

2.0 The Excellence in Environmental Stewardship e-toolkit Good Practice Guidelines



Figure 2: Explorationists love and respect the beauty of where we work, from the Arctic to the jungles of Brazil in this case. Adhering to the best practices in EES will help preserve this beauty. © Noranda/Falconbridge

The Excellence in Environmental Stewardship (EES) e-toolkit is a comprehensive and up-to-date on-line resource for environmentally and responsible exploration practices and issues. Throughout the e-toolkit, emphasis is placed upon planning for avoidance of adverse impacts wherever possible. Taking account of the potential impacts before initiating an exploration program helps to ensure that exploration professionals leave as light a footprint as possible during their work.

EES e-toolkit is designed to provide guidelines to current professional practices, not prescriptive solutions to specific issues. The e-toolkit can, however, form the basis for individuals and companies to set up more detailed guidelines for their own activities. EES includes information on measures and practical options to minimize the environmental impact of exploration, anywhere in the world.

In addition, the EES e-toolkit contains high level discussion and guidelines for responsible community engagement, recognizing that companies must be prepared to earn their "social license to operate" any new mine, or even to undertake an exploration program.

The information in the e-toolkit has been drawn from company files, and from many other sources of practice guidelines. These sources are documented in the **Acknowledgements** section.

Before examining this e-toolkit, please read the two sections that follow this page. The first is an **Introduction** to the EES e-toolkit project, which sets out the background and structure of the e-toolkit and explains how it was put together. The second is a section on **Management**

Essentials, which presents many of the areas of current management practice of which one should be aware before commencing an exploration program.

An abbreviated version of the **Management Essentials** section is presented in each of the activities, under the title **Planning Needs**. It gives a "broad brush" view of the issues dealt with in detail in the introductory section, but does not serve as a substitute.

2.1 Introduction

The prime objective of EES e-toolkit is to improve environmental stewardship in exploration. It is designed to achieve this by presenting a compilation of current professional practices in the exploration industry, derived from measures that are known to work and to be cost-effective.

Most companies and individuals are conscious of the need for proper environmental stewardship in exploration. EES e-toolkit gives access to a compilation of current professional practices so that you can carry out your programs with the least adverse impact on the environment and local communities. You will minimize your reclamation costs if you incorporate these guidelines into your initial program design.

Poor environmental performance and failure to deal properly with the needs of local communities will not only harm you, but also the reputation of the industry at large. It is very important that the industry maintain its access to lands for exploration in order to enable the discoveries that are its lifeblood. If the mining industry allows exploration work to damage either the environment or local communities and does not remediate that damage, it will not retain the access required for long-term growth.

As comprehensive and practical as the content of the EES e-toolkit is, its value can truly be recognized when the information and recommendations it contains are put into practice. This e-toolkit is set out in a format to allow information relevant to your program to be accessed simply and rapidly.

The subsections that follow explain in greater detail what EES e-toolkit is all about and how to use it. They also give some background on the experience of the people who put it together and discuss the audiences for which it was prepared.

2.1.1 History

EES was previously known as e3 Environmental Excellence in Exploration, which was launched in 2003. EES e-manual was set in motion by the collective realization by a number of mining companies that the standards of worldwide environmental practice in the exploration phase of work needed to be raised. Although many companies and individuals already reach high standards of environmental stewardship, there are some that do not. It is important that those not performing to a high standard be encouraged to improve their practice to acceptable levels. Poor behaviour in the environmental area, by any exploration operator, gives the industry a bad name and has the potential to severely restrict access to lands for exploration.

The concerned companies offered to supply their own environmental practices to an industry association with an international scope and the ability to assemble these practices into an accessible format for all interested parties to use. The Prospectors and Developers Association of Canada accepted an invitation to coordinate and manage this initiative on a non-profit basis. The result was the Environmental Excellence in Exploration (e3) e-manual. The Web site was launched in March 2003 on a paid subscription basis. Thanks to the generous support of

sponsors and the very positive support of subscribers during the first year of operation, the Web site became freely accessible in March 2004.

In March 2008; the PDAC engaged in a broadly based consultation process to develop e3 Plus a Framework for Responsible Exploration and the PDAC's corporate social responsibility (CSR) committee assumed responsibility for the project. The new Framework builds on the original e3 by expanding the focus on environmental issues to include new components that facilitate responsible exploration. The acronym e3 stands for excellence in three ways: social responsibility, environmental stewardship, and health and safety. The 'Plus' indicates a significant expansion of the original e3 program, primarily in the areas of social responsibility and health and safety.



