilling programs must be submitted prior to starting work, and a tabulation of drilling data must be submitted after drilling is completed⁹⁶. Manitoba and New Brunswick require prior notification of airborne surveys and submission of results⁹⁷ regardless of whether the information is filed for work credit.

New Brunswick, Nova Scotia and Newfoundland require periodic submission of statistical reports on work and expenditures completed on mineral interests⁹⁸. Details submitted in work reports may be omitted from statistical reports. Technical Progress Reports, required in New Brunswick, must be submitted every five years from the tenth anniversary of registering an interest, and must include: a location map; a list of all exploration and development expenses to date; a summary of surface exploration work with results and assays; a summary of drilling and underground development work with results; a list of tonnages and grades of mineral deposits; an explanation of why the holder of mineral claims is not proceeding to production; and a description of future work planned for the mineral claim.

⁹⁶NS Reg. 30/91, s.74(2); Cons. Mineral Act, 1976, s.4(4); C.R.C. 1977, c.1516, s.74.

⁹⁷SNS 1990, c.18, s.38; CRC 1977, c.1516, s.27(1)(2); SNB Chap. M-14.1, s.62(2), s.63 1991-92, c.9, s.58(1), s.59(1).

⁹⁸Cons. Mineral Act, 1976, s.4(1); SNS 1990, c.18, s.42,43; NB Reg. 86/98, s.22(1); SNB Chap. M-14.1, s.56(8)(9).

3.3 Discussion

With the exception of different cost structures, legislated requirements for representation work in the provinces and territories have many common elements despite differing regional characteristics of each jurisdiction. Although many of these requirements may be applicable in the NWT, caution should be used when comparing costing structures for maintaining mineral rights in the NWT with those of other jurisdictions. Assets and liabilities of working in a particular jurisdiction may be reflected in costing structures. Although the NWT's high mineral potential is a significant asset, a list of liabilities would include: poorly developed infrastructure and the smallest geoscience database for its area relative to the rest of Canada. From an administrative viewpoint, the vast areas of the NWT make it difficult to monitor mineral exploration and development activity, and industry compliance with legislation.

Some of the legislative approaches outlined in this chapter were discussed in the workshops described in Chapter II, and provided the basis for some of the proposals for changes to the CMR. Members of the NWT mining industry were consulted on the proposed changes, and their responses are discussed in Chapter IV.

CHAPTER IV RESULTS AND DISCUSSION

4.0 Introduction

Workshops (referred to in section 2.4), attended by DIAND, EMPR and mining industry representatives, focused on generating objectives to be achieved by legislation and suggesting possible regulatory options to achieve objectives. An overall 'Mission Statement' was developed to reflect the objectives expressed workshop participants. Options discussed in the following chapters were judged by their relevance to, and consonance with the Mission Statement as well as acceptability to stakeholders.

Mission Statement

To design modern, reasonable regulations that are as easy as possible to administer, with clear, objective, non-discretionary requirements for maintaining mineral rights, that will:

- a. foster a healthy mining industry and ensure mineral resources are developed in an orderly and predictable fashion;
 - b. stimulate, maximize and sustain exploration and development of mineral resources in a way that, accounting for unique regional characteristics, is competitive with southern Canada, and;
 - c. maximise disclosure and acquisition of high quality geoscientific information from work on claims and leases while,
 - i. respecting industry's need to retain confidentiality in certain competitive situations, and,
 - ii. avoiding unnecessary additions to industry's 'paper burden'.
-
-

Legislative options developed during the workshops were the subject of a questionnaire survey. Workshop and survey results are discussed in general terms in this chapter and the reader is referred to Appendix 3 and 4 for specific survey questions and numeric results. Comments quoted from questionnaires are not attributed to any source, as respondents were ensured confidentiality.

The survey response rate was 49% (summarized below) including people who stated they did not know the CMR well and declined to participate.

Group	Number of Responses	Number of Refusals	Number of Companies Represented by Respondents
Majors	25	2	19
Juniors	11	-	11
Consultants*	5	1	6
Independents	9	1	-
NWT Chamber of Mines	0	-	0
Total	50	4	35

* Grouped as juniors or individuals for questionnaire analysis, depending on how respondent classified self.

4.1 Respondents' Profile

Forty-seven questionnaires were returned by professionals in geology and/or engineering and three by prospectors. Thirty-two percent of all respondents were in management. Ninety-eight percent of respondents had filed work on NWT mineral claims, and sixty-eight percent had filed work on NWT Prospecting Permits.

4.2 General Comments on the CMR

Respondents were asked to rank and comment upon general statements about the CMR. It was remarked that the wording and layout are difficult for a layperson to understand, the CMR are "*archaic in design and concept*" and should be updated to use metric measures. Difficulties in tracking claim ages and work requirements were also noted and one individual advised including tables or charts to indicate expenditure requirements for claims of different areas and ages. Suggestions were that work requirements are too low, "*leading to prospective areas being tied up for excessive periods of time*". It was also proposed the CMR should, in some way, recognize industry's increasing costs of complying with escalating environmental regulation. One respondent suggested regulations should provide incentives for working in remote areas where costs are a barrier.

Endorsements of certain requirements in other jurisdictions can be used to provide guidelines for elements that should be included or strengthened in the CMR. Paper staking or clear staking regulations; five-year prospectors' licences; improved procedures for grouping and handling excess work; a PAC system; lease acquisition requirements based on economic or geological criteria; reduction or elimination of fees such as grouping or filing fees; and requirements to work leases were cited as favourable features of Canadian mining legislation.

4.3 Level of Work Expenditures

Despite low expenditure requirements in the NWT, hypothesis one (section 2.2) can, at least on an industry wide basis, be refuted. Expenditures on mineral exploration have been increasing over the past 20 years. Figure 4.1 graphs this trend⁹⁹, against the total area of different types of mineral rights in good standing each year. Total exploration expenditures show an increasing trend¹⁰⁰, contrasting with the decline in total area of mineral rights in good standing. The relationship suggests not only are expenditures increasing, but they are being directed toward intensified work on smaller areas.

4.3.1 Options

Workshop participants did not resolve questions of: whether fees and expenditure requirements are too low, and; how much expenditure requirements could be raised before they deter exploration in the NWT. However, the following options for modifying expenditure requirements were developed.

- i)* Through consultation with industry, raise expenditure requirements.
- ii)* Adopt an escalating fee structure to ensure advancing work on claims.
- iii)* Raise administrative fees, such as grouping or recording fees, to increase the cost to industry of keeping ground, so holdings would be rationalized.
- iv)* Structure work requirements to ensure advancing work on properties (Yukon example).

⁹⁹Sources for data to construct graph are: Dr. Donald Cranstone, unpublished data; EMR Canada, Canada Minerals Yearbooks, Mineral Reports 31-36; NWT Chamber of Mines, unpublished surveys.

¹⁰⁰The graph only includes data up to the year 1991 and does not reflect increased activities attributed to a diamond 'staking rush' that began in late 1991.

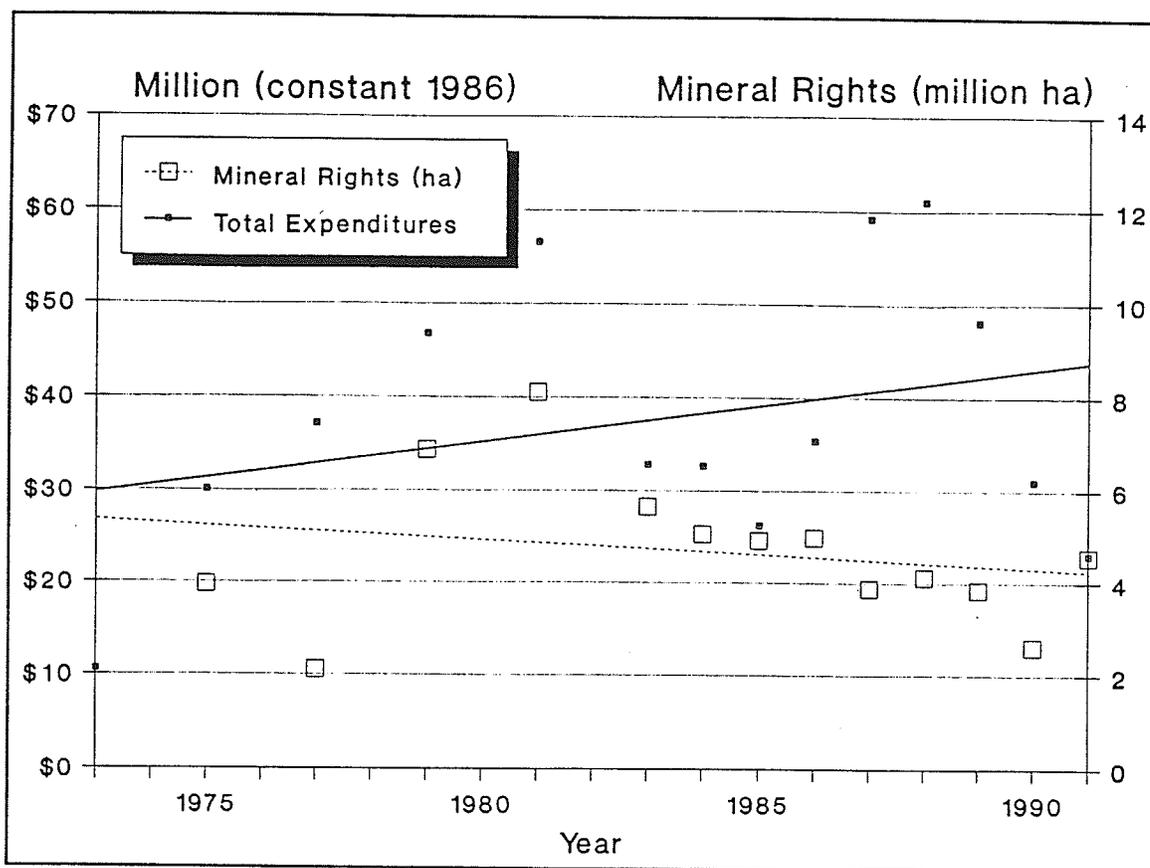


Figure 4.1: Total yearly expenditures on mineral exploration compared to the total area of mineral rights (claims, permits and leased claims) held in good standing each year.

- v) Limit the number of years that excess work can be carried forward, and the amount of excess work that can be spread throughout grouped claims.
- vi) Indirectly raise expenditure requirements by reducing or eliminating credit for specified indirect expenses.

4.3.2 Response to Options

Fifty-seven percent^{wrf101} of respondents thought current expenditure requirements were appropriate. Sixteen percent of majors, twenty-three percent of juniors and thirty-six percent of independents thought expenditure requirements were easy to exceed.

¹⁰¹ %^{wrf} is an average of the relative frequency of responses for a particular answer for the three groups: majors, juniors and independents.

Twenty-eight percent of majors, and fifty-eight percent of juniors and independents had at one time or another, been unable to complete minimum expenditure requirements and forced to let promising mineral claims lapse.

The difference in responses between industry groups can be accounted for by comments relating the claim block area to the difficulty or ease in fulfilling or exceeding expenditure requirements. It is likely majors are able to acquire and maintain larger claim blocks than juniors and independents. It was noted juniors and independents experience difficulties entering certain types of exploration, for example diamond exploration which involves acquiring and maintaining large areas of ground, because they are unable to raise the necessary capital.

Assessment-driven work has been carried out frequently or sometimes by 48%^{wrf} of respondents. The most common reason cited for carrying out assessment-driven work was obligations under option agreements to maintain an entire claim group in good standing, including claims that would normally be allowed to lapse. Another reason was confidentiality: credit for work on low-mineral-potential claims was spread to high-mineral-potential claims to avoid filing work from the high mineral potential claims. Respondents also stated work was dictated by economic conditions. They carried out just enough work to maintain claims until markets were favourable and it was possible to raise money for advanced exploration or development.

The majority of respondents opposed raising expenditure requirements, indicating an increase would make it significantly less attractive to work in the NWT. Thirty-three percent^{wrf} of respondents agreed required expenditures should be raised. The weighted

average of the levels suggested was \$4.72/acre/year (\$11.66/ha/year). All respondents were asked to indicate the level of expenditure requirements that would be a deterrent to working in the NWT. The weighted average of their responses was \$5.91/acre/year (\$14.60/ha/year).

Concerns were expressed about effects on juniors and independents of increasing expenditure requirements. It was speculated a hike in expenditure requirements would increase the difficulties in raising financing for exploring large properties. Other remarks were, *"it would make land selection more discriminatory"*, it would force companies to *"reduce claim sizes to focus on most prospective areas"*, and would *"encourage more selective work and rationalize land holdings to prioritization [sic] of claim's potential"*. Although this is a desired goal of expenditure requirements, it may result in smaller acreages being acquired, held and explored, leading to a reduction in overall exploration activity in the NWT.

Respondents suggested additional alternatives to raising expenditures requirements that had not been included in the questionnaire. Suggestions included:

- offer incentives such as cash rebates for chemical analyses or other exploration data, fuel tax breaks, flow through shares, and exploration incentives that may be tied to reporting all work;
- relax form and content regulations for representation work;
- give more credit for filing more work and for filing work early;
- relax grouping rules, and;
- introduce penalties for not filing work.

Sixty-three percent^{wrf} of respondents opposed an escalating rate, arguing it would cause administrative difficulties in tracking work requirements, but also suggested the

approach would be an effective means of encouraging progressive work. As one person noted,

there is some merit in the escalating rate because: (1) [it] encourages exploration in early stages [and it] (2) encourages portions of property deemed of lower merit to be dropped, and hence become available for staking by others.

Overall, implementing escalating expenditure requirements or raising expenditure requirements were ranked as more effective in terms of encouraging more work on properties and filing work than raising fees, reducing credit for indirect expenses or structuring work requirements to ensure progressive work.

Only 33%^{wrf} of respondents favoured limiting excess work credits that could be carried forward, commonly suggesting limits of either five or ten years. There were also proposals to introduce a PAC system to bank excess, if excess work were limited. Sixty-seven percent^{wrf} of respondents were opposed to limiting excess work, which they viewed as a penalty for carrying out extensive programs. It was noted that limits would discourage expensive exploration methods, and discourage claim holders from filing work if no credit would be earned.

The issue of grouping was not raised during early research, or during workshops. However, some respondents indicated dissatisfaction with, what they perceived to be, an inflexible approach to grouping under the CMR. Although 42%^{wrf} agreed a claim group size should be limited, it was also suggested the maximum group size should be increased.

