

**SUBJECT: Drill Core and Materials  
Storage Facility Policy**



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## 1.0 Policy Section

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### 1.1 General Policy

It is the policy of the Department of Natural Resources (DNR) to encourage mineral exploration in the province and to generally protect the interests of existing mineral right holders.

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### 1.2 Policy Statement

The DNR will catalogue and store core, bore hole cuttings and other related samples from exploration and mining programs conducted in the province at repositories located in Sussex, Fredericton, and Madran (and at such other localities on a temporary basis as required), in accordance with this policy.

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### 1.3 Policy Objectives

Drill core, bore hole cuttings and related samples have a high monetary and scientific value and should be retained whenever possible, but a compromise has to be reached between the value of these materials and the expense of constructing new storage at storage facilities. Since existing facilities are now essentially filled to capacity, and future storage space, if constructed, would eventually be filled, it is necessary that this policy, in effect:

- limits the Division's future storage requirements (i.e., future storage facility construction),
  - sets conditions for accepting, storing and preserving representative drill core, cuttings and other related samples for future use,
  - provides guidelines for abbreviating or discarding present and future drill core holdings, and
  - addresses usage protocols and safety issues related to utilization of storage facilities.
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### 1.4 Background

Data obtained from drill and bore holes are used for subsurface bedrock orientation information, to obtain samples for chemical analyses, for estimation of the size, quality and value of the deposit, and for obtaining samples for processing or metallurgical assessment, porosity studies, etc.

Drilling is also very useful because the drill retrieves continuous core or chips of rock as it bores into the earth's crust and is a permanent record of the rock attributes of the crust at that site, and is a relatively expensive means of delineating resources.

Retaining cored materials in storage facilities thus obtained is therefore, a cost effective means whereby the Province can maintain records of past exploration work and make these materials available for future use.

In the early 1960s the Geological Surveys Branch, of the Department of Natural Resources, began a modest program to store drill core at the Bathurst Regional Office and in Fredericton. With the signing of the first Federal-

Provincial Mineral Development Agreement in 1970, funds were made available to construct a storage facility in Madran to house the core previously stored in Bathurst.

Since then, other buildings have been constructed to store materials in Sussex and Fredericton. These storage facilities are very well utilized by industry and government geologists. Additional information regarding mineral and hydrocarbon exploration in New Brunswick can be found in Attachment A.

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## 2.0 General Scope and Application Section

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**2.1 Policy Scope and Authority** To assist in the implementation of this policy, the Minerals, Policy and Planning Division shall assign drill core managers to supervise and coordinate activities at the Madran, Sussex and Fredericton storage facilities. The drill core manager and division directors are to ensure compliance with this policy.

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**2.2 Policy Application** This policy applies to all drill core, bore hole cuttings and related samples resulting from mineral and hydrocarbon exploration and any other such material that may be obtained on an ad hoc basis.

This policy also applies to users of the storage facilities by the public and private sectors.

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**2.3 Legislative References**

1. Section 65 of the *Mining Act*, provides that:  
*“subject to subsection 66(3), no person shall abandon, discard, dump, destroy, or otherwise reduce the original technical value of any drill core or cuttings obtained by surface or underground drilling for the purpose of searching for minerals or mineral-bearing substances except for those sections submitted for assaying or testing, or for microscopic, metallurgical or beneficiation studies without the permission of the Recorder.”*

2. Subsection 66(1) of the *Mining Act* provides that:  
*“any person intending to abandon, discard, dump, destroy or otherwise reduce the original technical value of any drill core or cuttings obtained by drilling as referred to in section 64 and in their possession or lodged with them for safe-keeping, other than as authorized in section 65, shall notify the Recorder of that intention and upon receipt of the notification the Recorder shall:*

- a) Provide the person with permission in accordance with section 65;*
- b) Take possession of the drill core or cuttings for the Crown; or*
- c) Log the drill core or cuttings and provide that person with permission in accordance with section 65.*

3. Draft Drilling and Production Regulations under the *Petroleum Act (Oil and Natural Gas Act)*, once in force, will provide that:

1. (a) At each successive 3 metres, a well licensee shall take a sample of drill cuttings representative of the rock drilled in that 3-metre interval.