Figure 3 EES will provide explorationists with environmental best practices for work anywhere in the world. © Noranda/Falconbridge

2.1.2 Purpose

The purpose of EES e-toolkit is to provide cost-effective, technically sound, and internationally acceptable practices for enhancing environmental performance in mineral exploration. Our goal is to foster the transfer of knowledge and technology to all stakeholders, and therefore promote good practices and continuous improvement in environmental stewardship in the exploration and mining industry.

Use of these practices will result in improved environmental performance. It will also help to preserve access to lands for future exploration and the development of new mines, thus ensuring the long-term sustainability of the mining industry.

2.1.3 Layout of EES Web Site

Following the EES e-toolkit **Professional Practice Guidelines** section, the layout of the technical content of the EES e-toolkit web site contains **ten issues**, which are:

- Planning Needs
- Land Disturbance
- Site Management

- Air Management
- Fish and Wildlife Management
- Water Use and Conservation
- Hazardous Material
- Spill Management
- Waste Management
- Reclamation and Closure

These issues could be assembled by relevant information on six activities. These activities, include:

- Land Acquisition
- Surveys
- Access
- Camp and Associated Facilities
- Stripping and Trenching
- Drilling

EES e-toolkit is organized by issues, because many of these issues are common to several activities, and to avoid duplication of information between activities. If you are specifically interested in a particular activity (e.g., Drilling) you will have access to each issue that you need for planning and carrying out that activity.

For any issue that you undertake, you can access specific information in this e-toolkit, and extract what you need, directly from the Web site (by printing the documents in PDF format).

Whatever delivery method you choose, you need to apply the recommended practices in order for EES e-toolkit to have any chance of success. There is **Contact Us** button on the Web site if you require assistance.

Table 1: Relationship between Issues and Activities

Activity	Land Acquisition	Surveys	Access	Camp	Stripping and Trenching	Drilling
Issues						
Planning Needs	Useful	Useful	Useful	Useful	Useful	Useful
Land Disturbance	Useful	Useful	Critical	Critical	Critical	Critical
Site Management	Useful	Useful	Critical	Critical	Critical	Critical
Air Management	Useful	Useful	Critical	Useful	Critical	Critical
Water Use and Conservation	Useful	Useful	Critical	Useful	Critical	Critical
Fish and Wildlife	Useful	Useful	Critical	Critical	Critical	Critical
Hazardous Materials	Useful	Useful	Critical	Critical	Useful	Critical
Spill Management	Useful	Useful	Critical	Critical	Critical	Critical
Waste management	Useful	Useful	Critical	Critical	Critical	Critical
Reclamation and closure	Useful	Useful	Critical	Critical	Critical	Critical
Check List			Critical	Critical	Critical	Critical
Case Histories	Critical	Critical	Critical	Critical	Critical	Critical

Importance Level
 Critical
 Important
 Useful

2.1.4 Scope

Most producing companies have established procedures for environmental practice in and around operating mines. Many of these are also applicable to the most advanced stages of exploration such as large-scale bulk sampling, underground exploration, and pilot plant testing. At the more advanced stages of exploration, government regulations can become very detailed and prescriptive; EES e-toolkit does not cover these.

EES e-toolkit is designed, not to overlap with the operating procedures discussed above, but to complement them by emphasizing sound environmental practices from the earliest stages of the exploration process. The current version of EES e-toolkit offers guidelines in these areas for exploration activities that would normally lead to the outlining of a mineral resource on a property.

Mineral reserve definition and large-scale bulk sampling are not in the scope of this version, but may be included in later versions of the e-toolkit.



Figure 4: EES covers all exploration activities from land acquisition through drilling. © Noranda/Falconbridge

2.1.5 Compilation and Editing

The EES e-toolkit has been compiled and edited from information obtained from companies, government agencies, and individuals. Two teams of volunteers worked to construct the EES e-toolkit, under the direction of a full-time Project Manager.

The EES e-toolkit Technical Committee, which compiled and edited this information, was composed of individual geoscientists seconded from their companies to help with this task or, in one case, retained to complete particular portions of the e-toolkit. All eight individuals are involved either in exploration or environmental practice.

Cumulatively, they represent over 200 years of exploration and environmental experience on most of the continents of the world, and they bring to EES e-toolkit a wealth of practical knowledge and perspective.