Reducing credit for indirect expenses may increase the amount of exploration work carried out to fulfil expenditure requirements and also eliminates rewards for bad

project management, particularly in the area of logistics, which adds to overall costs and therefore credit. Only 54% of majors and 58% of juniors agreed credit for indirect expenditures should be limited, compared to 73% of independents. The most frequently suggested limit was 10% of total credit allowed for direct expenditures.

Respondents were divided over the issue of whether transportation is a direct expense; whether transportation only within the NWT is a direct expense and transportation outside the NWT is an indirect expense; or whether transportation is an indirect expense. A majority of respondents opposed granting full or partial credit only for expenses incurred within the NWT. Some comments were: "[the] NWT benefits from local expenditures even if a company administers work from elsewhere", and "the intent should be to encourage all exploration, no matter where the head office is based".

Ninety-one percent of respondents thought environmental monitoring surveys and environmental reclamation should be accepted as representation work. An opinion shared by most respondents was, "these expenditures are an integral part of exploration and development programs and they should be included". One individual noted that:

some people stake old mine sites just to hold in case metal prices increase or other economic factors improve. Often any assessment work they do is 'just to hold the ground'. The public would be better served in having this same effort devoted to clean-up work.

Opposing views were that expenditures on environmental studies were "nothing to do with mineral development", and "will not contribute to expanding exploration knowledge and will open up a new area for unjustified charges".

4.3.3 Discussion

Responses indicate expenditure requirements are considered fair and claimholders are generally not performing assessment-driven work unless compelled by option agreements. In addition to the question of need (discussed in relation to Figure 4.1) other arguments can be advanced against raising expenditure requirements. One respondent noted:

If the exploration potential of a district is similar to that of a southern one and the company gets the same credit for doing work on district claims, it would not make sense to explore in the NWT where poor infrastructure and remoteness make it more costly to operate.

During a follow-up telephone interview, another respondent warned NWT expenditure levels should not be compared to expenditure levels in other jurisdictions, unless other factors, such as the available geoscience database, were considered. He pointed out that Ontario, with expenditure requirements approximately five times higher than the NWT, can offer a more extensive geoscience database than the NWT.

In the NWT, which has a relatively small geoscience database, industry must generate their own information, and with high exploration costs, industry gathers less exploration information for their expenditures. To reduce the risk of missing a deposit they need to acquire and screen large areas. Low expenditure requirements and resultant longer tenure facilitate this approach.

In summary, raising expenditure requirements would not be consonant with (a) and (b) of the Mission Statement. Increasing expenditure requirements to promote work on properties is not only unwarranted but may discourage companies from exploring in

the NWT. The only rationale for an increase may be to encourage filing a higher ratio of work performed.

4.4 Geoscience Database Acquisition

Acquisition and enhancement of a geoscience database was stressed during workshop sessions. Concerns were that only a small ratio of work was being filed; work from advanced exploration generally exceeded legislated requirements and was therefore not being filed; and there was no requirement to file work on leases. Figure 4.2 compares total expenditures on exploration with the value of representation work filed with DIAND¹⁰². The graph demonstrates an increasing divergence between the dollar value of work filed and the dollar value of total exploration expenditures, which supports hypothesis 2 (Section 2.2), but fails to establish a causal relationship between the amount of work filed and expenditure requirements. The value, in 1986 dollars, of work filed, has remained relatively constant, not declined as might be expected if work was being filed only to fulfil expenditure requirements. There are however, disincentives to filing work including mandatory lease requirements (discussed in Section 4.6), legal survey

¹⁰²"A Statistical Report of Current and Historical Mining Lands Activity in the Northwest Territories".

requirements, cash-in-lieu provisions¹⁰³ and no incentive to file work on leases¹⁰⁴ that may be contributing factors to the low ratio of work filed.

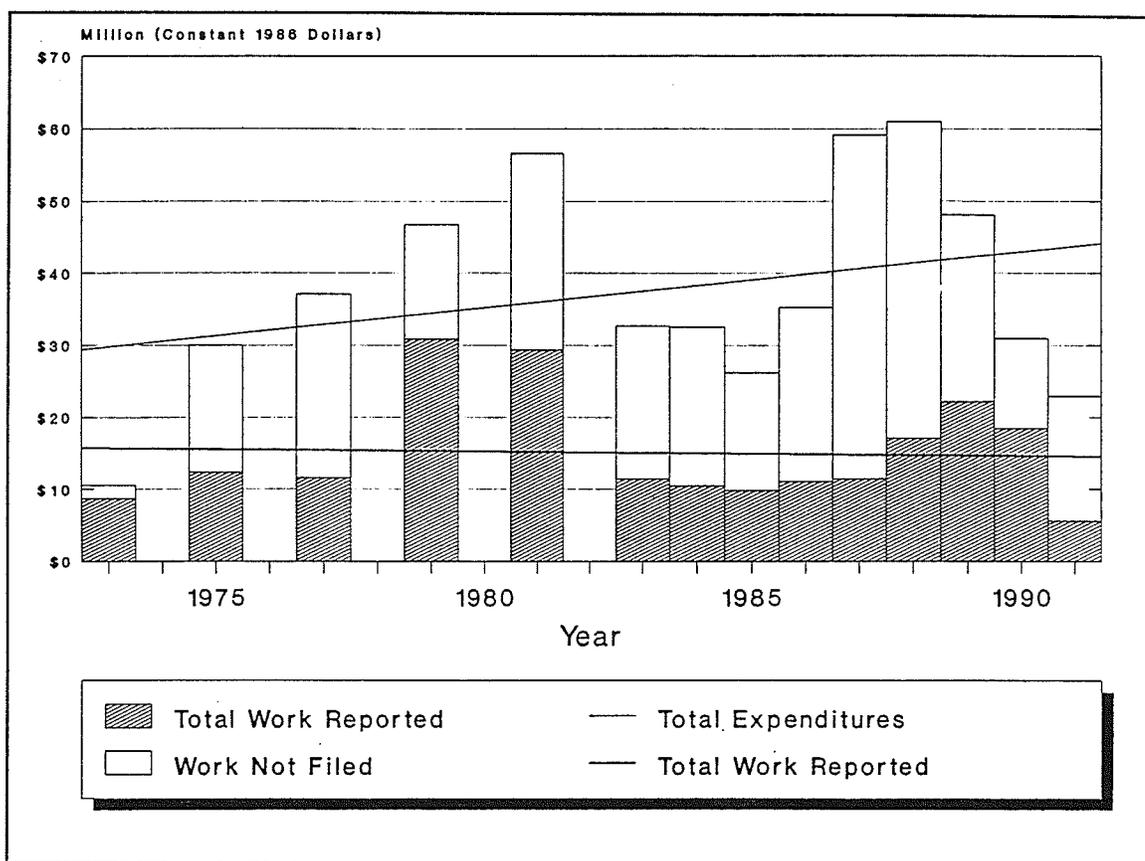


Figure 4.2: A comparison of total yearly expenditures on exploration with the total value of work filed each year. The stacked bars on the graph indicate total expenditures, and the ratio of work filed to work not filed.

¹⁰³These provisions, discussed in Section 3.1.3, allow claimholders, on payment of a fee and submission of a performance bond for work due, up to three one-year extensions to complete work. If the work is not filed, the performance bond is forfeit to the Crown but the work is considered to have been done. This is contrary to the objectives of assessment work requirements as may not work have been done, and information is not collected.

¹⁰⁴The CMR, s.60(2) states the value of assessment work performed on a leased claim may be deducted from the rent due. However the amount of credit allowed is the lesser of (a) approved expenditures on work or (b) 50% of the rent owing for the year. This suggests a maximum of \$.50/ha credit would be allowed for work, which provides little incentive for filing.

DIAND has not previously enforced requirements to file work. Section 41(1)(b) of the CMR could be interpreted as a requirement to file all work¹⁰⁵. However, there has been confusion over interpretation and the provision has not been enforced. Until recently, there was a clause in CMR Mining Leases requiring the lessee, on expiry of the lease, to:

*make available to the Department complete copies of all geological, geophysical and geochemical reports obtained, copies of all drill core logs, assay results and all other relevant information the Minister deems necessary...*¹⁰⁶.

The clause was removed partly because it had not been enforced, partly because of administrative difficulties that would have been caused if, for example, a mine such as Pine Point submitted reports on all work, and partly in response to industry opposition to the requirement¹⁰⁷. By not enforcing the filing requirements discussed, DIAND captured limited information on advanced exploration and mining projects carried out in the NWT.

Drawbacks to capturing more information were also discussed in the workshop. One concern related to administrative difficulties in handling and storing the volume of information that may be submitted. Another problem was the possibility of acquiring partial and therefore misleading information which, as noted by Downing and Mackenzie, "*is a diseconomy which hinders discovery of mineral deposits*".¹⁰⁸

¹⁰⁵John Hodgkinson, personal communication, January 1993.

¹⁰⁶Standard lease agreement, 1988.

¹⁰⁷Pat Corrigan, personal communication, June 1992.

¹⁰⁸Public Policy Aspects of Information Exchange, p. 30.

One participant observed mining companies have their own information formats which may be incompatible with formats used by government and would not be willing to incur additional costs to ensure compatibility. This problem is exacerbated when mines close or an advanced exploration project is suspended and companies are unwilling to commit additional resources to organize and submit information on abandoned work.

4.4.1 Options

The consensus reached in the workshop was advantages outweighed the drawbacks of capturing as much geoscience information as possible. The following options were suggested as methods for collecting information on a larger ratio of work carried out.

- vii)* Eliminate or restrict use of cash-in-lieu payments.
- viii)* Require all work be filed but balance the requirement with an acceptable confidentiality period.
- ix)* Use one, or a combination of options discussed in Section 4.3, to raise required expenditures and therefore the amount of work that must be filed. (Refer to section 4.3.2 for a discussion of responses.)
- x)* Require all work be filed as a prerequisite for lease application.
- xi)* Implement a PAC system.

Another option favoured by DIAND and EMPR workshop participants, was to require an information summary be filed along with reports, similar to the information needed for NWT Mineral Industry Reports (MIRs) or to require submission of summary statistical reports similar to those required in New Brunswick and Nova Scotia. Industry participants rejected the idea considering it an additional demand on their time. Therefore the idea is inconsistent with (cii) of the Mission Statement and was not evaluated further.

4.4.2 Response to Options

A great deal of emphasis has been placed on the importance of representation work reports as a source of geoscience data. To compare the relative 'value' of reports compared to other sources of data, respondents were asked to rank, on a scale of one (most useful) to five (least useful): GSC maps and publications; maps produced by DIAND or under the Canada-NWT Economic Development Agreements (MDA, MIO); MIRs; or the National Mineral Inventory (NMI). MIRs, written and published biennially by DIAND Geology Division, are intended to describe and document mineral exploration over a two year period. They are generally based on information from assessment work reports, or in the case of advanced exploration or leases, information obtained directly from the company or other sources. If MIRs are written and published in a timely fashion, they may include, with the claimholder's permission, details of work based on reports that are still confidential. The NMI, produced by EMR Canada, indexes mineral showings and describes their exploration history and geology.

Thirteen respondents indicated sources of data they used, but did not rank them. In total, 98% of respondents used GSC publications and maps, 94% used assessment work reports, 88% used DIAND/MDA/MIO Maps, 79% used NWT Mineral Industry Reports, 65% used the NMI, and 19% used other sources of geoscience data. Several respondents noted the usefulness of sources varied depending on the region or area the source described. The mean of ranks assigned to each source are as follows:

Mean Rank	Source
1	GSC Maps and Publications
2	Assessment Work Reports, DIAND/MDA/MIO Mapping
3	MIRs
4	National Mineral Inventory

Other information sources used by respondents were: in-house reports and data; proprietary geophysical and geotechnical databases; personal contacts; industry publications such as the *Northern Miner* and *Vancouver Stockwatch*; EMR-Canada maps of airborne geophysical surveys; and Landsat or remote sensing data. The importance of personal contacts and information from 'old timers' was emphasised.

A majority of respondents indicated they filed all results from their exploration projects either all or most of the time, but were evenly divided on whether there should be a requirement to file all work. Only 13%^{wrf} indicated they would not comply with a requirement to file all work, 58%^{wrf} would unconditionally file all work, and 30%^{wrf} would file all work contingent on a number of factors including an absence of filing fees and acceptable confidentiality period.

Reasons given for potential non-compliance were resentment toward 'free riders', and option agreements stipulating data must be kept confidential. Some juniors and independents indicated they could not afford to prepare reports on all work completed. Respondents also stated there was no reason to prepare reports on claims that would be dropped. As one respondent noted,

facts are gathered until the odds tilt against finding an economic deposit. At this point, no further money should be spent on 'final reports' or

assessment work reports...[also, data] is often not in suitable form for filing.

Other comments concerned data interpretation. One respondent suggested interpreted data has more value than raw data and additional credit should be given for interpretation. Another respondent stated regulations should only require raw data be submitted.

Respondents were evenly divided between whether electronic data formats should be an acceptable medium for filing representation work reports. Of those who thought it should be accepted, 88%^{wrf} thought it should be optional to file data in an electronic format.

The preferred confidentiality period remains unsettled. The range of responses to different proposed confidentiality periods is indicated in Appendix 4 (Question 11a). Although no outstanding industry preference was indicated, 40% of independents preferred a one or two year confidentiality period.

Fifty-five percent^{wrf} of respondents were in favour of a PAC system, although seven percent^{wrf} stated certain conditions should apply, including limitations on excess work and restricting use of PAC on a regional basis. Contrary to earlier indications that the proposal would evoke a negative response from prospectors and independents, 67% of independents favoured the system compared to 38% of majors and juniors. Respondents in favour of PAC suggested a range of 25-100% for the portion of work requirements on properties that could be discharged through application of banked credits.

4.4.3 Discussion

New Brunswick and Manitoba have implemented requirements to file all work and estimate work filed as a ratio of total work is approximately 75%¹⁰⁹ and 90%¹¹⁰ respectively. One means of ensuring at least partial compliance is to raise expenditure requirements. However, the effectiveness of this measure is limited as it places a ceiling on the amount of work companies will file. As Downing and Mackenzie stated,

*[the] demand for full disclosure of exploration information cannot be enforced when the exploration organization can retain its exploration rights by satisfying a minimum work requirement. A specified work limit is important once exploration rights have been acquired, in order to encourage a competitive exploration environment. However, this requirement must not limit the level of information disclosed.*¹¹¹

Figure 4.2 indicates that, overall, industry is exceeding required expenditure levels, but not filing all work. It does not relate the amount of work filed with the type of exploration (advanced or grassroots) carried out. Work not being filed, may be excess from advanced exploration, or work on leases. For example, during peak exploration activity between 1986 and 1988, Noranda Exploration spent \$43 million exploring leases at Matthews Lake, and Neptune Resources spent \$5.5 million on exploration at Colomac¹¹². Although expenditure estimates were not available, other 'advanced' (high cost) programs included work evaluating deposits at Kiggavik (Uranengesellschaft Canada), Giant Yellowknife Mine's leases at Salmita, Borealis Exploration's leases at Fat Lake,

¹⁰⁹Eugene Jackson, personal communication, June 1992.