(b) The 3-metre sample interval described in (a) may be varied if specified by the Minister in the well licence.

(c) The drill cuttings taken under subsection (a) or (b) shall be placed in cloth bags with waterproof labeling specifying the well name and the depth at which the sample was taken.

(d) The well licensee shall:

(i) wash, dry and preserve a portion of the samples of drill cuttings referred to in subsection (3) in transparent vials arranged in lidded trays in consecutive order;

(ii) accurately label each vial with the well name and the depth at which the sample was taken;

(iii) dry the remainder of the samples in the cloth bags and place the cloth bags in sacks, each sack

containing 50 bags corresponding to successive drilled intervals, labeled with the well name and the drilled interval; and

(iv) deliver the trays and sacks of cuttings, at the expense of the well licensee, within 1 month after the finished drilling date of the well, to a place designated by the Minister.

(e) Where the well licensee takes samples of drill cuttings at an interval of other than 3 metres those samples shall be labeled, placed in vials and otherwise treated in the same manner as those otherwise taken at 3-metre intervals.

2. (a) The Minister may, where he considers it necessary for proper well evaluation, direct a well licensee to core a specific interval in a well.

(b) Unless otherwise directed by the Minister, a well licensee may remove and retain, from any core recovered, one longitudinal slab no thicker than the lesser of 25 millimetres or one-half the thickness of the core.

(c) A well licensee shall, with respect to any core recovered or the part of the core remaining after the removal of a slab in accordance with subsection (b), place the core in a wooden or cardboard core box which has

(i) sides which project above the level of the contained core;

(ii) a lid which can be securely fixed to ensure safe travel; and

(iii) an inside length of 76 centimetres.

3. (a) A well licensee shall label each core box and lid with

(i) the well name;

(ii) the depth interval of the core recovery; and

(iii) the date of coring.

(b) A well licensee shall forward each lidded core box, at its expense, within 1 month after the finished drilling date of the well, to a place designated by the Minister.

(c) Where a core is received by the Minister in an unsuitable container, the core may be re-boxed by the Minister at the expense of the well licensee.

(d) A well licensee shall supply the Minister within 1 month after the completion

of a core analysis with a copy of the report of the analysis, including the normal measurements of porosity, permeability and fluid saturation.

(e) A well licensee shall supply the Minister within 6 months after the completion of a core analysis with a copy of reports of measurements pertaining to the estimation of reserves of oil, natural gas or bitumen, or potential recovery method.

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## 3.0 Definitions Section

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**3.1 Core** “core” means samples obtained by diamond drilling.

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**3.2 Cuttings** “cuttings” means chips and small fragments of rocks brought to the surface by flow of the drilling fluid as it is circulated during drilling.

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**3.3 Related Samples** “related samples” means coarse rejects from sampled core or powders from analyses of these rejects.

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**3.4 Materials** “materials” refers to core, cuttings and related samples.

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**3.5 Designated Official** “designated official” means the Regional Geologist, his designate or the Drill Core Manager.

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## 4.0 Procedures Section

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### 4.1 Conditions for Accepting, Storing and Sampling Materials

**4.1.1 Determination by Senior Staff** It is incumbent upon the Director of the Minerals and Petroleum Development Branch or his designate to ensure that the person or well license licensee complies with the requirements of section 2.3 of this policy. Upon completion of the submission form (in the case of materials that fall under the *Oil and Natural Gas Act*) and receipt of the materials, the responsibility for the materials is on the Director of the Geological Surveys Branch or his designate.

The Regional Geologist will determine if the materials should be accepted. If warranted and the owner is agreeable, arrangements should be made to ship the materials to the nearest storage facility. Assessment credit will be allowed for transportation if the Regional Geologist accepts the materials.

