

THE MINE MEDICINE MANUAL

A COMMUNITY RESOURCE



Glenn M. Grande

*Reference Manual & Field Guide to:
Fair Mining Practices: A New Mining Code for
British Columbia*



Edited by Stan Tomandl

The Mine Medicine Manual

Copyright © 2015 Fair Mining Collaborative. All rights reserved.

No part of this publication may be reproduced, stored electronically, or transmitted in any form by any means, electronic, photocopying, recording, or otherwise, without the prior and express permission of the copyright holder.

We would like to thank our funders who generously supported the creation of this book:

Real Estate Foundation BC, Wilburforce Foundation, Law Foundation of British Columbia, Campion Foundation, Western Mining Action Network



Library and Archives Canada Cataloguing in Publication

Grande, Glenn Morton, 1963 -

The mine medicine manual a community resource / Glenn M. Grande
ISBN 978-0-9921509-0-7.

1. Mines and mineral resources. 2. Mine monitoring. 3. Aboriginal law. 4. Mining law.

Fair Mining Collaborative
#401 - 2202 Lambert Drive
Courtenay, BC, Canada, V9N 1Z8
www.fairmining.ca

Printed in Canada

I

N

S

I

D

E

Disclaimer	4
Four Keys	5
About the Manual	6
Outcomes	7
Using the Manual	8
Eight Jobs	9
Exploration	10
Consultation	44
Development and Production	68
Closure	76
Field Companion	82
Appendices	111
Glossary	124
Credits	130

The Eight Jobs

Job 1	<i>Background Check</i>	23
Job 2	<i>Gathering the Elements</i>	36
Job 3	<i>Assembling the Laws</i>	53
Job 4	<i>Calling the Nation</i>	56
Job 5	<i>Spreading the Word</i>	57
Job 6	<i>Into the NoW</i>	62
Job 7	<i>Covering the Field</i>	110
Side Job	<i>National Topographic System</i>	35

DISCLAIMER

This publication, in all its parts, is presented with the understanding by all parties, publishers, readers, and users, that it does not constitute advice or the last words of knowledge, skill, or expertise, including in the areas, professions, or trades of law, negotiations, mining, outdoor survival, geology, or geo-science. In no event, including negligence, the use of inaccurate information, or the misrepresentation of information or the law, on the part of the publishers, authors, funders, or any other persons involved with the creation of this publication, will the publishers, authors, funders, or other persons so involved be liable for any direct, indirect, or consequential damages resulting from the use of this material. The publishers, authors, and funders offer no opinion as to the accuracy of the information. The information represented here is current in the province of British Columbia only at time of writing. Readers and users must confirm the currency and accuracy of the sources and should seek certified, professional advice before proceeding in any of the areas covered in this publication.

Where your footsteps fall so follows your mind and your heart. Know and understand what you are entering before you proceed. Account for yourself and your actions. Own the decisions you make and the consequences that flow from those decisions.



FOUR KEYS

... to success

ENGAGE

The *Mine Medicine Manual* comes with an invitation to participate. Any ideas you have in order to make it work better are welcome. Send us your comments to help us keep it current. We encourage you to contact the Fair Mining Collaborative to give input or get assistance.

MONITOR

All stages of the mining process will require your attention and energies. Whether it is done on a computer, on paper, or in the field, a large part of your work will be monitoring activities while creating and enacting responses along the way.

FOCUS

Nothing in the mining process operates in isolation - everything is connected. One task may become more than was anticipated. Try your best to stay with one thing at time. Ask for help.

Fair Mining Collaborative
1 250 871 3627
website: www.fairmining.ca
e-mail: info@fairmining.ca

PRIORITIZE

The *Manual* will guide you through tasks but likely there is simply not enough time to do what needs doing. One strategy is to find the most important task and commit to that task alone, without distraction. It is okay to temporarily set aside tasks and return to them later with a fresh outlook.



ABOUT the MANUAL

Calling this work the *Mine Medicine Manual* and using the seven sacred teachings and colours, are done neither lightly, nor without permission. The author is aboriginal and walks the medicine path under the direction of a medicine man who is an elder and mentor. The medicine is introduced here because responding to mining on the land requires all seven energies and directions. Mind, body, spirit, heart, and all that is above, below, and within. All directions will be called as you are tested. It is understood, as with all things, that the centre as well as the whole must stay strong to do this job effectively.

Fair Mining Collaborative offers the *Mine Medicine Manual* in a good way; with the wish that it is kept and used as part of a job that requires the support of all good traditional ways and customs: walking the Good Red Road with the Seven Sacred Teachings.

Creation of the *Mine Medicine Manual* would not have been possible without the input, comments, and feedback of people that have shared their experiences and provided their insight over the two years that this project has been in development.

They are honoured at the end of the *Manual*.

The laws and practices of mining are analyzed generally in *Fair Mining Practices: A New Mining Code for British Columbia* - FMC's extensive academic companion volume to the *Mine Medicine Manual*. *Fair Mining Practices (FMP)* takes an exhaustive look at the best mining laws from around the world and offers them as suggestions for improving British Columbia's mining laws. It also gives directions for community mining policies.

The *Mine Medicine Manual* is a 'living document', and readers are encouraged to contribute to its betterment by sharing their stories, wisdom, and suggestions for future editions. Questions and comments may be sent to info@fairmining.ca.

The *Manual* is meant for use and for sharing. Please feel free to copy and distribute.

Special mention goes to Fred John - medicineman and honoured elder of the Xaxli'p band of the St'at'imc First Nation, Lillooet B.C. whose wisdom, insight, grace, and patient teachings are present from cover to cover in this book.

OUTCOMES

By the end of the *Manual* everything will tie together under a common theme: the recognition of inherent aboriginal rights and title in the context of mining. BC mining law lacks in this area, and the aim of the *MMM* is to help you identify where these deficiencies affect your community, and what you can do about it. Within the *MMM* we hope to help you achieve the following objectives:

1. Identify and understand mining Exploration, Development, Expansion, and Closure activities carried out on your traditional territory.
2. Understand the basic tools available to a mining company in its quest for minerals and how they are used.
3. Create a proactive response to mining on your territory.
4. Learn available measures to reduce the impacts and maximize the benefits for your community of any mining development.
5. Learn methods for monitoring land and water affected by mining while protecting them from further unwanted mining development.
6. Learn the basic principles behind consultation, negotiations, and agreements.
7. Recognize and engage with key mining players.
8. Have meaningful and constructive dialogue within your community and with neighbouring communities regarding mining.
9. Gain a basic understanding of the Canadian and British Columbia legal frameworks and how they apply to mining.
10. Learn and utilize in detail the specific British Columbia and Canadian statutes governing mining.

USING the MANUAL

The key feature of the *Mine Medicine Manual* that sets it apart from other toolkits is the Eight Jobs. Seven main jobs and one 'side job' appear at places in the *Mine Medicine Manual* to help guide you through your response to mining in your territory.

Each Job has ...

TASK

The broad, central work project.

FOCUS

A key point to help get you going.

TOOLS

Tools needed - like documents, data.

OBJECT

A goal to carry forward.

TIPS

Helpful suggestions to use at your discretion.

LINK

Direct link to a web site (at time of publication).

Since the *Mine Medicine Manual* is created from the vision of the *Fair Mining Practices*, we offer, along with the Eight Jobs, the relevant governing statutes, and where applicable, the chapter numbers to *Fair Mining Practices (FMP)* pertaining to the topic.

STATUTE

This icon refers to the governing provincial or federal statute and main applicable sections. It may also refer to guidelines, regulations, instruments, or policies.

MMM

Refers directly to pages within the *Mine Medicine Manual*.

FMP

Refers to the main pages in *Fair Mining Practices: A New Mining Code for British Columbia* that pertain to the topic.



= Seek legal advice.

Prophecies tell that this is the
time for
One Heart,
One Mind
and One Drum.

EIGHT JOBS

The job of caring for the land while dealing with mining, either in its potential, or in its full production, is not simple or easy. Myriad tasks are on the path: doing research, building community capacity, getting cooperation on the part of the prospector, mining company, or government agency, not to mention all the day-to-day distractions that come up to challenge you. To try to simplify a complex process, the *Mine Medicine Manual* divides the overall job of resource manager for mining into eight smaller jobs.

Some jobs can take a lifetime of work. Some can be accomplished in a morning. You may be required to obtain mapping resources, or do your own mapping. You may have to go to the field just to confirm one small item on a list of many. The point is, this is challenging, detailed, and often frustrating work. And in today's reality, there is no guarantee of success; but without giving it our all and helping each other, failure is assured. The current state of mining in British Columbia, especially considering how it is affecting communities, requires extreme dedication and hard work.

1	Background Check	23
You will learn the Mineral Titles Online system, check for claims, check claimants and their histories.		
2	Gathering the Elements	36
You will create profiles of key claims and claimants, and research, gather, and validate their exploration data.		
3	Assembling the Laws	51
You will begin to study and collect relevant laws on mining, as well as those on aboriginal rights and title.		
4	Calling the Nation	54
You will use different ways and means to garner community input to help guide you.		
5	Spreading the Word	55
You will reach out to the world and broadcast your message in all possible ways.		
6	Into the NoW	60
You will investigate Notices of Work from miners and respond to each using the tools in this manual.		
7	Covering the Field	108
You will perform field tasks from the <i>MMM Field Companion</i> .		
Side Job	The NTS	34
You will learn the National Topographic map system of Canada.		

EXPLORATION

I told them that
they were
responsible for
watching over
the land, their
four-legged
brothers, and all
their relations.



1	The Mining Path	12
2	Types of Mines	13
3	Mine Life Cycle	14
4	Mineral Search	15
5	Regulation	16
6	Mineral Tenure	18
7	Claims vs. Leases	20
8	Finding Claims	22
Job 1	<i>Background Check</i>	23
9	The BCeID	24
10	Methods & Impacts	26
11	Physical Sampling	28
12	Drilling	29
13	Mineral Grades	30
14	NI 43-101	31
15	Placer Mining	32
16	Resources	34
Job 2	<i>Gathering the Elements</i>	36
17	BC Securities Commission	38
18	Potential Harms	40
19	Potential Benefits	42



1

THE MINING PATH

**S
T
A
R
T**

Prospectors pick, mark, claim, and pay for the right to explore the claim temporarily under a Free Miner's Certificate. Claims may be converted to Leases - see [page 20](#).

S T A K I N G

ON TO POSSIBLE FULL
DEVELOPMENT

EXPLORATION (2)

MAJOR ACTIVITY
(SEE PAGE 16)



**CANNOT
PROCEED
WITHOUT A
*NOTICE OF
Work***

EXPLORATION (1)

LOW LEVEL ACTIVITY
NOW INCLUDES AERIAL SURVEYS

Most intrusive sampling methods short of a Notice of Work.

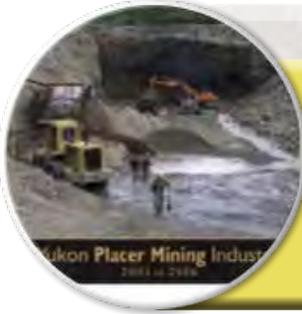
(SEE PAGE 16)

Once 'staked', prospectors can move their exploration efforts from the desktop to the field.

**P
R
O
S
P
E
C
T
I
N
G**

2

TYPES of MINES



PLACER

Alluvial / Glacial / Stream & River beds / also called 'Hydraulic Mining: uses water to wash away sediment and expose the heavier minerals like gold. Panning for gold is the most basic form of placer mining.



UNDERGROUND

Underground mining for minerals or coal. Except for pre-crushing below the surface, everything dug out of here gets processed on the surface.



OPEN PIT

A pit can be created for anything from a coal mine to any metal mine. Pits may also provide underground access using adits and shafts. Pits can also be used for future water and tailing containment ponds.

3

MINE LIFE-CYCLE

Closed or abandoned mines can re-open. See: *Brownfield* in GLOSSARY p. 124



PROSPECTING and EXPLORATION



EMP CHAPTERS 1, 5, 6, 10

CLOSURE



EMP CHAPTERS 8, 9, 10

DEVELOPMENT



EMP CHAPTERS 4, 6, 7



PRODUCTION



EMP CHAPTERS 4, 6, 7

All types of mineral searches are generally considered Exploration. However ...

PROSPECTING is simply a low-level intrusion into an area and usually refers to the early search for mineral deposits. It meets the definition of “mining activity” under the definitions of both the *BC Mineral Tenure Act*, and the *Mines Act*. It is generally understood to mean non-mechanical, low-impact activities, such as :

- desktop searches,
- geological field mapping
- rock-chip sampling
- aerial surveys

In BC, prospecting activities can be performed by any holder of a Free Miner Certificate. For more extensive Exploration activities, a free miner may have to file a Notice of Work, which will come across your desk as a mining ‘Referral’ - see page 58.

More extensive **EXPLORATION** generally requires the use of heavy machinery for road construction, drilling, blasting, and trenching.

Prospecting and Exploration activities can also be distinguished according to how they are regulated. (see following page)

Under Part 9 of the *Health, Safety and Reclamation Code* (HSRC), Prospecting is perhaps best defined as everything that is in the list of exploration activities that are excluded from the permitting process under column (b) (on the next page) while Exploration activities are listed in column (a).

If a potential mineral deposit is discovered during prospecting, the deposit may be subject to further exploration as the miner will want to find out more about its size, location, and composition.

STATUTE(s)

Mineral Tenure Act, Part 1
HSRC, Part 9, Definitions
HSRC, s 9.2.1(1)
Mines Act, s 1

FMP

128 - 129

Full **EXPLORATION** activities require mine inspector approval in the form of a permit. Each **Notice**

of Work Application is also a mining permit application. **Referral** - see NOTICE OF WORK on page 58.

From: *Health, Safety and Reclamation Code*, Part 9, Definitions:

(MAJOR activities requiring a NoW)

HSRC Part 9 (a)

EXPLORATION activities are those activities which are undertaken in the search for and development of coal and minerals, as defined in the Mineral Tenure Act, with the exception of placer minerals:

(a) and include:

- (i) disturbance of the ground by mechanical means such as drilling, trenching and excavating;
- (ii) blasting;
- (iii) construction, modification, deactivation and reclamation of an exploration access and camps;
- (iv) induced polarization surveys using exposed electrodes; and
- (v) site reclamation.

(b) but do not include ...

(LOW-LEVEL activities - no NoW)

HSRC Part 9 (b)

- (i) **PROSPECTING** using hand tools;
- (ii) geological/geochemical surveying;
- (iii) airborne geophysical surveying;
- (iv) ground geophysical surveying without the use of exposed, energized electrodes;
- (v) hand trenching without the use of explosives; or
- (vi) establishment of exploration grid lines that do not require the felling of trees, with the exception of trees and shrubs that create a hazard to safe passage and danger trees as defined in the Workers' Compensation Board Regulation

As far as how they are to be carried out, most activities in HSRC Part 9 (a) & (b) are governed by 'Schedule A' of the *Mineral Tenure Act Regulations*.

STATUTE(s)

Mineral Tenure Act Regulations
Schedule A

Once a person obtains a Free Miner Certificate (see: [FINDING CLAIMS](#) on page 22 and [THE BCEID](#) on page 24) he or she has the right to stake a claim under certain conditions. A free miner certificate grants the miner the right to enter land in order to conduct the prospecting activities listed in column (b) on the previous page.

Exploration and prospecting can take place anywhere except Indian reserves and:

- land occupied by a building;
- the curtilage (75 feet) of a dwelling house;
- orchard land;
- land under cultivation;
- land lawfully occupied for mining purposes, except for the purposes of exploring and locating for minerals or placer minerals as permitted by the Mineral Tenure Act;
- protected heritage property, except as authorized by the local government or minister responsible for protecting the protected heritage property; and,
- land in a park (except as permitted by section 21 of the *Mineral Tenure Act*).

Anyone can still undertake recreational gold panning in BC without a Free Miner Certificate.

TIP

POWER TO CANCEL A FREE MINER CERTIFICATE

Free Miner Certificates can be cancelled in certain circumstances, such as for contravening the *Mineral Tenure Act*, the *Mineral Tenure Act Regulations*, the *Criminal Code of Canada*, the *Mines Act*, the *Mining Right of Way Act*, the *Heritage Conservation Act*, or the *Health, Safety and Reclamation Code for Mines in BC*. See:

[APPENDIX 3: POWER PROVISIONS](#) on page 122.

STATUTE(s)

Mineral Tenure Act,
s 11 (2)

FMP

123 - 130

6

MINERAL TENURE

The Mineral Titles (formerly Mineral Tenure) system is the BC system of laws governing where mining can and cannot occur, and how mining claims and leases are allocated and managed.

The Mineral Titles system dates from the 1800s and encourages citizens to exploit mineral resources on behalf of themselves and the Crown. Since that time the system has been known as a ‘free entry’ system. Staking was originally done on the ground and is now done online.

With few restrictions on where a miner can go, today’s Mineral Titles system is also called a ‘two-zone’ (Prohibited and Allowed) system. The *Mine Medicine Manual* touched on this on the previous page (17) and will expand on the ramifications of this in more detail.

Where Mining is Prohibited & Allowed	
PROHIBITED	ALLOWED
PARKS (government can override and permit mining in parks)	ALL OTHER AREAS SEE: <u>REGULATION ON</u> PREVIOUS 2 PAGES (16-17)
HOMES & YARDS	
CURRENT MINES	
CULTIVATED LANDS	
ORCHARDS	
HERITAGE SITES	

STATUTE(s)

Mineral Tenure Act,
s 11 (2).

FMP

103, 113, 127

Free Mining / Free Entry

CRITERIA TO HOLD A FREE MINER CERTIFICATE	PROCESS
<p>To simply 'hold' a mineral title a person need not be a free miner, but only a free miner may explore for subsurface minerals.</p> <p>Section 8 (2) of the Mineral Tenure Act defines a free miner:</p> <p>(2) On application in the prescribed form and on payment of the prescribed fee, a free miner certificate must be issued to an applicant who is</p> <p>(a) a person age 18 or over and ordinarily a resident of Canada for at least 183 days in each calendar year or authorized to work in Canada,</p> <p>(b) a Canadian corporation, or</p> <p>(c) a partnership consisting of partners who are persons that qualify under paragraph (a) or (b).</p>	<p>The following pages will guide you through the process for obtaining a BCeID, and Free Miner Certificate. From there you can log on to the Mineral Titles online website and get familiar with the claim-staking process.</p> <p>To perform Job 1: BACKGROUND CHECK and Job 2: GATHERING THE ELEMENTS, or to simply view and monitor claims on your territory, you do not need a Free Miner's Certificate (see: <u>FINDING CLAIMS</u> on page 22).</p> <p style="text-align: center;">www.mtonline.gov.bc.ca</p>

STATUTE(s)

Mineral Tenure Act, s 8.

FMP

88, 120,
121 - 130,
137 - 139



 The right granted by the Crown to a miner to explore for minerals is above almost every other land right. This practice and its foundational belief system are out of balance with the very people it is meant to serve.

7

CLAIMS vs. LEASES

The right to hold mineral claims in BC has two major forms:
the Mineral Claim, and the Mineral Lease.

TYPE	DESCRIPTION
CLAIM (General) <i>Mineral Tenure Act,</i> ss 6, 28(2).	A Claim is a mineral, placer, or coal claim and includes a legacy claim. It is a chattel, which is an item of personal property – i.e., property other than real estate.
LEASE (most secure form of mineral tenure) LINK <i>Mineral Tenure Act,</i> s 42.	A mining Lease can be 1 claim but is usually a group of claims that a miner wishes to retain for a longer time. To convert claims (or a claim) into a lease, a miner pays money over a different term than for a claim. But converting to a lease also means the claims become vulnerable to charges against them, like liens and debts. For example, a mineral lease is an asset that can be seized in debt-collection scenarios against the lease owner.
MINERAL CLAIM	A Mineral Claim is a claim to the minerals within an area which has been located or acquired by a method set out in the regulations.
PLACER CLAIM	A Placer Claim is a claim to the placer minerals within an area that has been located or acquired by a method set out in the regulations.
LEGACY CLAIM (incl. Crown Grants)	A Legacy Claim or Legacy Lease is a claim or lease made prior to the above definitions coming into force under subsequent Acts. Commonly (but not always) referring to those claims made before the claim staking system went online 12 January 2005. Under s. 24.1 of the MTA a legacy claim continues until forfeited, cancelled, terminated, abandoned, or converted to a lease.