¹¹⁰Ted Batchelor, personal communication, June 1992.

¹¹¹Public Policy Aspects of Information Exchange, p.44.

¹¹²D.D. Brown and T.W. Caine. 1986, 1987, 1988. Series: Mines and Mineral Activities, Ottawa: DIAND.

and the Back River Joint Venture's claims in the George Lake area. Very little of this work was filed, but it represents a large portion of exploration expenditures.

Raising expenditure requirements to \$5.91/acre/year (\$14.60/ha/year), the threshold for deterring work in the NWT¹¹³, would have virtually no effect in terms of capturing more advanced exploration information. For example, from 1986 to 1988, Noranda's expenditures on leases¹¹⁴ at Matthews Lake averaged \$3,476./acre/year (\$8,587./ha/year). However a negative impact on smaller projects may be anticipated as the survey indicated raising expenditure requirements to \$4.95/acre/year (\$12.22/ha/yr) would make working in the NWT significantly less attractive for 70%^{wrf} of respondents.

A requirement to file all work would require consideration of what constitutes a complete report on work. A DIAND workshop participant stated an interpretation and model was an outcome of data collection during exploration, and should be filed as a necessary component of a report. Although there was no specific question on the questionnaire dealing with this potential requirement, it is apparent it would be met with resistance. Some respondents felt if an interpretation was filed, additional credit should be given in recognition of the time, effort and cost of developing an interpretation and model. One respondent agreed with implementing a requirement to file all work and results:

¹¹³Refer to Question 17, Appendix 4.

¹¹⁴Based on information from the DIAND Mining Recorder's office indicating the area for the leases explored totalled 1669 ha.

but not necessarily...interpretation - strictly the data. This is required if the confidentiality period is only one year. The advantage one company has over the other is the model and interpretation.

DIAND's viewpoint may reflect their need to fulfil information requirements necessary to carry out their geological survey activities. Herfindahl has commented that geological surveys,

are subject to the tendency to orient the agency's activities toward 'professional' objectives that may be in conflict with economic objectives. Obviously this does not mean that studies oriented toward the economic objective of providing information which will eventuate in the discovery and exploitation of deposits must be unprofessional. It does mean, however, that the tendency to set too stringent standards of various types must be avoided...At all point in the programming of geological information activities the question must be asked: Will this pay off or not?¹¹⁵

The requirement for full reports may not pay off, as it may cause administrative difficulties in handling the volume of information, generally offers limited benefits to stakeholders, and may inhibit filing work. Difficulties occur in assigning credits to interpretations and models which vary widely in sophistication and cannot be proved or disproved. Also, respondents expressed concerns about the amount of work that goes into preparing full reports, and the fact that they did not want to "*spend time and expense preparing reports on unsuccessful exploration or claims that will be dropped.*" By reducing the amount of effort that would go into filing a report, it is likely the Crown would capture more information, including information on claims that were about to be dropped.

¹¹⁵Natural Resource Information for Economic Development, p. 135-136.

Of the options discussed for capturing work (Section 4.4.1), (vii), (viii) and (x) would be the most relevant. If (viii), a requirement to file all work, were implemented, (x), a requirement to file all work on leases, would be redundant. Option (viii) would need to be augmented by removing disincentives to file work such as mandatory leasing and legal surveys, and implementing an acceptable confidentiality period. Implementing a PAC system (xi) would ensure more work is filed, and could be used to protect claimholders who are unable to complete work requirements on properties if the use of cash-in-lieu (option vii) is eliminated.

4.5 Mineral Leases and the Long Term Maintenance of Mineral Rights

Between 1983 and 1991, leased mineral claims in the NWT comprised, on average, 10% of the total area of mineral claims. Figure 4.3 shows the disposition of leases according to exploration or development history.

Leases are maintained by paying rent of \$1.00/acre/year, an amount equal to half the required work expenditures. It has been argued that,

*only the best properties, i.e. those with the potential to become mines are taken to lease but, if this is the case why should the 'rent' be reduced on the best properties?*¹¹⁶

It was noted during the workshop, that industry currently tends to allocate exploration budgets to mineral claims requiring exploration for maintenance, rather than leases which are regarded as protected, low cost, 'tenured' interests.

¹¹⁶ R. Hornal, D. Mackinnon, and E. Cotterill. January, 1991. *A Discussion Paper on a Northwest Territories Mining Act* for the Mining Legislation and Resource Management Division, Northern Affairs Program, DIAND, p. 7.

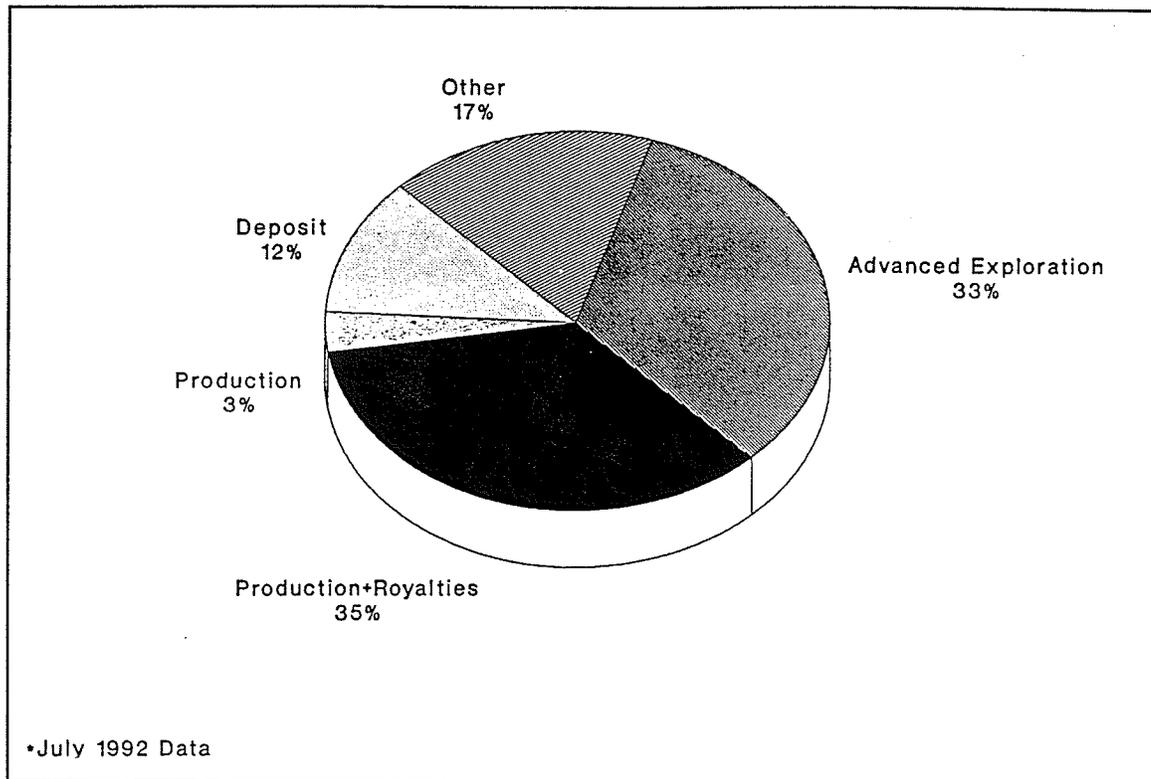


Figure 4.3: Disposition of Northwest Territories' Mineral Leases, By Area and Activity (Information current July, 1992).

4.5.1 Options

The following options were suggested for managing mineral rights in the long term:

- xii) Discourage 'frivolous' leasing by establishing terms and conditions for granting or renewing leases such as increased acquisition costs, completion of specified expenditures, definition of a workable deposit, or a production decision. This could also imply elimination of mandatory leasing.
- xiii) Establish higher rents for non-producing leases than leases, but allow relief from high rents if representation work is carried out.
- xiv) Require production to maintain leases or representation work on non-producing leases but allow limited ministerial discretion to grant relief from requirements for defined reasons such as persistently poor commodity markets.

4.5.2 Response to Options

Most respondents expressed the view that claimholders should only be permitted to lease claims covering discoveries or potential producers. Respondents suggested approaches, in addition to those mentioned in the questionnaire, which included increasing current rent levels, or implementing escalating rent which reverts to a base level if production is undertaken.

Eight respondents who commented on Question 35, regarding terms and conditions for lease renewal, said renewal should continue being virtually automatic. Others suggested leases should support production, "*have drill indicated or proven reserves that would support a production decision when economic conditions improve*", or have been "*advanced in some way, through environmental studies, feasibility studies, [or] physical work...*". In general, respondents felt the lessee should prove the lease was required to protect exploration investments while moving toward development and production.

4.5.3 Discussion

The attitude of many respondents was reflected in comments such as:

I see the use of leases as a cheap way for companies to tie up ground thereby preventing others from doing useful work on that bit of land. It just provides for a stagnation of the exploration process.

Many felt requirements for lease acquisition and maintenance should be more rigorous.

The combined approach most commonly suggested was option (xii), require at least ten-years-work be completed before a lease is granted and option (xiii), charge high or

escalating rents for non-producing leases which could be offset by completing assessment or development work.

Many respondents commented that a lease should be for production purposes, but they were also concerned about protecting exploration investments when they are unable to do more work, it is unnecessary to do more work, or it does not make economic sense at the time to develop or produce. One person commented,

why do you wish to penalize someone who has worked a claim for 10 years, paid to have it surveyed, and pays a fair rental. Some deposits (in fact most deposits) are uneconomic at the time of discovery and become economic because of improvements to technology, infrastructure or increases in price...If you make the discovery, you deserve the benefits!

Presumably, option (xiv) would be acceptable if combined with a provision allowing relief from production requirements if production was not warranted at the time.

4.6 Surveys

The mandatory leasing requirement is perceived as a disincentive to filing excess work because once \$20./acre is filed, the claimholder is faced with legal survey costs before taking the claim to lease. Average survey costs in the NWT range from \$750.-\$1500./line km¹¹⁷. Four respondents remarked survey costs were an obstacle to leasing claims. Workshop participants suggested surveys were an unnecessary expense that diverted money from exploration.

It was suggested legal surveys only be required when production is contemplated, but government reserve discretion to order surveys in 'staking rush' situations where

¹¹⁷Lorne McNeice, personal communication, August 1992.

there may have been intense and possibly sloppy staking. This option may create the need to periodically re-establish claim posts and claim lines.

Options discussed at the workshop included allowing use of Global Positioning Systems (GPS) and/or eliminating requirements for surveying non-producing leases. GPS use satellites as a reference point for establishing positions. Some claimstakers in Ontario are already using GPS to locate claims, and government claims inspectors are using GPS to find claimposts¹¹⁸. There is hope this method may replace the need for legal surveys. However, it was noted in the workshops that highly accurate GPS surveys that duplicate positioning accuracies of legal surveys, are approximately the same cost as legal surveys but are not presently accepted as a legal survey by the Surveyor General.

The majority of respondents agreed legal surveys should be required for a producing lease. There was slightly more support for using GPS surveys in place of legal surveys for a non-producing leases, than for requiring legal surveys for lease applications. If claims were to be maintained indefinitely or if there was no longer a survey requirement for non-producing leases, respondents thought the best approach for maintaining claim lines, would be to mark corner posts using a metal pin and survey with GPS.

¹¹⁸R.M. Lee. 1992. *GPS and Mining Claims Inspecting*, Ontario Ministry of Northern Development and Mines' and Minerals Monthly Update, September, p.13-14.

4.7 Ministerial Discretion

Mineral industry representatives have voiced concerns about ministerial discretion in the CMR, particularly with respect to second renewal of a mineral lease. At the workshop, the viewpoint of industry representatives was discretion should be exercised in situations not specifically addressed by rules and regulations, but should not be used to bend or break rules. However, they supported the current clause¹¹⁹ in the CMR that grants relief from requirements that, through circumstances beyond their control, the lessee, permittee or claimholder are unable to fulfil.

The majority of respondents thought discretion was acceptable in a new mining act to protect claim holders' interests under unusual or special circumstances. Suggestions were that, in addition to a *force majeure* clause, there be discretion in granting extensions when claim holders are affected by land withdrawals through land claims or park planning. Although existing mineral rights are protected under these circumstance, uncertainty negatively affects claim holders' abilities to raise financing for exploration.

4.8 Role of Prospectors

For reasons discussed in Section 3.2.3 specific considerations for prospectors have been incorporated into Canadian mining legislation. Comments concerning special consideration for NWT prospectors included the statement that provisions should be restricted to self-employed, true prospectors working on their own, not for a large

¹¹⁹s.81(1).

company. Other comments ranged from "*prospectors are the backbone of the industry and should be encouraged...*" to, "*...same rules for everybody; no exception for prospectors*".

4.8.1 Discussion of the Role of Prospectors and Juniors

During the course of this research it became evident that many members of a particular industry group (majors, juniors, independents) believed the CMR favoured members of the other group. Difficulties also arose in defining what constituted speculative activities as opposed to legitimate exploration and development activities. For example, some workshop participants were opposed to current provisions allowing two years before the first report on work must be filed. It was felt this allows speculators, with no intention of working the property, to tie up tracts of land during peak exploration activity. If the speculator could not negotiate an option agreement, the claims would lapse at a time when interest may be waning and the ground will be idle. Industry representatives argued strongly against this view. It was stated the activity was not 'speculation' but a legitimate undertaking for juniors and prospectors who stake properties and subsequently attempt to raise financing for exploration through option or joint venture agreements.

There have been arguments made for special consideration of prospectors and juniors because, as one respondent commented,

prospectors and junior companies have been largely responsible for high quality exploration that generates new mineral discoveries relative to the major companies.