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**4.1.2  
Unacceptable  
Materials**

Materials will not be accepted if they are:

- not accompanied by a location map;
  - not accompanied by the Drill Core and Cuttings Submission Form (in the case of materials that fall under the *Oil and Natural Gas Act*);
  - highly deteriorated or depleted;
  - not properly labelled;
  - from an area where the Minerals, Policy and Planning Division already has representative material in storage; or
  - is not deemed necessary as a contribution to the provinces' database.
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**4.1.3 Storage  
Priority**

Materials will receive storage priority if they:

- are from a deep stratigraphic test hole;
  - contain important structural, paleontological, mineralogical, environmental or other unique features;
  - will replace existing stored materials of inferior quality; or
  - come from an area where the Division has no representative materials already in storage.
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**4.1.4 Storage  
Facility**

A catalogue and location maps, in digital and/or hard copy formats, will be maintained in Fredericton, Sussex and Bathurst concerning the materials being recorded. When possible, this information will include the:

- name of the donor;
  - field location of the hole (NTS block, latitude and longitude);
  - date the hole was drilled and date material was submitted;
  - hole codes (i.e., box label);
  - logs, assays and other available information, plus locations where other pertinent information can be found;
  - abbreviation details;
  - elevation of collar;
  - depth of hole;
  - depth of overburden; and
  - location at storage site.
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**4.1.5  
Confidentiality**

If requested, material from new drill holes will be considered confidential for a limit of 2 years in the case of commodities relevant to the *Mining Act*. The period of confidentiality will be the same as the Report of Work filed by the company that contains the drill hole information. In the case of commodities relevant to the *Oil and Natural Gas Act*, confidentiality will be for a period of 1 year following the rig release date.

For drill core, confidentiality will be considered only if the core boxes are covered and nailed shut or otherwise secured by the organization submitting the core. However, due to the nature of the storage facilities (unsecured inside and outside storage), confidentiality cannot be guaranteed. If mineral rights to a property are dropped, the materials will no longer be considered

confidential.

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**4.1.6 Chemical and Physical Testing**

A designated official, who receives an application in writing, will make a portion of materials kept at a storage facility available for chemical and physical testing providing the material is not confidential.

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**4.1.7 Availability and Access to Materials and the Storage Facility**

Access to the storage facilities and to materials will be at the discretion of the designated official and shall not be refused without just cause. Access may be provided during normal working hours and/or after working hours.

A designated official shall decide what portion of any stored material may be made available for sampling. This will depend on the density of information (e.g., the number of holes drilled) in the area from which material is stored and the condition of the material. Core will be split on site within the core storage premises and by saw only (quarter or half). Quartering of core will not be encouraged and done so only when absolutely necessary.

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**4.1.8 Commitment to Mineral Right Holders**

If the material is from a property that someone else is currently holding, the application in writing must contain a commitment to provide all results of any tests, within 30 days of receiving said results, to the registered holder(s) of any mineral right(s) in good standing which encompass the source(s) of the material.

Copies of letters informing these registered holders must accompany the application. Their approval however, is not required, providing the confidentiality period has expired.

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**4.1.9 Test Results and Analyses**

If material is tested or analyzed by:

- a government department or agency, the affected holders of the mineral rights from which the materials originated will be notified in advance by a designated official and will receive copies of test results as above from the designated official.
- non-government workers, copies of all test results or analyses as well as remaining portions of sample material must be properly labeled and submitted to the designated official within one year of receiving approval to take samples, and in digital form if possible.

The test results or analyses will not be considered confidential unless a request is made in writing to the Regional Geologist by the sampler and/or the registered holder(s) of any mineral right(s) in good standing which encompass the source(s) of the material. The decision to treat the test results or analyses as confidential will be at the discretion of the Regional Geologist.

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## 4.2 Conditions for Discarding Stored Cores

**4.2.1 General Requirements** Deposits which have the most representative material in storage and that have been studied in detail by the Geological Surveys Branch will be given first priority for discarding.

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**4.2.2 Requirement to Examine Materials** All materials to be discarded shall be reviewed by the Regional Geologist or his or her designate before discarding. Ideally, in the case of core, it should be relogged and sampled by a staff member, put in a stratigraphic context and a report on the work published.