The EES e-toolkit Editing Committee was composed of ten people selected for the variety of their backgrounds and experience. Each of these brought their own perspective to the editing process, and the result of their review is the e-toolkit that you see here.

The guidelines outlined in this e-toolkit are designed to be practical and effective rather than prescriptive and theoretical. The work of both of these committees and the Project Manager has ensured that these guidelines are internally consistent and that, to the extent possible with a number of different authors, they read as a coherent document.

Currently, the EES e-toolkit is guided by a volunteer EES e-toolkit Committee of exploration professionals and managed by the Director, Sustainable Development, who is on the staff of the PDAC.

2.1.6 Intended Audience

EES is written primarily with the needs of mineral explorationists in mind, and is addressed to them. However, it can be relevant and useful to other audiences, which may include:

- Management in mining companies
- Prospectors
- Consultants, contractors, and others in environmental management
- Mining and environmentally-related governmental agencies
- Non-governmental organizations (NGOs)
- First Nations/ Aboriginal /Indigenous peoples
- Local communities affected by exploration activities
- Environmental Management System auditors
- University/College environmental courses/curriculum
- Professional development courses

It is also expected that EES e-toolkit will be of interest to other, non-mining related groups involved in activities on "the land" and in a position to create environmental impacts. These activities could include:

- Oil and gas exploration
- Pipeline operations
- Forestry activities
- Military exercises
- Hydroelectric developments
- Hydroelectric transmission corridors
- Recreational developments (e.g. ski resorts)
- Generalized access development (e.g. roads to resources)

There is an increasing demand around the world for geoscientists to be registered as professionals, and this carries with it a corresponding liability for actions taken. Although most geologists have always accepted responsibility for their actions and inactions, today they have much more personal, as well as professional, involvement and responsibility.

By virtue of being the first "on the ground", explorationists are corporate ambassadors. There is only one chance to make a good first impression. Therefore, members of the mining industry must work together to improve their knowledge and share practical cost-effective solutions. It is critical to ensure that those involved in exploration, and those potentially affected by exploration activities, have a transparent and common understanding of current environmental practices. (See e3 Plus Community Engagement section in Excellence for Social Responsibility e-toolkit).

We must then integrate these practices into the planning and execution of our exploration programs. Ultimately, the geologist in the field is the only person who can demonstrate, by his or her conduct, that this industry is respectful of its responsibilities to both the environment and the communities it encounters.



Figure 5: EES is a highly significant tool for planning exploration anywhere in the world. © Noranda/Falconbridge

2.1.7 The Future

The e EES e-toolkit project is designed to be a "living" document. The PDAC has committed to keep the EES e-toolkit updated to ensure that it remains current and relevant.

As the science and technology associated with environmental protection and remediation evolve, improvements in techniques and practices are to be expected. It is hoped that EES will be recognized as the leading vehicle for the dissemination of this knowledge so that it can continually "raise the bar" of environmental performance.

In this light, you are encouraged to use the **Contact Us** button and give suggestions from your own experience, anywhere in the world, for improvements or corrections to the practices outlined. Any such comments will be evaluated for potential inclusion in the e-toolkit. To a large extent, EES e-toolkit will only be as good as the people using it and contributing to it.

We would suggest that you encourage your peers to register as EES users. They can visit the PDAC e3 Plus site to register at www.pdac.ca/e3plus/

2.2 Management Essentials

Even though early-stage exploration generally leaves a small footprint, companies are encouraged to use the professional practices in EES e-toolkit and to establish sound environmental policies for exploration activities.

In its early stages, exploration generally has a low environmental impact. Since the odds of discovery are low, initial exploration activity is typically brief. Consequently, the need for reclamation may be modest and it is possible to remediate a disturbance quickly. As exploration becomes more advanced, the impacts increase correspondingly, as do the requirements for effective mitigation.

EES e-toolkit encourages a proactive approach to the issue of environmental impact; to avoid adverse effects wherever possible or, where that is not possible, to mitigate them effectively at

the least cost. Exploration professionals should include estimates of environmental and socioeconomic costs in any exploration program as well as the direct cost of carrying out a particular activity.