However, one author refuted this idea¹²⁰ saying the belief junior companies outperform majors was based on studies of numbers of discoveries regardless of size and value. Cranstone studied 1,000 metallic mineral deposits discovered between 1947 and 1982 and determined only 123 discoveries contained more than \$1,000 million worth of metals, and nearly $\frac{3}{4}$ of these were found by majors. However, Cranstone noted the value of minerals discovered per exploration dollar was comparable for both groups and exploration efforts of junior and major companies were complementary, as a discovery by one group tends to trigger discoveries by the other group. Therefore, it could be argued that if juniors and independents are exploration successes in terms of number of discoveries, than the two-year period for filing work allows juniors and prospectors to screen an area and make discoveries that will help to trigger other discoveries, and consequently it should be retained.

Cranstone's findings present a challenge to legislators to find a way of structuring legislation so that exploration efforts of majors, juniors and independents continue to be complementary. It can be argued that if requirements are relaxed so that they are easily met by prospectors and juniors, they will be even more easily met by majors. The relationship between independents, juniors and major, as expressed in the exploration history of a property, should be identified, so that legislative requirements can be developed that facilitate exploration based on the strength of each group.

¹²⁰Donald Cranstone. "Debunking a Myth" Northern Miner Magazine, January, 1988: 60-67.

CHAPTER V OVERVIEW, RECOMMENDATIONS AND CONCLUSIONS

5.0 Overview

This research identified weaknesses in the CMR's requirements for maintaining mineral rights, and discussed possible modifications that would strengthen the requirements. An initial scoping of issues highlighted three perceived weaknesses.

- 1) The level of work expenditures required by the CMR is too low and fails to promote development of mineral interests.
- 2) As a result of the low requirements for work expenditures, only a small portion of work carried out on minerals interests is filed with the government.
- 3) Work and rental requirements for leases are too low, and consequently, areas of high mineral potential are being 'banked' and not actively explored.

The three perceived weaknesses were evaluated through investigations of: statistical information about exploration expenditures; dollar value of work filed; and disposition of NWT mineral rights. Investigations failed to validate (1), since a trend toward increasing exploration expenditures on a decreasing area of mineral rights was identified. The relationship suggested a trend toward advanced exploration, despite low expenditure requirements.

Concerns about weaknesses (2) and (3) were substantiated. Investigations of the ratio of work filed to overall exploration expenditures, indicated that during the past 20 years, reports filed with DIAND have represented, on average, about $\frac{1}{3}$ of total exploration expenditures in the NWT. However, as noted in Section 4.4, no causal relationship was established between expenditure requirements and the amount of work filed.

Research of the exploration history of NWT mineral leases determined that approximately 17% of leases (by area) cover land where there is no economic or geological reason for a lease and 12% cover deposits that have not been the subject of advanced exploration or development. Mandatory leasing may be responsible for the 17% of leases that cover ground with no apparent economic mineral potential. A lease may be obtained with very little actual exploration work, and once the lease is obtained, there is virtually no incentive to work the ground.

Legislative responses or options to address concerns were sought through a review of mining legislation in force in Canada. The review (Chapter III) examined and compared requirements for mineral rights maintenance including: assessment work requirements and lease rental; allowable expenditures; types of work credited; and work required for lease application and maintenance. Approaches to dealing with deposits on work commitments, cash-in-lieu, excess work and grouping, filing work, and confidentiality periods were also reviewed.

Information from the legislation review formed a base for discussion in two workshops. Workshop participants comprised representatives of DIAND, EMPR and the mineral industry. Participants were asked to propose overall objectives for assessment work requirements, and options for modifications to the CMR that would address concerns and achieve objectives. Objectives for work requirements were summarized in a 'Mission Statement' (Section 4.0) and included: establishing a system that is easy to administer; that stimulates, maximizes and sustains exploration on mineral interests; and encourages and supports full disclosure and acquisition of work carried out on mineral

interests. The Mission Statement and stakeholder response provided the evaluation criteria for legislative options proposed.

Options, discussed in Chapter IV, included: directly or indirectly raising expenditure requirements or the cost of holding ground; requiring all work be filed on claims either when work is done, or as a prerequisite for lease application; directly or indirectly raising expenditure requirements to ensure a higher ratio of work is filed; and introducing work requirements for leases. Stakeholder response to options was probed through a questionnaire survey (Chapter 4, Appendix 3 and 5).

5.1 Recommendations

Based on the original research problem and weaknesses identified, two principal recommendations can be made. Options for carrying out the recommendations have been discussed in detail in Chapter IV. There is no single conclusion that can be made regarding the correct combination of options that should be used to rectify problems discussed. Different options may be combined in different ways to achieve similar effects.

The remainder of Chapter V will be devoted to a discussion of one possible combination of options that may be used to carry out each principal recommendation. The intention is to provide mineral administrators with a starting point for discussion about amendments to the CMR. Administrators will need to consider the options in terms of: enforceability; compliance questions; administrative ease or difficulty; and most

importantly, overall changes in mining legislation; before an appropriate mix of options can be determined.

5.1.1 Recommendation I

SUMMARY POINTS

ISSUE

Only a small ratio of exploration work is reported.

RECOMMENDATION I

To maximize disclosure and acquisition of high quality geoscientific information from work on claims and leases, amend the CMR to strengthen requirements to file work and remove disincentives to filing work.

OPTIONS

- 1) Raise expenditure requirements (directly or indirectly)
 - increases portion of work filed
 - does not maximize amount of work filed
 - low stakeholder acceptability, may deter exploration
 - easy to administer
- 2) Require all work be filed¹²¹
 - captures work from permits, claims and leases
 - maximizes amount of work filed
 - difficult to monitor and ensure compliance
- 3) Eliminate cash-in-lieu
 - eliminates option of not doing or not filing work
 - claimholder has no means of getting extension if unable to complete work in time
- 4) Require all work on leases be filed
 - maximizes collection of work from leases
 - redundant if (3) is implemented
- 5) Implement a PAC system
 - increases compliance with (3) by providing an incentive to file work
 - reduces need for cash-in-lieu
 - may be difficult and expensive to administer
- 6) Relax Form and Content for Representation Work Reports (File Basic Data Only)
 - reduces volume of extraneous data
 - incentive to file work if claimholder does not have to prepare a full report
- 7) Eliminate disincentives such as mandatory leases and legal surveys (discussed under Recommendation II)

¹²¹Modelled on New Brunswick and Manitoba's legislation. Report must be on all work including work performed in excess of required work.

Options 2, 3, 5, 6 and 7 are advocated as a means of implementing Recommendation I. Option 1 does not maximize the amount of work filed, it merely increases the portion of work filed to a ceiling that is defined by the level of required expenditures.

Experience in other jurisdictions shows full compliance with a requirement to file all work cannot be expected. The questionnaire survey indicated 88% of respondents would, in the absence of filing fees and with an acceptable confidentiality period, comply with a requirement to file all work. A number of factors influence the ability and willingness of a regulated group to comply with a law including:

- *understanding and acceptance of the objectives and rules of the regulatory program*
- *enforceability of the rules*
- *capability of the regulated group to comply*
- *social and psychological factors*
- *economic considerations*
- *capability of the regulatory program to monitor, promote and enforce compliance...*¹²²

With these factors considered, the following discussion will detail the recommended options.

¹²²Regulatory Compliance Project of the Department of Justice. 1992. A Strategic Approach to Developing Compliance Policies. Ottawa: Regulatory Affairs Division, Treasury Board of Canada Secretariat, p. 8.

It is provisionally recommended that reports on regional surveys, such as airborne geophysical surveys, be confidential for three years with no extension, but may be released sooner if mineral rights lapse. Reports on local exploration should be confidential for one year with an extension on request, based on conditions to be established and specified in legislation. The rationale for this recommendation is that, if the purpose of collecting a geoscience database is to facilitate further exploration, than the information should become available as quickly as possible.

This approach should balance the need for confidentiality in competitive or uncertain situations, with the need to access information, so exploration effort is not duplicated. However, confidentiality periods should be reviewed after implementation. It is unlikely industry will comply with requirements for full disclosure if they feel their competitive position is compromised.

A further incentive to comply would be to implement a PAC system. Despite industry's mixed response to PAC, the system has a number of strengths. It may encourage claimholders to more fully comply with requirements to file all work if credits can be used on other properties, and provides an incentive to file work on claims that are being dropped. It also allows claim holders who are unable to fulfil work requirements, to withdraw credits necessary to retain claims, which would replace the need for cash-in-lieu payments. This is essential in the NWT where adverse conditions may prevent claimholders from completing programs and expenditure requirements.

Recommended elements of an NWT PAC system are that: the system is flexible and allows portable credits to revert to the original claim holder when option agreements are terminated; the ratio of credits withdrawn to credits for work on the property must be set to ensure a reasonable amount of work is carried out on the property; the combination of PAC and work credits applied may not exceed the maximum value of excess work that may be carried forward (see Section 5.1.2), and; credits should only be transferred through land transactions--not sold.

As discussed in Section 4.4.3, requirements to prepare full reports may be a disincentive to filing work. To address economic considerations, as well as the capability of a regulated group to comply, minimum reporting requirements should be only for raw data with basic interpretation. For example, geological maps or drill sections with contacts and regional structures indicated. Although this may not provide all information sought by DIAND, it is an equitable requirement and may lead to more information being filed.

For producing leases, updated level plans and sections should be submitted periodically. Information requirements should be established and coordinated with requirements under the territorial *Mine Safety Act* so the lessee is not faced with duplicate reporting.

Mineral administrators should establish an expected level of compliance, and monitor compliance. This would help to signal that compliance is expected. Although the NWT is a vast region, most goods and services supporting field projects move through centres such as Yellowknife. It is possible, to a certain extent, to monitor exploration activity simply by talking to expeditors, aircraft charter companies, diamond-drilling contractors and other government agencies such as DIAND Land Resources¹²³. If compliance levels are lower than expected, additional measures to capture more work, for example reducing credit for indirect expenses, could be implemented when GNWT legislation is introduced. Also enforcement measures such as penalties for not filing work could be considered.

Industries' understanding and acceptance of the objective of filing more work may be increased if they find there is a conspicuous improvement in the geoscience database. Government should re-evaluate formats and methods used for disseminating information. The survey indicated a preference for raw data, such as mapping or original assessment work reports, rather than syntheses such as MIRs and the NMI. With the possibility of collecting all exploration data, government could consider, for example, the feasibility of developing continually updated GIS compilations of all data filed and results of geological survey activities that can be overlain with claim maps.

¹²³Most exploration activities require a land-use permit. Land Resources administers the *Territorial Land Use Regulations* under the *Territorial Lands Act*, and monitors land use.

5.1.2 Recommendation II

SUMMARY POINTS

ISSUE

Areas of high mineral potential are being 'banked' and not actively explored.

RECOMMENDATION II

To stimulate, maximize and sustain exploration on claims and leases, amend the CMR to ensure claims and leases are actively worked, and leases are necessary for economic/geological reasons.

OPTIONS

- 1) Eliminate mandatory lease requirement
 - eliminates disincentives to completing 10-years work
 - eliminates leasing for simply regulatory purposes
 - creates a need to restrict application of excess work if claims may be held indefinitely
 - creates a need to maintain claim lines
 - creates a need to define criteria for lease application
 - eliminates need for expensive legal surveys before a claimholder has finished evaluating the mineral potential of the property
 - 2) Require work (assessment/development/production) on leases
 - ensures leases are worked
 - induces industry to rationalize area of leased claims
 - creates need to protect lessees who have delineated a deposit but economics do not support a production decision at the time
 - acceptable to industry if coupled with provision for relief from work requirements
 - 3) Increase Rents for Leases
 - discourages 'frivolous' leasing
 - no activity, no associated economic benefits
 - not consonant with Mission statement
-

Option 3 does not fully address the issue. Option 2 may be a satisfactory solution to the issue, but implementation of Option 1 will eliminate disincentives to filing work. Therefore, a combination of options 1 and 2 should be used, in conjunction with the recommendations outlined in Section 5.1.1.

The mandatory leasing requirement should be eliminated so claims, subject to completion of work requirements, may be held indefinitely. With elimination of mandatory leasing, and continued low expenditure requirements, claimholders will be able to accumulate substantial amounts of excess work credit. For example, Noranda's

work at Matthews Lake, discussed in Section 4.4.3, would hold claims in good standing for thousands of years.

Limiting the application of excess work credits penalizes claimholders who have carried out costly exploration programs. Suggestions for dealing with excess credit are to: limit the amount of excess credit (including applied PAC) that can be carried forward to a total of 20 years; or discount the future value of excess work credits by implementing escalating assessment work expenditures over the long term. A discounting method has industry acceptance (see Section 4.3.2) and may be preferable to limiting credit as companies will still be penalized for carrying out costly exploration if they are unable to use all their accumulated PAC.

If mandatory leasing is eliminated, and therefore legal surveys within the first 10 years of the claim's life, it is provisionally recommended that during or within two years of staking, corner posts be marked using GPS and a metal pin. The recommendation is based on the assumption that the costs of GPS units are declining so they will be equally available to all stakeholders. A legal survey should not be a requirement for a lease application, but must be completed prior to commencing mine development.

Claimholders should be permitted to apply for a lease of the claim if they have recorded minimum expenditures of \$40.00/acre¹²⁴ (\$98.80/ha) on the claim or intend

¹²⁴This figure was somewhat arbitrarily chosen and based on Newfoundland's view that a 20 year exploration period allows for adequate time to evaluate a claim, and demand cycles in mineral commodity markets. However, given the low expenditure requirements and high costs in the Northwest Territories, this figure should be reviewed to determine if it represents a reasonable level of expenditures on property evaluations.

to go into production. The high expenditure requirements would help to eliminate the problem of 'frivolous leasing'.

Rent for non-producing leases should be increased to equal required representation work expenditures. Rent should be offset by assessment work, which should be allowed full credit. The recommended requirement for maintaining leases is that 'production'¹²⁵ must commence within five years and continue without aggregate shut-downs exceeding five years¹²⁶. During shut-down periods, work should be required to maintain the lease. Lessees should have the option of allowing mineral leases to revert to a claim if production requirements cannot be met. This will protect lessees who have developed properties but are unable fulfil production requirements. It is recommended renewal of leases be based on meeting the work and production requirements.

Section 81(1) of the CMR should be retained or a provision, modeled on Yukon's *Quartz Mining Act*¹²⁷, should be adopted to give relief from work requirements on both claims and leases. Terms and conditions should be established for declaring relief from work requirements, and should include consideration of the property's potential for all commodities, not just the commodity targeted during the property's exploration history.

¹²⁵Production will need to be defined.

¹²⁶Based on Newfoundland's Mining Act.