STATUTE(s)

Mineral Tenure Act, s 24.1

TIP

Mineral Tenure Act s 40

Land Used for Other Than Mining & Other Complaints

Under section 40 (1)(c) of the *Mineral Tenure Act*, anyone may file a complaint if the mineral claim is being used for any purpose other than mining. A fee is required to file a complaint and the ultimate decision-making discretion on the appropriate response is held by the Chief Gold Commissioner.

In the unlikely event you discover a mining claim being used for purposes other than mineral exploration, please report it immediately to the Chief Gold Commissioner at 1 250 952 0335. Complaints for other reasons may also be filed under s 40 of the MTA.

For a fee, and under certain conditions, a mining claim can be converted to a lease (max. 30 yrs.). Miners will do this to secure the claim for further exploration and development, or to prevent the claim from reverting back to the tenure system pending further decisions.

TIP

To help keep track of claim-to-lease conversions (among other things) announcements are printed in the BC Gazette - a publication of the Government of British Columbia, printed through the Queen's Printer. The Gazette is available for a subscription cost at:

LINK

<http://www.qplegaleze.ca/default.htm>

You must refer not only to the Legacy Claim itself, but the law at the time the claim was granted to find the true nature and extent of the claim. This is especially true for the myriad forms of the Crown Grant.

8

FINDING CLAIMS

It is not necessary to obtain a Free Miner Certificate to view mineral titles in BC and find who is staking

claims, how many of each kind they have, claim history, and contact information. Here's how:

You will need 2 things:

1. Your territorial map with the areas of concern
2. A computer with internet access. You may need to cross reference your map with the MTO map to pinpoint the areas you wish to check.

Note: the MTO map is not geographically accurate at smaller scales.

	ACTION	WEB PAGE / LINK
1	Go online to	https://www.mtonline.gov.bc.ca/mtov/home.do
2	Click (Home Page main menu)	'View (Mineral, Placer, Coal) Titles'
3	Use crosshairs to zoom in on BC map to any area(s) of your concern	
4	Click	'Legend' (top menu bar of map) - Pink areas = mineral claims / Dark Pink = mineral leases
5	Copy	6 or 7-digit title number in pink area
6	Return	Home page
a	Click (left menu)	'Search for Mineral / Placer / Coal Titles'
b	Paste	The title number into 'Title Number' box
7	Click	'Next' (at bottom of page)
8	Read	'Title Detail' page View Tenure / Check expiry date / see size of claim area / note NTS map number / check 'Owners' / check 'Submitter' / Get SoWs (PRINT COPIES)
9	Click	'Owners' Claimant's / owner's contact information (PRINT COPIES)
10	Read / Check	Claimant's / owner's other claims & claim history (PRINT COPIES) Print and file any and all applicable claims of each owner. CAUTION: some claimants own, or have owned <u>hundreds of claims</u> .

1	BACKGROUND CHECK	
TASK	You will be able to pinpoint and count mining claims on any NTS or BCGS map and build profiles of miners from this data.	
FOCUS	Begin with the FINDING CLAIMS exercise on the preceding page. Later, you can add orphaned and abandoned sites.	
TOOLS	<p>You will likely be doing this on a computer. Please ensure that you regularly back-up all your electronic files in case of bad connections, power outages, and any other unforeseen crashes of your computer system. Please also use:</p> <ol style="list-style-type: none"> 1. A secure and organized paper filing system. 2. These pages from the MTO site to start building your file: <ol style="list-style-type: none"> a. “Title Detail” page b. “Owner” page(s) c. “Claim History” page(s) <p>Later, you will add other documents and information that you learn about in the Manual to your file(s).</p>	
OBJECT	Create a file for each prospector, exploration company, and mining company on the land. Later, you will be able to create a profile for each claimant and company, as well as respond by sending letters, visiting sites, and creating a community response. The <u>compliance history</u> of miners is a key concern in the <i>FMP</i> .	
FMP 89 - 97	STATUTE(s) <i>Mineral Tenure Act, Part 2</i>	

TIPS

Revealed in a claimant’s history:

1. How often they stake
2. Preferences for certain claims
3. How often they abandon or forfeit claims, and clues to why

Information and patterns can be graphed or charted and included in your files on each claimant.

Note: Becoming a free miner is an optional step that may help you gain insight into how the Mineral Titles system works and perhaps stake your own claim(s) – you do not need to be a free miner to respond to mining activities.

But to be a free miner, first you must obtain a BCeID which is an electronic government-issued ID to access different provincial government services online. Staking on the Mineral Titles Online system is one such service.

OBTAINING A BCeID

STEP 1 - ON LINE	
1	Go online to www.bceid.ca
2	On the right hand side of the home page under the heading <i>Discover</i> , click <i>Services Available Online</i>
3	You will see four headings but three types of BCeID accounts: i. Business ii. Personal iii. Basic iv. (Alphabetical listing of all) Click the <i>Business BCeID</i> tab
4	Under the 'Energy, Mines, and Petroleum Resources' category, click the <i>Mineral Titles Online</i> sub-heading
5	Click <i>Register to Get This BCeID Account</i>
6	Click <i>No</i> ... You will see another prompt ...
7	Click <i>Yes</i>
8	Click <i>Proprietorship</i> (NOTE: Although this is a 'Business' BCeID you do not need to be a registered business or sole-proprietorship in BC. This is merely a formality for the BCeID process to issue a Free Miner Certificate)
9	Click the option that applies to you
10	Click <i>I DO NOT have a OneStop Account</i> , or <i>I DO NOT want to use a OneStop Account</i> (assumes you do not have a One Stop Account)
11	Click <i>No, do not convert an existing Basic BCeID</i> . Fill out your personal and contact information

When you make your in-person visit to verify your ID you will need to bring:

- 1) One piece of ID (status card, passport, driving license, birth certificate)

AND

- 2) One document proving your address (government letter, utility bill, bank statement)

STEP 2 - IN PERSON	
1	Go online to www.bceid.ca and enter your postal code to find the nearest Government Agent or Front Counter BC office
2	Make a 1-time visit in-person to the nearest location You must bring the following: <ol style="list-style-type: none">1. 1 piece government-issued ID (accepted IDs include status cards, driving license, passport, or birth certificates)2. 1 piece with a proof of address (e.g., a letter from a government agent or office, utility bill, or bank account statement)
3	WHILE THERE, PLEASE ENSURE that the counter-attendant: <ol style="list-style-type: none">1) Activates your account2) Gives you a Business ID3) Gives you a Printed copy of your Free Miner's Certificate4) Tests your access on a computer at the counter to double-check and help guide you and familiarize you with the BCeID process

IMPORTANT

Vital provincial archaeological data can be accessed on 2 provincial databases: the Remote Access to Archaeological Data (RAAD) - which uses similar mapping technology as the Mineral Titles Online system - and the Provincial Archaeological Report Library (PARL). These are available to First Nations Resource Managers, other professionals, and government agents and employees. However, in order to be granted access a user must obtain a BCeID. See [page 63: Consultation; Section 9 "Sacred Sites"](#) for more information.

Prospecting and Exploration each involve three major methods of activities on the land: Observation, Geological, Geophysical, and one that is done almost entirely in a laboratory: Geochemical.

Each has its own level of impact and potential for environmental damage graded here from 1: (Low) to 4: (Extreme), as the chart below explains.

1	Low	<ul style="list-style-type: none"> • Day trips or short overnight stays • Minor intrusions / Treading on the land in general • Surface holes / chips & channels • Garbage (depends on quantity & variety) • Minor brush cutting • Minor wildlife disturbances
2	MODERATE	<ul style="list-style-type: none"> • Use of small machines & tools (power hand-tools) • Fuels & chemicals (gas, diesel, cleaning agents) • Air & noise pollution • Noticeable land disturbance (trenches, site clearing) • Wildlife interference
3	HIGH	<ul style="list-style-type: none"> • Established & prolonged disturbance • Large ground-altering activities • Major brush-clearing • Damage to watercourses • Damage to land, vegetation, food sources
4	EXTREME	<ul style="list-style-type: none"> • Road & corridor construction • Possible irreparable damage to habitat • Damage to vegetation and food sources • Tainted surface and ground waters • Significant and continuous increase in the amount of fuel, chemicals, and toxins • Complete wildlife displacement and/or destruction

GENERAL CATEGORY		Impacts
OBSERVATION (PROVIDES SAMPLES)		
Observing clear features and mineral highlights showing through surface.	Spotting rock formations that hold or 'host' mineral deposits for later sampling - see <u>PHYSICAL SAMPLING</u> on page 28.	Showings & Hostings 1 2
GEOLOGICAL (PROVIDES SAMPLES)		
Geologist working in the field, using and augmenting existing maps, builds a 'road map' of geological features.		Mapping 1 2 3
Removal of 'overburden' - see <u>OVERBURDEN</u> on page 72. Search for a clean & continuous rock face to sample. Can use heavy equipment & blasting.		Stripping & Trenching 1 2 3 4
GEOPHYSICAL (LOCATES WHERE TO PHYSICALLY SAMPLE)		
Uses airborne magnetometers and electromagnetic sensor loops hung from aircraft (60 meters / 200 ft. Altitude). Impacts include a range of noise disturbances.		Aerial 1 2 3
Ground version of Aerial Surveys. Backpack units send electrical charges into the ground and read back the signatures of elements in the ground.		(IP) Induced Polarization 1 2
N	As of December 2012 IP surveys are under review for exemption from the Notice of Work. They will be exempt if they do not "...involve a temporary camp or any	
O	mechanized clearing, unless clearing is required for safety reasons under the	
T	[Health, Safety and Reclamation] Code." - Ministry Discussion Paper, 2012, at 4	
E		
GEOCHEMICAL (NEEDS SAMPLES TO ANALYZE)		
The chemical analysis of sample(s) Needs the physical sample obtained using the above methods to chemically test for the presence of elements and minerals - these are the basis for technical reports, and NI-43-101 (See: <u>NI 43-101</u> on page 31)		Assaying (Lab Analysis)

TIPS

- 1) Request flight schedules and routes in advance for aerial surveys.
- 2) Mapping (aerial or ground) is not deemed 'physically intrusive', so a Notice of Work is not required. You may wish to negotiate for the miner to give a notification for mapping and for IP surveys regardless, since aerial fly-overs are extremely disturbing to wildlife, especially during birthing seasons.

Listed below are the physical sampling techniques used in the field. They are used in the Observation and Geological exploration methods. These methods are used alone or in combination to determine the value of minerals in a claim. Some are more reliable than others,

depending on several factors like quantity, location, grade, erosion, and origins - the latter (origins) is especially important in soil, stream-sediment, and till samples, as some minerals may have originated many kilometres away but were carried by glaciers.

TYPE	IDENTIFYING FEATURES
ROCK SAMPLES (3 main kinds)	GRAB: A single piece, or several from the same location - small & hard to identify CHIP: Samples across an exposed outcrop CHANNEL: One or more long, continuous cuts of rock within an area
SOIL SAMPLES	HOLES: Shovel or auger samples 10 - 50 cm deep in a grid pattern at 10 - 50 m intervals
STREAM SEDIMENT SAMPLES	SCOOP MARKS: Evaluation of upstream deposits. Sometimes in the thousands
TILL SAMPLES	HOLES, SCOOP MARKS: 'Dry' sediment samples - 1 kg. bags of glacial sediment taken along a track of a glacier
BIO-GEOCHEMICAL SAMPLES	TREE & SHRUB SCRAPINGS: Bark & foliage reveal elements, and possibly the proximity and quantity of minerals
INDIGENOUS KNOWLEDGE	The presence and the movements of the elements, and the uptake of the elements and nutrients into the trees, has been known forever to Indigenous peoples

You may use similar methods (Soil, Stream Sediment, Bio-Geochemical) to test for metal and chemical contamination.

See: Pages 108 WATER SAMPLING, and 109 SOIL SAMPLING.

Otherwise known as ‘Advanced Exploration’, drilling is done based on results of Pre-Feasibility Studies, Feasibility Studies, and Preliminary Economic Assessments (see: GLOSSARY on page 124). The main drilling types are described below.

COMMON DRILLING TECHNIQUES	
NAME	OUTPUT
Diamond Drilling (most common & preferred)	Core Samples (long cylinders of solid rock reveal a cross-section of mineral content)
Reverse Circulation (RC) Drilling (sub-standard)	Bags of mixed rock fragments and soil

Phase I DISCOVERY Drilling in the general area	<ul style="list-style-type: none"> • aka: Exploration Drilling. • 1st drilling after sampling data analysis • Used during Exploration, Development, and Production • Used to ‘discover’ depth of a mineral deposit and gain a cross-section of the deposit
Phase II EXPANSION Narrows the search	<ul style="list-style-type: none"> • Drilling of more samples around the Discovery deposits. This stage of drilling shows the depth, width and shape of the deposit. It may also be done by an operating mine to help decide where to expand the mine
Phase III IN-FILL Pin-Points specific areas to drill	<ul style="list-style-type: none"> • 3rd phase takes Expansion results & drills between existing holes for detailed analysis that charts the course for locating the prime deposit • 3-D cross-sectional ‘maps’ built from sample data, then compiled with other data

STATUTE(s)

HSRC s 9.11.1 (and throughout)
Mineral Tenure Act Regulations
Schedule A

FMP

27 - 30,
150 - 154

13

MINERAL GRADES

TECHNICAL NAME	Also known as ...	DESCRIPTION
INFERRED (not allowed for use in NI 43-101)	Pathfinder Elements	<ul style="list-style-type: none"> • What may be present based on early results. • Element or gas associated with desired mineral(s).
INDICATED	Indicator Elements	Elements or gases associated with desired mineral - may also contain traces of the desired mineral(s).
MEASURED	Target Elements	The desired minerals or elements that reveal with certainty the presence of the desired mineral(s).
Results for gold (Au) and silver (Ag) are reported in grams per metric tonne (g/t)		
Results for copper and other base metals are reported in percentages (%)		

Dr. Copper: The prolific use of copper makes it a bellweather indicator of global economic health. Investors therefore have dubbed it “Dr. Copper”. As a general rule, as copper prices go, so goes the world economy.

MAJOR MINERALS & THEIR SYMBOLS

Silver	<i>Ag</i>
Aluminium	<i>Al</i>
Gold	<i>Au</i>
Copper	<i>Cu</i>
Iron	<i>Fe</i>
Potassium	<i>K</i>
Molybdenum	<i>Mb</i>
Magnesium	<i>Mg</i>
Nickel	<i>Ni</i>
Lead	<i>Pb</i>
Platinum	<i>Pt</i>
Zinc	<i>Zn</i>

Bre-X is the largest mining scandal in history. Toronto-based Bre-X acquired the Busang gold property in Indonesia in 1992 & 1993 and reported amazing drill results. In 1996, Bre-X was trading at \$280 per share, and was worth \$6 billion on the market. On Feb. 18 1997 Bre-X President David Walsh announced Busang had as much as 200,000,000 ounces of gold reserves. But in March 1997, copper & gold giant Freeport McMoran did its own testing and found only minor traces of gold. On March 19, 1997 the Bre-X geologist fell to his death from a helicopter in the Indonesian jungle. Although a suicide note was found, it has been speculated the geologist was murdered or even faked his own death. Bre-X stock plunged to \$2.50 per share while panicked trading crashed the TSX computers. A report by Strathcona Minerals stated there was virtually no gold

in Busang. Shares fell to \$.80 before Bre-X was de-listed from the TSX. From this scandal was created National Instrument 43-101. National Instrument 43-101 (NI 43-101) is a mineral resource classification system used for the public disclosure of information relating to mineral properties in Canada or owned by Canadian companies elsewhere and seeking Canadian investment. The NI 43-101 is a strict guideline for how public companies must disclose scientific and technical information about mineral projects on stock exchanges supervised by the Canadian Securities Administrators. To avoid fraudulent or grossly inaccurate reporting of mineral exploration activities, mining companies that issue stocks in Canada are required to file NI 43-101 reports and have them verified by a geologist or qualified person (QP).



The mine that started it all.

Entrance to the Bre-X Busang Mine in Indonesia where doctored samples and falsified data led to billions of dollars in investor losses, suicides, and National Instrument 43-101. Photo: cbc.ca

Placer mining is specific to alluvial (stream/creek/river) beds where water has carried sediments downstream and deposited heavier metals (particularly gold, silver, platinum, and gemstones) into the stream bed. Usually, sluice boxes of various sizes are used to trap the heavier metals while water is used to wash away the sediment.

Photos on page 33 show a sluice can be anything from a small, portable passive water model (Photo A) to an industrial scale model (Photo B). Depending on the size and scale of the operation, and the level of care shown by a miner, damage from placer operations can be negligible or irreparable.

Registration of placer claims in BC costs \$5/hectare as opposed to \$1.75/hectare for mineral claims. Placer claims require a flat fee of \$20 per hectare to maintain in lieu of work, whereas hard rock claims range from \$5 to \$20 per hectare to maintain.

Placer claims also have a different regime than hard rock claims for transitioning from claims to leases.

STATUTE(s)

HSRC s 10.1.1
Mineral Tenure Act
Regulations ss. 17, 18

The HSRC defines placer mining under “mining” and “mining activity” but excludes it from the definition of “exploration activities”.

Governance of placer mining in the HSRC is specific to Section 10.1.1 which calls for a separate plan to be submitted to the Chief Inspector of Mines under section 10 of the *Mineral Tenure Act*. From there placer mining is governed mainly by the *Mineral Tenure Act Regulations*. Section 18 is important because it mandates, among other things, an approved survey for every placer lease. Section 18 also directs miners to publish 2 ads in a local newspaper not more than 2 weeks apart, declaring the intention to apply for the placer lease.

The annual bulk sampling limit for a placer claim differs from hard rock (20,000 cubic m to 1,000 tonnes, respectively - and a 1-time 10,000 tonne sample every 5 years). Placer mines can also be aggregate (rock, sand, and gravel) quarries. However, unlike a regular placer claim, the owner of an aggregate quarry must also own the surface tenure or have the surface owner’s permission.

FMP

89, 98, 127



A



B

EA Thresholds

The *Application Requirements for Permit Approval* lists the threshold criteria for a BC *Environmental Assessment Act* review of a **new** placer mine at 500,000 tonnes or more of ‘paydirt’ each year. ‘Paydirt’ refers to the amount of aggregate that can be profitably mined. The equivalent term in mineral mining is ‘ore’. The threshold for a “**modification of an existing mine** facility that meets new project criteria” (and therefore is subject to an EA review) for placer

mines is a “35% or more increase in area of mining disturbance than was previously permitted”. You may also find these criteria in Appendix 1 of the *Guide to Preparing Mine Permit Applications for Aggregate Pits and Quarries in British Columbia* published by the Ministry of Energy and Mines in 2010.

STATUTE(s)

Application Requirements for Permit Approval, Table 2.2-1
BC Guide to Pits & Quarries
 Appendix I

Placer Areas in BC

Placer claims and leases are limited to specific areas in BC. In some of these areas placer outnumbers hard rock claims and leases. The richest placer deposits are in the Cariboo region around the towns of Quesnel and Williams Lake - towns created from the Gold Rush of the 1850s.

The process to access placer claims on the BC Mineral Titles Online system is exactly the same as the process for accessing mineral or coal mining claims. See **FINDING CLAIMS** on page 22. Choose the “View Placer Titles” option. See the link below for a map of BC placer areas.

LINK

http://www.empr.gov.bc.ca/Titles/MineralTitles/Pub/Documents/maps/placer_designated_areas.pdf

ONLINE RESOURCES

Acronym & Link	Full Name & Purpose
<p>CEAR http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=D75FB358-1</p>	<p>Canadian Environmental Assessment Registry. The federal registry of documents related to environmental assessments.</p>
<p>INFOMINE http://www.infomine.com</p>	<p>Provides access to properties, projects, reports, and results. Note: 'InfoMine' allows basic searches but requires a subscription for advanced use.</p>
<p>The MTO https://www.mtonline.gov.bc.ca/mtov/home.do See: FINDING CLAIMS - page 22</p>	<p>Mineral Titles Online pinpoints claims on traditional land. Allows you to: 1) Obtain miner contact info, FMC number, and work history 2) Conduct a territorial cross-reference search for claims</p>
<p>MINFILE http://www.empr.gov.bc.ca/mining/geoscience/minfile/Pages/default.aspx</p>	<p>Lists the number of holes drilled and the results. Allows you to pinpoint and examine all registered geological and mineral discoveries in BC.</p>
<p>PID http://www.eao.gov.bc.ca/</p>	<p>Public Information Database of documents related to BC environmental assessments (incl. all EAs).</p>
<p>SEDAR www.sedar.com You will find NI 43-101 reports here.</p>	<p>System for Electronic Document Analysis and Retrieval examines the records and reports of all publicly traded mining companies.</p>
<p>Ministry of Energy and Mines</p>	<p>Historic links information sheet</p>
<p>http://www.empr.gov.bc.ca/Titles/MineralTitles/Notices/InformationUpdates/Documents/InfoUpdate3.pdf</p>	

BASIC MAP RESOURCE

National Topographic System (NTS)

Mapping System covering most of Canada, including B.C.