EES e-toolkit's proactive approach is embodied in the [Management Essentials](#) section, which provides the explorationist with guidelines on how to prepare, conduct, and complete exploration activities in a responsible and transparent manner. Proper planning is essential and can result in a lessening of impact. Utilizing new technology may result in reduced reclamation costs. For instance, the wider application of lightweight portable drills in the initial evaluation of prospects has enabled companies to substantially reduce the impact of their activities. Proper planning and execution help to drive continuous improvements, resulting in enhanced environmental performance and lower total costs of exploration.

It is strongly recommended that each exploration entity establish environmental policies, and identify a senior staff member to be responsible for their implementation. This person should report to the President or Board, and be given sufficient resources to meet his or her responsibilities.

The subsections that follow encourage careful thought and planning in regard to a number of issues likely to be encountered in the field. Most of these can be considered as fundamentals of good exploration management, and should be incorporated into any planning.



Figure 6: Even though early stage exploration generally leaves a small footprint; companies are encouraged to use the best practices in EES and to establish sound environmental policies for exploration activities. © PDAC.

2.2.1 Exploration Code of Conduct

Most companies develop a formal corporate "Code of Conduct" to govern how they operate their business. All exploration personnel should be familiar with the company's Code of Conduct, and exploration activities should be consistent, and aligned, with its requirements at all times.

In exploration, it is important to develop, and abide by, what amounts to an exploration code of conduct. Basically, this means that it must be a priority to act responsibly toward the environment and local communities. Failure to adhere to such a code will not only damage the company or entity responsible for it, but may also adversely affect the mining industry as a whole.

In today's business climate, a company needs to earn a "social license to operate" in any area where it wishes to explore and develop a mine. Steps to earn that "social license" start with the initial exploration activities in an area.

Focusing upon environmentally sound conduct at the earliest stages of a project will maximize the chances of earning a "social license to operate" for either the company or a successor who develops the property.

In general, proper environmental conduct consists of:

- Addressing environmental challenges
- Complying with the relevant mining and other pertinent legislation, and
- Accepting and discharging corporate responsibility

Always attempt to minimize adverse impacts on the environment.

Where sites have been disturbed, try to return them to their pre-existing condition, where which is practicable. If communities have been affected, they should be left with a net benefit from any exploration activities.

2.2.2 Environmental Challenges

When entering an area for the purpose of mineral exploration, a company faces environmental challenges in addition to those of the exploration process itself.

Environmental challenges are dealt with by the application of technical expertise and resources, and can usually be resolved by professionals working within their areas of practice. Successful solutions require the application of good practices, open communication regarding activities and plans, and documentation of results.

2.2.3 Legislation and Permitting

Legislation pertaining to exploration varies considerably with each jurisdiction. Because of the variability and the frequent changes, EES e-toolkit makes no attempt to list or catalogue government legislation. However, the e-toolkit does incorporate some examples of practice from existing legislation because these represent good guidelines.

Before commencing exploration:

- Become familiar with the relevant and applicable legislation.
- Be aware of the legal system under which the company will be operating.
- Ensure that all required permits are obtained in a timely manner.

Assign a person to be responsible for identifying and communicating all applicable requirements. For ongoing exploration programs, consider implementing a compliance audit program.

Legislation

Exploration programs must comply with applicable legislation. Many activities (e.g., fuel handling, explosives storage) and practices employed to minimize environmental impact are mandated by legislation and overseen by regulatory agencies.

Mining Acts and other legislation generally confer rights of ownership or access to mineral lands. Local communities do not always understand the implications of these Acts to their local area. Land ownership can be a complicated issue in some parts of the world, especially in areas where Aboriginal people and communal land are involved.

In some cases, legislation can hold companies responsible for the acts of former owners or lessees. It is the company's responsibility to determine whether or not such liabilities apply. This issue is dealt with in more detail in the Due Diligence section that follows.

Common Law versus Civil Code

Study the legal system that is in effect in the country of operation. In particular, recognize that:

- Countries that operate under the Common Law system (e.g., Canada, USA, and Australia) have a completely different way of administering land tenure and mining rights than countries that use the Civil Code (e.g., French West Africa, countries in Latin America).
- Some countries (e.g., Botswana, the Philippines) have a mixed Common Law/Civil Code system, and there are other countries that have mixtures of Common, Civil, Customary, and Islamic law.

It is critically important to recognize and plan for these legal differences from the beginning of a project.

Permitting

Typically, permits are required for exploration activities such as drilling, camp construction, or access to the land. These must be obtained in a timely manner before the project commences.

These permits may also include:

- Plans for closure
- Removal of equipment and buildings used in the program

Follow the axiom: take out what was brought in (unless there is a very good reason for not doing so, such as future use).