¹²⁷"The Governor in Council may, by regulation, on the report of the Minister that owing to the market price of metals and other general conditions over which the owners of mineral claims exercise no control, the margin of profit that might reasonably be derived from the efficient and economical operation of those claims has, in the opinion of the Minister, been practically eliminated or for any other reason that to the Minister may appear to be sufficient, grant such relief with respect to the annual representation work or payment in lieu thereof as may be necessary under the circumstances", s.55, Cons. 1989 R.S., c.Y-4,S.1.

5.1.3 Discussion

The main objective of Section 5.1 was to suggest one possible schedule of legislative responses that would ensure all work on claims and leases is filed, and to ensure leases are granted and maintained only for properties with mineable deposits. The combination of options should help to address the issues of capturing work and long term mineral management. As noted in the beginning of Section 5.1, the proposed schedule provides mineral administrators with a starting point for discussion about amendments to the CMR. Administrators will need to assess the feasibility of implementing options in terms of: enforceability, administration, and overall changes in mining legislation.

5.2 Conclusions and Remarks

The low ratio of work filed to work carried out cannot be attributed solely to expenditure requirements. Response from stakeholders indicated that the low ratio of work filed may also be a function of disincentives to filing work, such as mandatory leasing. Also, there has simply been an absence (or possibly lack of enforcement), of a requirement to file all work. Comments from workshop participants and stakeholders suggest that the CMR's provisions for leases including: mandatory leasing; low rent; disincentives to perform and file work; absence of any requirement to perform work; and virtually automatic renewal of unproductive leases, repress sustained work, and development on mineral leases.

As the issues of filing work and unproductive leasing can be attributed to various provisions of the CMR, amendments to the CMR, such as those noted in the preceding

discussions, may correct the problems. Government is willing to contemplate modifications to improve work requirements. Industry is more circumspect. Although they have indicated there is room for improvement in the CMR, they are accustomed to, what they consider to be, a workable system.

Objectives stated in the workshops, and comments on the questionnaire survey, suggest government and industry interests are parallel in terms of the enhancement of a geoscience database and promoting exploration and development activity. These common interests, which form a basis for negotiation of a revised schedule of assessment work requirements in the CMR, need to be highlighted, as industry's ability and willingness to accept changes will depend on whether a problem is perceived, and whether changes are thought to be in industry's collective interest.

	<u>Mineral Resources Regulations</u> , N.S. Reg. 30/91
Ontario	<u>Mining Act Regulations 1991</u> , Ministry of Northern Development and Mines
Prince Edward Island	<u>Mineral Resources Act</u> , SPEI c.15
	<u>Work Requirement Regulations</u> , RSPEI 1988, Cap. M-7, June 1990 Update
Quebec	<u>Regulation Respecting Mineral Substances, Other Than Petroleum, Natural Gas and Brine</u> , RSQ 1977, c.M13-1, r.2 as am 1987, c.64 with amendments to December 7, 1988
	<u>Mining Act</u> , RSQ 1989, C.M13-1
Saskatchewan	<u>The Mineral Disposition Regulations, 1986</u> , Sask Reg 30/86 as am 33/88, 38/88, 104/88, 44/90, 22/91
Yukon	<u>Yukon Quartz Mining Act</u> , RSC 1970, c.Y-4 as am 1972, c.17; 1976-77, c.30; 1984, c.10.
	<u>Yukon Quartz Mining Act Schedule of Representation Work</u> , amended July 1975.

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PERSONAL CONTACTS

Many people, through direct contact or correspondence, contributed information, ideas and comments during the research for this practicum. People that are listed in Appendix 2 and 3 are not listed in this section.

Anthony Andrews, Managing Director, PDAC

Dorothy Atkinson, District Geologist, DIAND.

Patricia Beales, Archives Geologist, DIAND.

Susan Blackman, Research Associate, Canadian Mining Law Project, Canadian Institute of Resources Law.

Doug Camilucci, Senior Mining Royalties Advisor, Mining Legislation and Resource Management, DIAND.

Pat Corrigan, Senior Mining Advisor, Mining Legislation and Resource Management, DIAND.

Lou Covello, Covello, Bryan and Associates.

Dr. D.A. Cranstone, Financial and Corporate Analysis Division, EMR Canada.

Carol Ellis, Staff Geologist, DIAND Geology Division.

Roy Ellis, Territorial Statistician, Bureau of Statistics, GNWT.

Tom Hoefler, General Manager, NWT Chamber of Mines.

John Hodgkinson, Chief, Mining Legislation and Resource Management, DIAND.

Lucille Jerome, Ontario Ministry of Northern Development and Mines.

John Mason, Resident Geologist, Ontario Ministry of Northern Development and Mines.

Lorne McNeice, Surveys and Mapping, EMR-Canada, Yellowknife.

George Miller, President, Mining Association of Canada.

Jack Patterson, Manager, BC Chamber of Mines.

Diane Robinson, Claims Analyst, DIAND Comprehensive Claims Branch.

Appendix 1
PROVINCIAL/TERRITORIAL CONTACTS

Alberta	R. Brian Hudson, Manager, Mineral Agreements Resource Agreements Branch Energy/Mineral Resources Division
British Columbia	Talis Kalnins - Geologist Geological Branch, Mineral Resources Division Energy, Mines and Petroleum Resources
Manitoba	E.W. (Ted) Batchelor Director of Mines, Mines Branch Energy and Mines
New Brunswick	Eugene V. Jackson, Recorder Mineral Lands Natural Resources and Energy
Newfoundland	Noel F. Gover Mineral Claims Recorder Mines and Energy
Nova Scotia	Richard Ratcliff Registrar, Mineral and Petroleum Titles Natural Resources
Ontario	Blair Kite Supervisor Geoscience Approvals, Mining Lands Branch Mines and Minerals Division Northern Development and Mines
Quebec	Marcel Tremblay Direction de redavances et titre miners, Ministère de l'Énergie et des Ressources
Saskatchewan	Philip Reeves Mines Branch Director Saskatchewan Energy and Mines
Yukon	Roland G. Ronaghan Regional Manager of Mineral Rights Northern Affairs Program, DIAND

Appendix 2

WORKSHOP PARTICIPANTS AND LISTING OF OBJECTIVES

WORKSHOP PARTICIPANTS

June 26, 1993 Workshop

John Brophy, District Geologist
DIAND Geology Division

Michael Cunningham, Minerals Advisor
Mineral Policy, GNWT-EMPR

Steve Goff, District Geologist
DIAND Geology Division

Karen Klassen, A/Regional Manager
Mining Lands, DIAND

Edward McLeod, Mining Recorder
Mining Lands, DIAND

Dave Nutter, Director
Minerals and Economic Analysis,
DIAND

Bill Padgham, Regional Geologist
DIAND Geology Division

George Patterson, Director
Mineral Policy, GNWT-EMPR

Boyd Timler, Planning and Scheduling
Engineer
Giant Mine, Royal Oak Mines

July 2, 1993 Workshop

Michael Cunningham, Minerals Advisor
Mineral Policy, GNWT-EMPR

Mike Magrum, President
Northwest Territories Chamber of Mines

Gary Vivian
Covello, Bryan and Associates Ltd.

Brian Weir,
Barren Lands Exploration Services Ltd.

OBJECTIVES

Participants were asked to list objectives for, or concerning legislated assessment work requirements and rank them from most important (1) to least important (6).

Objectives of First-Most Importance

Provide for the orderly development of NWT resources in a predictable fashion.

Produce a modern, reasonable set of regulations to control the acquisition of and maintenance of mineral rights.

Stimulate exploration and foster a healthy mining industry.

Objectives of Second-Most Importance

Establish clear objective requirements to meet all regulations that do not rely on political involvement or use of discretionary clauses.

Clearly define mineral rights.

Ensure certainty over mineral rights.

Objectives of Third-Most Importance

Ensure regulations are not a disincentive.

Maximize/optimize mineral exploration and development in the NWT.

Ensure costing structure is such that exploration in the NWT is competitive with southern Canada, despite the NWT's remoteness

Objectives of Fourth-Most Importance

Maximize acquisition of geoscience database.

Develop database, require reports on all work, especially geophysics and drilling be filed, but ensure an extended confidentiality period.

Remove unnecessary bureaucracy (redundant paperwork for companies).

Provide for higher quality scientific database.

Be as easy as possible to administer.

Objectives of Fifth-Most Importance

Restructure lease requirements or eliminate leases altogether.

Require work be filed on leases for renewal.

Ensure continued property development or eliminate leases except for advanced projects or increase filing costs and extend \$2./acre assessment requirement beyond 10 years.

Effectively manage mineral rights in the long term.

Objectives of Sixth-Most Importance

Elucidate acceptable formats for assessment reports and maps. Un-ranked Objective

Reduce incidence of non-productive speculative land acquisition.

Stop speculators from holding land for long periods of time.

Maximize benefits to NWT residents.

Appendix 3

SAMPLE QUESTIONNAIRE



Kate Hearn
Natural Resources Institute
University of Manitoba
430 Dysart Road
Winnipeg, Manitoba
R3T 2N2

August 19, 1992

P.O. Box
Yellowknife, Northwest Territories
X1A

Dear Mr.

The federal Department of Indian Affairs and Northern Development (DIAND) and the Government of the Northwest Territories' department of Energy, Mines and Petroleum Resources (EMPR) are reviewing NWT mining legislation to prepare for development of a new NWT Mining Act and eventual transfer of mineral management responsibilities to EMPR. As part of this process, EMPR is funding and directing a graduate research project on the Canada Mining Regulations' requirements and conditions for maintaining mineral rights and how they can be improved. The project is being carried out with technical assistance from DIAND. The attached questionnaire is part of this research and was designed to find out your response to suggestions put forth by DIAND, EMPR and industry representatives, in a workshop on legislated requirements for maintaining mineral rights in the NWT.

The questionnaire requires some familiarity with the Canada Mining Regulations. If you feel someone else in your organization is better qualified to answer all, or parts of the questionnaire, please pass it on. Your responses will make up a very important and significant base from which to design regulations under the new NWT Mining Act. Please be assured that individual confidentialities will be preserved. Answers will be compiled and presented in aggregate to DIAND and EMPR.

For your convenience, a stamped, addressed envelope is enclosed for the return of the questionnaire, whether completed or not, by October 16, 1992. For more information, I can be contacted at () or you may contact any of the following:

George Patterson, Director, Mineral Policy, EMPR,
(403) 873-7086;

Dave Nutter, Director, Minerals and Economic Analysis, DIAND,
(403) 920-8263; or

Thomas Henley, Associate Director, Natural Resources Institute,
(204) 474-8373.

Thank you for your help.

Sincerely,

Kate Hearn

**QUESTIONNAIRE ON LEGISLATED REQUIREMENTS FOR
MAINTAINING MINERAL RIGHTS IN THE NWT**

SECTION A

Background: The reason for regulations requiring representation work is to get people to work on mineral claims - to "use it or lose it". A benefit realized through these regulations, is the build-up of information (representation work reports) about the exploration history and mineral potential of an area. Once the confidentiality period lapses, this information is available to all exploration companies and the public.

For these reasons, EMPR and DIAND are interested in how to improve the NWT regulations for maintaining mineral rights in a way that will, while providing a 'level playing field' for you and your competitors, encourage: (1) work on properties and (2) filling of that work. With this in mind, would you please answer the following questions as completely as possible. There is space at the end of the questionnaire for additional comments. You may be assured that your individual responses will be kept confidential.

THIS QUESTIONNAIRE IS PRINTED ON BOTH SIDES OF THE PAGE

1. What is your background? (Check one or more)

- Prospector Geologist Geophysicist
- Engineer Geochemist
- Management (specify) _____
- Other (specify) _____

2. Do you work for: (Check one or more)

- | | <u>Now</u> | <u>In the Past</u> |
|--|--------------------------|--------------------------|
| A "major" mining company | <input type="checkbox"/> | <input type="checkbox"/> |
| A "junior" mining company | <input type="checkbox"/> | <input type="checkbox"/> |
| Yourself | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Other (specify) _____ | | |

3. Have you or your organization ever filed representation work reports for any of the following? (Check one or both boxes)

- NWT Prospecting Permits NWT Mineral Claims

4a. Please rank the following statements on a scale of 1 (agree strongly) to 5 (disagree strongly):

The requirements for maintaining mineral rights in the Canada Mining

Regulations:

- | Agree | 1 | 2 | 3 | 4 | 5 | Disagree (please answer part b) |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | Are easy to understand |
| <input type="checkbox"/> | Are compatible with modern exploration practices |
| <input type="checkbox"/> | Are appropriate to the regional characteristics of the NWT |
| <input type="checkbox"/> | Are fair in the context of current economic realities |
| <input type="checkbox"/> | Are fine just the way they are |

4b. For statements ranked "4" and "5", please state why you disagree _____

5a. If you have filed work in other provinces, please indicate whether you think their legislated requirements for maintaining mineral rights are better, worse, or the same as requirements in the NWT. (Please check one box for each province you have worked in)

	<u>Same</u>	<u>Worse</u>	<u>Better (please answer part b)</u>
Alberta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manitoba	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Newfoundland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New Brunswick	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nova Scotia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ontario	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quebec	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Saskatchewan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yukon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5b. Please write down which features of mining legislation you thought were better. __

6. What sources of information do you use when you are researching an area? Please rank on a scale of 1 (most useful) to 5 (least useful).

- | | |
|---|---|
| <input type="checkbox"/> GSC Publications and Maps | <input type="checkbox"/> National Mineral Inventory |
| <input type="checkbox"/> NWT Mineral Industry Reports | <input type="checkbox"/> DIAND / MDA / MIO Mapping |
| <input type="checkbox"/> Representation Work Reports | <input type="checkbox"/> Other (please explain) _____ |

7a. When you are researching an area, do you regularly use representation work reports filed with DIAND in the NWT Geology Division Archives?

- Regularly (please answer part b)
- Sometimes (please answer part b)
- Rarely
- Never

7b. In general, do you think that the technical and scientific quality of these reports is: (Please check one)

- High
- Medium
- Medium, but improving
- Low
- Low, but improving

SECTION B

Background: Industry surveys suggest that total yearly expenditures are, on average, three times more than the amount of representation work filed each year with the DIAND Mining Recorders' office.