SIDE JOB	THE NTS
TASK	Learn the National Topographic map system and the BCGS system.
TOOLS	<ol style="list-style-type: none"> 1. The NTS maps of your territory (1:50,000 scale) 2. The NTS web site 3. The BC Mineral Titles web site
FOCUS	<ol style="list-style-type: none"> 1. Follow the link. http://www.nrcan.gc.ca/earth-sciences/geography-boundary/mapping/topographic-mapping/10807 2. On the right hand side of the page are instructions on how to use an NTS map: click Finding UTM References. Provides a quick, clear lesson in using the NTS map. 3. When you visit the Mineral Titles Online website and click to view any search function, you will notice the map of BC is based on the NTS.
LINK	
OBJECT	Obtain the NTS map(s) of your territory. Join them together to make a large mosaic to hang on the wall. Reference this map for all your work.
LINK	Download and print the BCGS map applicable to your specific claims of concern. at http://pub.data.gov.bc.ca/data-sets/177864/pdf/

The NTS divides Canada into six major indices:

- 1 British Columbia
- 2 Atlantic Provinces
- 3 Quebec
- 4 Ontario
- 5 Prairie Provinces
- 6 Nunavut, Northwest Territories, and Yukon

While there are different map systems in use, we focus here on the NTS because it is the basis for almost all other maps in Canada, and the basis for the BC Mineral Titles system.

NTS maps used to be available through local map dealers. Rarely can they be purchased over the counter any longer. Most are downloaded, printed, and sent by courier or mail.

BUY MULTIPLE COPIES of EACH

2	GATHERING THE ELEMENTS	
TASK	Gather <u>current and historical</u> exploration sampling data on all your Background Checks. Combine these findings into your files from Job1.	
TOOLS	<p>Access SEDAR, MINFILE, and InfoMine - see: <u>ONLINE RESOURCES</u> on page 34. If unavailable here, contact miners directly for their data & findings. Ask for technical reports (NI-43-101) Ask also for Induced Polarization (IP) & Aerial survey results.</p> <p>A <i>preliminary economic assessment</i> (PEA) of a mining property is the first sign that the company is serious about full-scale development.</p> <p>The PEA is an ‘official’ announcement to the public and investors of a mining project’s viability.</p>	
FOCUS	Study what minerals and conditions miners are seeking. Look for patterns and habits. Gain as much information as you can and keep it to use as a reference, so that when you do your field work, you will have a better understanding of who is doing what in terms of mining on your territory.	
OBJECT	Build profiles of mining companies based on your findings. Learn how to discriminate between accurate information and “promotional” information provided by the mining company. Develop an understanding of how to act upon this information, on a case-by-case basis.	
<p>MMM</p> <ul style="list-style-type: none"> • Previous pages: 28 - 35 • <u>FIELD COMPANION SITE VISIT CHECKLISTS</u> • <u>APPENDIX 3: POWER PROVISIONS</u> 	<p>STATUTE(s)</p> <p><u>NATIONAL INSTRUMENT 43-101</u></p>	

NOTE

The consequences of sampling errors (accidental or deliberate) during exploration are disastrous for all concerned. It is also one of the fastest ways for a mining exploration or development project to fail. Utmost care should be given to precise interpretation and representation of sampling data.

Reporting

Mineral exploration companies are required to disclose accurate sampling results. Try to obtain sampling results and compare what is reported on websites and in promotional information with what was actually found. The reporting of inaccurate or falsified data is everyone's responsibility. Please report errors and omissions to:

- A. British Columbia Securities Commission
701 West Georgia Street
P.O. Box 10142, Pacific Centre
Vancouver, B.C. V7Y 1L2
Phone: 604-899-6500
1-800-373-6393 (toll free across Canada)
Fax: 604-899-6506
Web: www.bcsc.bc.ca

LINK

- B. Association for Mineral Exploration British Columbia
Suite 800 - 889 West Pender Street
Vancouver, BC V6C 3B2
Phone: 604-689-5271
Fax: 604-681-2363
Email: info@amebc.ca
Web: www.amebc.ca

LINK

- C. Canadian Institute of Mining,
Metallurgy and Petroleum (CIM)
Phone: 514-939-2710
Web: cim.org

LINK

WHAT

The B.C. Securities Commission (BCSC) is the independent provincial agency responsible for regulating trading in securities in British Columbia. It offers investment, policy, and enforcement information. It does not have law enforcement or judicial powers.

WHY

In order to sell the potential of a mining property to investors, mining companies naturally focus on the positive results and data, and may not paint a complete and accurate picture of the reality that emerges once a mine begins operations, or the details may not be fully understood until operations begin. Therefore, the importance of accurate sampling and drilling results cannot be emphasized enough.

The BC Securities Commission lists many common problems with inaccurate and falsified data in its 2012 Mining Report.

From the BCSC 2012 Report:

“We find that a company’s disclosure in websites, investor relations materials, email promotions, social media sites, and corporate presentations (voluntary disclosure) is less likely to comply than its news releases, technical reports, annual information forms (AIF), and management discussion and analysis (MD&A) (required filings).”

UPDATE: The BCSC has not published another Mining Report as of 2014.

LINK

http://www.bpsc.bc.ca/For_Companies/Mining/#report

Below is a list of the kinds of problems the BC Securities Commission finds with mining companies' reporting of sampling results. The findings clearly show a trend toward sampling results information that is not quite accurate, held back, or improperly validated. Despite the advent of NI 43-101, tighter regulations, and a more educated public, the difference between the actual potential of the mine and the results that are reported to entice investors, the public, and the government, is still apparent.

BCSC Common Findings
1. Failure to file current or fully compliant technical reports.
2. Failure to include the required cautionary statements for preliminary economic assessments (PEA), historical estimates, and exploration targets.
3. Disclosure of mineral resources and mineral reserves (MRMR) that do not fully comply with NI 43-101.
4. Restricted or misleading references to mining studies.
5. Failure to name the qualified person (QP).
6. Missing or altered statements in certificates and consents of QPs.
7. Prohibited disclaimers or statements of reliance on other experts.
8. Non-compliant disclosure of MRMR, historical estimates, and exploration targets.
9. Disclosure that is not based on industry best practices.
10. Anomalous pricing assumptions and sensitivity analyses of metals or commodities.
11. Technical reports that do not disclose the QP's assumptions regarding reasonable prospects of economic extraction.
12. Mineral resource estimates that are not based on an appropriate geological model or do not apply reasonable constraints on mineralization.
13. Disclosure of ongoing mining studies prior to establishing mineral resources.

18

POTENTIAL HARMS

Now that you have learned about mining, miners, and the minerals they seek, we pause to consider what this all means for your community by doing a short examination of the harms and benefits mining brings.

The next job is consultation and communication: with miners, your community, and with government; as the Manual shifts into the phases after Exploration: Development, Production, and Closure.

AREA	HARM	RESPONSE	RESOURCE					
Water	Drainage & seepage of pollutants	-Monitoring -Observation -Sampling	1. <u>HSRC s 9.4.2</u> 2. <u>WATER SAMPLING</u> p. 108					
		Measure setbacks	<u>MMM: pp 104-107</u>					
	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	Dig and maintain monitoring wells	<u>WATER SAMPLING</u>	
	1	2	3	4				
Acid Mine Drainage / Neutral metal leaching (high pH drainage - often invisible, but toxic)	Pre-construction tailings pond liners (NOT mandatory in BC). De-watered tailings. Dry stacking.	<u>HSRC s 10.7.17</u> for reclamation of tailings ponds						
	Impoundment dam inspection	<u>IMPOUNDMENT DAM CHECKLISTS</u> p. 94						
Land	Brushing / Clear-Cutting	Site visits. Check against NoW, Mine Plan, or EA	<u>SITE VISIT CHECKLISTS</u> pp 86-91					
	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	Roads	Site visits. Check against NoW, Mine Plan, or EA	<u>ROAD CHECKLIST</u> p. 103
	1	2	3	4				
<table border="1"> <tr> <td>3</td> <td>4</td> </tr> </table>	3	4	Camps	Site visits. Check against NoW, Mine Plan, or EA	<u>SITE VISIT CHECKLISTS</u> pp 86-91			
3	4							
	<table border="1"> <tr> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	2	3	4				
2	3	4						

IMPACT	ISSUE	RESPONSE	RESOURCE
Cultural (Physical)	Destruction / Damage of ancient & sacred sites <div style="display: flex; justify-content: space-around; width: 100px; margin-top: 5px;"> 1 2 3 4 </div>		See: <u>SACRED SITES</u> - page 63. Also: guide books to mapping traditional territories by Terry N. Tobias:
Wildlife	Disturbance. (nesting / birthing areas, habitat & migration routes) Trauma. Deaths. <div style="display: flex; justify-content: space-around; width: 100px; margin-top: 5px;"> 1 2 3 4 </div>	<ul style="list-style-type: none"> -Mapping. -Recording -Animal Census -Patrolling Identify the <i>Cultural Keystone Species</i>	1. <u>CHIEF KERRY'S MOOSE</u> 2. <u>LIVING PROOF</u> Published by Ecotrust Canada and the Union of BC Indian Chiefs.
AREA	HARM	COMMUNITY DRIVEN RESOURCES & RESPONSES	
Cultural (Intangible)	Social stresses	Sudden influxes of money come with a cost. Of course, you and your community can decide the best ways to counteract the negative effects of an economic surge.	
Economic	Uneven wealth can exacerbate class divisions.		
Lasting	Cumulative Effects (i.e. changing water levels, receding glaciers, invasive species) <div style="display: flex; justify-content: space-around; width: 100px; margin-top: 5px;"> 1 2 3 4 </div>	Continued diligence, monitoring and recording of all projects, (not only mines) present and past. Map each one. Use files and maps as community and educational resources.	

CATEGORY		OPPORTUNITY
Main	Secondary	
Employment	On-Site Jobs	Operator, Driver, Trades, Custodial, Maintenance, Labour, Security
	Off-Site Jobs	Geological, Design, Legal, Business, Accounting, Marketing, Engineering
	Entrepreneurial spin-offs	Construction Contracts, Roadbuilding, Transportation, Catering, Tourism, Servicing
Education	Local Schools	New construction, renovations
	Trades training and Certification	i.e. <u>COLLEGE OF NEW CALEDONIA MINING INDUSTRY CERTIFICATE PROGRAM</u>
Revenue	<ul style="list-style-type: none"> Royalties - no 'industry standard' defines royalty agreements. Net Smelter Royalty (NSR) preferred - based on gross receipts of ore. No cost-deductions. NSR is included in some IBAs with First Nations. Equity - part ownership in company; stocks, dividends. Profit Share - % of profits (less costs) also called a Net Profits Interest (NPI) royalty. Guaranteed Base with Upside - % of profits plus a percentage of profits that exceed the expected profits. Fixed Payments - lump sum, periodic (usually annual) - not preferred. 	
Community Development	Infrastructure	Schools, housing, community centres, bighouses, cultural camps, sports arena / basketball courts, sports fields, etc.

NOTE

*Under sections 15 and 29 of the Mines Act, if an Inspector orders a mine closed to fix a hazard or clean up a mess, employees of the mine are entitled to compensation.

“Get involved, create jobs and meaningful jobs, not just window dressing for the ... companies.”

- Chief Clarence Louie, Osoyoos First Nation

Things to Consider

LEGACY VS. BENEFITS

Tough economies make it easier to believe a mine will be the answer to hard economic times. But mines have a short life-cycle compared to the long term environmental costs that they bring and leave behind. And it is possible they will fail to deliver the promised benefits to a community - a community that has to bear the long lasting effects of the mine. Communities must press for remediation of long term effects. The Takla First Nation of northern BC has negotiated with the miner and the BC government to clean up the toxic leaching from the Bralorne mercury mine, abandoned for 70 years. While this is a positive step, making reclamation and remediation part of the original plan will avoid this problem in the future.

- Docherty, et al, "[Bearing the Burden - The Effects of Mining on First Nations of British Columbia?](#)" (Harvard Law School, 2010) at 12, 14, 15, 23, 81.

See also: First Nations Women Advocating Responsible Mining (FNWARM) Fact Sheet:

http://www.fnwarm.com/media/Takla_Mining_Concerns_Backgrounder_Final_w_Map.pdf

EMPLOYMENT

It is true that mines create some local jobs but the promise of jobs, offered and controlled by the mining company, does not alone justify

a mine. In the end, given the legacy that mines leave, the benefits do not outweigh the harms unless the community has some power and influence in owning the benefits and reducing or eliminating the harms.

COMPANY PRIORITIES

Mines attempt to minimize environmental effects, but this is second to making a profit in order to sustain the business. The greatest cost to a company is the paying of salaries and benefits. This undeniable fact is always present behind every promise of jobs. From 2003 - 2010 operating costs for mines increased 32%. Add to this the fact that one-third to half of all costs go to personnel and it means that while there may be a promise of jobs, or an increase in training opportunities, there is also a necessary push-back from mining companies to downsize the workforce and use innovations such as automation to save on human resource costs.

- Summary and data taken from Canadian Institute of Mining and Metallurgy (CIM) Magazine, Dec. 2012- Jan. 2013, pp. 53-62.

Overall, the promises of development can be inflated, resulting in the community being in shock from the chasm between promises and reality. The effects of mining are far deeper and more complicated than benefits alone represent.

C O N S U L T A T I O N

... treat others as you would have
them treat you, respectfully. Learn
respect and learn balance. What
goes up will come down. What you
do for others will be done for you.
What you give away will always
come back to you in the
One Circle.

Important Note on Legislation	46
1 Governance (British Columbia)	47
2 Miners	48
3 Rights	49
4 Colonial Law	50
Canada	50
British Columbia	51
5 Aboriginal Law	52
Job 3 <i>Assembling the Laws</i>	53
Reception of Aboriginal Law	54
6 Community Voice	56
Job 4 <i>Calling the Nation</i>	56
7 Outreach	57
Job 5 <i>Spreading the Word</i>	57
8 Notice of Work	58
Notice of Work Content / Action Chart	59
The Tenure Overlap Report	60
The Statement of Work	60
Important Points in NoWs	61
Referrals as Consultation	61
Job 6 <i>Into the NoW</i>	62
9 Sacred Sites	63
10 Agreements	64
The Market Factor in Agreements	65
Negotiations Web	66

Important Note on Legislation Regarding Consultation

At time of writing, unprecedented, wholesale changes have been made to several acts of Parliament, and new legislation is being passed that eliminates large portions of prior environmental legislation, and could alter the entire consultation process:

1. Bill C-45: Jobs and Growth Act (companion to Bill C-38, 2012) includes:

Land Surrenders
Navigable Waters Act
Environmental Assessment Act

2. Bill C-428: Indian Act Amendment and Replacement Act
3. Bill S-6: First Nations Elections Act
4. Bill S-8: Safe Drinking Water for First Nations
5. Bill S-212: First Nations Self-Government Recognition Bill

Some of these amendments will present challenges and changes to the common law duty to consult and accommodate Aboriginal peoples in Canada over the coming years, as these amendments shift the environmental principles for land and water, and alter the Indian Act band governance systems.

In this Manual, we present a list of some resources and concepts in place at the time of writing to aid in the Consultation process. The list is not exhaustive, and we offer no guarantee as to their current effectiveness in the present state of proposed legislative changes.

The government's description of the proposed changes is available on the Aboriginal and Northern Affairs Development website:

LINK

<http://www.aadnc-aandc.gc.ca/eng/1350669181155/1350669219046>

Consultation is ongoing – not limited to the initial stages of prospecting and exploration.



BRITISH COLUMBIA

Ministry of Energy, Mines, and Responsible for Core Review

Minster	Honourable Bill Bennett P.O. Box 9069 STN PROV GOVT Victoria BC t: 604 387 5896 f: 604 356 2965 website: MEM.Minister@gov.bc.ca
Opposition Critic	Norm Macdonald, MLA t: 250-344-4816 toll free: 1-866-870-4188 e: norm.macdonald.mla@leg.bc.ca
Deputy Minster	Dave Nikolejsin t: 250 952 0504 f: 250 952 0269 e: Dave.Nikolejsin@gov.bc.ca
Assistant Deputy Minister	David Morel t: 250 952 0473 f: 250 952 0491 e: David.Morel@gov.bc.ca
Chief Gold Commissioner	May Mah-Paulson t: 250 952 0335 f: 250 952 0541 e: May.Mah-Paulson@gov.bc.ca
Chief Inspector of Mines	Al Hoffman t: 250 952 0793 f: 250 952 0491 e: Al.Hoffman@gov.bc.ca
Deputy Chief Inspector of Mines (Permitting)	Diane Howe t: 250 952 0183 f: 250 952 0491 e: Diane.Howe@gov.bc.ca

WHO	WHAT
Individuals	<ol style="list-style-type: none"> 1. Hobbyists / General Public 2. Free Miners 3. Traders / Shareholders
Junior Companies	<ol style="list-style-type: none"> 1. Perform Exploration only 2. Rely on market capital on unproven results (high risk) 3. Usually enter a Joint Venture Agreement with larger company as results dictate
Senior Companies	<ol style="list-style-type: none"> 1. Take over an exploration project and develop into a major mine 2. Class of applicants who apply for a permit under Section 10 of the <i>HSRC</i>
Shareholders	<ol style="list-style-type: none"> 1. All companies are publicly listed and traded on the TSX and TSX Venture Exchange in Canada, although not all junior companies use markets to capitalize their endeavours 2. Shareholder registers are property of companies and are usually available under certain conditions
Government	AKA 'The Crown' - Federal and Provincial actors - Ministries, agencies, and departments

A Note on The Following Section

Section 3 is neither legal education nor advice, but a comparison of two mindsets - two world-views. Laws are relative to the governments and societies of the nations that create them. We place the colonial legal perspective alongside the Aboriginal perspective.

We acknowledge aboriginal laws, customs, and traditions - many of which are still very much in place, and perhaps more relevant now than they have ever been. Section 3 is for reference. How you use, reconcile, and piece together the information is up to you.

The Canadian Perspective

In Canada, Aboriginal rights are legally defined as *sui generis* (one of a kind) inherent personal and communal rights, exercised by virtue of an individual's ancestrally-based membership in a present community. In the Canadian system these Aboriginal rights may include:

Rights to land (Aboriginal title)
Rights to hunt and fish
Rights to practice anything that was integral to the culture prior to contact
Special linguistic, cultural, and religious rights
Rights held under customary systems of Aboriginal law
Rights of self-government

Two principles form the foundation of the source of Canadian law regarding aboriginal rights and title: 1) *Doctrine of Discovery* (DoD) that land was 'discovered' by European powers relative to other European powers, and if native nations were recognized (in the U.S. for example) they would still fall under the ultimate authority of the colonial government. 2) *Terra nullius* (Latin for 'no man's land'). which means that Turtle Island (North America) was empty and ready for colonization.

The Aboriginal Perspective

Established by Aboriginal people for millennia, Aboriginal laws, practices, customs, and traditions have long been held as subordinate in the eyes of the Canadian system. Therefore, only certain portions of Aboriginal laws, practices, customs, and traditions are measured (and fewer meet) the legal test for Aboriginal rights in the Canadian system. In order to keep Aboriginal laws subordinate, Canada frames its interpretation of Aboriginal rights through an anthropological lens which does not envision Aboriginal people carrying their laws with them as they advance, grow, evolve, adapt, or innovate. In effect Aboriginal rights are frozen in time. Any progression which envisions usage of the land for purposes beyond custom and ceremony, means Aboriginal people must surrender their lands or convert them into non-title lands.

But despite this, looked at as a whole, Aboriginal title does not diminish or vanish. It has always existed and even flourishes. It is organic, inherent, sovereign, and has never been surrendered. When this is taken into consideration, and applied to mining, the Consultation perspective shifts.