Some countries (e.g., Canada, Australia) may require, as a condition of the permit, a completed anthropological study with the local Aboriginal group to identify any cultural sites.

Permits may also be required for the export of samples for analysis or processing. Failure to obtain these permits may result in:

- Substantial delays in shipping, or
- Impoundment of the material in question.

2.2.4 Planning

Planning

Careful planning prior to commencing exploration work is essential. Planning activities help to define the actual and potential impacts of the program, set goals and performance expectations, identify potential risks and countermeasures, and ensure that adequate resources are obtained. This requires a change in mindset from "How to mitigate the impact of the intended program?" to

one of "How to plan the intended program to have the least adverse impact upon its surroundings?"

There are several aspects of planning to consider, and they are set out below:

Costs

Take into account the total cost of an exploration program, which includes the costs required to:

- Conduct the exploration (e.g., trenching, drilling, soil sampling)
- Remediate or reclaim any environmental impact
- Address the concerns of local communities

Proper planning can help to minimize the total cost (exploration, reclamation/mitigation) of any program.

It may be necessary to:

- Choose a more "expensive" option (e.g., helicopter support of drilling) to reduce the requirement for, and costs of, environmental and social remediation measures
- Consider alternate methods of obtaining the required information at lower environmental cost
- Schedule exploration for the season that will result in the least potential impact upon the environment and local communities

Responsibility

It is important that exploration work be conducted so that:

- Work is carried out in a thoroughly professional manner that can withstand close scrutiny
- Specific responsibilities for environmental performance are defined for each team member or employee
- Responsible individuals have the authority and the resources to ensure that the environmental performance goals are met

Impacts

There will inevitably be some conflict between the needs of the exploration program and the requirements of environmental stewardship. Make sure that:

- The exploration imperatives do not take precedence over environmental issues
- Environmental professionals are involved in the design of any program at an early stage, so that their input can be considered and implemented where appropriate
- Baseline studies are always conducted prior to any major disturbance of the natural surroundings

The level of planning required for a program is, to some extent, proportional to the amount of work. For very large programs however, such as detailed drilling involving many rigs over several months, a formal risk analysis would ensure consideration of all foreseeable events. There should be established emergency response plans for use in the event of an accident.

Despite a commitment to, and implementation of, proper professional practice, a company may still encounter adverse comment from concerned citizens or groups. The best response to such comment is:

- A demonstrated adherence to good practice guidelines

- The support of communities and organizations that have benefited from the company's work elsewhere (this should be documented)

Baseline Studies

Whenever entering a new exploration area, consider the need for baseline studies of the existing environmental and socioeconomic situation. In the preliminary stage of reconnaissance exploration, this will usually not be necessary, but as soon as land disturbance begins with building roads or bringing in a drill, ensure that appropriate baseline studies are in place before actually disturbing the land.

Some well-established mines may not have carried out detailed baseline studies at the time that they were developed. In one case, original soil samples taken over the eventual mine site were discovered well after production commenced, and analysis of these gave useful information of the baseline conditions.



Figure 7: Careful planning to address environmental concerns is essential before beginning detailed exploration in any area of the world (in this case West Africa). © lamgold

2.2.5 Due Diligence

When acquiring a mineral property (or any interest therein), a company assumes the responsibility to become knowledgeable about, and financially responsible for, what is acquired. If an acquired property has environmental contamination, there may well be liability for the cost to reclaim the site to an acceptable level, even if the company was not aware of the problem.

In order to protect the company's interests, therefore, it is essential to determine the characteristics of the property of interest prior to purchase or other involvement, and to exercise due diligence. Due diligence can be fulfilled by a detailed data review carried out to establish the environmental, and if appropriate, the socioeconomic risks attached to the property.

In this review it is critical to identify:

- The potential reclamation costs
- The existing environmental liability associated with the exploration property

- Any adverse impact already sustained by local communities

By obtaining a good understanding of environmental and socioeconomic issues in any potential target property, a company can better prioritize exploration targets and property purchases, and help protect itself against future environmental liabilities. A review of the existing condition of the property and its history will also help to prioritize exploration targets and minimize future expenditures for historic damages. This is particularly important at brownfield sites (properties that were previously developed or explored) that are being considered for exploration purposes.