8: When you submit representation work reports, do you file all of the results of your entire exploration program? (Please check one)

- All the time
- Most of the time
- Seldom
- Never

9. Should there be a requirement to file all exploration work with the government?
(Please check one)

- Yes, all work should be filed
- All work should be filed when a mineral claim goes to lease
- Should have the option of only filing the amount of work needed to represent the minimum required expenditures

10. Would you comply with a requirement to file all exploration work with the government?

- Yes
- No
- Only under the following circumstances (Specify): _____

11a. How long should reports filed with the government be held confidential, and should the government extend periods of confidentiality on the reasonable request of the claim holder? (Check one)

- | | <u>No Extension</u> | <u>Extension on Request</u> (answer part b) |
|---|--------------------------|---|
| 1 year: | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 years: | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 years: | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 years: | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> For the life of the claim | | |
| <input type="checkbox"/> There should be no period of confidentiality | | |

11b. What should the terms and conditions be for receiving an extended period of confidentiality? (Please specify) _____

SECTION C

Background: In the NWT, claim holders must file reports of work in support of a minimum of \$2.00/acre/year representation work expenditures on their mineral claims. This required dollar value is the lowest in Canada and has not changed considerably from the \$1.93/acre/year required in 1949 under the predecessor legislation, the Dominion Lands Act. However, the cost of exploration is higher than in most other areas of Canada. These high costs and low requirements for representation work expenditures mean that an exploration program carried out in the NWT will keep mineral claims in good standing for a longer period than a similar program carried out in any other jurisdiction.

12. Considering all other factors governing the pacing and amount of work during exploration programs on mineral claims (such as the economy, interest rates, length of field season, etc.), do you think that the required level of representation work:

- Forces you to do more work than you would like to do in a year
- Is an appropriate level for the amount of work you can and would like to carry out in a year
- Is easy to exceed in a year
- Other _____

13a. Have you or your company ever had to carry out an exploration program solely for the purpose of fulfilling representation work requirements?

- Frequently (please answer part b)
- Sometimes (please answer part b)
- Seldom (please answer part b)
- Never

13b. Please comment on the circumstances. _____

14. Have you or your company ever had to let promising mineral claims lapse because you were unable to fulfill the representation work requirements?

- Yes
- No

15. Would raising the required amount of representation work expenditures to, for example, the national average of \$4.95/acre/year in the first five years: (Check one or more)

- Make it significantly less attractive to work in the NWT
- Encourage you to file more work
- Encourage you to do more work
- Other: (specify) _____

16a. Considering both your own activities and your competitors' activities, do you think that the dollar value of required representation work expenditures in the NWT should be raised? (Check one)

- Yes (please answer part c)
- No (please answer part b)

16b. If 'no' can you suggest other ways that mining regulations could be used to encourage people to do more work on their mineral claims? _____

and to file their work? _____

16c. If 'yes' what dollar value per acre per year would you suggest?

\$ _____ /acre/year

17. If required annual expenditures for representation work were raised, at what level would it become a deterrent for you or your organization to work in the NWT?

\$ _____ /acre/year

18. If required annual representation work expenditures were raised, should they be the same rate every year, or an escalating rate each year, for example \$0 in the first year; \$4.00/acre in the second year; \$6.00/acre/year for years 3 to 5; \$7.00/acre/year for years 6 to 10 etc.? (answer one)

- Same Rate
- Don't Care
- Escalating rate of (please specify): _____

19. Please rank the following approaches from most effective (1) to least effective (5) in encouraging work on properties and the filing of that work.

- Most Effective 1 2 3 4 5 Least Effective
- Raising required representation work expenditures
 - Implementing escalating requirements for work expenditures
 - Raising fees (for filing, recording, grouping, etc.)
 - Reducing credit for indirect expenses
 - Structuring work requirements so that certain types of work (for example prospecting, airborne surveys or reconnaissance mapping) would only be accepted early in the claim's life
 - Other (specify) _____

20. Regulations for representation work are based on the idea that expenditures are a measure of work on the property. Can you suggest alternative approaches to motivate work and have work filed, that could replace expenditures as a basis for requirements? _____

21a. Should there be a limit to the amount of excess work in one year that may be applied to work requirements of later years?

- Yes (please answer part b) No (please answer part c)

21b. How should excess work be limited, and what should the limit be? _____

21c. Why should there not be a limit? _____

22. Do you think there should be a limit to grouping mineral claims for the purpose of filing representation work, and, if so, what type of limit? (Check one)

- There should not be a limit
- Limit the maximum size of the group
- Limit the number of mineral claims that can be grouped
- Limit the number of mineral claims that can be grouped per year

23. Should cash in lieu of work be allowed in the NWT? (Check one)

- No
- Yes, in all circumstances
- Yes, when an extension is needed, to be refunded when the work is completed
- Yes, when representation credits are reduced for some unexpected reason, and the mineral claims are in jeopardy
- Yes, only under the following circumstances (please specify): _____

24. Should credit for indirect expenses, such as transportation or overhead, be limited to a certain percentage of direct expenses?

- Yes, to _____ %
- No

25. Please list the types of expenditures that should be considered indirect expenses: _____

26a. Should full or partial credit for indirect expenses be limited to those expenses incurred within the NWT?

- Yes, to _____% (please answer part b)
- No

26b. If 'yes', what types of expenses? _____

27. Are there any types of mineral development work or expenditures currently not accepted for representation work?

- No
- Yes (Please explain what they are and whether they should be accepted) _____

28a. Do you think that environmental monitoring surveys or environmental reclamation should be accepted as representation work?

- Yes
- No

28b. Why or why not? _____

SECTION D

Background: BC has a system where excess work, rather than being applied to future work requirements for the same claim group, is credited to a portable assessment credit (PAC) account. Up to 30% of the value of approved representation work on a property can be withdrawn from the PAC account and added to the value of the work reported. In other words, if approved reported work expenditures on a property are \$22,500., the claim holder can add another \$6,750. from their PAC account for a total \$29,250. work credit.

29a. Do you think that a PAC system should be implemented in the NWT?

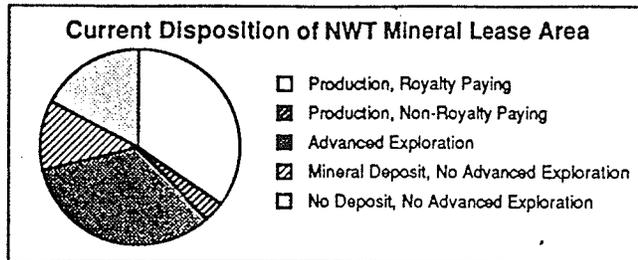
- Yes (please answer part b)
- No
- Only for these areas: _____
- Only if (specify): _____

29b. If 'yes' what percentage of the total value of work on a property should claim holders be allowed to withdraw from their portable assessment credit accounts?
_____ %

SECTION E

Background: Some stakeholders think that a lease is only necessary if a mineral deposit is being brought into production. Other stakeholders see leases as a way of protecting their exploration investment, whether or not production is taking place.

In the NWT, a mineral claim must be taken to lease after 10 years or if the claim goes into production. Rental for a mineral lease is \$1.00/acre/year during the first term of a lease compared to the \$2.00/acre/year representation work expenditures required on a claim. Between 1983 and 1991, approximately 10% (in area) of NWT mineral claims were leased. The pie chart shows how that area was used:



30. What should the terms and conditions be for granting a lease of a mineral claim?

- Mandatory lease after 10 years
- Complete \$_____ worth of expenditures
- Prove up a mineral deposit
- On request, based on a company's business decision to protect exploration investments
- Upon production decision
- Other (please describe) _____

31. Please rank, in terms of best (1) to worst (5), the following approaches to maintaining leases and discouraging frivolous leasing.

- | | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--|
| Best | 1 | 2 | 3 | 4 | 5 | Worst | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Pay higher rent for non-producing leases than for producing leases |
| <input type="checkbox"/> | Require production to maintain the lease |
| <input type="checkbox"/> | Require representation work and rent on non-producing leases |
| <input type="checkbox"/> | Require representation work in place of rent |
| <input type="checkbox"/> | Increase the cost of acquiring a lease |
| <input type="checkbox"/> | Other _____ |

32. What combination of the preceding approaches should be used in NWT mining legislation? _____

SECTION F

Background: When a mineral claim goes to lease, a legal survey, at costs ranging from \$750 to \$1500 per line kilometer, must be completed. GPS surveys are not yet an alternative to legal surveys as (1) a GPS survey with comparable accuracy to a ground survey costs a comparable amount, and (2) they are not yet accepted by the Surveyor General (EMR Canada) as a legal survey.

33. Please rank the following statements from 1 (strongly agree) to 5 (strongly disagree).

Agree 1 2 3 4 5 Disagree

- A legal survey should be required as a condition for a lease application.
- A legal survey should be required as a condition for production.
- A GPS survey should be accepted in place of a legal survey for a non-producing lease.

34. If there was no longer a requirement for mineral claims to go to lease after 10 years, how would you rank the following approaches to maintaining claim lines (Please rank the best as 1 to the worst as 5)

Best 1 2 3 4 5 Worst

- Establish corner posts with GPS and metal pin in ground
- Physically re-establish posts and claim lines every 5 years
- Physically re-establish posts and claim lines every 10 years
- Physically re-establish posts and claim lines every 15 years
- Legal survey
- Other (Please specify): _____

35. Currently, the first renewal of a lease in the NWT is virtually automatic, whether or not there has been any exploration work or production on the lease. If the government established certain terms and conditions that must be met before a lease could be renewed, what should the terms and conditions be? (Please specify) _____

36. Should there be a maximum size for a mining lease?

No

Yes, based on (Please specify) _____

SECTION G

Background: Discretionary clauses in mining legislation can result in insecurity and uncertainty for the mining industry, which contribute to the risks and costs borne by industry. For example, in the NWT, the second renewal of a lease is discretionary -- "a lease may be renewed", on unspecified terms and conditions set by the Minister.

However, discretionary clauses can also be used to protect the claim holder whose rights and investments may be threatened by unusual or special circumstances. The Canada Mining Regulations state that mineral rights holders who, for reasons beyond their control, are unable to fulfill the regulated requirements, are able to apply for relief to keep the mineral rights in good standing until the requirement can be fulfilled.

37a. Do you think there is a role for discretionary clauses in the new NWT Mining Act?

- Yes (please answer part b)
- No

37b. Where do you think they should be used, and what should they be? _____

SECTION H

38. Mining legislation in most provinces contains special provisions for prospectors. Which, if any, of these special provisions do you think should be in an NWT Mining Act? (Check one or more)

- Can only file prospecting reports early in claim's life
- Have relaxed standards for reports
- Can be given credit only for carrying out the surveys and filing the results, but not for interpretation of results
- Must have special qualifications (for example graduate of prospecting program)
- May only be credited a specified amount for their time (for example a multiple of minimum wage)
- Other _____

39a. Should such things as computer disks, microfilm, digital recordings of airborne survey readings, etc. be acceptable media for filing representation work reports? For example, should you have the option of filing a computer disk instead of a typewritten report on paper?

- Yes (please answer part b)
- No

39b. If yes, should it be optional or required? (please answer part c)

- Optional
- Required

39c. What types of information should be submitted in what types of format? (Please describe) _____

Appendix 4

SPREADSHEET OF QUESTIONNAIRE RESULTS

RESPONDENTS

T. Antoniuk, Senior Geologist, Rayrock Yellowknife Resources Ltd.
Hugh Arden, Prospector
Frank Balint, Exploration Manager, Minnova Inc.
Lee Barker, Vice President, Southern Era Resources
Stanley C. Bartlett, Senior Geologist, Canada Tungsten Mining Corporation Ltd.
Roy Bevon, Independent
L. Bratvold, President, New Era Developments Ltd.
Guy Breton, Cogema Canada Ltd.
J.E. Brunet, Vice President, Monopros Ltd.
Terry Chandler, Senior Geologist/Special Projects, Homestake Canada Ltd.
Carl Clouter, Prospector, Fortune Minerals
Lou Covello, President, Covello, Bryan & Associates
Russ Cranswick, Geologist, Kennecott Canada Inc.
Gordon Davidson, Senior Project Geologist, PNC Exploration (Canada) Co. Ltd.
Claude Durocher, District Geologist, Noranda Exploration Co. Ltd.
Dr. J.A. Fowler, Senior Vice President, Monopros Ltd.
Graham Farquharson, President, Strathcona Mineral Services Ltd.
John Fraser, Fraser Geological Services Inc.
Robin Goad, President, Fortune Minerals
R.S. Gray, Manager, Asarco Exploration Co.
L.B. Halferdahl, President, Halferdahl & Associates Ltd.
J.D. Hilland, President, Kaminak Resources Ltd.
Tony Hitchins, Project Manager, Amax Gold (BC) Ltd.
Janet Hopkins, Administrative Geologist, Westmin Resources Ltd.
Peter Hubacheck, Exploration Geologist, W.A. Hubacheck Consultants Ltd.
W.J. Humphries, Prospector
Maureen Jensen, President, Noble Peak Resources Ltd.
William Knutsen, President, Cameron Mining
Stefania Kuprejanov, Property Administrator, Minnova Inc.
D. Neil leNobel, Exploration Manager-Western Canada, BHP Minerals Ltd.
Barry Lowe, Mine Planner, Echo Bay Mines Ltd.
Mike Magrum, Oxen Engineering
J.D. Mason, Consulting Engineer
Dean McDonald, Senior Exploration Geologist, Nerco Exploration Co.
Dave Nickerson, Independent
Megan O'Donnell, Exploration Geologist, Homestake Canada Ltd.
R.A. Olson, President, R.A. Olson Consulting Ltd.
F.A. Perrino, Senior Project Geologist, Royal Oak Mines Inc.
Robin Price, Geologist/Acting Landsman, Placer Dome Inc.
Murray Pyke, Vice President, Comaplex Minerals Corp.
N.W. Rayner, Senior Property Administrator, Minnova Inc.
J.N. Schindler, Independent
Robert Sharp, Chief Geologist, Polaris Mine
Laurie Smith, President, Petromet Resources Ltd.
R. Sutherland, Nanisivik Mines Ltd.
Greg Tomacek, Geologist, Borealis Exploration Ltd.
Dr. W.J. Wolfe, Manager-Exploration, Cominco Ltd.
David Walsh, President, Bre-X Minerals
Glen Warner, President, Bear Creek Hills Estates
Peter Wollenberg, Vice President of Exploration, Urangesellschaft Canada Ltd.