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**4.2.3 Core Retention Procedures** The DNR staff member assigned to the disposal of core shall:

- keep a fence (cross-section) or several fences of holes to provide a longitudinal picture;
- discard complete holes, i.e., do not abbreviate holes except in certain cases such as massive sulphide intersections;
- photograph (digitally) core to be discarded (this is optional, depending on the cost benefit of digital images);
- keep the representative core that is in the best condition (whole core has priority over split core and sawn core has priority over broken core); and
- select core depending on the reliability of the hole location data.

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**4.2.4 Core Disposal and Notification** The DNR staff member assigned to the disposal of core shall:

- notify any current holder(s) of mineral rights 30 days prior to cores being discarded;
- ensure that an up-to-date list of core being discarded is maintained; and
- dispose of any hazardous (acid-generating, etc.) core in an environmentally responsible manner.

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## 4.3 Conditions for Access to and Use of Storage Facilities

**4.3.1 Access Protocol** Non-departmental visitors shall:

- Receive permission from the Regional Geologist or his or her designate to gain access to the storage facilities;
- be accompanied by an authorized DNR staff member on the first visit;
- receive instruction on the use of equipment within the storage facility and adhere to the "Storage Facility Safety Procedures" as outlined in Appendix B;
- in the case of the storage facilities in Fredericton and Sussex, not be permitted to work alone after normal working hours, and
- in the case of the Madran storage facility, not be permitted to work alone at any time unless a DNR staff member is on site.

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## 5.0 References Section

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- [\*Mining Act.\*](#)
  - [\*Oil and Natural Gas Act – Draft Drilling and Production Regulation.\*](#)
  - [\*DNR Safety Policy \(HRS-005-2002\).\*](#)
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## 6.0 Inquiries Section

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**6.1 Minerals Deposits Section**      Department staff may direct inquiries specific to the interpretation of this Policy to the Mineral Deposits Section of the Geological Surveys Branch, Minerals, Policy and Planning Division, DNR. (506) 453-2206.

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## 7.0 Attachments Section

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Attachment A: Mineral and Hydrocarbon Exploration in New Brunswick.  
Attachment B: Storage Facility Safety Procedures.

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## **Attachment A - *Mineral and Hydrocarbon Exploration in New Brunswick.***

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Mineral and hydrocarbon exploration is an essential component of a healthy mineral and hydrocarbon industry, because the only way to sustain non-renewable production is to discover new deposits to replace existing inventories. Basically, exploration involves the search for useful resources or deposits in the earth's crust that can be profitably exploited. These resources may be metallic or non-metallic and include such commodities as zinc, lead, copper, tin, nickel, gold, silver and platinum, or salt, potash, magnesium, titanium, hydrocarbons, aggregate, sand and gravel.

The search is conducted by large and small exploration companies and syndicates, prospectors and government geologists. It is now well established that certain types of deposits may be indicated in particular geological environments and found as a result of base-line geological work such as prospecting, geological mapping, geochemical surveys and geophysical programs. These are generally important initial steps in locating economic mineral and hydrocarbon resources.

Succeeding steps in exploration schemes utilize these methodologies and are designed to follow up larger scale geological clues, and focus attention on smaller and smaller areas until specific targets are recognized. Once these targets have been identified, they have to be assessed by drilling.

## **Attachment B – Storage Facility Safety Procedures.**

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### **Section 1 – Introduction (General Safety Overview)**

Safe work practices are required both to prevent accidents and to keep losses to a minimum when accidents do occur. Most accidents are caused by the failure to recognize potentially hazardous situations and to take appropriate preventative measures.

All employees should be thoroughly familiar with and ensure that they and their co-workers observe safe work practices. It is important that they are properly trained in the recognition of hazards associated with the workplace.

In general, safe work practices include being fully aware of hazards in the workplace, including hazardous materials identified through the WHMIS (Workplace Hazardous Materials Information System) program, having the proper training to deal with accidents when they occur, and possessing and using the proper equipment including Personal Protective Equipment (PPE), appropriate to the job and the associated hazards.

This procedure has been prepared as a guide to safe work practices for employees of the Department of Natural Resources and visitors to storage facilities. It is intended to highlight safe work practices in workplace situations commonly encountered by our staff and visitors and it incorporates, where appropriate, statements of safe practice standards that are expected of all employees and visitors. Its provisions are important to all, but particularly to workers who are new to our work environment. It must not be assumed that any hazard is obvious, or that any safety procedure is necessarily self-evident. All employees are expected to read and be familiar with these procedures and to take responsibility for their safety and that of workers and visitors.