The following subsections deal with the due diligence requirements on properties at different stages of exploration. Specifically, they include:

- Wilderness Sites
- Previously Explored Sites
- Previous Production Sites

2.2.5.1 Wilderness Sites

In remote wilderness areas with no previous exploration activity, it is highly unlikely that there would be any reclamation liability on any property acquired. In fact, the natural state provides a baseline against which any future development and subsequent reclamation can be modeled.

In such cases, however, it is important that environmental baseline studies be initiated prior to extensive activities on the site. This will provide support for any reclamation work to be done.

Note: It may be necessary to complete a thorough and complete anthropological / archaeological survey / inventory of the entire area, before any exploration activity is permitted.

2.2.5.2 Previously Explored Sites

For sites that have been previously explored, there is the potential that past or current activities may require reclamation and impose an environmental or socioeconomic liability on the property. Any such liability could be transferred to the company, should it choose to acquire the property. It is important to assess the likely magnitude of this before completing any acquisition.

Some of the primary environmental liability issues typically associated with a previously explored property could include:

- Openings on surface (e.g., trenches, open cuts, drill holes)
- Buildings and infrastructure, and impacted surrounding areas
- Solid waste storage or disposal, including drill core and scrap metal
- Soil, surface water, and ground water contamination from spills and drilling mud disposal
- Storage or usage of materials such as petroleum hydrocarbons on the site, above and below ground level
- Acid generation potential of exposed host rock and drill core

Socioeconomic liabilities could include:

- Disturbance of traditional use areas
- Disaffection of the local community

The amount of environmental liability at a previously explored site may be quite low and equivalent only to the cost of removing any equipment remaining on the site. On the other hand, it may be substantially higher if complex reclamation is required. The environmental liability associated with an exploration site can therefore vary considerably, from no cost to millions of dollars. Costs required for socioeconomic impact remediation are so site-specific that they are difficult to estimate with any accuracy.

2.2.5.3 Previous Production Sites

Some of the best exploration potential exists around previously operating mines, but these areas may carry particularly heavy environmental and socioeconomic liabilities that could be passed to a new owner at transfer of ownership. Consider commissioning an environmental liability audit on such sites prior to purchase to identify all liabilities and ensure that the company is willing to assume them. It may be that the reward of the property does not justify accepting the risks attached to it.

Environmental liability issues in previously producing mine sites may include:

- Openings on surface (e.g., trenches, open pits, open cuts, drill holes)
- Openings to underground (e.g., shafts, raises, adits, subsidence areas)
- Buildings, infrastructure, and other impacted areas
- Dams, diversions, or other structures affecting natural water flow
- Contamination issues created by large stockpiles of ore, waste rock, tailings, or heap leach material
- Solid waste storage or disposal, including drill core, refuse, and scrap metal
- Soil, surface water, and ground water contamination from spills or previous operations
- Storage or usage of materials such as PCBs, asbestos, petroleum hydrocarbons, or other chemicals
- Acid generation potential of exposed host rock, waste rock, drill core, and tailings

With the purchase or option of a historic mine site for its exploration potential, may come attached environmental and socioeconomic liabilities, and the company may have to bear the cost for reclamation of the entire site. This may occur even if the company never conducts exploration on the property. The only possible exception is if a release from existing environmental contamination is received prior to purchasing or entering the property. Such blanket releases may not be effective however, if the previous owner cannot pay for remediation and the government authorities will not backstop the agreement.

If a company does not clean up a previous operation site after acquiring it, a public black mark may result, even if there was no legal responsibility to do so. This may negatively affect further ability to obtain exploration permits, or obtain access from landowners in other jurisdictions.

2.2.6 Contractor Selection and Management

Companies now routinely engage contractors and subcontractors to carry out much of the specialized exploration work. Contractors can include:

- Stakers and line cutters
- Geophysical contractors
- Diamond drillers

- Heavy equipment operators

Even geological mapping and sampling may be contracted out to consultants with specific experience. If contractors create problems with respect to the environment or local community relations, the company may be liable. It is important to:

- Pay as careful attention to the selection and management of contractors and subcontractors as to company employees
- Ensure that contractors adhere to the same code of conduct as company employees.