1. What is your background?

	<u>Total</u>		<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Prospector	7	14	0	0	2	15	5	42
Geologist	40	80	22	88	11	85	7	58
Geophysicist	2	4	0	0	1	8	1	8
Engineer	10	20	3	12	3	23	4	33
Geochemist	2	4	0	0	2	15	0	0
Management	16	32	9	36	5	38	2	17
Other	4	8	2	8	0	0	2	17
NR	0	0	0	0	0	0	0	0

2. Do you work for:

	<u>Total</u>		<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Now:								
Major	25	50	25					
Junior	13	26			13		0	
Self	12	24			4		12	
Other	0	0			0		0	
NR	0	0			0		0	
In the Past:								
Major	22	63	9	64	7	70	6	55
Junior	16	46	6	43	5	50	5	42
Self	13	37	1	7	5	50	7	58
Other	5	14	2	14	3	30	0	0
NR	15		11		3		1	

n=50: Majors, 25; Juniors, 13; Independents, 12

f -frequency

rf -relative frequency

NR -No Response

3. Have you or your organization ever filed representation work reports for any of the following?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
NWT Prospecting Permits	34	68	64	20	80	7	54	7	58
NWT Claims	49	98	97	25	100	12	92	12	100

4. Please rank the following statements on a scale of 1 (agree strongly) to 5 (disagree strongly).

The requirements for maintaining mineral rights in the Canada Mining Regulations (CMR) are easy to understand.

	<u>Rank</u>	<u>Total</u>	<u>Major</u>	<u>Junior</u>	<u>Independent</u>
Agree	①	14	3	5	6
	②	25	17	5	3
↕	③	6	2	2	2
	④	3	1	1	1
Disagree	⑤	1	1	0	0
	NR	1	1	0	0
Average			2	2	2
Weighted Average		2			

n=50: Majors, 25; Juniors, 13; Independents, 12
f – frequency
rf – relative frequency
wrf – weighted relative frequency
 NR – No Response

The requirements for maintaining mineral rights in the CMR are compatible with modern exploration practices

	Rank	Total	Major	Junior	Independent
Agree	①	12	1	7	4
	②	18	11	2	5
↕	③	14	10	4	0
	④	4	2	0	2
Disagree	⑤	0	0	0	0
	NR	2	1	0	1
Average			3	2	2
Weighted Average		2			

The requirements for maintaining mineral rights in the CMR are appropriate to the regional characteristics of the NWT

	Rank	Total	Major	Junior	Independent
Agree	①	9	1	5	3
	②	22	16	2	4
↕	③	9	6	2	1
	④	6	1	2	3
Disagree	⑤	2	0	2	0
	NR	2	1	0	1
Average			2	3	2
Weighted Average		2			

The requirements for maintaining mineral rights in the CMR are fair in the context of current economic realities

	Rank	Total	Major	Junior	Independent
Agree	①	9	3	3	3
	②	17	10	4	3
↕	③	13	9	2	2
	④	6	1	2	3
Disagree	⑤	4	1	2	1
	NR	1	1	0	0
Average			2	3	3
Weighted Average		3			

The requirements for maintaining mineral rights in the CMR are fine just the way they are

	Rank	Total	Major	Junior	Independent
Agree	①	8	3	2	3
	②	12	6	3	3
↕	③	16	9	4	3
	④	5	2	2	1
Disagree	⑤	7	4	1	2
	NR	2	1	1	0
Average			3	3	3
Weighted Average		3			

n=50: Majors, 25; Juniors, 13; Independents, 12 NR – No Response

5a. If you have filed work in other provinces, please indicate whether you think their legislated requirements for maintaining mineral rights are better, worse, or the same as requirements in the NWT.

	Same			
	Total	Major	Junior	Independent
Alberta	0	0	0	0
BC	8	4	3	1
Manitoba	8	4	4	0
Newfoundland	2	2	0	0
New Brunswick	4	3	1	0
Nova Scotia	3	2	1	0
Ontario	6	1	4	1
Quebec	11	5	4	2
Saskatchewan	15	8	5	2
Yukon	7	2	3	2

	Better			
	Total	Major	Junior	Independent
Alberta	1	0	1	0
BC	5	5	0	0
Manitoba	2	2	0	0
Newfoundland	2	1	1	0
New Brunswick	1	0	1	0
Nova Scotia	1	1	0	0
Ontario	3	2	1	0
Quebec	5	4	0	1
Saskatchewan	0	0	0	0
Yukon	4	3	1	0

	Worse			
	Total	Major	Junior	Independent
Alberta	7	4	2	1
BC	8	2	3	3
Manitoba	3	3	0	0
Newfoundland	1	1	0	0
New Brunswick	0	0	0	0
Nova Scotia	1	1	0	0
Ontario	15	10	3	2
Quebec	3	1	2	0
Saskatchewan	1	1	0	0
Yukon	4	2	1	1

	No Response			
	Total	Major	Junior	Independent
Alberta	42	21	10	11
BC	29	14	7	8
Manitoba	37	16	9	12
Newfoundland	45	21	12	12
New Brunswick	45	22	11	12
Nova Scotia	45	21	12	12
Ontario	26	12	5	9
Quebec	31	15	7	9
Saskatchewan	34	16	8	10
Yukon	35	18	8	9

n=50
Majors-25
Juniors-13
Independents-12

6. What sources of information do you use when you are researching an area?
Please rank of a scale of 1 (most useful) to 5 (least useful).

GSC Publications and Maps

	Rank	Total	Major	Junior	Independent
Useful	①	26	13	6	7
↕	②	6	2	3	1
	③	3	2	1	0
Not	④	0	0	0	0
Useful	⑤	1	1	0	0
	NR	2	1	0	1
Average			2	2	1
Weighted Average		1			
Used, not ranked			6	3	3

NWT Mineral Industry Reports

	Rank	Total	Major	Junior	Independent
Useful	①	1	1	0	0
↕	②	9	5	0	4
	③	8	2	4	2
Not	④	9	2	6	1
Useful	⑤	5	4	0	1
	NR	11	7	2	2
Average			3	4	3
Weighted Average		3			
Used, not ranked			4	1	2

Representation Work Reports

	Rank	Total	Major	Junior	Independent
Useful	①	11	6	3	2
↕	②	8	5	2	1
	③	9	4	3	2
Not	④	7	2	2	3
Useful	⑤	0	0	0	0
	NR	4	2	1	1
Average			2	2	3
Weighted Average		2			
Used, not ranked			6	2	3

National Mineral Inventory

	Rank	Total	Major	Junior	Independent
Useful	①	0	0	0	0
↕	②	4	3	0	1
	③	2	1	1	0
Not	④	7	5	0	2
Useful	⑤	14	2	8	4
	NR	19	13	3	3
Average			4	5	4
Weighted Average		4			
Used, not ranked			1	1	2

n=50
Majors-25
Juniors-13
Independents-12
NR-No Response

DIAND/MDA/MIO Mapping

	Rank	Total	Major	Junior	Independent
Useful	①	6	1	3	2
	②	11	6	4	1
Not Useful	③	10	4	2	4
	④	4	2	1	1
Useful	⑤	2	2	0	0
	NR	7	6	1	0
Average			3	2	3
Weighted Average		2			
Used, not ranked			4	2	4

Other

	Rank	Total	Major	Junior	Independent
Useful	①	1	0	0	1
	②	0	0	0	0
Not Useful	③	0	0	0	0
	④	0	0	0	0
Useful	⑤	3	3	0	0
	NR	40	19	13	8
Used, not ranked			3	0	3

7a. When you are researching an area, do you regularly use representation work reports filed with DIAND in the NWT Geology Division Archives?

	Total			Major		Junior		Independent	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Regularly	28	58	57	14	61	10	77	4	33
Sometimes	14	29	32	5	22	2	15	7	58
Rarely	6	13	11	4	17	1	8	1	8
Never	0	0	0	0	0	0	0	0	0
NR	2			2		0		0	

n=50: Majors, 25; Juniors, 13; Independents, 12 NR—No Response
f –frequency *rf*—relative frequency *wrf* –weighted relative frequency

7b. In general, do you think that the technical and scientific quality of these reports is:

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
High	5	11	14	1	4	2	22	2	17
Medium	17	39	34	12	52	3	33	2	17
Medium, but improving	19	43	42	10	43	3	33	6	50
Low	2	5	6	0	0	0	0	2	17
Low, but improving	1	2	4	0	0	1	11	0	0
NR	6			2		4		0	

8. When you submit representation work reports, do you file all of the results of your entire exploration program?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
All the time	16	32	37	4	16	8	62	4	33
Most of the time	26	52	48	16	64	4	31	6	50
Seldom	7	14	13	4	16	1	8	2	17
Never	1	2	1	1	4	0	0	0	0
NR	0			0		0		0	

n=50: Majors, 25; Juniors, 13; Independents, 12	NR—No Response
<i>f</i> — frequency	<i>rf</i> — relative frequency
	<i>wrf</i> — weighted relative frequency

9. Should there be a requirement to file all exploration work with the government?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes, all work should be filed	21	42	43	10	40	6	46	5	42
All work should be filed when a mineral claim goes to lease	6	12	15	1	4	3	23	2	17
Should have the option of only filing the amount of work needed to represent the minimum required amount of expenditures	23	46	42	14	54	4	31	5	42
NR	0			0		0		0	

10. Would you comply with a requirement to file all exploration work with the government?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes	27	57	58	13	57	8	62	6	55
No	5	11	13	1	4	2	15	2	18
Only under the following circumstances...	15	32	30	9	39	3	23	3	27
NR	3			2		0		1	

n=50: Majors, 25; Juniors, 13; Independents, 12
 NR – No Response
f – frequency *rf* – relative frequency *wrf* – weighted relative frequency

11a. How long should reports filed with the government be held confidential, and should the government extend periods of confidentiality on the reasonable request of the claim holder?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
<u>No Extension</u>									
1 year	3	7	6	2	8	0	0	1	10
2 years	5	11	12	2	8	1	9	2	20
3 years	9	20	21	4	16	3	27	2	20
5 years	2	4	3	2	8	0	0	0	0
<u>Extension on request</u>									
1 year	6	13	16	2	8	1	9	3	30
2 years	3	7	9	0	0	2	18	1	10
3 years	6	13	13	3	12	3	27	0	0
5 years	2	4	3	2	8	0	0	0	0
0 years	2	4	3	2	8	0	0	0	0
For claim's life	8	17	14	6	24	1	9	1	10
NR	4			0		2		2	

n=50:
Majors-25
Juniors-13
Independents-12
NR-No Response
f - frequency
rf - relative frequency
wrf - weighted relative frequency

12. Considering all other factors governing the pacing and amount of work during exploration programs on mineral claims (such as the economy, interest rates, length of field season, etc.), do you think that the required level of representation work:

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Forces you to do more work than you would like to do in a year	2	4	5	0	0	2	15	0	0
Is an appropriate level for the amount of work you can and would like to carry out in a year	30	61	57	18	72	7	54	5	45
Is easy to exceed in a year	11	22	25	4	16	3	23	4	36
Other	6	12	13	3	12	1	8	2	18
NR	1			0		0		1	

13a. Have you or your company ever had to carry out an exploration program solely for the purpose of fulfilling representation work requirements?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Frequently	5	10	11	2	9	1	8	2	17
Sometimes	17	35	37	7	30	5	38	5	42
Seldom	12	25	26	5	22	2	15	5	42
Never	14	29	26	9	39	5	38	0	0
NR	2			2		0		0	

n=50: Majors, 25; Juniors, 13; Independents, 12	NR—No Response
<i>f</i> —frequency	<i>rf</i> —relative frequency
	<i>wrf</i> —weighted relative frequency

14. Have you or your company ever had to let promising mineral claims lapse because you were unable to fulfill the representation work requirements?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes	21	43	48	7	28	7	58	7	58
No	28	56	52	18	72	5	42	5	42
NR	1			0		1		0	

n=50: Majors, 25;
 Juniors, 13; Independents, 12
 NR—No Response
f — frequency
rf — relative frequency
wrf — weighted relative frequency

15. Would raising the required amount of representation work expenditures to, for example, the national average of \$4.95/acre/year in the first five years:

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Make it significantly less attractive to work in the NWT	35	70	70	17	68	11	85	7	58
Encourage you to file more work	7	14	15	3	12	0	0	4	33
Encourage you to do more work	4	8	8	2	8	1	8	1	8
Other	10	20	19	6	24	1	8	3	25
NR	0			0		0		0	

16a. Considering both your own activities and your competitors' activities, do you think that the dollar value of required representation work expenditures in the NWT should be raised?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes	18	37	33	12	48	2	17	4	33
No	31	63	67	13	52	10	83	8	67
NR	1			0		1		0	

16c. If 'yes' what dollar value per acre per year would you suggest?

Dollar value:	Total	Major	Junior	Independent
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
2.50	1	1		
3.00	2	1		1
3.50	1	1		
4.00	3	2	1	
4.95	1		1	
5.00	7	4		3
10.00	2	2		
	17	11	2	4
Average suggested dollar value per ac		5.18	4.48	4.50
Weighted Average	4.72			

n=50:
 Majors, 25
 Juniors, 13
 Independents, 12
f – frequency

17. If required annual expenditures for representation work were raised, at what level would it become a deterrent for you or your organization to work in the NWT?

	Total	Major	Junior	Independent
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
2.00	4	2	1	1
2.01	1	1		
2.50	1			1
3.00	6		4	2
3.50	1	1		
4.00	2		2	
4.50	2	2		
4.95	1		1	
5.00	2	1		1
6.00	5	4	1	
8.00	1	1		
10.00	6	4		2
12.50	1			1
25.00	2	2		
Average		8.08	3.66	6.00
Weighted Average	5.91			

n = 50:
Majors, 25
Juniors, 13
Independents, 12
<i>f</i> - frequency

18. If required annual representation work expenditures were raised, should they be the same rate every year, or an escalating rate each year...

	Total			Major		Junior		Independent	
	f	rf	wrf	f	rf	f	rf	f	rf
Same rate	29	59	62	13	52	8	67	8	67
Escalating rate of...	17	35	33	10	40	3	25	4	33
Don't care	3	6	5	2	8	1	8	0	0
NR	1			0		1		0	

Suggested Escalating Rates: (Not everyone that answered escalating rate of... suggested a rate)

	Cumulative Expenditures to End of Year...									
	1	2	3	4	5	6	7	8	9	10
	0.00	3.00	6.00	9.00	14.00	19.00	24.00	29.00	34.00	39.00
	0.00	4.00	4.00	6.00	10.00	10.00	10.00	10.00	10.00	10.00
	0.00	4.00	8.00	12.00	16.00	22.00	28.00	34.00	40.00	46.00
	1.00	3.00	6.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00
	0.00	4.00	6.00	10.00	14.00	20.00	26.00	32.00	38.00	44.00
	0.00	5.00	10.00	15.00	20.00	30.00	40.00	50.00	60.00	70.00
	0.00	2.00	4.00	6.00	8.00	11.00	14.00	17.00	20.00	23.00
	1.50	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00
	2.00	4.00	6.50	9.00	12.00	15.00	18.25	21.50	24.75	28.00
	0.00	4.00	10.00	16.00	22.00	30.00	38.00	46.00	54.00	62.00
Average	0.45	3.80	7.05	10.80	15.10	20.20	25.33	30.45	35.58	40.70

n=50:
 Majors, 25
 Juniors, 13
 Independents, 12
 NR—No Response
f —frequency
rf —relative frequency
wrf —weighted relative frequency

19. Please rank the following approaches from most effective (1) to least effective (5) in terms of encouraging work on properties and the filing of that work.