### **Section 2 – Responsibility for Safety (General)**

#### 2a. Introduction

The *Occupational Health and Safety Act* provides all workplace parties with three basic rights.

They are:

- the right to know – you are entitled to information on issues that affect your health and safety or that of another person in the workplace.
- the right to refuse – you have the right to refuse unsafe or unhealthy work.
- the right to participate – you can participate in health and safety committees, report unsafe conditions and voice your concerns or opinions on any issue that affects your health and safety or that of the workplace.

Sharing responsibility for health and safety in the workplace implies a responsibility to take every reasonable precaution necessary to prevent accidents. All employees have responsibilities in this regard, as described in the *Occupational Health and Safety Act*. These responsibilities are summarized in the following sections.

## 2b. Senior Management

The responsibilities of senior management are to:

- ensure that their workers, particularly supervisors, are familiar with the proper use of all devices, equipment and clothing required for their protection;
- ensure compliance with the *Occupational Health and Safety Act*;
- consult and cooperate with the Occupational Health and Safety Committee;
- provide the necessary training to committee members as required; and
- establish a written safety policy and safety program which must be made available to the Occupational Health and Safety Committee or a worker upon request.

## 2c. Managers and Supervisors

The responsibilities of managers and supervisors are to:

- provide safe working conditions for all workers under their supervision;
- correct any unsafe conditions or stop the work until safe conditions are restored;
- inform employees of the hazards on the job and how to avoid them;
- maintain a house-keeping standard and assign definite responsibilities to individuals to meet these standards;
- enforce safety regulations, policies and work methods and take disciplinary action as necessary to ensure compliance, ensure all Personal Protective Equipment (PPE) is used as required to safely carry out the work;
- meet regularly with workers to ensure all problems are adequately addressed and workers concerns are dealt with;
- investigate and report to senior management all accidents, incidents and near-misses to determine underlying causes and take prompt corrective action to prevent recurrence; and
- provide ongoing safety education programs.

## **Section 3 – Personal Safety Precautions**

Visitors, including DNR staff not directly assigned to the storage facilities, must check in with a designated official on every visit (daily) before accessing any material, before using any equipment, or before entering any of the storage facilities.

### 3a. Visitors to the Storage Facilities

Mandatory requirements for visitors to a storage facility:

- obtain emergency contact telephone numbers from a designated official;
- do not handle or operate equipment for which you have not been trained;
- check with a designated official to ensure equipment is in proper working order before use;
- wear proper head protection in all storage areas where overhead hazards exist;
- wear proper foot protection (except for purely office visits) while in the laboratory, storage and other operational areas of the storage facility;
- wear eye protection when using rock saws, core splitters, rock drills or breakers, or when you are in the close vicinity of any of this equipment while it is in use;
- wear ear protection when using or when in the vicinity of noise-generating equipment;
- wear hand protection (gloves recommended) when handling core boxes, pallets, storage containers, large samples, and other rough or sharp objects; and

- do not overload equipment, especially fork lifts.

### 3b. DNR Staff

- safe working procedures for visitors outlined in 3a. also apply to DNR staff;
- safe working procedures applicable to storage facilities are to be followed as applicable at field operational sites;
- all materials and equipment carried by truck or trailer are to be made secure to prevent movement or loss; and
- any unstrapped pallet load must be made stable before transportation or storage and extreme care must be taken to avoid spillage of any part of the load.

## **Section 4 – Procedures for Safe Use of Equipment (DNR Staff and Visitors)**

### 4a. Machinery

- all first-time users must receive instruction on the safe operation of machinery (e.g., rock saws, core splitters, fork lifts) from a trained designated official;
- if unfamiliar with the equipment, seek further advice and instruction from experienced personnel;
- PPE for hearing and eye protection is required at all times;
- wear a surgical mask or other breathing filter to avoid breathing rock saw dust;
- do not use equipment that does not appear to be in good working order; and
- report equipment defects immediately to a designated official.