Most reputable contractors have their own codes of conduct, and some trade associations and professional organizations (e.g., the Canadian Diamond Drilling Association) have their own set of environmental protection policies. Nevertheless, whenever hiring a contractor:

- Ensure that he or she will practice sound environmental stewardship in all of the work carried out
- Assign responsibility to a co-worker to monitor environmental performance in that area

Contractors' employees must not disturb or irritate local communities. Ensure that all contracts with suppliers of specialized services (e.g., drilling, excavation) have:

- Clauses that require adherence to the company's code of practice
- Penalties (e.g., replacement of personnel, withholding of payments or fines) for non-compliance

Consider including contract employees in any environmental, community relations, or health and safety training programs implemented.

2.2.7 Reviews and Audits

Whenever carrying out exploration, assess employees' environmental performance. Periodically review company policies to ensure that the work is consistent with current practice.

An audit may either be required by, or be imposed upon, an exploration program. An audit will examine the environmental and social liability, or risk of the project, and may suggest management action to ensure:

- Good practice
- Compliance with company policies
- Compliance with legislation
- Ability to meet obligations

Audits may be conducted by external third parties or by internal audit groups. Internal audits often identify controls that can be established to minimize liability in the future, and can identify problems before they become significant issues that might warrant third party intervention. Some companies are ISO-14001 compliant, and these standards require periodic environmental management system audits to maintain certification.

In all cases, corrective actions must be taken in response to audit findings. If an audit finding is left unresolved, it is evidence of a lack of due care.

Always carry out a due diligence audit prior to acquisition of a property that has had previous work done on it to ensure that there are no undetected environmental issues. For more detail, refer to **Due Diligence** earlier within this [Management Essentials](#) section.

2.2.8 Record Keeping

Accurate and thorough record keeping is an essential part of exploration. Record keeping includes both written records (most efficiently done with checklist forms), and digital photographs. Have a company procedure developed for record keeping, and a system capable of managing that information properly within the company. With current information readily available, communications with external stakeholders will more easily comply with legislative requirements and enhance community relations.

It is becoming increasingly important to augment the written history of a project with pictures, so that interested stakeholders can see for themselves what has been done. Supply the project or site manager with a camera, and ensure that photographs of drill sites and other areas of environmental or social impact are taken for historical reference purposes. To maintain a clear record trail, activate the date feature of the camera, if it has one, when recording reclamation activities.

It is particularly important in the environmental area to:

- Document the state of an area before, during, and after exploration
- Establish a clear record of activities for which you are responsible

Keep proper records of environmental "incidents" such as:

- Spills or excessive erosion that require reclamation
- Any event that requires notification to the relevant authorities
- All complaints received by the company or its exploration crews

Detailed record keeping will also facilitate any environmental audit that may be conducted during or after the life of the project.

2.2.9 Reporting

Many jurisdictions have legal obligations to report spills and other incidents. Have policies and reporting guidelines in place to manage the reporting of such information to all stakeholders.

Ensure that employers, governments and communities are informed in a timely fashion of any event that could be considered a crisis (e.g., fire, spill). A crisis is an event that has the potential for severe impact of a financial, health, property or environmental nature. There should be established procedures in place to handle crisis situations.

The trend for external reporting is becoming more and more demanding for companies. Over the last ten years, reporting requirements for companies engaged in mineral exploration have increased dramatically. Shareholders, and other stakeholders, require thorough, up to date information. Associated with this is a need for the release of data on a company's environmental performance.

Companies must organize their internal communications to ensure that there is proper backup for their public statements on environmental matters. The pressure to report on environmental matters has led many companies, as a matter of public transparency, to issue special publications in addition to sections on their environmental performance in their Annual Reports. As well, stock exchanges are exerting continuous pressure for increasing disclosure of company activities. Most companies do report on their environmental performance around their operating mines, but, at present, only a few emphasize their performance in the exploration process.

Although major companies are accustomed to issuing environmental or sustainability reports, junior companies generally are not. It is recommended that smaller companies include a section on their environmental performance in their annual reports. If it is being handled well, it may distinguish a company from the competition. Such a section might include environmental, health and safety statistics, plus a discussion of any socioeconomic issues. Explain any problem areas and the actions taken to rectify them.

In addition to information on exploration activities, it is important that monthly reports from an exploration project contain:

- A summary of environmental and socioeconomic performance
- The provision of statistics concerning, for example, the number of drill holes capped compared to the number drilled

The guiding principle of responsible exploration should be transparency, to the extent that it does not prejudice confidentiality and exploration competitiveness. At the conclusion of any exploration program, complete a project environmental report and be prepared to file it with the relevant authorities, either separately, or as part of a standard project drilling report. In this fashion, relevant information can be made available to other stakeholders and the public.