Raising the required representation work expenditures

	Rank	Total	Major	Junior	Independent
Most	①	7	4	1	2
Effective	②	7	5	0	2
↕	③	8	5	2	1
Least	④	8	5	3	0
Effective	⑤	17	5	5	7
	NR	3	1	2	0
Average			3	4	4
Weighted Average		<input type="text" value="4"/>			

Implementing escalating requirements for work expenditures

	Rank	Total	Major	Junior	Independent
Most	①	7	6	0	1
Effective	②	10	5	3	2
↕	③	7	3	3	1
Least	④	4	3	1	0
Effective	⑤	19	8	4	7
	NR	3	0	2	1
Average			3	4	4
Weighted Average		<input type="text" value="4"/>			

n=50: Majors, 25; Juniors, 13; Independents, 12
NR - No Response

Raising fees

	<u>Rank</u>	<u>Total</u>	<u>Major</u>	<u>Junior</u>	<u>Independent</u>
Most	①	2	2	0	0
Effective	②	0	0	0	0
↕	③	5	1	2	2
Least	④	5	3	1	1
Effective	⑤	36	19	9	8
	NR	2	0	1	1
Average			4	5	5
Weighted Average		5			

Reducing credit for indirect expenditures

	<u>Rank</u>	<u>Total</u>	<u>Major</u>	<u>Junior</u>	<u>Independent</u>
Most	①	4	1	0	3
Effective	②	4	0	2	2
↕	③	8	4	3	1
Least	④	12	11	1	0
Effective	⑤	19	9	5	5
	NR	3	0	2	1
Average			4	4	3
Weighted Average		4			

Structuring work requirements to ensure progressive work

	<u>Rank</u>	<u>Total</u>	<u>Major</u>	<u>Junior</u>	<u>Independent</u>
Most	①	6	2	3	1
Effective	②	11	7	2	2
↕	③	1	1	0	0
Least	④	8	5	3	0
Effective	⑤	21	10	3	8
	NR	3	0	2	1
Average			4	3	4
Weighted Average		4			

Other

	<u>Rank</u>	<u>Total</u>	<u>Major</u>	<u>Junior</u>	<u>Independent</u>
Most	①	5	2	1	2
Effective	②	3	3	0	0
↕	③	0	0	0	0
Least	④	0	0	0	0
Effective	⑤	4	2	1	1
	NR	38	18	11	9

n=50: Majors, 25; Juniors, 13; Independents, 12
NR—No Response

21a. Should there be a limit to the amount of excess work in one year that may be applied to work requirements of later years?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes	16	32	33	7	28	4	31	5	42
No	34	68	67	18	72	9	69	7	58
NR	0			0		0		0	

22. Do you think there should be a limit to grouping mineral claims for the purpose of filing representation work, and, if so, what type of limit?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
There should not be a limit	18	40	36	10	43	7	54	1	11
Limit the maximum size of group	18	40	42	10	43	2	15	6	67
Limit the number of mineral claims that can be grouped	7	16	18	2	9	3	23	2	22
Limit the number of mineral claims that can be grouped per year	2	4	4	1	4	1	8	0	0
NR	5	10		2		0		3	

n=50; Majors, 25; Juniors, 13; Independents, 12 NR—No Response

f —frequency *rf* —relative frequency *wrf* —weighted relative frequency

23. Should cash in lieu of work be allowed in the NWT?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
No	6	12	13	2	8	3	23	1	9
Yes, in all circumstances	11	22	22	6	24	3	23	2	18
Yes, refundable, for extension	28	57	57	15	60	5	38	8	73
Yes, when credits reduced and claims unexpectedly in jeopardy	2	4	4	1	4	1	8	0	0
Yes, only under the following circumstances	2	4	4	1	4	1	8	0	0
NR	1			0		0		1	

24. Should credit for indirect expenses, such as transportation or overhead, be limited to a certain percentage of direct expenses?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes	28	60	62	13	54	7	58	8	73
No	19	40	38	11	46	5	42	3	27
NR	3			1		1		1	

Suggested percentages:	<i>f</i>	Suggested percentages:	<i>f</i>
10.0%	9	25%	1
12.5%	1	30%	2
15.0%	2	50%	4
20.0%	3	60%	2

n=50:
 Majors, 25
 Juniors, 13
 Independents, 12
 NR—No Response
f – frequency
rf –relative frequency
wrf –weighted relative frequency

26a. Should full or partial credit for indirect expenses be limited to those expenses incurred within the NWT?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>		<u>Suggested Percentages:</u>	<i>f</i>
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>		
Yes	9	19	22	2	9	2	17	5	42	10%	2
No	38	81	78	21	91	10	83	7	58	80%	1
NR	3			2		1		0		100%	5

27. Are there any types of mineral development work or expenditures currently not accepted for representation work?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
No	20	57	55	10	67	4	44	6	55
Yes	15	43	45	5	33	5	56	5	45
NR	15			10		4		1	

28a. Do you think that environmental monitoring surveys or environmental reclamation should be accepted as representation work?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes	42	91	91	21	91	11	92	10	91
No	4	9	9	2	9	1	8	1	9
NR	4			2		1		1	

n=50: Majors, 25; Juniors, 13; Independents, 12 NR—No Response

f – frequency *rf* –relative frequency *wrf* –weighted relative frequency

29a. Do you think a PAC system should be implemented in the NWT?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes	22	45	48	9	38	5	38	8	67
No	23	47	46	12	50	7	54	4	33
Only for these areas:	0	0	0	0	0	0	0	0	0
Only if (specify)	4	8	7	3	13	1	8	0	0
NR	1			1		0		0	
			Suggested Percentages:						
			25.0%						1
			30.0%		4		3		3
			33.3%				1		
			40.0%				1		
			50.0%		5				2
			100.0%						

n=50: Majors, 25
 Juniors, 13; Independents, 12
 NR—No Response
f —frequency
rf —relative frequency
wrf —weighted relative frequency

30. What should the terms and conditions be for granting a lease of a mineral claim?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Mandatory lease after 10 years	16	32	32	8	32	6	46	2	17
Complete \$_ worth of expenditures	5	10	8	4	16	1	8	0	0
Prove up a mineral deposit	8	16	14	5	20	3	23	0	0
On request	17	34	32	10	40	4	31	3	25
Upon production decision	12	24	25	5	20	4	31	3	25
Other	13	26	24	8	32	1	8	4	33
NR	0			0		0		0	

31. Please rank, in terms of best (1) to worst (5), the following approaches to maintaining leases and discouraging frivolous leasing.

Pay higher rent for non-producing leases than for producing leases

	Rank	Total	Major	Junior	Independent
Best	①	7	4	0	3
	②	7	5	2	0
↑	③	7	4	2	1
	④	9	6	2	1
Worse	⑤	15	5	5	5
	NR	5	1	2	2
Average			3	4	4
Weighted Average		4			

Require production to maintain the lease

	Rank	Total	Major	Junior	Independent
Best	①	6	3	1	2
	②	2	2	0	0
↑	③	3	1	2	0
	④	2	1	1	0
Worse	⑤	33	17	8	8
	NR	4	1	1	2
Average			4	4	4
Weighted Average		4			

Require representation work and rent on non-producing leases

	Rank	Total	Major	Junior	Independent
Best	①	11	4	3	4
	②	7	4	2	1
↑	③	12	5	3	4
	④	2	1	1	0
Worse	⑤	14	10	2	2
	NR	4	1	2	1
Average			3	2	2
Weighted Average		3			

Require representation work in place of rent

	Rank	Total	Major	Junior	Independent
Best	①	12	8	0	4
	②	11	6	3	2
↑	③	7	1	5	1
	④	3	2	0	1
Worse	⑤	12	6	3	3
	NR	5	2	2	1
Average			3	3	3
Weighted Average		3			

n = 50; Majors, 25; Juniors, 13; Independents, 12. NR - No Response

Increase cost of acquiring lease

	Rank	Total	Major	Junior	Independent
Best	①	10	4	3	3
	②	2	1	0	1
↑	③	9	6	2	1
	④	3	2	1	0
Worse	⑤	20	11	4	5
	NR	6	1	3	2
Average			4	3	3
Weighted Average		3			

Other

	Rank	Total	Major	Junior	Independent
Best	①	8	5	1	2
	②	2	1	1	0
↑	③	0	0	0	0
	④	0	0	0	0
Worse	⑤	1	1	0	0
	NR	39	18	11	10

33. Please rank the following statements from 1 (strongly agree) to 5 (strongly disagree).

A legal survey should be required as a condition for a lease application A legal survey should be required as a condition for production.

	Rank	Total	Major	Junior	Independent
Agree	①	25	16	3	6
	②	5	4	1	0
↑	③	3	0	2	1
	④	6	3	2	1
Disagree	⑤	8	1	3	4
	NR	3	1	2	0
Average			2	3	3
Weighted Average		3			

	Rank	Total	Majors	Juniors	Independents
Agree	①	42	21	11	10
	②	5	3	1	1
↑	③	0	0	0	0
	④	0	0	0	0
Disagree	⑤	1	0	0	1
	NR	2	1	1	0
Average			1	1	1
Weighted Average		1			

n = 50: Majors, 25; Juniors, 13; Independents, 12 NR - No Response

A GPS survey should be accepted in place of a legal survey for a non-producing lease

	Rank	Total	Major	Junior	Independent
Agree	①	19	5	11	3
	②	4	3	1	0
↕	③	8	5	0	3
	④	2	2	0	0
Disagree	⑤	12	7	0	5
	NR	5	3	1	1
Average			3	1	3
Weighted Average		<input type="text" value="3"/>			

34. If there was no longer a requirement for mineral claims to go to lease after 10 years, how would you rank the following approaches to maintaining claim lines (Please rank the best as 1 to the worst as 5).

Establish corner posts with GPS and metal pin in ground

	Rank	Total	Major	Junior	Independent
Best	①	26	11	6	9
	②	11	6	4	1
↕	③	4	4	0	0
	④	3	2	1	0
Worst	⑤	1	1	0	0
	NR	5	1	2	2
Average			2	2	1
Weighted Average		<input type="text" value="2"/>			

Physically re-establish posts and claim lines every 5 years

	Rank	Total	Major	Junior	Independent
Best	①	4	1	2	1
	②	4	2	0	2
↕	③	8	7	1	0
	④	8	6	2	0
Worst	⑤	20	8	6	6
	NR	6	1	2	3
Average			4	4	4
Weighted Average		<input type="text" value="4"/>			

n = 50; Majors, 25; Juniors, 13; Independents, 12. NR - No Responses

Physically re-establish posts and claim lines every 10 years

	Rank	Total	Major	Junior	Independent
Best	①	9	4	2	3
	②	6	4	1	1
↑	③	6	3	2	1
	④	9	5	3	1
Worst	⑤	14	8	2	4
	NR	6	1	3	2
Average			3	3	3
Weighted Average		3			

Legal survey

	Rank	Total	Major	Junior	Independent
Best	①	8	8	0	0
	②	8	5	2	1
↑	③	6	2	4	0
	④	4	2	2	0
Worst	⑤	18	8	2	8
	NR	6	0	3	3
Average			3	3	5
Weighted Average		4			

Physically re-establish posts and claim lines every 15 years

	Rank	Total	Major	Junior	Independent
Best	①	1	0	0	1
	②	1	0	1	0
↑	③	3	2	1	0
	④	15	10	4	1
Worst	⑤	22	12	4	6
	NR	8	1	3	4
Average			4	4	4
Weighted Average		4			

Other

	Rank	Total	Major	Junior	Independent
Best	①	2	1	1	0
	②	0	0	0	0
↑	③	0	0	0	0
	④	0	0	0	0
Worst	⑤	0	0	0	0
	NR	48	24	12	12

n=50: Majors, 25; Juniors, 13; Independents, 12 NR—No Response

36. Should there be a maximum size for a mining lease?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>i</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
No	32	64	61	18	72	11	85	3	25
Yes	18	36	39	7	28	2	15	9	75
NR	0			0		0		0	

37a. Do you think there is a role for discretionary clauses in the new NWT Mining Act?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes	30	63	62	15	65	8	62	7	58
No	18	38	38	8	35	5	38	5	42
NR	2			2		0		0	

n=50: Majors, 25; Juniors, 13; Independents, 12 NR – No Response
f – frequency
rf – relative frequency
wrf – weighted relative frequency

38. Mining legislation in most provinces contains special provisions for prospectors. Which, if any, of these special provisions do you think should be in an NWT Mining Act?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Can only file prospecting reports early in claim's life	16	32	32	8	32	4	31	4	33
Have relaxed standards for reports	18	36	39	7	28	4	31	7	58
Can be given credit only for carrying out the surveys and filing the results, but not for interpretation of results	12	24	22	7	28	4	31	1	8
Must have special qualifications	12	24	25	5	20	6	46	1	8
May only be credited a certain amount for their time	10	20	21	4	16	4	31	2	17
Other	13	26	23	9	36	2	15	2	17
NR	3			0	0	1		2	

39a. Should such things as computer disks, microfilm, digital recordings of airborne survey readings, etc. be acceptable media for filing representation work reports?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Yes	25	51	50	13	52	7	54	5	45
No	24	49	50	12	48	6	46	6	55
NR	1			0		0		1	

n=50: Majors, 25; Juniors, 13; Independents, 12 NR—No Response

f —frequency

rf —relative frequency

wrf —weighted relative frequency

39b. Should filing electronic data (as in 39a) be optional or required?

	<u>Total</u>			<u>Major</u>		<u>Junior</u>		<u>Independent</u>	
	<i>f</i>	<i>rf</i>	<i>wrf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>	<i>f</i>	<i>rf</i>
Optional	22	88	88	11	85	7	100	4	80
Required	3	12	12	2	15	0	0	1	20
NR	0			0		0		0	

n=50: Majors, 25; Juniors, 13;
 Independents, 12 NR – No Response
f – frequency
rf – relative frequency
wrf – weighted relative frequency