CANADA

Canadian law originated in Great Britain and is called the Common Law. Based on the decisions of judges in courts, it has evolved into a system of rules created from precedent. Whenever a judge makes a legally-enforceable decision it becomes a precedent: a rule that will guide judges in making further decisions in similar cases. Court orders and declarations also become law. The law is also based on legislation; statutes supported by regulations and policies. Legislation is created and enacted by Parliament and provincial legislatures, and interpreted by courts and sometimes by tribunals. The supreme law of Canada is the *Constitution Act, 1982*. The first 34 sections of the *Constitution* are called the *Charter of Rights and Freedoms*. The *Charter* guarantees certain rights for Canadians. Falling just outside the *Charter* is Section 35 of the *Constitution Act, 1982* which states:

35. (1) *The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.*

The question of whether any nation needs another to affirm its rights remains, but when it comes to mining in BC, the *Constitution Act, 1982* and the following list, are key:

STATUTES	&	LINKS
<u>Canadian Environmental Assessment Act, 2012</u>		
<u>Criminal Code of Canada</u>		
<u>Canadian Environmental Protection Act, 1999</u>		
<u>Metal Mining Effluent Regulations</u>		
All statutes are available from the Queen's Printer or online.		

Also, according to the Minister (at time of writing) of Indian Affairs “there are innumerable federal laws and regulations governing the activities of mining companies in Canada; depending on what activity, where, when, why, and how. Relevant federal departments include Natural Resources Canada, Transport Canada, Fisheries and Oceans, Environment Canada, etc. Canadian mining law is also commodity-dependent, with different laws applicable to hard rock minerals, coal, industrial minerals, petroleum and natural gas, uranium, etc.”¹

¹ Hon. John Duncan, Minister of Indian and Northern Affairs Development, January 25, 2011.

BRITISH COLUMBIA

Mining is almost entirely governed in British Columbia by provincial laws. Some, like the *Mineral Tenure Act*, the *Health, Safety and Reclamation Code*, and the *Mines Act* have been mentioned.

An important feature, however, of British Columbia, is very little of it was established through treaties with First Nations. In fact, most of BC occupies the unceded, un-surrendered, and un-purchased lands of about 30 Aboriginal nations who were all present millenia prior to colonization. Yet at that time, few if any nation-to-nation treaties were ever offered by the colonial government.

These are the major statutes of the Province of British Columbia that pertain to mining:

STATUTES (BC)	&	LINKS
<i>BC Environmental Assessment Act</i>		
<i>The Mines Act</i>		
<i>Health, Safety and Reclamation Code</i>		
<i>HSRC Handbook (non-binding)</i>		
<i>Mineral Tenure Act</i>		
<i>Mineral Tenure Act Regulations</i>		
<i>Heritage Conservation Act</i>		
<i>Mining Right of Way Act</i>		

Whether the ‘Crown’ is worn federally or provincially, the Aboriginal right to Consultation is entrenched in Canadian Law. The government has a duty to consult with Aboriginal peoples and accommodate their interests, which is grounded in the honour of the Crown. (See: [APPENDIX 1: Haida Nation v. Attorney General \(BC\) 2005](#)). This duty to consult means that provincial and federal governments must adequately address Aboriginal concerns in decision-making processes, including prior decisions relating to mining activities. This legal and constitutional duty to consult arises where:

1	the Crown knows of the potential existence of the Aboriginal title or right;
2	the Crown contemplates conduct or proposes a decision; AND
3	that conduct or decision may have an adverse impact on the claimed Aboriginal title or right.

But caution must be used, as flexibility is both the strength and the flaw of Common Law. Common Law can backfire on First Nations. Legal proceedings should never be commenced without a clear and complete understanding of the Aboriginal cases in the Canadian courts and the case before you.

For millenia the original nations across what is now called Canada have had their own laws and civil codes. The Iroquois Confederacy's Law of the Great Peace: *The Great Binding Law, Gayanashagowa*) is one example. In not recognizing these laws, colonial governments create a gulf, miss opportunities for healing and growth, and lose valuable ancient practices. Today, First Nations have created, enacted, and adopted modern Constitutions (for example, the Constitution Act, Tsawwassen First Nation, 2009; the Westbank First Nation Constitution; and the Selkirk First Nation Constitution, 2007) and statutes (including Land Use Plans) that incorporate customary practices. All of these documents take the long view of responsible practice and care of the land and the people. The modern equivalent, the principle of *sustainability*, somewhat captures these practices, but diverges from traditional Aboriginal practices and becomes lost in the translation from the original teachings. The two world-views on the surface seem similar, but on the ground are often very far apart. Meanwhile, the notion of giving power to, or incorporating Aboriginal law, is conspicuously absent in colonial statutes.

In BC, mine plans are not required to comply with (or even acknowledge) any other land use planning instrument that may exist for a particular area besides provincial law and policy. As such, they may be developed and assessed in isolation from local municipal, and First Nations' land use plans, and are particularly void of Aboriginal cultural wisdom and guiding principles.

Section 10.1.4(2)(l) of the *HSRC*, which requires miners to include "inhabited places in the vicinity of the mine" in their permit application is the only section that acknowledges that anyone may live on, or use the land near an exploration site or mine development. It does not even begin to take into account the deep personal relationship native people have with the land. It sees only a short term for-profit relationship along a linear timeline.

BC mining legislation does not directly acknowledge the existence of Aboriginal communities, but sees them instead, as another item to deal with in an abstract decision-making process centred on development goals.

3

ASSEMBLING THE LAWS

<p>TASK</p>	<p>Build a legal library. Build a knowledge base and understanding of the colonial legal framework regarding Aboriginal rights and title. Familiarize yourself with the statutes. Learn and understand your own nation's legal frameworks, laws, constitutions, and declarations.</p>
<p>TOOLS</p>	<ol style="list-style-type: none"> 1. Your community documents may include: Constitution, Protocols, Declaration, Land Use Plan, Mining Policy, Bylaws. 2. APPENDIX 3 - POWER PROVISIONS on page 125. 3. The <i>Royal Proclamation 1763</i>. See APPENDIX 1D on pages 121-122. 4. Some Aboriginal rights & title cases are listed in APPENDIX 1A on pages 115 - 118. 5. <i>Royal Commission on Aboriginal Peoples, (RCAP 1996)</i>. Key section: <i>RCAP 1996, APPENDIX E, S. 1.16.2</i> Spot key words and phrases here and in other readings: <i>sui generis</i> / inhabitants / use and occupy / discovery / pre-contact / <i>terra nullius</i>
<p>FOCUS</p>	<p>Under APPENDIX 3 - "Power Provisions" on page 125 are some of the governmental prohibitions, remedies, and punitive measures available in BC when prospectors, exploration companies, or mining companies fail to comply with the law.</p>
<p>OBJECT</p>	<p>Gain an understanding and familiarity with the most important legislation that regulates mining activities. Bookmark these documents and noted sections for future reference. Study what laws are in play and how they overlap, intersect, and contradict each other; with the focus on mining.</p>
<p>STATUTE(s)</p>	<p>All major government statutes pertaining to mining are listed on pages 50 and 51.</p>



Whether or not it is written, our law is understood; handed down through generations. No amount of development can ever change this.

RECEPTION of ABORIGINAL LAW

Altered through colonial translation

Traditional Law

Planning for Seven Generations to preserve a long-term future.

Interconnectedness of all life informs how we care for the land.

Taking only what is needed to preserve future resources.

Health of the nation is tied to the land and both are everyone's responsibility.

Cultural traditions are integral, and form the substance of land use and care.

Wisdom in deciding not to proceed when the damaging effects outweigh the benefits.

New Language in Statutes

Intergenerational Equity

Environmental Sustainability

Economic Sustainability

Social Sustainability

Cultural Sustainability

Precautionary Principle



This chart illustrates how traditional wisdom can fade and lose meaning in modern interpretation.



Modern Expression

Investment for the future.
Transfer of material wealth and
assets to future generations.

Keeping some parts of the
land free from economic
exploitation.

Sustaining the economy
above all else. Keeping a
healthy tax base.

Keeping a healthy, viable tax
base, an educated population,
and trained work force.

Ensuring the continuation of
select communal practices and
structures that sustain identity.

Legal onus on proponents to
prove 'no-harm' even when
science is divided.*

** Once present, now removed from federal and BC provincial legislation*

Consensus is not a situation where everyone agrees on the same thing for the same reasons. General agreement can be reached to enough of a degree to allow a community to move forward with some people in complete agreement, some with reservations and doubts, and some in disagreement. The closest thing to consensus is when those with reservations and doubts express those doubts but consent to go along with the plan for the time being. The two sides (pro and con) in a consensus will always exist. Nature, including human nature, loves diversity and creativity, so all consensus is tem-

porary until the next thing comes along and a new consensus is needed. Consensus is a process, not a final, perfect solution.

APPENDIX 2 on page 123 is only one sample of many kinds of surveys. Data from many responses can be used to identify and solidify community concerns and strengthen your community's voice at the negotiating table, keeping in mind that the community voice can come in many forms; from every person, home, assembly, and gathering, all persons no matter how large or how small.

4	CALLING THE NATION
TASK	Community Survey. This can take 1 survey-taker around 2 weeks for every 50 citizens, depending on the questions.
TOOLS	<ol style="list-style-type: none"> 1. Use <u>APPENDIX 2</u> -page 120 2. Locate community member(s) 3. Organize: Facebook, Twitter, text message, e-mail, door-to-door, postage mail, community events, petitions, and any other methods you can imagine
FOCUS	<p>Possible uses of survey data:</p> <ol style="list-style-type: none"> a) Rejection or support for projects b) Prioritizing issues for the community c) Getting eyewitness accounts of mining from the field d) Oral history, evidence of territorial claims e) Opinion poll data
OBJECT	Data from completed surveys will aid in your quest to find a community voice.

When facing issues around mining it is important for a community to spread its message to the public. Greater public awareness of problems, issues, or concerns will make mining companies more accountable and transparent, and can empower your community's position. Here are some communications tools and an exercise to help define and spread a community's message:

TIP

To maximize media attention, send your community's message simultaneously to many different outlets.

LINK

[Resource Media.org 'Media Relations Tips' 2012](#)

PRESS RELEASE

Print media
Online news agencies (e.g., the Tyee)
Radio and television
Social media (e.g., Facebook, Twitter).

LETTERS

The United Nations
The Prime Minister
Provincial premiers
Federal and provincial ministers
Shadow opposition members
Financial lenders
Bonding agents
Shareholders
Company executives
Crown and industry public liaison reps
Exploration companies
Individual prospectors

5

SPREADING THE WORD

TASK

Writing a letter and /or press release.

TOOLS

Samples of your chosen format; depending on the purpose, audience, and stage of the mining process.

FOCUS

Defining and pinpointing the **purpose** and the **audience** is crucial. Depending on who you want to read your letter, each letter is written in a slightly different style. A letter to a specific miner will be in a different voice and style than one written to gain international support from the United Nations.

OBJECT

A well-thought-out, well-crafted document that succinctly focusses and states the intent of the community.

The 'NoW'

From this point forward in the Manual the terms 'Notice of Work' and 'Referral' are used interchangeably.

A 'Referral' is a generic term for the document that First Nations receive describing the proposed work for any type of resource development.

The government's name for a mining referral in BC is 'Notice of Work.'

The Notice of Work application contains important information, but is also very broad, and lets the miner decide on the quantity and quality of information given. Recall from page 16 that the following list of activities do not require a Notice of Work under BC law. Any exploration activities falling outside this list (usually activities that involve more invasive and destructive methods) require a Notice of Work.

(i)	Prospecting using hand tools
(ii)	Geological/geochemical surveying
(iii)	Airborne geophysical surveying
(iv)	Ground geophysical surveying without the use of exposed, energized electrodes
(v)	Hand trenching without the use of explosives
(vi)	Establishment of exploration grid lines that do not require the felling of trees, with the exception of trees and shrubs that create a hazard to safe passage and danger trees as defined in the Workers' Compensation Board Regulation

OBTAINING DOCUMENTS

Under Section 2 of the *Mineral Tenure Act Regulations* "On payment of the prescribed fee, a person may obtain a copy of the search of the paper records and documents pertaining to a mineral title." This includes past Notice of Works. Go to a BC Access center with your list of documents and file a document request under billing Code 508.

LINK

<http://www.frontcounterbc.gov.bc.ca/apps/now.html>

STATUTE(s)

*Mineral Tenure Act
Regulations s. 2*

2-Stage Notice of Work Action Chart

(suggested criteria)

I	STAGE ONE (SORTING)	
1	“Proposed activities”	Priority 1: severity and extent of impact to land.
2	‘Area of work’	Nearest claims to sensitive areas first. Check age of claims (MTO) & number of cells. <u>TENURE OVERLAP REPORT</u> on page 60 and <u>FINDING CLAIMS</u> on p. 22
3	“Start date”	Earliest start date to the front. The longer a claim has been explored - the more damage has been done to the site.
4	Selected ‘permit option’ One Year? Multi Year? Multi-Year Area?	Difficult to prioritize without using the above information. Work from a one-year NoW could be far more intense than the Multi-Year, or vice-versa. Use discretion.
II	STAGE TWO (ACTIONS)	
5	Applicant’s basic information	Keep contact info, claim history, and profile up to date (<i>MMM</i> Jobs 1 &2).
6	Details of foreseeable damages and mitigation measures from miner	Press the company for full and accurate disclosure. Use the <u>FMC CODE</u> for support, and the EA (if available) for reference.
7	Site location and timeline	Confirm location(s). Confirm & Monitor schedule(s).
8	Site Pre-Visit	Check site prior to miner’s arrival & take ‘before’ pictures. Conduct baseline studies.
9	Consultation with First Nations and or the general public 	Did the miner consult? If not, contact miner, remind her and initiate the process. Potential for legal liabilities. Follow Job 5 “Spreading the Word”.
10	Any other information required by the Chief Inspector of Mines	Submit missing info and flaws with any miner(s) or their NoWs to the Ministry, media, your community & colleagues -eg. traditonal use and archeological areas.
11	Visit site anytime after 30 days	Take ‘after’ pictures. Compare <u>proposed</u> activities with the <u>actual</u> activities. Keep as evidence. Use discretion when disseminating.

The Tenure Overlap Report

The BC government (Ministry of Energy, Mines and Responsible for Core Review) generates a Tenure Overlap Report (TOR) with every mining claim. This document is sent to the claimant(s) to acknowledge the government has received the claim(s); and it lists the type of claim(s), the expiry date, and area of the claim(s).

The TOR states:

“The First Nations interests section of the Tenure report provides tenure holders with preliminary contact information for First Nations with Aboriginal interests identified within the tenure area. These areas are based on knowledge currently available to the Province.”

The Province does not define the extent of its “knowledge” of or the nature of “aboriginal interests,” and leaves the timeliness and level of contact with First Nations up to the claimant(s). The government merely encourages claimants to begin the process of contacting First Nations as a Notice of Work is filed; and gives a list of resources to help guide claimants in the process.

Ensure every claimant you find on your land has responded to you via a TOR, and check each TOR contains correct information.

The Statement of Work

Another valuable document is the Statement of Work. Not to be confused with the Notice of Work, the Statement of Work (SoW) is a report each miner must file periodically to prove exploration work has been done on the claim, or reasons for not exploring the claim. Statements of Work must be registered on the MTO. The recorded holder or agent then has 30 days to submit the physical work report or 90 days to submit a technical work report. Work has to be done on the claim to keep it, or, if no work can be done, the miner has to pay money to keep the claim.

All SoWs are to be submitted to the Vancouver Mineral Titles Branch.

Statements of Work are documents submitted by miners to the government with a cost summary of the work done to date, or the money paid in lieu of work. They are helpful for an accounting of how much is / was spent on a claim, which mining claims are dormant or abandoned, and which are active or ‘heating up’.

MMM

FINDING CLAIMS on page 22 - Step 8 of the chart - the ‘Tenure Detail’ page

Important Points (NoWs)

1	Although Notice of Work applications are done online using a standard form which is then mailed out, sometimes the Crown or the proponent or another Ministry will send documents or other referrals detailing the same project. A quick check of the Project name or map references will reveal if they are duplicates.
2	Referrals are jargon-heavy so it is vital to cultivate links to people who can help – tradespeople, lawyers, geologists, hydrologists, engineers, foresters, fellow resource managers.
3	As is apparent in the Action Chart on page 59, referrals often reveal limited information about the scope of a project. You will have to respond, even in light of this minimal information.
4	The clock on the NoW / Referral starts ticking from the start date on the notice / letter, <u>not</u> the day you receive it.

Referrals as Consultation

When the Ministry receives a Notice of Work from a miner the Ministry is supposed to refer it to other affected government agencies and stakeholders, including First Nations. Whether it is a TOR or a NoW, the government often sees this as adequate consultation, and sets the time limit for a response at 30 days in most cases. While the legal basis for regarding the Notice of Work to First Nations as consultation stems from the Crown's

duty to consult, TORs and NoWs rarely fulfil the duty adequately. TORs are left to the claimant(s), and NoWs are sometimes forgotten, lost, or duplicated on different styles of documents before being forwarded to First Nations; if they are forwarded at all. The NoWs that are received differ in their substance and levels of consultation required. In almost all cases First Nations are given a short, 30-day time limit to respond.

FMP

259 - 265

JOB 6	INTO THE NOW (NOTICE OF WORK)
TASK	Find the priority issues within each Notice of Work using the chart on page 59 and respond accordingly
TOOLS	<ul style="list-style-type: none"> • <u>ACTION CHART</u> on page 59 as a starting reference • Community Land Use Plan or Mining Policy • <i>Health Safety and Reclamation Code</i> (HSRC) • Use <u>HSRC</u> Section 10 as a guide. It calls for miners to obtain the following community data and documents: <ol style="list-style-type: none"> a) Maps (10.1.4(1)) b) Baseline data (10.1.4(2)(a-l)) c) Mining Plan / Policy (10.1.4(3))
FOCUS	<p>Search for discrepancies in the mine application. For example, information that does not comply with the items listed in the ‘Tools’ section above.</p> <p>Check especially (as listed in the <i>HSRC</i>: Section 10.1.4(3))</p> <ol style="list-style-type: none"> (c) Mining Methods (f) Impoundments (g) Waste disposal (i) Water volume balance <p>Riparian setbacks - under your laws, or BC laws.</p>
OBJECT 	<p>Create a list and note mine development activity that:</p> <ol style="list-style-type: none"> a) Violates, omits, or alters any permits, or agreements and community land use policies, or mining policies b) Analyze these and take the company to task on the pertinent issues (call, write, e-mail, send official notice) c) Send a copy of these actions to the office of the Chief Inspector of Mines and anyone else you see fit, and d) Make it a part of your Letters / Press Releases from Job 5 in order to keep the community up to date


 We must do the responsible work. It
 is one thing to dig holes in the earth.
 It is another to care for it.

Legislation

Section 1 of the Mineral Tenure Act defines a sacred site. Section 13 of the Heritage Conservation Act prohibits the removal of heritage objects that are protected by that Act except with a permit.

The first step in the protection of sacred sites is to identify and map where those sites are. See POTENTIAL HARMS on page 40 for helpful mapping resources.

RAAD & PARL

First Nations Resource Managers can obtain access to the Remote Access to Archaeological Data database (RAAD) and the Provincial Archaeological Report Library (PARL). This process requires your BCeID (see page 24).

NOTE: Archaeological Surveys can be lengthy, costly, and complex. The BC Archaeology Branch maintains the provincial archaeological site inventory in a database called the

Heritage Resource Inventory Application (HRIA).

Mineral Reserve Option

To make an area of land exempt from mining, citizens and communities can apply to have land set aside as mineral reserve land.

The types of mineral reserves are:

NO REGISTRATION RESERVES	Prohibit the acquisition of a mineral and/or placer claim over a parcel of land
CONDITIONAL REGISTRATION RESERVES	Stipulates the specific conditions or restrictions that apply to a claim registered within the reserve
COAL LAND RESERVES	Prohibits persons from applying for a coal license over a parcel of land

LINK to forms and guides
www.tca.gov.bc.ca/archaeology.

STATUTE(S)

Mineral Tenure Act, s 22
Coal Act s 21

FMP

102 - 111

LINK Ministry website for Mineral Reserves

<http://www.empr.gov.bc.ca/TITLES/MINERALTITLES/RESERVES/Pages/info.aspx>

10

AGREEMENTS

Following is a list of the different types of agreements. Most agreements are with mining companies, but some are with other communities and other governments.

Check to see what agreements are in place in your community, the signatories, and any other important information like expiry dates and renewal dates.

<i>Type of Agreement</i>		<i>Signatories</i>	<i>Notes</i>
Agreement(s) with Adjacent Communities			
Socio-Economic Participation Agreements			
Traditional Knowledge Protocol			
Resource Funding Agreements			
Negotiation Agreement			
Access Agreement			
Exploration Agreement			
Accommodation Agreement			
Revenue Sharing / Impact Benefit Agreement			

<i>Other Community Tools</i>	
Land Use Plans	
Mining and Resource Policy	
Traditional Use Study	
Socio-Economic Baseline Study	
Environmental Baseline Study	
Community Meetings and Surveys	

LINKS

First Nations in British Columbia

For sample agreements:

<http://fnbc.info/resource/first-nations-mining-protocols-agreements>

The Market Factor in Agreements

Mining companies might promise many things: jobs, low environmental impacts, business opportunities, and community support. However, the mine and the promises that go along with it are subject to market forces. Like most stock market products, mineral and coal prices fluctuate for a number of reasons. If prices fall, the mine may lay off workers, close down, or try and save money by making less environmentally responsible decisions.

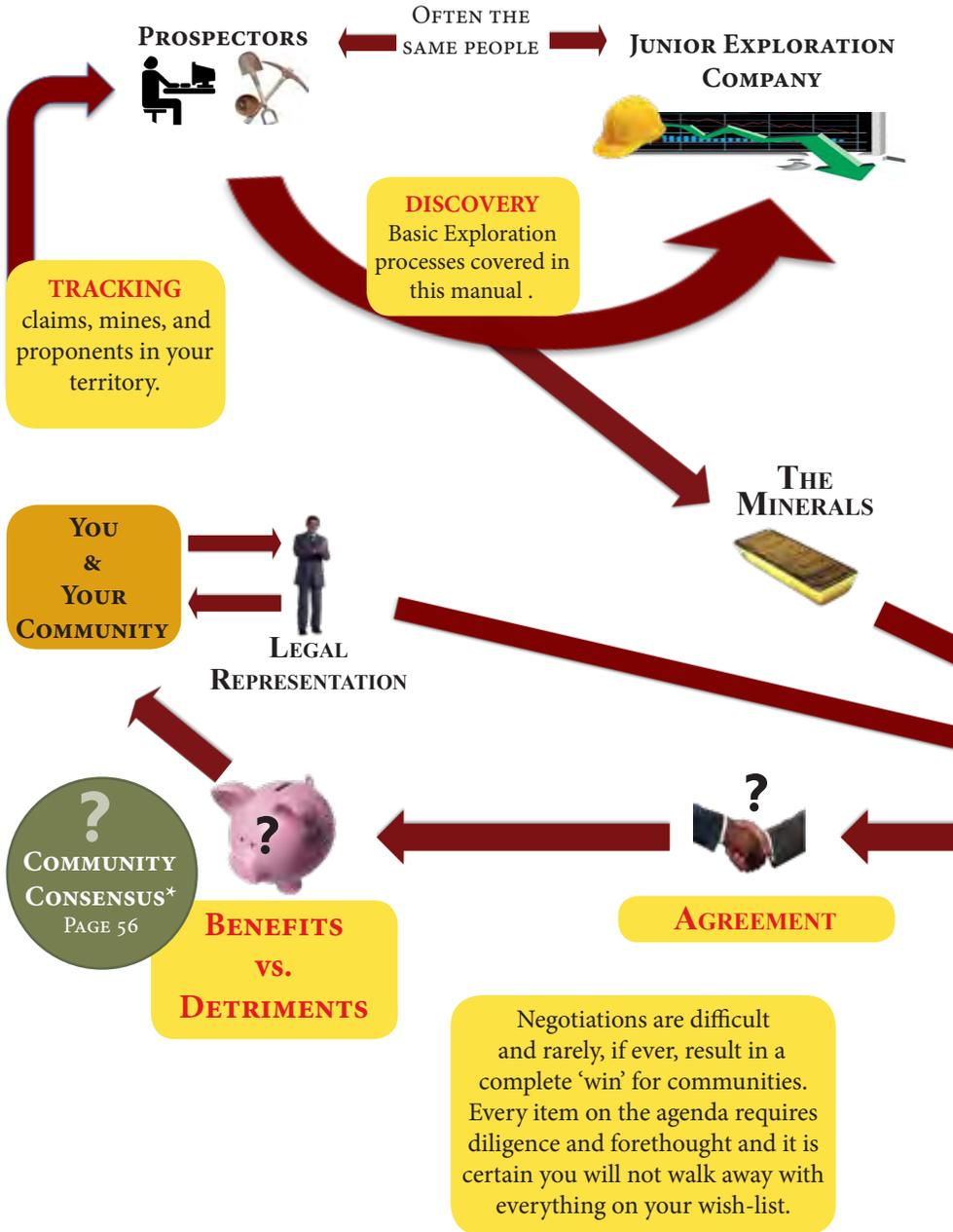
The impacts can be sudden, lasting, and irreversible. Part of being diligent is asking how a mining company can hold to its promise, or predict any event in the life of a mine, when everything about the mine is tied to the vulnerability of the market? What will a mining company agree to do - agree to be responsible for - should the market fall? Will it sign an agreement that accounts for this? Do not rely on words - get it in writing.

TIPS

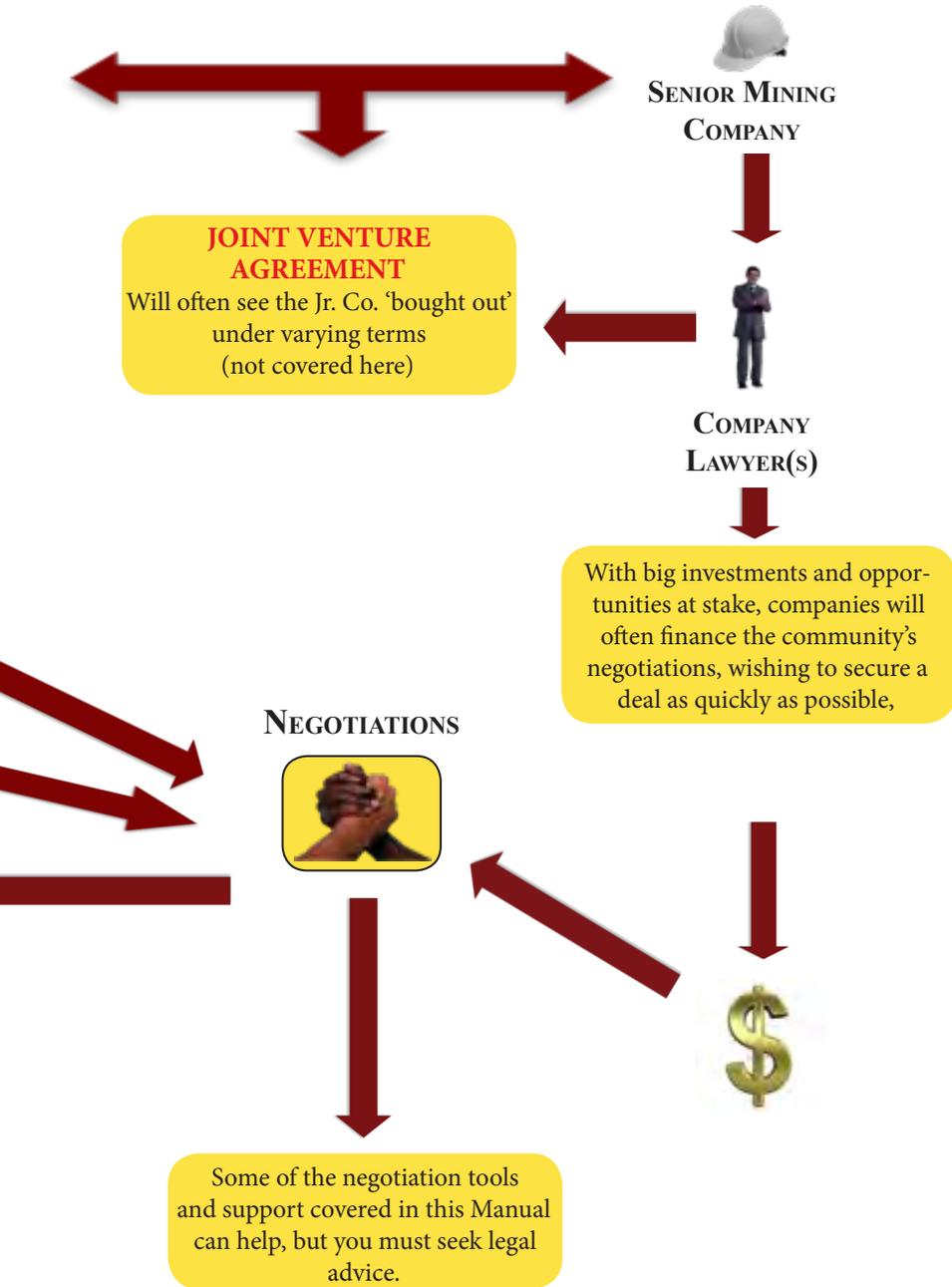
- 1) Plan negotiations backwards. What are your ultimate goals? Plan your negotiation strategy from this point 'backwards' to the present day.
- 2) Do not negotiate yourself into a corner. Avoid agreeing to things that absolve the proponent from liability, leave you no alternative, or end one phase of the mine without providing for the next or considering the mine's legacy.
- 3) Be mindful of the mine's legacy. Once the mine is shut some effects will linger for centuries – see # 1 above.
- 4) Network with other communities that have negotiated agreements, especially with the same company.
- 5) Study examples of each agreement before negotiating.
- 6) Seek experienced legal advice before proceeding with any negotiations



The Negotiations Web



The Negotiations Web



DEVELOPMENT and PRODUCTION



Of the Four Directions Coyote owns the South. Coyote is Trickster as well as the provider of abundance. The teachings of Coyote are often misunderstood. To misunderstand the teachings of Coyote is to misunderstand abundance.

C O N T E N T S

1	Permits	70
2	Stages	71
	Overburden	72
	Containment	72
	Mine Site Access	73
	No-Access Options	73
3	Production	74
	Processing	74
	Treatment & Recovery	75



After the Exploration stage, ‘free miners’ may try to expand a viable exploration site based on sampling results and develop it into a producing mine. Mines that are in production can also undergo further expansion. Either way, these steps represent the next stages in a mine-life cycle: Development.

In BC, the office of the Chief Inspector of Mines can decide that a mine does not require a permit. He or she decides this based on the “nature of the proposed work.” The discretionary power granted the office of the Chief Inspector of Mines is such that mines can be exempt from some permit conditions given the circumstances. BC mining law mandates no guidance for these decisions. This is not to say the authorizing of permits is done carelessly or recklessly, but that there is much discretionary power, which leaves room for other factors to influence decisions which can result in everything from errant exemptions to double-standards. Given the current laws you may not be able to do much about this. But remember that you can control *how* you respond. That is the spirit of the *Mine Medicine Manual*.

Under section 10(1) and (2) of BC’s *Mines Act*, permits (mine permits) are usually required for:

surface or underground development or production
major expansions or modifications to existing producing mines
underground exploration requiring excavation, large pilot projects, bulk samples, trial cargos, or test shipments

Aboriginal communities do take part in some permit reviews, but their participation is not legally entrenched in BC mining laws. As well, in BC mining law, no requirement exists to include the recognition of the constitutional rights of Aboriginal people. Neither does the permitting process require any environmental study (another discretionary option) or inclusion of any Aboriginal land use plan. Given this imbalance, we therefore must stress the importance of ensuring a land use plan, solid baseline data, and an organized and informed response system are underway or in place.

STATUTE(s)

Mines Act ss
10(1) (2)

FMP

249 - 279

OPEN PIT MINES	
STAGE	FEATURE
<i>Drilling</i>	Has a different meaning in Development than in Exploration. In Development, drilling is done either to expose rock, or to make holes to plant explosive charges.
<i>Blasting</i>	Extreme noise. Blasting is traumatic to wildlife. Produces: Shock waves, dust, and debris. Extremely hazardous explosive material is stored on site.
<i>Loading</i>	Occurs in the mining area / pit. Depending on the size of the operation and the type of material being trucked (ore / waste rock) different vehicles may be used.
<i>Hauling</i>	The creation of roads = truck traffic, noise, litter, air, water, and ground pollution. Roads leading into mine = wildlife disturbance, deaths, and habitat destruction. Some hauling is done via slurry pipes.
UNDERGROUND MINES	
<i>Drilling</i>	Same as above but takes place underground.
<i>Ventilation</i>	Vital necessity for underground mines. Noise is produced by the ventilation pumps above ground.
<i>Blasting</i>	Vibration on the ground comes in shock waves, depending on the depth. Extremely hazardous explosive material stored above ground.
<i>Load /Muck Haul / Hoist</i>	Ore pre-crushed underground (mucked) then placed on conveyors then transferred to loaders which carry (haul and hoist) the ore to the crushers.
<i>Rock Support</i>	Done below ground to shore-up the excavations. Materials are shipped in and stored on site.
<p>Since most of underground mining takes place out of sight, the greatest immediate disturbance occurs during development of the mine site which includes the headframe, production plant(s), tailings and settling ponds. Later, the operating of machinery and the hauling of ore for processing adds to the list of disturbances.</p>	

Overburden

In any major exploration or development project, especially if a mine is planning an open pit, it has to remove the rock and soil on top of the mineral deposit. This rock and soil is called Overburden. Mining companies might overlook some important issues when it comes to overburden:

1. Overburden should be sampled, just like ore, to find out if it has any toxins that will be released when it is exposed to air and water.
2. If overburden is found to have toxins, it needs special handling.
3. Topsoil needs special care. BC law requires that mines save topsoils, and use them for reclamation "unless these objectives can be otherwise achieved in the basic mine permit requirement."

In some jurisdictions (Yukon) overburden must be preserved and replaced, even in the exploration phase.

STATUTE(s)

Mines Act s
10.1.4(3)(h)

FMP

30, 125,
147, 157,
358, 367



The earth is never a burden. No part of her is unimportant or unnecessary. She is the foundation of life - the holder of all medicines. She is part of who we are as human beings.

Containment

Mine tailing impoundments are built on the same principles as water dams. But that is where the similarity ends. Impoundment dams hold back massive quantities of processed waste rock, water, and toxic chemicals used in processing. Sometimes these substances can leach through the dam, or penetrate the ground and contaminate the water table. Therefore impoundment areas and dams need to be built so that nothing leaks out. An improperly built tailings dam OR an improperly maintained tailings dam is a ticking time-bomb as is evident in the Mount Polley Mine Disaster, 4 August 2014, near Likely, British Columbia. De-watering and dry-stacking tailings can alleviate some of these issues.

Impoundments must also be built to control water flow. They must also consider rain accumulation. Dam linings and coverings are a separate branch of impoundment technology. When lining or covering an impoundment, choices must be made between function, durability, absorption, and cost. A tailing impoundment has an unlimited life expectancy and will be an issue for generations.

STATUTE(s)

HSRC s 10.6.7

MMM

pp 93 - 99

FMP

367, 375

Mine Site Access

You need mine site access not only to check impoundments, but for almost all field work before, during, and after the development stage of a mine. Access to a mine site can be a very real and difficult issue. For safety and other reasons, mines are protected but the surface is not private property in most cases as miners only have subsurface right. Access is obtained through permission, or a dispute & resolution process which is time-consuming and costly.

Some suggestions:

1	Negotiate access into agreements
2	Develop a relationship with the mining company early
3	If you get access, try to maintain regularity in your access schedule
4	If denied: Use other ways & means to get information

TIPS

Write a letter of commendation and thanks to companies that are using care and due-diligence in their processing, doing everything by the book or going the extra mile. Once a company is operating, a respectful relationship is best. Their response is out of your control, but respect will create positive relations.

No-Access Options

Without direct access doing a proper assessment of mining activities is more difficult. But the difficulty can be reduced by taking different courses of action, and seeing things from as many 'angles' as possible. Some options include:

Boundary surveillance. Observing from as close a distance as possible; using magnification and video recording to assist.

2nd-hand reports. Workers, or others who have had direct access can report on their findings. Give personnel a list of things to look for each time they enter.

Aerial photos. Most companies have aerial photos of their operations; and in some cases the government may provide aerial photos as well.

Camera-mounted, remote-control flying machines can be purchased at hobby stores for a few hundred dollars, and feed video directly to your computer.

Sampling of land, vegetation, and water can be done up-to-and-including the boundary of the mine site.

These charts are a basic description of production stages. While all ore is crushed and most is ground (except in Heap-Leaching) and all processing uses Gravity separation, the subsequent methods for processing gold (Au) and silver (Ag) are different than methods used for base metals.

Production uses a lot of energy and machinery, and introduces the use of large quantities of chemicals, many of which can end up in the tailings impoundment or dry stack.

**PRODUCTION
& DEVELOPMENT
CHECKLISTS**
page 100

A	PROCESSING THE ORE	
	CRUSHING & GRINDING	
	STAGE	FEATURES
	Primary Crushing	Initial crushing of the ore. Pieces less than 15 cm.
	Secondary Crushing	Crushes to smaller pieces 0.5 - 2.0 cm.
	Grinding	Ore & water mix. Ball-grinding machine (most common) grinds into fine particles depending on the ore, and the size desired. Typically less than 0.2 mm.
B	RECOVERING THE METAL	
1	ALL METALS (INCLUDING GOLD & SILVER)	
	Gravity	Gravity separates all metals of various densities from whatever medium is used to suspend them in the processing: air, water, or other liquid agents. The gold pan, and the sluice box, ancient designs still used today, are the most basic gravity separators. Massive centrifuges and concentrators are industrial-sized separators found in large scale processing.

LINK

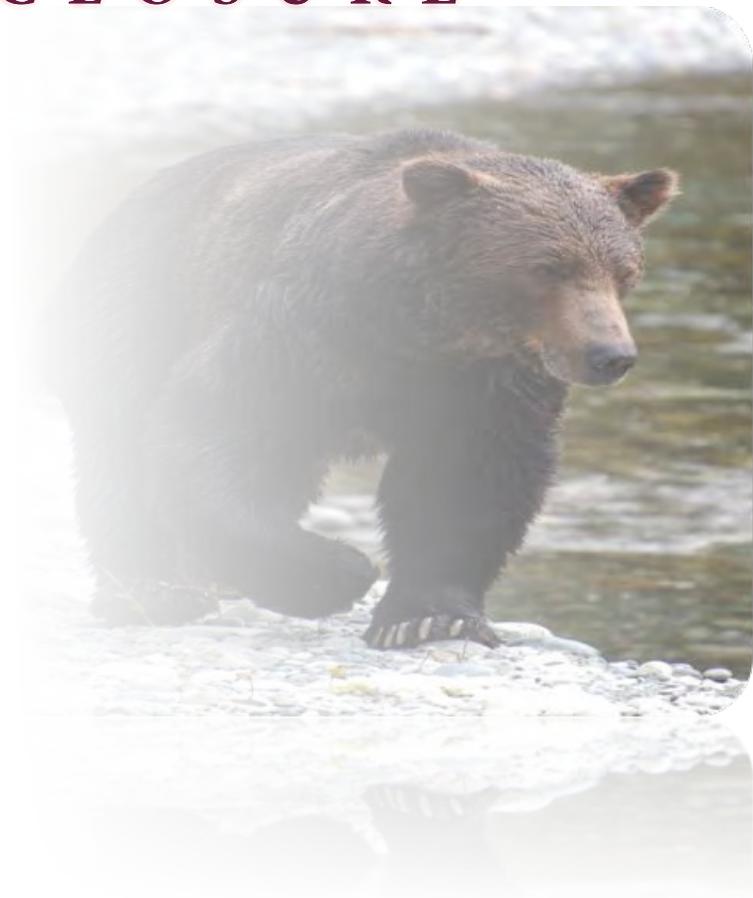
Mining companies who use cyanide should be signatories to the INTERNATIONAL CYANIDE CODE. Some Canadian gold and silver producers are not.

Processing of ores, can create potential acid generation by exposing rock to water and air, leading to acid mine drainage requiring centuries to treat. Some older tailings impoundments are concentrated reservoirs of toxic soup.

Acid-bearing rock is submerged in water or dry stacked and covered to prevent acid rock drainage. See 'HARMS' on pages 40-41, as well as the 'DEVELOPMENT AND PRODUCTION CHECKLISTS' starting on page 100.

B		RECOVERING THE METAL (CONT ...)
2		GOLD (Au) & SILVER (Ag) (SPECIFICALLY)
	Heap-Leach	Favoured because it is most economical but has the highest potential for pollution. Simply put, it involves piling the ore and applying cyanide. Therefore it does not require crushing or grinding.
	Carbon-in-Pulp (7 stages)	A 7-stage process that uses cyanide and activated carbon in a solution through a series of drop-tanks. Companies attempt to destroy or recover cyanide before the waste goes to tailings storage.
1	Thickening	Use of thickening agents and sedimentation.
2	Cyanide Leaching	Metal /cyanide solution diluted and agitated.
3	Carbon Absorption	Blended with carbon pulp that absorbs Au & Ag.
4	Carbon Stripping	Carbon stripped from gold in acid wash.
5	Electrowinning	Electrolysis attracts Au & Ag on steel wool or plates.
6	Smelting	Electrowinning melted into doré bars.
7	Tailings Disposal	'Empty' pulp (Au / Ag removed) sent to tailings storage. Should be cleaned of cyanide and the cyanide reused.
3		FOR HIGH SILVER (Ag) CONTENT
	Zinc Precipitation	Zinc powder used as it is more effective than carbon for obtaining silver.
4		FOR SULPHIDE BASE-METAL ORES
	Froth Floatation	For base metal ores. Chemical process using a chemical concentrate and a hydrophobic (water-repugnant) liquid film. Again: uses a floatation circuit of gravity tanks.

C L O S U R E



Bear is elder kin who projects strength, wisdom, and mastery of the land. But bear answers to nature, and reminds us that mastery must still answer to the power of Mother Earth.

C O N T E N T S

1	Closure	78
	Closure Plans	78
	Impoundments	79
	Progressive Reclamation	79
	Reclamation	79
2	Decommissioning	80
	Orphaned Mines	80
	Subsidence	80
3	Security	81



Closure is not a phase of mining that occurs at the end of a linear timeline. Closure is a distinct part of mining that is always present regardless of the phase of operation. A good miner is one who has an exit strategy before digging starts. Whether it is a prospector, a small exploration company, or a full scale, major production - a poor closure plan, or lack of a closure plan up front, is cause for serious alarm. Having a plan, however, is only the beginning. Closure is distinct because it includes the final legacy of the mine and serious questions need asking: What will it cost? What will it look like? How much damage will be irreparable? What sorts of toxins will leach into the lands and waters? Will wildlife ever return? What will the community be like? Will things in and around the site even be close to original condition? The answer to the last question, is 'no.' Things will never be the same once a mine has come and gone.

If temporarily closed, a mine may re-open, depending on the severity and duration of the stoppage. Miners must file a notice to close no later than 7 days prior to closing. Temporary closures longer than 1 year require an application to amend the permit.

Closure can occur for the following reasons (and likely many more not on this list):

Failed inspection see 'NOTE' page 42 .
Work stoppage
Drop in metal prices
'Bre-X style' - see page 31
Cave-in / explosion / disaster
End of mine's life

Closure Plans

Some of the key things every closure plan should contain:

Post-closure land use
Monitoring
Water treatment
Re-vegetation
Post-closure community development (long term)

Notice how the closure plan is dependent on the methods used during exploration, development, and production. How a mine is built and is operated will directly affect how it closes. It is all tied together.

Impoundments

The Health, Safety and Reclamation Code states that tailings impoundment dams must conform to the *Canadian Dam Association* guidelines. Although the guidelines are concerned largely with the operation of hydro-electric dams, and other dams that contain water flow control, they also apply to impoundments. Also, Schedules 1 and 2 of the *British Columbia Dam Safety Regulations* (B.C. Reg. 44/2000) of the *Water Act* are helpful in determining inspection routines and protocols. See also: [CONTAINMENT](#) page 70, and [IMPOUNDMENT DAM CHECKLISTS](#) page 91. Dumps and slopes on waste rock piles follow the industry standard also found in: the *Interim Guidelines of the British Columbia Waste Rock Pile Research Committee*.

Progressive Reclamation

“A mine begins to close the day it opens” is the idea of Progressive Reclamation. But events change and closure plans need to be amended or altered. As mined land is exhausted of viable ore, a mining company should, where possible, begin closure and reclamation on that land. Progressive reclamation is part of any mine plan. A miner requires authorization to divert from a mine plan or reclamation program.

Reclamation

If closure is a distinct part of mining, then reclamation is a distinct part of Closure. Reclamation is the word for returning the land to nature. But mining can cause permanent changes to the environment. The key to reclamation is a good closure plan that includes engaging in practices from the start of the mine that will make closure and reclamation easier. The plan must also include forward-looking provisions that will attend to the long-term effects with a robust monitoring program. The science of reclamation has evolved in the modern age, and industry is more aware, and making some genuine efforts to mitigate lasting effects through better reclamation plans. Chapter 9 of *Fair Mining Practices: A New Code for British Columbia*, sets out in extensive detail the laws and policies where reclamation is lacking in BC and offers some remedies for these deficiencies.

STATUTE(s)

HSRC s 10

FMP

321 - 387

Decommissioning

Decommissioning means much more than just the dismantling of a mine's infrastructure. Not only do headframes, plants, and buildings need to be removed, but all underground workings, shafts, adits, and tunnels need filling and sealing. If you are viewing a mine plan in the development phase, check item-by-item to ensure the decommissioning of each item is on the agenda.

Orphaned Mines

An orphaned mine is a closed or abandoned mine without an owner. Orphaned mines revert back to the government, which is another way of saying they become taxpayers' responsibility. Despite shared responsibility, it is likely that your community will have to spearhead a response. Treat orphaned mines as you would any other mine site: approach with caution; adhere to strict safety guidelines (see [SITE VISIT PRE-CHECK](#) - page 86); and keep it on your radar. Orphaned mines still have very live and real issues such as acid mine drainage (AMD).

Subsidence

Subsidence is what happens when the earth over an underground opening collapses. Such openings were either not filled correctly, or left empty entirely. Over time, the weight of the ground and the effects of moisture, seismic activity, and gravity become too great, and sinkholes develop to varying degrees: from minor depressions to massive landslide catastrophes. It is important that any closure plan provides full protection from subsidence by including a comprehensive backfilling plan at the end of life for every underground section of the mine. Repacking the holes with solid concrete is the best alternative. Rock, dirt, and sand may also work. Organic materials are insufficient because they will rot. Underground openings should not become waste dumps for chemicals, effluents, and garbage as deleterious materials will contaminate the groundwater. Subsidence is a very real issue in the State of Pennsylvania where millions of homes sit on top of hundreds of old coal mine tunnels. Pennsylvania has an excellent resource that illustrates the causes, effects, and solutions around subsidence:

LINK

<http://www.dep.state.pa.us/msi/>

It is absolutely critical that a closure plan include a robust and easily-accessible amount of cash to perform the required actions through the closure and reclamation processes. Yet, for all its importance, financial security for reclamation and closure is another area left to the discretionary power of the office of the Chief Inspector of Mines and/or the Minister of Energy and Mines. BC law currently mandates no requirement to post, and sets no standard for any amount posted. It raises the question for your community: What are the possible courses of action?

First, ensure that adequate security is posted as part of the Impact Benefit, or Socio-Economic Agreement. This will require gaining knowledge of the proponent's closure plan (which you should have) and assessing it against the security to determine if enough money will be available.



Assessing the securities for mine reclamation funds requires professional expertise. Please seek legal advice.

STATUTE(s)

Mines Act s 10.4(a)

FMP

389 - 425

Second, have community contingencies in place, not only for an overall closure, but also for sudden work stoppages, mine abandonment, toxic spills, accidents, and disasters. When such unforeseen things occur, mining companies, and the government may be slow to respond, or fail to adequately respond. Security for your community, therefore, is more than just a monetary issue in the hands of the miners - it is a comprehensive plan against any negative future circumstances. As you work, you will find areas where your community needs to be secure against detrimental circumstances and events. Have discussions and create plans around such events. Revisit them and update them annually.



Only when the last tree has been cut down, the last river has been poisoned and the last fish has been caught will we realize that we cannot eat money.

- Cree Proverb

Field



Companion

Do not waste.
Use all things wisely.
Never take more than
you need and always
give away that which
you do not use.

A WORD ON THE FIELD COMPANION ...

The Field Companion supplements the *Mine Medicine Manual* by providing a set of checklists and appendices to copy, download, and print to help users document mining activities on their territory. It is our hope that this will enable communities to reinforce their ability to negotiate, monitor, enforce, and protect themselves against the negative effects of mining, and benefit from the positive effects.

Checklists

The checklists do not assume the user is a trained, professional engineer, geologist, resource manager, or other professional. The checklists are offered as another set of tools in this toolkit. Parts of some lists, and in some cases entire lists (i.e. Dam Safety Checklist) are borrowed from the same documentation used by industry and government.

Portions of the checklists may seem self-explanatory to some and complex to others. Fair Mining Collaborative is available to help, but we also encourage the user to do the necessary research and self-teaching to master the checklists.

Legal Case Citations

The case citations are for personal use, study, and reference, and are by no means exhaustive. They are not offered as legal advice, nor do the notes and summaries express the full legal depth of each case. Law is complex and requires professional expertise to interpret.

Survey

The Survey contains suggested questions. Please feel free to alter, delete, or add your own. Use, but please do not rely, on social media. Social media is effective but community consensus must be organized, substantive, recorded, and documented. Face-to-face contact, and community assemblies are still the most powerful tools for informing a community; for airing concerns or grievances, or for building, achieving, and maintaining consensus - see page 56.

C O N T E N T S

Site Visit Pre-Check	86
Checklist Terminology Guide	87
E Exploration Checklists	
1E - Exploration Site Checklist	89
2E - Drill Site Checklist	90
3E - Abandoned / Orphaned Site	91
Mineral Tenure Act, Section 59	92
M Impoundment Dam Checklists	
1M - Dam Safety	94
2M - Dam Slope	96
3M - Dam Crest	98
P Production and Development Checklists	
1P - Dust	101
2P - Noise	102
3P - Airborne Toxins	102
4P - Roads	103
W Water Regulations	
1W - Riparian (Water) Setbacks	106
2W - Allowable Setback Activities	107
3W - Water Sampling	108
S Soil Sampling	112
Job 7 <i>Covering the Field</i>	113

“If we don’t say it, who will? As keepers of the knowledge, it is our responsibility to share what has been passed on to us. Lessons learned are gifts and we have the responsibility to share these in order to teach about living in harmony, balance and respect with each other and with nature and its biodiversity.”

- Pauline Waterfall (2009)

Site Visit Pre-Check

ITEM	day-trip only*	
Fuel (if going by vehicle)		
Spare Fuel		
Adequate Gear for Weather & Conditions		
Emergency Kit		
Radio or Communications with community (if not ... what is the contingency?)		
Emergency First Aid Kit		
Return Plan Filed with Office		
GPS		
Compass		
Map (NTS / Backroad Map Book / other)		
NoWs / Referrals (Copies of original documents)		
Camera / Binoculars		
Personal Protective Gear		
Rubber Gloves (for water sampling)		
Work Gloves (for soil sampling & general work)		
Dust mask		
Respirator (gas mask) with chemical cartridges (see TIPS below) Store properly and regularly TEST for leaks. Receive proper training on use.		
100' Measuring Tape		
Excellent Boots		

TIPS

* Overnight stays require adequate shelter, sleeping bags, spare clothes, ample food, water, and heat; cooking supplies and kitchen gear; among other things not covered here.

NEVER go alone.

In the presence of GAS: 1) Don your respirator. 2) Check your partner - assist them if they have trouble putting their mask on. 3) Evacuate area immediately.

Do not take unnecessary risks. Use common sense.

Watch out for and record physical hazards on site such as rusted and abandoned equipment, and barrels of hazardous materials.

Avoid contaminated areas.

Except for soil and water samples DO NOT, under ANY circumstances, move or remove any materials. Take pictures instead.

Chart Terminology Guide

Item	Procedure(s)
Referral / NoW # / Claim #	Referral or Notice of Work Number. Use same document type for all visits if possible
Time IN / OUT	Use 24-hr clock.
Company / Claimant	Name of mining company or claimant
Mine Type	M=Mineral / P=Placer / PA= Placer(Aggregate) / C=Coal / O=Open Pit / U=Underground / A=Abandoned OR=Orphaned
Stage	P=Prospecting / Expl. 1=Low-level (pre-NoW) / Expl. 2= post-NoW
Mineral or Metal type (use Periodic Table of Elements symbols):	Ag = Silver / Al = Aluminium / Au = Gold / Cu = Copper / Fe = Iron / K = Potassium / Mb = Molybdenum / Mg = Magnesium / Ni = Nickel / Pb = Lead / Pt = Platinum / Zn = Zinc
Map Reference	Recommend using NTS grid system
RS Violation (Riparian Setback Violation)	Is the activity violating the riparian setbacks? Ensure you compare activities to the Allowable Activities chart.
Water Samples Taken a) Take water samples b) Label & secure the containers	Visible contamination? Odour? Benthic (aquatic) organisms? Dead or sick fish / animals / birds?
Physical Description	Describe the topography & local markers, GPS co-ordinates if possible
Notes (use more pages if needed and attach)	Wildlife Fish Disturbance Dead animals Scattered wildlife Absent wildlife Trails & routes conditions
	Land Brush cutting / clearing Roads & trails Camp clean-up / legacy Contamination Spills Litter

E	Exploration Checklists
---	------------------------

1E Exploration Site Checklist

Date: _____ 20 _____
Day Month Year

Referral / NoW#

[Empty box for Referral / NoW#]

Time IN

OUT

Mining Company

[Empty box for Mining Company]

Mine Type

[Empty box for Mine Type]

Exploration Stage

[Empty box for Exploration Stage]

Minerals Sought

[Empty box for Minerals Sought]

NTS Map Reference

[Empty box for NTS Map Reference]

Miners Present?

Contact?

Use separate sheet to record conversation

Notes

[Empty box for Notes]

Riparian Setback Violation(s)

(describe)

Water Samples

[Empty box for Water Samples]

Week of _____ to _____ 20 _____

Your Name			
Date & Time			
NTS(or other) Map Reference			
Claim, NoW, Referral #		Area (Size)	# Shafts
Type of Mine (Surface / Underground)			
Metal Type(s)			
Drill Phase (D / E / I)		#Today	# Total
MMM	Bags		
29	Cores		
Riparian Setback Violation Y / N		Details	
Water Samples Taken Y / N		Quantity & Location	

Week of _____ to _____ 20 _____

Your Name				
Date & Time				
NoW / Referral #				
Company / Claimant				
Last Date of Operation				
NTS (or other) Map Reference				
TYPE of MINE <ul style="list-style-type: none"> • Surface • Surface (Placer) • Underground • Open Pit 	Area (Size)	# Pits	# Shafts	# Adits
			DO NOT ENTER !	
Condition of Area	Damaged	Remediated	Abandoned Machinery	
Description of Area & Apparent Dangers				
Riparian Setback Violation(s) Y / N	Details			
<ul style="list-style-type: none"> • Water Samples • Soil Samples (Yes / No) 	Describe			

Section 59 - Mineral Tenure Act, BC

Historically, closed mines were simply abandoned. This led to toxic contamination of ecosystems, local and widespread. The common practice today is: the day a mine opens, it begins to close. See: "PROGRESSIVE RECLAMATION" on page 79.

Mines undergo final closure as their production lives end but mines can also close due to work stoppages, and shut-downs for safety under various conditions or market fluctuations in their product.

Note on the removal of property from Abandoned Sites & Mines:
Under Section 59 of the Mineral Tenure Act ...

59 (1) If a mineral title is abandoned, cancelled or forfeited, or escheats to the government, it is the duty of the last recorded holder to remove all property within the boundaries of that title within one year after the abandonment, cancellation, forfeiture or escheat, or a longer period that may be set by the chief gold commissioner.

In other words, the last miner on the site has 1 year to remove everything ever brought to the mine site unless the miner has an extension from the Chief Gold Commissioner.

ID	Impoundment Dam Checklists
----	----------------------------

The construction, maintenance, and life of an impoundment dam must follow the same guidelines as any other dam. These guidelines are set out in British Columbia law which follows the Canadian Dam

Association Guidelines.

The following checklists, are taken directly from the Dam Inspection Checklist for Dam Safety Review (BC) and reformatted for this Manual.

Name of Dam (Impoundment)	
Inspection Date	
Current Weather	
Owner's Name	
Address / City / Postal Code / Telephone / Email	
Inspection Participants	
Who did the last Formal Annual Inspection?	
When?	
Any Prior problems requiring follow-up?	
Repairs or Modifications? (where, when)	
Past Failures/Incidents/Breach?	
Is the mine currently operating?	
Design report & plans available?	
Dam Material Known?	
Foundation	
Design Engineering Consultant	
Construction Date	
Dam construction details	

Impoundments will be within the mine site property - see 'MINE SITE ACCESS' - page 73. It is very likely that you will need more room

to write during your inspections. Consider creating an *Impoundment Record Book* that you can use as a written record, and pass on others.

Previous Dam Safety Review					
Last Date of Review					
Reservoir Storage Volume					
Licensed Storage Volume					
Dam Environment					
Reservoir Area					
Site Access - is site access adequate for safe operation and maintenance?					
Any other concerns in the watershed that could impact the dam?					
Any operational constraints that impact dam safety?					
Comments on Public Safety:					
REQUIRED ACTION	NONE	MONITOR	MAINTENANCE	REPAIR	N/A
UNUSUAL CRACKS					
New					
Type					
Efflorescence (mineral deposits appearing as white particles - minerals left behind from seepage. Can cause deterioration)					
Displacement (have things shifted?)					
UNUSUAL LEAKAGE					
Increase					
Is it Clear or Stained?					

VEGETATION Yes/No	
Type	
Location	
Recommendations	
SLOPE PROTECTION	
Type none / grass / riprap / other	
Notes	
EROSION Yes/No	
Type wave / runoff / unknown	
Location	
Length	
Width	
Notes	
SLIDES Yes / No / Could not Inspect	
Length	
Width	
Location	
Notes/Causes	

CRACKS Yes/No	
Transverse/Longitudinal/ Other	
Quantity	
Length	
Width	
Location	
Notes/Causes	
ANOMALIES	
Bulges / Depressions / Hummocky (Describe)	
Size	
Height	
Depth	
Location	
Notes/Causes	
OTHER	
Burrows / Ruts / Other Concerns	
Location	
Notes/Causes	

Is there public access to the crest? Yes / No	
Is the crest marked or signed? Yes / No	
Is vehicle access to the crest restricted? Yes / No	
VEGETATION	
Trees Yes / No	
Location of trees	
Notes	
Brush none / sparse / dense	
Notes	
Quantity of Brush bare / sparse / adequate / dense	
Appearance of Brush too tall / too short / good	
Notes	
EROSION Yes/No	
Location	
Type wave / runoff / unknown	
Length	
Width	
Causes	
Notes	

SETTLEMENT	
Notes/Causes	
INSTABILITIES	
Cracks Transverse/Longitudinal/Other	
Quantity	
Length(s)	
Width(s)	
Location	
Notes/Causes	
ACCESS	
Location	
Ground Cover bare / grass / other	
Location	
Notes	
OTHER	
Burrows, Ruts, Other Concerns	

PD

Production and Development Checklists

Are the following Dust Abatement protocols in place ?		YES	NO
Covering roads and other work areas with water or sealants?			
Permit obtained for the withdrawal of water from a watercourse?			
Is a copy of applicable permits available on the work site and are field staff familiar with the requirements?			
W A T E R	Water trucks shall not be driven into a watercourse/wetland.		
	Water trucks shall not be driven down to the edge of the water course/wetland unless the area is firm enough so that this action does not cause rutting and erosion.		
	Ensure that the amount of water withdrawn from the water source is not excessive.		
	Ensure that the intake hose is properly screened.		
	If a petroleum leak occurs, does company have a spill kit available?		
	Ensure that the water truck is not leaking petroleum product and is not refuelling or getting services within 30m of a watercourse/wetland.		
	The water trucks shall have a method of controlling the application rate, so that no excess water flows into a watercourse/wetland.		
Ensure that water (runoff) does not directly enter any watercourse/wetland.			
C H E M I C A L	Ensure that chemical dust suppressant will not directly runoff and enter a watercourse/wetland.		
	Ensure that the proper application rates are followed.		
	Chemical dust suppressant shall not be applied within 30m of a watercourse/wetland.		
	Ensure that calcium chloride, magnesium chloride, or any ligno-sulphonates used are within the <u>Environment Canada Best Practices for the Use and Storage of Chloride-Based Dust Suppressants</u> (now available only upon request).		
	Tankers used in the application of liquid calcium chloride shall not be washed out within 30m of a watercourse, wetland or other environmentally sensitive area.		
Application shall be restricted to the driving surface only.			

PD2

Noise

NOISE CONTROL		
Are the following Noise Abatement protocols in place ?	YES	NO
Noise reduction filters on heavy fans, and generators?		
Ventilation fans below the surface (underground mines)?		
The entire site surrounded by a berm?		
Plan for timing blasting to lessen community & wildlife disturbance (complete with a schedule and consultation process)?		
Protocol or plan for subsequent fly-overs during expansion operations?		

PD3

Airborne Toxins

AIRBORNE TOXIN CONTROL		
Are the following Airborne Toxin Controls in place?	YES	NO
Is tailing storage area underwater?		
Waste rock piles sprayed with sealants? (SEE: Chart 2B 'DUST' on previous page for chemical sealant guideline protocol)		
Ventilation fans below the surface (underground mines)?		
Is crushed ore stored in enclosed structures?		
Is reclamation and /or re-vegetation of waste piles and tailings piles undertaken immediately upon completion?		
Are filters installed and maintained on all exhaust systems (heavy equipment, generators, etc.)?		
Are scrubbers and filters on all smokestacks and gas-emitting exhausts ?		

Item	Compliance / Deficiencies
Have the routes been located such that, wherever possible, they blend in with the topography?	
Have the routes been located, and the alignment been selected to avoid and / or minimize the environmental effects on the following items, taking into consideration the overall costs of the road project:	
Watercourses, wetlands, estuaries, tidal zones, and marine shore areas	
Historic sites	
Agricultural land	
Fish and fish habitat	
Wildlife and wildlife habitat	
Species at risk and their habitat	
Other	

W	Riparian Checklists
---	---------------------

Exploration activities must maintain a specified distance (called **setbacks**) from streams, creeks, ponds, lakes, and any and all watercourses, wetlands, aquifers, and reservoirs - natural and man-made. But water bodies are sometimes neglected or setbacks violated. BC regulations are only somewhat concerned with water quality and will allow the contamination or alteration of water in some situations.

Part 9, Table 9.1 of the *HSRC* (2 pages ahead) allows miners to infringe on setback limits to reasonably access and service sites.

As discussed on page 105, section 9.5.1 (2) of the *HSRC*, allows for any unspecified activities to take place and violate the setbacks; leaving it to the discretion of the miner(s) to decide what is reasonable. And no guidelines exist to define what is an acceptable reduction in risk to health, safety, and the environment. The following job for the resource manager is to ensure miners are not taking advantage of this provi-



sion, violating the regulations, and threatening or contaminating water, when alternative methods exist but are discounted for inadequate reasons like convenience and cost-cutting.

Further, when it comes to discharge of waste into the environment, BC sets out an application requirement to support a *Mines Act* (MA) permit and a waste discharge permit under the *Environmental Management Act* (EMA) for a proposed mining project.

LINK

http://www.env.gov.bc.ca/epd/industrial/mining/pdf/effluent_permitting_guidance_doc_mining_proponents_apr2013.pdf

A good example of a review of a mine discharge permit application is the 2011 report by Brian Olding & Associates. Commissioned by the Soda Creek Indian Band, the Williams Lake Indian Band, and Imperial Metals Corporation, the “Olding Report” preceded the Mount Polley Mine Disaster which occurred 4 August 1024.

LINK

<http://www.documentcloud.org/documents/1262983-final-report-mp-mc-master-ta-review-jun21-2011.html>

Table 9.1

From the *Health and Safety Reclamation Code* (HSRC) for Mines in British Columbia, 2008.

(Riparian setbacks are measured horizontally from the top of the bank)

Riparian Type	Dimensions of Riparian Type	Drilling (m)	Exploration Access (m)
Stream	Stream widths (m)		
	20 +	50	70
	5 to 20	30	50
	1.5 to 5	20	40
	less than 1.5	5	30
	under 0.5 in alpine areas above timberline	5	15
Wetland	Wetland Size (ha)		
	5 +	10	30
	1.0 to 5.0	10	20
	0.25 to 1.0	10	10
Lake		10	30

This table applies only to mineral (hard rock) mining. Placer mining is exempt from this portion of the *Health, Safety, and Reclamation Code*. A Memorandum of Understanding (MoU) was established in 1997 between the provincial ministries responsible for mining, forestry and environment with respect to placer mining activities in riparian ecosystems intended to “form an interim agreement for management of placer activities, until replaced by a placer mining regulation under the Mines Act” (Employment and Investment, 1997). No legislation or regulation for placer mining has emerged to replace this MoU. The MoU establishes for placer operations a 10m setback from the high-water mark of rivers streams, lakes or wetlands. A clause in the MoU allows for a modification of the 10 metre setback if jointly agreed to for site-specific areas with aquatic protection concerns.

- (1) The following activities may be carried out within the setback distances noted in Table 9.1:
- (a) construction, maintenance, deactivation, and reclamation of stream crossings;
 - (b) access from water landings for the purpose of servicing exploration camps and equipment;
 - (c) access to set up and service water supply pumps and lines; and
 - (d) access to service drill sites.
- (2) Exploration activities in addition to those in (1) may occur within the riparian setback distances noted in Table 9.1 when one or more of the following conditions apply:
- (a) no other practicable option exists;
 - (b) risk to health and safety can be reduced; or
 - (c) risk of adverse impact to the environment can be reduced.

From the *Health, Safety and Reclamation Code* (HSRC) for Mines in British Columbia, 2008. Table 9.1

STATUTE(s)	FMP
HSRC Part 9, Table 9.1	29, 120 146, 147 152

PROCEDURE

1. Keep all equipment clean.
Alcohol or boiling water will sterilize most equipment.
2. Store in an airtight compartment when clean.
 - a. Keep sterile until used.
 - b. Rinse with de-ionized (distilled) water before use.
 - c. Rinse water sample bottle 3 times before taking final sample.
 - d. Keep detailed notes of each sample:
 - i. Precise location
 - ii. Who took sample
 - iii. Time & date
 - iv. Weather
 - v. Temperature (air & water)
3. Seal and label the sample immediately.
4. Store samples in a locked cooler.
5. Maintain control over samples to prevent tampering.
6. Choose a reliable lab for testing.

TEST FOR:

- | | |
|--------------|-----------------------|
| pH | - use strips |
| Metals | - use strips |
| Conductivity | - use hand-held meter |
| Temperature | - use thermometer |

NOTE: Meters are more accurate for measuring pH than strips

EQUIPMENT FOR WATER & SOIL SAMPLING

- beakers (250ml and 500ml)
- scoops (range of sizes 65ml, 200ml)
- stainless steel trowel or soil auger
- 5mm screens or sieve
- rinse bottle using deionized water (distilled water)
- conductivity meter and standard solutions
- pH metre and standard solutions
- test strips (pH, metals, cyanide)
- hand-held thermometer
- preservatives - sodium hydroxide and 10% HCl
- cooler with lock
- large plastic re-sealable bags (durable)
- sample bottles
- gloves, mask, sturdy boots
- pvc tubing (optional, for siphoning samples out of barrels)
- knife
- notebook
- pencils, marker, grease pencil
- camera and batteries
- maps
- first aid kit
- axe

WHY SAMPLE THE WATER ?

In order to:

1. Test for contaminants that the mining company does not monitor.
2. Test the water in places the mine does not test.
3. Sample during changes in flow, when the company may not test.
4. Obtain information about the contents of the mine's effluent that the company and/or government refuses or neglects to share.
5. Test for cumulative effects of any other development in the area.

WHAT TO SAMPLE

1. Check the government mine effluent data at the National Pollutant Release Inventory (NPRI). The NPRI will only list the results of certain chemicals for mine sites in Canada. You need to test for the rest.

LINK

<http://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=4A577BB9-1>

Labs do a total metals analysis, using a method called inductively coupled plasma (ICP). The ICP method is inexpensive and tests for many metals (70 +/-). Acme Lab charges \$30.45 for all 70. Compare results from your lab test with the Canadian Water Quality Guidelines for the Protection of Aquatic Life, found here:

LINK

<http://ceqg-rcqe.ccme.ca/en/index.html>.

Laboratories Websites:

LINKS

www.actlabs.com
www.alsglobal.com
www.acmelab.com

Contaminants may not be present at every mine. Do some research before investing in tests. Those of concern not included in an ICP analysis are as follows:

- Hexavalent Chromium
- Mercury
- Ammonia, Nitrate, Chloride and Sulphate (can be tested together using ion chromatography)
- Phosphorous
- Thiosalts
- Xanthates (no current test for this substance, but it is very toxic to fish).
- PAHs (Polycyclic Aromatic Hydrocarbons)

WHERE TO SAMPLE

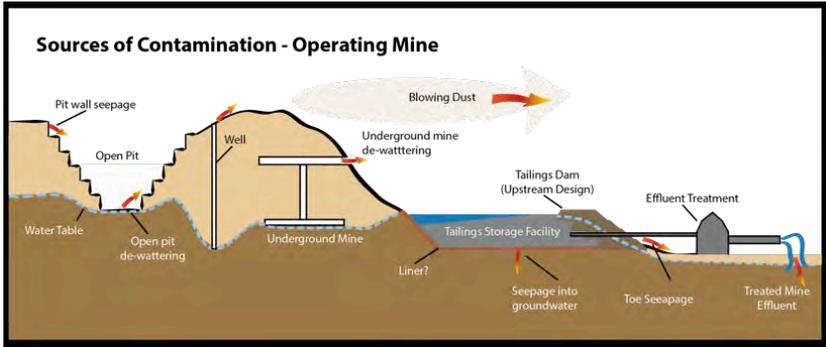


Diagram by Tara Ammerlaan

Choose places mine contaminants could be entering the environment.

Consider these places in an **operating mine**:

1. The effluent discharge point.
2. Groundwater seepage areas.
3. Nearby streams during drought conditions (when the stream is fed by groundwater).
4. Monitoring wells.
5. Surface drainage from the mine that is not fed into the tailings storage facility (TSF). Look for streams that only flow after rains.
6. Dust blowing off the mine site will settle on vegetation and ground surface and will mix with runoff.
7. Base of the tailings dam for seepage.
8. Waste rock piles.

Additional places to consider in a **closed/abandoned mine** include any or all of the items from an operating mine plus:

1. Adits to an underground mine
2. Pit walls
3. Trenches

Baseline data is necessary to determine if elevated concentrations of a metal are natural, or caused by the mine. The ideal baseline data would be collected prior to exploration work or construction of the mine.

For an existing mine, a nearby stream may give you an good baseline. Baseline data for some substances may be in the mine's Environmental Assessment (EA). See page 34 "ONLINE RESOURCES" to access EAs on CEAR.

WHEN TO SAMPLE

1. Immediately after first big rainfall events
2. When mine is increasing effluent discharge
3. At the start of 'freshet'
4. When lakes turn over (when surface lake temperature is nearing 4°C.)

Pollution is not continuous and comes out of the mine at different rates. Contaminant loads may 'pulse'. For example if a mine gets a temporary permit to lower the level of water in its TSF this would result in a higher flow of potentially contaminated water, but only for a short period of time. If you do not happen to sample during that time, the contaminated water could go undetected. This could result in unexplained ecosystem changes.

Weather events are another cause of temporarily increased contaminant loads. One big rainstorm in the fall might carry a summer's worth of dust off the mine site and into local streams.

High water flows from spring runoff may mix sediment up into the water column.

Contaminants accumulate in different places in the environment like sediments, animals, and aquatic life, especially bivalves.

Look for slow moving areas, with fine sediment clays and silts. Surface water and deep water do not mix in winter. Lakes usually mix during the spring and fall. Pollutants can accumulate in the lower levels of the lake, and only surface during the spring and fall turnovers.

Certain contaminants also accumulate in animals where they 'bio-magnify' and show in higher concentrations in predators at the top of the food chain. Bivalves (clams, mussels) also filter water when they feed and pick up contaminants. Tests on bivalves may reveal if a 'pulse' of contaminants washed through the system.

Chemicals do not act in isolation. For example, cadmium may be more poisonous if mixed with arsenic. Little is known on the effects of multiple contaminants in the human body.

PROCEDURE

Field testing is good for detecting rapidly soluble metals and short-term pH. However, it will not detect the slow-leaching metals. Important parameters like solid-phase sulphide will not be detected in the field. Most sampling studies are best referred to a lab. However, if you choose to do your own field work and analyze samples on-site, prepare a paste solution and use the same on-site sample analysis techniques as for water samples. Prepare a paste solution as follows:

1. Use a stainless steel trowel to pick up samples and sift them in a 5mm screen.
2. Sift into a clean, clear plastic bag with label.
3. Clean trowel and screen with de-ionized water
BEFORE TAKING NEXT SAMPLE.
4. Measure 65 ml of sifted soil sample into beaker.
5. Add 100ml of de-ionized water.
6. Stir with stainless steel spatula.
7. Allow to settle 10 minutes before testing.

REFERENCE

Pages 108 and 112 (Water and Soil Sampling) from:

MINE MONITORING MANUAL -
A RESOURCE GUIDE FOR COMMUNITY MEMBERS

by Sue Moodie, Yukon Conservation Society, June, 2001.
An excellent field guide to help community members test for water and soil contamination from metal mines.

7	COVERING THE FIELD
TASK	Using what you have learned, select the most applicable Checklist from the Field Companion based on a situation you are facing in your community as it deals with mining. Use the Pre-Check preparation and go and perform a field visit.
TOOLS	The <i>Mine Medicine Manual</i> . Your knowledge and talents. Your community’s strength. The applicable laws (Colonial & Indigenous) Your elders’ wisdom.
FOCUS	Your selected Checklist.
OBJECT	This site visit may be your first, or one of many in your experience. It is part of an overall program. From now on, when responding to mining on your territory, you will be able to address the situation with the appropriate tools at the relevant time.

“Forget litigation. It’s a waste of time and money.”¹

¹ Professor Robert Williams is a member of the Lumbee Nation, Arizona, and is co-counsel with Robert Morales in the Hul’qumi’num Treaty Group’s case before the Organization of American States. The Hul’qumi’num-speaking peoples have lived on the southern portion of what is also called Vancouver Island, and the south coast of BC since time immemorial. The case has won the right to be heard on the basis of human rights and international law by showing the Canadian legal system does not follow due process of law when assessing aboriginal title. Professor Williams’ statement refers to the cost, unpredictability, and flaws inherent in the Canadian legal system with respect to aboriginal title. Community solidarity can be more effective.

APPENDICES

C O N T E N T S

1a - Five Major Cases	115	
1b - Other Significant Cases	117	
1c - <i>Tsilhqot'in Nation v. British Columbia</i>	119	
1d - <i>Royal Proclamation, 1763</i>	121	
2 - Community Questionnaire	123	
3 - Power Provisions	125	
Glossary	127	
Writers & Reviewers / Image Credits	133	
Image Credits	134	

APPENDIX 1a

Citation	Date	Issue(s)	Reasoning	Appeal
<i>Haida Nation v. British Columbia (Minister of Forests)</i> , 2004 SCC 73.	18/11/04	What duty, if any, is owed to FN (unsettled) claims on land?	Crown owes a duty <u>prior</u> to proof of rights and title. It cannot be interpreted narrowly. Varies with circumstances & arises when a Crown actor has knowledge of the potential existence of the Aboriginal right or title, and contemplates conduct that might adversely affect it. Consultation means good faith and reasonableness by Province and Aboriginal people. <u>Not a veto for FN. Companies do not have a duty to consult.</u>	None further (no appeal exists past the Supreme Court of Canada)
<i>Taku River Tlingit First Nation v. British Columbia (Project Assessment Director)</i> , 2004 SCC 74.	18/11/04	Was the accommodation engaged in by Province prior to issuing project approval certificate adequate to satisfy honour of Crown?	YES. Even though the Crown owes duty - in this case the TRTFN were deemed to have been adequately consulted.	None further

FIVE MAJOR CASES

<p><i>West Moberly First Nations v. British Columbia (Chief Inspector of Mines)</i>, 2011 BCCA 247</p>	<p>05/25/11</p>	<p>Does the duty to consult apply when the provincial government decides to amend an existing permit to allow the proponent to expand exploration activities?</p>	<p>The court held that the government had a duty to consult the West Moberly First Nation before amending the permit on the grounds that the expansion may adversely affect their Aboriginal right to hunt caribou.</p>	<p>None further</p>
<p><i>Neskonlith Indian Band v. Salmon Arm (City)</i>, 2012 BCCA 379</p>	<p>04/04/12</p>	<p>Do municipalities have a constitutional obligation to consult with FNs before making decisions that could adversely affect aboriginal rights or title?</p>	<p>NO. Under Haida, the duty lies at all times with the Crown, not with municipalities.</p>	<p>None further</p>
<p><i>Ross River Dena Council v. Government of Yukon</i>, 2012 YKCA 14</p>	<p>27/12/12</p>	<p>Is the “free entry” mining regime (Yukon Quartz Mining Act) subject to consultation requirements?</p>	<p>YES. Consultation must take place prior to the recording (staking) of a mineral claim on traditional territory, absent a treaty or final agreement. (Yukon Court of Appeal) [YKCA]</p>	<p>Leave to appeal sought at the Supreme Court of Canada. Denied, September 2013. YKCA ruling stands.</p>

CAUTION !

Care must be taken interpreting and using these and other cases. These cases are presented here as reference only - to illustrate a body of Canadian law. We strongly recommend that you obtain legal advice.

APPENDIX 1b

Citation	Summary
<i>Calder v. British Columbia (Attorney General)</i> [1973] S.C.R. 313	First time that Canadian law acknowledged that Aboriginal title to land existed prior to the colonization of the continent; that it was not merely derived from statutory law.
<i>Guerin v. The Queen</i> [1984] 2 S.C.R. 335	The government has a fiduciary duty towards the First Nations of Canada. It confirms that Aboriginal title is a <i>sui generis</i> right.
<i>R. v. Sparrow</i> [1990] 1 S.C.R. 1075	Aboriginal rights that were in existence in 1982 are protected under the Constitution of Canada and cannot be infringed without justification because of the government's fiduciary duty to the Aboriginal peoples of Canada.
<i>Native Women's Association of Canada v. Canada</i> [1994] 3 S.C.R. 627	Court decides against the claim that the government of Canada has an obligation to financially support an 'interest group' in constitutional negotiations - to allow the group to speak for its people.
<i>R. v. Badger</i> [1996] 1 S.C.R. 771	Sets out a number of principles regarding the interpretation of treaties between the Crown and Aboriginal people of Canada.
<i>R. v. Gladstone</i> [1996] 2 S.C.R. 723	Heiltsuk First Nation proved an Aboriginal right to sell herring roe on kelp.
<i>R. v. Pamajewon</i> [1996] 2 S.C.R. 821	The right to self-government is subject to reasonable limitations and excludes the right to control gambling.

At time of writing (2015) many more interesting cases have emerged in Aboriginal law on the Canadian legal landscape. Please contact a lawyer specializing in Aboriginal law for an update on these cases and their legal ramifications.

OTHER SIGNIFICANT CASES

Citation	Summary
<i>R. v. Van der Peet</i> [1996] 2 S.C.R. 507	Stó:lô First Nation failed to meet the test for commercial selling of fish. Established the 'Van der Peet test' for determining if an Aboriginal right exists. Took the 1st step of the 4-part 'Sparrow Test' and fragmented into 10 separate micro-tests. Seen by some as a step backwards.
<i>Delgamuukw v. British Columbia</i> [1997] 3 S.C.R. 1010	Even though this case is cited as the precursor to Aboriginal title, and while it recognized oral history as admissible, it was sent back for a trial that never happened.
<i>Chippewas of Sarnia Band v. Attorney General of Canada</i> 51 O.R. (3d) 641 [2000] O.J. No. 4804	First time an 'Aboriginal group' was claiming ownership of privately held land. Denied by Ontario Court of Appeal
<i>Paul v. British Columbia</i> 2003 SCC 55	A provincial administrative actor is granted the power to determine questions of law, and may adjudicate matters within federal legislative competence, including s. 35 Aboriginal rights issues.
<i>Liidlii Kue First Nation v. Canada (Attorney General)</i> [2004] 4 CNLR 123 (Fed TD)	"When test drilling on unoccupied Crown land may affect an Aboriginal right to hunt, trap or fish on the land, there is a constitutional obligation to consult with the affected party."
<i>R. v. Marshall; R. v. Bernard</i> [2005] SCC 43	Drew mainly from the tests in <i>Delgamuukw</i> and denied the Miq'maq of Nova Scotia and New Brunswick the claim of title, and logging rights that would have flowed from title.

APPENDIX 1c

TSILHQOT'IN NATION

v.

BRITISH COLUMBIA 2014 SCC 44

In Canadian common law, Aboriginal title is special type of Aboriginal right, still undergoing formation through the courts and finding expression (or not) in legislation. To most Aboriginal people however, title is inherent; an historical fact no other power can grant or deny.

The *Tsilhqot'in* decision affirms in Canadian common law that infringements on Aboriginal title or rights by the Crown must abide by the section 35 Constitutional framework and the justification test as set out in *R. v. Sparrow*.

The *Sparrow* test requires any infringement by the Crown to a) have a valid legislative objective (in the broader public interest), b) be reasonably justified, and c) result in minimal impairment of the Aboriginal right. For example, an infringement would be considered unjustified if it resulted in undue hardship or prevented the exercising of the Aboriginal right as long as that right does not harm the general populace or Aboriginal people themselves.

The *Tsilhqot'in* decision also affirms that breaches of Aboriginal rights are held to the same standard whether those breaches are provincial or federal in origin. The doctrine of interjurisdictional immunity (a legal doctrine meant to resolve issues of competing legislation between the two levels of government) is of no force and effect in matters pertaining to Aboriginal title. Both Crown entities are held to the same standard.

**THE FIRST CASE IN CANADIAN HISTORY TO GRANT
ABORIGINAL TITLE TO A FIRST NATION**

26 JUNE 2014

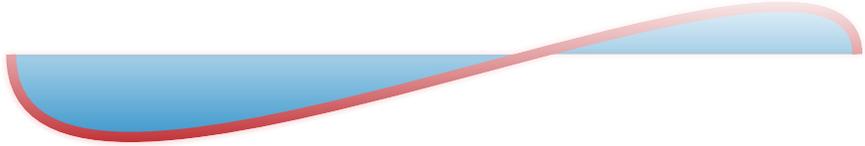
The decision also upholds the precedent that the section 35 framework requires a liberal and purposive interpretation by the courts in order to provide the greatest potential for reconciliation of Aboriginal rights with the broader Canadian diaspora.

The *Tsilhqot'in* decision does not directly address subsurface rights, or whether or not the issuance of mineral tenures violates the Aboriginal right to title in land. Nor does the decision confer any new legitimacy on other unceded and unproven land claims in Canada, or British Columbia. Each matter will still have to be put before the courts on a case-by-case basis.

The *Tsilhqot'in* decision does, however, hold that “once title is established, the Crown cannot proceed with development of title land without consent by the title-holding group unless it has discharged its duty to consult, and the development is justified pursuant to s. 35 of the Constitution Act, 1982” [para 91]. This effectively cements the duty to consult and accommodate set out in *Haida Nation v. British Columbia (Ministry of Forests)*.

As well, the Supreme Court of Canada held that “once title is established, it may be necessary for the Crown to reassess prior conduct in light of the new reality in order to faithfully discharge its fiduciary duty to the title-holding group going forward” [para 92]. This means that what was once ‘justified’ prior to a title claim, may not be justifiable after title is proven.

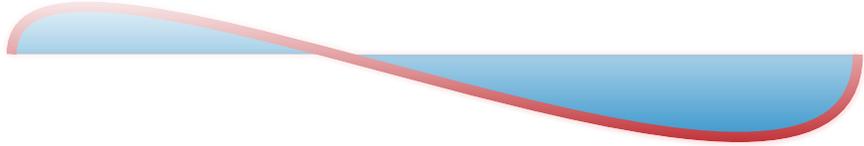
APPENDIX 1d



Royal Proclamation, October 7th, 1763

And whereas it is just and reasonable, and essential to our Interest, and the Security of our Colonies, that the several Nations or Tribes of Indians with whom We are connected, and who live under our Protection, should not be molested or disturbed in the Possession of such Parts of Our Dominions and Territories as, not having been ceded to or purchased by Us, are reserved to them, or any of them, as their Hunting Grounds. We do therefore, with the Advice of our Privy Council, declare it to be our Royal Will and Pleasure, that no Governor or Commander in Chief in any of our Colonies of Quebec, East Florida, or West Florida, do presume, upon any Pretence whatever, to grant Warrants of Survey, or pass any Patents for Lands beyond the Bounds of their respective Governments, as described in their Commissions:





as also that no Governor or Commander in Chief in any of our other Colonies or Plantations in America do presume for the present, and until our further Pleasure be known, to grant Warrants of Survey, or pass Patents for any Lands beyond the Heads or Sources of any of the Rivers which fall into the Atlantic Ocean from the West and North West, or upon any Lands whatever, which, not having been ceded to or purchased by Us as aforesaid, are reserved to the said Indians, or any of them.

And We do further declare it to be Our Royal Will and Pleasure, for the present as aforesaid, to reserve under our Sovereignty, Protection, and Dominion, for the use of the said Indians, all the Lands and Territories not included within the Limits of Our said Three new Governments, or within the Limits of the Territory granted to the Hudson's Bay Company, as also all the Lands and Territories lying to the Westward of the Sources of the Rivers which fall into the Sea from the West and North West as aforesaid.

LINK

Excerpt of the Proclamation:
[http://indigenousfoundations.arts.ubc.ca/home/government-policy/
royal-proclamation-1763.html](http://indigenousfoundations.arts.ubc.ca/home/government-policy/royal-proclamation-1763.html)

YES

Are you aware of the mining development in your community?

NO



What mining developments can you name on your territory?

What effects of mining have you witnessed?

Are you or any of your family involved with mining?

If so ... how?

What social, economic, or environmental changes have you seen from mining?

Overall, what is your opinion of the mining development(s) of which you are aware?

Would you like more information?

YES

NO

What miners are on the land?

What effects is mining having?

I am specifically interested in ...

How do I get involved?

I can offer the following ...

Contact me

Name

Phone

e-mail

Facebook

Mailing Address

Best time to call :



Thank you for your attention. We hope for your support.
Please e-mail us at info@fairmining.ca for more information.

APPENDIX 3 POWER PROVISIONS

LINKED

STATUTE	SECTION(S)	PURPOSE
<i>Canadian Environmental Assessment Act, 2012</i>	5 5(1)(c)	Narrows the definition of environmental effects. Now, only effects on fish habitat or aquatic species-at-risk will be assessed. Excludes any assessment of land-based species-at-risk, such as Woodland Caribou, Section 5(1)(c) contemplates effects on Aboriginal peoples
<i>British Columbia Environmental Assessment Act</i>	8 and 10	Requirements for environmental assessment certificate
	41 - 45	Governs offences, penalties, remedies, compliance orders
<i>Criminal Code of Canada</i>	396. (1)	Punitive measures for tampering with samples and giving fraudulent results. See: NI 43-101 on page 31
<i>Mines Act</i>	2 - 6	Grants power to the Chief Inspector of Mines
	10	Governs permits
	10(8)	Remedies for failure to comply with permit conditions
	11	Grants power to Minister equal to that of Chief Inspector of Mines
<i>Health, Safety and Reclamation Code (HSRC)</i>	10.1.2 - 10.6.15	Application, permits, mine plan, security requirements
HSR Code Handbook (non-binding)		Written by industry for use as a procedure manual for exploration, and to comply with the HSRC

The listing of these provisions does not constitute legal advice. It is merely a quick-reference list to help the reader pinpoint the statute that governs the area of their interest. Readers are cautioned, and reminded to seek professional legal advice before acting on any of the provisions listed here.



APPENDIX 3 POWER PROVISIONS

LINKED

STATUTE	SECTION(S)	PURPOSE
<i>Mineral Tenure Act (MTA)</i>	10	Mandates that Free Miner Certificates accord with: 1) Mineral Tenure Act (MTA), 2) MTA Regulations, 3) Criminal Code, 4) Heritage Conservation Act, 5) Mines Act, 6) Mining Right of Way Act, 7) Health, Safety and Reclamation Code
<i>Mineral Tenure Act (MTA)</i>	18	Authority to suspend or cancel mining operations or claims
	29 and 33	Mandate the reporting of work on a claim to maintain the claim
<i>MTA Regulations</i>	2	Anyone can search for paper records or documents pertaining to a mineral title or titles.
<i>MTA Regulations</i>	15	Regulates the <u>physical</u> reports on exploration and development work
<i>MTA Regulations</i>	16	Regulates the <u>technical</u> reports on exploration and development work
<i>MTA Regulations</i>	18	Requirement for a survey for a placer lease
<i>MTA Regulations</i>	Schedule A	Guidelines for reporting exploration and development work
<i>Mining Right of Way Act</i>	2	Power to take necessary right of way on private land (building road access) <u>without the consent of the owner</u>
<i>Heritage Conservation Act</i>	All	Identification, protection, and exemption from resource development for heritage sites See: <u>SACRED SITES</u> on page 63

Glossary

and other interesting terms

Abandoned Mine	“A mine for which all permit obligations under this Act have been satisfied and in respect of which the mineral claims have reverted to the government.” - <i>Mines Act</i> - Definitions
Acid Mine Drainage (AMD) Also called Acid Rock Drainage (ARD)	When sulfide-bearing rocks (sulfide is like a dry ingredient) are exposed to air, water, and biological activity the seepage is called AMD. Heavy metals such as copper, mercury, lead, selenium etc. dissolve in the sulphuric acid and contaminate runoff and groundwater. Must be contained. Processes for neutralizing and cleaning AMD mine water must be maintained for centuries.
Advanced Exploration	Exploration involving drilling, blasting, major ground disturbance, and the erection of major camps.
Advanced Property	Industry term for property undergoing advanced exploration. Has mineral reserves, and is supported by a Preliminary Economic Assessment (PEA) Pre-Feasibility Study (PFS) or a Feasibility Study (FS).
Assaying	Chemical analysis of samples. Done in a laboratory.
CIM	The Canadian Institute of Mining (Metallurgy and Petroleum) “Founded in 1898, ... leading technical society of professionals in the Canadian Minerals, Metals, Materials and Energy Industries.” - http://www.cim.org/en/About-CIM.aspx
Claim Staking	Original process for prospectors to possess land for mining exploration. Now done online in BC.
Closed Mine	“A mine at which all mining activities have ceased but in respect of which the owner, agent, manager or permittee remains responsible for compliance with this Act (the <i>Mines Act</i>), the regulations, the code and that person’s obligations under the permit for that mine” - <i>Mines Act</i> , s 1, Definitions.

Closure	Planned for at all phases, a vital link and distinct phase in the entire process from permitting to reclamation.
Consultation	An informal and formal process. A legal duty of the Crown (see: Appendix 1a - Five Major Cases on pp 112 - 113). Should be maintained through the entire life of the mine. Communication, dialogue, and negotiation are the core elements of consultation.
Crown	Standard legal term for the government – Federal and / or Provincial. Officially means ‘Her Majesty the Queen in Right of Canada’.
Dam Safety Review (DSR)	The assessment process for assessing the safety of a dam or impoundment. Criteria from the Canadian Dam Association Safety Guidelines are used by the province of BC.
Deep Mine	Natural Resources Canada definition: <ul style="list-style-type: none"> • ore is extracted at depths greater than 1000 m, • encountering issues of increased ground pressures, such as seismicity and/or wall convergence, • encountering issues related to increased ambient temperatures. i.e. risk of heat stress in the workers.
Development	A distinct phase of mining occurring after exploration, feasibility studies, approvals, and financing are in place for a mine to go ahead and be built with the aim of production. Development is decided on one major point: projected profit based on the cost of mineral retrieval.
Diamond Drilling	Diamond-inset cutting heads on drill bits are used to extract cylinders of rock. Cylinders are cross-sections that reveal fairly precise indications of the composition of the material and the location of minerals.

Escheat	A legal term meaning when someone dies without heirs their property is left in 'limbo'. It reverts (escheats) to the government.
Exploration	A distinct phase of mining between prospecting and development. Encompasses preliminary & advanced exploration.
Feasibility Study (FS)	"A comprehensive technical and economic study of the selected development option for a mineral project ... results ... may serve as the basis for a final decision to proceed with, or finance, the development of the project. The confidence level ... higher than that of a Pre-Feasibility Study." - CIM definition.
Free Miner	Archaic term still used to describe the role of one who has obtained a permit to explore for minerals.
Free Miner Certificate	B.C. Permit allowing a person to stake and explore claims for a one-year period. (Cost \$25 as of 2015 - an 80% decrease since 1880).
Haul	General term for moving ore, waste rock, overburden, and soil. Has specific reference to the stage of moving the ore in underground mining.
Hoist	Term for moving ore from underground (lifting to the surface).
Hosting	Bodies of earth, rock, and ore that contain desired minerals.
Impoundment	Area built of earth to contain hazardous waste water and solids used in mineral processing at mine sites and processing facilities.
Indicator Elements	Elements that occur naturally in conjunction with desired minerals but ALSO CONTAIN traces of the desired element(s). Evidence that further exploration is warranted.
Induced Polarization (IP)	Geophysical exploration method that charges the ground with electric current. Current is read back and reveals indicator elements that hold electric charges (like sulphides and graphite).

Map Cell	The smallest map section on a mineral titles claim map.
Mineral	Inorganic element or compound with structure, chemical composition, and crystal form.
Mineral Reserve (The ‘mineral’)	The ‘mine-able’ part of a resource that has been economically demonstrated, measured and indicated by, at minimum, a Pre-Feasibility Study.
Mineral Reserve (The ‘area of land’)	In BC a reserve is established by a regulation of the Chief Gold Commissioner under section 22 of the <i>Mineral Tenure Act</i> or section 21 of the <i>Coal Act</i> . It is the legal instrument used to prevent or restrict access to mineral, placer, and coal lands.
Mineral Tenure	The legal system for obtaining rights to access and explore land for mineral exploration and exploitation.
Muck	Term for the rock broken out by blasting. ‘Mucking Out’ means moving or ‘Hauling’ the blasted debris out for processing or storage.
National Instrument 43-101	Canadian legislation (latest version enacted 30 June, 2011) sets out the “Standards of Disclosure for Mineral Projects” to certify (among other things) the results of the geological reports, and the credentials of the geologists.
Neutral Metal Leaching	Neutral-and-above pH (7-8) drainage. Can contain invisible toxic metals. Common to all mines including salt mines, coal mines, potash mines, etc.
Ore	The material containing the economically viable minerals.
Orphaned Mines	Abandoned mine(s) for which no owner can be located, or the owner is broke.

Pathfinder Elements	Trace elements that occur naturally near desired mineral deposit revealing a rough direction or proximity to the desired mineral(s).
PARL	Provincial Archaeological Record Library
Placer	Mineral deposits commonly showing in stream gravel and beach sand formed by separation during sedimentation.
Porphyry	Type of igneous rock showing quartz crystals.
Pre-Feasibility Study (PFS)	“A comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined.” - CIM definition.
Preliminary Economic Assessment (PEA)	A conceptual economic analysis of a project. A PEA is generally the first signal to the public that a mineral project has potential viability. A milestone in the evolution of any mineral project. Viewed by the market as important information. CANNOT be called a PFS or FS.
Production	A distinct phase of mining occurring after Development.
Proponent	Term for Prospector / Mining Company / Exploration Company / ... anyone who supports and /or undertakes mining activity. NOT the Crown.
RAAD	Remote Access to Archaeological Data
Reverse Circulation (RC) Drilling	Heavy duty Exploration performed by flushing a drill hole with water and pumping the water (with sample rock fragments) back to the surface for analysis. Generally considered messy and unreliable as the fragments are scattered and do not reveal pinpoint depth-analysis of minerals since they are scattered in a mass collection. Necessary in some situations.

Riprap	Rock piled along slopes to protect them from erosion and collapse.
Showings	Visible mineral deposits.
<i>sui generis</i>	Latin term meaning 'one of a kind' - used in Canadian law to try and describe the nature of Aboriginal rights and title in the eyes of colonial law.
Surface Mine (Open Pit or Placer)	Self-explanatory term for any mine above ground.
Target Elements	The desired minerals or elements that reveal with certainty the presence of the desired mineral(s).
<i>terra nullius</i>	Latin term meaning 'no man's land' - used to support the Doctrine of Discovery: the idea that North America was 'empty' upon 'discovery' by Europeans.
UTM (map reference)	Stands for 'Universal Transverse Mercator' - the map system developed by the U.S. Army in 1940 divides the earth into 60 zones of 6 degrees latitude each. An alternative to the Longitude / Latitude system, the UTM system uses Eastings and Northings as coordinates.
Underground Mine	Self explanatory term for any mine below ground.
Waste rock	Rocks that host, contain, or surround the deposit. Once the pile of waste rock reaches its limits for a particular area the waste rock can be re-contoured and reclaimed by adding soil and planting vegetation. Should be tested. May be acid-producing or not. If not, it may be laden with potential future acid-producing sulphides and must be monitored.

Credits

Writers & Reviewers

Author:	Glenn Grande, BA, BEd, JD	Editorial Review:	Tara Ammerlan, BSc Amy Crook, MSc
Contributors:	Tara Ammerlaan, BSc Amy Crook, MSc Anna Johnston, BA, JD Stan Tomandl, MA		Kelly Forbes, BA Ann Jacob, BEd Stan Tomandl, MA
First Nation Reviewer:	Fred John, ADC II, MMHPC I	Geology Review:	Kevin Morin, P. Geo.
		Academic Legal Review:	Professor Hamar Foster, QC, University of Victoria

Works Cited

PAGE	TEXT
8, 10, 44, 83	The phrases on these pages are the Seven Sacred Teachings of White Buffalo Calf-Woman. From: David Bouchard and Dr. Joseph Martin, <i>The Seven Sacred Teachings of White Buffalo Calf Woman</i> , (North Vancouver: More Than Words Publishers, 2009).
27-30, 71,74,75,	Descriptions of Exploration, Drilling, Sampling, Development, and Production from a study of the excellent resource: <i>Mineral and Mining Essentials</i> , by Robert Stevens, Pakawau GeoManagement Inc., 2010, Port Coquitlam, B.C.; www.miningessentials.com .
50	Minister Duncan quote: Indian and Northern Affairs Canada's Response to Environmental Petition No. 0304 regarding Federal Regulations concerning Canadian Mining Companies in Canada and Abroad.
61	'Notice of Work /Referral - Important Points' courtesy of Zachary Romano, University of British Columbia Law, Class of 2015.
100-103	Development and Production Checklists from the Province of New Brunswick Environmental <i>Management Manual for the Department of Transportation, New Brunswick Department of Transportation</i> , Fourth Edition, January 2010, pp 277-456.
108 & 112	Water and Soil Sampling techniques: Sue Moodie, <i>Mine Monitoring Manual - A Resource Guide for Community Members</i> , Yukon Conservation Society, June, 2001.
117 - 118	Cases courtesy the University of Toronto, Online: http://guides.library.utoronto.ca/aboriginallaw?hs=a . (no longer online).

Image Credits

PAGE	IMAGE
5, 76	Bear: http://www.campbellrivergrizzlybeartours.com/index.html ; (not credited).
8, 46, 49, 54, 59, 62, 81, 114, 121,125	Gavel image from http://tuftsobserver.org/2010/11/i-plead-the-tenth/ ; (not credited).
10	Eagle: http://www.radiope.com/eagle-wallpaper-hd.html ; (unaccredited) (defunct).
Cover, 11,14	Prospecting tools: http://riosuerte.com/ ; (unaccredited).
13	Placer Mine: Yukon Placer Mining Industry 2003-2006, by W.P. LeBarge and C.S. Welsh; http://emrlibrary.gov.yk.ca/ygs/yukon_placer_ind/03_06.pdf
13	Underground Mine: http://www.pashnit.com/roads/cal/Empire.ht ; (not credited).
13	Open Pit Coal Mine: http://en.wikipedia.org/wiki/File:Strip_coal_mining.jpg ; (not credited).
Cover, 14, 69	Production: floatation Tanks: http://www.vancouver.sun.com/business/2035/Timing+everything/6600604/story.html “Timing is everything”, Article by Scott Simpson, May 14, 2012 (photo not credited).
Cover, 14, 69	Development: Mining Equipment: http://www.maticanaiselenici.com/en/?page=read_news&id=13327 (defunct).
Cover, 14, 77	Closure: Old Mine Entrance: http://1vcm.tripod.com/id38.html ; (not credited).
18	Longhouse and Totem Pole: http://history30bordenschool.wikispaces.com/People+of+the+North+Woods (commons).
66	Stock Market Graph: tobaccopr.org (not credited).
68	Coyote: http://www.discover-southern-ontario.com/coyotes.html ; (not credited).
82	White Buffalo Calf Woman: Artist: Cher Lyn (used by special permission) http://www.mysticartmedicine.com/ .
105	Water splash: http://www.hdwallpaperspics.com/water-drop-pictures.html .

Some of the images are found on the World Wide Web, and their sources do not credit the specific source. The websites and publications they represent are accurate at time of publication. Some images are used by special permission of the artists. In all cases, the use of these images should not be construed as an endorsement of the *Mine Medicine Manual* by the artist, the website proprietor(s), or webmaster(s).



omnia infra et supra

ISBN 978-0-9921509-0-7